USAID | BÉNIN DU PEUPLE AMERICAIN

BASICS

Basic Support for Institutionalizing Child Survival (BASICS)

July 30, 2009 - July 29, 2012

FINAL REPORT

Original contract under the Partnership for Child Health Care (PCHC)
No. GHA-I-07-04-00004-00

Subcontract MSH IQC
No. 09-MSH-01; Task Order No. 08

BASICS Benin Final Report (English Version)

BASICS Benin

July 30, 2009 – July 29, 2012

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Acronyms

ARI	acute respiratory infection
BASICS	Basic Support for Institutionalizing Child Survival (project)
BCC	behavior change communication
CBBE	*Centre Béninois pour le Bien-Être et la Sauvegarde de l'Environnement* (NGO)
CHW	community health worker
COVADES	*Corps de Volontaires Africains pour le Développement Économique et Social* (NGO)
CRAM	*Chargé de Recherche Action et Mobilisation* (health zone unit in charge of research and social mobilization)
CTM	Cotrimoxazole
DEDRAS	*Développement Durable, le Renforcement et l'Auto promotion des Structures communautaires* (NGO)
DSME	*Direction de la Santé de la Mère et de l'Enfant* (Maternal and Child Health Directorate)
EDS	*Enquête Démographique de Santé* (Demographic Health Survey)
GRADE	Action Research Group for Development and Environment (NGO)
GSM	Global System for Mobile Communications
ICCM	integrated community case management
IEC	information, education, and communication
IMCI	integrated management of childhood illness
LDP	Leadership Development Program
MOH	Ministry of Health
MSH	Management Sciences for Health
NGO	nongovernmental organization
NHMIS	National Health Management Information System
PISAF	*Projet Sante Familiale* (Integrated Family Health Project)
PSI	Population Services International
QIT	quality improvement team
RDT	rapid diagnostic test
SMS	short message service
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

The Basic Support for Institutionalizing Child Survival (BASICS) Benin Project, funded by the United States Agency for International Development (USAID), worked to implement and strengthen integrated community case management (ICCM) —mainly malaria, diarrhea, and acute respiratory infection (ARI)—for children under five. The BASICS Project worked at the national level with the Ministry of Health (MOH) and in five health zones.

Grants to NGOs for ICCM: The BASICS project used local non-governmental organizations (NGOs) to be the bridge between the communities and the health zones. Based on a competitive process, BASICS and the MOH selected five local NGOs who were tasked to:

- Facilitate the development of a network of community health workers (CHWs) in the health zone through training and supervising in collaboration with the health zone teams;
- Implement behavior change communication (BCC) activities developed with the support of BASICS, the health zones, and various local social partners; and
- Help the health zone teams develop and manage an information database on the villages covered. The database included population size, number of households benefitting from the program, use of health centers, and CHW interventions to treat the target illnesses.

Technical Assistance to Develop Integrated Community Case Management (ICCM) Approaches and Tools: To support implementation by the health zones and the NGOs, BASICS supported development of the following tools (approved by the MOH):

- Intervention package implementation tools
- CHW training tools
- Post-training monitoring tools
- CHW supervisory training tools
- CHW performance criteria

Links between the Community, CHWs, and their Respective Health Centers Strengthened: This component revolved around the following items:

- Strengthened capacity of individuals, families, and CHWs to identify signs and symptoms of malaria, diarrhea, and ARIs and to understand the importance of prompt treatment of malaria, diarrhea and ARI

- Improved knowledge and understanding of ICCM by CHWs
- Development of approaches and tools for supportive supervision between the health facility and CHWs; CHWs received individual supportive supervision and group supervision

Figure 1. Major Project Achievements of the BASICS Benin Project

BASICS Benin Major Project Achievements	
▪ Helped to institutionalize ICCM at the national level	▪ Trained 1,048 CHWs (see Appendix 2 for full list of training)
▪ Created five groups of ICCM tools for better case management	▪ Implemented a system of CHW supervision , which resulted in improved case management
▪ Trained and supported CHWs to treat 86,609 cases of malaria, diarrhea, and ARIs in children under 5 from September 2010 to April 2012	▪ Developed an SMS texting system for improved detection, treatment, and referral
▪ Trained and supported CHWs to conduct 52,543 household visits	▪ Developed a database to collect and analyze community data

To facilitate the MOH's integration of community data into the National Health Management Information System (NHMIS), BASICS and the MOH's health zone teams worked together to develop a database to collect and analyze data and enable MOH structures to handle community-level data when the BASICS project closes. Consequently, in partnership with AFRICARE and the Djougou Health Zone, BASICS and the MOH designed, tested, and finalized a database in conjunction with the other health zone coordination teams.

The data collection system that BASICS piloted involved completing electronic forms and sending them by short message service (SMS). As required by the MOH, data on cases seen, cases treated, stock management, and referrals of serious cases were collected during the pilot test. With the support of Medic Mobile, BASICS developed four simplified electronic forms corresponding to the paper forms: 1) report of cases seen; 2) drug management report; 3)

stock-out warning; and 4) referral of serious cases. In addition, BASICS also trained CHWs and their supervisors on the use of these forms.

There was good compliance with the system from the health facility staff and the CHWs. While BASICS encountered some technical challenges during implementation, overall, SMS/Global System for Mobile Communication (GSM) proved to be a reliable system that made it possible to connect CHWs and their supervisors. Additionally, the system can be used in other areas of the health system, including: coordination and management of CHWs; mobilization for vaccination campaigns; outreach strategies; supply management; referrals to health centers and counter-referrals; data collection; and health service mapping.

During implementation, various challenges emerged, specifically regarding quality of care, communications between CHW and health facilities, and changes in the MOH policy on malaria. BASICS designed technical innovations to address these challenges.

Since the CHW post-training assessment identified weaknesses in quality of care, BASICS implemented an improved collaborative approach to advance CHW performance. This approach used teams of CHWs and their health center supervisors to test various approaches to providing technical support to CHWs. This revised approach to supervision was based on group supervision and individual on-site coaching for each CHW, with a focus on those who were having more difficulty. The approach encouraged supervisors to become more involved and have increased interest in the tasks that the CHWs perform. Six months after implementation of the collaborative approach CHWs' performance had improved substantially across all indicators.

BASICS facilitated the integration of the rapid diagnostic test (RDT) for malaria into ICCM following the MOH's new policy, which declared that all malaria treatments should be free, but only with a diagnostic confirmation of malaria. Expecting such a change in policy, BASICS had already planned a pilot study, and was therefore able to quickly implement the practice and share lessons learned with the MOH for their scale up.

BASICS worked with the health zones and MOH directors to update the case management algorithm to include the use of RDTs. In collaboration with the health zone management teams, BASICS staff first conducted a training of trainers, these trainees, in turn, conducted CHW trainings in the use of RDTs. The assessment showed that among the 40 Tchaourou CHWs who had been trained:

- 85 percent of CHWs performed 90 to 100 percent of RDT tasks correctly;
- 10 percent of CHWs performed 75 percent to 85 percent of tasks correctly (at this performance level, CHWs required close supervision); and
- 5 percent of CHWs performed less than 70 percent of tasks correctly, and needed additional on-the-job guidance.

Lessons Learned

- By facilitating links between the health zones and the communities, the partnership between health zones and local NGOs can play a vital role in establishing ICCM in Benin, especially in hard to reach areas. Participants greatly appreciated the leadership development trainings, which allowed them to build and improve joint task forces among NGOs and health zones.

- CHW knowledge was particularly weak in the few areas analyzed during the post-training monitoring. Applying the collaborative strategy to the Copargo Health Zone resulted in improved CHW performance in a short amount of time. This shows that performance improvement strategies with close participatory monitoring and immediate feedback on areas of needed improvement are highly effective.

- The database that BASICS developed with the MOH and AFRICARE facilitated the entry and processing of data from CHW activities. This tool will help ensure sustainability and integration of community statistics into the NHMIS.

Challenges and Recommendations

- Regular one-on-one supervision of CHWs with immediate feedback on areas of needed improvement makes it possible to ensure the quality and continuity of services. This feedback should be made systematic.

- The partnership between local NGOs and health zones produced strong results and should be maintained to make interventions more successful.

Introduction

Context and Objectives

Benin has a population of approximately eight million people, 44 percent of whom are under 15 years of age. With an annual population growth of approximately three percent, Benin's population is expected to double over the next 24 years, which will place heightened pressure on an already overburdened health care system struggling to meet the needs of the current population. The country's maternal and neonatal mortality rates have remained high for several years, despite great efforts to reduce them. Though slight progress has been made in reducing infant and child mortality rates, this progress will still not be enough to meet Millennium Development Goal 4, reduction of under-five mortality by two-thirds, by 2015. Table 1 below shows the changes in Benin's child health indicators from 1996 to 2006.

Table 1. Mortality trends for children under 5 (per 1,000 live births)

Survey	Neonatal Mortality	Child Mortality	Infant-Child Mortality
EDSB-I 1996	38.2	80.0	166.5
EDSB-II 2001	38.4	77.8	160.0
EDSB-III 2006	32.0	62.0	125.0

Source: EDSB-III 2006

Despite major efforts, Benin's infant and child mortality still remain among the highest in West African coastal countries, at 62 and 125 per 1,000, respectively. It is believed that most of these deaths are due to preventable childhood illnesses such as malaria, ARI, and diarrhea.

To meet the high demand for health care, Benin's MOH undertook a complete reorganization and established partnerships with the private sector, civil society, and religious organizations to provide adequate health care services to its population. In 1990, Benin adopted an IMCI strategy to provide comprehensive treatment for children suffering from malaria, pneumonia and diarrhea the - primary causes of death among children aged 0 to 59 months globally. This strategy includes appropriate curative, preventive, and promotional interventions in health facilities (clinical IMCI) and at community and family levels (community-based ICCM). Improving coverage, extending community-based IMCI services, and training CHWs to provide quality health services to communities have become priorities to combat the infrequent use of health services as seen in the 2006 Demographic Health Survey, which indicated that only 36 percent of children with ARI symptoms, 37 percent of children with a fever, and 21 percent of children with diarrhea were brought to a health facility to receive care.

USAID awarded the three-year BASICS Benin project to the Partnership for Child Health Care Inc. in 2009. The project was the first in Benin to implement an ICCM package through a partnership between local NGOs and the MOH. It covered the following five health zones:

- Kandi-Ségbana-Gogounou and Banikoara, in the Alibori Department
- Tchaourou, in the Borgou Department
- Djougou-Ouaké-Copargo and Bassila, in the Donga Department

BASICS designed an ICCM strategy with four core elements to:

- Develop, optimize, and build the capacity of NGOs and the MOH to work together to provide communities with access to large-scale, high impact health interventions;
- In the 5 Health Zones start community based intervention with a focus on continuum of care
- Advocate for the inclusion of ARIs in the ICCM package; and
- Help institutionalize ICCM at the national level.

This report summarizes the results achieved by the BASICS project between August 1, 2009 and July 29, 2012.

Project Intervention Areas

The 34 health zones in Benin make up the most decentralized operational unit in the Benin health system, corresponding to the WHO's description of a "health district." The zone also includes private health facilities, and all of these entities (both public and private) are supported by a public or private referral hospital (zone hospital), intended to service an area serving covering between 100,000 and 200,000 inhabitants.

BASICS BENIN by numbers

5 health zones

93 health facilities

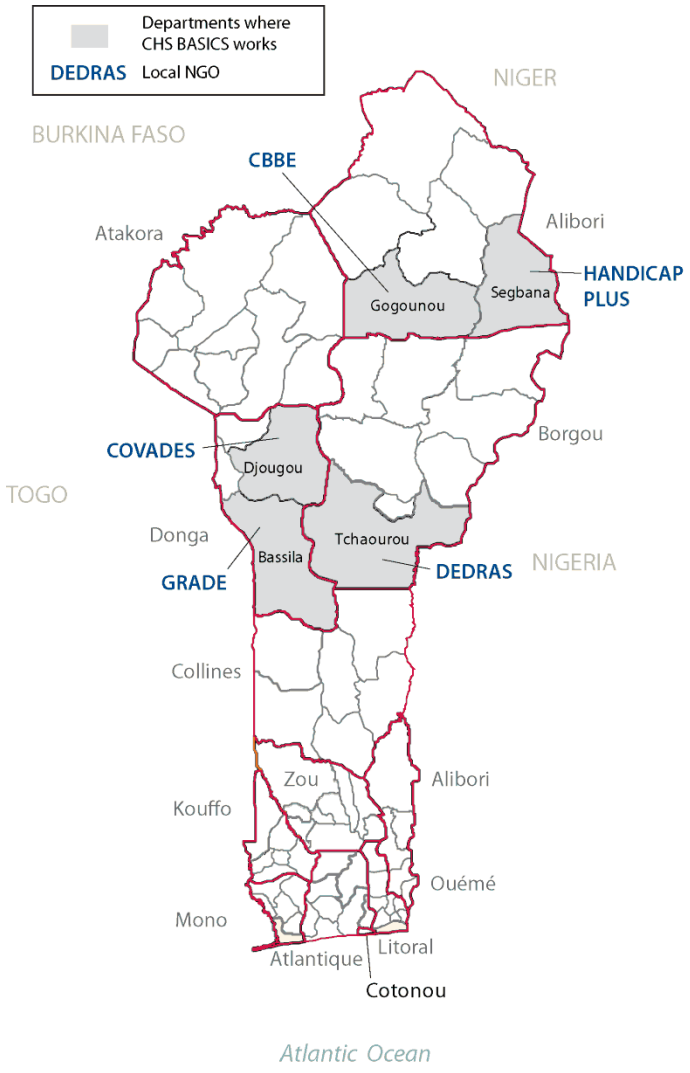
972 Community Health Workers

202,116 under-five children served what amounts to 16-20 % of total population of under-five children in Benin

5 Local NGOs involved

Time of operation
July 30, 2009 – July 29, 2012

Figure 2. Map of BASICS Benin Implementation Coverage



Primary Project Results

Component 1: Grants to NGOs for ICCM

Expected Results

- Strengthened capacity of individuals, families, communities, and health workers to identify the signs and symptoms of malaria and to understand the importance of prompt treatment of malaria.
- Improve CHWs knowledge and understanding of community case management
- Increase community awareness of consistent and proper use of LLITNs
- Improved case management of diarrhea/ARI/malaria through community-based approaches.

Achievements

BASICS built the capacity of NGOs to:

- Successfully manage their grants, meeting or exceeding requirements;
- Train, supervise, support, and retain CHWs under the direction of the MOH; and
- Manage their programs effectively.

1. ***Grants management***

In order to issue grants to local NGOs, the project partner, Management Sciences for Health (MSH) completed a request for application (RFA) that invited the NGOs to write a concept paper. NGOs submitted 40 concept papers, which were received and reviewed by a multidisciplinary team composed of representatives from the Department of Health, the National Malaria Control Program, the five health zones, the Borgou and Atacora Departmental Health Directorate, the Projet Sante Familiale, PSI, and BASICS. As a result, five local NGOs were selected to receive grants:

- *Centre Béninois pour le Bien-Être et la Sauvegarde de l'Environnement* (CBBE), for the Banikoara health zone
- GRADE, for the Bassila health zone
- *Corps de Volontaires Africains pour le Développement Économique et* Social (COVADES), for the Djougou-Copargo-Ouaké health zone
- DEDRAS, for the Tchaourou health zone
- HANDICAP PLUS, for the Kandi-Gogounou-Segbana health zone

The selected NGOs were expected to carry out the following tasks:

- Facilitate the development of a network of CHWs in the health zone through training and supervising CHWs in collaboration with the health zone teams

- Implement BCC activities developed with the support of BASICS, the health zones, and various local social partners
- Help the health zone teams develop and manage an information database on the villages covered; the database included population size, number of households benefitting from the program, use of health centers, and CHW interventions to treat the target illnesses

The NGOs helped the CHWs by providing educational messages to promote health practices such as using ICCM, helping families to appropriately use bed nets, immunizing children, and detecting and managing malnutrition. The NGO staff and health center nurses met regularly with CHWs to share and discuss best practices and difficulties that they face in their day-to-day work. These meetings were also used by the NGOs to collect information and data on the CHWs' activities. During nationwide immunization and bed net distribution campaigns, the NGOs helped organize the CHWs involvement in distribution activities. Each month, the NGOs assisted the health zone team to organize data quality checks and provided feedback to the CHWs.

The NGOs were also involved in the three pilot studies implemented during the third year of the BASICS project. Three of the five NGOs worked to:

- Organize, train, and follow the CHWs in Tchaourou and Bassila implementing the SMS pilot test
- Implement the performance improvement collaborative process in the Copargo health zone with the health center nurses, the CHWs, and the quality assurance teams

- In collaboration with nurses, organize, train, and jointly supervise the introduction of the malaria RDT process in Gogounou and Tchaourou.

2. Strengthened capacity of government and NGO grantees to implement ICCM

BASICS Benin built the NGOs' capacity in the following ways:

- The project staff regularly supervised the NGO activities by attending consultation meetings held by health zones and through participation in group supervision and quarterly reviews. These monitoring activities helped the NGOs better manage their activities, improve the quality of their accounting records and technical and financial reports, and ensure compliance with production and archiving standards.

- BASICS held two capacity building sessions for NGO managers: one to train them in leadership development and teamwork, and another on the use of the QuickBooks accounting software and planning their contractual activities. The project also developed a grant management guide and distributed it to the NGOs in September 2010 to facilitate the administrative and financial management of their grants.

- At the end of the project, the capacity of the NGOs had been successfully built, which was emphasized when four of the five NGOs (GRADE, DEDRAS, CBBE, and HANDICAP-PLUS) received additional funding from other partners such as the European Union, Plan Benin, and the Government of Benin for the first time.

BASICS Benin built the health zone's capacity in the following ways:

- Additionally, a BASICS consultant provided continuous technical assistance to the MOH, which made it possible to assist the Ministry's officials in reviewing the community management regulatory instruments and developing case management background documents. With the project's support, the MOH revised national guidelines and tools for ICCM, including CHW training and supervision materials.

- BASICS improved the leadership skills of MOH staff from the Maternal and Child Health Unit, the National Malaria Control Program, and the National Public Health Unit through MSH's Leadership Development Program (LDP). This training strengthened team dynamics and the performance of MOH staff, and improved their competency in situation and problem analyses and action planning.

- The project also funded the participation of MOH officials in regional and international meetings on ICCM policy, so that they were aware of new international child health strategies and could share their experiences with other countries.

- BASICS strengthened the coordination/collaboration mechanism with partners and clients on behalf of the MOH. After consultation with the MOH, a steering committee was put in place to ensure the technical oversight of the project between the MOH and BASICS, and there were periodic meetings to share information about the project's implementation, lessons learned, and challenges. The MOH found this steering committee useful and extended it to cover other Ministry projects.

3. ***Community awareness of consistent and proper use of long-lasting insecticide treated nets increased***

The CHWs provided mothers with information and advice on their children's health, including information on malaria, the use of treated bed nets, and the need for early malaria treatment. After the national bed net distribution campaign in July 2011, which was organized by local NGOs and supported by the CHWs, and based on the data collected in 2012, it was determined that more than 50,000 long-lasting insecticide treated nets were distributed in the BASICS project areas.

Challenges

Despite the selection process, some NGOs showed weaknesses and lack of performance in implementing their grants. It remained a challenged for the NGOs to do follow up and continuous capacity-building for their staff.

Many projects or pilot programs offer additional tasks for CHWs, which could affect their availability or the quality of their services within the BASICS project. The steering committee could act as a coordinating body between the different projects so that the CHWs are not overburdened and therefore are able to continue to provide high-quality services.

Lessons Learned

Partnerships between health zones and NGOs help to support planning, implementing, and monitoring of field activities and are a key factor in ensuring sustainability. At the end of the BASICS project, CHWs were motivated and capable of providing quality care, and communities remained mobilized to support ICCM.

Component 2: Technical Assistance to Develop Community Case Management Approaches and Tools

Expected Results

- Development of tools for common community-level approaches and tools for integrated community case management (ICCM) of malaria, diarrheal disease, and ARIs
- Information, education and communication (IEC) and BCC strategies and refined materials in support of ICCM of malaria, diarrheal disease, and ARIs
- Strengthened capacity for GOB and NGO grantees to implement integrated community case management.

Achievements

1. ***Development of common community-level approaches and tools for ICCM of malaria, diarrhea, and ARI***

Five groups of tools (See Appendix 1) were developed with BASICS support and approved by the MOH during an official ceremony on April 22, 2011. These tools included:

- Intervention package implementation tools,
- CHW training tools,
- Post-training monitoring tools,
- CHW supervisory training tools, and
- CHW performance criteria.

During the first program year, BASICS, WHO, and UNICEF jointly advocated for a MOH ICCM strategy modification. BASICS took the lead in many donors meetings, advocating for the addition of ARIs to the ICCM package to increase accessibility to case management for one of the major causes of under-five mortality. The project also shared examples from other countries (i.e., Senegal, DRC, and Madagascar) to show how well-trained and supervised CHWs—even those with little or no education—had correctly managed cases of pneumonia, malaria, and diarrhea at the community level.

The Mother and Child Health Unit, National Public Health Department, UNICEF, the WHO and other stakeholders agreed to advocate for the inclusion of ARI at the community level so CHWs could provide case management for ARI. After sustained and successful advocacy, the MOH issued a decree authorizing the inclusion of treatment of ARIs at the community level in the intervention package, which was signed on March 4, 2010.

BASICS successfully continued their advocacy efforts to provide initial drug provision to the CHWs. The MOH signed a letter on February 14, 2011 authorizing the health zone head physician to train CHWs to provide initial drugs for ICCM.

2. ***Refined IEC and BCC strategies and materials in support of ICCM of malaria, diarrhea, and ARIs***

To support the *Direction de la Santé de la Mère et de l'Enfant* (DSME or Maternal and Child Health Directorate), a consultant helped the ministry review the national communication strategy and IEC tools. The consultant conducted a major document review and developed a revised draft strategy in partnership with the DSME, which was then submitted to the MOH. All of the IEC tools (i.e., image boxes, radio spots, etc.) were collected, and materials that were appropriate for use at the community level were duplicated by BASICS and other partners, such as UNICEF and AFRICARE.

Local NGOs created radio spots that were broadcasted on local radio stations to remind communities of important prevention practices.

Challenges

One of the major challenges was the diverse set of languages in the project area, which made it difficult for radio programs to penetrate the communities. For this reason, village and community leaders were heavily involved in the dissemination of the messages.

Lessons Learned

Close collaboration with partners in developing tools is necessary to accelerate the scale-up of implementing a high-impact intervention package at the community level. The various tools that were developed for this purpose helped to improve CHWs' quality of care as follows:

- Served as a true checklist and flowchart
- Facilitated compliance with the guidelines
- Indicated steps to take and decisions to make
- Reported the results of a treatment or visit
- Constituted a source of ICCM data
- Provided an opportunity to expand knowledge of communications techniques and techniques for evaluating, identifying, and treating sick children
- Made it possible to collect, process, and analyze data about the services offered by CHWs
- Improved the visibility of CHW activities

Component 3: Strengthen Links between the Community, CHWs, and their Respective Health Centers

Expected Results

- Strengthened capacity of individuals, families, and CHWs to identify signs and symptoms of malaria, diarrhea, and ARIs and to understand the importance of prompt treatment
- Improved knowledge and understanding of ICCM by CHWs
- Developed approaches and tools for supportive supervision between the health facility and CHWs

Achievements

1. ***Strengthened capacity of individuals, families, and CHWs to identify signs and symptoms of malaria, diarrhea, and ARIs and to understand the importance of prompt treatment***

Previously, health workers and CHWs were trained to identify the signs and symptoms of malaria, and to advise mothers to seek care as soon as their child became ill. With the support of local NGOs, the CHWs continued to counsel mothers on malaria and provide malaria treatment, but also expanded the range of their treatment capacity to include diarrhea and ARIs. Health promotion messages to mothers and caretakers were also expanded to include such topics as the use of treated bed nets to prevent malaria, boiling water to avoid diarrhea, fully immunizing their children to avoid illness, and the need for early treatment for malaria, diarrhea, and ARIs. CHWs were provided with flip charts describing these health messages that they used to educate mothers and parents during home visits.

2. *Improved knowledge and understanding of ICCM by CHWs*

In the first year of the project, BASICS trained 193 trainers and 233 CHWs, and scaled up in the second year by training 802 new CHWs for a total of 1,048 trained CHWs. BASICS' NGO grantees and health zone teams provided regular supervision. The project produced and distributed a CHW workbook to better guide newly trained CHWs in ICCM procedures.

BASICS provided each CHW with a bag containing an equipment kit (see Table 2). The health zone drug store provided all pharmaceuticals, according to the MOH cost recovery system (see Table 3).

The project conducted a post-training evaluation in February 2011. Of the 1,048 CHWs trained by the project, 972 (or approximately 93 percent) were contacted and evaluated. The overall loss of trained CHWs was, therefore, 7 percent. The primary reasons for attrition were illness, death, and a lack of contact information for certain CHWs. The Bassila health zone had the lowest attrition rate.

Table 2. Content of the CHWs' kits

Metal case containing: ▪ Towel ▪ Flashlight ▪ Soap ▪ Timer ▪ Cash box ▪ Medicine bag	▪ Five-liter plastic bottle ▪ One-liter graduated container ▪ Small cup ▪ Two spoons ▪ Plastic basin ▪ One-liter beaker ▪ Raincoat

Table 3. Drugs and other items provided to CHWs by the health zone drugstore

▪ Artemisinine combined treatment (Coartem) ▪ Oral rehydration salt ▪ Zinc sulfate ▪ Cotrimoxazole (CTM) ▪ Timer ▪ Nutritional arm strip ▪ Sheet for community case management and reporting ▪ Pencil, eraser, ballpoint pen

3. *Developed supportive supervision approaches and tools for use by the health facility and CHWs*

To maintain and reinforce the knowledge that CHWs gained during their initial training, BASICS ensured the volunteers received adequate supervision. Health center nurses conducted supervision visits in close collaboration with the local NGOs. BASICS used two supervisory approaches:

- *Individual supportive supervision:* Supervisors visited the villages to help the CHWs better manage cases by providing feedback on observed weaknesses. At the end of the visit, the supervisor provided feedback to the CHW and, together, they developed a performance improvement plan to be reviewed at the beginning of the next monthly supervision visit. During these visits, supervisors frequently communicated with mothers and other community members and collected information by completing the relevant forms.

- *Grouped supervision:* As recommended by the MOH, all CHWs in a health center's catchment area assembled at the health center to discuss their experiences and the challenges they faced, particularly regarding restocking supplies. During these meetings health center officials collected relevant information.

To successfully and consistently supervise, monitor, and follow-up on CHW activities, BASICS adapted the CHW supervision tools as previously mentioned in Component 2.

CHWs treated 86,609 cases of malaria, diarrhea, and ARIs in children under five over the life of the three-year project. In addition, CHWs conducted 52,543 household visits (35,581 in 2011 and 16,962 in 2012). Because these CHWs operated in remote areas, far from health centers, many of these cases would probably have been lost if the CHWs had not been present to provide treatment.

4. *Development of a database to collect and analyze community data*

To facilitate the MOH's integration of community data into the NHMIS, BASICS and the MOH health zone teams worked together to develop a database to collect and analyze community data, and enable the MOH to handle this data after the BASICS project closed. The database was designed, tested, and finalized in partnership with AFRICARE and Djougou health center and in conjunction with the other health zone coordination teams. See the table of indicators in Appendix 3, which shows the types of information collected by this database.

86,609 cases of malaria, diarrhea and ARIs were treated in children under 5 by CHWs from September 2010 to April 2012.

BASICS also supported the training of staff from the five health zone statistics units to ensure that they were able to properly use the database to collect data and develop appropriate dashboards for their respective teams. However, the use of the database at the health zone level will need to be followed-up by the health zones to ensure that they meet MOH standards.

Table 4. Cases of illness in children under five managed by CHWs during the project

	2010		2011		2012	
	Target	**Achieved**	**Target**	**Achieved**	**Target**	**Achieved**
Malaria	6,057	**9,623**	24,226	**38,601**	15,769	18,373
Diarrhea	1,971	1,934	7,884	4,428	1,845	1,371
ARI	1,040	**2,535**	4,154	**6,730**	2,800	3,016

5. Innovative approaches and tools to improve C-IMCI

❖ The SMS/GSM Communication System

Despite the relationship developed between health centers and CHWs, it is still not easy to obtain useful information in real time on activities conducted at the community level, as no formal communication system currently exists. To explore the potential of SMS texting to decrease the communication gap between the health centers and CHWs, BASICS implemented a pilot test. For this pilot, BASICS selected two health zones where they tested if it was possible to strengthen communication between the community level and health facilities by using SMS to:

- Improve referrals of serious cases by CHWs to health centers or zone hospitals by reducing referral time and making the counter-referral process more systematic;
- Alert the health center of cases of moderate malnutrition identified by CHWs that require treatment at the health center level;
- Report drug stock status in a timely manner to avoid stock-outs; and
- Share daily information, particularly on CHW activities, a CHWs' requests for guidance, feedback from the head nurse, or any other information to be shared with one or all of the CHWs. The system also aimed to share monthly reporting of data collected by CHWs, in order to make data collection more complete and timely. The completeness rate fluctuated around the 80 percent mark, which indicates that much data was not reported.

The system BASICS piloted sent forms by SMS. As required by the MOH, these forms collected data on cases seen/treated, drug stock supplies, and referrals. With the support of Medic

Mobile, BASICS developed four forms corresponding to simplified versions of the paper forms of the MOH's paper forms. The four forms were labeled as follows:

- Report of cases seen
- Drug management report
- Stock-out warning
- Referral of serious cases

Every week (no later than Monday at midnight), CHWs sent and SMS message reporting the number of cases seen/treated and the drug report. A return receipt was sent to each CHW once the data had been received in the system. In the case of referrals, SMS messages required immediate action on the part of either the Head Nurse or the hospital. The CHW's referral messages were received directly by the referral hospital at the same time as the Head Nurse. The hospital then had the possibility of contacting the CHW through the counter-referral form, by sending a traditional SMS, or by calling the CHW.

BASICS trained all 42 health workers in the health centers and referral hospital emergency services in Tchaourou and Bassila to use the SMS/GMS system. They, in turn, trained 88 percent of the CHWs in Tchaourou (152/171) and 100 percent of the CHWs in Bassila (102/102).

Results of the SMS/GSM Communication System

The tables below show the number of trained health workers in the respective health zones (see Table 5), and the number of messages sent between January and March 2012 (see Table 6), and.

Table 5: Health workers and CHWs trained by BASICS to use the SMS/GSM technology

	Health workers trained	CHWs trained	TOTAL
Tchaourou	25	152	177
Bassila	17	110	137

Table 6: SMS sent by CHWs by type of form from January 30 to March 28, 2012

	Cases seen/treated report	Drug management report	Stock-out warning	Cases referred
Tchaourou	258	98	47	29
Bassila*	67	15	13	1

Challenges of the SMS/GSM Communication System

- Long process of negotiation before signing an agreement with MOOV Benin, a major telecommunications company in Benin
- Need for a highly-qualified expert to install the system
- Insufficient SMS network coverage

Lessons Learned of the SMS/GSM Communication System

- The SMS/GSM is a reliable system that makes it possible to connect CHWs and their supervisors
- Contact must be maintained with CHWs and health center officials to improve the system
- The system can be used in other areas of the health system, including:
    - the coordination and management of CHWs
    - mobilization for vaccination campaigns
    - outreach strategies
    - managing supplies
    - referrals to health centers and counter-referrals
    - data collection
    - health services mapping

❖ **The Collaborative Approach to Improving Performance through Supervision**

As a result of the CHW post-training assessment, which identified weaknesses in quality of care, BASICS implemented a revised collaborative approach to improve CHW performance. Working closely with the MOH, BASICS implemented the approach in the Copargo village from October 2011 through late March 2012.

BASICS' revised collaborative approach used teams of CHWs and their health center supervisors to test various strategies for providing technical support to CHWs. The revised approach to supervision was based on group supervision and individual on-site coaching for each CHW, with a focus on those who were having more difficulty. The approach encouraged supervisors to become more involved and interested in the tasks that the CHWs are performing. BASICS also established six local quality improvement teams (QITs), composed of the CHWs, the health center supervisor, and community members. The QITs tackled issues through periodic problem-solving meetings. As part of the revised supervision technique, the project organized learning sessions for the QITs. These sessions allowed the QIT members to share results achieved, discuss problems and successes, and identify best practices with the goal of rapidly improving performance. Under the supervision of the local health authorities and the BASICS consultant

and advisor to the collaborative project, the project held two learning sessions in each health center catchment area. Six months after implementation of the collaborative approach, CHWs' performance had improved substantially according to all indicators (see Table 7).

Table 7. Evolution of the performance of the CHWs in Copargo while using BASICS' revised collaborative approach

N°	Indicators	Performances		
		Post-training assessment	3 month follow up	6 month follow up
1	CHWs ask patients appropriate questions to determine presence of danger signs and severity of illness	79%	93%	**98%**
2	CHWs correctly calculate breathing rates for children seen with cough	71%	85%	**100%**
3	CHWs classify rapid breathing as pneumonia	71%	92%	**100%**
4	CHWs correctly treat children under five with pneumonia	57%	75%	**100%**
5	CHWs comply with at least 80 percent of cough treatment standards for children 2 to 59 months of age	50%	91%	**100%**

Note: Numbers were rounded up.

Table 7 above shows that, over the course of six months, the collaborative approach led to substantial improvements, particularly in:

- CHWs' ability to systematically look for signs of danger and severity increased by nearly 25 percent;
- CHWs ability to correctly calculate breathing rates increased by more than 30 percent;
- CHWs ability to classify rapid breathing increased by 30 percent;
- CHWs ability to correctly treat pneumonia in children under five increased by 40 percent; and
- The proportion of CHWs who improved their ability to comply with at least 80 percent of treatment standards doubled.

This shows that the monitoring and supervision of CHWs by nurses and other trained health professionals is crucial to maintain and improve performance after training, and constitutes a good practice that should be promoted.

MOH staff gave positive feedback about the success of the collaborative approach when offering feedback about supervising CHWs during the training. The following quotes show how the process was greatly appreciated:

> "*When the CHWs come to the center for group supervision, they are often concerned that they will not be able to speak with the head nurse due to the pressure and workload. During the on-site supervision, however, the head nurse is better able to listen to the CHWs and can use the opportunity to resolve any problems and correct any misinformation*."
>
> - Kpassabia head nurse

> *"If the collaborative approach is implemented as we are doing and planning, there will be great benefits in terms of the quality of integrated treatment of illness in children under five by CHWs. This approach will bring CHWs closer to the head nurses, who may even take the opportunity to review the clinical IMCI strategy."*
>
> - Copargo Health zone health director

> *"The CHW who I supervised would normally prescribe five 480mg pills of Cotrimoxazole to children aged 2 to 12 months instead of seven pills. He said that this is what he learned from another CHW. On-site supervision allowed me to correct any misinformation the CHWs had."*
>
> - Kpassabia nurse

> *"After the results of the collaborative approach orientation and planning workshop were presented, the CHWs in the Copargo health area decided to meet periodically amongst themselves to discuss challenges…To everyone's great surprise, on the day of their meeting, the two inactive CHWs who were often late to meetings were among the first to arrive."*
>
> - Copargo community health center head

Best Practices of the Collaborative Approach to Improving Performance through Supervision

- Monitoring and supervision of CHWs by nurses is a good and important practice that should be encouraged. When the nurses are sufficiently motivated and are truly interested in the supervision process, they do what is necessary to assure that CHWs' work is up to standard.

- Individual coaching of CHWs helped to improve their abilities, despite their low level of education and literacy. In the collaborative process, the coaches divided CHWs according to their learning capacity, paying particular attention to CHWs who needed more guidance.

- Providing CHWs with opportunities to sharing their experiences and challenges helped to improve their performance.

Challenges of the Collaborative Approach to Improving Performance through Supervision

The complexity of the ICCM reporting sheet for children under the age of five years posed a challenge for aggregating the information received during the training, and required additional attention during supervision and meetings.

Lessons Learned from the Collaborative Approach to Improving Performance through Supervision

- The motivation of CHWs and the supervisory strategies developed through the collaborative approach are crucial for the future of ICCM.

- Results data shows that CHWs are capable of performing these tasks when there is appropriate and on-going follow up.

- The experience with the collaborative approach demonstrates the need for clear health system engagement and a suitable structure to support this kind of activity from the outset. The collaborative approach helped strengthen team skills by working toward a shared objective. In Copargo, CHWs took the initiative to meet periodically to discuss challenges.

- The tools should be tailored for CHW's level of education, in this case, less information and better illustrations. Quality assurance teams should also test these tools to make sure that they fulfill the CHWs' needs and they are appropriate.

❖ Inclusion of Rapid Diagnostic Tests (RDTs) in ICCM

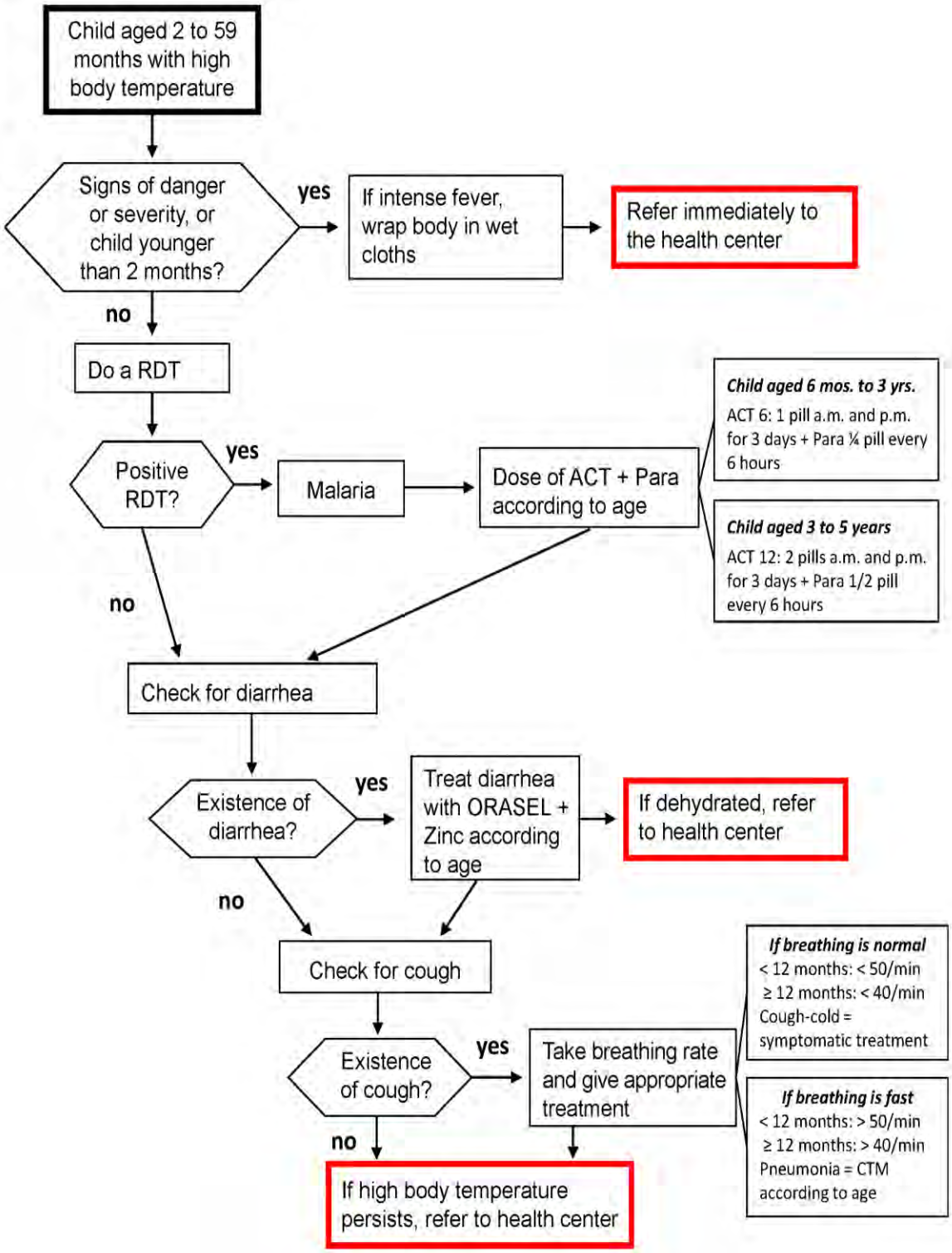
BASICS facilitated the integration of the rapid diagnostic test (RDT) for malaria into ICCM. In 2011, the MOH's new policy declared that all malaria treatments should be free, but only with a diagnostic confirmation of malaria. Expecting such a change in policy, BASICS had already planned a pilot study, and was therefore able to quickly implement the practice and share lessons learned with the MOH for their scale up.

BASICS worked with the health zones and MOH directors to update the case management algorithm to include the use of RDTs (see Figure 3). In collaboration with the health zone management teams, BASICS staff first conducted a training of trainers, and then conducted CHW trainings in the use of RDTs on January 26, 2012 and February 23, 2012 in two targeted project zones in Tchzaourou and Gogounou. A total of 102 CHWs were trained in the use of RDTs. BASICS supported the teams in Tchzaourou and Gogounou but only followed up with the CHWs in Tchaourou, as only these CHWs received the necessary commodities and equipment to perform RDTs from the MOH.

Among the 40 Tchaourou CHWs, a post-training evaluation showed that:

- 85 percent of CHWs performed 90-100 percent of RDT tasks correctly;
- 10 percent of CHWs performed 75 percent and 85 percent of tasks correctly (at this level, CHWs require close supervision); and
- 5 percent of CHWs performed less than 70 percent of tasks correctly, and need additional on-the-job guidance.

Figure 3. Community IMCI Algorithm including RDTs



Lessons Learned from the Inclusion of Rapid Diagnostic Tests (RDTs) in ICCM

- By providing the health zones with an extension in the communities and a structure and skills for working together, the partnership between health zones and local NGOs can play a vital role in establishing ICCM in Benin, especially in hard to reach areas. Participants greatly appreciated the leadership development trainings, which allowed them to better constitute joint task forces between NGOs and health zones.

- Collaboration with partners in the field, including the health zone head physicians, AFRICARE, UNICEF, the Belgian Technical Cooperation, and others, made it possible to avoid duplication of effort and to work in a mutually reinforcing way to achieve shared results. This was especially true during the group supervision activities, which were conducted by both AFRICARE and BASICS.

- Approximately 10 percent of CHWs were no longer active after two years of implementing the project. The reasons for this attrition are varied, ranging from physical disability, to resignation, to female workers leaving the village to live with their new husbands. BASICS has noted that motivational activities for CHWs, such as the pilot SMS/GSM communication system initiative and the partnership between BASICS and AFRICARE, which provided financial incentives to CHWs through the Global Fund, can help retain volunteers.

- CHW knowledge was particularly weak in four areas analyzed during the post-training monitoring: knowledge of the signs of danger/severity, knowledge of appropriate conduct during household visits, determination of children's age groups, and classification of rapid breathing in a child with a cough in order to diagnose pneumonia. Applying the collaborative strategy to the Copargo health zone improved CHW performance in these four areas within six months. This shows that performance improvement strategies with close participatory monitoring and immediate feedback on weaknesses are highly effective.

- Case treatment data shows that CHWs consistently treat more boys than girls, a trend which was observed every month. The BASICS project staff examined the issue, and one reason that may explain this phenomenon is the predominance of boys in the Beninese under-10 population, a trend that has been documented in national publications (statistical yearbook, Demographic Health Survey) and by other partners (UNICEF, AFRICARE).

- The database that BASICS developed with MOH and AFRICARE facilitated the entry and processing of data from CHW activities. This tool will help ensure sustainability and integration of community statistics into the NHMIS.

Recommendations for the Inclusion of Rapid Diagnostic Tests (RDTs) in ICCM

- The partnership between local NGOs and health zones produced excellent results and should be maintained to make interventions more successful.

- The quality of CHW data should be continuously improved through use of the quality assessment process that BASICS developed for use during monthly meetings and which provides high quality statistical data to inform decision making.

- The project staff must include a social mobilization specialist to ensure communities are rallied around a topic.

- Regular one-on-one supervision of CHWs with immediate feedback on their weaknesses makes it possible to ensure the quality and continuity of services. It should be made systematic.

- The following project activities should be made sustainable:

    - In partnership with MOOV Benin, ARM3 should continue the SMS/GSM pilot. The Belgium Technical Cooperation has expressed willingness to undertake a pilot in Bassila.
    - The collaborative approach, which improved the quality of CHW services.
    - Monitoring and motivating CHWs by the health zones in collaboration with the local communities to provide treatment and promote nutrition and vaccinations.

Appendices

Appendix 1: Summary Table of Tools Developed with BASICS' Support

Purpose	Tools developed	Content of tools
Implementation of the intervention package	Integrated case management sheet Several sheets are bound together in the form of a CHW case management log.	Includes several sets of instructions for: ▪ collecting information on the child and his or her illness, ▪ identifying and treating signs of danger and severity, ▪ identifying and treating uncomplicated malaria, ▪ identifying and treating uncomplicated diarrhea, ▪ identifying and treating pneumonia, cough or cold, ▪ identifying and treating moderate acute malnutrition, ▪ identifying a complete vaccination status, ▪ choosing appropriate advice to give, and ▪ conducting follow-up care.
	Household visit sheet Several sheets are bound together in the form of a CHW household visit log.	Includes questions and observations to evaluate household knowledge, attitudes, and practices related to key behaviors to promote the health of children under five. Topics include: ▪ Exclusive breastfeeding, ▪ Supplementary feeding, ▪ Long lasting insecticide treated nets, ▪ Vaccinations, ▪ Safe drinking water, ▪ Hand washing, ▪ Symptoms of health risks, and ▪ Prenatal consultation.
Training of CHWs	CHW workbook	Includes four modules and appendices ▪ Module 1: Communication techniques ▪ Module 2: Integrated treatment of fever, diarrhea and ARI in children under five ▪ Module 3: Monitoring pregnant women, women who have recently given birth, and newborns ▪ Module 4: Management tools ▪ Appendices: Guides for mothers of sick children ▪ Key practice guides
	Facilitator's guide for teaching CHW workbook modules	For each module, the guide includes: ▪ The average time for the module (length) ▪ The teaching objectives ▪ The facilitation techniques to use ▪ The necessary materials ▪ The steps to take (process) ▪ Guides to read (any additional information related to each topic). It also includes:

		▪ The conditions for supervising participants ▪ The choice of training site ▪ The facilitator's role during practical exercises ▪ The objectives of the practical exercises ▪ Primary tasks of the facilitator and list of materials necessary for a successful course ▪ Facilitation technique sheets
	Video CD	Video excerpt of the IMCI training course for qualified providers, covering: ▪ General danger signs ▪ Calculating breathing rates ▪ The signs of severe cough, diarrhea, and malnutrition
Post-training monitoring of CHWs	Several sheets are recommended for use to conduct post-training monitoring of CHWs trained in the implementation of the high-impact intervention package	▪ Inventory sheet for tools, materials and drugs ▪ Drug management sheet ▪ Review sheet for cases treated by the CHW ▪ Direct observation sheet for treated cases ▪ Completed treatment validation sheet ▪ Completed household visit results validation sheet ▪ Answer sheet for evaluation questions to test CHW theoretical knowledge ▪ Follow-up visit summary sheet ▪ Health area data compilation sheet
Supervisory training of CHWs	Several sheets are recommended for use to conduct supervisory training of CHWs trained in the implementation of the high-impact intervention package according to the visit objectives	▪ Direct observation sheet for treated cases ▪ Review sheet for treated cases = monitoring tool ▪ Inventory sheet for tools, materials and drugs ▪ Drug management analysis sheet = monitoring tool ▪ Completed treatment validation sheet ▪ Completed household visit results validation sheet ▪ CHW theoretical knowledge evaluation sheet and list of questions ▪ List of CHW performance evaluation criteria ▪ Supervisory micro-planning sheet ▪ Supervisory report template All sheets do not need to be completed during a supervisory visit. Depending on the visit objectives, one or more sheets may not be completed during the same supervisory visit.
Evaluation of CHW performance	List of criteria proposed to evaluate CHW performance	Contains more than 20 criteria, some with weighting grids

Appendix 2: Summary Table of Trainings Conducted by BASICS

Date	Training topic	Participants	Remarks
Oct.-Dec. 2010	Training of trainers in the C-IMCI package	193 trainers	5 Health Zone head physicians, 17 doctors, 5 C/RAM, 146 ICP/SF[1], 15 NGO representatives and 6 nursing aides, 2 AFRICARE facilitators, and 2 participants from PISAF
Oct.-Dec. 2010	Training of CHWs in the C-IMCI package	1,048 CHWs	All CHWs had to know how to read and write. Women's groups were trained in Djougou and Bassila.
Oct.-Dec. 2010	Training of supervisors in the monitoring/supervision of CHWs	196 supervisors	
Dec. 2010 and Aug. 2011	Training of NGOs in planning and using Quick Books software	16 NGO workers	First session: Oct. 20-24, 2010 Second session: July 5-7, 2011
January 2012	Training of trainers in using RDTs	12 trainers	
January and March 2012	Training of CHWs in including RDTs when treating cases	102 CHWs	
January-March 2012	Training of trainers in using SMS	42 health workers	Health center and hospital emergency staff
January and March 2012	Training of CHWs in using SMS	254 CHWs	CHWs in the Tchaourou and Bassila health zones

[1] Infirmier Chef Poste/Sage Femme.

Appendix 3: Table of BASICS Indicators

Indicator	Method of calculation	Source and baseline	Annual targets (black) and annual performance (red)			Remarks
			Year 1	Year 2	Year 3	
Percentage of children under five seen by a CHW for a fever and treated according to national policy	Numerator: number of children under five seen by a CHW for a fever and treated according to policy in a given period; Denominator: total number of children under five seen by a CHW for a fever in the same period and health zone	Routine data from CHWs Baseline = 0%	50% **53.3%**	100% **70.8%**	100% **100%**	The data for Year 1 is for 5 months; the data for Year 3 is for 6 months.
Percentage of children under five seen by a CHW for diarrhea and treated with ORS	Numerator: number of children under five seen by a CHW for diarrhea and treated with ORS in a given period; Denominator: total number of children under five seen by a CHW for diarrhea in the same period and health zone	Routine data from CHWs Baseline = 0%	50% **90.4%**	100% **98.6%**	100% **100%**	The data for Year 1 is for 5 months; the data for Year 3 is for 6 months.

Percentage of CHWs subject to supervision at least once a month	Numerator: number of CHWs subject to supervision at least once a month in a given period; Denominator: total number of CHWs in the same period and health zone	Route data from CHWs Baseline = 0%	50% **0%**	100% **85%**	100% **80%**	This refers to systematic, joint supervision carried out in conjunction with AFRICARE. 10% of CHWs have not been retrieved.

Number of people trained by the project in the treatment or prevention of malaria	Number of people trained by the project (health workers, CHWs, community members) in the treatment or prevention of malaria	Project reports Baseline = 0 Target = 1,300	0 **0**	**1300** **1207**	108 **108**	-1,049 CHWs -142 health workers -16 NGO outreach workers -In year 3, 102 CHWs trained + 6 health center nurses
Number of fever cases treated in project areas	Number of fever cases treated in project areas	Routine data from CHWs Baseline = 0	6,057 **9,623**	24,226 **38,601**	15,769 **18,373**	The data for Year 1 is for 5 months; the data for Year 3 is for 6 months.
Number of diarrhea cases treated in project areas	Number of diarrhea cases treated in project areas	Routine data from CHWs Baseline = 0	1,971 **1,934**	7,884 **4,428**	1,845 **1,371**	The data for Year 1 is for 5 months; the data for Year 3 is for 6 months.
Number of service delivery points served by the project reporting shortages	Number of service delivery points reporting shortages	Routine data from CHWs Baseline = 0	0 **NA**	0 0	0 **0**	There is no stock out recorded in year 2 and 3 in Project's areas.

Number of people trained in child health and nutrition in project areas	Number of people trained by the project (health workers, CHWs, community members) in child health	Project reports Baseline = 0	0 **0**	1300 **1207**	108 **108**	-1,049 CHWs -142 health workers -16 NGO outreach workers -108 persons trained in RDT
Number of cases of ARIs treated with antibiotics by project-trained CHWs	Number of cases of ARIs treated with antibiotics by project-trained CHWs	Project reports Baseline = 0	1,040 **2,535**	4,154 **6,730**	2,800 **3,016**	The data for Year 1 is for 5 months; the data for Year 3 is for 6 months.
Number of laws, policies, regulations, and guidelines on the accessibility and use of health care services redacted with the help of the project	Number of laws, policies, regulations, and guidelines on the accessibility and use of health care services redacted with the help of the project	Project reports Baseline = 0	1 **1**	1 **1**	1 **1**	Law to allow ARI inclusion in IMCI package; Guideline for training, supervision, database, etc.