

# Collaborative Approach to Community-based Malaria Prevention in Benin

## Background

Throughout Benin, malaria is a serious health problem, especially for children and pregnant women. According to a study conducted by Plan Benin in 2006 in the Couffo department of southwestern Benin, malaria was the most common disease affecting children under five, accounting for 39% of all health facility visits for children. Among pregnant women, malaria was a significant cause of anemia and was responsible for approximately 19.8% of all maternal deaths.

Although malaria is largely preventable through, among other methods, the regular use of insecticide-treated bednets, the availability and use of long-lasting insecticidal nets (LLIN) in the Couffo prior to the project's inception was very low. Only 34% of children under five and 35.5% of mothers slept under LLIN.

Furthermore, though malaria can be severe, early and appropriate treatment is very effective. However, in Benin, care-seeking outside of the home was very limited; in the Couffo department, 86.7% of mothers first sought home-based care before seeking outside care for counseling and treatment. Though home-based care can be effective, it is essential that caregivers are knowledgeable about proper home treatment, as well as danger signs requiring medical attention. A failure to recognize danger signs and a delay in treatment often has serious consequences, including death, especially for children.

To address these issues, Plan Benin applied the improvement collaborative approach to a community-based malaria prevention project from 2007 to 2009. Funded by USAID and overseen by the University Research Co. LLC (URC) through the USAID-funded Quality Assurance and Health Care Improvement projects, the Plan project aimed to contribute to the reduction of child and maternal mortality rates by improving behaviors related to the prevention and treatment of malaria.



This improvement collaborative approach was implemented in 50 villages in the communes of Aplahoué and Djakotomey in the Couffo department of Benin.

Specifically, the project aimed to:

- Increase from 34% to 60% the utilization of insecticide-treated bed nets.
- Promote appropriate management of malaria in households and communities.
- Increase by 40% timely care seeking for complicated malaria among children under five and pregnant women.
- Strengthen collaboration between health structures and communities through home visits and support to community groups.

To read more about the Benin collaborative, see <http://www.hciproject.org/node/1612>.

For more on the improvement collaborative approach, see [http://www.hciproject.org/improvement\\_tools/improvement\\_collaboratives](http://www.hciproject.org/improvement_tools/improvement_collaboratives).



HEALTH CARE  
IMPROVEMENT  
PROJECT



Republic of Benin  
Ministry of Health  
District Health Directorate  
of Mono/Couffo



## Improvement Collaborative Approach

In Benin, as in much of Africa and the developing world, limited human resources are a key constraint in improving the health of the population. Health agents are unable to respond to the needs of all children in all the villages which they cover; therefore, it is essential that community members play an intermediary role.

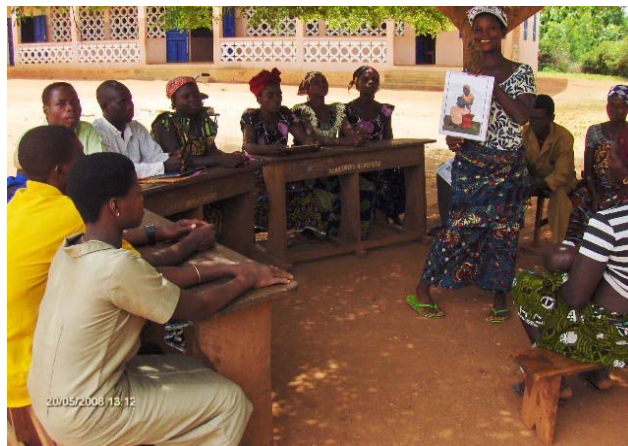
Using participatory methods, community-based program implementation is improved through adapting local behavior patterns to best practices for an important health issue (in this case, malaria); achieving significant results in a short period of time and at a low cost by maximizing methods that are proving successful; and extending the adapted best practices to other localities in the region/country through a controlled scale-up strategy.

**1. Collaborative Demonstration Phase.** Through the establishment of Quality Improvement Teams (QITs) comprised of community volunteers, mothers of children under five, village leaders, traditional healers, and health workers in each of the project's 20 pilot villages, the project mobilized the villages to learn about and take action against malaria. The efforts of these teams included: promoting knowledge of how malaria is transmitted, how it can be prevented, and the signs of complicated malaria; conducting unannounced night visits to the homes of pregnant women to ensure proper use of LLINs; and collecting data on common indicators.

Plan Benin also coordinated with suppliers and the Ministry of Health to have Coartem, an artemisinin-based combination therapy (ACT) for the treatment of malaria, made available to community health workers (CHWs) for distribution in the project villages.

In each village, QITs held bimonthly sessions to report monitoring data and project progress to the community and village assembly. In addition, learning sessions for QITs from different villages were conducted each quarter to share experiences and best practices, thereby encouraging constant improvement in village implementation strategies and overall program effectiveness. Each quarter's learning session was held in a different QIT's village to allow the other teams to witness firsthand the innovative methods they had developed. Moreover, by collecting data on common indicators, the teams were able to assess their effectiveness relative to one another, thereby fostering a competitive and entrepreneurial spirit.

**2. Collaborative Expansion Phase.** Building upon the activities which were consistently refined in the 20 pilot villages during the demonstration phase, Plan Benin expanded the project to an additional 30 villages. Because existing QITs were able to share the refined methods they had developed during the previous phase, expansion villages were able to more rapidly reduce malaria prevalence and transmission in their own villages.



Malaria education session



A QIT member inspecting LLIN installation

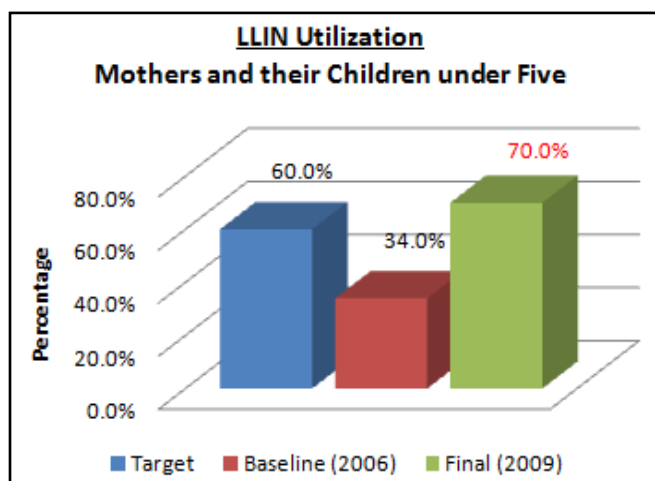


Learning visit between Bota and Dekandji QITs

## Results

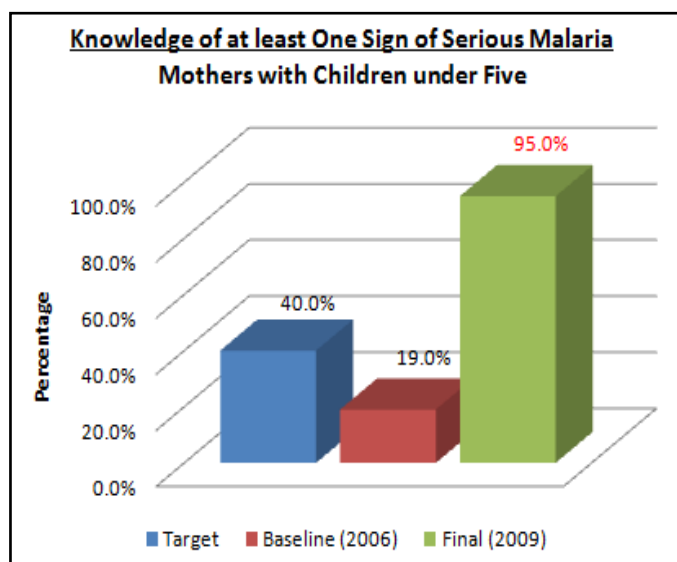
A final evaluation using Lot Quality Assurance Sampling (LQAS) methodology was conducted in 19 of the project's pilot villages in March and April of 2009. The main findings of the evaluation are detailed below.

**LLIN Utilization.** The evaluation found that the project succeeded in improving LLIN utilization among the targeted groups. While QITs conducted unannounced nighttime visits to monitor actual LLIN utilization during project implementation, the final evaluation measured utilization through three proxy criteria: presence of an LLIN which is 1) suspended over the sleeping location, 2) of a recommended brand to ensure quality, and 3) not torn. As indicated in the graph at right, the percentage of mothers and children under five found to sleep under an LLIN in the 24 hours preceding the survey more than doubled over the project period, increasing from 34% at baseline to 70% at the project's conclusion. For mothers and their infants zero to 11 months, the percentage utilizing LLINs at the end of the project was even higher at 80%. Moreover, 90% of mothers of infants aged zero to 11 months consistently slept under LLINs during their last pregnancy.



**Appropriate home-based care and treatment.** The project's educational activities and home visits were also effective in increasing the provision of appropriate home-based care and treatment of malaria. Home-based care and treatment is considered appropriate if the caregiver of an under-five child suffering from malaria has purchased Coartem and complies with the directed dose according to the age of the child. Over the course of the project, the percentage of children under five who suffered from fever in the two weeks preceding the survey and who received appropriate home-based care and treatment for malaria within 24 hours increased from 25% to 55%, surpassing the target of 40%.

**Early referral to health facilities.** One of the effects achieved through the project's awareness-raising activities was an increase in knowledge of the danger signs of malaria and a consequent increase in referrals of serious malaria cases to health facilities. As shown in the figure at right, a dramatic increase in knowledge was achieved; from a baseline level of just 19%, the project was able to enable 95% of mothers with children under five to identify at least one sign of serious malaria. As a result, the number of children under five in the project villages who were treated in health centers for serious cases of malaria increased from only 92 in 2006 to more than 200 in 2008. Moreover, over the two years of project implementation, no deaths among pregnant women recorded in health facilities were due to malaria.



## Conclusion and Recommendations

The improvement collaborative approach has proven to be an effective means of creating an environment that fosters sustained behavior changes. In this project, the methodology fostered an entrepreneurial spirit that led to continuous improvements and shared learning among QITs on improving malaria-related behaviors and practices in the community. Two main strategies contributed to this success: increased collaboration between communities and health facilities, and community learning and problem solving.

### ***Increased collaboration between communities and health facilities.***

Given the limited reach of health facility staff, the use of QITs and CHWs to address awareness and health behaviors at the community level was key to the project's success. Regular home visits allowed QITs to observe household practices, reinforce good behaviors, and address individual barriers; these visits were key to producing results such as increased LLIN utilization among both pregnant women and children. In addition, CHWs were able to provide effective monitoring of sick children during home visits; however, they should further enhance the monitoring of mothers of children with malaria through daily home visits during the three days of treatment to ensure adherence to the treatment protocol. Furthermore, the practice of health facility workers making counter-referrals to CHWs should be further expanded to ensure proper follow up of serious malaria cases after discharge.

***Community learning and problem solving.*** At the core of the collaborative approach is a community approach to solving intractable health problems. The project proved successful in creating local responses to address many existing barriers to accessing appropriate health care. For example, acknowledging that transportation and financial means serve as two significant barriers to seeking health care for malaria, communities worked together to create solidarity funds and transportation agreements to remove this barrier. As effective solutions such as these were found, they were disseminated among the pilot villages and adapted to suit the circumstances in each locality. Other barriers, such as those limiting the use of intermittent preventive treatment for malaria during pregnancy (IPTp), were identified but still require further work to be addressed.

Looking ahead, new strategies for building ownership and sustainability of project activities within the community should be developed. For example, agreements with the Ministry of Health could allow part of the profits from the sale of bednets, Coartem, and IPTp to help fund community activities such as solidarity funds. In addition, the systematic inclusion of monitoring and supervision of CHWs in the District Health Directorate and Health Zone outreach strategies would help to ensure continued quality of CHW activities. Finally, as the collaborative approach has proven to be effective in improving malaria-related indicators, Plan Benin and other local actors should continue to expand the establishment of QITs and support shared learning experiences to efficiently scale up the approach throughout Benin.

### **Solidarity funds: Community funds to subsidize early referral to a health facility**

While knowledge was a major barrier to early referral of severe malaria cases to health facilities, affordability and accessibility were also major hindrances for many families. In order to provide support to families in need of financial assistance in case of health emergencies, 16 of the project's pilot villages set up solidarity funds, fueled by contributions varying from \$0.05 to \$0.10 per family per month. The pooled funds then remain available to subsidize the transportation of under-five children in the case of serious malaria or other serious health concerns.

When a CHW refers a child to a health facility for treatment, the CHW contacts the solidarity fund treasurer for transportation fees. In the absence of the treasurer, the CHW makes the necessary arrangements with a village motorcycle owner who will take the child to the health center. In each of the three pilot villages (Dekandji, Koyohoué, and Avégodo) where there was no solidarity petty cash fund, a driver was identified to provide transportation free of charge; they are always available to transport a sick child. The solidarity fund in some villages also helps parents cover expenses for consultation and treatment. With these support systems in place, parents no longer have to worry about how to get their sick children to the health facility for treatment.



Solidarity fund box of the Dowomey QIT