

# Delayed access to care for childhood malaria

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# VALORISATION





This valorisation chapter discusses the value of the results in a broader context. More specifically, it translates the results to both the scientific and non-scientific communities who play a role in improving access to healthcare in rural areas of developing countries. It first presents the innovation of the separate studies and then provides the relevance of the results for the different target groups (i.e. households and communities, community health workers, researchers, policymakers and Ministries of Health). Activities that could be implemented for each target group are also described to show the possible value of the results in the future.

## **I. INNOVATION OF THE DIFFERENT STUDIES**

This section discusses the innovation and value of the results of the separate studies. The causes and consequences of delayed access to diagnosis and treatment were first explored [1, 2]. The role of out-of-pocket costs in reducing access to healthcare facilities [1], and causing delays in reaching diagnosis and treatment allowing the illness to progress from uncomplicated to severe/cerebral malaria and disability was documented [2]. To improve access to care, rapid diagnosis tests (RDTs) and treatment (artemisinin-based combination therapies for uncomplicated and rectal artesunate for severe malaria) were introduced via community health workers (CHWs) in rural communities of Burkina Faso, Nigeria and Uganda [3-5]. The main results showed that the use of CHWs increased, and illness duration, private costs and the time to reach treatment decreased [3, 4].

### ***Digital stories and a qualitative approach to raise the voice of parents of severely disabled children***

Parents of 6 children who had a cerebral infection that caused permanent disability were interviewed about their daily life and challenges [2]. They were worried, stressed, exhausted and depressed, and had to reduce their working time or leave their jobs to take care of their disabled children. As a consequence, households were pushed further into poverty. By using digital stories and a qualitative approach with only a few participants, we were able to probe deeply and enable parents to make their voices heard by sharing their narratives.

### ***Changing the way of using healthcare***

Healthcare facilities where prompt diagnosis and treatment are available are usually located far away and reaching a facility could take up to a few hours and be expensive. As a consequence, parents of sick children anticipated high costs of healthcare [1]. They used a wait-and-see approach and often reached a facility

when the child was very sick [1]. As healthcare facilities are usually difficult and expensive to reach, the strategy to introduce RDTs and treatment in the community tried to change the perception of seeking care by bringing access to healthcare directly to parents of sick children [3-5]. This strategy was shown to improve access to care so that sick children can receive immediate treatment closer to their home.

### ***Training voluntary community members to provide healthcare***

To successfully bring RDTs and treatment in the community, CHWs play a central role. CHWs are community members who volunteer to provide healthcare in their community. The intervention showed that CHWs could be easily trained to differentiate symptoms, take a RDT, analyse the results of the RDT, treat according to the symptoms and the results of the test, and refer sick children with severe symptoms to the closest healthcare facility for further management. By using voluntary members of the community to provide healthcare, one solution to the shortage of health workers has been offered in hard to reach villages and in communities where there is no immediate access to a healthcare facility.

## **II. RELEVANCE AND ACTIVITIES**

### ***Households and communities***

The intervention showed several benefits for the households. Illness duration, out-of-pocket costs and the time to reach treatment decreased [3, 4]. Therefore, it is important to let populations know about these advantages of using the intervention, especially when not all parents of sick children regularly go to a CHW. In this context, meetings and workshops with the community as well as sensitization and education programmes could be organized. A description of such activities is given under the sub-section “Policymakers and Ministries of health” as it is also relevant for this target group.

### ***Community health workers***

The intervention showed that CHWs could be trained and could be effective. CHWs are usually the first point of care in the community, thus offering immediate treatment to sick children. However, CHWs are volunteers who may need to decrease their time allocated to income-generating work in order to serve the population [5]. As long as they remain volunteers, their effectiveness will strongly depend on their motivation to continue despite potentially reduced occupational income. One study showed that status and recognition in the community and commitment to the well-being of children play an important role on CHW’s

motivation [6]. Therefore, to keep CHWs motivated and increase their self-esteem and personal satisfaction, it may be important for them to know how important they are within the community and the health system, and to acknowledge them frequently for the benefits they bring to the households and the community. To achieve this, meetings with CHWs, supervisors and policymakers/Ministries of Health could be organized where CHWs appreciation and importance could be explained. In addition, CHWs could also receive a certificate or extra training. An identification badge, a t-shirt, and a bicycle have also been mentioned to increase their sense of pride and self-worth [6]. Finally, a financial compensation for their work, time and efforts such as the model implemented in Burkina Faso, or a mixed-model of financial and in-kind compensations could be another solution to encourage motivation and avoid decreases in their income.

### ***Researchers***

It is important that the results of the intervention are made available to the research community so that researchers can build on and further develop this agenda. We published several articles in peer-reviewed open access journals so that our results can be easily accessible, especially for developing countries.

As explained, only the financial costs of an episode of illness were calculated in the different studies of this thesis. This leaves room for further research on the broader economic costs of uncomplicated and severe malaria so that a more complete picture of the households and CHWs costs is available. In addition, as suggested, future research could evaluate methods to encourage community investment in the costs of delivering RDTs and treatment.

### ***Policymakers and Ministries of health***

The findings of the intervention should be of great interest for policymakers and Ministries of Health (MOHs) of malaria-endemic countries. To disseminate our results, as previously mentioned, we published several articles in peer-reviewed open access journals. In addition, the MOH was directly involved and responsible for the implementation of the intervention in Uganda, and in Nigeria, the Federal MOH supported the study by providing RDT kits in addition to those procured by the World Health Organization [7].

Our results improve the understanding of the importance of reducing uncomplicated malaria to reduce prevalence of severe malaria and emphasised the need for avoiding cerebral malaria and consequent disability. Children with severe

physical and mental disability due to a cerebral infection were often deprived of schooling and parents had to stop working or reduce their working time in order to take care of their child [2]. As a consequence, household occupational earnings decreased, and financial resources were reduced. With lower education than non-disabled counterparts, disabled children may have fewer future employment opportunities and consequently lower future income. It is thus of interest to malaria-endemic countries to diagnose malaria and provide treatment at an early and uncomplicated stage of the disease to avoid evolution of uncomplicated to severe/cerebral malaria, disability and death. This keeps the children and their families “healthy”, “productive” and “wealthier” for the future. Our intervention of RDTs and treatment in the community delivered via CHWs demonstrated how this might be implemented [3-5]. The results show that the intervention was feasible, had positive effects on health and reduced out-of-pocket costs for families. The project was carried out in several districts in each country but can be implemented on a much larger scale by MOHs when they apply for funding to the Global Fund to Fight AIDS, Tuberculosis and Malaria. By investing now in diagnosis and treatment in the community, countries can thus prevent and avoid the negative consequences of (severe) malaria in the future.

Our findings could also be helpful to increase the use of CHWs. Although the intervention had several benefits for the population, not all parents of sick children routinely go to a CHW. The main reasons given were that they were not aware of the presence of a CHW in their community, or they believed that CHWs could not treat well or they did not perceive the symptoms were severe enough to warrant CHW intervention. Therefore, our results showed the importance of raising awareness of the population on the benefits of the intervention and on the presence and role of the CHWs in the community. In this context, should the intervention be scaled-up, governments would need to focus on community sensitization and education programmes. They could organize workshops where symptoms, especially those that prevent oral medication (i.e. repeated vomiting, lethargy, convulsion, altered consciousness or coma) could be explained to people, and outline actions that need to be taken when these symptoms occur by showing images/drawings. Simulations and role-plays between participants could also be used. In addition, community sensitization should also concentrate on the role of the CHW. The CHW could be introduced in a community meeting, emphasising the benefits of going to a CHW and explaining the tasks (s)he performs, and facilitate questions by members of the community. Finally, some incentives or promotions (e.g. free drugs at CHWs

during a certain period of time) could also be introduced to encourage parents of sick children to go to a CHW.

Finally, our results could support the development of health system reforms if governments decide to scale-up the intervention. For instance, CHWs might be remunerated (for specific tasks) and/or obtain a more official status within the formal healthcare system. They could also receive extra training, and a career path linking them with facilities might be outlined. In addition, to increase CHW use and decrease the time to reach treatment in communities where distances to healthcare facilities are great, healthcare reforms could introduce incentives to visit CHWs for febrile children as early as possible.

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