



Community Based Malaria Control

Introduction

In the 30 seconds it takes to read this sentence and the next, malaria will kill another African child. The killer behind malaria is plasmodium, a parasite transmitted by the bite of the female anopheles mosquito. Malaria affects nearly 40% of the world's population, or about 500 million people. Nearly all—90 %—live in sub-Saharan Africa. There, malaria is the cause of death for one fifth of children under five. Of the million people who die each year of malaria, 900,000 of them lived on the African continent. The children who survive a severe bout of malaria may develop chronic anemia and neurological impairment. Pregnant women are susceptible to malaria and it is a cause of low birth weight and infant mortality.

The burden of malaria is causing many countries in Africa to sink further into poverty. Malaria is both a cause of poverty and a result of poverty. The net loss to the economy in Africa due to malaria is estimated to be \$12 billion (US). Malaria's lethal impact decreases the economic potential of an African country by 1.3% through loss of productivity because of illness or death. The disease consumes 40% of public health expenditure and accounts for up to 50% of all outpatient visits and 30-50% of inpatient admissions. Malaria, in short, is a crisis that affects health, economics, and human dignity.

To address this crisis several initiatives have been tried since 1998 with varying success. For example one of the Millennium Development Goals is to stop the spread of malaria by 2015 and reverse its incidence. Leaders of African countries met in Abuja, Nigeria in 2000. Their resolve: to halve the incidence of malaria by 2010. Their strategy: the Roll Back Malaria global partnership launched by the World Health Organization (WHO) in 1998. But the Roll Back Malaria program has not met its goals. Its critics cite inadequate technical advice to individual countries about drug resistance levels and types of malaria. Right now, the United Methodist Central Conferences in Africa carry the burden of malaria, TB and HIV/AIDS. Their resources are stretched.

What would a strong program—leading to an Africa without malaria—look and feel like?

United Methodists have a unique opportunity to expand attention and resources to combat the lethal disease of malaria—to transform the lives, economies and health of hundreds of thousands of people. Here's how.

The following sections describe a strategy to start up a community based malaria control program initially in one West African country, with a second in close succession. Based on these experiences the program will be then introduced in other African countries.

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UMCOR Health Ministries is a program area of the United Methodist Church General Board of Global Ministries.

“We don’t have to reinvent the wheel.”

Strategy

Malaria is a problem that affects a community. Every community has its local realities, its strengths and its limitations.

To combat a long-standing disease like malaria one has to harness local initiatives, local resources, community mobilization and a sense of ownership among the people who are most affected by the problem. These are lessons UMCOR Health Ministries has learned from the history of community based health care which taught us the value of community participation. Communities often have the knowledge and the will to combat a public health problem like malaria but lack the resources and the organizational capacity to sustain the effort.

The steps needed to prevent and combat the menace of malaria have been well recorded by agencies like WHO. We don’t have to reinvent the wheel. Our strategy will be to introduce a strengthened Roll Back Malaria initiative into an existing United Methodist community based health program or health facility. We will augment those areas of the strategy that may have reduced its success in the past. For example, we will fully involve our partners from the start in developing the project. This will allow us to be sensitive to the local and national malaria control programs that may exist in that region.

Interventions

STEP 1: Ensure Community Participation. We will encourage communities to come up with meaningful ways to be involved with the malaria control project. We will be sensitive to folk health traditions and beliefs about malaria while we engage the community leaders in the planning process. It will be important to involve women’s groups, youth, village councils and local community organizations from the start. Women and children are the ones who are most susceptible and they need to be involved in the planning from the beginning. The project will be “women and children centered” rather than “women and children focused.”

STEP 2: Conduct Health Education. We will require a number of trained health personnel who will lead the initiative. They will be trained in the comprehensive community based malaria control strategy and they in turn will train community health volunteers. The doctors, nurses and lab technicians in the UMC health facility will also require orientation about the plan. The malaria prevention health volunteers will take the message to the villages and ensure the community fully participates in the project. The volunteers will disseminate the information through community meetings, home visits and school health education. They will use audio and visual media like the radio, cassettes and videos to transmit the message.

Vector Control is a cornerstone in preventing malaria. It is important that the interventions are ecologically sound. *Microbes* like bacillus thuringiensis var and israelensis serotype H-14 can kill the mosquito larvae when sprayed over their breeding sites on stagnant bodies of water. *Thermacol*, the

“A net culture must be established.”

polystyrene that is used in packing, expands to 35–40 times its original size when exposed to super-heated steam. When thermacol is spread over water it kills the larvae by sealing off the surface of the water. Thermacol is cheap, easily available, nontoxic and biodegradable. Introducing larvae-eating fish, like tilapia, guppy and gambusia affinis, into stagnant water is another simple way to control the anopheles mosquito. *Neem oil* is an effective mosquito repellent and can be used in a variety of ways: as a cream or emulsion for topical use, applied on mats, used as a vapor or applied to a ball made of wood scrapings which when left in a water tank acts as a larvicide.

Mosquito nets, if properly used and maintained, can be an effective protection against mosquitoes. By treating the nets with an insecticide (pyrethroid) enhances the protection as the chemical produces a barrier even beyond the net and protects persons in the vicinity. The chemical is odorless, nontoxic, and does not stain clothes. It mixes well with water and is ideally suited for treating bed nets. A new treatment every six months keeps the chemical working. Insecticide-treated nets, called ITNs, can decrease deaths in African children under 5 years of age by 25%. A target that was set at the Abuja meeting was to get 60% of the population at risk to use ITNs. But it is estimated that only 3% of children in Africa under age five use ITNs and the rate is 2–3 times lower in rural areas as compared to urban areas. In Nigeria only 5% of the population uses bed nets although 10% possess the nets. The figures for ITNs are even smaller. The Global Fund has set a target of 100 million ITNs for the continent and the World Bank has proposed to increase funding from \$500 million to \$1 billion over the next 5 years—money which will be used to buy bed nets, medicines and support to countries that allow lower taxes on malaria medicines.

A “net culture” has to be established. Wide publicity and promotion are first steps. Another way to ensure that ITNs are used and retained by the population at risk is to subsidize the price so the nets are affordable. In the new “net culture,” the community must be involved in procuring, storing and distributing the nets. Longer lasting nets are being developed; we will explore the possibility of providing these new nets.

Case management—that is, insuring that the community has good access to **prompt diagnosis and effective treatment** of malaria—is a key to success. Rapid tests are now available that can quickly diagnose malaria. The UMC health facilities will require improvement of their laboratory services and a regular supply of the best anti-malarial drugs. Chloroquine is now not effective against malaria caused by *plasmodium falciparum*; the drug of choice is sulfadoxine-pyrimethamine. Even better are the artemisinin-based combination therapies (ACT). An effective preventive tool is to administer anti-malarial drugs to particularly vulnerable population groups, such as children with acute fevers. Pregnant women, another vulnerable group, benefit from “intermittent preventive treatment,” a drug regimen given at the second and third trimesters during antenatal visits.

Obstacles

Malaria control becomes difficult when the suggested interventions are not available or difficult to institute. Lack of second line anti-malarial drugs becomes a big handicap especially when the parasite is resistant to chloroquine. Inadequate health infrastructure, poverty, illiteracy and conflicts all compound the problem. People accept malaria as inevitable and do not know how to prevent or treat it. Even when they do know they do not have the money to buy the nets or the drugs. The spread of HIV is another obstacle as HIV infection increases the severity and fatality of malaria in adult men and pregnant women. The coexistence of the two diseases in the same population makes the control more difficult. Fevers, so common in persons with severe HIV infections, may be mistaken for malaria and malaria can worsen the HIV infections.

Budget for 3-Year Program

Our aim is to begin a 3-year program in Sierra Leone and follow six months later with a second program in a country to be selected. Sierra Leone has the infrastructure, facilities, and capacity to ramp up a program quickly. The second selection will require additional development. Using the experience there, we can then replicate the project in several other sub-Saharan countries like Liberia, Nigeria, Democratic Republic of Congo, Mozambique, Angola and Zimbabwe.

First year budget for one program:		\$70,000
Salaries: Project manager 1, Nurse 1, Lab Tech 1, Health Educator 1, Community Volunteers 10		\$20,000
Drugs, equipment, supplies		\$10,000
Health education		\$ 7,000
Indoor residual spraying		\$ 3,000
Insecticide Treated Nets		\$30,000
Total		\$70,000
Budget for three years with ramp up of second country in mid year 1:		\$350,000