

A Model for Fighting Malaria in Mainland Tanzania and Zanzibar

Through the introduction and scale-up of key malaria prevention and control measures by RTI International and local partners, significant progress is being made in the fight against malaria in Mainland Tanzania and Zanzibar. Highly endemic throughout the country, with over 90% of the population at risk of infection, malaria is responsible for more than 50% of deaths among children under five years of age and up to one-fifth of deaths among pregnant women.

Vector Control Interventions

Integrating vector control interventions—such as indoor residual spraying (IRS), long-lasting insecticide treated nets (LLINs), and application of larvicides—is an effective strategy for a successful malaria control and prevention program.

RTI has been implementing IRS in Zanzibar since 2006. IRS controls malaria by spraying the interior of household structures with a residual insecticide. With funding from the U.S. President's Malaria Initiative, RTI has conducted three spray rounds in Zanzibar—with each application covering over 200,000 houses—achieving more than 90% coverage and protecting an overall population of more than 1 million.

On Mainland Tanzania, the Ministry of Health and Social Welfare requested assistance in conducting IRS in selected areas of Muleba and Karagwe districts of Kagera Region. In the first round of 2009, over 55,991 households in Muleba were sprayed and 89,451 households in Karagwe, achieving 90% and 97% coverage, respectively. This was the third spray round for 27 wards in these districts, and the first for an additional 15 wards. Ongoing monitoring of new malaria cases shows a significant decrease in malaria transmission in the targeted areas.

With local partner Mennonite Economic Development Associates, RTI assisted the Zanzibar Malaria Control Programme (ZMCP) in developing new modalities and channels for promoting and distributing LLINs in Zanzibar. Some 330,000 LLINs, which retain lethal concentrations of insecticide for at least 3 years, have



been distributed to children under five and pregnant women in Zanzibar, reaching 80% coverage. In 2008, the ZMCP began subsidizing free LLIN distribution, targeting universal coverage.

On the mainland, RTI also manages a larviciding component of the Urban Malaria Control Programme in Dar es Salaam. Bio-larvicide, naturally occurring bacteria that eat larvae, is placed in small amounts of standing water to prevent disease-carrying larvae from developing into adult mosquitoes. This program is one of the few malaria control efforts focused on urban areas, where IRS campaigns are usually less effective due to the presence of insecticide-resistant mosquitoes. Urban populations also tend to go to sleep later, which reduces the effectiveness of LLINs. In 2009, RTI will double larviciding activities from 15 to 30 targeted wards, covering a population of over 1.4 million people in the city.

Encouraging Behavior Change and Improving Communication

In Zanzibar, RTI helped to strengthen and expand the Zanzibar School Malaria Programme by providing teachers, education officials, and district health officers



with information and skills to enable them to better educate students on malaria control and prevention techniques, as well as symptoms and treatments for the disease. Organized around teacher centers in each district, 669 head teachers from primary and selected preprimary and secondary schools from 95% of all schools were trained.

In 2009, RTI started implementing a Malaria Communication Plan, leading a mass media malaria campaign in collaboration with ZMCP and the ministries of Education and Communication. Using radio, television, billboards, and placards, the campaign is focusing on anti-malarial preventive and curative measures.

Preventing Outbreaks through Surveillance

In collaboration with the U.S. Centers for Disease Control and Prevention and ZMCP, RTI helped develop the Malaria Epidemic Early Detection System (MEEDS). MEEDS aims to detect the early stages of an epidemic, within 2 weeks of onset, by measuring weekly changes in frequency and incidence rates of new laboratory-diagnosed malaria cases at 52 health facilities in Zanzibar. A public-private partnership with Selcom Wireless facilitates data transmission from health facilities via SMS messages on cell phones and delivery of weekly updates to ZMCP and other Ministry of Health authorities. The MEEDS network will expand to all 150 health facilities in Zanzibar.

In June 2008, MEEDS detected an increase in malaria infections in Bumbwini, in Zanzibar. ZMCP responded with a multi-faceted intervention including IRS, LLINs, and treatment. Community mobilization was set in place within 1 week.

In addition to MEEDS, RTI has expanded the entomological and epidemiological sentinel surveillance of the IRS areas to establish vector distributions and densities, susceptibility, and epidemiological indicator baselines. Sentinel surveillance alerts the project and government partners when conditions are ripe for an outbreak so that interventions can be created or adjusted to best fit local conditions, and thus more effectively reduce the number of biting mosquitoes.

Capacity Building and Training

Intense efforts to build local capacity for IRS activities have been ongoing in partnership with the National Malaria Control Programme (NMCP) in Mainland Tanzania and ZMCP in Zanzibar. Local staff are involved throughout the



planning process for IRS rounds, such as conducting logistical assessments to accurately estimate the required quantities of materials, human resources, and training costs for an IRS program.

More than 700 local spray operators have been trained on spraying technique, data collection, and compliance with safety measures. Staff from both the NMCP and ZMCP have also been trained in entomological and surveillance systems, and provide training to local community surveillance personnel to improve their knowledge of and skills on larval control. Currently more than 80% of IRS project work is conducted by local partners.



PRESIDENT'S MALARIA INITIATIVE



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