

# INVESTMENT IN MALARIA CASE MANAGEMENT CAPACITY SAVES LIVES

## TECHNICAL BRIEF

Mozambique Integrated Malaria Program (IMaP)



A health worker, or agente polivalentes elementares (APE), stands alongside a community member in Mozambique. Photo by Chemonics International, Inc.

In malaria-endemic countries, fever is by far the most common reason for visits to health facilities. The World Health Organization (WHO) recommends that patients who present with fever are tested for malaria with a rapid diagnostic test (RDT) or microscopy, and only those who test positive are treated for malaria. The [3rd edition \(2015\) of WHO guidelines](#) for the treatment of malaria call for treatment of uncomplicated *Plasmodium Falciparum* malaria with artemisinin-based combination therapies (ACT), severe malaria with intravenous or intramuscular artesunate, and accurate dosing for children based on weight. Timely and accurate testing and correctly administered medication help to ensure a prompt return to health and strengthen trust in the health system.

Malaria remains the most important public health problem in Mozambique. In collaboration with Mozambique's National Malaria Control Program (NMCP) and its other development and technical partners, Chemonics International led the USAID Integrated Malaria Program (IMaP) in Mozambique from 2017 to 2022 with its core partners, Friends in Global Health and FHI360. IMaP worked at the national, provincial, and district levels to strengthen training and supervisory structures for quality case management (i.e., diagnosis and treatment) and preventive treatment among pregnant women to reduce malaria morbidity and mortality in four high malaria-burden provinces — Nampula, Zambézia, Tete, and Cabo Delgado.

IMaP's work included updating malaria policies, strategies, and guidelines for case management. The program provided technical and logistical support and developed and revised malaria case management resources, for example, the Integrated Supportive Supervision Manual and Tools for Malaria Programs, flowcharts and posters, standard operating procedures and job aids, and a malaria death definition and discussion guide for morbidity and mortality meetings. In addition, the project contributed to the midterm review and revision of the Malaria Strategic Plan.

## Improving Case Management in Mozambique

### Healthcare Worker Training

IMaP used an agile, blended approach to training, initially conducting classroom training sessions before transitioning to on-the-job training, partly due to COVID-19. In less than two years, IMaP trained 135% (2,354 of 1,750) of targeted healthcare workers (HCWs). Thereafter, the project transitioned to on-the-job training during integrated supportive



*A community health worker distributes a bed net and discusses malaria prevention with school children. Photo by Chemonics International, Inc.*

## Mozambique Integrated Malaria Program (IMaP) PROJECT DETAILS

### DURATION

November 2017 –  
October 2022

### LIFE OF PROJECT FUNDING

\$23,797,392

### GEOGRAPHIC FOCUS

Zambézia, Nampula, Cabo Delgado, and Tete provinces

### PRIME CONTRACTOR

Chemonics International, Inc.

### PARTNER ORGANIZATIONS

FHI 360

Vanderbilt University Medical Center (VUMC) / Friends in Global Health

supervision, targeting staff and facilities with a high proportion of severe cases and poor malaria outcomes (including mortality). The classroom training sessions included the following modules:

1. Definition and classification of malaria
2. Malaria diagnosis using RDTs and microscopy
3. Malaria in pregnancy and delivery of intermittent preventive treatment in pregnancy (IPTp)
4. Treatment of simple and complicated malaria
5. Pre-referral treatment
6. Sulfadoxine-pyrimethamine administration
7. Pharmacovigilance
8. ACT consumption reporting sheets
9. Capture of malaria data

### Integrated Supportive Supervision (ISS)

To strengthen the implementation of malaria treatment guidelines, IMaP led the revision of the malaria case management supervision manual to create the Integrated Supervision Manual for Malaria Programs. Using the new manual, IMaP trained 403 (99% of the

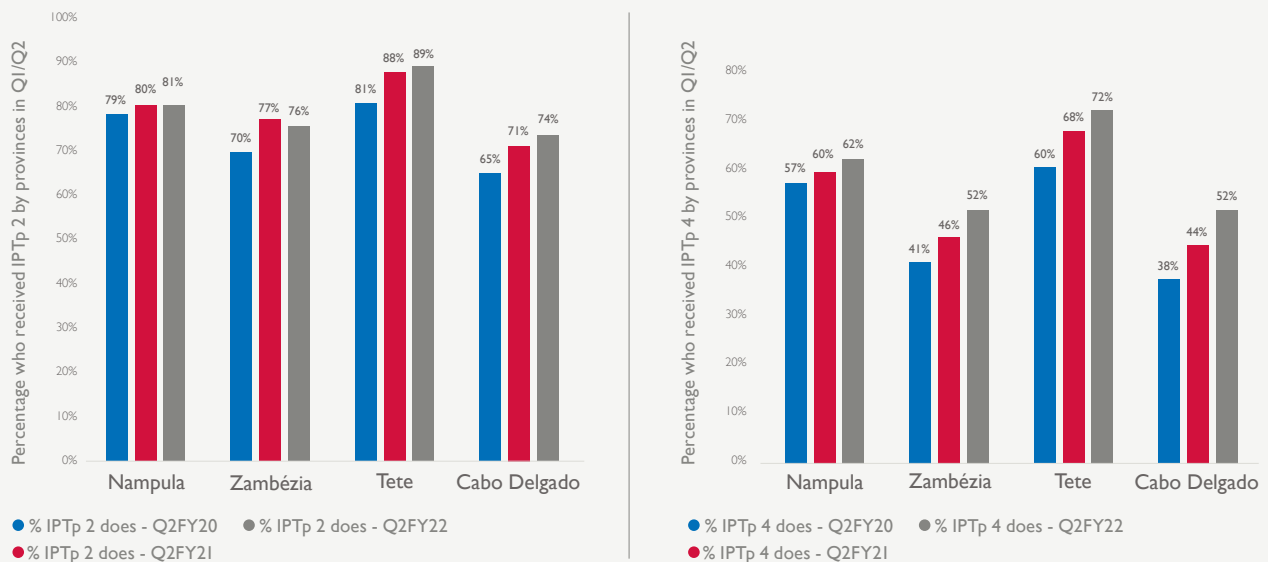


A community health worker talks with a family about malaria prevention and treatment. Photo by Chemonics International, Inc.

targeted 405) provincial and district staff in the four focus provinces to become supervisors. In this role, they conduct mentoring and supervision visits to health facilities to assess compliance with malaria treatment guidelines and the quality of services provided to patients.

Together, IMaP technical staff and trained supervisors, who include malaria focal persons from the Provincial Directorates of Health (also known as *Direcção Provincial de Saúde* [DPS]), visited health facilities to

Exhibit I. Coverage of IPTp2 and IPTp4 in the Four IMaP Target Provinces



observe clinicians providing outpatient consultations, inpatient care, and antenatal care services. The teams visited district warehouses and facility pharmacies to monitor stock levels and expiration dates of RDTs, insecticide-treated nets, and antimalarial drugs. To aid clinicians to adhere to treatment guidelines, IMaP delivered on-the-job training during supervision visits and developed and distributed 14,821 malaria case management posters and 12,285 diagnosis and treatment flowcharts for clinicians to use during patient consultations.

Over the course of the project, IMaP on-the-job training and mentorship reached 3,544 clinical staff on malaria case management and IPTp based on identified needs from 2020 to 2022. On-the-job training included how to conduct RDTs; the calculation, dilution, dosage, and administration procedures for injectable artesunate; and administration of IPTp to pregnant women. IMaP and DPS mentors reviewed medical records of malaria patients to identify areas for case management improvement and observed HCWs



Hermengrato Alafo, the IMaP provincial clinical specialist, providing technical assistance to maternal and child health nurses in Chirodze Ponte Health Centre in Cahora Bassa District, Tete Province. Photo by Chemonics International, Inc.

during the patient consultation process to ensure they were adhering to national malaria standards of care. In 2022, 93% of HCWs who were observed adhered to case management standards (e.g., correctly tested a fever case and provided appropriate treatment based on the test result), a significant improvement from 70% in 2018. There was also improvement in the administration of IPTp to pregnant women (see Exhibit 1). Successes in the implementation and strengthening of the capacity of the NMCP on ISS facilitated the transition of the activity to the DPS in two provinces (Cabo Delgado and Tete) in Year 5 of the project.

### Agentes Polivalentes Elementares training

*Agentes polivalentes elementares* (APEs) are the frontline health workers for many households in the northern provinces of Mozambique; each APE can support up to 2,000 residents in the most remote communities. IMaP conducted refresher training for 2,956 APEs based on Mozambique's malaria treatment guidelines and mentored 718 APEs on procedures for conducting household diagnostic tests, using RDTs correctly (e.g., correct number of buffer drops and how long to wait before reading the result), treating malaria cases, and referring patients with fever and malaria-like symptoms or signs of severe disease to health facilities for further care. Strengthening the framework for oversight and support for APEs was crucial for their clinical expertise and their sense of job satisfaction. The refresher course used a training-of-trainers model, with the chief district officer and district malaria focal point as the trainers. Health facility clinicians who supervise APEs received mentoring on effective training, supervising, and support.

### Malaria Morbidity and Mortality Sessions

With technical and logistical support, health facilities strengthened their case management knowledge and skills through malaria morbidity and mortality sessions. Clinical and health facility directors, head nurses, and district malaria focal points from referral health facilities and two other large health facilities

in each province met and discussed severe malaria cases and deaths. Participants concluded that most deaths attributed to malaria were misclassified and caused by other diseases; clinicians were not regularly monitoring patients in the ward; malaria complications were mismanaged; and incorrect doses of injectable artesunate were administered in the first 24 hours of treatment. Findings from these sessions led to supportive supervision visits and on-the-job training at affected facilities, which ultimately led to a reduction of deaths from malaria. For example, Hospital Central de Nampula recorded a 38% reduction in malaria deaths (131 to 81) from 2018 to 2019 after receiving hands-on training and supervision. To address malaria morbidity and mortality nationally, IMaP worked with the NMCP and other key stakeholders to develop terms of reference for the National Severe Malaria Cases and Deaths Committee as well as a Death Discussion Guide.

## Accomplishments

IMaP successfully adapted training initiatives to ensure continuity and minimal disruption during COVID-19. This included virtual training in addition to on-the-job and classroom-based training sessions.

During IMaP's five years of operation, over 9,000

HCWs and APEs were trained in malaria case management and IPTp.

IMaP led the introduction, implementation, and standardization of ISS for HCWs to develop their skills and improve quality malaria health service delivery. ISS was later expanded to other provinces.

The regional malaria morbidity and mortality discussion sessions allowed health facilities and districts to share experiences and learn from their peers, contributing to improvements in quality of care and prevention of deaths.

Although not entirely attributable to IMaP, between 2018 and 2021 in all four target provinces, there was a 43% decrease in malaria deaths as a proportion of all inpatient deaths (from 3.7% to 2.1%), despite a 16% increase in malaria cases. The increase in malaria cases is likely in part due to improved health-seeking behaviors, increased testing, and improved reporting.

## Recommendations

The NMCP and its partners should continue to monitor, evaluate, and revise the ISS approach as needed.

DPS offices and implementing partners should continue to support districts to conduct malaria morbidity and mortality discussion sessions for further improvements.