

# Accelerating the Reduction of Malaria Morbidity and Mortality (ARM3) | BENIN

## Improving Malaria Diagnostics



### ARM3 AT A GLANCE

**DONOR:** USAID/PMI

**PERIOD:** 2011–2018

**PRIMARY OBJECTIVE:** To assist the Government of Benin (GOB) to rapidly and significantly reduce both the number of malaria cases and malaria-related mortality, as part of its efforts to bring malaria deaths to zero and eliminate malaria as a public health threat by 2030.

**MAIN APPROACH:** ARM3 technical experts worked closely with Benin's National Malaria Control Program (NMCP) to intensify malaria interventions and surveillance at all levels, with continuous capacity building including training, coaching and mentoring of NMCP and health-facility staff.

**SUSTAINABILITY:** The ARM3 methodology was designed for sustainability. In 2014, ARM3 transitioned from an implementing to an advisory role. The NMCP is now fully in charge of malaria interventions.

**NATIONAL IMPLEMENTERS:** National Malaria Control Program (NMCP) of Benin with technical assistance from Medical Care Development International and other partners.

**POPULATION REACHED:** Over 11 million—the entire population of Benin—in all 34 health zones.



### CHALLENGE

Prompt and accurate diagnosis of malaria saves lives. In 2011, the Government of Benin (GOB) called for all people presenting with fever to be tested, whether by rapid diagnostic test (RDT) or microscopy. The protocol also requires anyone with symptoms of severe malaria to be biologically diagnosed using malaria microscopy.

When ARM3 began, many health workers lacked hands-on training in malaria diagnostics, understanding of standard operating procedures (SOPs), and manuals. Many health-facility microscopes were nonfunctional, and stock-outs of lab supplies were common. Improvements in these areas and others were needed for the National Malaria Control Program (NMCP) to be able to follow GOB policy.

### RESPONSE

ARM3 assisted the NMCP to update and distribute SOPs and manuals for testing; upgraded microscopes nationwide, improved the supply chain for reagents and other lab consumables, and instituted an OTSS system—Outreach, Training, and Supportive Supervision—in all departments and health zones.

The program emphasized a “cascade” system of capacity-building, in line with Benin's decentralization policies. The NMCP with ARM3 trained supervisors in each of the 34 health zones to carry out OTSS in their own zones—and train a cadre of others in SOPs as well as in OTSS techniques.

### RESULTS

**The GOB set a target for 90 percent of patients with possible malaria to be tested either by RDT or microscopy. Actual results, according to DHIS2 statistics, showed that diagnosis of likely cases rose dramatically:**



In 2016, the NMCP took full ownership of the OTSS system, with MCDI providing technical assistance.

All 115 public and private laboratories supervised in 2017 had the ability to perform biological diagnosis of malaria.

**Diagnostic laboratories with reference documents on malaria:**

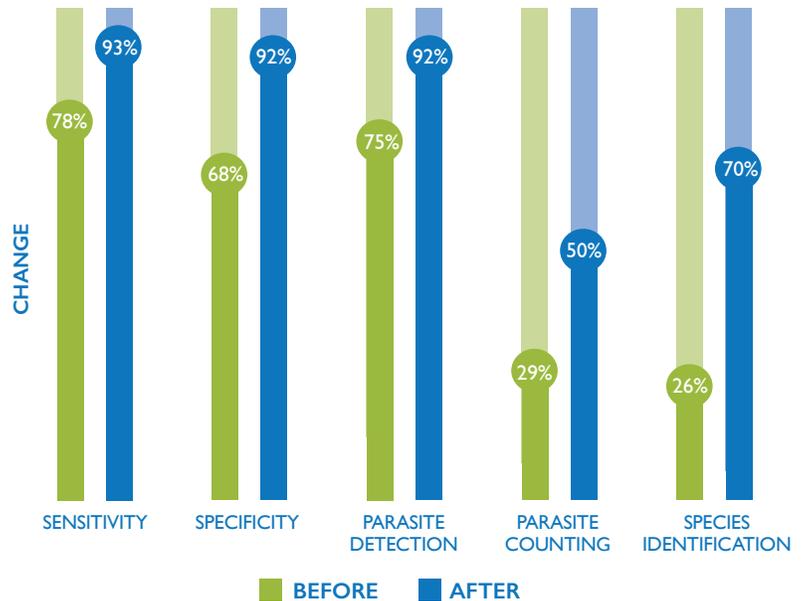


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## RESULTS CONTINUED

With the assistance of ARM3, the NMCP trained microscopists from private facilities for the first time. Ratings of a sample of 22 private-sector microscopists, before and after a 2017 training:



“[OTSS] allowed us to apply ourselves more in everything we do: Produce monthly statistics... [According] to the new policies... and biological diagnosis; ...avoid breaks in supplies of reagents and consumables;...[prepare the slides well]... use the manual of standard operating procedures and the guides for microscope use and maintenance...”

S. BENOIT AKPODE  
MEDICAL BIOTECHNOLOGIST

### OVERALL RESULTS OF ARM3:



[www.mcdinternational.org](http://www.mcdinternational.org)



#### For more information:

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## METHODS

**Training.** The project trained more than 2,600 health workers in malaria diagnostics (microscopy and rapid diagnostic testing).

**OTSS for continuous improvement.** Teams from ARM3 and the NMCP performed bi-annual, supportive supervisory visits with biotechnologists and others at 115 diagnostic laboratories.

**Policies, standards, materials.** With ARM3, the NMCP developed and distributed manuals, standard operating procedures, a microscope maintenance plan, diagnostics quality-assurance plans, and other reference documents for accurate and standardized lab results.

**Laboratory equipment.** With the NMCP, ARM3 inventoried and assessed hundreds of microscopes at 124 laboratories and arranged to repair or replace those not functioning.

**Pilot of quality control method for RDTs.** Drying preserves parasites in malaria-positive blood. ARM3 and the NMCP introduced the use of Dried Tube Specimens (DTS) in Benin to check the accuracy of rapid diagnostic tests, using DTS in a pilot in health facilities. Findings were publicized at the American Society of Tropical Medicine and Hygiene Annual Meeting in 2016.

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