About the Program for the Advancement of Malaria Outcomes

While mortality from malaria has drastically decreased in Zambia over the past decade, malaria remains a public health concern with over five million cases reported annually. Malaria prevalence varies between and within districts and is endemic across all ten provinces. The Government of the Republic of Zambia (GRZ) has set ambitious timelines for the elimination of local malaria infection and disease.¹

The Program for the Advancement of Malaria Outcomes (PAMO) is a flagship malaria program for the U.S. government’s President’s Malaria Initiative (PMI) in Zambia. PAMO helps the GRZ accelerate progress toward eliminating local malaria infection and disease. Implemented by PATH in partnership with Jhpiego and the Broadreach Institute for Training and Education (BRIT), PAMO supports the GRZ at the national level through the National Malaria Elimination Centre (NMEC) and in four high burden provinces: Luapula, Muchinga, Eastern, and Northern. PAMO’s strategy focuses on:

- Increasing effective coverage of proven malaria interventions in alignment with the National Malaria Elimination Strategic Plan.²
- Strengthening management capacity of provincial and district Ministry of Health personnel to provide oversight and supervision of delivery of malaria interventions.
- Strengthening the health management information system at the provincial and district levels to improve data reporting, analysis, and use for decision-making.

Measuring what matters: how progress is scored.

Outreach training and supportive supervision (OTSS) utilizes observations, practical demonstrations, on-the-job training, and patient record reviews to improve malaria case management skills amongst health care workers (HCWs). Routine OTSS helps ensure compliance with national testing and treatment guidelines at the facility level, improving quality of case management as new staff enter the workforce and refreshes skills for existing HCWs. PAMO is working with the Ministry of Health through the NMEC to expand OTSS in the four high burden provinces using a standardized method.

OTSS supervisors use observation and facility registry data to score six aspects of HCWs’ skills:

1. **Clinical skills:** Clinical check for severe malaria, decision-making when ordering a diagnostic test, final diagnosis, and prescription of appropriate treatment.

2. **Rapid diagnostic test (RDT) use:** Sample collection, performance, reading and recording of results.

3. **Microscopy skills:** Slide preparation, staining, and reading of results.

4. **Testing prior to treatment:** Clinical records reviewed to see who received artemisinin-based combination therapies (ACTs) and results compared results between laboratory registers.

5. **Adherence to negative test results:** Laboratory and clinical records reviewed to see if anyone who tested negative was given ACTs.

6. **Adherence to positive test results:** Laboratory and clinical records reviewed to see if patients who tested positive for malaria were given ACTs.

A score greater than 90% indicates high performance, a score below 75% is considered poor and not acceptable. The results are shared during the visit for real-time feedback so that corrective action can be taken immediately.

**IMPACT AT A GLANCE**

378 provincial and district supervisors trained.

Onsite mentorship provided to 1,246 health care workers.

RDT observation scores improved from 89% to 93%.

Laboratory score improved from 65% to 80%.

*Data for all four PAMO-supported provinces from January 2017 to March 2020.

**Figure 1. Illustrative section of the OTSS scoring guide.**

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¹ [https://www.nmec.org.zm/malaria-overivew](https://www.nmec.org.zm/malaria-overivew)

Decentralizing OTSS to mentor more health care workers

Before 2016, OTSS was highly centralized—a team of supervisors from the capital, Lusaka, would visit health facilities in provincial centers, focusing on those with microscopy capabilities. To further the reach of mentorship, PAMO has strengthened and broadened the scope of OTSS at the provincial level, focusing first on facilities with microscopy diagnosis, and introducing OTSS at the district level in facilities that rely on RDTs. PAMO expanded the team of supervisors and mentors from laboratory specialists and clinicians to also include pharmacists, maternal and child health specialists, and district information officers who provide instruction on supply chain logistics, treating malaria in pregnancy, and improving data quality. OTSS supervisors visit health facilities twice a year. At each visit, the team looks at the challenges they identified in the last visit to ascertain improvements and to provide further on-site training and mentorship to improve quality of care.

Moving from paper to digital systems

When OTSS was first introduced, teams used a paper-based checklist. To reduce the time required to manually aggregate and update the data, PMI supported the development and introduction of an electronic data system (EDS). The EDS automatically generates scores, which helps supervisors visualize results to see whether health care workers are meeting the minimum standards. Where they find challenges, they immediately provide onsite training and mentorship to correct behaviors and improve skills. The EDS also automatically updates the data in DHIS2 and stores the data in a centralized location. This allows for real-time review of the data in DHIS2 and easier tracking of progress over time. PAMO has supported the Ministry of Health in transitioning from the paper-based system to the EDS, distributing 118 tablets and mentoring supervisors on proper use. Other partners, such as the Global Fund and the PMI-Impact Malaria project, are supporting the transition across other provinces.

Quality of case management is improving

Since January 2017, PAMO has trained 378 supervisors, expanding the reach of OTSS. In 2016, none of the districts received OTSS, whereas now all districts in Eastern, Muchinga, and Northern, and nearly half of districts in Luapula province have received OTSS support. OTSS support has expanded to 94% of malaria microscopy health facilities (n=102 out of 108), and 44% of non-microscopy facilities (n=368 out of 832), mentoring a total of 1,246 health care workers. Decentralization of OTSS has led to an improvement in health care workers’ adherence to national malaria case management standards. Proper use of rapid diagnostic tests increased from 89% in 2017 to 93% in 2019, which surpasses the optimal score of 90%. Regular OTSS visits have significant potential to eliminate presumptive treatment of malaria and improve the treatment of confirmed malaria.

Figure 3. OTSS performance on six composite scores, Q1 2017 through Q1 2020.
OTSS is strengthening diagnostic confirmation

The NMEP directs HCWs to confirm every suspected malaria case with microscopy or an RDT prior to treating the patient for malaria. Moving away from presumptive treatment (relying solely on clinical diagnosis of symptoms) and towards confirmed diagnosis and treatment helps reduce the misuse of anti-malarial drugs, which improves patient care and helps protect medical supplies. Accurate diagnosis improves the identification and subsequent management of non-malarial febrile illnesses. It also contributes to malaria elimination as successful treatment clears parasites from the body, therefore minimizing onward transmission. In Eastern province, 42% of all the treated malaria cases in 2014 were unconfirmed. Figure 4 shows that PAMO-supported provinces have seen a steady decline in the practice of treating unconfirmed malaria cases. By strengthening RDT and microscopy skills amongst HCWs, OTSS has contributed to a reduction in presumptive treatment. In Northern Province, the sharp increase in presumptive treatment of malaria in the first quarter of 2020 was due to high rates of RDT stock-outs. The province experienced quantification and commodity supply challenges during that period.

Figure 4: Reduction in proportion of unconfirmed, treated malaria cases, Q1 2014-Q1 2020.

Lessons learned in conducting OTSS

In conducting OTSS in the four PAMO-supported provinces, PAMO has learned four key lessons:

1. Forming a multi-disciplinary team of OTSS supervisors from provincial and district health offices is a cost-effective strategy that also enhances government ownership and accountability.

2. Framing OTSS as a case management skills-building rather than a fault-finding system increases HCW engagement and encourages a solutions-oriented mindset.

3. Transitioning OTSS from a paper-based to an electronic system increased timely access to OTSS data which improved the MOH’s ability to review data and take appropriate action where necessary.

4. OTSS accelerates the malaria case management learning curve as facilities orient new staff.

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3 WHO Global technical strategy for malaria 2016-2030.