

ESTABLISHING A MALARIA SLIDE BANK TO SUPPORT QUALITY MALARIA MICROSCOPY SERVICES IN AFRICA

Amref Health Africa is the African continent's leading health charity. We believe that everyone, everywhere - simply by virtue of being human - should have the right to health.



Project title: Establishing a Malaria Slide Bank to support quality malaria microscopy services in Africa

Project Goal: To collect, establish and maintain high-quality reference blood slides to support training of malaria microscopists and other malaria microscopy quality assurance programmes within the African region and beyond.

Project Location: Busia and Marsabit Counties, Kenya

PROJECT BACKGROUND

Malaria continues to have a devastating impact on people's health and livelihoods globally, despite being a preventable and treatable disease. According to the World Health Organization (WHO), 241 million malaria cases were reported in 2020 in 85 malaria endemic countries (WHO World Malaria Report 2021). The WHO African Region carried the greatest disease burden, with over 95% (228 million) of global malaria cases. Malaria diagnosis and treatment are also impacted directly and indirectly by other health emergencies, such as the COVID-19 pandemic, due to reduced access to health care services, decreased availability of diagnostic, curative and preventative supplies, and effects on malaria prevention campaigns¹.

Early diagnosis, and prompt and effective treatment are crucial for reducing malaria mortality and morbidity. The gold standard for malaria diagnosis is using microscopy to confirm suspected cases, which involves examining a drop of the patient's blood on a microscope slide. However, the quality of microscopy services is often not adequate to ensure good health outcomes. Therefore, strengthening malaria microscopy services through national quality assurance (QA) programmes has become a priority in malaria endemic countries. QA programmes include activities such as malaria microscopy refresher training courses, competence assessment of malaria microscopists, and external quality assessment programmes (known as proficiency testing). These require access to a Malaria Slide Bank, which contains a range of reference microscopy blood slides from various malaria species.

has been funded through running malaria microscopy courses and sales of some slides, with WHO supporting the validation aspect.

Once fully established and validated, the Amref Malaria Slide Bank will be the second officially recognised Malaria Slide Bank in the world. It will:

1. Maintain a repository of high quality malaria blood films for regional malaria microscopy training and WHO-related assessment and accreditation programmes.
2. Provide high-quality malaria blood films for loan or sale to other institutions and organisations across the African continent for microscopy training and accreditation programmes.
3. Exchange slides between slide banks in other regions that share similar objectives.
4. Maintain a permanent reference database of all malaria species found in Africa.

The Bank will be able to support the current high demand for slides for malaria microscopy training and related QA programmes, which will lead to high-quality malaria microscopy diagnosis across this high burden region and ultimately improved health outcomes.

PROJECT BENEFICIARIES

- **35 laboratory staff and 7 health facilities in slide collection sites.** During collection activities across the sites, laboratory staff will receive on-the-job training on quality malaria diagnostic procedures. In addition, the 7 health facilities will receive essential laboratory supplies for malaria microscopy services.
- **Malaria microscopists, clinicians and patients across the African continent.** The slides will be a resource for malaria microscopy refresher training courses and competence assessment of microscopists to be able to provide quality microscopy services for better patient management.
- **National malaria control programmes (NMCPs) and national malaria elimination programmes (NMEPs).** National malaria programmes are responsible for implementing QA activities and require slides for various activities, such as competence assessments and proficiency testing of malaria diagnostic laboratories.
- **The East African Regional External Quality Assessment Scheme (EA-REQAS).** In the year 2000, Amref Health Africa launched the EA-REQAS in collaboration with the Ministries of Health of Kenya, Tanzania, Zanzibar and Uganda, with support from the World Health Organization and Izumi Foundation. The scheme targets basic laboratory tests and aims to meet the need for an affordable, integrated proficiency testing service suitable for smaller laboratories in peripheral health facilities. To date, the scheme has conducted 28 surveys and currently serves over 140 health facilities in Burundi, Kenya, South Sudan, Somalia, Tanzania and Uganda. Malaria blood slides are compulsory materials submitted in every survey, and EA-REQAS depends on the Amref Malaria Slide Bank to provide slides.



EQ-REQAS Laboratory © Kennedy Musyoka

The project has been designed to ensure sustainability of the Malaria Slide Bank and continuing benefits to the beneficiaries.

By collecting and validating 10,000 slides from the four malaria species found in Africa, this will greatly improve training for microscopists across the African region for many years to come, ultimately resulting in improved quality diagnosis of malaria and better health outcomes. The slides will also be used to support national QA programmes, such as national malaria control programmes and national malaria elimination programmes which will result in improved quality diagnosis. These benefits will be seen for many years as the slides will be stored and kept in a good usable condition for up to 10 years.

As part of self-sustainability, a small fee that will be charged from the sale and/or loaning of slides that will support management of the slide bank and replenishment of lost or broken slides. This will ensure that the Malaria Slide Bank operates a sustainable model that will allow further slides to be collected and validated in the coming years.