

# Training in malaria microscopy and South Sudan's first malaria slide bank

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Dear Editor,

Given that malaria in South Sudan is endemic in 95% of the country and contributes significantly to overall mortality (sixth cause of death),<sup>[1]</sup> we feel that malaria deserves greater consideration by scholars, institutions, organizations and the public alike.<sup>[2]</sup>

Several initiatives for tackling malaria are currently being implemented across the country by numerous health organisations. These include the improvement of malaria diagnosis based on clinical presentation and quality assured laboratory diagnosis using rapid diagnostic tests (RDT) and microscopy. Despite the practical advantages of adopting RDTs, microscopy remains the accepted standard for clinical diagnosis in resource-constrained settings.<sup>[3,4]</sup> However, quality assured malaria microscopy requires basic laboratory infrastructure, a power source, well maintained equipment, a regular supply of quality reagents, and competent microscopists.

In February 2020, Amref Health Africa conducted two Refresher Training in Laboratory Diagnosis of Malaria courses in Juba at the Public Health Laboratory targeting microscopists from Ministry of Health hospitals and primary healthcare centres from greater Equatoria and Bahr el Ghazal regions of the country. When competence in malaria microscopy was assessed among the 24 microscopy trainees, none attained a competence level that would ensure an accurate malaria diagnosis. Instead, all the trainees achieved only the equivalent of Level 4 (the lowest grade) using the World Health Organization (WHO) grading system.<sup>[5]</sup> A similar result was recorded in training courses in 2017.<sup>[6]</sup> Microscopists with WHO Level 1 certification (the highest grade) achieve malaria parasite detection in at least 90% of samples, correctly identify malaria parasite species in  $\geq 90\%$  of samples, and perform a correct parasite count in at least 50% of samples. Higher levels of competence in malaria microscopy are therefore urgently needed to improve malaria diagnostic services in South Sudan.<sup>[7]</sup>

The current limited competence of malaria microscopists in South Sudan undermines the optimal performance of malaria diagnosis at health facilities. Amref Health Africa is therefore planning to conduct further refresher training and competence assessments in malaria microscopy, and, at the same time, establish South Sudan's first National Malaria Slide Bank. A malaria slide bank is a repository of well-characterized, high-quality reference malaria slides that are used for malaria training as well as in quality assurance programmes.<sup>[8]</sup> The malaria slide bank will be established with the technical support of Amref Health Africa's Regional Laboratory Programme based in Kenya, which is in the process of setting up a regional malaria slide bank facility through the rigorous WHO process of slide validation and polymerase chain reaction (PCR) testing. The combination of standardised training activities with ongoing quality assurance and support supervision of microscopists has been shown to enhance accuracy of malaria diagnosis in clinical settings.<sup>[9,10]</sup>

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Africa in South Sudan has secured the necessary financial and institutional support to carry out these integrated interventions to improve the standard of malaria diagnosis in the country. We look forward to engaging a wider range of health partners to enable them to benefit from in-country, high quality malaria microscopy training and quality assurance services provided through the National Malaria Control Programme.

#### References

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## Malaria Resources

### Celebrating success – LLIN distribution in South Sudan during COVID-19

Summarised from the [Malaria Consortium blog](#) of 28 July 2020

Working with the South Sudan National Malaria Control Programme (NMCP) and Population Services International (PSI), Malaria Consortium recently completed a successful long-lasting insecticidal net (LLIN) distribution campaign in Northern Bahr el Ghazal state of South Sudan. The campaign distributed 980,000 LLIN, reaching more than 1.8 million people in over 300,000 households.

Supported by the collaborative efforts of partners at every stage of the distribution, Malaria Consortium rapidly implemented a series of new measures to ensure LLIN distribution has continued during the pandemic.

Social Behaviour Change Communication (SBCC) is a critical component of successful LLIN campaign delivery and especially important during a pandemic. Health messaging around both malaria and COVID-19 was broadcast to communities on radio talk shows and jingles, and communicated through Information, Education and Communication materials. As part of the training for campaign volunteers, an SBCC component was taught that emphasised key malaria prevention health messages and raised awareness of COVID-19. The recipients of the training were then able to disseminate this information through interactions with their communities during the distribution. These adaptations were implemented rapidly and as a result not everyone initially understood the risks of COVID-19 and the need to adapt the LLIN distribution, reinforcing the need for strong health messaging and protocols for sanitising and washing hands. Strong community leadership, effective training and the combined efforts of all partners helped to address the lack of understanding within communities of the risks posed and helped make the campaign a success.