

The role of laboratory science in the battle against malaria in South Sudan

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Introduction

When discussing the challenges surrounding malaria in South Sudan the focus tends to be on the availability of medical supplies, health care infrastructure, and social stigma. However, one important aspect that is sometimes overlooked is the role of laboratory science and diagnostics in both the control and prevention of malaria. This article describes the role of laboratory science in combating malaria and recent developments in South Sudan.

The role of laboratory science in battling malaria

The COVID-19 pandemic has highlighted the importance of diagnostics and laboratory science in the battle against infectious diseases. The following is a brief overview of the more prominent functions of the laboratory service in relation to malaria.

1. Improve diagnosis: The World Health Organization (WHO) recommends the prompt diagnosis of all patients suspected of having malaria through the use of microscopy or malaria rapid diagnostic tests (RDT).^[1] Early diagnosis of malaria facilitates better management and surveillance of the disease. Unfortunately, these techniques are often difficult to attain in many African nations due to the limitations faced by medical laboratory professionals.

2. Prevent misdiagnosis: A misdiagnosis is simply an incorrect diagnosis and often occurs with malaria because the symptoms are not specific and mimic other diseases. Without a precise diagnosis there remains a barrier to effective control of malaria in many communities. The consequence is a wastage of limited antimalarial drugs on patients who do not have the disease. The American National Health Institute (NIH) reported that such occurrences lead to the "...raising the cost of treatment..."^[2] In nations, where the availability of these resources is highly limited it is of great importance that they be conserved.

3. Prevent the development of drug resistance: The American Journal of Clinical Pathology has written extensively on how inaccurate diagnostics lead to the widespread and unnecessary use of antimalarials which in turn leads to parasites developing resistance to these treatments.^[3] Improving diagnostics with 95% sensitivity and 95% specificity may potentially prevent 100,000 deaths and about 400 million unnecessary treatments each year.^[3]

Improving laboratory science in South Sudan is a critical step to moving towards a future free of malaria.

Recent developments in laboratory science in South Sudan

In South Sudan there have been positive developments in recent years. For example, in 2019 the South Sudan Ministry of Health launched an advanced curriculum for a Diploma in Medical Laboratory Sciences.^[4] The introduction of this diploma marks a major development for the people of this country. Since 2012 three more health sciences institutes that provide education and training in Medical Laboratory Science have been established making a total of six.^[4]

This programme will provide South Sudan with future laboratory professionals and enhance collaboration with the organizations that helped develop this diploma such as Amref Health Africa, the African Society of Laboratory Medicine (ASLM) and the Center For Disease Control.

References

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