

Testing for malaria reduces overprescription by more than 70 percent

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Using malaria rapid diagnostic tests in registered drug shops in a highly endemic region in Uganda substantially reduced overdiagnosis of malaria, improving the use of valuable malaria drugs, according to a new study published in *PLOS ONE*.

Most of the 15,000 patients that visited drug shops with a fever chose to buy an rapid diagnostic test when offered one by the trained vendors taking part in the study. Once they performed the test, results showed that less than 60% of the patients had malaria. The vendors usually complied with the test results, reducing overprescription of malaria drugs by 73%.

The researchers from the Artemisinin-based Combination Therapy (ACT) Consortium at the Ministry of Health in Uganda and the London School of Hygiene & Tropical Medicine in the UK carried out the study because up to 80% of malaria cases in Uganda are treated in the private sector.

The private sector is a common source of treatment in many other malaria-endemic areas, especially where there is poor access to public health facilities. Patients buy antimalarial drugs in shops to medicate themselves, although malaria is not always the cause of their fever, and thus inappropriate treatment is very common.

Lead author, Professor Anthony Mbonye from the Ugandan Ministry of Health, said: "Our findings show that it is feasible to collaborate with the

private health sector and introduce malaria [rapid diagnostic tests](#) in drug shops. The next step is to refine the strategy and understand the cost implications of scaling it up in Uganda. Our long term aim is to provide evidence to help the World Health Organization develop guidance to improve [malaria treatment](#) in the private sector."

Dr Sian Clarke from the London School of Hygiene & Tropical Medicine, also a principal investigator in the research, said: "This study shows that rapid diagnostic tests can improve the use of artemisinin-based combination therapies - the most effective treatment for malaria - in drug shops, but it's not without its challenges. These tests alone will not improve the treatment of other diseases. We now need to continue working with the Ministry of Health to investigate how to improve our approach and expand it to other common illnesses."

At present, drug shop vendors usually treat patients based on their signs and symptoms without testing their blood for the presence of malaria parasites, as recommended by the World Health Organization. This can result in patients with a fever being overdiagnosed with malaria and purchasing a treatment which they don't need.

Rapid diagnostic tests are simple tools that require minimal training to diagnose malaria, providing an alternative to microscopy (a method that requires laboratory equipment and qualified staff). Rapid tests can help health workers and vendors in remote locations to prescribe the correct treatment for malaria.

An investigation conducted alongside the trial, published in Critical Public Health, found that despite their popularity, malaria tests were not a simple fix in the private sector. Patients welcomed the rapid diagnostic tests as well as government involvement in improving drug shops, and vendors "felt big" and more akin to qualified health workers in the public sector for being allowed to test blood. But researchers warn that

this could give a false impression of vendors' other skills and services, and regulation by authorities is needed.

The team have recently received a new grant to investigate the feasibility of training and equipping registered drug shops to manage three key childhood diseases: [malaria](#), pneumonia and diarrhoea.

[Introducing rapid diagnostic tests in drug shops to improve the targeting of malaria](#) from [ACT Consortium](#) on [Vimeo](#).

More information: *PLOS ONE*. [DOI: 10.1371/journal.pone.0129545](https://doi.org/10.1371/journal.pone.0129545)

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