Interactive training halves malaria overdiagnosis and prevents wastage of drugs

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Interactive training programmes for health workers could reduce overdiagnosis of malaria by half and help prevent valuable drugs from being wasted on patients who don't have the disease, according to new research published on World Malaria Day in *The Lancet Global Health*. The study shows that the roll-out of malaria rapid diagnostic tests (RDTs) in endemic countries should run alongside these new training programmes.

The study in Cameroon, carried out by the Artemisinin-based Combination Therapy (ACT) Consortium based at the London School of Hygiene & Tropical Medicine, compared the use of RDTs when packaged with either a basic or a comprehensive training programme for clinicians. Their results showed that those undertaking the comprehensive programme were much less likely to overuse antimalarials. Only 31% of patients in this group received a malaria drug that they didn't need, compared to 52% in the group undertaking the basic programme and 84% in the control group which represented the standard practice.

The more effective training package lasted three days and was designed to change prescribing practices. In addition to the content of the basic package, which only provided conventional training on RDTs, malaria diagnosis and treatment, the comprehensive package had smaller groups and longer discussions about clinical guidelines, real-life scenarios and effective communication with patients. It was also more interactive, using card games, drama and problem solving exercises.

This research was carried out in response to calls from governments to provide evidence that helps to change the behaviour of clinicians, who often treat patients based on their signs and symptoms without testing their blood for the presence of malaria parasites. This often results in patients with fever being overdiagnosed with malaria and receiving expensive malaria treatment that they don't need.

The study's lead author, Dr Virginia Wiseman from the London School of Hygiene & Tropical Medicine, said: "If we are serious about improving the targeting of malaria medicines by using RDTs, then there needs to be a far greater focus on behaviour change. This study, the first of its kind in Cameroon, highlights that health workers not only need training to diagnose and treat malaria, but most of all need the confidence to put what they learn into practice and to communicate more effectively with patients about why they are tested and that fever is not always caused by malaria. Our results suggest that a good training programme designed to translate knowledge into practice could dramatically reduce overdiagnosis of malaria in Cameroon and prevent the wastage of valuable medicines."

The World Health Organization recommends that health workers test patients for malaria before prescribing antimalarial treatment, but for decades malaria has been diagnosed based on symptoms alone. Microscopy is a method that requires laboratory equipment and qualified staff, while rapid diagnostic tests are alternative, simple tools to diagnose malaria accurately which can help health workers in remote locations to prescribe the correct treatment.

Professor David Schellenberg, director of the ACT Consortium at the London School of Hygiene & Tropical Medicine, said: "This study shows that rapid diagnostic tests can take the guesswork out of diagnosis, which can improve the targeting of malaria treatment to those who really need it. We recognise that this is one study carried out in one setting, in

one country, but it helps us to maximise the value of RDTs in different contexts such as the private sector or other countries. It also draws attention to the importance of understanding the non-malarial causes of fever. For example, meningitis or pneumonia are life-saving infections and require referral and additional treatment."

Prof Wilfred Mbacham from the University of Yaoundé, who co-led the study in Cameroon, said: "Rapid diagnostic tests are new technologies that can greatly assist nurses and doctors in making life-saving decisions at the point-of-care. Rather than do passive training in the use of RDTs, building confidence and providing communication training are key to accept a negative test for a patient with fever and to use other treatment options. We reached this result through repeated consultations with the National Malaria Control Programme. Governments need to minimally invest in building up the critical mass of health workers who prescribe appropriately, which requires a curriculum change in medical schools."

More information: Basic or enhanced clinician training to improve adherence to malaria treatment guidelines: a cluster-randomised trial in two areas of Cameroon, Mbacham et al, *Lancet Global Health* 2014, Published Online April 25, 2014, dx.doi.org/10.1016/S2214-109X(14)70201-3

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