

Professor Janet Hemingway, outlines 15 years of malaria interventions in Africa

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Anopheles gambiae mosquitoes feeding on blood

In an editorial in the weekly science journal *Nature*, LSTM's Director, Professor Janet Hemingway, looks at how the last 15 years of control measures have led to massive reductions in disease prevalence in Africa since 2000. The article comes as a study by Bhatt et al featured in the same edition provides the first authoritative, data-driven models to estimate the relative impact of the different interventions employed. At the same time Professor Hemingway warns of the problems that growing insecticide and drug resistance could mean to those efforts.

Professor Hemingway charts the history in the shifts of approaches to interventions. Beginning in the 1960s when [vector control](#) through indoor residual spraying (IRS) with DDT and treatment with the drug chloroquine were seen to fail, to a move away from vector control to prompt and preventative treatment. In 2000 that changed again with the widespread distribution of long lasting insecticide treated bednets impregnated with pyrethroid insecticides. In 2005 this was further enhanced when the US President's Malaria Initiative reintroduced IRS in 15 high-burden countries and failing drug treatments were replaced by artemisinin-based combination therapies (ACTs) by 2013.

Bhatt et al estimate that 663 million clinical cases of [malaria](#) were averted between 2000 and 2015 with 68% of these due to bednets, 22% due to ACTs and 10% due to IRS. While this massive improvement should be applauded, Professor Hemingway warns against complacency: "When I began working on insect-borne diseases a child died of malaria every six seconds, and while it is great progress it is unacceptable that a child still dies of the disease every minute. However the massive reduction in deaths due to these three highly successful interventions is now threatened by the rapid development of mosquito resistance to insecticides and parasite resistance to drugs."

She acknowledges that when using malaria cases as a measure resistance to drugs is relatively easy to spot, but without monitoring insecticide

resistance specifically, it is not seen until it is a major problem. She continued: "Given the crucial role that vector control has had in reducing malaria over the last 15 years a more proactive approach is now needed. A healthy portfolio of new antimalarial drugs and insecticides is under development, but we need to be able to move past the development, financial, regulatory and policy hurdles to rolling them out - only by their development will we stay ahead of the burden of [resistance](#) and move to a place where no child dies from malaria."

More information: Malaria: Fifteen years of interventions:
www.nature.com/nature/journal/.../72/full/526198a.html

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