

# Estimating the best time of year for malaria interventions in Africa

January 15 2015

---

New methods for analysing malaria transmission can estimate the best time of year to carry out campaigns such as mass drug treatment and spraying of houses with insecticide.

In a study publishing this week in *PLOS Computational Biology*, Jamie Griffin of Imperial College London uses methods that calculate the effect of interventions against [infectious diseases](#) when conditions change seasonally.

The study finds that for malaria in Africa the best time of year for mass drug administration is in the low season, whereas the best time for house spraying, or a vaccine that reduces [infection rates](#), is just before the high season.

An important summary of the dynamics of an infectious disease is the reproduction number, defined as the average number of secondary infections that would result from each infection if everyone were susceptible. The study's author shows how to find the reproduction number, and the number's change due to interventions when the disease has seasonal variation or the intervention effects change over time.

It has been estimated that in some parts of Africa the reproduction number needs to be reduced over 1000-fold in order to locally eliminate malaria. The results of this study can help us to understand how to optimally combine existing interventions. The methods may be applied to novel control measures to assess what contribution they could make to

the large reductions in transmission that are needed.

**More information:** Griffin JT (2015) The Interaction between Seasonality and Pulsed Interventions against Malaria in Their Effects on the Reproduction Number. *PLoS Comput Biol* 11(1): e1004057. [DOI: 10.1371/journal.pcbi.1004057](https://doi.org/10.1371/journal.pcbi.1004057)

Provided by Public Library of Science

Citation: Estimating the best time of year for malaria interventions in Africa (2015, January 15) retrieved 20 April 2024 from <https://medicalxpress.com/news/2015-01-year-malaria-interventions-africa.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.