

# Seasonal prevention of malaria in African children: Analysis of life-saving potential

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Giving young children medicine once a month during the rainy season to protect them against malaria could prevent tens of thousands of deaths each year in some areas of Africa, according to new research.

A team of scientists analysed the potential impact of a new strategy to control malaria in [Africa](#) which takes a similar approach to that used to protect [travellers](#) going to malaria endemic areas and found that even with moderate levels of coverage it could lead to significant [public health](#) improvements.

Malaria experts see this new approach, called seasonal malaria chemoprevention (SMC), as an exciting new tool in the fight against malaria. The study highlights the areas of Africa where this approach could be used most effectively and will assist deployment of this new control measure where it is needed urgently.

The study, published in *Nature Communications*, was led by the London School of Hygiene & Tropical Medicine and involved a collaboration of researchers in the UK and Africa.

In some parts of Africa, malaria is only a major problem for a few months of the year during and immediately after the [rainy season](#). In these areas, providing monthly courses of a cheap antimalarial drug combination (sulphadoxine-pyrimethamine and amodiaquine) to young [children](#) during the malaria transmission season when they are at highest risk has been shown to prevent approximately 80% of severe and

uncomplicated malaria cases.

It has been found that large-scale administration of antimalarial medicines once-per-month on repeated occasions can be carried out successfully, that it is very safe and that it provides protection even if children are sleeping under insecticide treated bed-nets. Currently, the main approaches to malaria control are use of insecticide treated bed-nets and spraying of homes with insecticide, combined with prompt diagnostic testing and effective treatment of malaria patients with artemisinin-based combination therapies.

Combining satellite maps of rainfall with information on the malaria burden in different areas of Africa, the researchers identified the regions where seasonal malaria chemoprevention would be useful and cost-effective. The largest impact would be in countries of the Sahel and sub-Saharan, a wide-belt of Africa ranging from The Gambia and Senegal in the West to parts of Sudan in the East. Key countries are Nigeria, Niger, Burkina Faso and Mali, where approximately 14 million children under five are at risk in areas suitable for this approach.

Following a review of the evidence including these findings by its Malaria Policy Advisory Committee, the World Health Organization (WHO) recently formally recommended seasonal malaria chemoprevention as policy for malaria control in the Sahel and sub-Saharan. Some of the countries in West Africa identified in this study may wish to introduce SMC into their national malaria control programmes.

The team also estimated the number of children at risk of malaria in these areas, and the number of malaria cases and deaths that could be prevented if seasonal malaria chemoprevention is widely used. There are approximately 40 million children under five living in parts of Africa suitable for SMC who could benefit from this intervention and around 150,000 childhood deaths from malaria each year. Making realistic

rather than optimistic assumptions about how many children could be reached and how effective this approach would be, the researchers estimate that around 11 million cases of malaria and approximately 50,000 deaths from malaria could be prevented per year if SMC was fully implemented.

Lead author Dr Matt Cairns, of the London School of Hygiene and Tropical Medicine, said: "Providing insecticide-treated nets is an important way of protecting children from malaria, but in some areas it isn't enough – children need additional methods of protection. We have identified two large areas of Africa where monthly seasonal chemoprevention could be an effective addition to existing approaches that reduce exposure to mosquitoes. If this control measure could be deployed widely it could prevent many millions of cases of malaria and tens of thousands of deaths every year."

Professor Sir Brian Greenwood, one of the senior authors of the study and a leading expert on [malaria control](#), said: "Excitingly, this is something that is available to put into action immediately, so children will start to benefit from this approach now rather than in three or five years' time. The key is to ensure that the promise becomes a reality."

Dr Robert Newman, Director of the WHO Global [Malaria](#) Programme, remarked: "This intervention has great potential to contribute towards the achievement of the health-related Millennium Development Goals in the Sahel sub-Region of Africa; the opportunity for policy adoption and implementation should be seized quickly."

Provided by London School of Hygiene & Tropical Medicine

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