

New high-resolution maps show how to defeat malaria

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New research published today in *The Lancet* examines high-resolution images in areas where the fight to defeat malaria is succeeding and where it has stalled.

"Understanding the distribution of malaria is crucial for fighting the disease," said lead author Dr. Peter Gething, Professor of Epidemiology at the University of Oxford and director of the Malaria Atlas Project (MAP). "We're constantly working to pull in more data and improve modeling strategies so that we can provide the best tools available for people around the world working to eradicate malaria."

Two studies present the most comprehensive picture to date of the *Plasmodium vivax* and *Plasmodium falciparum* parasites, which cause the majority of the global malaria burden.

Previous global maps have focused on a single year. These studies chart the change over time from 2000 to 2017, revealing areas of progress and regions where the burden of malaria is still high or increasing. They also show the burden of malaria at a fine local geographic scale, allowing [decision-makers](#) to target interventions where the need is greatest.

The study is available at IHME's website at <http://www.healthdata.org>; data visualizations are available at <https://map.ox.ac.uk/explorer/#/>.

The research, led by MAP in collaboration with researchers at the Institute for Health Metrics and Evaluation (IHME) at the University of Washington's School of Medicine, builds substantially on previous estimates of malaria burden by pulling in additional data sources and mapping trends over time. The results for 2017 make up the malaria estimates in the annual Global Burden of Disease study, coordinated by IHME, and inform United Nations statistics relied on by the Global Fund and nations' ministries of health.

"We can't get complacent now on malaria eradication," said Dr. Simon I. Hay, director of the Local Burden of Disease project at IHME and founder of the Malaria Atlas Project. "There's been a lot of progress, but in many areas there are still obstacles to overcome. These maps help

make the case for continued commitment of resources and expertise to defeating a disease that has harmed and killed millions. With precise data, we can identify where support for prevention, diagnosis, and treatment can make the biggest difference."

Plasmodium vivax (Pv) is the most geographically widespread species and the second largest contributor to the malaria burden worldwide. The results show a 42% decline in the global burden of Pv over the study period, but increased burden in areas of the Middle East and South America since 2013. In Afghanistan, Yemen, and Somalia, progress toward elimination was reversed. Venezuela, where prevalence has risen since 2012, is now the highest-prevalence region in the Americas.

Plasmodium falciparum (Pf) is the most virulent and prevalent malaria strain and the dominant strain in sub-Saharan Africa, where malaria burden remains high. Over 90% of people in sub-Saharan Africa live in Pf-endemic areas, and the region accounted for more than 85% of deaths from Pf in 2017. Infants and children under 4 years of age living in sub-Saharan Africa represented more than a third of Pf cases globally in 2017.

The researchers highlighted challenges to malaria eradication, including political instability, habitat change, resistance to insecticides and antimalarial drugs, and shifting funding priorities. An annual evaluation of global health financing produced by IHME projects a \$2 billion shortfall in achieving the World Health Organization [malaria](#) spending target for 2020 and minimal expected growth in development assistance for health.

Provided by Institute for Health Metrics and Evaluation

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