

Estimating global malaria incidence

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Estimates of malaria incidence derived from routine surveillance data suggest that 225 million episodes of malaria occurred worldwide in 2009. This estimate is lower than other published figures, such as those from the Malaria Atlas Project (MAP), particularly for estimates of malaria incidence outside Africa. Richard Cibulskis and colleagues at the WHO in Geneva, Switzerland present a critique of different estimation methods of the worldwide incidence of malaria in this week's *PLoS Medicine*.

Knowing the burden of malaria in any country is an essential component of public health planning and accurately estimating the global burden is essential to monitor progress towards the United Nations' [Millennium Development Goals](#). In this study the authors produced their estimate by analysing routine surveillance reports compiled by national health ministries and conducted a statistical analysis to determine the range of uncertainty of their estimates.

The researchers also compared the strengths and weaknesses of surveillance-based and cartographic-based (relying on surveys) malaria incidence estimation methods, finding that although at present malaria [surveillance systems](#) currently miss at least 90% of cases, accurate surveillance has both temporal and spatial advantages over population survey data and should therefore be the ultimate goal for malaria control programmes.

The authors say: "To strengthen surveillance requires a critical evaluation of all the types of error we have identified in this paper. Only

with investigations of this kind can we confidently assess malaria burden and trends, and the return on investments in control programs."

In an accompanying Perspective, Ivo Mueller, Laurence Slutsker, and Marcel Tanner (uninvolved in the research study) highlight the importance of using complementary methods to estimate the burden of malaria and call for a renewed focus on efficient malaria surveillance. These authors say: "[Both methods used in the research article] have their unique strengths and weaknesses, and rather than seeing them as competing approaches, they should be synergistically combined."

They continue: "Ultimately, good quality and up-to-date information on malaria burden will become even more important for both monitoring and operational purposes as [malaria control](#) activities are further intensified."

More information: Cibulskis RE, Aregawi M, Williams R, Otten M, Dye C (2011) Worldwide Incidence of Malaria in 2009: Estimates, Time Trends, and a Critique of Methods. *PLoS Med* 8(12): e1001142. [doi:10.1371/journal.pmed.1001142](https://doi.org/10.1371/journal.pmed.1001142)

Mueller I, Slutsker L, Tanner M (2011) Estimating the Burden of Malaria: The Need for Improved Surveillance. *PLoS Med* 8(12): e1001144. [doi:10.1371/journal.pmed.1001144](https://doi.org/10.1371/journal.pmed.1001144)

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