

[Back to previous page](#)

New study doubles estimate of global malaria deaths

By [David Brown](#), Published: February 2

The number of people who die annually of malaria is roughly double the current estimate, with a huge overlooked death toll in adults who, according to conventional teaching, rarely die of the tropical disease. That’s the conclusion of a new study that, if widely accepted, could affect billions of dollars of charitable spending and foreign aid in the developing world. The new estimate is likely to spur increased competition for global health spending, which has stalled in the economic downturn.

The report, [published in the Lancet](#), describes malaria as a problem not only far bigger than thought but also declining rapidly because of better prevention and treatment.

According to the new calculations, global malaria deaths peaked in 2004 at 1.81 million but by 2010 had fallen to 1.24 million. That year, 524,000 people age 5 or older died of the disease — about 42 percent of the global toll.

In contrast, the World Health Organization estimates that 655,000 died of malaria in 2010, with 91,000 — 14 percent — being people age 5 and older. The WHO agrees that malaria deaths peaked in 2004.

“In the global health landscape, being twice as big as people thought is pretty important,” said Christopher J. L. Murray, who headed a team at the Institute for Health Metrics and Evaluation at the University of Washington that prepared the new estimate. The team also found that malaria accounts for a higher fraction of African children’s deaths — 24 percent — than previously thought.

He predicted the findings will be controversial.

Malaria was eliminated from the United States in 1951 and from Europe in 2009. More than 90 percent of deaths from the infection now occur in sub-Saharan Africa, where children are at highest risk.

The disease, transmitted by mosquitoes, has become an object of attention and spending by rich countries in the last decade. Financial assistance to low-income countries increased from \$150 million in 2000 to \$2 billion in 2011.

Most of the money comes through the Global Fund to Fight AIDS, Tuberculosis and Malaria, which has disbursed \$15.1 billion to fight those three diseases over the past 10 years. Malaria accounts for 30 percent of the fund’s grants. By the end of last year, Global Fund money had bought and distributed 235 million insecticide-treated mosquito nets and more than 200 million doses of curative drugs containing artemisinin, a compound first used in Chinese herbal medicine that has transformed malaria therapy.

The largest donor country is the United States, whose President’s Malaria Initiative, started by President George W. Bush, spent \$500 million in 2010 on malaria control.

The U.S. government’s spending on global health has been flat at \$8.9 billion a year for two fiscal years. In November, the Global Fund, which is headquartered in Geneva, said it would not make any new grants for two years.

Asked if the higher death toll would change Global Fund spending, the organization’s director of strategy, Rifat Atun, said: “That’s a billion-dollar question, literally.” He said it seems clear that adults need to be targeted more in malaria programs.

“There are implications for productivity and effects on economic activity from illness in these individuals. There are impacts beyond just health,” Atun said.

The head of the advocacy organization Malaria No More, David C. Bowen, wouldn’t speculate about policy implications of the higher estimates.

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“I don’t think the answer is to rob Peter to pay Paul,” he said. “What the world has been doing is working and desperately needs to continue.”

The coordinator of strategy for the WHO’s global malaria program, Richard Cibulskis, played down the conflict between Murray’s data and the WHO’s. There is a large margin of error in the estimates, and in most cases, they fall within each others’ upper and lower bounds.

“I wouldn’t say they are that different,” he said.

The one area where there is complete incompatibility is deaths in Africans age 5 and older, where Murray’s estimate is eight times higher than the WHO’s. The University of Washington team used many sources to get its number: 435,000 deaths in 2010. The sources included not just vital statistics registries, “verbal autopsy” reports of people who died of fever and academic studies, but also mortality predictions based on treatment practices, population movement and parasite transmission rates.

One of the skeptics of such a high malaria death rate in adults is Kevin Marsh, a physician with the KEMRI-Wellcome Trust research program in Kenya who has spent 22 years in Africa. He said he and others have repeatedly investigated reports of hospitals with high malaria mortality and none have proved true.

“I’m not saying it’s impossible, but with all we know, it’s highly unlikely,” he said.

In his experience, he said, severe illness in adults is often incorrectly attributed to malaria because it’s an illness that practitioners are familiar with and know how to treat.

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