

Study reveals that preventing malaria in travelers to West Africa reduces health costs

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Not only do U.S. travelers to West Africa who consult health providers before they leave and take prescribed preventive medications substantially reduce their risk of contracting malaria, they also reduce costs to their health insurance providers and, in most cases, to themselves. In a report that has been published online in *Clinical Infectious Disease*, researchers from the U.S. Centers for Disease Control and Prevention (CDC) and from Massachusetts General Hospital (MGH) report finding that the costs associated with contracting malaria—to both third-party payers and to individual travelers—outweigh the costs of preventive care.

"This analysis confirmed that pretravel health consultations for travelers going to areas where the risk of malaria is equivalent to that of West Africa result in cost-savings," says Edward Ryan, MD, director of the Tropical and Geographic Medicine Center in the MGH Division of Infectious Diseases, a co-author of the report and senior advisor for the research team. "We know from other studies that [preventive measures](#) reduce the risk of contracting malaria, so the question we were looking at was whether [preventive care](#) for travelers saves money. The answer to the question is a resounding yes for health care insurers and carriers and, in many cases, for travelers themselves."

As part of its mission to prevent and track diseases in the U.S. and around the world, the CDC established the Global Travel Epidemiology Network (GTEN), a national network of travel clinics that collects data from individuals planning to travel internationally. Coordinated from the

MGH Division of Infectious Diseases, GTEN now includes 26 clinical sites, 18 of which provided data for the current study. Although the CDC recommends that all [international travelers](#) consult with a health provider before their departure, most do not for reasons that can include lack of awareness or concern about health risks and the fact that pretravel appointments, vaccinations and preventive medications often are not covered by health insurance.

Since malaria prevention would be a major concern for travelers to areas of the world where the mosquito-borne illness is common, the current study used prevention of malaria in travelers to West Africa as a test case to examine the impact of pretravel consultation on health care expenditures. The research team compiled data collected in GTEN clinics from about 1,000 travelers going to countries in West Africa in 2009 and 2010—including how long they were traveling, the purpose of their trip and what anti-malarial drugs were prescribed.

This data was used by the CDC researchers—led by Kenji Adachi, PhD, and Margaret S. Coleman, PhD—to construct the economic model analyzing the costs and benefits of the pretravel consultation. For travelers, preventive costs included any co-pays for the appointment, time off from work and costs of prescribed medication. These were compared—from perspectives of both travelers and coverage providers—with the costs that would be incurred if a traveler contracted malaria, which usually include hospitalization, sometimes in intensive care.

Depending on factors such as the length of a trip—which affects both the risk of contracting malaria and the costs of preventive medication—and the costs and effectiveness of the prescribed drugs, the model revealed that, while the costs to payers for preventive services ranged from \$161 to \$208, the average costs to treat a case of malaria would be more than \$25,000. Overall the analysis found that covering

preventive services could save payers from \$14 to \$371 per patient, with greater savings associated with longer visits to malaria-prone areas. For individual travelers, while out-of-pocket costs for prevention averaged around \$45, contracting malaria would cost an average of nearly \$3,400. Travelers staying less than 9 days, whose risk of contracting malaria would be considered low, would have a net cost of around \$20, but those staying a month or longer would save an average of \$32.

Ryan, a professor of Medicine at Harvard Medical School, explains, "We focused this analysis on one illness, malaria, but pre-travel medical care also involves trying to prevent many other illnesses associated with travel. Our analysis suggests that, not only does it make good medical sense for travelers to check in with their [health care](#) provider before traveling, it also makes solid economic sense. In this era of trying to maximize the utility of every [health](#)-care dollar, studies such as this will play a critical role."

Provided by Massachusetts General Hospital

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