CDC and the U.S. President's Malaria Initiative

Photo courtesy of BK Kapella

The U.S. President's Malaria Initiative

The U.S. President's Malaria Initiative (PMI) is a U.S. Government initiative established in 2005 to sharply decrease malaria deaths by scaling up proven interventions. PMI is an interagency initiative led by the U.S. Agency for International Development (USAID) and implemented together with the U.S. Centers for Disease Control and Prevention (CDC). PMI works in 19 sub-Saharan Africa countries, where malaria exacts its greatest human toll, and the Greater Mekong Subregion, where resistance to the most effective malaria treatment drugs has already appeared.

In each PMI country/region, two PMI resident advisors (one each from CDC and USAID), supported by other in-country staff and teams at CDC and USAID headquarters, work with host country governments to support implementation of national malaria control program (NMCP) plans. PMI teams develop annual malaria operational plans; participate in national malaria partner coordination mechanisms; and assist in the design, implementation, monitoring, and evaluation of program activities.

Because of PMI and its global partners, more people than ever have access to life-saving malaria interventions. The World Health Organization (WHO) 2015 *World Malaria Report* documents that global intervention scale-up was associated with more than 6.8 million lives saved from 2000 through 2015.

CDC's Major Contributions

For more than 60 years, CDC has provided scientific leadership in public health efforts to fight malaria, increasing global capacity to prevent death and illness from malaria. CDC helped develop and evaluate four key global malaria interventions: long-lasting insecticide-treated nets (ITNs), rapid tests to diagnose malaria and artemisinin-based combination therapies to treat malaria patients; intermittent preventive treatment for pregnant women; and indoor residual house spraying (IRS)—all recommended by WHO and supported by PMI. With PMI, CDC's expertise in strategic science focuses on making sure these interventions remain effective and continue to save lives.

CDC continues its long history of collaboration with NMCPs, helping build their technical leadership and capacity to plan and implement effective prevention and control measures.

CDC's Congressional Mandate in Support of PMI: Strategic Information

CDC has been directed by the U.S. Congress to advise the U.S. Global Malaria Coordinator and play a leading role in the implementation of monitoring, surveillance, and evaluation activities for malaria. To ensure that limited resources are used wisely, CDC helps countries and the U.S. Government target appropriate malaria prevention and treatment efforts and understand the impact of PMI efforts.

Evaluating Impact

CDC provides scientific expertise in evaluating the health impacts of malaria control interventions in PMI-supported countries in sub-Saharan Africa, in collaboration with national and global partners. Impact evaluations have been completed in seven PMI countries and are underway in an additional six. These impact evaluations have linked improvements in child survival and reductions in malaria transmission to the expansion of malaria control activities—findings that have been mirrored in national household surveys. For example, in Malawi and Rwanda, deaths in children under the age of 5 years have declined by 30% and 67%, respectively, over the last decade. PMI resident advisors based in countries where malaria is endemic play a critical role in these evaluations and help train host country counterparts to become leaders in research and evaluation science. CDC scientists and program managers also assist NMCPs and partners in disseminating evaluation findings at national and international policy and scientific meetings.

Center for Global Health
Division of Parasitic Diseases and Malaria

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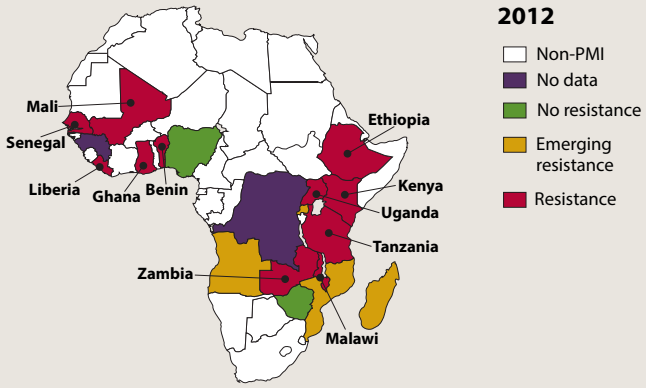
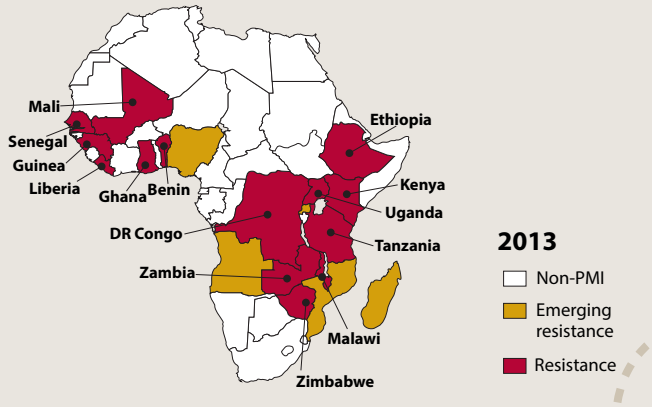
Pyrethroid Resistance in PMI Countries

PMI monitors mosquitoes' resistance to insecticides, which ITNs and IRS rely on for preventing malaria transmission. When resistance to one class of insecticide is detected, changing to a different insecticide is required for IRS to remain effective.





Insecticide-treated nets in the field are examined for holes in a PMI operational research study led by CDC.

Monitoring Interventions through Surveillance

CDC's malaria epidemiologists, entomologists, laboratorians, and public health advisors provide internationally recognized expertise to help ensure that PMI-funded interventions continue to provide protection against malaria and save lives. For example, mosquitoes that transmit malaria may develop resistance to the insecticides used on bed nets or applied to walls of households. Likewise, malaria parasites can gradually develop resistance to antimalarial drugs. CDC supports NMCP partners to remain vigilant against emerging insecticide and anti-malarial drug resistance.

Surveillance for confirmed malaria cases, another cornerstone of CDC expertise, is key. Improved systems to capture, transmit, analyze, and disseminate malaria surveillance data in a timely manner will help hone strategic approaches as malaria continues to decline. This combination of monitoring (vector – parasite – human) in each PMI country provides necessary data to trigger programmatic decisions regarding insecticide use, malaria treatment policy, and optimal deployment of program resources so that program activities can be continuously adjusted for maximum effectiveness.

Optimizing Interventions via Operational Research

Following the broad scale-up of proven public health interventions, questions are often raised about how to maximize impact of a particular intervention by making it even more effective, more acceptable, more accessible, or more economical. CDC experts identify operational research opportunities within PMI countries and implement studies to strengthen and refine malaria control strategies. For example, when variation in physical durability of ITNs was first observed several years ago, CDC initiated efforts to study net longevity in eight PMI countries. Results of these studies helped identify weaknesses in some net brands, and in one case a manufacturer modified its net construction to improve the longevity of ITNs procured by PMI. They have also played a key role in helping WHO formulate recommendations for net monitoring. CDC's scientific leadership and global network of collaborators help partner countries to conceive, implement, and evaluate malaria control programs—and to produce results that can be used to guide the allocation of PMI resources.

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