Confronting the Malaria Threat

Excerpts from Testimony by Roger Bate, Ph.D.
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before the House Subcommittee on Africa on "Malaria and TB in Africa"

Ninety years ago, a Congressional Committee held a hearing on malaria, but its focus was slightly different. It concentrated on combating malaria in the United States.

As late as 1940 at least a million people in the United States experienced the body shaking chills, fevers, and sweats of malaria. However, using federal and private funding, the Rockefeller Foundation, the Tennessee Valley Authority, and the United States Public Health Service enacted comprehensive programs to counter the conditions under which malaria flourished in the U.S. Through a combination of treating infected people with effective drugs, larviciding areas where mosquitoes bred, and spraying the outdoors and the interiors of houses with the insecticide DDT, these groups managed to eradicate malaria from the United States by the early 1950s.

While we are now malaria-free in the United States, other areas of the world are not so lucky. Malaria is the biggest global killer of children. Sub-Saharan Africa in particular bears the brunt of the malaria death toll of one to two million people a year, 90 percent of whom are pregnant women or children under the age of five. As Dr. Wen Kilama, Chairman of the Malaria Foundation International puts it, "The malaria epidemic is like loading up seven Boeing 747 airliners each day, then deliberately crashing them into Mt. Kilimanjaro."

Malaria not only slaughters African children. It also perpetuates the cycle of poverty, much as malaria kept the American South poor until its eradication. Malaria probably costs Africa 1.2 percent of its GDP, or about $12 billion, every year (the equivalent for the U.S. would be about $135 billion a year).

According to the World Health Organization (WHO), malaria rates have increased about 10 percent in the past few years—at a time when the 12-year Roll Back Malaria initiative to halve malaria rates worldwide is approaching its halfway point. The initiative—whose main funder is the U.S—is failing.

CDC/Jim Gathany

Fortunately, some African countries are enacting comprehensive malaria control programs much like those that helped eradicate malaria from the United States. These successful programs are grounded in the idea that effective malaria control employs every tool that science has provided.

South Africa has had such a program for over 50 years. South Africa depends upon a combination of low-level, controlled indoor insecticide use and prompt treatment of malaria cases to keep malaria incidence low (bed nets and reducing mosquito breeding sources are also employed in a limited way).

This insecticide use is vastly different from the widespread spraying from the backs of trucks or agricultural spraying from aircraft that we saw in the 1950s and 1960s. Indoor residual spraying (IRS) involves the application of a small amount of insecticide on the interior walls and under the eaves of a house.

In 1996, South Africa's Department of Health decided to replace the insecticide it had used for 50 years, DDT, with synthetic pyrethroid insecticides. However, largely because agriculture uses synthetic pyrethroid insecticides, insecticide resistance soon became a problem. What followed was one of the worst malaria epidemics in the country's history. Malaria cases rose from around 6000 in 1995 to over 60,000 in 2000.

Led by the South African Government, negotiators for the Stockholm Convention on Persistent Organic Pollutants—also known as the POPs treaty—agreed in 2000 that DDT could still be used for disease control. South Africa reintroduced DDT to malaria control in KwaZulu Natal Province, the province worst hit by the epidemic. In 2001, South Africa introduced a new anti-malaria drug, Coartem, an artemisinin-based combination therapy, to treat malaria patients. The combination of insecticides and drugs caused malaria

cases to fall by almost 80 percent by the end of 2001.

In the early 1980s, Zambia, one of the poorest countries in Africa, discontinued its insecticide spraying program, due largely to financial constraints. As a result, the incidence of malaria cases nearly tripled, from approximately 120/1000 population in the late 1970s to over 330/1000 in the late 1990s.

However, in 2000, a privately funded malaria control program in the Zambian Copperbelt began using DDT. It protects a population of approximately 360,000 at a cost of $6 per household (in a region with approximately 11 residents per house). After just one spraying season, malaria cases declined by 50 percent. Today, case rates are down 80 percent since the inception of the program, with mortality rates reduced even further since the introduction of newer and better drugs. Zambia has now implemented DDT and pyrethroid IRS programs in other parts of the country with equally good results.

Inexplicably, most international aid organizations resolutely refuse to fund comprehensive malaria control programs like those in South Africa and Zambia. Responding to pressure from malaria specialists and critical media coverage of its previous funding allocation, The Global Fund to Fight HIV/AIDS, Malaria, and Tuberculosis is the only international public donor to provide even marginal support for DDT and effective drugs to combat malaria.

I am sad to say that one offender is the U.S. Agency for International Development (USAID). Not only does USAID resist funding some of the most effective interventions, but it wields its great influence throughout the international public health community to discourage support of these interventions by the Global Fund, the United Nations, and by individual country malaria programs who know that USAID is their main donor.

Despite the obvious benefits of comprehensive malaria control programs, by its own admission, "USAID typically does not purchase drugs or medicines other than in exceptional or emergency circumstances for any of our programs" and "IRS is not a major focus of our programs."

In 2003, USAID received a Congressional allocation of $65 million dollars. As USAID's money does not go to the purchase of antimalarial drugs or to funding indoor spraying, one would hope that some goes to the purchase and distribution of bed nets. Some does, about $ 4.2 million of it, but USAID's net distribution program often flies into the face of economic realities in African countries by charging for nets. Most people in Africa cannot afford to purchase bed nets, even at cost. Thus most countries in Africa try to heavily subsidize the purchase of the nets or distribute them for free.

Still, this is only $4.2 million out of $65 million. Of that, USAID asserts that it spends 28 percent on the prevention of infection. $4.2 million is a bit short of 28 percent of $65 million—so where does the rest of the money go? It goes to local country contractors, presumably for education, distribution, and capacity building. When Africa Fighting Malaria asked how the contractors spend the money, USAID headquarters said they did not have access to that information. When asked how that information could be obtained, USAID did not even bother to reply. On September 14, Sens. Judd Gregg (R.-N.H.) and Russell Feingold (D-Wis.) asked the General Accounting Office to investigate USAID's malaria program, since transparency is so low.

Congress needs to spend money on combating malaria in Africa, but it also needs to assure that that money is being effectively utilized. As sufficiently compelling as the humanitarian reasons are, malaria in Africa also affects the United States' national interests.

First, as U.S. Marines' experience a year ago in Liberia attests (22 percent contracted malaria), U.S. troops are at a distinct disadvantage when entering a combat zone that is also a malarial area.

Second, like AIDS, with which malaria is often found in deadly tandem, malaria is a destabilizing disease. By sapping the strength of adults, by compromising the educational development of school-aged children, and by killing young children, malaria severely retards the economic development of African countries, creating poverty and despair in its wake, and countries beset by poverty and despair are more prone to political instability than those that are not.

Finally, malaria cases in the U.S. have primarily been imported in recent decades, but last year, an outbreak in Florida could not be traced to any traveler. This disturbing incident suggests that the U.S. could be on its way to welcoming this deadly disease back to its homeland.

Mosquito-borne disease will continue to threaten the United States. The U.S. simply cannot close its borders to all international trade, travel, and immigration and it is through such routes that new vectors and new diseases, such as West Nile Virus, have made their way here, and it is the way that old diseases, such as malaria, will re-establish themselves here.

The best way to prevent malaria from threatening U.S. interests both at home and abroad is to combat malaria where it is found by helping to fund effective, comprehensive malarial control programs.