

By Harald Nusser

Ending an epidemic is a marathon undertaking, and in the case of malaria, we are nearing the finish line. But we will need to keep up the momentum.

Over the past few decades, governments, nongovernmental organizations, and the private sector have broken new ground in the science of treating malaria, and have channeled extraordinary resources toward the cause. The investments have paid off: the global malaria mortality rate fell by 60% between 2000 and 2015.

Still, mounting challenges such as drug and insecticide resistance threaten to reverse the progress we have made. For two consecutive years now, malaria deaths have risen, while funding has flatlined. This year's World Malaria Day (April 25) should thus spur a redoubling of our efforts. Eradicating malaria will require new medical and health-policy solutions as well as stronger political will.

My company, Novartis, has been active in Africa for the past two decades, providing antimalarials and working with governments to support health-care systems. During that time, we have learned that we need more first-hand information from malaria experts operating on the front lines of the fight.

To that end, we commissioned the study *Malaria Futures for Africa*, co-chaired by Richard Kamwi, ambassador of the intergovernmental organization Eliminate 8, and Bob Snow of the KEMRI-Wellcome Trust program and the University of Oxford. The study compiles advice from ministers of health, heads of national malaria control programs, academics, and community leaders across 14 African countries, all of whom offer critical insights about important challenges and opportunities in the fight against the disease.

One of the study's clearest takeaways is that we need to arm ourselves against the rising threat of drug and insecticide resistance by investing in research and development for next-generation antimalarial treatments. Malaria-bearing mosquitoes have developed a resistance to commonly used insecticides in 61 countries around the world. And in Southeast Asia, some strains of the malaria parasite itself have begun to develop a resistance to artemisinin, the basic component in standard treatments.

Without a concerted response from the global health community, drug-resistant strains of malaria could spread to Africa and cause more than 100,000 new deaths

per year. To avert this outcome, we must invest more in innovative public-private partnerships like GAVI, the Medicines for Malaria Venture, and the Wellcome Trust, all of which are working to develop new prevention and treatment tools.

Another key insight from the study is that we need to make better use of the tools we already have. A child dies from malaria every two minutes, on average, yet only one in five infected children receives the appropriate treatment. Nearly a decade ago, Novartis helped develop the gold standard in pediatric antimalarial medicine, and we have donated more than 350 million doses since 2009. But the persistence of deaths from malaria shows that treatment is not reaching every child in need. Clearly, we need to expand access to medicine, not just through ad hoc measures, but by building the capacity of health-care systems.

That is why the next chapter of global health development must focus on improving the delivery of care. Since 2000, the global health community has saved millions of lives by responding to specific epidemics like HIV, tuberculosis, and malaria. But these efforts must now be fully integrated into national health systems to ensure that all patients are consistently receiving high-quality care.

Progress will require eliminating shortages of doctors and nurses, adopting electronic recordkeeping, and strengthening the availability and quality of primary care. These measures would help not just in the fight against infectious diseases, but also in the ongoing effort to treat chronic diseases, which are imposing an additional disease burden on many developing countries.

Needless to say, improving health-care systems will require more resources and firm leadership, particularly in the countries most affected by malaria. And, as almost all of the study participants made clear, we need to move beyond traditional donor-funding mechanisms to tap into domestic resources.

Ghana is one of the countries that is leading the way on this front. In response to dwindling donor funds, the Ghanaian government brought the country's private-sector leaders together to launch the Ghana Malaria Foundation, which currently is working to fill urgent funding gaps, but will eventually help lead a sustainable, domestic effort to eliminate malaria from the country.

This is a challenging moment in the fight against malaria. But it's also a moment of opportunity. For its part, Novartis recently announced that it will invest more than \$100 million in antimalarial R&D over the next five years, to help contain emerging

resistant strains of the disease. Our focus now is on completing clinical trials for two promising new antimalarial drug candidates. While these therapies are being developed, we are also working on a strategy to ensure that patients in malaria-endemic countries can afford them, and to improve the effectiveness of our response by identifying areas where malaria takes the greatest toll.

The fight against malaria has been a multi-decade marathon. Through the United Nations Sustainable Development Goals, the world has formally committed to ending the malaria epidemic by 2030. That objective is within sight, but we cannot count on our current approach to carry us across the finish line.

Rather, we need to listen to those on the front lines and heed their calls for a renewed commitment to ending malaria. By investing in next-generation tools and building sustainable health-care systems, we can consign this disease to the history books once and for all.

Harald Nusser is Head of Novartis Social Business.

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