Investing in malaria research in challenging financial times

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The theme of the upcoming 6th MIM Pan-African Malaria Conference, ‘Moving towards malaria elimination: Investing in research and control,’ is full of challenges and, if the sixth gathering is like the fifth, participants will be excited by the answers. Although the theme of the conference has two components, research and control, the fact remains that research is the overwhelming member of the pair as we move into somewhat uncharted waters. The reality is that control in an era of pre-elimination and elimination also requires the variously termed operational, intervention, applied or implementation research to determine practical methods that work.

Research, of course, does not just happen. This year’s World Malaria Day (WMD) theme, in concert with the theme of the MIM conference, reminds us of the precarious financial position of the progress in all aspects of malaria programing and called on the malaria community to ‘Invest in the Future: Defeat Malaria’. The WMD partners reminded us that, ‘These great strides are now under threat; the focus on malaria control is beginning to fade and has led to insufficient financial support. With an annual shortage of US$3.6 billion, particularly across Africa where high-burden countries are facing critical funding gaps, all the impressive gains in malaria control over the past decade are threatening to grind to a halt and in some cases reverse.’

Moving into the pre-elimination phase of malaria control requires strong surveillance systems. This includes both the tools needed to detect the disease under circumstances of hopefully diminishing prevalence, and also appropriate health systems that can operate and sustain implementation of appropriate surveillance. The WHO’s Global Malaria Program is gearing up with its Test, Treat and Track (or 3T) effort. WHO describes a malaria surveillance system with the following parts: ‘the tools, procedures, people and structures that generate information on malaria cases and deaths, which can be used for planning, monitoring and evaluating malaria control programmes’. Continued research is needed to ensure that each of these four components is able to adapt to changing disease conditions as we approach elimination.

Examples of such conditions are areas of unstable malaria transmission, such as recently documented in central Sudan. Although none of the women who had recently delivered had positive blood slides for malaria, a large number tested positive using PCR. A positive PCR test for malaria was associated with low birth weight. The challenge of continued malaria infections engender requires major research efforts as traditional control strategies (case management, indoor residual spraying, long-lasting insecticide-treated nets and intermittent preventive treatment) bring down malaria prevalence to low and seemingly undetectable levels.

Malaria surveillance planning in the Solomon Islands also emphasizes the challenges of tracking the disease when many cases are asymptomatic. Active detection based on perceived symptoms does not work well under such circumstances when fevers no longer signify malaria. While the researchers found that PCR prevalence was five times higher than that determined by microscopy, they also recognized that mass screening is costly and inconvenient.

Whatever surveillance system evolves in low and/or unstable transmission areas, it needs to account for public perceptions. The study in the Solomon Islands also pointed out the challenges of such perceptions where people could recall what malaria was like in former times, but discounted its seriousness in the present. Some individuals who had never experienced malaria were identified: a part of the population that will grow over time.

Swaziland is another setting where the malaria burden has been reduced to negligible levels and a surveillance system has been put in place where many ‘confirmed malaria cases were investigated at household level to identify the source of infection, using the strengthened surveillance system’. Swaziland recognizes that, ‘new approaches are required to provide case-based risk maps to countries seeking to identify remaining hotspots of transmission while managing the risk of transmission from imported cases,’ and has completed research on high risk mapping that accounts for settings with low resources.

Given the continued challenges of conflict and post-conflict areas in malaria endemic countries, research is also needed in order to meet the malaria service needs of displaced people and refugees in whom malaria should not be ignored if elimination is to succeed. An example is found in this current issue of International Health (p. 211) where Draebel and colleagues not only document the prevalence of malaria among pregnant women, but factors that dispose them to accepting malaria interventions like long-lasting insecticide-treated nets.

We also need to constantly test and re-test malaria service delivery mechanisms to fine tune them to evolving malaria conditions. Also in this issue of International Health (p. 196), Siekmans and colleagues document that a community case management of malaria program delivered by community health workers continues to be an important strategy of reaching the poor.

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We will still face the need to scale up and sustain widespread control measures in high burden countries like Nigeria and the Democratic Republic of the Congo, but increasingly we will see more countries move toward low levels of transmission and potential pre-elimination status, whether in the Sahel of Africa, southern African nations like Namibia and Swaziland, or in island settings like the Solomon Islands and Zanzibar. We need to avoid the situation that when malaria is out of sight and out of mind, it is also out of funds. Continued investment in basic and operations research around elimination issues is an urgent need.

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References