

Man vs. Mosquito

"With malaria, there is no silver bullet. We need a diversity of interventions including some designed for specific local conditions." –Tony Kiszewski, Asst. Prof. of Public Health Entomology, Bentley University

When he's not teaching global health at Bentley, epidemiologist Tony Kiszewski spends time in Africa researching appropriate, sustainable malaria interventions. One thing he's sure of: there is no one-size-fits-all solution to this complex disease that kills at least a million people every year.

Why is it so difficult to eradicate malaria? In every place you find malaria, you find radically different conditions. The mosquitoes are different, people's living habits are different, the ecology is different. Malaria is complex at every level, beginning with the parasite itself. There is no silver bullet.

Are bed nets working? Insecticide-treated bed nets work well in many environments, but they aren't distributed widely enough. And in some places they don't work very well at all. Mosquitoes are adapting to insecticides by biting outside, or earlier in the evening, so bed nets won't always protect people. Mosquitoes are also developing resistance. Yet bed nets are still promoted as the primary intervention.

Are there alternatives? There are many low-tech interventions that can be implemented locally without a lot of outside resources. For instance, studies in West Africa have shown that simply putting a house up on stilts will cut the level of mosquito biting in half. I'm currently working with local people in specific countries to get small projects going.

For example? In western Ethiopia, we're looking at farming practices that are increasing malaria risk by creating a favorable habitat for the *Anopheles* mosquito that transmits the disease. Shifting the location of maize fields or planting border crops are low-tech approaches that could make a big difference.

You advocate "bottom up" approaches. Why? A common trap people fall into is assuming you can design one approach and distribute it universally. That won't work for malaria. In addition to the standard suite of global interventions, we should be listening to local experts and supporting local approaches that are appropriate, affordable and sustainable.

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