

Winning the fight against malaria

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The United Nations' special envoy for malaria, Ray Chambers, discusses the ongoing battle against a disease that last year killed more than 400,000 people.

About 3.2 billion people, nearly half the world's population, are at risk of contracting malaria, according to the World Health Organization (WHO). WHO figures show that in 2015 there were about 214 million malaria cases globally and an estimated 438,000 related deaths. And those totals are dominated by sub-Saharan Africa, which reported 89 percent of total cases and 91 percent of deaths.

In February 2008, the secretary-general of the United Nations appointed Ray Chambers as the first special envoy for malaria. In the past 15 years, global awareness and funding for malaria have greatly increased, and UN figures show more than one billion mosquito nets have been distributed in sub-Saharan Africa, averting over 6.2 million malaria-related deaths, many of them of children. In the lead-in to World Malaria Day, on April 25, McKinsey's Raj Garg spoke with Chambers about the ongoing fight against malaria. An edited transcript of their conversation follows.

Interview transcript

McKinsey: You've played an instrumental role in the fight against malaria. What's the origin of your passion and interest in the area?

Ray Chambers: I've really been focused on helping children at risk for the last 30 years. I hadn't done any real work overseas until after September 11, 2001, a period when Colin Powell said the only way we could avoid terrorism is to level the playing field. And that's when I learned about the United Nations Millennium Development Goals.

Sometime later, I was working with [Earth Institute director] Jeffrey Sachs to develop a plan on how the world would be most likely to optimize the Millennium Development Goals. And we created the Millennium Villages, a project to address poverty in Africa. Jeff came back from a trip to Malawi with photos of children in a Millennium Village, and three were sleeping in a room. I said, "Aren't they cute?" And he said, "You don't understand. They're in malaria comas and they're likely to die."

I'll never get that image out of my mind's eye. I pictured my own three- and four-year-old grandchildren. And I proceeded to learn as much about malaria as possible. I learned that it was, for a time, the number-one killer of children in sub-Saharan Africa, and that it had been killing 1.2 million people a year, all from a mosquito bite. And I then learned that the insecticide-treated mosquito net, bed net, worked well because the anopheles mosquito only bites after nine o'clock at night, when children should be in bed. You can get three children under a mosquito net, in bed, and the net only costs less than \$10. Then, when the mosquito lands on the net, it dies because of the insecticide. And that disrupts the reproductive cycle. So I simply said, "Let's cover everybody who needs a net with a net," and, three weeks later, I found out that 800 million people needed a net.

McKinsey: What is your assessment of where the fight to control malaria is now?

Ray Chambers: Malaria is a unique challenge. The parasite is wily, and whatever worked as a medicine 20 years ago, chloroquine, is not effective with that parasite today. We're using artemisinin, which comes from the Chinese wormwood plant. We're starting to see resistance to that medicine by the parasite in the Mekong region.

And so we're rapidly working on developing new medicines to forestall the resistance. We have some promising drugs in the pipeline, led by the Medicines for Malaria Venture. We could get to a single-dose drug for malaria that could be both preventive as well as therapeutic. Right now, with artemisinin, it's usually two doses a day for three days.

On the medicine side, we're moving in the right direction. We're starting to see, as a result of having reduced morbidity, reduced mortality of children in Africa by over 70 percent. And we're seeing a decline in the incidence of malaria, which has resulted in, as President Kikwete of Tanzania said recently, "a greater percentage of attendance at work."

In Zanzibar, we've had zero deaths from malaria since 2011 due to the closely watched bed-net coverage, as well as the availability of diagnostics and proper medication. We're going to see malaria, morbidity, and mortality continue to decline, but with a strong caveat that we have to be so vigilant. If it upsurges somewhere, it can really get out of control, as we've seen in Sri Lanka and other places.

We announced, with Bill Gates, a plan last September to march toward full eradication of malaria. That plan contemplates a 25-year, comprehensive effort, and we're really grateful to Bill Gates for his willingness to play a leadership role in that quest.

McKinsey: You mentioned that there's a 70 percent reduction in Africa in terms of the malaria burden. How many lives do you think, over the ten years that you've been active in this fight, have been saved through the spread of bed nets and the use of medications and residual spraying?

Ray Chambers: WHO has estimated that it's more than six million, but that estimate was from nearly two years ago. Six million children's lives saved as a result of the partnership that came together to try and reduce as many deaths of children as quickly as possible from malaria. And I actually think the number is quite a bit higher because of the inaccurate way that deaths are calculated due to verbal autopsies.

If somebody has a fever and dies, we don't know if it's from malaria or from respiratory illness. And my sense is, because of inaccurate measuring tools and techniques, it's probably significantly more than that. And in my lifetime, there is nothing even close to that level of satisfaction that's come from being part of a partnership and a team that helped save the lives of so many children.

McKinsey: What are the biggest challenges in eradicating malaria?

Ray Chambers: I've really been focused on helping children at risk for the last 30 years. I hadn't done any real work overseas until after September 11, 2001, a period when Colin Powell said the only way we could avoid terrorism is to level the playing field. And that's when I learned about the United Nations Millennium Development Goals.

McKinsey: You've played an instrumental role in the fight against malaria. What's the origin of your passion and interest in the area?

Ray Chambers: I think there are many. The most near-term are the ones about which we have to stay vigilant. If the parasite develops resistance to the medicine, can we move quickly enough to replace that medicine? If the mosquito develops resistance to the insecticide on the nets, do we have enough alternative insecticides in the queue so that we don't miss a beat in keeping that coverage?

One of my great concerns is that, because we've covered over a billion people in sub-Saharan Africa with nets, those people who have been covered and protected by the nets for the last five or six years didn't have the chance to develop any type of immunity to malaria. So if they're not covered once their nets wear out, they're the most vulnerable people in Africa. That, in and of itself, in a particular area, could cause an upsurge. So the near-term concerns are great.

But then, longer term, we've theorized about how we could cover people with bed nets, have medicine available, and, starting with a village—at the lowest level—treat everybody. The hope would be that they're treated and there's nobody in the village with malaria in their system, and we keep them covered with a bed net and in Saran wrap. The average life of an anopheles mosquito is about 21 days, and if that mosquito, or those mosquitoes, can't bite somebody with the parasite and they can't bring it to somebody else, have we cleared a cycle, and can we then expect that that village would be malaria-free?

I understand that these mosquitoes travel a maximum distance of about two kilometers. So we'll always worry about mosquitoes coming in that picked up the parasite elsewhere, or people coming into the village that weren't wrapped up with bed nets and protected. But our best thinking is to use that core of an idea and to see if you can go from one village to two to four to eight, and then get into an entire region.

It's been done in some of the Polynesian islands with success. We're starting to see the southern African countries move toward eradication and elimination. But we haven't tested that at scale. And can that be done, or is it just a theory?

We're about to have the advantage of the new GlaxoSmithKline vaccine. Can that add an arrow to the quiver that could make the difference by vaccinating key people? And even if it's only one-third efficacious, that's significant in terms of adding to our arsenal of techniques. The one-dose medication could be very helpful if we pursue that strategy. My guess is that we'll try a number of strategies.

McKinsey: What's the total funding that might be required to do this?

Ray Chambers: It's difficult to say. We're hoping that prices continue to drop. When we started ten years ago, the bed nets were costing between \$8 and \$10 each. As a result of our forming the African Leaders Malaria Alliance, a de facto cooperative, a one-stop shop, we've been able to get the cost of nets down to under \$3 apiece.

Experience has shown that we have to replace the nets every three years because of wear and tear, even though the insecticide on many of the nets would last longer. Our partners are working on nets that could last six years.

We've heard numbers like \$3 billion to \$6 billion a year. I would hope that we would use efficiencies of scale in doing some of these other things that could reduce those costs. The decline in morbidity and mortality should reduce the cost as we move forward. And we're hoping that, within ten years, the need for donor governments to subsidize malaria interventions would decline by as much as 50 percent.

McKinsey: While there are obvious health and humanitarian reasons to motivate the fight against malaria, what are the reasons why businesses should be interested?

Ray Chambers: So many businesses have recognized the sub-Saharan continent of Africa as perhaps the area with the greatest upside investment return. I've heard people speak about investors having a chance at receiving a return of more than 20 percent per annum. And many people believe it's the African subcontinent that can produce that.

So as we've eliminated malaria deaths in some areas, reduced mortality and morbidity, attendance is higher at jobs, and companies are very concerned about their workers. And

they incur the healthcare costs and the turnover, and all those are being reduced at this time. So, day in and day out, companies who are desirous of investing in Africa because of unique natural resources or because other opportunities can present that high rate of return; completely concomitant with that is the need to reduce malaria.

McKinsey: What is the role that the private sector has played to date in the malaria fight? And what are some of the next steps that you would like to see the private sector take?

Ray Chambers: The private sector has been a significant part of the partnership that I talked about, and that's helped us get to this point and this level of progress. And it's a wide array of private-sector partners, including mining companies who have employed so many people in sub-Saharan Africa and needed to protect the employees and their families from illness from malaria.

We've seen a tremendous growth and partnership with the phone carriers. We've had a great partnership with McKinsey, starting out by helping us think through the best way to achieve the Millennium Development Goals, to setting up the strategy for malaria and for the road map to eradicate malaria. A number of new entries from the private sector will be important. We have great transportation needs—getting nets out to rural areas and getting medicines out to the different hospitals. Medical-record technology has made it easier to trace what's gone on with malaria in a village where, hopefully, we don't have to rely upon verbal autopsies. And I see technology continuing to play a role. We've used SMS in Senegal and Cameroon so a famous soccer player could send a message to parents at nine at night, asking if their children were sleeping under a bed net.

McKinsey: As you look back at the journey in the fight against malaria, what do you see as the key success factors? You've mentioned one of them: partnerships. And I'd love to hear a bit more about how partnerships have been specifically very important. But what other success factors may have been important as well?

Ray Chambers: Approaching malaria as we did, ten years ago, as a business, and recognizing that we had to get as many bed nets out and cover people and children and pregnant women. But then also to have the availability of diagnostic tools and medicine. And then to determine where they are best appreciated and most effectively used and at what times during the year—the rainy season?

Forming the African Leaders Malaria Alliance was a quantum leap forward. We have 49 heads of state that come together twice a year and we talk about the critical issues we need to achieve over the next six months until we meet again, and not have a small country like Benin have to pay a much higher rate or price for a bed net than a larger country like Nigeria.

And so I think applying those business tools: coming up with a marketing mantra like, "Ten dollars buys a bed net, saves a child's life," getting on programs like *American Idol*, getting the National Basketball Association and Major League Soccer to adopt Nothing But Nets.

And we've raised visibility through social media where, eight years ago, only 21 percent of Americans viewed malaria as a global health crisis. Now it's close to 60 percent.

Utilizing a lot of business techniques that we all learned over the years and coming together with one plan, about six years ago, helped us immensely. Getting the secretary general, in 2008, to call for universal coverage with bed nets by the end of 2010 was significant. And then in 2015, calling for near-zero deaths from malaria, by the end of 2040, gave us and the leaders in every country clear, tangible, and measurable targets to aspire to. [□](#)

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