

*Make Me Care About...*

Make Me Care About...Malaria

Podcast episode 10 transcript

**Jen Hatmaker:** You guys, do you know what the deadliest animal is on the planet? I didn't. I thought I might. From all the movies and TV shows, I was kind of thinking sharks. But that's not it. Turns out sharks kill about five people a year. However, mosquitoes are the deadliest animals on the planet, by a long shot. And obviously their biggest threat, malaria. My guest today teaches us all about malaria and also why there's reason for hope. All right, Dr. Okumu, you have one sentence to make me care about malaria.

**Fredros Okumu:** Malaria affects all of us because of its impact on global and economic growth, its impact on health, its impact of travel. And I think the best way to summarize it is that let's just say it's better to be alive than to be dead.

**Jen Hatmaker:** You can say that. Okay. I am in agreement with you that said, can you tell me more?

**Fredros Okumu:** First of all, this is a disease for which we have known how to treat it, we have known how to prevent it for more than 100 years. And yet, we still have every year more than 250 million cases, more than 600,000 deaths, most of them African children.

**Jen Hatmaker:** Okay. Wait, Fredros. So 600,000 people, most of them children. So by the numbers, that's almost 2,000 people a day. And so that's something like as if five planes full of people crashed every single day, mostly with children on board. Those numbers are actually really hard for me to even comprehend.

Created in partnership with the Bill & Melinda Gates Foundation, this is Make Me Care About. I'm Jen Hatmaker and with me is Dr. Fredros Okumu, director of Science at the Ifakara Health Institute in Tanzania. And today, Dr. Okumu is helping us care about malaria. Hi Fredros.

**Fredros Okumu:** Hey Jen.

**Jen Hatmaker:** So here is my first question for you. Can you expand a little bit on what the downstream effects of malaria are on first of all, both the affected countries and then of course the rest of the world?

**Fredros Okumu:** This is a disease for which we have the right medication, we have tools to prevent it. But because it's associated with poverty and then it's in very low income communities, mostly, it's kind of a very neglected disease. So there is something to do with dignity that is important there that I think we can talk about as well. But mostly it's the loss of lives. The second is just loss of work hours. So when you're sick, you are unable to go to work, children are unable to go to school. All this together compute towards the economic losses.

**Jen Hatmaker:** I think I know the answer to this, but are there particular groups that are disproportionately affected by malaria?

**Fredros Okumu:** There are many people who say that yes, indeed malaria is transmitted by mosquito and is caused by a parasite. But that is only partly true. Malaria is mostly a disease of low income housings, of communities that have the poorest access to good healthcare. And so I think that that's something that we cannot deal with simply by distributing bed nets. It is something that requires a much more holistic engagement in these communities.

**Jen Hatmaker:** That kind of brings us back to a word you mentioned a minute ago, which is dignity. And that has a place in this conversation, that yes, we can easily and specifically talk about the economic impact of malaria on countries in the world abroad, but there is a dignity question at its center that also bears our attention. Can you talk a little bit more about that,

**Fredros Okumu:** Jen, I think the best way to summarize this is that all lives have equal value. Now, when you have a situation where certain countries or certain communities have greater access to the same medication, to the same prevention, to finances that you need to do this than the low income families, then you start asking yourself, are they your children of a lesser God? And even when they speak, the voice that they project does not carry the same weight.

So I think that we have put ourselves in a situation where we can choose which diseases we want to prioritize on the basis of where those diseases are most prevalent. We can choose where to put resources on the basis of which demographic is most affected. And this is true at global scale, but it's also true in my own country. Because if we had a disease that was killing mostly adult people, there would be greater attention to that disease than a disease that is killing mostly children. Similarly, at a global level, you could say that if malaria was still in the north or in the West, that there would be greater resources, just as much as you've seen for COVID.

**Jen Hatmaker:** What are some of the tools that malaria endemic countries have at their disposal to fight this disease and how effective are they?

**Fredros Okumu:** The main tools for malaria control really are the following. Number one are insecticide treated bed nets. Those insecticides can kill mosquitoes that are attempts to bite you when you're sleeping. The second malaria intervention that we use is spraying of houses. A lot of the mosquitoes that transmit malaria like to bite people inside the house and then rest in the walls of those houses. And when they do that, they can be killed by this insecticide. Finally, we have some very good medications available around the world. If you get them at the right time, you get the right diagnosis, there is like 97% cure rate for this. So we need good diagnostics for that and then good treatments for this. So those three things are the main interventions that countries are using at the moment.

**Jen Hatmaker:** Let me ask you this. How is climate change affecting malaria?

**Fredros Okumu:** What we can say for a fact is that the changing environment, the changing climates, the changing land use patterns, are impacting the suitability of different locations to have malaria. The changing climate, for example, is making it easier for mosquitoes to survive in certain areas because they're warming up. If a previously forested area becomes inhabited because other people are escaping their impact of climate change, but they convert these environments that were otherwise previously non-malaria to become malaria.

Lastly, one of the most notorious malaria mosquitoes in Africa is what we call an anopheles gambiae. It likes to breed in small water bodies. So you can imagine if you have an extended period of drought, this water bodies might disappear and that makes life very difficult for this individual mosquito.

**Jen Hatmaker:** Okay. So we have learned some pretty sobering statistics actually about malaria. But I'm excited about the second half of this conversation. Stick around because we're going to get into what would happen if we just killed all the mosquitoes. Then of course, always my favorite section of the discussion, which is let's talk about solutions and they exist. So created in partnership with the Bill & Melinda Gates Foundation, this is Make Me Care About. I'm Jen Hatmaker.

Created in partnership with the Bill & Melinda Gates Foundation, this is Make Me Care About. I'm Jen Hatmaker, and with me today is Dr. Fredros Okumu, director of Science at the Ifakara Health Institute in Tanzania. And today Fredros is helping us care about malaria. Welcome back Fredros. Now, I'd like to hear you talk about this, explain it a little bit. Should we just kill all the mosquitoes that carry malaria using gene drive? Can you talk about that a little bit?

**Fredros Okumu:** Well, I see now you start to be interested in specific technologies and I-

**Jen Hatmaker:** I've done some homework.

**Fredros Okumu:** Yeah. Americanness is starting to show.

**Jen Hatmaker:** It leaks out. It does. It seeps out.

**Fredros Okumu:** So of course the genetic modification of mosquitoes is a potential option. The data that we have from laboratories suggests that yes, indeed it is possible to modify mosquitoes so that either they do not transmit malaria. It is also possible to modify these mosquitoes so that they no longer reproduce. We have to continue doing scientific research on this and say, could there be a negative impact that as yet we still do not know.

**Jen Hatmaker:** But at the bare minimum, it's promising. A lot of the folks listening in into this conversation, are American. And so as you have explained, while malaria may be primarily located in certain regions and countries, it is a global issue. How likely would you say it is for an average American traveling abroad to maybe encounter malaria?

**Fredros Okumu:** Well, an average American traveling to a malaria endemic country will very likely catch malaria. Okay, so let's just put that out there.

**Jen Hatmaker:** That's an easy answer. Let's just put that one right on the nose. The answer is highly likely.

**Fredros Okumu:** You come to my village and you are unprepared. Of course, these insects will bite you and he could potentially catch malaria. Now the question is what happens after that? Because often, American travelers are some of the most prepared travelers. They have taken their prophylaxis, they are wearing mosquito repellents, they're sleeping under bed nets. It means

therefore that the likelihood of them suffering a negative impacts from a malaria infection is very low. There are actually things you can do to prevent yourself from getting malaria. And if you get malaria, there are things you can do to prevent yourself from dying. And a typical American tourist has access these things when they visit my village. And so when you ask me this question, I start to think, how do we extend that same access that you have, Jen, when you come to my village, so that the 1,000 kids who live in my village have the same access?

**Jen Hatmaker:** I love that approach to look at a possible solution through the lens of tour tourism and global travel. I am curious, because you are a very smart and fancy global scientist. Let's say an American contracts malaria, we likely have all the resources we need to treat it. Can you walk me through the process of both a malaria diagnosis and then treatment or lack thereof, if you are in an under-resourced country and probably under the age of five?

**Fredros Okumu:** The health system weaknesses that we have, it's improved a lot in the last few years, but there's still a lot of weaknesses here. So if I get sick, if I get infected malaria, the first sign I usually see is I start to have fever. For the best results, I need to be able to go to a health facility as soon as possible, within the first day or at worst, two days. It's not guaranteed that everybody is within a reasonable access in all communities. In some communities, they are very lucky that maybe 80% are within 10 kilometers. But you don't have modes of transport, so you're talking about walking distance.

Assuming that you get access to that health facility. It could be the most peripheral dispensary. You are hoping that they have a diagnostic, that they can tell you what exactly you are sick of. Even if they give you the correct diagnostic that it is malaria, it is not guaranteed that they will have the medication for you. And finally, if you get the medication, it's not a single tablet, it's a series of tablets. If it's kids, it depends on the severity. Sometimes, you need to be kept in the hospital. Sometimes, you need [inaudible 00:12:16] injections if it's severe malaria case, and so on and so forth.

So overall, you see a situation where even if you had a medicine as we have today, that has like 97% cure rate, the actual effectiveness, given the health system weaknesses, goes sometime down to as low as 37, 40%.

**Jen Hatmaker:** If we decided as a global community enough's enough, we've got this one in hand, we know what to do and we have the money to do it, what would the impact be on both local and global economies?

**Fredros Okumu:** It's important for the global economy that we are safeguarding the livelihoods of the young people because this really is how we are going to sustain humanity going forward. There was a 40% chance that I would die on the first year, and that either myself or my mother would die on the day I was born. We survived that period, myself and many other colleagues. That investment is paying off now because I can stand up for my country, I can train a lot of other people. But this never gets computed by economists.

**Jen Hatmaker:** What good news for the world to have hundreds of thousands of children live into adulthood and unleash their very special brands of brilliance and creativity and innovation to the

world? That's reason enough. That is reason enough. Now, as we probably look at every possible angle to address malaria, let's figure it out by hook or by crook, in any which way we can do it. And so that brings me to my last question for you. Do you think that total malaria eradication is possible in our lifetime? And if so, what are we going to have to do to make it happen?

**Fredros Okumu:** The answer is yes. The question is, can we actually do it? I think we can. It'll take a lot of marshaling of resources. But I've seen greater things happen in this world. I've seen countries come together to do some fantastic... I mean HIV is a good example there. You've seen what has happened with the COVID-19 vaccinations. Together with the people of America and the people of my country, I'm sure we can raise the necessary resources and put in the energies and the brilliance of many young people around the world to make this happen.

**Jen Hatmaker:** So you guys, I will confess, I really frankly didn't think much about malaria unless and until I was traveling to a place where I had to take malaria pills. But Dr. Okumu actually reminded me today of something I hold dear, which is that at the end of the day, this is about dignity and respect and just basic care for one another. It's not okay that hundreds of thousands of children die every year from something we know how to prevent, right? This is not okay. We just need to decide it matters enough to protect them. All kids are our kids. So we can do this. We really, really can.

Make Me Care About is produced by Jesse Baker and Eric Nuzum of Magnificent Noise. Our production staff includes Sabrina Farhi, Hiwote Getaneh, Julia Natt, and Kristin Mueller. Our executive producer is Eric Nuzum, and I'm the host, Jen Hatmaker. To learn more about Dr. Fredros Okumu's work, please check out the show notes. And if you liked this episode, follow the show to hear more things to care about. Also, we'd be grateful if you could share this episode with a friend.