



## **DevelopmentAid Dialogues**

### **Episode 3: Mosquitoes, Money & a Warming World: Why a Malaria Vaccine Isn't Enough | Insights from Scott Filler**

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#### **Hisham Allam**

**Hello, everyone. Welcome to DevelopmentAid Dialogues, our new project exploring the heart of humanitarian aid's most critical topics. Today, we are joined by Dr. Scott Feller, head of Malaria at the Global Fund. He has devoted his life to stamping out this preventable treatable disease, which costs a child's life every two minutes. Dr. Scott, good morning.**

#### **Scott Filler**

Good morning, thank you so much for including me in this important discussion.

#### **Hisham Allam**

**We hear a lot about malaria in Africa, are there other areas where malaria is a significant problem?**

#### **Scott Filler**

So, malaria, has been a worldwide problem for hundreds and almost thousands of years. Currently, because of our effort's malaria has gotten more concentrated in Sub Saharan Africa, where currently now 90 percent of the burden still lies. But there are places of the world where malaria remains endemic outside of Sub-Saharan Africa, particularly in the Americas, in places in Asia. We are very volitionally trying to shrink the map you and bring less and less areas that have malaria in the world. Unfortunately, the burden of disease still is concentrated in Sub Saharan Africa.



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Hisham Allam

**With all the buzz around new malaria vaccines, are they a silver bullet or do we still need the old school methods?**

Scott Filler

The malaria vaccines are an incredibly exciting development. There's never in the history been a vaccine against parasitology diseases. So, we're very excited about the advent of the malaria vaccine. And in fact, two products have now been approved by our normative partner, the World Health Organization.

But unfortunately, the malaria vaccines are not a silver bullet. They are. Incredibly helpful for decreasing cases and deaths among kids in very high burden areas. But they are quite expensive. They have a fairly short duration of protection. And so what, when we look at the vaccine, we look at them as a complementary tool that needs to be layered on our other interventions.

Particularly really trying to interrupt contact between human and infectious mosquitoes and making sure that when people get sick, they have access to diagnosis and treatment. But when you add the vaccine on top of the other inventions, we see even better decreases in morbidity and mortality. So the vaccine is a fantastic addition to our toolkit, but it's not to replace our toolkit. We get the best results when the communities we support receive it full combination of interventions, bed nets, drugs the vaccines all put together the best way to fight malaria.

Hisham Allam

**I think you have benefited from COVID 19, right?**

Scott Filler

Well, that's a tough phrase. I would say no one benefited from COVID 19. I mean, COVID was a difficult moment for everyone in public health. Particularly as people were scared to access health services during the time of COVID. So, we're extremely worried that people wouldn't get diagnosis and treated for malaria. But on the other side, the major investments in COVID, particularly trying to understand what is happening with febrile illness in the periphery of health systems is exactly what we're trying to accomplish in malaria.

So, a lot of the investments in the surveillance, diagnosis and potentially treating COVID was very much to supporting the health system that could help treat malaria as well. So, while COVID was a major derailment of public health systems, the architecture to set up to help with COVID also can really truly help fight malaria. So, when we discuss future pandemics or addressing COVID in the future, we're trying to build a health system that's resilient and can help with all acute febrile illnesses.



## **DevelopmentAid Dialogues**

**Hisham Allam**

**Let's move forward to women who are the backbone of malaria preventing as health care workers. What are the biggest challenges they face and how can we better support these everyday heroes?**

**Scott Filler**

Well, that's fantastic. I mean, in the malaria space, one of the critical interventions is allowing people to get the Early diagnosis and treatment for malaria. Earlier in their clinical course so that they don't progress to severe disease, and if you treat them early, it will render them less infectious. A really good way of accessing communities is by extending the reach of the health system, particularly by health workers, and often those health workers are female. What we can do for those individuals is several things. We need to make sure they have the supplies in their back pocket so that when they address a sick child, they can address them appropriately. We need to make sure that they're appropriately trained so they have the skills in order to do that clinical service. We need to make sure they're supervised well so that they can course correct, address bottlenecks, and make sure to get better and better at their jobs.

I'm a firm believer, and it's a growing stance of institution, that health workers should be paid. That this time spent, while many of them are volunteers, can very creep into many things that they have to do in their lives. So appropriate remuneration is really important. And ultimately, if they're very good health workers, we should enable them to become supervisors and have career progression.

So, if we can enable these women to be supplied, trained, supervised, hopefully paid, career progression would be possible. It makes this cadre of health workers even stronger to bring the critical care to the people that need it.

**Hisham Allam**

**What are the specific barriers women face, like access to education or resources that hinder their effectiveness?**

**Scott Filler**

Yeah, so malaria is you know, a disease of poverty, which keep people in poverty, but it has a really a multi sectoral element to it. When women particularly don't have access to appropriate education when they don't live in environments of good housing and poor nutrition it all contributes to the downward spiral of poverty and malaria, we always say is a cause of poverty and a consequence of poverty and in society, women are the one who often bear the brunt of these challenges. So, if we can, in a multi sectoral way, address malaria, not only by preventing malaria itself by some of the causal elements of poverty, education, nutrition, housing. If we can put that together as a package, we truly hope that all boats will rise and that women living in these communities can live to more positive life experiences.



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Hisham Allam

**Correct me if I'm not right, 76 percent of malaria death are children under 5. That is heartbreaking. What are some creative, child friendly ways to protect them from this disease?**

Scott Filler

It is heartbreaking. The world's complacency around malaria for these poor communities and the children who don't have a voice in these communities is heartbreaking. And that is a big reason why the Global Fund exists, to bring hope to these areas and ensure that these children can live more productive lives. So, our main interventions for malaria control Also should be very targeted to kids. So, as I mentioned, interrupting contact between kids and infectious mosquitoes and the main way we do that is by trying to ensure kids sleep under long lasting insecticide treated nets. They can receive those nets as part of large, big national campaigns, or they can go to vaccination sites. the expanded program from immunizations and get a bed net. We want to make sure that these kids have access to diagnosis and treatment. This is the cornerstone of malaria care. So, when a child gets an acute febrile illness, there has to be an environment through a health worker, through a clinical post, potentially through the private sector, where they get early diagnosis and treatment. We can also use drugs in different ways other than treatment. We can give them presumptively to kids. This is done particularly in highly seasonal areas when we know a big wave of malaria is coming. We give the kids anti malaria to try to protect them. And now oh, we have the vaccine, so if we can add the vaccine in a cost-effective way to this, these children.

So, as you see, the best thing for a child is to get a combination of interventions. Try to not let them get bitten by mosquitoes, get them access to care, use drugs to prevent them from getting sick, get them vaccinated. When we can apply all those in combination, we can do the best we can to protect kids in these environments.

Hisham Allam

**And do you think that all these efforts are enough to combat malaria?**

Scott Filler

Well, ultimately, like I said, the end goal is not only to decrease children from dying from malaria, but is to eliminate malaria from countries. At the moment, malaria is proving to be quite stubborn, and we are trying to get rid of malaria with appropriate resources.

We're still having trouble pushing through for elimination and ultimately eradication, and I believe the deployment of the current tools. There's more we can achieve by deploying the tools more effectively and efficiently. But ultimately, it's going to be a combination of doing the Increasing the use of those tools and potentially some things coming down the pike in the future to try to help us drive to zero.



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**Hisham Allam**

**Impressive. What is some age-appropriate ways to educate the children about malaria prevention, empowering them to protect themselves and their families?**

**Scott Filler**

Education is incredibly important in the malaria fight because without community engagement, without the right actions at the lowest level, even the best laid plans won't be effective. And so, we talk about education and particularly young children, for instance, trying to make sure they sleep under a bed net or when they get sick to seek appropriate care are institutions pretty agnostic to information flows this information can come through large campaign style communications, it can occur through schools, it can occur through local religious establishment.

We really defer to the variability that we see within countries for them to kind use what they feel is the best communication tools. So, in a sense, they said we use multiple channels. It's radio, it's local religious leaders. It's community activism around a vaccine day, but we really try to tailor it and allow the local context come up with solutions that they think will be most beneficial because that we find that grassroots ability to communicate effectively. We found is the one that sticks the best.

**Hisham Allam**

**Which countries do you think that they have a high amount of population that are affected with malaria or suffering of malaria?**

**Scott Filler**

There are many countries suffering the untoward burden of malaria. As we discussed, they're particularly concentrated in Sub Saharan Africa. There are about 10 or 11 countries highlighted by the World Health Organization, which bear 80 percent of the burden. And those we refer to as the high burden to high impact countries. But unfortunately, there are a small subset of countries which maintained the majority of the burden, but the bulk of them remain in Sub Saharan Africa.

**Hisham Allam**

**Is it related to poverty, cleanliness, or environment?**

**Scott Filler**

Why is malaria concentrated in Sub Saharan Africa? It's a challenging question. We first discussed that malaria is both a cause and a consequence of poverty. And unfortunately, poverty does rest in Sub Saharan Africa for very complicated geopolitical history and reasons. Also, Africa does have one of the most successful malaria mosquitoes. They're very, the mosquitoes in Africa transmit malaria very efficiently. So, it's a combination of poverty, it's a combination of being in the



## DevelopmentAid Dialogues

tropics where it's just very warm and wet and conducive to malaria transmission, and they have the mosquitoes which are the best at transmitting malaria in the world.

You put those things together combined with some historical complacency around malaria leads to the difficult perfect storm of malaria still remaining in areas and a primary public health problem for many of our countries in sub-Saharan Africa.

**Hisham Allam**

**Building on that, how does the Global Fund support these vulnerable groups and could you share any success stories where your interventions have made a significant difference in their lives?**

**Scott Filler**

Like as we discussed malaria is both a cause and consequence of poverty. So, I think if you in areas as the global fund was really getting off the ground in the early two thousand, as we led to the major successes in malaria control. It took a really palpable visit to a community to see the difference when you line up in an outpatient department and see 200 kids with one health worker trying to do appropriate diagnosis and management of acute febrile illness, and then you distribute bed nets in a very high concentrated way and come back and visit that clinic and there are 20 kids in line. It's. It's a completely different situation that health worker now can spend the appropriate time doing a differential diagnosis on kids, getting the appropriate therapy potentially for malaria for potentially for other places. So, decreasing the burden of malaria, we're also trying to build health systems, but we also say the unburdening of health systems to allow them to function is so critical. So, it just, it's very palpable when you decrease the burden of malaria communities, how you can quickly see. how systems can be relieved, how better lives can be achieved, and hopefully start that virtuous cycle of breaking you know, enabling all the boats to rise and hopefully economic development to occur.

**Hisham Allam**

**Scott, let's move forward to development. Beyond the immediate health impact, how does malaria trap communities in a cycle of poverty can we control it to unlock economic opportunities and development?**

**Scott Filler**

I am a true believer of if you can take malaria off the equation, that you will allow economic prosperity to advance. So why does malaria, a disease of poverty, keep home poverty? Well, the poverty creates the situations of, we've discussed poor education, housing, nutrition, all leads to worse malaria and when individual households they're out of work as adults, they, you know, when they get malaria, their kids get sick and they have to spend their discretionary income. So, it's a drain on the household resources, both financially and in time and space. And it's very hard to break that cycle. But if you can break the cycle and families have more resources they will potentially, as I said, have more resources to invest in children and be honest. In very poor settings, reproductive rates are very high and as you can decrease child deaths, people tend to start to have less children as well, which contributes to the virtual cycle of economic development. So



## DevelopmentAid Dialogues

being able to invest in each child more and not having so many children because you're worried a subset of them will die. Better education, better housing, nutrition, all in combination as a result of pulling malaria off the equation is the real, true, hopeful, virtuous, upward cycle that we're trying to achieve by investing exceptionally in malaria.

**Hisham Allam**

**The RAI initiatives sound like a game changer. Would you tell us a little bit more about it and what made it successful?**

**Scott Filler**

The Regional Artemis Initiative was launched by the Global Fund around seven or eight years ago. And at the time, there was a very large concern about the emergence of drug resistance coming out of the Greater Mekong Subregion. And there was a big worry. That malaria would become untreatable and this untreatable disease would spread to Africa and other places. The global fund in its partnership model decided that the best way to get rid of resistant parasites is to get rid of all parasites in the region and achieve elimination. So, the Rye, was a concerted effort by the global fund to over invest in the greater make on sub region with a laudable goal of getting, getting rid of malaria and in fact getting rid of drug resistant parasites. The reason why the rye was so successful, a big reason was with the global fund dramatically increased the finances to the region.

Because it does take a lot of resources and the end game towards elimination. But this was combined with a regional approach. So, bringing the countries together in a way that they would share experiences and learn from each other. And when any resources became available that were unspent could be transferred to be flexible and move between areas.

So, the region was used as the unit of success and no longer the country. And that flexibility allowed for a lot of movement of resources in the areas. And I would say the third element beyond financing regional coordination and collaboration was creativity. Malaria elimination is not algorithmic and takes the, an art of malariology and not necessarily science. And the RIE has really taken some creative approaches. An example being malaria can be in certain areas a concentrated disease and occupational exposure amongst men who travel to the forest for work. As a consequence, the Global Fund in support with its WHO and partners are giving drugs to these individuals presumptively to prevent them from having malaria before they go into their occupational exposure.

And it's really dampened these hot spots of malaria in certain places. Again, using the tools we have but in a creative and new and different way has enabled the RIE to really progress. And so in certain countries, we're very hopeful that we can get to elimination, particularly Laos, Cambodia, Vietnam are very close to zero falciparum malaria cases. And we're truly hoping that these investments in the RIE and the project will help us get to zero.



## DevelopmentAid Dialogues

Hisham Allam

**Impressive shifting gears to climate change, From Pakistan to Mozambique, climate change seems to be fueling malaria outbreaks. How exactly is our warming planet impacting the spread of this disease?**

Scott Filler

Thank you for the question, Hisham. So, climate change is truly affecting malaria. Malaria is a very climate sensitive disease, particularly because it's a vector borne disease, and you need to have the right temperature and rainfall conditions in order for the mosquitoes to thrive and survive and transmit malaria. So, the main way of which malaria is affecting places are these major perturbations. You mentioned the floods in Pakistan, where malaria increased cases by 2000%. So, these. Non predictable climate events of which are really becoming more prevalent with climate change is wreaking havoc in malaria systems, particularly flooding, changes in temperature.

These drastic weather events are causing major malaria outbreaks. So those are big perturbations, but just the slow change of the climate and how temperatures are changing in places is also changing the geographic distribution of malaria. Our goal with our partners is to shrink the map, but if malaria is expanding to areas where it never was, it's, it's going the opposite direction.

A prototypical example may be in the Kenyan highlands. We always had, we're somewhat dogmatic and said malaria wouldn't go above 2,500 meters. It's just simply too cold. And recently there have been malaria cases detected at these altitudes. So, areas that were, weren't really ready for malaria are starting to experience it.

I would say the third way the climate is affecting our work is in seasonal predictability. In certain areas, malaria gets very concentrated in certain times of the year and particularly when the heavy rains come in West Africa. But with climate change and boy, the last couple of years with the El Nino oscillations, we've seen that these seasonal patterns aren't as predictable. Some of our interventions are targeted to be deployed around the seasonal period. So that we make sure to decrease the burden of disease during this seasonal peak. But if we can't predict when the seasonal peak is going to occur, it's very hard to distribute things like seasonal malaria chemoprevention.

So, climate perturbations, changing geographies, lack of predictability is just making the effort even harder in a time when we're really struggling to keep up with malaria control. So, climate, as I said, is working against us, but we're truly hoping to be able to be adaptable and flexible and continue to shrink the map.

Hisham Allam

**There is a funding gap for malaria control. Why is it happening and what are the consequences? Let's talk about solutions and how can we get more resources to where they are needed most.**

Scott Filler

The Global Fund, as we started, is a financing institution. We collect money from our donors and try to invest it in countries with the least ability to pay and the highest burden of disease. So why is the money insufficient at this point?





## DevelopmentAid Dialogues

Well, there are some things working against us. We discussed the perturbations of climate, but one of the biggest challenges is a very simple numbers game. And that's in these, context, particularly in sub-Saharan Africa, is that populations are growing very fast.

This is, can be, a consequence of poverty and is a known part of the difficult poverty trap. But trying to cover everyone with bed nets when there simply are more people is a little bit of a challenge. So that's one thing we're challenging. Also, as we start to enter into a bit of a biological arms race with malaria, trying to tackle drug resistance and insecticide resistance. Some of our new tools, particularly bed nets to combat insecticide resistance, are more expensive on a per unit basis. So, we have more people and more expensive tools, making it more difficult to keep up. We also truly understand that malaria health commodities bed nets, drugs, diagnostic tests don't deliver themselves.

So, it takes significant resources to build up resilient and sustainable systems for health. All that being said is we as an institution, along with our partners, simply need to continue to raise more money for the fight. We want to combine this with an increased domestic commitment against malaria. We, in certain low-income countries, the commitment for, to fight malaria has been a challenge. There are certain areas that have somewhat complacent to the disease, and that's often because, as we discussed, little children in rural areas don't have as loud a voice as people in the capital making budgetary decisions.

So, we need to make sure to give pregnant women, kids in rural areas a voice so that domestic commitments also rise. So, I believe if we collectively can make a very clear case for the fight against malaria, how it by removing it from health systems, you can allow those systems to function, how you can allow communities to enter into an upward spiral of development, economic development by removing malaria. And hopefully you can tap into a global solidarity that this is not only a laudable goal for I'm a firm believer in attacking malaria. I've committed my life to this, but it is continuing in a challenge in a competitive environment for overseas development assistance for people to focus on this disease, but I truly believe the world is a better place if we can get rid of malaria and fight it constantly. And so, I will continue to stand here and make the fight against the disease. And I hope that people see clearly how positive changes is for the world collectively.

**Hisham Allam**

**This is leading me to my next question. Malaria respects no borders. How can international cooperation and knowledge sharing accelerate progress in the fighting against this disease?**

**Scott Filler**

Malaria control and elimination, in a sense, has to occur country by country because that's the unit of our geopolitical structures. But malaria doesn't respect borders doesn't respect these artificial barriers. A great example is drug resistance. So as drug resistance will emerge in one country, it'll quickly spread to its neighbors.

An approach to drug resistance has to be a regional one, where we discuss all antimalarials entering into a particular region, how the countries can work together to collectively, because individually, a country may choose the cheapest



## DevelopmentAid Dialogues

solution. But if we have a regional approach where we can help make sure to provide potentially better alternatives, it would be a better solution.

So, we are really trying to work through a regional approach to malaria control, because one country, if it's very successful, is boarding one that's unsuccessful, in fact, won't be able to achieve their goals. So, we really are trying to work through our partnership to think about how do we affect things on a regional basis. And like I said, resistance is a great example of how you can't, the unit of analysis is no longer the individual country, it must be a collective response.

**Hisham Allam**

**Scott, are we on track to achieve a malaria free world by 2030?**

**Scott Filler**

No, we're not on a path to get to a malaria free world by 2030. I think we have to be honest about that. We're making very large strides. Malaria is not in the same situation it was in 2000 when the major move and public health effort against malaria was enacted. The advent of the global fund, the big USG bilateral investments, other big donors. So, we, like I said, morbidity and mortality had been greatly decreased though we plateaued and we're, we're deviating from our targets 2030. When an in-depth analysis was done by the Lancet Commission on Malaria Eradication to try to understand a target date, a more realistic date was thought that we could achieve elimination on the path to eradication 2040, 2050. The most important message right now, though, is that we have a long way to go.

We've done amazing things to decrease the burden of disease, but there's still a long fight to go. Historically, it's shown that this fight is not a short term one, but a long term one, and we have to be careful students of history and not let the difficulty and the challenges of refractory malaria derail us in our efforts, because it will take a long fight. It will take the long term, and we can't have the world move their attention away from this laudable goal.

**Hisham Allam**

**What are the recent stats about mortality rate?**

**Scott Filler**

Why are things plateauing in their nature as they currently are? I mean, the burden of disease, as I said, has decreased, but some of the challenges have been things we've discussed. It's increased population size, climate perturbations, the advent of insecticide resistance, making our tools not as strong, and a collective inability to keep the resources in place increase. So, I think if we can be smart with the money that we do have, convince and continue to demonstrate the profound changes in communities by decreasing the burden of disease and continue on the trajectory, I think we can be successful and we can't lose hope in the fight just because we plateaued. Because malaria, like I said, is a very stubborn and intractable disease that's not going to go away easily. But if we keep our efforts focused, particularly to maintain transmission reduction as we see new tools on the horizon, because like I said, not everything, we have current tools and



## DevelopmentAid Dialogues

we can go farther with them, but there also is an intense amount of research and development going on with some real game changers in the horizon.

And so, while you don't want to completely wait for something that's coming. We can do a lot with our current tools. It will take potentially the advent of some newer additions that can unleash the potential to really drive down transmission.

**Hisham Allam**

**What makes you continue your work against malaria during all this history? You have a rich history and experience fighting malaria.**

**Scott Filler**

I would say two things. The first is that when as an undergraduate, and this is a touch straight story, but I spent my undergraduate year in Kenya, studying at the university of Nairobi and I myself contracted malaria 19 or 20 years old and had cerebral malaria and almost died. So, it's a touch prophetic, but I've committed my life to trying to kill the parasite that tried to kill me first. The second is I come from a background that I truly believe in that I don't understand why a child who is born in a rural area of Uganda should have any different life than one that's born in Europe or other places.

I don't it makes no sense to me that we live in a world that doesn't have that sense of equity and opportunity for everyone. No child should have to face the untoward consequences and they were not they didn't choose where they were born. And so, I just come from a rural area of Uganda. True sense that everyone deserves equal opportunity to have a healthy, happy life and malaria is one of the primary reasons why that does not happen. So, I've just committed myself to try to establish where it doesn't matter where you're born, you shouldn't have to deal with the untoward effects of malaria. I really believe in doing these interviews and continually get the message out. Cause I, I just believe this is so important. So, I really appreciate what you're doing.

**Hisham Allam**

**Dr. Scott, this conversation has been truly illuminating. We explored the complexities of malaria, the potential of new vaccines, the critical role of women in prevention, and devastating impact on the children. We also learned about the innovative RAI initiative and the challenges posed by climate change and the funding gaps.**

**To our listeners, thank you for joining us on this episode of DevelopmentAid Dialogues. We hope you found this discussion as enlightening as we did. Stay tuned for more conversations on pressing topics. Until next time, this is Hisham Alam signing off. Goodbye.**