EPISODE 39. CAN WE ELIMINATE MALARIA? PERSPECTIVES FROM TWO WOMEN LEADERS

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Garry Aslanyan [00:00:08] Hello and welcome to the Global Health Matters podcast. I am your host, Garry Aslanyan. We are in the full swing of our season four. If you just found us, we have close to 40 episodes for you to explore. You do not need to listen to them in sequence. You can look them up and choose a la carte, topics and issues that most interest you. I promise you will want to hear them all. In this episode, I will be discussing with two esteemed women pioneers working with passion and ambition to eliminate malaria in their countries. Malaria eradication has been a global goal dating back to 1955, with the launch of the Global Malaria Eradication Program. Significant progress has been made towards a malaria free world. Currently, 43 countries have successfully eliminated malaria, with Cabo Verde becoming the third African country declared malaria free. Africa, however, continues to experience the highest share of global malaria burden, with 94% of malaria cases and malaria deaths. Thus, it is vital for countries to remain steadfast in their efforts and to embrace new opportunities to eliminate malaria. To discuss this in more, I am joined by Francine Ntoumi and Corine Karema. Francine is the founder, president and executive director of the Congolese Foundation for Medical Research in the Republic of the Congo. She is also professor of Molecular Epidemiology at the Institute of Tropical Medicine at the University of Tübingen in Germany. Since 2009, Francine has been promoting and developing health research capacities in Central Africa, and her research has been focused on malaria, tuberculosis and Covid 19. Corine Karema is the Director of Malaria, NTDs and Global Health at Quality and Equity Health Care in Rwanda. She is the former director of the Rwanda National Malaria and NTDs Control Program, and she served as the interim CEO of the Roll Back Malaria Partnership. Corine served and currently serves on various malaria Technical advisory committees, and her research has focused on assessing the impact of malaria control interventions. Hi, Francine. Hi, Corine, how are you today?

Francine Ntoumi [00:02:59] Hi, Garry. I am fine.

Corine Karema [00:03:01] I am doing well, thank you.

Francine Ntoumi [00:03:03] And Corinne.

Corine Karema [00:03:03] How are you? I am fine, thank you, professor. I am doing very well. Thank you.

Garry Aslanyan [00:03:08] Great. Welcome to the show. You have both played an influential role in malaria elimination in your respective countries and regions. What do you think have been some of the most significant successes that have been achieved?

Francine Ntoumi [00:03:23] Thank you Garry. In Republic of Congo, malaria has not been eliminated so far, but we have seen a reduction of the burden, so I would say the success of my research group has been to link research findings into the National Malaria Control Program agenda. To have really not only surveillance, but to have data coming from scientific research groups and decisions to be made based on results. To have a link to that has been something important, because we have seen here scientists work in isolation and national malaria control program doing only surveillance, but now we have science integrated into surveillance agendas. I would say that it has not been a full success, but that it has been an interesting achievement.

Garry Aslanyan [00:04:34] And Corine in Rwanda, what about where you are?

Corine Karema [00:04:36] We have at least 94% of malaria cases in Africa, so we have seen a decline. But unfortunately for the last two years, the progress is stalled. Although we have seen that there are some countries that have eliminated malaria, we have now three African countries that eliminated malaria as of 2023, we have Algeria, Cabo Verde and Mauritius, Cabo Verde was certified malaria free, this year in 2024. So, we are seeing progress, but we are still lagging behind. We have seen progress in terms of development of new tools, increase of coverage of malaria intervention, but we are still lagging. I give the example of Rwanda. Rwanda have been an exemplary country in terms of success for malaria. We have reduced malaria for more than 80% in malaria cases and deaths, thanks to the combination of the widespread use of long lasting insecticide treated nets, indoor residual spraying in the highest malaria district, as well as improvement of success of effective treatments. The artemisinin combination therapy, as well as a strong health system, which enables the country to make sure that commodities are reaching the hard-to-reach population. We have also an incredible community health system where community focus is basically treating 68% of malaria cases. I think with a combination of a strong health system as well as, increased coverage of intervention Rwanda have seen a great success of malaria reduction but not yet eliminated. There is a lot to do for us to eliminate. I believe that with the few countries in Africa that have eliminated malaria, I believe that with the current tools, Africa can eliminate malaria. But we need to be serious, we need to boost and accelerate, the way we are doing business in terms of malaria elimination.

Garry Aslanyan [00:06:46] I want to come back and ask, what do you think are the major gaps and challenges that remain, let's say, in your countries or the countries that you know most. Francine what are still the major gaps and challenges?

Francine Ntoumi [00:07:00] The major gaps? I would say to really have a success in the fight against malaria in the Republic of Congo and Democratic Republic of Congo, I would say in Central Africa would be data, to have accurate data to be able to use at the right target at the right moment and the right community. That would be the major gap in terms of vector control, entomological data. We have a strong component in Cameroon as an example, in Republic of Congo and Democratic Republic of Congo we see that we do not have enough entomologist, so we use old data. Now we have accurate data, but during most of 15 years we were using old data for making decisions. We have seen with the Covid 19 pandemic how it is important to talk to the communities, to have them engage in what we are doing in our interventions. Even in malaria, a very old disease, we still need to use appropriate tools and to have people knowing these tools. But many of our people do not use the tools in the appropriate way. The major gap, we say, is the financial gap. To have our government putting more funds in for fighting malaria. So that is where I see a gap in research, community engagement and financial.

Corine Karema [00:08:48] Totally in agreement. Those are really the important elements that are the key challenges today in the malaria response. In addition to that, there is also now biological challenges like drug resistance. For instance, with the anti-malaria drug that we are using, we have seen that already four countries Rwanda, Uganda, Tanzania and Ethiopia, are showing that there is partial resistance to the only effective drugs that we are using to treat malaria. Falciparum this is an artemisinin based combination therapy, which is actually worrying because we do not have another alternative. We also have insecticide resistance, I think that we have more than thirty five African countries that have shown that there is resistance to at least one of the four insecticides that are being used, in the fight against malaria. I agree also that there is limited funding, but I believe that we are not using properly the funding that is available. If we could be able to tag it as professor Ntoumi says, target the most affected, this is the most affected country, use appropriately or effectively the malaria intervention we can achieve and accelerate the disease. We are also seeing climate change and in countries that have the impact of climate it is also having an indirect impact of malaria. Those I think are the challenges.

Garry Aslanyan [00:10:28] So maybe we can explore some of the current and new opportunities emerging in this. Francine, you already mentioned some of them. And then, Corine mentioned climate change we will look at one health and the opportunities for countries to embrace that kind of approach as with climate change at the same time. So how does one health approach unfold, or how is thinking about it at country level?

Francine Ntoumi [00:10:57] The One Health approach is for me, very interesting because it is really a la mode. To say that you have to consider disease not only in your discipline, but to engage the others, so that is interesting. That is a way to push people to work all together. I have seen that working on Malaria, you have seen entomologist working in a silo, biologist like myself, molecular epidemiologist and social scientist who are not being involved at all. And we absolutely need them. So to put this one health approach is important to remind us that we cannot find the solution alone. We have really to work in multidisciplinary, interdisciplinary approach. That is important. Now today with this climate change, as Corine mentioned, that is very important because it is the environmental component that will affect the animal component vector, the mosquito, and will affect the human, the animal. We see we really need to use this approach. But now having said that, do we have the human resources to address the one health approach? It is not a normal way to work. People are used to working on their own, so there is a need from the top to give a really a strong signal that, France will be given as an example, if you work in an interdisciplinary way. For malaria I think that we have worked, we have entomologists, we have molecular biologist working in human. But the environmental component has not been really used in our investigation. So that is an opportunity really to do better.

Garry Aslanyan [00:13:11] Corine, you also said that, I mean, you can reflect on this issue around One Health as well, and you could maybe reflect more on the front line delivery, access, involvement of community, both for prevention and treatment and also integration of care and diseases. How has this been achieved in Rwanda or elsewhere? Wherever you know, and what can be done or what is being done? Because we also know that if we do not do that, we probably will never achieve some of the malaria goals.

Corine Karema [00:13:49] I remember when I was director of the National Malaria and Neglected Tropical Disease in Rwanda, we saw an increase of malaria, we didn't understand this because we did the distribution of mosquito nets, we gave and increase of access, community health focus. But there was an increase of malaria, it is because they had expanded the rice cultivation. But for us to think of how can rice cultivation increase mosquito breeding sites and then of course helping to increase malaria. We are seeing that there are countries like, Rwanda that through the implementation of integrated vector control management, using poorer communities as well as, environment and management is helping to reduce the mosquito breeding sites. I see there are countries like Kenya, even Nigeria, with their community based program that involve local population in environmental management and vector control, it is helping to reduce malaria incidents in those regions. I see that it is really important. To come to your question in terms of integrated, this is also integrated care of other disease, like malaria with other disease. It is really a critical aspect that is helping to enhance the overall health system efficiency and effectiveness. For instance, the governmental fund has been working to integrate malaria services within the primary health care and for instance, you have the distribution of mosquito nets through the vaccination. When a child is coming for a vaccination or immunization depending on their age, the child will also receive a mosquito net for malaria prevention, and you really see that it is beneficial to the family, because at least the child is coming once for a single visit and receiving all the package. Really a great outcome with an increase in coverage of the use of mosquito nets, for instance.

Garry Aslanyan [00:15:56] I am sure our listeners are interested about a malaria vaccine that made a lot of headlines in public health and really hailed as a promise to save lives, especially the lives of children.

I am curious to know, do you think that this will be that last tool that we have in the LMICs, or in countries where a lot of work needs to be done for malaria, and how will it play out? So, Francine and then Corine.

Francine Ntoumi [00:16:28] We hear many promises to reduce the malaria burden, but the result so far we have with these two vaccines R21 and RTS, which are prequalified by W.H.O. and recommended to be implemented in a seasonal and high transmission areas. So far the data is promising, but we still need to do more about these vaccines, also, the limited number of doses available for these vaccines today. Maybe the situation will change, but this will also be an issue with the cost of the vaccine. This means we need to have financial support, financial support to collect data, local data to know how to better implement these vaccines. If we do not have enough doses, who should get these doses? So we need to have more research, research to be able to give advice to our stakeholders. Because as an example, here in Congo, the Ministry of Public Health is really willing to move forward with this vaccine and ask scientists how to implement this vaccine in a proper way. To give a proper response, we need to do a minimum of investigation to provide accurate data. The last comment is even with these vaccines, a social scientist, again I am not a social scientist, but I know how useful, how important they are. When you say to a mother, here in Africa, all the mothers know about malaria. They know when the child has a fever, it could be malaria.

Francine Ntoumi [00:18:39] That's the first idea. When you introduce the malaria vaccine, for a mother, not an educated mother, to know that you need to do this and this, she will think okay my child is vaccinated, my child is protected and maybe she will not use any more the bed nets. She would think okay the child is vaccinated, so I will use the bed nets for older children as an example. But we know that with these vaccines we still need to use preventive tools like bed nets, both bed nets and malaria vaccine. This means that there is really a need to explain properly to the mother what it means for protection. With internet and fake news the message has to be well articulated to not produce the wrong information.

Garry Aslanyan [00:19:52] So we need to better understand there might be unintended consequences out of this that we may not predict. So we need to get a better sense. Corine, what is your thinking about the vaccine introduction?

Corine Karema [00:20:05] The vaccine took more than 50 years, to develop these vaccines. So just imagine our research is prioritizing malaria and the same as the anti-malaria drug, it took more than 20 years to have the artemisinin based, combination therapy. So, the vaccine is here but as you know, the vaccine cannot be given alone without the other malaria interventions. The malaria vaccine is not the silver bullet for malaria elimination. There are many innovative interventions and community strategies that are showing great promise, for instance, the gene drive technology, which involves to genetically modify mosquitoes. There are already three countries that have started to deploy those mosquitoes so we will see what will be the outcome of this technology. There are many countries, more than 35 countries in Africa that are showing insecticide resistance, so the new generation of nets are more effective, resistant to the current vectors and also provide better protection. There is also other solutions, like digital solution, mobile health solution, as well as community based intervention, we need to always combine interventions. For the moment we do not have a silver bullet. We need to target, for instance, the available resources to the most affected communities, the highest burden. This is where I agree with Professor Ntoumi, she is coming back every time with data, data, data, data to decide, our policies, data to guide our intervention. This is what I believe.

Garry Aslanyan [00:21:59] A question to both of you in terms of, you keep bringing this issue of understanding, having the data and having research results that then can help. Do you think that in the recent attempts to, or in recent institutions that have been established on the continent, things like the

Africa CDC or other public health institutions and with the hope of, making things less siloed and based on the data from the continent and the colonized, two institutions and all of that, how do you think that will help? Or is it already helping in this?

Corine Karema [00:22:53] I believe that they are great ideas. You have Africa CDC, Africa Public Health Fair research Center, everything is becoming Africa, but when you look at Africa CDC and the way Africa CDC has supported the African continent in the Covid response, it has been amazing helping to make sure that, vaccines, which as you know, were not prioritized for Africa, but how much money from the continent is being given to support Africa CDC. As long as Africa CDC, as well as the great idents, all the African public health and African institution are being created and established, it is also quite important that African countries contribute to the financing as well as the funding of those institutions, otherwise it will be as in a country where you have 95% of the malaria funding coming from Northern institutions and international institutions. Then of course there is always interest, they are coming to support the countries, but there is also sometimes some interest that they do and they don't do, while it can be a priority for the country. The idea of African institution is really good because it is important for Africa to lead, to own the response, and fight of the public health issues. I think that we need political leadership as well as political commitment translated into resources. We need resources also coming from Africa. At least that will make Africa stronger and more powerful to be sitting on the table and take decisions. This is what I believe.

Francine Ntoumi [00:24:51] That is exactly what I think. If we do not put funds on the table, money on the table, we have no words to say and we cannot address all the relevant issues of the continent. So that is the first thing, we have to put funds on the table. I fully agree with you Corine fully, fully agree.

Garry Aslanyan [00:25:18] You really are leaders in the fight against malaria in different levels globally and in your countries. Where does your passion come from for this? Corine, and then Francine.

Corine Karema [00:25:32] So I was born in DRC Congo, grew up in DRC Congo and went to Rwanda after the 1994 genocide against the Tutsis. So first of all I see malaria in my daily lives, and then I have also seen with strong leadership, efficient malaria control, malaria the disease can be eliminated. I have been working in Rwanda for ten years as the director of the malaria program, and we had 86% decline of malaria cases and deaths. I feel that this is a disease that we can eliminate and this is where the passion comes. I believe also that malaria can be also hard to get within my generation, so this is where I really have and take the passion for me. It is also social responsibility because, it's not acceptable to have a child dying every minute from malaria. This is a disease that can be treated, that can be prevented. This is where I have my passion. I believe that it is possible to eliminate malaria.

Garry Aslanyan [00:26:42] Francine.

Francine Ntoumi [00:26:44] The passion for me started during my postdoc at Boston Institute because I started to work on malaria there, and I have seen a team of passionate scientists. I have learned how malaria was the first killer of the continent, and I have seen these people working hard to find solution. I realize how well science can help to find solution. The passion starting there, until today. I know that it is possible to do something if we share ideas. There is no stupid ideas. So, trying to find solution with others and using science, that's why I am passionate, because I know that using science we may develop our continent, we may change our environment, we may make our lives better. I try to share my passion to the young generation, because I know that only with passion you may change the game. That is what I am trying to do and I am trying to share.

Garry Aslanyan [00:28:02] Corine kind of told that already, but do you think that we will eliminate malaria in our lifetimes, in your lifetime? Or and if not, how are we going to support the young generations to do that?

Francine Ntoumi [00:28:16] Maybe I will start first because Corine is positive and I am negative. So for me, no, I will not believe that malaria will be eliminated, at least in high burden country if we continue, but Corine say that if we continue to behave like we are, if we do not put more funds on the table, if science is not fully integrated in the arsenal of tools to fight this disease, if not only the one health approach, but really everyone has to decide we eliminate malaria from the top to the last citizen of the country. Elimination will not be imported, so U.S. citizens will not come to my country to eliminate malaria. It should be our business like also Corine has said, if we consider that malaria is our business, that we need to train our scientists for that, to find the right, to put money on the table and to put that on our agenda, really on our agenda. Okay, maybe malaria will be eliminated in countries like DRC and my country, where malaria burden is very, very high. But if we continue to rely on funds coming from Europe to fight malaria in my country, no, I do not believe that malaria will be eliminated.

Garry Aslanyan [00:30:02] Corine your time.

Corine Karema [00:30:04] For me I have been working in the malaria space for more than 20 years. I am seeing for the last three, four years there is a change. There is a change the way people believe there is a change in a way, for instance, when you look at the use and the strengthening of the use of data, and there is also innovation. I believe that we can eliminate malaria within a generation. Then of course, there are many "ifs", so there are many conditions. For the young ones it is clear there is imbalance in terms of the malaria experts, malaria research, when you compare Africa versus the world or northern countries. We are seeing currently now there are also many African institutions that are being established being created, so I believe that we need to be intentional, we need to be transformational in terms of how we want to strengthen African public Health institution, African researchers and of course get, African government also to put their resources on the table so that Africa can decide and we can make a change. I believe that we can eliminate malaria.

Garry Aslanyan [00:31:30] Thank you for this conversation. I am convinced after this I am leaning towards Corine, Francine. I hear your realistic view but I am leaning towards her. At least I have no choice. We all don't have a lot of choice. Best of luck with all of your work. Thanks again for joining us today for this important conversation.

Francine Ntoumi [00:31:59] Thank you for the invitation.

Corine Karema [00:32:00] Thank you for inviting me. And thank you everyone who organized this podcast. It is really important for us.

Garry Aslanyan [00:32:07] Thank you.

Garry Aslanyan [00:32:10] Francine and Corine celebrate the progress made in their countries, but remain ever so aware of the work that remains. From the experiences of the Republic of the Congo and Rwanda they highlight three areas to guide the future. First, there is a need for different types and good quality data that could guide the development of the colonized, integrated national malaria strategies inclusive of the changes in the environment. Second, innovations like the malaria vaccine hold great promise, but the implementation of this cannot be separated from strong community education and involvement, especially to ensure unintended consequences are avoided. Third, achieving a malaria free

world will only be possible through the shared responsibility and leadership for everyone from top level government representatives to scientists and most importantly, citizens.

Garry Aslanyan [00:33:21] Let's hear from one of our listeners.

Arshad Altaf [00:33:26] Hi Garry. This is Arshad Altaf from the regional office in Cairo. Through this short voice note, I want to congratulate you and the team for continuously covering a wide variety of public health topics in the Global Health Matters podcast. I particularly enjoyed your discussion with Doctors Bhattacharya and Birn. We are a smallpox eradication and who took the credit for it is eradication? Who was not mentioned? Which was the government and the unsung heroes who were the front line vaccinators across the globe. This particular episode has given me the idea to rewrite a piece on W.H.O. history, in light of current times and key historic public health movements. Cheers and thanks, Garry.

Garry Aslanyan [00:34:17] Thank you very much, Arshad, for your message and for being a constant fan of the podcast. To learn more about the topic discussed in this episode, visit the episode's web page where you will find additional readings, show notes, and translations. Do not forget to get in touch with us via social media, email, or by sharing a voice message, and be sure to subscribe or follow us wherever you get your podcasts. Global Health Matters is produced by TDR, a United Nations cosponsored research program based at the World Health Organization. Thank you for listening.