Confronting the Mpox Threat: Global Responses and Protecting At-Risk Populations

Tues, Apr 29, 2025

SUMMARY KEYWORDS

Mpox outbreak, One Health, zoonotic disease, social disparities, vaccine equity, global health funding, public health emergency, antimicrobial resistance, community engagement, decentralization of laboratories.

SPEAKERS

Nodar Kipshidze, Aula Abbara, Yap Boum II, Samantha Serrano

Samantha Serrano 00:00

Hello, everybody, welcome. Thank you so much for joining this webinar. I'd like to start right now at 9 am EST, just to make sure that we have time for everyone to get their questions in and for our speakers to answer any questions that we might have.

My name is, is Samantha Serrano. I am the Associate Director of Science Communications at the One Health Trust, and I'm very happy that everyone can join us today. Hello, Professor Yap Boum II, thank you for joining us. We are very honored to have the three experts we have today to talk about this ongoing crisis. It's a really important discussion to have right now.

Mpox is a One Health Crisis. It's a zoonotic disease with the potential for a pandemic that's quickly evolving, and it's heavily impacted by issues such as social disparities, conflict, migration and displacement, and displacement, vaccines, equity, and more. This is all against a backdrop of major shifts and losses in global health funding. This issue, I think, has lost a lot of attention, and we'd like to bring it back into focus. I'm honored to bring together these three experts who can speak on the many facets of this ever-changing crisis. Unfortunately, Dr. Ngashi Ngongo had a scheduling conflict, and he's going to be unable to speak today, but we're really happy to have Professor Yap Boum II take his place and speak on behalf of the Africa Centres for Disease Control and Prevention (CDC).

Before we get into questions. I just want to introduce our experts. Our first expert, Professor Yap Boum II, is a deputy incident manager for the continental mpox response at the Africa CDC. He's also the former Executive Director of the Institut Pasteur of Bangui in Central Africa. He's a public health expert. He was the former Representative of Epicentre, the research arm of Médecins Sans Frontières (MSF), and led Cameroon’s COVID-19 operations. His work spans tuberculosis, malaria, HIV, Ebola, and COVID-19, alongside teaching public health and microbiology across Africa. He's passionate about equity and

African-led research. He co-founded several initiatives, including iDocta, HS4Health, and an AI-powered platform called “the Village” (that connects scientists toward decolonizing global health). He holds degrees in engineering. He holds an MSc and a PhD in microbiology, an MPH in epidemiology, and an MBA in entrepreneurship. So welcome, Dr. Boum II.

Our second expert is Dr. Aula Abbara, and she is an infectious disease malaria advisor to MSF Amsterdam and an infectious disease consultant at Imperial College Healthcare NHS Trust in London. She's an honorary senior clinical lecturer at Imperial College London in infectious diseases, where she's undertaking a research fellowship on AMR and displacement. She's worked in a number of humanitarian settings, including outbreaks for emerging and reemerging infectious diseases, particularly in conflict-affected settings. And then we have Mr. Nodar Kipshidze, who is a senior research analyst at the One Health Trust. He is a PhD student in epidemiology at Columbia University, Mailman School of Public Health, and a T32 pre-doctoral fellow in the global HIV implementation science training program funded by the National Institute of Allergy and Infectious Diseases. His research centers on questions of disease persistence, mobility, and vaccine effectiveness using mathematical, statistical, spatial, and agent-based models.

We're going to start with two rounds of questions for each of the speakers, and then after that, we will have time to take questions. So, if you do have questions throughout the talks and the answers, please write them in the chat, and we'll be sure to get to them.

The first question is actually for Mr. Kipshidze. We'd just like to build a panoramic view of what's been happening recently with mpox, just to better understand the epidemiology of mpox and the different recent outbreaks. Can you speak a little about the 2022 mpox outbreak that sort of brought global attention back to mpox? Tell us a little bit about that, and what is the difference between that outbreak and the current outbreak we're experiencing now since 2024?

Nodar Kipshidze 05:32

Yeah, those are fantastic questions, and I think I would even start by saying that the two recent outbreaks are very different from historical mpox outbreaks, which also kind of brought a lot of attention to the 2022 outbreak epidemiology and who's being affected and where they’re being affected, really shifted from our understanding of mpox between the 2022 mpox outbreak is still ongoing, contrast to the 2024 outbreak, which was largely localized in Sub Saharan Africa are also vastly different in terms of who was getting infected, how it was being transmitted, and then obviously geographically, where it's been spreading.

The 2022 outbreak was primarily driven by Clade IIb mpox. So, if you want to think of Clades, they’re like cousins of very similar viruses. That's, I think, the best way of explaining clades. I'm still trying to figure out the best way to describe the differences.

But basically, Clade IIb was really driving the 2022 outbreak as of now. It's spread across 110 countries with at least 100,000, maybe 120,000, from the most recent reports of confirmed cases, not even suspected cases.

If we look at who's being affected, both globally and even here in the United States, is largely driven by sexual transmission, either via skin-to-skin contact or the exchange of bodily fluids, largely affecting gay, bisexual, or other men who have sex with men (GBMSM) for the data that we do have available, and then also affecting men, really, between the ages of 18 to 49.

As I mentioned previously, we're still having cases that continue to spread and emerge globally, even in the U.S., even though it's largely died down from kind of this outbreak response period, we're still having as many as 200 cases per month nationally, which is still quite high for something that's not really endemic to America.

The contrast to the 2024 outbreak, the World Health Organization (WHO) redeclared mpox as a public health emergency of international concern, on the heels of Africa CDC declaring it a continental health emergency, and this one was primarily driven by Clade I mpox.

This is really much more complicated in terms of who's being affected as being transmitted. It's a real mix of sexual and non-sexual transmission. For data that we do have in terms of potential routes of exposure, primarily, at least, we believe that it has started from the Democratic Republic of Congo (DRC). That's kind of where the first cases emerged. And in terms of the age distribution, even if we just focus within the DRC, it really depends on the region that you're kind of focusing on. In certain parts, it's really primarily affecting younger school-age children. But if you look at places like the south of the DRC, it's much more like the Clade IIb mpox outbreak among adults.

Then it's also obviously spread to surrounding countries, or some countries, at least now, are starting to see a kind of wind-down of the outbreak. But other countries are also seeing a surge of new cases. I mean, it's also spreading globally, maybe not at the same speed as the quake outbreak, but we are seeing cases of importation globally. I think just as of this month, we saw a few cases in China, which was really alarming — it was most alarming. It's also, again, affecting the GBMSM community in terms of the cases abroad. So really, just by comparing the two outbreaks, we're focusing on how it's being translated, who's being affected, and then where the outbreaks are situated.

Samantha Serrano 09:10

Thank you so much, Mr. Kipshidze. Recently, just this last month, we had a case of Clade I here in Brazil, where I'm based. So, it's spreading globally, and it's really important to pay attention to that as well.

The next question is for Professor Boum II. Can you tell us what's happening on the ground in DRC, with the current outbreak, you know, who's being most affected? What are the local government responses in Africa CDC response, and healthcare system responses in general? Can you speak a little bit about that?

Yap Boum II 09:52

Yeah, sure. Thank you, Samantha, for the question and also for the invitation. And thank you, Nodar, for setting the play and the scene, but before going straight to DRC, just to highlight that the current outbreak is exposing 24 out of the 54 African countries, so half of the country is currently exposed to the mpox outbreak.

That's why the public health emergency has been expanded, as we have, as we speak, 17 countries that currently have some active cases. So, what is happening? As we see, the number of kids is around 2000 cases per week, which is quite important in terms of suspected cases. But now, when we go to the confirmed case, we are around 500 per week.

Now, when we look at what is happening to what was happening six months ago, we see a kind of decline, especially in the confirmed cases, though the suspected cases are increasing, and I will go back to your question right now on what is actually happening and how we respond. So, after six months, after we declared the facts, we ended the first plan. So now we are in the new plan, which is focusing on intensification, integration, and legacy.

“So, how could these outbreaks be taken as an opportunity to strengthen the health system?” By doing that, we deployed community healthcare workers — 3000 in DRC, which remained the epicenter in Uganda, which is the second most affected country, and Burundi.

We deployed all those healthcare workers. So, they are the ones supporting the countries in active tracking. What we mean by that is, that we need people who can go door to door and look for patients. Once they have a patient, they do the investigation to see where the people around that case are, so that they can have access to sample testing. Through sample collection, they can have access to vaccination or the measures that need to happen around the different cases. So that is the key part of the strategy, which goes together with the vaccination.

The third part that is being implemented in the DRC and other countries is the decentralization of the laboratories. We are coming from a place where we could have maybe one month or even three months for some patients, between the time their sample is collected to the time they receive the result. And you imagine an outbreak that is not possible. Therefore, we push the establishment of laboratory capacity in every different hotspot zone so that we reduce the time between the sample collection and the testing, and therefore, we can have a response that is aligned with the challenge. So, we have the surveillance, I mentioned with the community health care workers, we have the vaccination that is being scaled up, and then we have the testing.

But the critical point in DRC is that this is also the country that is affected by the humanitarian crisis in the eastern part of DRC, which is also the place where you have the highest number of kids, where you also have the outbreak of measles, and you also have an outbreak of cholera. So, you have a place where you have an important number of other outbreaks, you have a humanitarian crisis, and that's also where you have mpox.

So that pushed us to have an integrated approach, together with all the different partners, maybe to highlight, or to mention, that the Incident Management Support Team (IMST) is a platform. This is co-led by the Africa CDC, and the WHO with 28 partners, including GAVI, the vaccine alliance, UNICEF, MSF, and many others.

So, the idea now is to really take the strengths of all those partners so that other people cannot have access. MSF, for example, can have access to support case management and so on. UNICEF can support vaccinations. So this is currently where we are moving, going back to the North and South Kivu because

that is where we have the highest burden in DRC, and provide all the different pillars that I've mentioned, the surveillance, the vaccination, and decentralization of the laboratory, I will stop from there.

Samantha Serrano 14:46

Thank you so much, Professor. Boum. Yeah, it's amazing to see the response that has happened, and it's great to see the partnerships that have been formed as well. Dr. Abara, I'm wondering if you can speak a bit about MSF and the humanitarian response in the current outbreak, what sorts of vulnerabilities are you seeing, and how are those being addressed?

Aula Abbara 15:14

Thank you very much, Samantha, and to the One Health Trust for inviting me to speak today.

So, in terms of the humanitarian response from MSF, I would say it's quite wide-ranging and responsive to the needs in the different areas and the different countries related to the degree of risk and the number of cases being seen. For example, if there are countries where there are small numbers of patients but are at risk or have suspected cases, we've been supporting our teams and the local stakeholders in terms of preparedness, making sure they've got the correct pathway. Should they have a suspected case, know how to test, know how to collaborate with the local healthcare authorities.

However, we have also responded in a number of different parts of the DRC, which is being heard as among the most affected, by far, of the countries with the Clade Ib in particular, but also the 2024 outbreak in general, but also surrounding countries like Burundi. So, we had a response in Bucha, and if we look at the DRC, Professor Yap has already highlighted just how vulnerable the eastern part of the DRC is.

So, MSF Amsterdam and other sections of MSF were already active in both North and South Kivu. And this is really important, because South Kivu was where the first cases of Calde Ib were identified, and I think that was around a few months ago now. This is where we have potentially the largest number of patients presenting to the different health facilities.

So, in terms of the response, we have worked on a number of different pillars. Of course, we're part of the IMST and worked very closely with the different stakeholders, but very importantly, with the local health authorities and the Ministry of Health to ensure that we're responsive to patient's needs, as Professor Yap has rightly highlighted, this is also an area of great insecurity, conflict, forced displacement, other outbreaks, malnutrition, very sadly, and also an area that's vulnerable to other emerging infectious diseases.

So we've responded to this by firstly supporting stable healthcare facilities such as the mpox treatment centers, making sure that they are safe and accessible for patients, and making sure that our care for patients is patient-centered and patient-focused, and that the correct pathways are placed with the correct training for our staff, and the staff that we work with in place, to ensure safe care for our patients, but also for them, because remember, healthcare workers themselves are one of the important risk groups, as we have seen with the previous outbreaks as well.

We've also supported a number of other pillars. So, for example, we've supported surveillance activities, testing activities, contact tracing, and vaccination planning, which, of course, is a really important aspect of prevention, particularly for the most vulnerable. And then the other things that we have done, and this becomes really important, and again, it touches on what Professor Yap has said, we strengthened our community engagement and our health promotion activities, because and what's important about the latest clades or latest outbreaks that we are seeing is we have shifted, compared to other outbreaks, from a predominantly zoonotic transmission.

So, for animals to humans to human-to-human transmission, this is sadly, something that has sustained the outbreak. And, there are different risk groups where these impacts may have spread more readily. And of course, you asked me about vulnerable communities. Among the most vulnerable of our populations are, of course, children and pregnant women, so people who may be in close contact with one another for different reasons.

Then the other thing we have also supported, and this is really important, both for our inpatients and our outpatients in terms of mental health and psychosocial support (MHPSS), particularly where there are vulnerabilities for the populations that we are serving. So, in terms of vulnerabilities, I've said that children, particularly those under five, are very vulnerable. They've been affected differently by different clades and at different times in the outbreaks, and how we have tracked them. But it's really important to understand that children have the greatest mortality (chances), particularly the very young, so children under one-year-old.

This becomes really important because if you think about the Clade IIb outbreak that affected many countries in the world from 2020 to 2022, onwards, there were very few neonates and children in that initial outbreak because of the modes of transmission the populations affected, whereas in this outbreak, we did see a greater number of children.

However, we didn't have the same level of experience, and I say that as a global community, not just as MSF, in terms of optimal care, in terms of treatment for neonates, what may or may not work for neonates? What are the best? What is the best advice that we can give women in terms of breastfeeding? And that takes me on to other at-risk groups, for example, people with co-infections or any other form of immunosuppression, so patients with human immunodeficiency virus (HIV) and very low cluster of differentiation 4 (CD4) glycoprotein counts can have potentially very severe disease. We think they probably shed the virus for longer, and therefore they may be at risk of also increased transmission for the people looking after them in these settings, and women who are pregnant.

We still need a lot more data around that. Some evidence suggests that there are poor outcomes, whereas other evidence suggests that perhaps they're not as affected as we think. But the case series and the data that we are looking we look at for pregnant women remain not as optimal in terms of needing the decisions to make. And of course, the other vulnerability becomes other things that affect children with mpox. So, for example, malnutrition is another important risk factor for morbidity and inpatient stays. And also, how we can support patients, particularly if their gastrointestinal tract is affected? And so, as MSF, we have worked very particularly with the local stakeholders to ensure that

the best care is available to patients and communities in this setting, particularly targeting the most vulnerable in these settings.

Samantha Serrano 21:36

Thank you so much. Dr Abbara, it's good to see that the response is multi-faceted from both sides. The next question is for Mr. Kipshidze. We have World Immunization Week, as well as the man who has "Vaccine Saves Lives" as his background. I need to ask a question about vaccine distribution for controlling these outbreaks.

Can you speak a little bit about what that looks like, and can you tell us a little bit about the 2020-2022 campaigns in the U.S. for vaccine distribution, and how that can help us learn about effectiveness and things like that? Then I'd really like to know what's needed for equitable and efficient distribution in the areas and populations at risk in this current major outbreak.

Nodar Kipshidze 22:40

Yeah, that's a fantastic question or question, I should say. I would start off by saying, unfortunately, you would see kind of the repeating of past mistakes, I'll say with like the COVID-19 being the most recent example, both in just kind of the global distribution of vaccine, but even just kind of local vaccine responses, and thinking about "who wants to get vaccinated?" and if "they're not getting vaccinated," figuring out strategies to really reach out to those communities that are effective. So, if you look at the U.S. campaign, or the vaccine campaign in the United States, what we saw was, unfortunately, a little slow going at first, and largely that was due to kind of stockpile constraints. And so, for the time being, they kind of shifted to a somewhat dose-sparing strategy. So, the way people would get an octave was slightly changed just to kind of increase the number of available doses. I think there was even, at times, maybe an increase in the length of time between the first and the second dose. But stockpile constraints largely dissipated by, I would say, October of 2022, and so in terms of people who want to get vaccinated, eventually got vaccinated, I would say now, in terms of the demand, it's pretty much stagnant like we don't see huge proportions of the population getting vaccinated.

Again, in terms of the affected populations, what we really see is that, at least in the U.S., in terms of who was getting affected. Almost two-thirds of cases primarily affect black, African American, Hispanic, and Latinx men. But they unfortunately made up, you know, less than a third of vaccine recipients. And this isn't necessarily surprising, you know, as I mentioned already, COVID-19 was a recent example of who wants to get vaccinated. I mean, vaccine hesitancy is so complex, and something that could take up more than the time of this webinar in terms of understanding, like, what's driving it, and it is so context-specific.

So in the U.S., a lot of it has to do with structural racism, historical determinants of health, thinking about access to vaccines, and how things like redlining, historical redlining, can also drive access to vaccines because there are even people who might want to get vaccinated, but either are too far away,

don't have time to take off from work to get vaccinated. So, there are just things we have to really think about, contrasting that to the 2024 outbreaks, very much different in terms of access to vaccines.

I believe it was either the WHO or the Africa CDC that initially estimated that 10 million doses would be needed in terms of this response, and perhaps this may be even increased. I haven't read if there are any changes to those estimates. I know at one point there were at least 5 million doses that were committed through the access and allocation mechanism (AAM), which is really a mix of support from a few countries, including the US, and I know we're going to talk about changes to the funding landscape.

So, I'll save some of that for our next speaker. But just thinking about even the most current administration, and whether that might change in terms of those commitments, I think I believe, and maybe Professor can correct me if we've distributed maybe about a million doses, just under a million doses. But again, thinking about who's getting affected.

So, if you remember, kind of when I was talking about epidemiology as well, some of the other speakers of who's getting affected, for example, places like the DRC, right? A lot of children of school age are getting affected. But the vaccine that's primarily being used for this response, as well as the 2022 response, which was the modified vaccinia Ankara - Bavarian Nordic smallpox vaccine (MVA–BN) vaccine, was not initially approved for school-aged children, but we recently got preapproval for the vaccine.

It was either earlier this year, perhaps late last year, and so that's been at least a positive in terms of, you know, vaccinating populations kind of most at risk, especially in terms of complications related to mpox, as well as mortality, but again, repeating same mistakes where countries that have access to the vaccines were essentially hoarding vaccines that were not really thinking about, how can it be most equitable in the distribution of vaccines and providing them to countries that really need them at this point.

Samantha Serrano 26:54

Thank you so much, Mr. Kipshidze. Professor Yap II, I wonder, as Nodar mentioned, if you could address these shifts in global health funding and how they may have impacted the current outbreak response. You know, what do cuts mean for vaccine distribution, healthcare infrastructure, and disease surveillance?

Yap Boum II 27:21

Yes. Thank you, Samantha. But maybe if you allow me, before jumping into that, I will just follow up on the issue of vaccination. Just to highlight that the different partners, UNICEF, GAVI, WHO, of course, and Africa CDC, have done a fantastic job on the delivery of more than 1 million doses of vaccine, MVA-BN, in 10 African countries.

So, the vaccination is going on. There is a lot of need for the population. So, there is no issue of vaccine hesitancy. But the plan that we have, and I'm responding to Nodar, is that we expect 6.4 million doses of vaccine to be administered on the continent, and that is to achieve two things.

One is to control the outbreak, which is due to the Clade Ib with the secret transmission and so on, and the other one in a country where the Clade Ia is endemic, country or region, at least, to reduce by half the burden, so we are still far from getting the 6.4 million. So, as he rightly mentioned, that will be an issue of equity to ensure that the vaccine is available where they are needed. That's to make the transition to the impact of the U.S. government freeze and cuts, because this is the crisis within the crisis.

As far as the vaccination is concerned, 800,000 doses of vaccine were to be provided by the U.S., so that Discussions are ongoing to secure possible waivers and facilitate delivery. Some progress has been made—previously stalled shipments have now reached certain countries, and we continue to engage in dialogue to ensure broader access. We can say that some of those are successful, where some doors that were frozen now are based in countries, and then we keep on the decision with them.

But to go back to the budget, the pledge for the response was 1.1 billion U.S. dollars, and the U.S. has pledged 500 million of this total amount. So, while a large amount of what has been pledged has been disbursed, the remaining amount has come at the time of the cuts. And this has a tremendous impact on different levels of the response.

The first one I mentioned was the vaccination. Some of the doors were not available at some point, the waivers are ongoing, and we hope that we'll be able to recover all of them on time because they need to be there on time. They need to reach a country where they can still be used. The second point is on. The surveillance and the laboratory, the sample collection, and the sample transportation in many countries, including the DRC, Uganda, and in Burundi, some of them were relying on NGOs, like FHI 360, Village Health Team, and so on. And those organization was heavily supported by U.S. aid.

So, when that stopped, it also meant that all those human resources who were in the field, collecting and transporting the sample, did not have motivation or incentive. So, in a country such as the DRC, we have a testing coverage which is around 24 percent. What does it mean? It means that out of 10 people who have the symptom of mpox, we call this a suspected case, only two or three will have the sample reach the laboratory. This is a big challenge because the sample is not connected, and the sample is not transported, which means that what we are seeing might be just the tip of the iceberg. So those are some of the impacts, but also one of the key focuses was and still is the decentralization of the laboratory, and part of it was quite heavily supported by the U.S. government and the other organizations around, however. You know, it's been said, never miss the opportunity of a good crisis.

So, the countries in Africa CDC, and other partners are working toward changing their mindset. First, carry on the discussion with the U.S. government. A week ago, the Director General of Africa CDC and the leadership of IMST were at the spring meeting in Washington DC to discuss with the International Monetary Fund (IMF), the World Bank, and all the Ministers of Finance, to see how we can change how we address the crisis. A month before the detection was going on with the U.S. government. So that's the first part.

On the other hand, we've launched the Africa financing new era, where we are looking at three pillars. The first one increases domestic funding. And it's been realized that the African countries agreed 20

years ago during the Abuja declaration, to spend at least 15 percent of the Gross Domestic Product (GDP) on investment in health. So, this has not been happening. Only two or three countries have been doing that. So now it's a big push, and we were happy that last week, the President of Angola pledged 5 million waivers at the CDC to support the response to those outbreaks.

So, we are moving to the second pillar is alternative or innovative financing. How can we tap into the diaspora bonds? How can we tap into the etiquette so that we can also harness a bit of that money to invest in healthcare and respond to outbreaks? And the third one, not the least, is the blended financing of the public-private partnership. So those initiatives have been, let's say, accelerated, catalyzed by the crisis. So yes, we have a crisis here. It's critical. The conversation is ongoing so that we can mitigate the impact in the response, but in the meantime, we are taking advantage of having champions so that we can have local resources to be more autonomous, and, let's say, more independent, because this cut has highlighted an important dependence in both sides, while what we are looking at is the interdependence, because what is happening in Africa with imports, at some point we have those mutations, and they might go back and like we have the mpox outbreak in 2022 who knows if we won't have another mutation that will print globally. So, it's really not an aid that is needed, but an investment that is needed to ensure that we are all safe. Thank you.

Samantha Serrano 34:10

Thank you so much, Professor. Yeah, very well said.

Dr. Abbara, we know that there's a large refugee population and populations of displaced people in the regions that are most affected by mpox. We know that these are vulnerable populations to infection. How has this growing displacement of people and growing refugee populations due to conflict, you know, climate change and economic disparities impacted the spread of in response to mpox outbreaks and even other outbreaks, and how can we aid institutions, and other stakeholders adapt with these major shifts in funding availability, and, you know, really growing rhetoric and policies that are stigmatizing refugees and displaced people and also impacts. Can you speak a bit about that?

Aula Abbara 35:13

Thank you, Samantha, for the question.

In so many of these situations, you won't see one emerging or reemerging infection acting on its own. It's often in a setting where there are multiple other confounders and disasters, and you've mentioned conflict, climate, and sadly, the forced displacement that we see in terms of these impacts.

What does that mean in terms of our response? It makes it incredibly difficult. We have important pillars, as we have heard, around prevention, which include vaccination, that includes health promotion, which includes different aspects of infection prevention and control. However, this becomes increasingly challenging when you have a setting of increased conflict and forced displacement, and that's for a whole variety of reasons.

So, when there is insecurity, patients may not be present in a timely manner because they have to prioritize many other things. Healthcare access may become increasingly difficult. There may also be a

lack of trust in the health services that are being provided, given that people are being moved from areas that may be familiar with the health system and the healthcare services to an area where they are less familiar. In addition, and very sadly, the eastern parts of the DRC are very affected by massive internal displacement. And I always remind people that internal displacement forms most people who have been forced from their homes, not just as refugees, but internally displaced within their own country's borders, and very sadly, many of them may end up in tented settlements where there is significant overcrowding.

If you think back to our mpox response in high-income settings, we were trying to tell people to try and isolate themselves at home, if that was at all possible. Of course, in a setting of forced displacement, where many people share a tent, where water and sanitation are scarce and poorly provided, there is a risk of increased spread within these settings, including from adults to children and vice versa, or people mixing in such settings. So, in that sense, conflicts and the other confounders have profound impacts on our ability to prevent transmission and beyond. Preventing transmission notwithstanding the difficulties in accessing tests in the DRC, we can also do surveillance in real-time to monitor for areas where there are outbreaks or increasing cases in different districts or regions and therefore intensify our activities in those settings. Because for many of our staff, at one point, from the mpox treatment center Uvirah in South Kivu, it wouldn't have been possible for them to go out into the community, given the levels of insecurity that were surrounding these areas.

The other thing you've highlighted quite nicely is not just the impact of conflicts, but also the economic downturns and inequities and inequalities, but also with climate change. So the discourse on emerging and reemerging infectious diseases and climate change, quite rightly, is increasing, particularly from vector-borne diseases, particularly for antimicrobial resistance, but also when we start thinking about epochs and Zoonotic infections, predominantly, but also ones that eventually spread from humans to humans, what we start to understand is the impacts, for example, of extremes of heat, deforestation, how people interact with their environment and with animals, and we don't know what spillovers we're going to see on the back of these different climate changes, and how our populations who live, perhaps more closely with nature, with animals in these settings, may find themselves.

I think the other aspect here is the importance of not just thinking about mpox. It's one outbreak. It was an important outbreak affecting our population, but at the same time, MSF was responding to measles, cholera, and increases in malaria as well, all of which are affected by conflict and displacement, all of which have important prevention aspects to them, whether it's by vaccination or vector control, and also all of them, which disproportionately and negatively impact the health of children, particularly where there is food insecurity, health services for children are also interrupted in these settings.

So, I think your question at the end is, what can we do better? And I would say that there are a number of things we started to touch on, the different licensing and approvals for these facts, vaccines. So obviously now, when we talk about pandemic preparedness, we are increasing. Discussing these first 100 days of the response, and what we do know, and we've discussed this a lot within MSF, and the movement is there was a slowness in the prioritized prioritization of children, and for that matter, pregnant women in research and licensing for vaccine and other products, when we know that children

under the age of one year old are particularly affected. And so, what we need is emergency approvals around some of these unlicensed products where the benefits outweigh the need and where it can be lifesaving, for example, in a high-risk contact child. And for example, that is what we had in some of the high-income settings. There were these approvals in place, and there were these mechanisms to be able to respond in a timely manner.

I think many of you have been following the conversations about the International Pandemic Preparedness Secretariat (IPPS) and their challenges, and conversations will know is this is one of the things that they highlighted, and there may be a number of reasons for this. One of them may be a global health security argument. Another, maybe some of the challenges when you are dealing with vulnerable populations, such as children, in terms of these international mechanisms, and some of these medicinal products. “What is it that we can do better?”

I think my colleagues have already stated the very important things that we need to do as an international community, given the significant aid cuts, not just affecting vaccination and humanitarian responses, but also food. The World Food Program has had significant cuts that are directly impacting our populations. In MSF, one of the many things that we are doing that goes beyond advocacy is also enforcing the importance of prevention, primarily, and making sure that healthcare access is available appropriately and promptly for the populations that we serve. Because, of course, we'll use mpox here for an example, if you wait until your disease becomes severe, it becomes harder to treat, harder to manage, whereas if you had better healthcare access early, or better still, were able to prevent it early, you're on a much better footing.

There are other things that we need to do, and that includes supporting local ground-up initiatives because we know of the many reasons that there needs to be localization. Localization is more cost-effective and more directly reaches the population. And of course, there's often better sustainability and trust. And of course, that has important economic and financial implications.

Lastly, we need to discuss important aspects globally around equitable access to vaccination. To give you an example, I work in the UK as an infectious diseases doctor, and I received two doses of the vaccine in 2022 when we started to have cases in the UK. What I would really like to see is our healthcare worker colleagues, our colleagues working in the field, having that same level of equitable access, because you asked me about vulnerabilities, and I stated some of the others, but our workforce and our healthcare workers, but also the people involved in cleaning and water sanitation, there are important people and in the wider workforce in this response and potentially at great risk in terms of contamination with mpox. And then I think the last thing I'd say here is the importance of improved collaboration and reducing redundant redundancy where that is possible to make sure that we're more cost-effective and generally effective in the humanitarian responses not just mpox, but some of the other emerging and reemerging diseases that we're seeing around the world.

Samantha Serrano 43:48

Great. Thank you so much. Dr. Abbara, for answering my questions, we're going to stop with that because we do have some time for some questions from the audience. The first question we received is

for Professor Yap from Victor Umbala. Would alternative samples that are lesion-forming be something that can be implemented to mitigate transmission? Saliva or samples taken from the tongue have been shown to have over 85 percent sensitivity among those with mpox lesions. This can be an alternative to decentralized testing, especially using molecular point-of-care tests.

Yap Boum II 44:42

Yes, thank you. That's very good feedback, because currently we are relying on collating samples, using swabs on the skin of patients who have rash symptoms, and we have to send them to the lab, where we use point of care, agents, experts, and others. So all alternative technology is either at the level of sample collection, at the level of sample transportation, and at the level of testing, because currently, we are evaluating two rapid genetic tests which should be able to provide us the answer to whether the patient has impacts or not within 15 minutes. So, we hope that this will also provide us with some good results, therefore allowing decentralization to go up to the community level. So, I will urge my colleagues to reach us, to reach out to us. Maybe Samantha would provide her email so that we have that information. We can transfer them to our research and laboratory pillar so that they can be included in the evaluation. You know, before proposing to use some of those tests, we need to ensure that they have been properly validated, but this is an important tool in the decentralization of the laboratory. Thank you.

Samantha Serrano 46:14

Thank you so much. Dr. Yap, the next question we have here is for Dr Abbara. Is there research underway to understand why younger children are so vulnerable to mpox Clade II? This is important for malnutrition and other comorbidities.

Aula Abbara 46:38

So, I think there have been studies that look at the different risks and risk factors that may put children at greater vulnerability if there's more in-depth immunological investigation, but I'm not aware of them. And bearing in mind some of the challenges that we face in the DRC, it may not be possible to do some of those tests.

We've certainly had discussions like this. For example, we did have neonates in the UK early in the 2020-2022 outbreak, and there were discussions about what we could do in terms of looking at immunological profiles and responses as to why neonates may be the most vulnerable.

But I guess if you think about it, neonates are vulnerable to a lot of other viral infections, perhaps more so than some of the adult populations, and I'm sure there's a variety of reasons that relate to that. And of course, if they are malnourished or affected by co-infection with other diseases that affect their immune system, that might also put them at risk, but I'm not aware of more in-depth research around that, but I don't know if Professor Yap or Mr. Nodar are aware if any of these studies are ongoing.

Samantha Serrano 47:53

Did either of you have any idea about that as well? No. Okay, great. Thank you so much. Dr. Abbara. The next question is, for Mr. Kipshidze from Jared Schulten. Is the age range you mentioned, 18 to 49 years old, most affected due to a greater likelihood of sexual activity? Or is there some other hypothesis or evidence for this? Some older cohorts had smallpox vaccinations in the U.S., for example.

Nodar Kipshidze 48:27

Yeah, it's a great question. So, if we think of the 2024 outbreak in terms of the adult populations that are affected, I think it's multifaceted. Sexual transgene is playing a role, but it's also just kind of close contact.

So, as Dr. Abbara mentioned before, you have huge swaths of internally displaced populations, and so they're in very tight spaces where it just really facilitates transmission of mpox as just other infectious diseases, both bacterial and viral. And so, I think it just is an unfortunate situation, you know, these, these pathogens usually take, take hold of these unfortunate situations to transmit quite effectively. So really, in terms of, you know what, or why, that age range, again, I think it's just very multifaceted in terms of the modes of transmission.

Samantha Serrano 49:23

Thank you so much.

Yap Boum II 49:25

Maybe, Samantha, if you don't mind, I would like to add a few additions, looking at what we are seeing across the continent. And rightly so, it was mentioned the issue of the transmission was mentioned. But here we start with the clade.

We have Clade Ia and Clade IIb. The original one was a Clade Ia, which was a spillover from the animal to the human. And we were seeing a household transmission, so within the families, and therefore, the children were affected. So now we have some evidence of sexual transmission of the Clade Ia. So, we move from animal to human to household and now to the second transmission of Clade Ia. For Clade Ib, we are seeing the opposite, where initially in countries like Uganda, we see an increased number of cases and expression increases due mainly to the sector transmission, focusing on the population, the sex workers, the truck drivers, and so on. But now what we are also seeing is that we have the household transmission of the Clade Ib, so just to say that all posting is dynamic, we start from one way of transmission, one population, if it's on transmission, we are mainly talking about the adult.

But the,n when it comes to the household, when the children are exposed, maybe the thing that I also want to highlight, which is also an advocacy piece, is that DRC is the only country where the vaccination is approved with the man for children between one year and 12. All the other countries are starting from 12 and beyond, while we are seeing those children affected. So, it's important to take the opportunity of this, those platforms to encourage the country, one, because the children are also affected. Two, because we see in the DRC that we don't have severe adverse events in children. So, the vaccine is pretty safe for that population. So, it's important to have to consider that so that we ensure that everyone is protected and no one is left behind, especially because of age.

Samantha Serrano 51:47

Thank you so much, Professor. Yes, we have another question here for you. I believe that's asking if there's any progress with the point of care testing or Rapid Diagnostic Tests (RDT) on the ground.

Yap Boum II 52:03

Yes, there is a lot of progress. I remember I mentioned that the plan we are in now, the response plan number 2.0, is focusing on intensification, where we want to catch all the kids, wherever they are. It scales up the vaccination and increased surveillance, the IPC, and case management. And the second part is the integration, the integration, I think it's all I was talking about. It is an instant. Part of DRC, you have measles, you have mpox, and it's not possible clinically to make the distinction between the two.

So, what we've been pushing is the evaluation and therefore the validation of point of care that can make the distinction between mpox, measles, and chickenpox. So that when we have the patient, we can take care of them according to what they have, in terms of testing, but also in terms of management, the way we manage the IPC, the case management, and the vaccination will differ depending on that. So, this is the first advance in the point of care. It's really to have those multi-place tests that are being rolled out in the DRC, and that will be, will continue to be, rolled out in other countries. The second one I mentioned is ongoing, the validation of the rapid analytics text, and based on the result, we will be able or not we use them in the field.

Samantha Serrano 53:33

Great. Thank you so much. We have one question. It hasn't been directed to anyone, but it says in Nigeria, the mode of transmission has been largely human-to-human. Has there been any big break in animal-to-human transmission in the African continent?

Yap Boum II 54:00

Yes, if I may, start in the Central African Republic, for example, we've been having a case impact has been around. We've been seeing an increased number of cases last year and early this year, 2025, and this one, based on the genomic surveys that we've done, is mainly a spillover from the animal to humans.

So, this is one of the places in DRC when you go to the province of Ecuador, and some of those problems are also close. That way, we keep on seeing the transmission from human to animal. This highlights the importance of the One Health approach. This emphasizes the fact that in the target I was talking about this decentralization, for example, the target of the lab that needs to be supported, the vet lab, is also part so that once the surveillance is done, we can also track to see. See which animals are responsible for the transmission. There was an article months ago from Recourse in partnership with the ELMOD Foundation in Germany, where they found a new reservoir for mpox in the squirrel, which is an animal that is used by children to play with, and two by other villages to eat. So these are important findings, just to highlight that the epoxy is really a need to have a One Health approach, the animal, the human,

but also the environmental, because we are now tracking mpox in wastewater so that where the human surveillance is lacking, we can be in the position to track those viruses in the wastewater, and this is something that is also working pretty well.

Samantha Serrano 55:55

Thank you so much. Professor Yap, one last question for Dr. Abbara, how is the current mpox outbreak impacting the, you know, emergence and spread of antimicrobial resistance in the region? Can you speak a little bit about that?

Aula Abbara 56:15

Yeah. So, in the mpox treatment center with MSF Amsterdam, we've started to ensure that we address this issue. So, for example, this mpox outbreak may be associated with overuse or misuse of antimicrobials, which can be an important driver of antimicrobial resistance.

There may be a tendency, particularly if there are severe mpox lesions, and we've sadly seen this practice in a number of different settings, with people affected by impacts, where almost people might choose to have a lower threshold for starting antimicrobials or starting intravenous antimicrobials, so all of or maybe giving a longer course than they otherwise would, and all of this could be associated with the development of antimicrobial resistance.

Again, with the mpox outbreak and the complications that we see as clinicians, some of which are rare, some of which are more common, the most common probably being skin and soft tissue infections, including necrotic infections, where it may well be reasonable if there's suspicion of superadded bacterial infection to also start antimicrobials that could be a driver of AMR and of course, some patients may get other complications, like pneumonia, meningoencephalitis and other complicated other such complications where antimicrobials may be used or misused in different settings. The extent of this we may not know because, as we said, with the destruction related to the conflict, we may not have the full extent. And with microbiology services, for example, not being as available in many of these settings, we may not know the extent of AMR.

Then the other important factor here relates to the interrelatedness and the sort of very close relationship between not just AMR and environment, but also AMR and climate change, AMR and conflict-affected settings where you may see multiple drivers in this particular setting, even going beyond mpox, which can also drive antimicrobial resistance and may also lead to increased transmission that we may not fully be able to ascertain in such settings.

Samantha Serrano 58:38

Thank you so much. Dr. Abbara, I want to make sure that we close this on time, but before we officially close the conversation, I wanted to invite any of you speakers to let us know any take-home message you'd like the audience to have in regards to the current outbreaks and response and what to keep in mind going home.

Yap Boum II 59:07

Can I start?

Samantha Serrano 59:09

Yes, of course. Doctor, yes.

Yap Boum II 59:11

No, thank you so much for holding these. Now the take-home message is that the Mpox outbreak is continuing in the African continent. But because we are interdependent, whether we are talking about funding, whether we are talking about the spread of disease, we all need to invest in the rest of the response to this outbreak. We are in the intensification phase, looking for integration, and for the legacy we really want the countries affected to be different after the outbreak than before, with the capacity to decentralize the laboratory, the surveillance, and, of course, the scope of vaccination that will rely on the solidarity, because vaccination is an issue of equity.

So, we really hope that we'll manage to get those that are needed, and with the support of all the partners, MSF, UNICEF, and all those, we will be able to bend the curve so that we can move to something else over you.

Nodar Kipshidze 1:00:24

Yeah, I would just like to thank you, Sam, again, for putting this all together, and for my fellow speakers, really great to hear from both of you as well to get your perspectives on the situation. I think for me, the take-home message is just a reminder of really using a One Health framework in terms of just thinking about public health. If we think about emerging and re-emerging infectious diseases, we know about 70 to 75 percent are zoonotic in origin, and thinking about, the risk factors for those spillover events to occur, thinking about things like animal reservoirs and all the other factors that kind of drive largely human-driven, factors that drive the spillover events to occur more and more often, things like land use change, climate change, all of these are things that are being done by humans.

So, thinking about how we can maybe modify some of those behaviors, whether through policy or just real buy-in from other governments and administrations, and just using that one health framework to potentially prevent the next pandemic.

Then I think secondly, as Professor Yap had already mentioned, really thinking about the equitable distribution of vaccines, as my background says, vaccines save lives. It's not just for mpox. It's not just for COVID-19, there are many other vaccine-preventable diseases out there, and vaccine distribution and access still are very much an issue. So, thinking about how we can distribute those vaccines in an equitable way globally.

Aula Abbara 1:01:58

And so, I would say, among the most important things going beyond the One Health approach is making sure that we always address these issues beyond the pure biomedical and take a transdisciplinary

approach across sort of anthropologists, across water and sanitation experts, and, of course, the healthcare workers, the wider team of healthcare workers and thinkers in this space. And secondly, prevention is always better than a cure. So that's vaccination, but also the community and public health messaging that we need to enforce, to support our often-vulnerable communities, and also to go out and reach them where they are, rather than expect them to come and find us with these different things.

I think the last thing to say, and it touches on what Professor Yap has said, is taking a system-strengthening approach, because we must never just look at one infectious disease on its own. They all have reverberating effects across the spectrum, and not just in infectious diseases, but also beyond that, for example, in maternity and pediatric and childcare, and non-communicable diseases in these settings. So, really trying to be holistic in how we understand and approach these outbreaks. Very sadly, it's not just the current mpox outbreak we're seeing, not current increases in malaria, measles outbreaks, and cholera outbreaks, very sadly, we may well see other spillover events which can affect, often, the most vulnerable communities that we serve.

Samantha Serrano 1:03:24

Thank you so much, everyone, again for joining us. It was an honor to gather all of you today and to hear your thoughts and learn from your experiences. We really hope that what's been said today will carry over and we can continue discussions and talking about this in the future, and for change, for better outcomes, right? Thank you very much, everyone, for joining us.

Be sure to follow the One Health Trust for updates, and we'll have this recording up soon. Thank you very much, Professor Yap, Dr. Abbara, and Mr. Kipshidze, for joining us.

Yap Boum II 1:04:02

Thank you so much. Bye.