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TRANSCRIPT

Online Event

“Delivering Immunizations in Fragile and Conflict-Affected Settings to Strengthen Global Health Security”

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FEATURING

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Bliss:

So last July, data collected by the World Health Organization and UNICEF regarding national immunization rates showed that globally, coverage of routine immunizations for vaccines, such as the one for diphtheria, tetanus and pertussis had decreased for a second year in a row. Now, this disappointing news came after decades of progress in improving immunization coverage that had been driven by efforts to diversify and regionalize vaccine manufacturing, pool vaccine procurement to drive prices down, deploy innovative financing mechanisms to subsidize low-income countries' purchases, and strengthen countries' health systems and immunization delivery systems.

But during COVID-19, lockdowns, the diversion of health resources to outbreak response, and the suspension of air travel and even overland transportation routes, all created delays in the delivery of vaccines. Now, these factors help explain why some children didn't complete all three recommended doses of diphtheria, tetanus, and pertussis, but they also point to the fact that some children got no doses of vaccine at all in 2020 and 2021.

Now, not surprisingly, over the same years of the COVID-19 pandemic that overall immunization coverage went down, the number of zero-dose children increased to 18 million. Now, a large percentage of these children are living in fragile or conflict-affected settings, where security conditions, controlled by nonstate armed groups, mistrust of state authorities, or even just the remoteness and mobility of the population can make it very difficult to deliver health services, including immunizations. This can become a significant challenge for health security. When measles coverage rates slipped, for example, we can see an increased rate of deadly outbreaks. Measles outbreaks can be both difficult to contain and expensive to control, in that they require treatment initiatives and also special campaigns to reach missed children.

And the challenges in immunization coverage over the past several years are not just to do with vaccines for children. Delivery of COVID-19 vaccines for adults, including those living in fragile or conflict settings, as well as refugees, migrants, and displaced people, has also proved to be a difficult puzzle to solve. In fact, among the ten countries ranked highest on the fragile states index, which assesses vulnerabilities – states' vulnerabilities to risk, internal tensions, violent conflict, and humanitarian crises – immunization coverage for DTP3, measles, and COVID-19 vaccines is lower than recommended, as you can see in this map here.

Hello, and welcome to today's panel discussion on delivering immunizations in fragile and conflict-affected settings to strengthen global health security. I'm Katherine Bliss, director for Immunizations and Health Systems Resilience at the CSIS Global Health Policy Center. And I'm really pleased to be joined by a group of experts to talk about the challenge of increasing

immunization coverage among populations living in remote, insecure, or mobile settings, and really to dig into the steps that the international community can take to improve outreach, and improve coverage, and improve the situation for people living in those communities.

My guests today include Ahmed Arale, deputy global director and technical lead for the CORE Group Partners Project; Ted Chaiban, global lead coordinator for the COVID-19 Vaccine Delivery Partnership; and Anuradha Gupta, president of global immunization at the Sabin Vaccine Institute.

So, over the next hour, we'll discuss the innovative approaches as well as strategic coordination among national governments, district officials, multilateral agencies, and civil society organizations that can be taken to close gaps in immunization coverage that have widened during the pandemic, while also strengthening the delivery of immunizations for future cohorts.

So, Ted, Anuradha, and Ahmed, welcome to the discussion.

Ahmed Arale: Thank you so much.

Dr. Bliss: So, I want to start out by asking each of you to share your perspective on, you know, really how the last three years of the COVID-19 pandemic have affected the delivery of routine immunizations with the populations that your organizations are working with. Why is the increase in zero-dose children concerning? And what do you see as the implications for regional and global health security? So, Anuradha, let me bring you in first.

Anuradha Gupta: So thank you, Katherine, for this very interesting question.

I think during the last three years we saw a lot of very grave impacts of the pandemic on routine immunization services. And, you know, in 2020, when the pandemic hit, everybody sort of expected that the disruption to really happen, you know, because there were lockdowns and, you know, there were just no services. Also, caregivers were very fearful, you know, of bringing their children to – for vaccination services. But in the latter half of 2020, immunization became the first service to bounce back, and really bounce back well. So 2020, we actually saw a drop in routine immunization which was much less than what was anticipated. And that made all of us very hopeful, optimistic, and euphoric, frankly. And we thought that routine immunization is really going to continue to stay at a – at a high level.

But I think 2021 was a very sobering year, because that was the time when pandemic – when COVID-19 vaccine rollout started to really scale up. And some of the sort of estimation that I personally did at that time really went to show how we were actually expecting countries to deliver five times more

vaccinations on top of routine immunization, something for which health systems in most LMICs were simply not ready. And therefore, we started to see sort of a double whammy, where COVID-19 vaccine rollout itself was plagued with several challenges, which I'm sure Ted will talk about, but I think routine immunization services also began to be disrupted.

Now, from my perspective, what is worrying? The most worrying part is that the decline that we have now seen in routine immunization – and you flashed up some of the data – is actually quite sustained and prolonged. And I think this whole hope and optimism that routine immunization will bounce back may not actually happen. You know why? Because the pandemic has also brought some deeper challenges to the fore. For example, disinformation. You know, also some of the issues that we saw around COVID-19 vaccine delivery bleeding into routine immunization. Just the burnout of the health workforce and the fatigue levels. So, I think – so there is community mistrust that you alluded to and sort of fatigue, but there's also fatigue on the part of the delivery machine. And I think that's just a very, very worrying sign.

Now, just one last thing, therefore at Sabin what we have done is to actually put together a new, BRAVE and BOLD approach. And what is BRAVE? B is boost immunization, because we now know that it is not just about the basic childhood vaccines, but we are actually getting into life course immunization, which brings its own new challenges. So really boosting immunization, thinking through some of these newer elements of the problem. Then R is reduce the number of zero-dose children, because that's where we have seen a 37 percent increase. And I do want to underscore the point that actually whatever drops we saw in coverage of the basic antigens, they were directly in correspondence with the increase in the number of zero-dose children.

So actually, it was really purely an increase in the number of children who lost access to services. And as a result, you know, the global target of actually averting 5 million deaths every year, in the 2030 agenda, we are moving in the wrong direction because last year the number of deaths that were averted through vaccines fell to 4 million, you know? And the previous year, it was 4.2 million. So really the progress is moving in the wrong direction. And if we have this accumulation of zero-dose children, that is just an invitation to disease outbreaks. So polio resurges, you know, measles resurges. And just for us to remember one thing, that these outbreaks will happen in unvaccinated children. They don't happen among children who are vaccinated. So therefore, there is a risk, direct risk, to health security.

So A for us, in the BRAVE framework, A for us is accelerate vaccine introductions, because we also saw depth of protection dropping during the pandemic years. HPV's a very good case in point, where we saw the global coverage actually falling already at 15 to 12 percent. And then V is value. Community is value, women, because we know gender barriers just sort of

need to be identified, addressed. But we also need to use communities and women as changemakers. And then E for us is enhanced integration, because really this is the time to think or reimagine, you know, the service delivery models, to make sure that we integrate as much as possible.

Dr. Bliss: So, this is the BRAVE program?

Ms. Gupta: BRAVE, but it is also BOLD. And probably I would sort of dwell on that a bit later.

Dr. Bliss: OK. Great. Thank you.

So, Ahmed, let me turn to you. You're with CORE Group. You're based in Nairobi and working with populations in a number of different countries across sub-Saharan Africa. What have you seen with the populations you work with over the past three years? And, you know, when you think about the increase in the number of children in particular who have missed out on all of their vaccines during this period, how is this manifesting in the communities with which you work? And what do you see as implications for regional health security as that deepens, as Anuradha has explained?

Mr. Arale: Thank you so much, Katherine, for giving me this opportunity. CORE Group Partners Project is a multi-country, multi-partner project primarily funded by USAID, and also Bill and Melinda Gates Foundation.

And we work with multiple local and international NGOs in security-compromised areas of fragile states, like Horn of Africa, Somalia, Kenya, Ethiopia, South Sudan, northern Nigeria, and many other countries. So, I will tell you, populations are underserved, primarily mobile populations, especially nomadic pastoralists, migrant populations, internally displaced persons affected by humanitarian crisis in this region, especially Horn of Africa, insecurity, drought. You can see a severe drought in the Horn of Africa right now. So, we work for this population.

And what I can mention is that COVID-19 pandemic has disproportionately affected these underserved communities. What I can say is that as much as we are working with these communities to prevent polio and other vaccine-preventable diseases. What we can say is that COVID-19 has reversed the fragile gains in polio eradication and other vaccine-preventable diseases. And what we currently see is outbreak of measles, among other vaccine-preventable diseases. As we talk, there are measles campaigns going on in Kenya, northern Kenya, Somalia, and Ethiopia. And that shows that COVID-19 really reversed the gains we did as far as immunization is concerned.

These communities are marginalized, as you can see the map there. You see the color codes in those maps. We are a community-based, cross-border

project. So, we work in the border areas of Kenya, Somalia, Ethiopia, South Sudan, Uganda. And you can see the Horn of Africa is an epidemiological belt. These are homogeneous communities who straddle these borders. Mainly, they are illiterate. They straddle this border. The borders are porous.

And most of the time, these borders are insecure. And so, we have these low-immunity populations who are rarely served by the conventional health care services. So, these are communities that you need to go and look for them, instead of them coming to you, because of their mobile lifestyle of looking for livelihoods. And as droughts bite, and the famine sets in, these populations move across the borders.

So the color codes you see there are every different color is a local organization or an international NGO. These are NGOs and civil societies who have worked in these border areas for many years, who have earned the trust of these communities. That's why they are placed in areas that cannot be reached by governments and U.N. agencies. So as much as we have worked with this community, we have seen a severe impact of the pandemic as far as immunization is concerned. And now we have pools of cohorts of zero-dose children. And really, it is challenging to track them. And I think as we go on, I'll talk about what we do in terms of ensuring that we reach them.

Thank you.

Dr. Bliss: Well, thank you. And especially for providing a map where we can really see how, you know, the border areas, you know, where some of the communities are really moving back and forth across borders, creating challenges that we'll talk about in a little bit.

Ted, I want to turn to you. You're with the COVID-19 Vaccine Delivery Partnership, which is focused, I think largely, on delivering vaccines to adults. But, you know, the COVID vaccines became available, you know, at a time when it was clear that the pandemic had been affecting the routine immunization platforms. And so, you know, as you look at the challenge of kind of building on those platforms to deliver vaccines for adults, how has the – I guess, the impact of the pandemic on those routine systems shaped what you're looking at, and the challenges that the partnership is trying to tackle?

Ted Chaiban: Thank you, Katherine. And thanks for having us this evening. It's great to be on a panel with Anuradha and Ahmed. I want to complement what they've put on the table already with a couple of points. You know, I think at the beginning of the pandemic, Anuradha mentioned 2019, what we saw is a lot of hesitation to be in contact with the health system. So, a lot of reduction in health-seeking behavior. And that worked itself out over 2020. But in a number of countries, specifically in fragile and conflict-affected contexts, you

have issues with trust, trust in authority, trust in the health system, that have impacted upon people's willingness to engage and come into the system.

The pandemic also brought out some of the structural challenges of health systems that were there in many low and lower-middle income countries, especially in fragile and conflict-affected settings. So, issues with infrastructure, issues with logistics, but also some of the more fundamental structural questions around human resources for health. In many countries, the pandemic has reduced the fiscal space. There's been an economic downturn. And, you know, a health worker that maybe two years ago was making a minimum living wage is now, after currency devaluation, a very tight budget, getting paid sometimes, getting paid very little. And that has a profound impact on the availability of health services in a number of these countries.

If I can refer, for example, to a mission we had to Guinea-Bissau, which, you know, was dealing with needing to work on polio, needing to work on measles, and continue the push with COVID-19 vaccination, which they've done a good job on. But, you know, the health workers are fundamentally looking for how to participate in the next campaign in order to get DSA so that they can sustain themselves and their families. And so, we need to be looking at ways to address some of those fundamental structural issues. And, you know, we can come to that later in the discussion today, but it will be important that one of the legacies of the COVID-19 response is to strengthen those community health systems. A lot of work has been done on cold chain. A lot of work has been done on health management information system. How can we also invest in human resources for health?

Let me also say that, of course, you know, when you have a very concerted attention on the COVID response, and what has worked is proximity. So there needs to be – there has needed to be an outreach in campaign-style activities to get as close as possible to the people that needed to be vaccinated, the high-priority groups, in particular the elderly, the people with co-morbidities. And that takes a significant amount of resources. You need the time and the resources and the machinery to do the microplanning and get the vaccines out there, work with a wide range of partners, including civil society NGO to do the work. And of course, that means that when you're doing that, you're not focusing on other health priorities. So, there's a number of reasons why we've seen the drop-in immunization coverage rates.

At the same time, I think it is important to say that in some countries, like Uganda, like Central African Republic, like Chad, we did not see this drop, but we saw a recovery. And the COVID-19 response has also resulted in investments in the essential immunization system. That will benefit immunization going forward. I mentioned the cold chain, the health

management information system. Often a lot of investment in digitalization. So, we also ought to build on those assets going forward.

Dr. Bliss: So, Anuradha, Ted has, you know, talked about some of the investments that have been made in the cold chain, in digitalization of records, and that kind of thing. We know that there is still a lot more that can be done as far as supporting health workers and their training. But, you know, one of the – one of the questions, you know, that comes up when you talk about mobile and displaced populations in particular, where so many of these, you know, children who have missed doses or haven't been immunized at all, live, or, you know, the communities from which they come, is that national governments are often unwilling to, you know, either allocate resources for that population or, you know, sort of claim that. And I think even more so when you have populations that are crossing borders.

And so, I know there have been a number of documents that have come out kind of, you know, quantifying some of the challenges that that poses. But, you know, what are the arguments that can be made to states and that civil society can embrace as well in their interactions to argue for including migrant and refugee and displaced populations when, you know, thinking about, you know, planning for immunization programs?

Ms. Gupta: Yeah. So, I think that if you look at the number of zero-dose children and their distribution, you would see that about 50 percent of the zero-dose children actually are concentrated in urban slums, remote rural areas, and conflict settings. But 50 percent of them really are in sort of non-specific contexts. And they actually include nomadic, mobile, migrant populations. But ethnicity and poverty are also two major predictors. And when we are – when we are talking about mobile, migrant, displaced populations that we know that a lot of these factors coexist. So they are – they are homeless. You know, they sometimes lack identity. You know, their identity's not accepted by any government. They are extremely poor and clearly, you know, livelihood is something that they struggle with. So and then they lose access to services.

So based on my own, actually, work also around polio, where we – in India we tried to really bring a laser-focus on mobile groups and nomadic populations. And then Gavi, I really feel that we require highly bespoke service delivery models to really address some of these issues, because these populations also are not heterogeneous – they are not homogenous, right? They are highly, highly heterogeneous. For example, when we are talking about displacement, you know, we know that now food crisis is becoming a major crisis, more than 200 million people across 53 countries.

So clearly there is a movement and there is displacement. And then suddenly in several countries we see, for example, IDPs, internally displaced people

and the camps and their, you know, concentration. And we saw that, for example, in CAR, you know, Central African Republic. And which really forced us to start to think very differently about how to take services to them. So, there is this whole issue of internally displaced populations. Then the second is refugees, right?

So, for example, when I went to Cox's Bazar in Bangladesh – and that's a very large population – and then refugees don't go – they just stay there, right, in the host country. But then there's also a sort of a reluctance on the part of the governments to actually mainstream them or regard them as a part of their population. So therefore, you know, you could really see how, you know, they were still stigmatized, they were still excluded. You know, there were still issues about service delivery, despite the fact that external aid was pouring in.

So, I think that there is this whole issue of the apathetic attitude of the governments, Katherine, as you said. And then at Gavi we – for the first time, therefore, did a policy on fragility, emergencies, and refugees, where we actually highlighted two things. One is that for these you actually need highly flexible programmatic approaches because, typically, if we vaccinate only infants, you know, in these cases you have an accumulation of unvaccinated children. So, children below the age of five years or 10 years who could absolutely be unvaccinated, and then they become epicenters of disease outbreaks. So therefore, we introduce the flexibility to do wider age group vaccination, right?

But I think one of the issues, and now, of course, that policy evolved into a policy for displaced fragility, emergencies, displaced populations. Because, you know, we realize refugees are not the only indication of displacement. So programmatic flexibility is required. And I think we need to work with the governments to make sure that that is appreciated. But I think there is one issue that still remains. And that is that in these kinds of populations you can see these diseases like pneumonia, right, spiking. And there may not be a national introduction of pneumonia in those particular countries.

So how do you make sure that in some of these concentrations you actually make a highly targeted and selective use of vaccines which may not be a part of the national immunization programs, because these populations are just at a very high risk of some of these diseases. And I think that is a question that still remains out there for the global community to address. And the COVID-19 vaccination, with the humanitarian buffer approach, we need a beginning, but I think we need to think about how we bring that to routine immunization.

And then another point that I want to make is that when Gavi did this strategy our insistence was that the governments must actually try and

mainstream these populations, because it's not just vaccination that these populations need. They need a host of other services. And therefore, we made co-financing, you know, a prerequisite. And what we realized was that the governments are very reluctant to go finance. So, I think this remains an issue about how to bring governments onboard to say, look, if these populations are there to say, then how do you cater to their requirements?

And then the second question is the communities, right? So we also found that communities have a lot of mistrust towards the governments. And I think that's another issue that really needs to be tackled. And therefore, I would say that in most of these settings if we want to succeed, we need to bring new intermediaries, you know, who then can be that interface between communities and the governments, and make sure that there is allocation of resources for these populations, and that those allocations are properly utilized.

And just the last thing is integration. So, when I went to Cox's Bazar in some such settings, I really – I was quite astonished to see that the service delivery continues to be driven by the perverse incentives that they had touched on. Because, you know, if we – for example, in Cox's Bazar, there was a preventive, call it a campaign, for which funding was being provided by Gavi, but because there was so much of funding and operational costs, that really meant that that was being run as a silo, right? But then routine immunization – (inaudible) – there was less than 50 percent uptake.

And a lot of times communities can begin to confuse – get confused about whether, you know, the teams that are coming to their houses to deliver some sort of vaccination – be it polio or all the vaccines that the children need, and therefore they don't have to – and I thought there was great opportunity to synergize vaccinations with, let's say, food distribution. Because food is something that people really put a lot of value on. So, if we could combine, you know, immunization and food distribution, I think we stood a much better chance of pushing up immunization coverage and making sure that you minimize the risk of disease outbreaks.

Dr. Bliss:

So, I mean, it sounds like, on the one hand, it's a larger political question for governments, like, is this refugee community, or are these displaced people, or, you know, migrants who may be going back and forth across borders, are they citizens or are they recognized? Are we going to say, yes, in fact, they're going to be in this country for a while and so we need to provide, you know, the kinds of services that we're providing everyone else? So on the one hand it's a political question, but also then, you know, there's – you've pointed out the kind of tailored – the bespoke approaches you really need to understand the particular trust and relationship that has developed with the community in question over time.

Ahmed, I want to turn to you. I mean, you talked about the work that CORE Group and partners are doing with pastoralist groups, and in particular those who really do move back and forth across borders, many of which are insecure or, you know, have – pose security challenges at different moments. And I wanted to ask you to say a little bit about some of the – I guess, the tailored approaches. Or, you know, what has worked well in terms of reaching those communities with offers of immunizations? And, you know, what are the arguments that are most successful, I guess, at the district and country levels to, you know, say, you know, we really need to include these communities in the overall plan for immunization?

Mr. Arale:

Thank you so much. I really concur with Gupta on the issues she mentioned. And for us, the civil societies who work with these underserved communities, and I mentioned there are a lot of competing priorities. Humanitarian crisis, whether by insecurity or, you know, drought, and that. Having worked with these communities, we have learned to take advantage of even these competing priorities by leveraging and trying to integrate immunization services at every available opportunity.

As Gupta mentioned, one of it is food distribution. As you may be aware, these civil societies and NGOs were trusted to implement this immunization project because of the work they have been doing with these communities over the years. And one of them is food distribution, especially through internally displaced persons who ran away from droughts or insecurity. Others have been streaming to one of the biggest camps in Dadaab, the refugee camps. So at every point, we integrate immunization into any services being provided by the various NGOs and the United States. And that is nutritional services, a wash program, and many other services that these NGOs provide.

One approach that is really working for us right now is the one health approach. Over the years we have done polio-eradication activities in these communities. Hence, we were requested to use the polio infrastructure and the community networks to bring onboard priorities on other diseases, disease surveillance. And especially the priorities for global health security. And really, that was a great thing, because the population we work with are mainly pastoralists. As you are aware, their main priorities is pasture, water for the animals. Hence, human health becomes secondary. These people are on the move. You have a situation whereby a mother in labor can be left behind because the herd is moving to look for water. The old place is dry.

So when we brought onboard the global health security priority zoonotic disease surveillance, that meant working with veterinary services, animal health departments of the various governments in these areas. And I'll tell you, in Horn of Africa, the population of nomads are more than 20 million. That is a sizable, you know, population. So when we integrated priority

zoonotic diseases, and now veterinary, animal health department personnel, who are part of our teams, that really attracted the interest of the nomads. When you have a community forum or a community dialogue where you have animal health staff who want to talk about the animals, because they are trusted in the animals – the health of the animals.

And that helped us to integrate. So currently we are talking about one health community-based cross-border interventions. And along those borders that you have seen, we use this approach. The other approach that has really worked for us is cross-border health interventions. As I mentioned the borders are officially closed, but unofficially they are not closed. And these community is moving about. So we set up a cross-border health intervention mechanism, whereby we have cross-border health communities on both sides. And we have our multiple NGOs and civil societies working with the United States, WHO, UNICEF, UNHCR in these areas to have this cross-border coordination and collaboration.

We have cross-border committees at these zero-point border areas to share information, to monitor the movement of these populations. We're able to map out and provide this, you know, population – mobile population, migrant population, and children on the move – so that we're able to target as far as, you know, for the tracing, looking for immunization drop-outs, you know, mapping out of these cohorts of zero-dose children. Who, in most cases, assists the propagation of disease across borders. And the backbone of our projects are community volunteers. And this is where we have worked with these communities to train them, empower them, so that the communities who are mobile – and these volunteers are embedded within this mobile population, especially nomadic pastoralists.

And using technology, which is really interesting for us here, we have equipped these volunteers with smartphones. They are able to geo-record where these zero-dose children are and do real-time reporting. In areas where even our staffs cannot go. And so we have – they are able to map out using their smartphones so that they link these communities to the broader health facilities, so that we're able to do targeted outreaches by these border health facilities that we work with, to go out to these communities and give them services. And integrating any services in this veterinary vaccination, in this nutrition support that is happening. So, we use that cross-border health mechanism to really target these populations.

Dr. Bliss:

Thank you.

So, Ted, I want to turn to you. Both Anuradha and Ahmed have, you know, talked about the importance of, you know, really understanding the community needs and the importance of integrating the delivery of immunizations within a larger package of services. I know when we've talked

before you've – you know, the COVID-19 vaccine delivery partnership, as many of the countries where you're working are those kind of listed on the top of the fragile states index.

And I know you've said that, you know, there's not really one factor that explains, you know, some of the challenges in all of the countries. What are you seeing, you know, now, as far as the approaches that are working best in the countries that you're really focused on to really raise coverage of COVID-19 vaccine uptake? And, you know, what are – what are some of the lessons that you're drawing from this experience that you see, you know, may be relevant for other adult immunizations over time?

Mr. Chaiban:

So, a few points. And I'm going to reinforce some of the points that Anuradha and Ahmed have made. I mean, just first on the premise, there are now eight countries that have joined COVAX that are still below 10 percent vaccine coverage when it comes to the basic set of vaccines related to COVID-19. And six of those are dealing with major emergencies. Places like Haiti, Yemen, DR Congo. And so, there is a strong correlation between facing major humanitarian emergencies or being conflict-affected and, you know, facing difficulties with raising the overall coverage levels, including for zero-dose children.

I think there's a number of reasons for that. And again, we need to go back and recognize that Omicron changed risk perceptions. When a lot of countries wanted the vaccines, they were not available in significant quantities. And we need to look at how the health architecture is and how member state reacted, issues with vaccine nationalism. These countries are also places that have many competing priorities. If you're dealing with drought and hunger, that's going to be the number-one concern. There are mass difficulties with logistics in these places, and infrastructure is complex. And, to go back to an earlier point we made, the whole issue of trust, and whom you trust, and who you're going to trust to provide your health care, is key.

Now, you know, at the same time we've seen countries make enormous progress in some of these settings. A place like Somalia was at 6 percent vaccine coverage when it came to COVID-19 in January. They're now at 38 percent vaccine coverage with the primary series. Central African Republic is now at 39 percent. So, there's a number of places that have moved forward. And when they've moved forward, they've done what Anuradha and Ahmed spoke about, but let me add a couple of elements. I mean, it is important that leadership in government set the tone, because the machinery of the health system will follow the lead from the top of government. And that is key. When there is a political block at that level the rest of the architecture and the rest of the infrastructure won't work.

Second, though, is this really important point that both Anuradha and Ahmed have made about the bundling of activities. And we worked, as the COVID-19 Vaccine Delivery Partnership, you know, UNICEF, WHO, Gavi, the World Bank, USAID, and others, to identify opportunities for that bundling. A set of essential health and humanitarian services, including COVID-19 vaccination, that are delivered together.

And then to give a couple of examples of where countries have taken this forward. In Central African Republic, they did campaigns that brought together COVID-19 vaccination, measles vaccination, vitamin A and deworming. In Iraq and Ethiopia, the COVID-19 vaccination effort was used as a way to identify zero-dose children and bring them back into the health system and provide them with the vaccines they had missed. And in Mali and in South Sudan, where it was recently in both of those countries – a number of discussions have taken place with humanitarian NGOs to reach remote populations with a package of activities.

If you're going to send a mobile team into a remote area to reach someone who is displaced or otherwise living in a context where their humanitarian needs prevail, you need to be able to provide a range of services. As Ahmed was just describing, it's often issues around nutrition, essential immunization, and then the COVID-19 vaccination is part of that package reaching that family.

You asked about the lessons learned. So let me put a couple points on the table there. Firstly, is to say, you know, going forward I think a number of countries will continue to do a COVID-19 vaccination campaign into 2023, in an effort to raise their overall coverage levels and reach high priority groups. But in parallel to looking at this question of integration, a different type of integration. Not necessarily an integrated campaign so much as integrating into primary health care services. And this is – this is key. And there, I think there's a number of lessons that we can draw.

One is this importance of having a way of decentralizing health services. You know, in Madagascar, Mali and Niger, almost 50 percent of the population is more than five kilometers away from a health facility. So really, the way to reach them is going to be through outreach and mobile services, building on, you know, health posts, other smaller infrastructure that might be there. And you need to be able to get that proximity going and continue to do that effort, again, with that bundle of services that we all spoke to.

Second, there's been a number of examples where you had an alliance between the health system and NGO and CSO actors. So both relying on faith-based organizations to mobilize religious and community leaders that the population trusts, but also working with a range of actors that can twin with the health system to provide the services and a measure of quality control.

You know, that same grouping, that same way of working can also really strengthen the issues around community dialogue, vaccine demand, and risk communication and community engagement.

And then the last point I would make is, you know, the importance in those settings and those kind of contexts to really link up with services that the population asks for and that are of priority to the population. So, to really have that dialogue and that understanding.

Dr. Bliss:

So really integrating services, also using the opportunity of the delivery of the immunization to link people to other kinds of services, whether health or food related services, wash and others. But, you know, also to recognize that people's needs are, you know, complex and multifaceted. So, thank you.

I want to, first, ask those in our online audience and those who are here in the room, if you have a question or a topic that you'd like to raise, please use the online portal or the QR code here in order to submit a question, if you would like to do so.

But, Anuradha, I want to go back to a point that Ahmed raised. You know, Ahmed talked about the really looking at the work of the community health workers within the pastoralist communities but, you know, really educating them and empowering them to deliver messages about the immunizations, you know, within that setting. But I wanted to ask you about the role of, you know, kind of thinking about gender within the delivery of immunizations, particularly in these – for these vulnerable groups and in these fragile settings. Is there more that the immunization community, working with civil society and with governments, could be doing to address some of the gender-related barriers to accessing these vaccines?

Ms. Gupta:

Yes, absolutely. We can do much more. And I think the fact that we haven't paid adequate attention to gender issues has been a problem. And I think we really need to be much more intentional, deliberate about gender dimension and immunization for us to make progress.

And now two things. You know, one is that there is a very intimate connection between unvaccinated, zero-dose, under-vaccinated children and gender, right? Because we know that these children actually sort of have mothers, you know, who ought – who live in households, actually, where there could be a great deal of gender discrimination, right? And really, disempowerment of – including disempowerment of women.

And that then – and we also have very compelling data now to show that if a child is zero-dose, then there is a much greater likelihood that the mother of that zero-dose child does not have access to skilled birth attendants, antenatal care, contraception, apart from the fact that these households often

do not have access to water, sanitation, education. So, there is a very big gender dimension, you know.

And the second example that I want to say is about HPV, right? Because HPV, we know that only 12 percent of global coverage of young girls. And really countries with 60 percent of cervical cancer, you know, burden, haven't yet introduced the vaccine. And the vaccine has been introduced, but progress is not being seen. So, there is a whole sort of set of questions out there. And now cervical cancer-related deaths are on the rise. Three hundred forty thousand estimated deaths of women, you know, in 2021. And this means it has outpaced maternal deaths. So, there is a big challenge.

So I really like to bucket, you know, sort of gender and gender-related issues in four categories, Katherine. One is where when you are looking at girls and women as recipients of services. And they are disadvantaged, right? So while we take a lot of pride in the fact that at the global level boys and girls have equal access to immunization, you start to dig deeper and you find that within countries there are some communities where girls are disadvantaged. So we cannot take our eyes off that. And as I said, HPV, where girls are the direct recipient of services, but we see much less attention to women. So, where girls and women are actually recipients of services, we see this whole gender discrimination. And we need to be more cognizant of that and be proactive in dealing with this issue.

The second category is women as caregivers, right? And that's where we think – I, based on all my work – you know, I feel that we haven't actually paid enough attention to making our service delivery gender-responsive. So for example, we find in urban slums where poor women actually are out during the day working, and immunization services are offered during the day, right? And clearly, they can't forgo their daily wages, and therefore they choose, right, their work, you know, sort of, and that is a problem. But then in Haiti, like Ted mentioned Haiti. And in Haiti we brought a gender lens to service delivery, and just a simple change. Like, you know, a changing the time of immunization session to late evening, right, when actually women could bring their children to immunization services much more easily, actually pushed up the coverage rates.

So, I think it is really the timing of the immunizations. It's the location. So in Haiti, actually, the locations were very carefully chosen, like marketplaces, you know, places that women found much easier to frequent or to go to, you know, that made a difference. So, I think we really need to think about how we look at service delivery approaches through the lens of gender. And how do we minimize barriers for caregivers? And so, you know that this whole drop-out rate – so, one is zero dose, but the drop-out rate between DTP1 and DTP3 has not been tackled at all. It has not changed. Because, you know, caregivers, who are largely women in LMICs, when they bring their children

and they find, for example, vaccine stock out or, you know, very distasteful behavior on the part of service providers, and go back disappointed, they never return. So, I just think that this is – this is caregivers.

The third, really, is the service providers. And I know you have written about that, right? So, for example, if 70 percent of our health workforce is women, then how do we ensure they have the right skills, they have the security, they have remuneration, they have incentives, you know, they have career advancement opportunities, and things like that? So how do we – and also, stability, frankly. So that's one gender lens – just an example of a gender-responsive approach.

But then at the same time, we also saw that in those communities, where male workforce was dominant, actually women could not access services. So I was very fascinated by Sabin's work, you know, where with some insights surface, was shown that in Cameroon, right, there was this whole conflict-affected area. And they therefore had to organize their services like hit and run services, you know? But because they were male service providers, women could not interact with male service providers. And therefore, you know, that was a problem, right? And then women groups were brought into the discourse to actually change that. And that really helped women, you know, come forward and get their children vaccinated.

So, I think this whole – and we saw the same thing in Afghanistan and Pakistan, where Pakistan lately had a worker's program, then it became a big one. So I think the service provide – gender lens in service providers, but also harnessing the power of women as changemakers. You know, how do we leverage the power of the different women networks? And we have found that to be extremely compelling. And just the male participation then. How do we – and that, to me, is the other end of the spectrum if you look at gender-responsive to gender-transformative model, then that is really where we have also seen very good results.

It takes a lot of time. It's painstaking. You know, like, in India, we stood up a program where men were really encouraged to shoulder responsibility for bringing their children for immunization. And I think that that's useful, but we should always understand that – you know, that that's a long haul. But, you know, short of that, there are several, sort of, simpler solutions and low-hanging fruit, which we absolutely should be looking at if we want to accelerate immunization.

Dr. Bliss:

So, we can really think about gender in terms of recipients of services, providers of services, and advocates for services, and kind of how that dynamic plays out. I want to get to a couple of questions that we've had today. We have – we have others, but we may not have time for all of them. But several of you have mentioned lessons from the polio eradication work

over the last several decades.

And so, this is a question from Lora Shimp at JSI. She asks – you know, she says: Polio, you know, often polio lessons are raised. But polio also had billions of dollars in supplemental funding over 35 years, with even higher funding over the last 10 years, to countries that still have the highest zero-dose. So, the dozens of more successful countries are not getting equivalent resourcing to the large amounts of funding that is not going to Gavi and WHO's high priority list. So, you know, how do we – that are not as successful...

So how do we, you know, as – I think, if I understand this question correctly, you know, there's been already a great deal of funding going into, you know, this – you know, including supplemental funding, into the polio eradication process. In some places now, you know, those programs are being transformed and moved into different kinds of programs, even though we still face existing polio challenges. You know, so how do we explain the difference in funding to, you know, these different categories? And how do we – how can we kind of take the lessons from this experience and look ahead?

So, I'm not sure I'm catching all – this is kind of an imperfect system for getting the questions. So, Ahmed, I'm going to turn to you to, you know, think through some of the work that your organization has done around polio and kind of how some of the lessons from the funding experience in the past can be relevant for future work.

Mr. Arale:

Thank you so much. As far as polio is concerned, I think for us, civil societies who have worked with these marginalized communities, what we can say is that polio funding really was a lifeline for these communities. That was the only way they could see services. It was through polio that we could go to these communities. And the lessons learned from the polio eradication initiative is that with this network of trained community volunteers and personnel, really, these were very handy during the outbreak of COVID-19. For example, we also work with the informal settlements, especially in Nairobi. There's a sub county in Nairobi called Kamukunji, which is regarded as a transit hub because it houses a lot of Somali migrants, Burundians, South Sudanese.

And in these informal settlements we have these undocumented migrants who are in fact missing communities. And this is where our community-based approach really came handy, and through the polio. And that is where the government called on us to use our community initiative so that we're able to better respond to COVID-19. And we ended up training of 4,000 – retraining, or giving fresher training, to over 4,500 community volunteers in the whole of Nairobi country. And that was one of the things that we can say

we learned from polio eradication. In fact, these were communities who have been empowered, and those are the lessons that we are currently using as far as, you know, COVID-19 vaccination, using the same to also scale up routine immunization, and integrating the two.

So, what we can say is that certainly for us in these fragile states, when there was the polio roundup, we could see things going down, especially routine immunization, because we produced these outreaches to ensure that these communities get all antigens and, you know, get services. So, polio eradication really has been one of the lessons that we are currently utilizing. As far as, you know, leveraging the networks and the infrastructure to bring onboard other interventions – and I mentioned that we’ve already integrated global health security agenda priority zoonotic diseases into what we already have for polio eradication. And now we are modeling a one health approach as far as community interventions are concerned, yeah.

Dr. Bliss: Well, thank you. You know, we’ve come to the end of our time here. I want to give each of you an opportunity to kind of share, I guess, you know, some final reflections and just kind of your one wish or recommendation, you know, when you think about what the immunization community and really the global health community can do to ensure greater progress in reaching populations in these fragile and conflict-affected settings, you know, over the short and medium term.

Ted, let me start with you.

Mr. Chaiban: Thank you, Katherine. Let me basically start with I think a key point. And it would go back to the question on polio to an extent. Look, I think polio’s done a great job of, you know, in moving forward the eradication effort, investing in the kind of outreach that Ahmed spoke about. And at the same time, we need to find ways that when we work on disease-specific initiative, they strengthen the health system and eventually everything gets reintegrated back into routine services. And that’s what we’re going to work with do with COVID-19. That’s what polio will need to do as well, as they’re reaching the finish line.

I think the one wish I have coming out of the pandemic response is that we take some of the resources that are still left, some of the energy that is still left, and invest in community health systems. That we find ways between what the ministry of finance has its disposal and the partners to invest in paying, protecting, and providing a career path for community health workers, for frontline health workers, 70 percent of whom are women, as was discussed earlier.

And it’s been done before in places like Ethiopia, like India, like Bangladesh, like Rwanda, where you’ve had that community structure, or you’ve had paid

community health workers that are valued and have a career path. It's had profound effects on health outcomes, including immunization. We have to have more countries with that opportunity. And we can do it as part of this COVID-19 response. It's going to be essential for future pandemic preparedness and response. It's the pathway to universal health coverage.

Dr. Bliss: All right. Thank you. So, investments in the health system and really, you know, supporting that level of community-based primary care.

Ahmed.

Mr. Arale: Thank you so much. From our experience, I think community-based interventions, empowering the communities, is the best sustainable way of confronting future outbreaks and pandemics. When we have these empowered communities, I think that is the way to go. The other one is cross-border, you know, interventions in these fragile states needs robust partnerships, collaboration of the government, United States, civil societies. Of course, programming in this area is really expensive.

The other issue I want to mention is that the need for civil societies to be at the table when it comes to talking about immunization because these are the voices from these communities. The voices from these communities can only be heard through – and so the need for having them on the table.

The other issue is I wished the governments to do more investments in the border areas, these marginalized areas, as far as health infrastructure is concerned. And also, focus on these mobile populations. They need services. And they are a very crucial population when it comes to disease outbreaks and their control. Thank you.

Dr. Bliss: So, community-level engagement and advocacy as well.

Ms. Arale: Yes.

Dr. Bliss: Anuradha, your top wish.

Ms. Gupta: So, yeah. So, I just want to build on what Ahmed said. I think the global health context is evolving very rapidly. And therefore, there can't be any static approaches or static solutions. And I really feel we have reached that point in immunization space, you know, where people closest to the problem, you know, we have to acknowledge, can also be closest to the solution. And therefore, I think we need a bold approach. And that is the second part of the BRAVE and BOLD approach, which is about the how.

And by BOLD, what we are saying is that B stands for bridging the gap between global and local. So, you really bring together the global, the

national, subnational, and local levels. People are talking now a lot about localization, but how is really still a problem. So, bridge that gap. O is, and for that to happen, organize differently. Organize to foster a two-way exchange and learning. It can't be just from global to local or from local to – because communities also need a certain global perspective – benefit from a global perspective. So two-way exchange.

L is listen to understand and co-craft solutions. Sometimes I really get frustrated. At the global level we run the risk of being an echo chamber, right? We are talking to each other, but we really need to lend ourselves to active listening to understand what exactly the problem is. Like Ahmed was saying, nomadic populations. In Chad also, you know, we were having the same thing. You know, livestock vaccination and childhood vaccination, bring them together. Very out-of-box solution, right, locally. So, listen to understand and co-craft solutions because they have the best chance of succeeding on a sustained basis.

And D is dynamically distill and disseminate what works. Because that actually can lead to so much of cross-pollination, cross-fertilization, where actually people become – you know, on the ground become heroes. And they can inspire each other, frankly. You know, and you are able to scale up and replicate, you know, things that really are showing promise in many very challenging operating contexts.

So this is just my closing. Just that Niger and Chad are among the two fragile countries, but we have seen Niger reduce their zero-dose children by 20 percent, despite the pandemic. And Chad, since 2015 – when I first visited Chad, the immunization coverage was 41 percent, Katherine. And, you know, after that, all these locally led, community-led solutions, you know, today it is 58 percent. Seventeen percent increase, steady increase. And as Ted also said, even during the pandemic they maintained that upward trajectory. So, there's a lot of hope. There's a lot of promise. Let's just all come together to deliver in a bold manner.

Dr. Bliss: So, Ted Chaiban, Ahmed Arale, and Anuradha Gupta, thank you so much for joining me this afternoon to talk about the challenges and really many different opportunities for improving access to vaccines in fragile and conflict-affected settings, both around routine immunizations and COVID-19 vaccines as they become integrated into a much larger health system. Really appreciate your joining me today. Thank you to our online audience, and look forward to hearing more about BRAVE and BOLD programs and progress in the year to come. So, thank you.

Ms. Gupta: Thank you.

Mr. Arale: Thank you so much.

Mr. Chaiban: Thank you.

(END)