

VIRTUAL EVENT  
NOVEMBER 3, 2021

## Speakers

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## Event presented by

 COLUMBIA UNIVERSITY | ISERP  
INSTITUTE FOR SOCIAL AND ECONOMIC RESEARCH AND POLICY  
IN THE FACULTY OF ARTS AND SCIENCES  
THE CENTER FOR PANDEMIC RESEARCH

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# The History and Future of Planetary Threats: Financing Preparedness

HEALTH EXPERTS AROUND THE WORLD have warned for years that countries, regional bodies, and global institutions must invest more in critical capacities to prevent, detect, and respond to infectious disease threats. The COVID-19 pandemic lays bare how the current global health architecture was not prepared when the threat emerged. In this webinar, Amanda Glassman, Jeffrey D. Sachs, Chinwe Lucia Ochu, and Natalia Pasternak joined Wilmot James to discuss the urgent need to finance preparedness and how to mobilize significant resources for global health security. The webinar was co-sponsored by the Center for Pandemic Research at the Institute for Social and Economic Research and Policy (ISERP), The Center for Sustainable Development, and The Academy of Political Science.

*The views expressed by speakers are their own and not necessarily those of any organization with which they are affiliated.*

**WILMOT JAMES<sup>1</sup>:** Welcome everybody. Good morning, good afternoon, good evening—wherever you might be. Welcome to today’s seminar, which is part of The History and Future of Planetary Threats series convened by ISERP. Clearly, the COVID-19 pandemic is a planetary threat, and so it is certainly fitting and appropriate that we deal with financing preparedness.

Our presentation will be given by Amanda Glassman, the executive vice president and senior fellow at the Center for Global Development. I will introduce our other speakers as we go along, but just to mention, she will be followed by Dr. Jeffrey Sachs, an economist, university professor and director of the Center for Sustainable Development at Columbia University; Dr. Chinwe Ochu, who is with the Nigeria Centre for Disease Control (NCDC), based in Abuja; and Dr. Natalia Pasternak, a

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microbiologist and visiting scholar at Columbia’s Center for Science and Society.

Just to note, Amanda Glassman published a policy brief titled, “A New Multilateral Financing Mechanism for Global Health Security and Pandemic Preparedness,” (August 2021, Pandemic Action Network). It is a real delight for me to introduce Amanda.

**AMANDA GLASSMAN<sup>2</sup>:** Many thanks, Dr. James. I will give a brief overview of the work of an independent panel that was set up by the G20 Italian Presidency to take a look at how finance can be organized systematically and sustainably to reduce the world’s vulnerability to future pandemics. This high-level panel is mainly made up of financial and economic authorities, with just a few global health people sprinkled in. They looked at the issues through an economic lens. If you are from the public health field or the medical profession, these might be unfamiliar ways to think about some of these issues. But it fits with what Dr. James was describing—a planetary threat and how to respond, and whether our financial institutions are really fit for purpose to support those responses.

The proposals were presented to Finance Ministers and Central Bank Governors in July of 2021, and then the G20 at the end of October. The panel’s co-chairs were Tharman Shanmugaratnam, Singapore’s Senior Minister; Ngozi Okonjo-Iweala, the current Director General of the World Trade Organization; and Lawrence H. Summers, the former Secretary of Treasury and professor at Harvard University.

First, vaccinating a majority of people in all countries and ensuring adequate supply of medical countermeasures is the most urgent goal on the international community’s plate today. All the rhetoric sounds good, but there is still an extreme slowness in the rollout of medical countermeasures and vaccines in low and middle-income countries. And that informs what we need to put in place in the future. Second, we cannot wait for COVID-19 to be over to make the global investments and reforms we need to head off future pandemic risks, which are more frequent and increasingly dangerous. Third, this requires political leadership and commitment, and recognizing that we all share in the benefits from preparedness, whether it is the investments we make domestically or whether it is sharing in the burden of making these investments in low- and middle-income countries.

This report is arguing for larger collective financing, beyond aid. Aid exists for other reasons—to promote equity or to support the development priorities of countries. But, there needs to be a source of concessional finance for global public goods that protect against pandemic risks. As a global community, we have the scientific, technological, and financial resources to sharply reduce the risk of a pandemic. This means that we are able to avert the huge costs that an outbreak brings, and we have to do better.

In terms of future pandemic risk: If we look at reported influenza spillover events over time, there has been some increase associated with the improvement of reporting systems. Even if we adjusted this for doing better at catching cases, we are seeing an increasing risk. If we look at other kinds of pandemic threats—other coronaviruses (not COVID-19) such as filoviruses, Nipah, and Machupo—in terms of severity or the number of reported deaths as well as the frequency of reported spillover events, we are seeing a tendency to increase. There are huge uncertainty intervals around those estimates, but empirical evidence to date suggests an increase.

How important is pandemic risk? Are we really living through a once-in-a-century pandemic with COVID-19? I think the analysis done to influence the panel’s recommendations shows that is not the case—we are seeing pandemic potential risks every 5–10 years. The expected deaths

<sup>2</sup> **AMANDA GLASSMAN** is executive vice president and senior fellow at the Center for Global Development and also serves as chief executive officer of CGD Europe.

over the next decade from a pandemic flu or a viral hemorrhagic fever, are at a level comparable or larger to some other risks that we prepare for better as a community and as countries—such as earthquakes, floods, or storms. It is not to minimize the risks that these other hazards cause, it is just to say that these pandemic risks are really important, and we should treat them in the same way.

The panel also looked at what the costs of pandemic preparedness investments would be against their benefits in economic terms—not just the health benefits, but also the benefits to economies from preventing a wider scale impact. Researchers at Imperial College London looked at four different countries: India, China, the United Kingdom, and the United States. In all cases, we have a huge net benefit from relatively modest pandemic preparedness investments. And, the size of those benefits, even for a country like India in the case of a SARS-like virus, could be huge. So, the returns on this investment are significant. We should act.

The panel took a look at what was needed within pandemic preparedness, and they settled on four major global gaps. First was stepping up research and globally networked surveillance—epidemiological surveillance, mortality surveillance, and vaccine adverse events surveillance. The idea is to prevent, detect, and rapidly control emerging infectious diseases. A second category of gaps was around setting up resilient national health systems to strengthen the workforce, health facilities, animal health, and routine activities. A third area is around the supply of medical countermeasures like vaccines, diagnostics, and treatments. There has been a move to radically shorten the response time to a pandemic. The response to COVID-19 was short. Within one year we went from sequencing the virus to several efficacious vaccines. But, we failed on the last piece of that, which is to deliver equitable global access in time. Finally, we need global governance to make sure the system is tightly coordinated, properly funded, and with clear accountability for outcomes.

The basic approach that the panel took was from the lens of global public goods. Any international support for pandemic prevention, preparedness, and response is not fundamentally about aid or redistribution, but about investment in a global public good from which all nations benefit. The broad principles that underpin financing for pandemic prevention, preparedness, and response flow from its global public good nature. First, prevention and preparedness need financing every year, not just during a pandemic or in the wake of a large pandemic. But, when we look at how countries spend, there are high opportunity costs—meaning scarce health monies and the need to treat people seeking care today. They may not invest as much as is needed in surveillance, labs, or public health measures because the effects will not be seen for a couple years or in a certain timeframe. Countries may systematically under-invest, especially countries where health budgets are very tight. That is the argument for collective external financing for this use, but not at the expense of aid. Second, in case there is a pandemic risk, financing that is rapid, available to all countries that need it, and delivered without complicated business-as-usual requirements is absolutely essential. We have seen during COVID-19 that much of the financial support provided to countries came late and insufficiently. It came looking exactly like a regular investment loan that you would do for a bridge. That is not the way to deal with an emergency. It is not the way we would deal with a financial crisis. And finally, all funding flows should show clear accountability for outcomes.

Financing pandemic prevention, preparedness, and response should be anchored in enhanced, reliable, and timely multilateral funding. This is the holy grail—it means non-aid and assessing contributions according to a country's ability to pay, the size of their GDP, and the size of their population. It could also be complemented with other kinds of funding streams, but the real message of the panel is that this should not take away from poverty reduction or the Sustainable Development Goal (SDG) agenda more broadly, because these are still important goals. It

has to be additional. Second, is to empower the existing organizations in the system, like the international financial institutions, and to push them to more boldly support the global commons. In some ways, the multilateral development banks (MDBs) are much farther out in front on climate risks and climate adaptation financing than they are on pandemic risk, which they continue to speak about as not a global threat. We are trying to change that thinking and use some of the tools they have to get the money to the right place. Finally, we need to create stronger incentives for governments in low-income countries and lower middle-income countries to invest in global public goods through expanding grant support and matched funding.

In terms of the scale of investments required, there is a very long list of needs. The panel went through a lot of different studies and concluded that they needed about \$15 billion per year for prevention and preparedness in collective and multilateral financing that could be added onto the existing system. They were very conservative. They left out many things I wanted to include such as anti-microbial resistance—things that you would also like to limit. But, it seemed that was a feasible amount in the end. If you compare it to the cost of response to COVID-19 so far—\$10 trillion, probably more at this stage—it is still a good deal.

The specific proposals were as follows. Again, there is no perfect solution because it operates in a very complex landscape of many different kinds of organizations—including the global health organizations, the international financial institutions, the regional bodies, and country-level investments themselves. I would say that all institutional choices have pros and cons.

The first recommendation was to take a systematic approach to ensure enhanced and predictable global financing for pandemic prevention, preparedness, and response. There was no system in place in the response to COVID-19 with responsibility overall for putting some money in R&D, in procuring PPE, or in preparing countries to vaccinate. There was no centralized oversight. There is of course the World Health Organization (WHO), which was tracking the risk and making recommendations. Their role has been standard setting and guidance, and they did some contingency financing for immediate needs, such as epidemiologists. But, there was no directed program of investment, and we saw the consequences. The money arrived late. It was insufficient. Developing countries that buy through COVAX never had a chance to buy large volumes of vaccine prior to completion of stage three clinical trials, and thereby assure that they were right at the top of the line to get doses—because they were, in many ways, much more vulnerable than the high-income countries. So, the idea is to bring some articulating oversight between finance and health authorities to get money where it is needed.

I think the panel was also inspired by the idea of the Financial Stability Board, which was an entity endorsed by the G20. The idea was an informal board that would work effectively to get money where it is needed during an emergency. We have lots of oversight mechanisms in health, but I would say its main distinguishing feature is that it includes finance authorities. So, the G20 agreed this was a good idea. I would also say that this board complements the Independent Panel for Pandemic Preparedness and Responses' (IPPPR) proposal for a Global Health Threats Council. That is more of a UN General Assembly and heads of state body. That is about political priority. This board is more about money where it is needed, when it is needed.

To back up the board, the panel also proposed a Global Health Threats Fund. It would mobilize \$10 billion per year, catalyze these investments, and fill the gaps that have been identified in global public goods for pandemic prevention, preparedness, and response. It would be a multilateral financing mechanism to pool resources, without crowding out aid. It is a financing mechanism that could be attached to an existing institution. This is the topic that is under discussion today. But, the idea was to provide financing for preparedness needs that are so important: enhanced manufacturing for medical countermeasures, stronger genomic surveillance, stronger grant financing to complement the MDBs' and global health organizations' existing support for

country- and regional-level investments in global public goods, and then for research and development.

The panel's other recommendations included increased domestic finances for prevention and preparedness, especially in middle-income countries where there is space to spend a bit more. They made some recommendations recognizing that many of the most valuable pandemic prevention and preparedness investments should be part of domestic budgets as high priority and high return domestically. They also promoted strengthening the core financing for the WHO. There are also a whole set of recommendations around making the financing of global public goods part of the core mandate of the MDBs.

At the 2021 G20 summit, it was not a slam dunk. The result was not as ambitious as many of the panel members hoped. Certainly, the chairs of the independent panel, Ellen Johnson Sirleaf and Helen Clark, were profoundly disappointed by the lack of ambition. On the other hand, I think there is still space to move on this. They did establish a Joint Finance-Health Task Force, which echoes the board recommendation. And, they will report back to the G20 on modalities to establish a financial facility to ensure future funding for pandemic preparedness.

For those of us in the community that work on these issues, it has been several years. I think Wilmot and I were talking about the same idea before COVID. This is a medium-term effort. It really is a change in paradigm to start thinking about these planetary threats and their financing differently.

To end, the message is that these future pandemic risks are significant, and they are happening more frequently. We are either going to spend more now than in the past or we will continue to incur these very high-cost events, both in human and economic terms. It is utterly irrational. You would think that the need for change would be evident given what we are going through, but it is slow to come. I think it is also because we think about things like climate change and climate risk differently from the way that we think about global health. And maybe we need to start thinking with that same lens. I think the planetary threat lens is probably the way to go.

**JAMES:** Thank you very much, Amanda, for walking us through some complicated issues. With that, I want to head straight over to Dr. Jeffrey Sachs.

**JEFFREY D. SACHS<sup>3</sup>:** Thank you very much, Wilmot, and thank you, Amanda, for the presentation. I am not too enthusiastic about the specifics that are recommended, and I will try to explain why. You talked about the four things that are part of this—surveillance, the resilient national systems, the supply of countermeasures, and global governance. All of that is fine. But where are the national systems in this? What is \$15 billion relative to the gaps of national systems? It does not really make sense.

We are facing a couple of problems. One is about surveillance and pandemics, to be sure. But the problem of poor countries is about poverty and the lack of health systems in those countries. This proposal does not really understand or get at that very much. It seems to be directed at pandemics, and what do we do about pandemics, but we cannot face pandemics if there are not functioning health systems. And in poor countries, there are not properly functioning basic health systems. We should spend much more time on that. Essentially, we should be asking: What do we need to do to achieve SDG 3, and especially SDG 3.8, which is universal health coverage (UHC)?

<sup>3</sup> **JEFFREY D. SACHS** is a University Professor and Director of the Center for Sustainable Development at Columbia University, where he directed the Earth Institute from 2002 until 2016.

My modest proposal is that we need global health funding that is realistically scaled to the needs, to ensure that everybody has access to a basic health system. That is true whether it is about a pandemic, a new disease, the flu, or the countless deaths from many existing diseases that are not properly treated right now in low-income countries.

What I am proposing is that we take Gavi and the Global Fund to Fight AIDS, Tuberculosis, and Malaria, which are vertical institutions designed to do vertical things, and merge them to create a Global Health Fund that could also help fund the things that Amanda talked about. Basically, we need health workers, facilities, public health surveillance, and other kinds of capacities. The \$15 billion number makes no sense to me at all. It is not sufficient to create resilient national systems. And just because we are in a pandemic, we should not focus our efforts on pandemics only. We should focus on health, and on addressing the massive gaps that were already unfilled even before COVID. We should not fight only the last battle, or the one after next, and so forth—but address the health needs.

I heard three kinds of structural recommendations—all in spirit in the right sense. But for me, not substantively in the right sense. First, that there should be a global health threats fund. I think there should be a Global Health Fund, which is about health systems. We already have two, Gavi and the Global Fund, and this should be basically a merger and expansion of that. I do not think the G20 or G20+ is the right venue. I think WHO is the right venue. We should reflect on the fact that WHO got battered by Trump and battered by geopolitics, and that is a danger for the planet. We need a well-functioning WHO. We should aim to strengthen WHO, not to replace it with something in the G20+. The G20 is not even a thing; it is a meeting. It does not have a structure, so we need an institutional structure with global reach and that is WHO. Second, the amounts. I do not know where they come from, but I cannot imagine \$15 billion being the right number. And third, we should be careful not to assign this to the World Bank or to the MDBs. The reason we created the Global Fund 20 years ago was that the World Bank could not do that. The reason that Gavi, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), and other programs exist is that the MDBs are not structured for this. We need a Geneva-based structure of finance. It should be closely tied to WHO.

Many of the things that Amanda said are very important, predictable, and multilateral. You referred to non-aid many times. I do not know what that means exactly, because aid also should not be “voluntary”—when you want to do it—and haphazard. Maybe that is a semantics question. But we need global financing for global health, including preparedness, basic health systems, health workers, logistics, infrastructure, and so on. My guess is that the right number in terms of the financing gap is closer to \$50 billion per year, which is about one-tenth of 1 percent of the income of the high-income world. So not a great deal of funding. And we should do it to strengthen the institutions we need to make this work, especially WHO and closely-linked financing to WHO, which is what Gavi and the Global Fund are meant to do—but now their role should be expanded.

I worry a bit about phrasing all of this as “pandemic preparedness” rather than phrasing it as “public health.” Even before COVID, the gaps were huge and were not being attended to. We had programs like 90-90-90 for eliminating AIDS that were not properly financed. We were under-financing the fight against malaria. We were dramatically under-financing many other interventions in low-income countries. Of course, the rich world is scared of new pathogens, which we all should be. But the rich world never paid much care or attention to poor people dying of all these other causes. I just do not want us to lose focus on the broader issues by an overly narrow focus on the next pandemic or on creating a new plethora of institutions around emerging diseases, but not around the large-scale emerged diseases. I think this is what we should be really aiming for in the next few months when the G20 follows-up on these recommendations—to under-

stand that we have basic problems that need attending to, in addition to the pandemic issues. We should be thinking more broadly about this.

Finally, let me say that the issues about vaccine coverage—only 6 percent of Africa’s population is fully vaccinated—are not mainly about finance. The issues are mainly around power, access to technology, and local production. Basically, the rich countries have commandeered all the vaccines produced in their countries. Poor countries could not buy the vaccines that they wanted because the United States put on an export ban and strong-armed others so that Americans can be vaccinated. Even when Americans do not want vaccines, the hoarding continues. We end up throwing away expired vaccines, rather than having a fair, equitable, and smart process that shares the vaccine capacity more broadly. So, this is also a matter of power structure, and so on.

We need proper governance, and I am not sure that the G20 is the place to do it. I would say that WHO is the place to do it. And we have to make sure that poor countries have their voice, which they do not have right now in the international processes. By the way, I am strongly advocating not a G20+, but a G21, which is that the African Union be formerly the twenty-first member of the G20, just like the European Union is the twentieth member. At least that would formally put Africa at the table, not as an invited guest, but as 1.4 billion people, 54 countries, and \$3 trillion dollars of GDP.

This is all to say, in summary, that the recommendations are sensible and in the right direction, but not in their specifics. In their specifics it is as if this is a narrow problem, but we have a general problem, which is global health coverage, global health systems, and global health equity. And that goes beyond pandemic preparedness.

**JAMES:** Thank you very much, Jeff. I was hoping for a robust discussion, and we have got one. Amanda asked to respond, so I am going to hand it back to Amanda.

**GLASSMAN:** Thank you for that feedback. I am now going to speak as an individual, and not as a representative of this panel. The first thing to say is that prevention and preparedness of pandemics is not just a human health or a health systems issue. It is about animal health. It is about how humans interact with the environment. It is about travel regulations. It is a whole-of-government affair, and it is not something that is only limited to the health sector. I think that is one thing to keep in mind when we talk about this issue of whether it is just SDG 3 or UHC.

Second, universal health coverage, the way WHO and the World Bank currently define UHC, is about access to a basic package of services and about household financial protection from catastrophic out-of-pocket expenditures. UHC, as currently defined and as financed by many governments, is not public health. Public health is what we are talking about now. Public health has to do with institutions that are connected to the health system but do not operate as health providers—for example, the centers for disease control or CDC, like the Nigeria CDC and the Africa CDC. Those public health institutions are not really part of the universal health coverage agenda as it stands today. Could they be? Absolutely. But I think it is something that we need to think about in the way that we finance some of these issues.

If we look at how the Global Fund to fight AIDS, Tuberculosis and Malaria money has been used, part of it goes to public health interventions like spraying and surveillance. But, most financing is about treatment in health facilities. And that is right because they are trying to save lives through the provision of antiretrovirals. Little funding has gone to prevention except treatment as prevention. So, prevention and public health has been a different policy and institutional issue. Treatment in clinics is related and potentially deeply interconnected with public health (via

testing or contact tracing for example), but I do not think the way that health systems are constructed right now is helping as it should with public health.

We see this phenomenon in every country in the world. We see it in the United States, where our public health agencies are decentralized and underfunded. State-level agencies have no routine financing relationship or policy conditionality with the national CDC and no policy or financing relationship with the health system.

The other piece is that prevention and preparedness is not just about the public sector health facilities, which, in low- and middle-income countries, can sometimes reach only half the population or so in the best-case scenario. Public health (and pandemic prevention and preparedness) has to reach the entire population wherever they are, wherever they seek services or information. Whether they are very rich or very poor. Whether they are using the private sector or whether they are using the public sector. It is a whole population policy. Given limited resources, UHC coverage schemes often subsidize only the poor or a sub-set of the population with public monies; again, this makes sense vis-à-vis the objectives of UHC, but does not help with public health.

I do not disagree with the point that there are bigger health problems, and we have to look at the imperative to finance pandemic prevention and preparedness in context. I think that is the intent of that section of the High-Level Independent Panel report on resilient health systems. The panel itself was thinking that investing in a health system is a government's priority. That is what a government should do, and that is what they should finance. And, there is funding available to do that through the existing entities. That is important funding, and it should be respected. Is it insufficient funding? Very unlikely.

**SACHS:** But it is massively insufficient. That is the whole point. It is massively insufficient.

**GLASSMAN:** By the way, we cannot even fund the Access to COVID-19 Tools Accelerator (ACT-A) fully. I think you are quite right. I might have chosen another number as the headline financing request. Even the WHO at the end of 2020 sent a report to the G20, and the preparedness ask was only \$10 billion. We were a little bit higher than what the UN itself said was needed. So, things change over time. The panel wanted to be conservative and realistic, and that is how they got there.

I think the other question is: Which organization within the UN family plays what role? I think this panel put at the very top that the WHO should be fully funded and appropriately funded through assessed contributions. They also got behind a pandemic treaty. I do not think there is any disagreement there. That recommendation was also echoed by the independent panel.

For grantmaking, I think there are those two alternatives, as you say, whether it is some evolution of the Geneva-based global health funds or whether it is the MDBs. MDBs can take grant money, and they can leverage it up even further by raising money in the private sector the way they are doing in climate. And, the World Bank money goes on-budget. All of the global health funds have been off-budget. That is a problem when you are talking about basic public health like surveillance, lab testing, CDCs, and things like that.

**JAMES:** I am aware that Jeff needs to leave, and I wanted you to have a chance to respond. This conversation should continue. These are fundamental issues at stake here. They are questions about whether we require one global instrument to deal with it, or layers of instruments—especially in national funding for health systems, which is a very important point.

**SACHS:** One final point. I think we should absolutely understand that universal health coverage means both curative services and public health. Of course, in the United States, we do not get



this, but we should not let that affect the whole world. Of course, a health system includes public health and institutional facilities for curative, therapeutic services, and so forth. Let us be sure that there is no confusion on that point. They are deeply interconnected—overlaps of personnel funding, all logistics, data systems, and so forth. So, we need to fund both sides of this. I think a Global Health Fund would, and should, have windows for these different components. I agree with Amanda, but I am just horrified to think that it is not part of somebody's definition of universal health coverage. It is certainly part of my definition of universal health coverage.

**JAMES:** Thank you very much again, Jeff. We really appreciate your comments.

**SACHS:** Thank you very much.

**JAMES:** Terrific. And with that, I am going to hand it over to Chinwe. She is a physician, and she is the director of Prevention, Programmes, & Knowledge Management and the Head of Research at the Nigeria Centre for Disease Control (NCDC). The NCDC obviously covers Nigeria, but has developed massively over the last two to three years to serve not only Nigeria, but also West Africa as a whole.

**CHINWE LUCIA OCHU<sup>4</sup>:** Thank you very much, Wilmot. It has been a pleasure listening to this very interesting discussion. Thanks to Amanda for bringing up the global perspective and what the G20 panel has proposed. I think it is good that we are having these discussions, and that the different global entities are coming together to think about pandemic preparedness. I think that is a plus. If that is what we are getting out of this pandemic, then that is good. Have G20 and WHO come up with their own plans. Then the other pockets of financing mechanisms here and there coalesce. This is a huge problem to solve. But, let the discussions start happening. I think it is a good thing that the discussions are happening already at a global level.

I will not delve much into the global side because I think I was invited to this panel to bring in the country-level perspective. When we are talking about pandemic preparedness, the amount of funding we dedicate to a particular issue depends on how important we think it is and how much we feel threatened by that risk. So, how much we think a health security threat means to us as a global community will determine the amount of commitment in funding for pandemic preparedness. At the country level, when we are talking about pandemics, it all starts as an index case in a community. The ability to detect that index case and control the spread of that highly-pathogenic infectious disease is what matters. So, as much as we are planning at the global level and putting financing mechanisms in place, which is very good, a lot depends on strengthening the local communities and the national systems to be able to curtail and address these health threats as they arise. If we are able to contain an epidemic in a country, it does not get to become a pandemic. It does not spread to other countries. And, if you control it at the community level, at the health facility, or at the laboratory, it does not get to spread.

Whether we are able to contain it at that level depends on the system. This is where I very much agree with Jeff—strengthening the systems to be able to deal with these health issues. The kind of impact a particular pathogen has on a health system depends on how resilient that system is. It also depends on socioeconomic factors and so many things in a country. For instance, in my country—I am speaking from a lower middle-income country, but I could also be speaking for a

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low-income country—a plethora of health problems make us vulnerable to these health threats. This is what should inform the funding mechanisms we should have at the national level, that should eventually build up to a regional funding mechanism, and then the global one, before it becomes relevant to us.

At the national level, how accessible are the laboratory facilities in helping us to quickly detect an infectious disease threat or an outbreak in a local community? Due to the COVID-19 outbreak in Nigeria, for instance, we have been able to build up laboratory and diagnostic capacity. We went from three public health laboratories to 150 laboratories in just one year. That shows us what we can achieve if we feel threatened. This is something that we have not been able to do over the years. We have been struggling to get political commitment, and to get everyone to know that health is everybody's business. It never happened until we had a pandemic.

How do we now build on the gains of this pandemic to ensure it makes us better prepared for future pandemics? Whether or not we are going to have future pandemics is not even the issue. It is going to happen given the changes that we are seeing—climate change, changes in the ecosystem, human-animal-environmental interface, and zoonotic infectious disease outbreaks.

What I think is a major thing for us now, especially at a country level, is strong advocacy for domestic funding for health. We need to make a political case for national governments to invest in health—not just from the health sector, but a multisectoral commitment towards domestic financing for health. What kind of financing mechanism will work at the national level? I have been an advocate for co-funding mechanisms, not this erratic donor-driven response that ends with a particular pandemic or epidemic. That is not sustainable. So, we need national government to commit to a particular proportion of deliberate, dedicated funding for epidemic preparedness or pandemic preparedness.

If we are talking about the G20 funding, how sure are we that when a pandemic happens like COVID-19, that all the countries in the world will have equitable access to that funding? We are seeing it play out in the case of vaccine access and equitable distribution of vaccines. There is a lot of nationalism playing out. We have countries now thinking about booster doses of the vaccine when countries like Nigeria have less than 5 percent vaccinated in a population of way over 200 million persons. Many countries are beginning to feel safe already, and they are opening up. But, unfortunately, nobody is safe until everyone is safe.

So, these funding mechanisms, yes, they are fine because they are global. But at the national level, we need to think about how to have a funding mechanism that can be easily and readily accessible for us to improve our medical countermeasures, and to make sure that these are all prepositioned and ready to be accessed when there is an outbreak in any setting. We also have to invest in capacity building—building our laboratory infrastructure. We have over 150 public laboratories now scattered all over the country like I said. But, how about the human capacity to manage those laboratories? How about the frontline workers that need to be trained? How about the rapid responders that need to be trained? How about the surge capacity that should be there in case we have the kind of outbreak we had with COVID-19?

These are all national issues that make a very strong case for increases in domestic funding. Of course, that does not exclude the need for the global community to come up with plans, like I said, to get everyone to think about pandemics as a big health threat, and place it at par with other security threats, like terrorism. If you compare funding for pandemic preparedness with funding for other kinds of security threats, we are not yet placing them at the same level. We are not seeing bioterrorism or biological threats as important as the other forms of threats. So, we need more advocacy and political commitment towards financing.

We need to be able to have funding to improve digital data systems. For us to advocate for improved political commitment for health funding, we need to have data. And data management

is a big problem in the African setting. So, we need to build that capacity. We are glad that, as a country, Nigeria was able to digitize surveillance. But is that the case with other countries in Africa? These are all issues, and that is why a regional body like the Africa CDC is very important. And then of course at the country level, each country needs to have a national public health institute to focus purely on health security issues, and to advocate and bring all the sectors together, so that everyone thinks about health and invests in health as a political choice.

I think, to me, these are key issues that need to be addressed within the global platforms that we are setting up and the mechanisms in place at the global level for pandemic preparedness, so that we are sure that we are getting to the root of the problem. Thank you.

**JAMES:** Thank you very much, Chinwe. I would like to amplify the point you are making about the importance of national resource mobilization. It is a strategic priority of the Africa Centres for Disease Control. Speaking as an African, our governments can do a lot better in two respects. They should improve the way they collect revenues for government. So, if you think about efficient revenue collection, and developing systems like that, you can add a significant proportion to the national budget expenditure of a country. That is the first thing.

The second is to develop, as you point out, not just a health budget, but a health security budget that crosses all the normal silos—health, agriculture, and defense. It should include justice, and a range of other areas. Let’s pick this up in the discussion. I think it is really important to say that the dependence of low-income and middle-income countries is a fact, but at the same time, we have power to advocate for greater resource mobilization on a national level. This must be part of any plan that is made. So, thank you very much for that.

With that, I am going to hand it over to somebody from another part of the world, Natalia Pasternak. She is currently at Columbia, but she is normally based in Brazil, and she is a microbiologist by background.

**NATALIA PASTERNAK<sup>5</sup>:** Thank you, Wilmot, and thanks to my colleagues for such insightful presentations. And most of all, thank you for speaking so well about financial preparedness, budgets, testing, genomic surveillance, and building capacity. I am going to talk about communication and why we also need to invest heavily in communication preparedness. And I am going to tell a little story about my own country, Brazil. It is kind of a paradox when it comes to vaccine uptake, and I will come to that in a minute.

When we are talking about preparing for epidemics, we are talking about changing people’s behavior. So, of course we need testing and surveillance. We need to build capacity. But, we are not getting anywhere if we do not focus on changing people’s behavior in a pandemic or an epidemic, investing heavily in information, raising awareness, and developing good science communication or good risk communication. We are not going to get people to rely on testing, vaccination, social isolation, or any kind of preventive measure if we do not explain why all these measures, and their collaboration, are needed to prepare for epidemics, to fight an epidemic, and to prepare for the future.

We need to invest heavily in publicity campaigns. And these, of course, cost money. They do not cost as much as testing, genomic surveillance, or building capacity, but they have to be justified as well. So, how do we justify a heavy investment in publicity campaigns? How are we go-

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ing to persuade policymakers, both national and worldwide, that we need to talk to the population, and we need to raise awareness on the importance of preventive measures?

This is what I call the Brazilian paradox, because we have, in Brazil, all the elements for a very heavy anti-vaccination sentiment. Disinformation in my country comes directly from the federal government, directly from the president himself, who says on national and international news that vaccines are going to turn you into an alligator or give you AIDS. This is the president speaking. We also have in Brazil lots of celebrities, famous actors and athletes, talking against vaccination—saying they are not going to vaccinate their children, they are afraid of vaccinations, the vaccines were made too quickly, and all that which we have heard elsewhere in the world. And, we have religious leaders in Brazil that speak against vaccination. We had one episode with the HPV vaccine. The evangelical community was very much against the HPV vaccine because they linked it to sexual liberty in young girls. So, we had some problems with implementing this vaccine in Brazil.

So, how come people in my country do not listen to any of this? Thankfully people do not take the president seriously when it comes to vaccination. And yes, many people in my country dressed up as an alligator when it was time to get their COVID jabs—showing that they do not care what Jair Bolsonaro says. They are going to get their COVID jabs. Even some Bolsonaro supporters tried to skip the line and get their COVID jab. So, people do not really care about the president being an anti-vaxxer.

This is strictly for vaccines. This is confidence and trust built in vaccination programs in Brazil over five decades. It is not the same for mask wearing. It is not the same for social distancing measures. So, it is not as if the president is ignored in all that he says, but luckily, when it comes to vaccines, people do not listen to the president. They do not listen to celebrities. They do not listen to religious leaders that talk against vaccination. They want their vaccines. Residents are very favorable to vaccination, and they have been so even before the pandemic.

A national survey taken in 2019 by my institute in São Paulo, together with a national polling service from Brazil called Datafolha, shows clearly that 97 percent of the respondents agreed that vaccines are important and bring health benefits. This did not change during the pandemic.

A global study published in 2021 also shows how my country stands on vaccination—83 percent of the population is willing to get vaccinated. It is higher now. It is up to 98 percent of the population. There are states in Brazil, like my own state of São Paulo, where the whole population is already vaccinated, at least with one dose. So, people are willing to get vaccines in Brazil.

The reason—and this is what we use to justify investment in communication—is that ever since the dictatorship in Brazil, and that is 50 years ago, we have been building trust in vaccines. We have invested heavily in vaccination campaigns. That involved, 50 years ago, the use of celebrities, famous actors, famous athletes, religious leaders, and community leaders in publicity campaigns that ran on television shows, on radio shows, and in every newspaper in the country. A picture from 1975 during the dictatorship shows the minister of health at that time vaccinating a child. Joe Droplet, or “Zé Gotinha” in Portuguese, is our mascot. This was our mascot for the polio campaign, and it has been around for many decades. Everyone in Brazil knows about Joe Droplet, and it became huge with the children.

So, Brazilians got very emotionally attached to vaccination programs, but this took 50 years to build. It takes time to build trust in science and in vaccines, but it is worth it. Because now my country is probably the country that is most willing to vaccinate, whereas in the United States, vaccines are abandoned and there are vaccines to spare, but they cannot convince the population to get vaccinated. So, this justifies the investment.

How do we convince leaders and policymakers? We do it by comparing countries and interventions. It is not the first time in history that we are doing that. Take economics teams and J-pal (<https://www.povertyactionlab.org>). They have been doing it. They have been using something similar to randomized clinical trials and comparing interventions in cities and in countries to justify investments to public leaders. The use of randomized trials and scientific evidence in public policies was even the subject of a Nobel Prize (<https://www.nobelprize.org/prizes/economic-sciences/2019/press-release>). We have to take advantage of the situation and of the time we are in right now to compare countries, compare interventions, and develop metrics.

We usually say in Brazil that vaccines are a victim of their own success when it comes to anti-vax sentiment, because people forgot what it was like to live in a world without vaccines. There are many people who never saw someone with smallpox, or polio, or dying from measles. People forget, and we have to take advantage of the moment now, because now we can do what my country did 50 years ago. We can build trust in people's memories.

Fifty years ago in my country, people knew what it was like to die of smallpox, to die of polio, to see a child that could not breathe, or that became paralytic for life. People remembered, and trust in vaccines was built on people's memories. Now that we are going through a pandemic, at least we can take advantage while people's memories are fresh. People have seen what happens to the world in the absence of one single vaccine for one single disease—and the world stopped because of one disease. Now it is time to build metrics, to compare interventions, and to go to policymakers and say now is the time to act. Now is the time that we justify investment, not just in surveillance, testing, preparedness, and budget, but in good science communication, in good risk communication, and in raising awareness of the importance of health measures and vaccinations. If it was done in my country 50 years ago, I am sure that it can be done in the world if we pay attention to this moment and take advantage of people's memories. Thank you very much.

**JAMES:** Thank you very much, Natalia. That was absolutely fabulous. You developed an approach that affirms both Jeff's comments and Amanda's comments. And by that, I mean that this is quite targeted. Vaccines are part of a bundle of medical countermeasures. In order to have the level of trust in vaccines that you outlined, three things are required. You need the vaccines first. Then you need vaccine delivery platforms within the health system, which is not straightforward. It is a complicated thing. And then you need those vaccines to be taken up. You need all three things in place. So that is about strengthening the health system overall, the vaccination platforms, but it is also very targeted. It is about vaccines, which is part of medical countermeasures and pandemic response. So, thank you very much for that.

If I can turn back to Amanda. You heard what Jeff had to say and what the other panelists also had to say. National resource mobilization, Chinwe's point, is a priority and we need a program to jack it up. We need to develop a measure, 2 percent of GDP or something, and then hold governments to account in a convention of some kind. And, you heard Natalia's comments about the results of 50 years of investment in a vaccination program. Where does this leave you in terms of the proposals that were framed?

**GLASSMAN:** Thank you. And, thank you to Chinwe and to Natalia for their engaging presentations. Part of the panel's recommendations were first recognizing that this is about national governments, national systems, and national spending—which is one reason why the idea was to put the money in the bank, because they fund into national systems. But, it would not have to be the World Bank. I think you could imagine a regional alternative, like the African Development Bank, the African Union mechanism, maybe that is the right approach, rather than the World

Bank. I do not know; these are things that one could discuss. But, the way the bank works is that it lends highly-concessional resources into government budgets for their own spending. And, it is a way that governments prioritize spending or reform certain sectors. So, I think it really has some advantages over straight grants via a global entity. But, these are all things that can be argued and discussed further.

Over the next five years, most low- and middle-income countries will have real problems regaining levels of economic growth that we saw prior to the recession. In addition, we have huge setbacks in a lot of different areas, in education, and other kinds of health problems. Funds are going to be very tight. But at the same time, we have seen health systems scale up enormously. Chinwe was pointing to the increase in labs, 3 to 150 labs in a year. So, that new capacity is sticky hopefully, meaning that it will keep the increased expenditure even after the crisis is done. And, that is probably true for health workers. I think that is a very positive sign. We may see. We do not know yet, because the data is usually a bit out of date, that domestic spending on health has already increased for this reason. Also, the city of São Paulo said that they had added 8 hospitals and 5,000 health workers. And, they are probably not going to fire them when the crisis is finished. So, I think that might be a small silver lining to this crisis.

I also take the very important point that Chinwe made about a global fund—are they going to be equitable or are they going to get the money out? I think there are two parts to that. One is that the time to reserve the doses is during stage three clinical trials, which means we need the money then. We then need binding contracts on behalf of the entire world, especially for low-income countries that are not necessarily going to be able to set the money aside to do that. But then the other part is further on—are we sure that money will be allocated? I think that is why maybe the regional institutions are a good idea—the African Union or the African CDC. In Latin America, there is the Pan American Health Organization, but it is not really a financing mechanism, and I do not know how you feel about the Inter-American Development Bank. But, it is different everywhere. Similarly, in the Southeast Asian region, there is the Association of Southeast Asian Nations, but it does not have exactly the same level of consensus as exists around the African Union or the African CDC. So, I think we should just remain open to all of those possible ways forward.

I also take Natalia's point about 50 years of investment in public health. Brazil has always had a strong public health and primary healthcare program. But, I could go over to Peru and see the effects of 50 years of not investing in public health. You could say the same thing for the United States. We have underfinanced public health for a really long time, and we are seeing the results of that right now. So, I think it is about more domestic investment and priority to public health. And that is why I do not like to lump it with universal health coverage. I think universal health coverage is important in its own right, but it is not the same as public health.

**JAMES:** Thank you, Amanda. If I can turn to Chinwe on the question of national resource mobilization—the general point that Amanda was elaborating on as well. You spoke about advocating for bigger budgets for health. Who in Nigeria does the advocacy? Describe to us what the political strategy would be. Who are the actors involved? Which institutions? How should they be strengthened? What is the role of the press and journalism?

If you talk about advocacy, it is really important because there was a lot of innovation during the pandemic, in Africa and elsewhere, in terms of how people responded. We must not forget what those innovations are. If you are a democratic country, what you need is a vibrant civil society with institutions that can advocate, the kind of institutions that Brazil has for example, and Natalia is a leader of that.

**OCHU:** Thank you very much. I really appreciate that case study, to see a nation that has a success story on how community engagement and empowerment can overturn a lack of political will to drive the public health system. Unfortunately, that is not the story in Nigeria. It seems to be the reverse, where people lack trust in government, and government is pushing for a public health intervention that has proven to be useful. People are seeing it as a conspiracy because of lingering issues of distrust in the government. So, a lot has to do with engaging the community and all the key stakeholders—the community-based organizations, the civil society groups, and the private sector. Everyone has to lend a voice to advocacy and to advocating for more domestic funding for health.

I think we have this success story around COVID because this is the first time we are having a disease outbreak that is not limited to the poor and vulnerable, but that affects everyone equally. You can argue that it affected more of the highly-placed people than the low ones—the ones that were more likely to travel to countries that had the heavy burden and the new strains of the virus. So, the ordinary man on the street felt that it is not his problem. It is a problem of the political class. It is a problem of the rich. So why are they forcing me to get vaccinated? Why are they telling me to wear a face mask?

Because it affected more of the high-caliber persons, everyone was able to come to the table to start talking about what we can do to stop it. This is why we had a level of political commitment that led to the progress we made in building laboratory capacity. We multiplied health facilities from only one that could admit a COVID-19 case when we had the first one in February last year, to over hundreds of treatment centers now all over the country. This is because the political will was there. This is what happens when those that control the resources feel they are threatened, and they are willing to commit everything towards containing that outbreak.

How do we sustain this, and make health a political choice? It is to go back to the grassroots. Go back to the communities. Go back to all the key players that can apply that pressure on the political class to invest in health—a very big investment that will serve all interests. How do we do that? The use of data. I still come back to data. And, the cost analysis that Amanda presented. It was beautiful. We have not done that in Nigeria. Show the cost of not preparing and what that will cost the government—what they stand to lose if they do not prepare. Can we do a cost-benefit analysis to show what they have gained economically by being prepared, and what they have lost by not being prepared, and then presenting the data the way it is to the political class? I think that will make a case.

Secondly are the people that get to choose the government themselves. Politics is a very strong issue, and we have seen politicization of health in all the countries of the world during this pandemic. If the people that elect people into power make health a political choice such that if they do not see a clear agenda for funding health security, for strengthening health systems, or for improving universal health coverage, they are not going to vote for you, that is believing there will be free and fair elections, where the people's choice really matters. This would be a very strong way to advocate for investment in health.

It is a plurality of approaches that is needed in creating advocacy, but it has to be a whole of society creating awareness and getting everyone to be responsible. Let the voices be heard. Let everyone really shout it. But most importantly, the National Public Health Institute owes it as a responsibility to provide the needed data, to show in clear terms exactly what is going on, and to guide the politicians, the leaders, and the government in making the right decisions for health.

**JAMES:** We are quite good at assessing what the gaps are. We are becoming really good at assessing what the risks are. We are very good at identifying what the hazards are. But, we are not yet great at doing on a global level what you just described, and what Amanda also outlined,

which is looking at what the benefits would be if you invest now, and what the returns are in the longer term. The model to help individual countries do that is not complicated, but you need a basic level of metrics, some basic data, and so on. So, we should do exactly what you described by country. There has been an exercise of the WHO when it comes to assessing gaps and risks, but you can require that kind of modeling, which can be used for advocacy and convincing governments.

I want to give Natalia a chance to respond. Can you say something about the role of the church or religious institutions in Brazil around the question of vaccinations? For example, the Catholic church in the Democratic Republic of Congo (DRC) was vital in supporting the uptake of Ebola vaccines in parts of the DRC where government has no presence at all, and where the church was quite important. The church has not always played a positive role, but I am curious about what their role is in Brazil.

**PASTERNAK:** Thanks, Wilmot. And Chinwe, I love that you mentioned distrust in government. I think that, this time, distrust in government in Brazil played to our advantage because the president is speaking against vaccines. So, people do not trust him, do not listen to him, and get vaccinated anyway. But I really see your point. When people distrust institutions, it is usually the first step towards building an anti-vax sentiment in the country. And, this has some overlap with celebrity anti-vax discourse, and religious leaders as well. But, distrust in government plays a major part.

And we have seen this being built over the years. If we think about the DTP vaccine crisis in the United Kingdom, it was about distrust in government—the feeling that government is hiding something from the population and not explaining everything that happened to people. Or the Cutter Lab incident and polio vaccination in the United States in the 1960s—that also was a driving force of anti-vax sentiment in the United States.

Trust in institutions and trust in government, especially in health institutions, is vital to building favorable sentiment to vaccination and to all the health interventions as well. Because in Brazil, on one side we are really proud of our vaccine-prone population. It took 50 years to build that trust with a very strong national immunization program, which seems to be surviving even Bolsonaro. But, we do not know for how long. As I said, we have in Brazil all the elements now to build on an anti-vax sentiment. We have the disinformation coming from the federal government, from celebrities, from religious evangelical leaders, and I do not know. I am afraid that maybe in 10 or 20 years' time, the situation in my country could be very different. I hope that we do not wreck this beautiful vaccination confidence that we have today. Building trust is an ongoing process. You cannot just let go of that and say: Brazilians like vaccinations, we need not worry. Let's stop investing in publicity campaigns. Because if we do that, we can lose this trust.

Wilmot, about religious leaders, some evangelical leaders in Brazil, not all of them of course, speak against vaccination. This is quite worrisome in Brazil. I do not think that the Catholic church has adopted an anti-vax discourse at all in Brazil. Brazil used to be a very Catholic country, but it is slowly being taken over by evangelicals. Evangelicals seem to have some problems with specific vaccines. As I told you earlier, the HPV vaccine was a problem in Brazil because somehow it was linked to precocious sexuality in young girls. So, we do have a problem that needs attention.

But so far, Brazilians are still so favorable to vaccination that any kind of anti-vax sentiment is restricted to a small percentage of the population, usually in very high-income classes. It is usually connected to the natural fallacy or wellbeing movement, and not to religious thinking or political thinking. The small anti-vax sentiment that we have in Brazil today is very focused in a niche section of the population, which are the very wealthy who have fallen into the natural fal-



lacy world that says: “I don't want anything with chemicals. Vaccines have chemicals. I just want to be natural and eat only organics. And, I don't need vaccination.” So, this is something that we need to pay attention to in Brazil because it can grow, but so far it is really contained, and it affects only a small part of the population.

**JAMES:** With that, we have run out of time. In terms of comments in the chat, there was one empirical observation: Public health was definitely not part of the definition of universal healthcare at the World Bank between 2011 and 2020. In general, within the health sector, policymakers need to fund higher-return activities ahead of lower-return ones.

Let me say that the whole question of financing preparedness will be an ongoing concern. The history of dealing with pandemics is what is known as the boom-and-bust cycle or crisis-and-neglect cycle. And, we will have that again. Right now there is a lot of focus. Once the pandemic turns—in the sense that it will be endemic for a while, and not really over ever—the political temperature and appetite for doing something will wane. So, this is the time to act, and this is the time to figure out what you need to do. It is complicated.

Clearly part of the story is that we must strengthen the WHO. Nobody would quarrel with that. The WHO itself needs a new financing mechanism, and it needs a whole range of other reforms as well. So, we will continue to have this discussion, but we really should settle on what our financial plans are. It does not have to be a single plan. In fact, it will not be a single plan. There are global issues, regional issues, and national issues. When you deal with a pandemic, it is in fact the entire global architecture.

I would like to thank Amanda very much for her contribution. Thank you to Chinwe, Natalia, and Jeff. I would like to thank Harlowe Zefing, who essentially runs the Zoom seminars. And, I would like to thank Loren Morales Kando at the Academy of Political Science, our partner that publishes the outcomes of our deliberations. The President of the Academy is Robert Shapiro, from Columbia's Department of Political Science. And with that, thank you to everybody who attended. Until next time, have a good day.