

“This Is Everybody’s Issue”

An interview with Victor Dzau and Margaret Hamburg on confronting the biggest public health crisis in generations.



The editor of *Issues in Science and Technology*, William Kearney, recently discussed the coronavirus pandemic with National Academy of Medicine President Victor Dzau and NAM Foreign Secretary Margaret “Peggy” Hamburg. Their conversation touched on topics such as pandemic preparedness, or the lack thereof; the toll the pandemic is taking on vulnerable populations, especially racial and ethnic minorities, as well as on medical clinicians themselves; the prospects for a vaccine and the global cooperation needed to ensure an effective one is shared fairly among nations; and where the two physicians see hope amid the heartbreak and tragedy.

Dr. Hamburg, you cochaired an Institute of Medicine (now the National Academy of Medicine) committee that issued a report in 2003 warning the United States to fortify its public health system not only to better prepare the country for outbreaks of emerging infectious diseases but to help poor countries improve their capacity to do so as well. You said at the time that the United States should help lead efforts “to reverse the complacency in industrialized countries regarding this problem.” Dr. Dzau, you spearheaded the commissioning of a report in 2016, post-Ebola, that warned that the world was grossly underinvesting in efforts to prepare for and prevent pandemics. Was anyone listening?

Hamburg: The National Academies for decades has been at the forefront in the study of emerging infectious disease threats

and in making policy recommendations that were on target but not always picked up on as aggressively as they should have been. It was a 1992 report by a committee cochaired by Joshua Lederberg on emerging infections that first laid out a new way of thinking about these threats. Then the report you referenced, which Josh and I cochaired, reinforced this idea. Ironically, it came out just after 9/11 and the anthrax letter attacks and when SARS was literally unfolding, and we thought for sure that okay, now people are really going to listen because they understand what biological threats can mean, both naturally occurring and deliberate. But that report, replete with solid recommendations made all the more relevant today, was largely ignored outside a small set of people who were very deeply interested in and concerned about these issues.

Dzau: Our 2016 report took a somewhat different tack. We called pandemic preparedness a neglected dimension of global security, and emphasized the risk to economic growth and stability, in hopes of more people hearing the message, so we were not talking just to the health sector. The report warned that the number of outbreaks was going up in a dramatic fashion, and we estimated an average global loss of \$60 billion a year from potential pandemics. Of course, that pales in comparison to the cost of what we are going through now. We can take a little credit in that the Coalition for Epidemic Preparedness Innovations, created to facilitate vaccine development and access, came out of the report, as did the Global Preparedness Monitoring Board, of which I am a

member. The report also prompted some reforms and rethinking about contingency funding at the World Health Organization. So there are things that happened. However, they didn't happen at a high enough level, and I think the biggest concern I have is a lack of coordination. No matter what you do, when one country invests but others do not, the weakest link in the chain is what creates these pandemics. The lack of solidarity is one big area that I think we need to think about.

Hamburg: It's also a question of political will and sustained commitment. We've seen incremental improvements over several decades now. As we have moved from one crisis to another, lessons learned have been applied to some lesser or greater degree, but that set in motion a cycle of crisis and complacency. When the initial problem occurs, people are mobilized, and they lay out a set of needs and opportunities. Some of those move forward, but many drop off as other world events happen, as there are other competing priorities and needs and as political leadership and commitment shifts to other issues.

Dzau: The willingness to spend on things that may or may not happen takes a lot of political will and public support, so I think that's an important point, Peggy, and it brings me to another point: even if countries invest in preparedness, they may not be the right investments. You can see that in the Global Health Security Index scoring, where the United States was ranked as one of the most prepared countries in the world, and yet we're performing really poorly. So another lesson that we must learn is to look at what preparedness really means. I still argue, though, that what you do nationally in response to an outbreak is not a just a matter of providing money; it's whether you have a quick, decisive strategy that can make things work, and whether, in fact, there is solidarity across the world to work together.

Hamburg: Picking up on health care now, we are going to have to think very carefully about how to resolve a set of tensions that have been clearly elucidated as we've grappled with the care of COVID-19 patients. We were already trying to deal with escalating costs of health care in this country and how to constrain that, and now we're going to be facing even more economic constraints. We're going to have to come out of this and work in an environment with real emphasis on cost controls, yet we also have to be able to build in resilience and redundancy to respond to potential catastrophic events, both ones that may occur locally or regionally, but also this kind of distributed threat like we've been experiencing with COVID-19.

It's going to require people coming together across sectors to figure out how the nation is going to create a new framework for health care, and it probably also is going to need to recognize the role of social determinants of health and the fact that much of what's important for health near-term and long-term doesn't happen within a clinical setting, something we've all known for

a long time. We need to have our systems and funding streams reflect that important reality, and put in place preventive, community-based, and population-based services that will lead to greater health overall.

The pandemic is putting a magnifying lens on some of the underlying, fundamental health challenges you just touched on, isn't it?

Dzau: Yes, it is unmasking problems we have always had. As Peggy said: social determinants, access to care, preventive strategies. But don't forget, this highly vulnerable population, they are also the ones who are doing jobs on the front line, in jobs that are more at risk of direct contact. Unlike people such as us, sitting in our rooms, doing Zoom, their exposure is much higher. This is coupled with the recent social unrest, which really highlights the fact that the nation has a lot of problems, including socioeconomic inequalities and structural racism, among others. What I see is that we are bringing all these underlying issues to the fore.

Hamburg: COVID-19 has cast a very harsh light on inequities that exist within the nation's health care system, but also in terms of the opportunities that some populations have and others do not, and that has really created an environment where, at the moment, it feels absolutely intolerable for us to continue on this way, that real action must be taken. Again, just like with our response to microbial threats, I hope this time we really address these very fundamental and systemic problems and don't just hit the snooze button and become complacent once this acute crisis has passed.

Dr. Hamburg, given that you once served as health commissioner in New York City, were you surprised by how hard the pandemic hit the city?

Hamburg: One thing that was very striking to me when I was health commissioner—and I'm sure this trend has persisted—is that when I looked at indicators for the worst health status, whether it was infant mortality or heart disease, they stacked up in the poorest communities of the city and communities that very much tended to be people of color. The COVID-19 crisis exacerbated these issues.

In terms of New York City's vulnerability to emerging infectious diseases, I am not surprised at all. In fact, my strong interest in emerging infections and resurgent infectious disease threats grew from my period as health commissioner there. We were grappling with HIV and the resurgence of tuberculosis, particularly a new, more frightening drug-resistant form of TB. We were dealing with outbreaks that were occurring because of travel and trade and importation of disease. We were also trying to ensure that we could prevent the routine causes of infectious disease through childhood immunization programs, among

other actions. The fact that New York City is such a dense urban center, that it has pockets of poverty, that it is very much at the heart of intense international and regional and national travel and trade, makes it highly vulnerable to infectious disease.

You are both physicians. What has it been like to watch your colleagues in the medical profession struggle to fight COVID-19?

Dzau: It has been extremely difficult to watch. Our frontline clinicians are dealing with what we call a moral injury, in trying to make decisions of whom to treat when you have limited resources, while also worrying whether you are going to get it yourself. Will you bring it to your loved ones? My colleagues and I wrote a paper in the *New England Journal of Medicine* calling this a parallel pandemic. Prior to COVID-19, the medical community already was facing a major crisis of burnout, depression, suicide. But now we're seeing a surge. There was the reported case of the emergency room physician in New York who committed suicide. We invited her family to speak to our action collaborative on clinician well-being and

timeframe? Currently there are 10 vaccines in clinical trials, some in Phase 2 or going into Phase 3, as you said. We don't know what's going to work, and we are moving at warp speed, so there is a concern that we may not be careful enough looking at side effects. It takes time to do good evidence-based clinical trials. Given the concerns about vaccines that are already out there, we need to be very careful. Hopefully, one or more will work. Nations are trying to get a vaccine by taking many shots on goal. But that creates a problem of resources. Which vaccines are nations going to bet on? How much can you spend? How do you ensure an adequate supply of vaccines for your citizens? In the United States, we have a lot of resources, although they certainly aren't infinite, and I worry about the rest of the world, so everyone has equitable access to a vaccine.

Hamburg: I think the scientific community has come together in extraordinary ways in this country, and working internationally, to try to advance the science. We have moved in ways that we never thought possible in terms of the speed of development. We've also been thinking in new ways about the need to do things that—at an earlier time—would have been

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resilience, and it was very touching. It was a reflection of what almost everybody is facing on the front line.

Our paper calls for the chief wellness officers and wellness programs at hospitals, which we've been long advocating for, to be part of COVID-19 "command centers." After 9/11, Congress passed an act to monitor and treat the physical and mental health of the heroes who responded. We ask the nation and Congress to do the same now for the heroes responding to the pandemic, to support funding for the well-being of those affected. We need a national database to track clinician well-being during and after COVID-19. We need to take care of the people who take care of patients.

A lot of hope is being placed on the prospects of a vaccine emerging in what would be an unprecedented timeframe, and at least a couple candidates will enter Phase 3 clinical trials this summer. What do you think? Is there too much hype in the hope?

Dzau: This virus is with us; it's not going away. Whether we get seasonality or not isn't that important, because it will be with us in our community. Look at what is happening now in the south, where it is markedly increasing. So a vaccine is the best hope we have. It is certainly our best hope if we do not want to get herd immunity through a lot of people being infected, and therefore many more deaths. What's the

done sequentially. We are now undertaking them in a much more parallel way, which involves much more risk in terms of financial investments in manufacturing and uncertainty about whether you are backing a winner. But it also means that as soon as we know which vaccines actually are safe and effective, we'll be able to have them rapidly manufactured and available. So we are accelerating the R&D process in novel and important ways to ask the right questions and get answers much more swiftly, and also investing in the manufacturing capacity and all that's needed for production and distribution. This is crucial because as soon as vaccines are available, there are literally billions of people around the world that will need to be vaccinated.

Dzau: I agree with Peggy that the scientific collaboration is great. Imagine having a vaccine candidate in 45 days; that's unheard of! I am less optimistic about the competition among countries, because each nation wants to be sure it has enough doses for its own citizens. Countries with resources are making deals with companies very early to make sure they lock up the vaccine, but they can lock out countries that don't have those resources. And even a rich country could bet on three vaccines and still lose. To some extent, we need to find a way to de-risk everybody. So one of the ideas we are working on is a procurement process in which countries pool resources to de-risk themselves by guaranteeing that if anything works in the

pool of vaccine candidates, they'll have access. It also drives down the price. The countries of course have to make a commitment to share, which can be tricky.

What kind of global governance framework do you need to pool resources for vaccine procurement?

Dzau: One initiative that I've been involved with creating is the Access to COVID-19 Tools (ACT) Accelerator, which is developing an architecture or road map for countries to co-invest in the development of vaccines and ensure equitable allocation. In May we held an online Coronavirus Global Response summit hosted by the president of the European Commission at which many organizations and governments committed approximately \$9 billion for ACT. By late June we were up to almost \$18 billion.

Hamburg: I do think we need to be very careful not to overpromise on a vaccine. The science has moved forward in remarkable ways, but we need to let science drive the process. Checkpoints in the rigor of the scientific review need to be met. We must make sure that the vaccine is safe and effective; the benefits must outweigh the risks; and we have to understand how the vaccine will work, what dose, how many doses, and how much protection it will offer and what the duration of the protection is. We need to make sure that in our eagerness to harness the fruits of science and technology to create vaccines, we do not end up with a vaccine that we do not adequately understand.

The World Health Organization has become a target of the Trump administration. Dr. Dzau, you joined the presidents of the National Academy of Sciences and National Academy of Engineering in issuing a statement saying the United States' support for WHO should not waver during a pandemic. That was when the administration was threatening to pause funding for WHO, and now it has pulled the United States out of WHO altogether.

Dzau: Defunding WHO is really in many ways defunding the rest of the world. It's the organization that all countries are depending on. I think this is something of great concern. I mentioned solidarity—it really takes everybody working together to stop pandemics.

Hamburg: I am so glad Victor and the leadership of the Academies did speak out on this issue. WHO is a very essential and unique organization. It is the only health entity that has membership from almost every country in the world—rich, poor, north, south, sophisticated in terms of science and medicine, some much less so. It provides a crucial function by offering all countries normative standards, guidance, technical assistance, and other resources, as well as program

coordination around the world. This is critical, especially in the middle of a pandemic when, as Victor said, the safety of any nation depends on activities in other nations. To announce that the United States is going to pull out on what almost is a political whim is just reckless and puts citizens of this country and of the globe at unnecessary added risk.

It's hard to see a silver lining in a catastrophe like this, but do you see any positives amid the calamity? What gives you hope?

Hamburg: First, I think there has been a renewed appreciation of the importance of science and why evidence matters. We need to build on that, to make sure that we really live up to the trust that the public is putting in us, to make sure that capabilities in science and technology translate into things that really matter in their lives and will make a difference for their health, the health of their families, communities, the country, and the globe.

Second, although we haven't come together in all the ways that I would have hoped, and frankly expected, in terms of breaking down some of the divisiveness and nationalism that has interfered with our global engagement at a critical time, I do think—and maybe it's partly the social distancing—that there is a renewed appreciation of the importance of social engagement. That what we do as individuals really matters to our communities more broadly, and that we really do need to look out for each other, that we're all in this together. We really have to make a renewed commitment to using evidence and data to make the world a better and safer place.

Dzau: I have confidence that we will come out of this a better nation and a better world. If you look at what we've done after World War II, after 9/11, after the financial crisis, it gives me confidence that ultimately, the right things will be done and we will prevail from this terrible experience. The lesson to learn is that we do need to come together, as Peggy said, understanding that this is everybody's issue. I'm very encouraged by my own experience globally, including the fact that our summit raised about \$9 billion from some 30 countries in one day—not for their own countries, but for the world. This encourages me to think that people are, in fact, working together to solve a problem. Between science, solidarity, and individual accountability, I do think we can make the world a better place.

Victor J. Dzau is president of the National Academy of Medicine and chancellor emeritus and James B. Duke Professor of Medicine at Duke University, and past president and chief executive officer of the Duke University Health System.

Margaret A. Hamburg is foreign secretary of the National Academy of Medicine, and former commissioner of the US Food and Drug Administration.