

ANTICIPATE

Learning from COVID-19 to Prepare the Response to the Next Systemic Crisis

Abstract

More than 200 million people around the world have been infected by COVID-19, and the number of deaths is approaching five million. Almost six billion vaccine doses have been administered. The pandemic has put the principles and practices of multilateralism to their most severe test in decades. Many environmental, economic, and societal factors have contributed to this global health crisis, including a focus on national rather than international solutions. These trends show no signs of slowing and the next pandemic may be just around the corner. This makes it imperative to integrate the lessons of COVID-19 quickly and to start preparing our response to future systemic crises now. Tomorrow's global challenges will be inherently transdisciplinary and transnational in nature. That means it will be crucial to break down traditional silos if we want to improve our ability to anticipate and prepare for these kinds of emergencies.

- What lessons can be learned from the response to COVID-19?
- Where is the next systemic crisis likely to come from?
- What role should be played by the international community, both in Geneva and around the world, in preparing for the next systemic crisis?

Participants

Moderated by:

Elaine Fletcher, Editor-in-Chief, Health Policy Watch, Switzerland/USA

With:

Patrick Aebischer, President Emeritus, EPFL; Vice-Chairman GESDA, Switzerland

Chorh Chuan Tan, Chief Scientist, Ministry of Health, Singapore; Board Member, GESDA, Singapore

Matthias Egger, Professor of Bioethics, ETHZ; Founder, Health Ethics and Policy Lab, Department of Health Sciences and Technology; Board Member GESDA, Switzerland

Jeremy Farrar, Director, Wellcome Trust; Board Member, GESDA, UK

Soumya Swaminathan, Chief Scientist, World Health Organization (WHO), India

Highlights

The first year and a half of the pandemic brought wildly uneven results. Vaccines were developed in record-breaking time with the help of longstanding research on mRNA technology. But as wealthy nations moved past the initial waves of vaccinations and onto booster shots, the vast majority of low-income countries still had yet to get their first shots. The COVAX Facility, created by an alliance of international organizations to ensure a greater measure of equitable access, had contributed only about 5% of all vaccines administered globally. A part of the problem has to do with the manufacturing process, however, which could be improved through so-called "tabletop" processes that would provide a workaround to existing cumbersome processes for producing the mRNA-based vaccines, according to GESDA's vice-chairman, Patrick Aebischer, a prominent scientist with extensive experience in startups who said that "Big Pharma has failed" to deliver adequate production at scale. Permitting these smaller operations to proceed with fully automated, tabletop vaccine "printers" could enable nations with smaller populations to vaccinate their inhabitants then provide more for shipments abroad. "I think this is a game changer. So it has two things: it has speed and scale," said Aebischer. "You could imagine having pilot plants, public-private pilot plants. The footprint of a pilot plant for Switzerland would be extremely small. You cover the needs of a country like Switzerland quickly; you could then also produce vaccines for export," he said. "One of the big breakthroughs in those new crises will be the manufacturing capability associated with mRNA."

The World Health Organization created a new science division in 2019, just before the pandemic hit. The timing made it "a rollercoaster ride", recalled WHO's chief scientist, Soumya Swaminathan, a paediatrician and clinical scientist, because the new division had only begun to focus on topics such as norms and standards, digital health and innovation. "And eight months later, the pandemic hit. We had to accelerate," she said. "And the needs became very, very obvious." Swaminathan said nobody expected vaccines to be produced in less than a year, and at the start of the pandemic it was clear that despite the convening power of an organization like WHO, overcoming the "uncoordinated and fragmented response" of nations would be a big challenge. To do a better job, she said, the UN health agency should be empowered to receive more data. "We need global governance of existential threats like pandemics and climate change. You cannot do a country at the time," she said. "We need a stronger, better financed and more empowered WHO to actually do the work that we are expected to do."

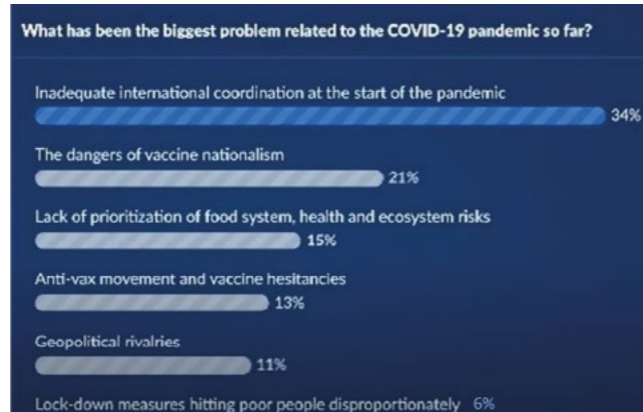
International cooperation is the key, said GESDA board member Jeremy Farrar, director of the Wellcome trust, and former professor of tropical

medicine. "The problem is national governments willing to do what is right for the world and share with COVAX the stuff that they have, essentially vaccines, therapeutics and PPE and oxygen, but essentially vaccines," he said. "Ultimately, all of these multilateral agencies, including WHO, are really dependent on national governments. If national governments want them to work, they can work." Over the past couple of decades, he said, the world has had a series of warnings that include the Nipah, SARS, MERS and Zika viruses. "Every two to three years, we have had a warning of a national or regional issue which disrupted the societies in which it happened. And anticipation is important, because I think what governments really struggle with is that ability to deal with today's issues, which are pressing and which require a great deal of attention," said Farrar, adding that is where GESDA can play a role by focusing on anticipation. "We talk about multilateralism. We have to accept that in this crisis, at the moment, multilateralism is failing," he said. "And I think trying to get that bridge between national tensions, national polls and international action lies at the heart of GESDA."

Another GESDA board member, Chorh Chuan Tan, emphasized the importance of integrating all efforts, a critical lesson for Singapore, where the pandemic response drew on the lessons of previous outbreaks. "It is really critical to learn from this to do much better integration for infectious disease pandemics, like the one we have," said Tan, a former university president. "If we look at the cross-country comparisons about endemic responses to COVID, one of the features was the fact that countries where the response was fragmented tended to do less well," he said. "There is a lot that we can do for data integration, not just within a country but across countries to accelerate our ability to make decisions faster. Then there is also the integration between the response efforts and the rest of the healthcare system. Because eventually there is the impact on the wider health care system." He compared the process of getting prepared for a pandemic with setting up a tent at a windy campsite. "You have to peg all the sides of the tent down, but you know they are all flying all over the place," said Tan. "And so, my point is, we need to find one or two places to peg the tent down so it will not fly away. And some things, some pegs are going to take a longer time to fix."

In Switzerland, the high degree of innovation still did not prepare the nation fully for this pandemic; also, its deep aversion to making mistakes made it too slow to react, according to Matthias Egger, a professor of epidemiology and public health. "When you look at the Swiss system, we are very good at moderation. We are good at long-term compromise. We are good at thinking hard and long about things. We are not very good at acting quickly

because we may actually make a mistake," he said. "So, our political system is not ideal for such a crisis." Egger suggested adopting more evidence-based policymaking to include mechanisms that allow leaders to quickly have evidence synthesized and made understandable. "Politicians do not want to read long academic papers. They want information for action," he said. "And scientists want to write long academic papers and publish them in high impact journals. But high-impact journals do not necessarily have a high impact on policymaking. So, there is a whole range of challenges that we need to address in that context in order to make Switzerland fit for the next crisis." Egger also proposed establishing a Geneva hub modelled after WHO's Hub for Pandemic and Epidemic Intelligence in Berlin. Germany invested \$100 million in it as part of WHO's Health Emergencies Programme. With the help of the Swiss, he added, a Geneva hub would represent a "practical application" of GESDA's mission.



Answers from audience to poll about challenges of the COVID-19. Note the importance given to lack of international coordination and to vaccine nationalism.



Takeaway Messages

Develop leadership structures and strategies to respond faster and to distribute vaccines more fairly, establishing a bridge between scientists and policymakers that should be permanent, not restricted to moments of crisis.

Invest in manufacturing and coordination of research and development; mRNA technology allows for quick prototyping and decentralized manufacturing, which could break through some of the impasses in vaccine inequality. Scientific research on vaccines (and also on anti-viral and anti-microbial agents) needs to be accelerated and put in a holistic frame, notably in a One Health (humans, animals) approach. More emphasis should be put on the links between climate change and threat of pandemics.

Create a worldwide genomic surveillance network to spot new diseases wherever they emerge. Better integration of national data and surveillance are essential tools for fighting a pandemic. The Swiss and GESDA could help set up a Geneva hub of WHO's Health Emergencies Programme like that in Berlin.

More information

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