COVID-19: what health experts could and could not predict

Nearly a year after the first cases of COVID-19 were reported, it is time to look back and assess what could have been predicted by health experts.

Every year over the Christmas break, I turn off my email and check out from reading the news, to clear my head for a week. But at the beginning of 2020, when I switched back on, the global health security community was abuzz. A new memo from the World Health Organization (WHO) on 5 January announced a pneumonia-like cluster of infections in Wuhan, China. Almost a year on, we have learned much about this virus, and we have gained more insight on COVID-19 in retrospect. It is a good time to reflect on the response and what we could have anticipated.

Some aspects of this pandemic were entirely predictable. It was clear to scientists that one of the greatest threats to humanity was a pandemic, specifically a fast-moving respiratory pathogen. A spillover event from an animal, most likely a bat, was seen to be the source that moved into communities and then around the world on airplanes. The WHO picks up on average 3,000 signals of potential new outbreaks every month. The past few years have seen Zika fever, plague, dengue, chikungunya, multi-drug-resistant tuberculosis, polio, cholera, lassa fever, yellow fever and numerous other infectious diseases flare up in different countries.

Also expectedly, thanks to its reformed Health Emergencies Programme, which was updated in light of what the organization learned from the West African Ebola crisis, the WHO performed well in response to this pandemic. It started technical briefings by the Director-General and the strong emergency-response team in mid-January and alerted the world to a public-health emergency of international concern (its highest alarm bell) on 30 January. It shared information, communicated clearly and tried to bring countries together to form agreements. In February, the outbreak on the cruise ship *Diamond Princess* hinted at asymptomatic transmission and aerosol transmission, and the WHO mission to China in February laid out clearly why a SARS approach to COVID-19 was optimal and caused New Zealand to pivot away from an influenza strategy.

But five aspects of the pandemic response were more unpredictable.

First, few would have guessed that the USA and UK, both countries that have historically been seen as leaders in pandemic preparedness with adequate wealth and expertise, would suffer as badly as they did. This can be chalked up largely to poor leadership, following an influenza model of letting the virus spread, and lack of humility in the face of an infectious disease. Viruses do not suddenly disappear because 'silver bullets' such as herd immunity magically happen.

Second, healthcare capacity is important but falsely deceptive with the coronavirus SARS-CoV-2. The public-health community has always argued that investing in public-health capacities, and preventing large outbreaks, would be cheaper and better for the economy than reactive and late responses. Unfortunately, this has largely fallen on deaf ears in government, who consider public health as a drain on money rather than an engine of growth. The prevention of infectious disease is about all the steps put in place to stop someone from becoming infected and arriving at the hospital. Surprisingly, European and North American countries did not focus enough on a preventive approach and instead focused on making health services their front-line response to the pandemic.

Third, it was surprising that some leaders would falsely claim the choice was between the economy and COVID-19 instead of realizing that minimizing COVID-19 harm would also reduce non-COVID-19 harm and vice versa. In fact, economic analysis of the first half of 2020 clearly shows that countries that suppressed COVID-19 effectively also experienced the smallest losses in gross domestic product and, in some instances, even experienced growth. In the medium to long term, it is clearly the virus, not the restrictions themselves, that is hurting the economy.

Fourth, public-health experts probably underplayed the importance of travel bans and border measures. But travel restrictions and border control have been shown so far to be one of the most important tools governments have for protecting their populations from the full impact of this pandemic. So far in 2020, no country has

effectively and sustainably suppressed this virus without strict border measures. The International Health Regulations might need to be reviewed in light of this.

Finally, no one could have predicted how difficult a joined-up strategy would be in Europe and North America, let alone globally. If COVID-19 killed as many people as SARS (with a case-fatality rate of 10%) or MERS (with a case-fatality rate of 33%), it would have been easier to have countries all heading toward elimination together, because it would have been impossible to let SARS-CoV-2 spread within populations. Yet because SARS-CoV-2 is deceptively mixed in its outcomes instead we have a patchwork of mitigation, suppression and elimination strategies being pursued by governments and an absence of global cooperation, coordination and a collective strategy. This is despite the WHO's best efforts to advise countries to follow the East Asian model of elimination.

So where does this leave us? Many health experts are exhausted after sprinting for almost a year. Yet all we can do is to keep contributing evidence and hope that political leaders give weight to expertise and long-term solutions. No one knows how long it will take for this global pandemic to end — possibly 2023 or 2024. But whenever this may be, you will find me on a beach at the Pacific Ocean drinking a virgin mojito, as it will take me longer than a week to recover from this pandemic and forget about global affairs for a while. □

Devi Sridhar✉

Global Health Governance Programme, Edinburgh Medical School, University of Edinburgh, Edinburgh, UK.

✉e-mail: devi.sridhar@ed.ac.uk

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