

## Voices

## The Global Response to the COVID-19 Pandemic

Global approaches towards pandemic control range from strict lockdowns to minimal restrictions. We asked experts worldwide about the lessons learned from their countries' response. Their voices converge on the importance of scientifically guided interventions to limit the spread of SARS-CoV-2 and its impact on human health.



**John Nkengasong**

Africa Centres for Disease Control and Prevention

### Africa's Response to COVID-19

The global response to the coronavirus pandemic will be a critical case study in future public health curricula. While some countries were quick to respond, others were not. While some took extreme measures, others were lax. What strategies have we seen as being successful in responding to the pandemic? In Africa, it was **unified leadership**.

The first case of the coronavirus in Africa was confirmed on February 14, 2020, in Egypt and served as the impetus to mobilize leaders of African Union (AU) member states into taking swift action. Just 1 week later, on February 22, H.E. Moussa Faki Mahamat, the chairperson of the African Union Commission, convened an emergency meeting of ministers of health with all 55 member states in attendance. It was from this critical forum that the Africa Joint Continental Strategy for COVID-19 Outbreak was born.

This preemptive coordination by the AU and member states led to the advancement of surveillance, contact-tracing, the rapid scaling up of testing, and case management across the continent. And through the Africa CDC, this key alignment in vision has helped build the capacity of member states to respond to COVID-19 and future pandemics. Leaders understanding the significance of pursuing a harmonized approach from the onset—underpinned by communication, collaboration, coordination, and cooperation—has been vital to the work of the Africa CDC. This unified leadership will continue to be key in our (eventual) ability to lead Africa out of this pandemic, and in our overall quest to establish a new public health order on the continent.



**Akiko Iwasaki**

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### In the Absence of a National COVID Response

As the death toll skyrockets on a daily basis in the US, we are painfully reminded of the lack of leadership and unified plans to contain the pandemic, leading to a catastrophic explosion of COVID-19. Other countries, such as New Zealand, Germany, and Taiwan, had sensible public health measures put in place swiftly to squash the outbreak and maintain low numbers; early decisive lockdown measures; implementation of surveillance systems; mask use; targeted testing strategies; and the use of information technology. Instead, in the US, we had no national lockdown plans, masks are politicized, testing discouraged for fear of rising numbers, worsening PPE shortages, and growing distrust in science. Despite this chaos, local scientists and public health experts banded together to counter COVID-19. We tested saliva because we ran out of swabs—this ultimately led to Yale's famous SalivaDirect, led by Drs. Grubaugh and Wyllie. We optimized different primers, pooled samples, and multiplexed PCR to save reagents and money. We shifted to studying immune responses in COVID-19 patients in the hope of coming up with a better therapy. While I am immensely proud of the incredible accomplishments by the scientists fighting the virus, we cannot bring back the 280,000 people who died as a result of the lack of national COVID strategy. The painful lesson we learned from all this is that our country needs a president who can provide a concrete and consistent plan for battling the next pandemic, and that this plan must be guided by science.



**Cesar Victora**  
Federal University of Pelotas

### COVID-19, Science, and Politics

Brazil is second only to the United States in COVID-19 deaths. As might have been expected, the pandemic is heavily hitting the poor and those with African or indigenous ancestry, who are also the most vulnerable to the economic crisis. Yet, arguably the most striking aspect of the pandemic is how prevention and treatment have been obliterated by politics. President Bolsonaro plays a divisive role in ignoring and contradicting scientific knowledge by promoting hydroxychloroquine, opposing social distancing and face mask use, censoring epidemiological results on high prevalence among indigenous populations, and discontinuing the funding for such studies. Since March, two ministers of health resigned in opposition to the president's positions and the third, an Army official, is now in danger of losing his post. We are now seeing what may be the first ever official antivax campaign by a presidential office. Even though no vaccine is available in Brazil yet, Bolsonaro repeatedly stated that vaccination will not be compulsory, instead of promoting its uptake. He publicly reprimanded his minister for ordering millions of doses of the Sinovac vaccine, a joint venture between Chinese manufacturers and the Instituto Butantan, which is undergoing large-scale phase 3 tests at present, all because Butantan belongs to São Paulo state, whose governor will likely run against Bolsonaro in the next presidential elections. The silver lining in this cloud has been the unity shown by most governors and mayors, strongly supported by the scientific community and the mass media. Concerted opposition to the anti-scientific behaviors of national leaders is what Brazil can show to the rest of the world.



**Juhwan Oh**  
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### It Should Be Democracy That Fills the Gaps in the Science

South Korea managed to suppress the COVID-19 outbreak by deploying a comprehensive anti-pandemic arsenal including rapid establishment of disaster management team, swift scale-up in testing capacity by public-private partnership, timely re-allocation of diverse resources, and meticulous contact tracing to prevent asymptomatic community transmission. Highly transparent risk communication culminated in the public's committed cooperation to new behavioral protocols without implementing coercive measures, avoiding the negative economic impact. At the crux of South Korean success lies in the central leadership's rapid, responsible, and humble approach, catalyzed by the golden balance between science and democracy. Imperfect scientific knowledge was overcome by dedicated civic engagement to collectively deal with an uncertain future during a crisis. However, innovative and timely social support, especially for those in more affected industry and business sectors, has yet to be fully secured, which may hamper South Korea's achieving high compliance to the new normal state and may lead to surge in cases. Unnecessarily coercive regulations like lockdowns from Western countries, a tactic never used in the country's early response, could in fact aggravate the situation. The victim-blaming culture promoted by populist approaches, one in which a single patient or community is ostracized for an inevitable outbreak, may disrupt the well-established citizen compliance achieved by persuasive technocrats. Innovations in social support must take place to protect the core principles of South Korea's early successful pandemic strategy.



**George F. Gao**  
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### **Efficient Non-pharmacological Interventions Are Key**

In late December 2019, we were notified that there were some sporadic cases with so-called pneumonia of unknown etiology (PUE) in Wuhan City, Hubei Province, China, and with historic record time the causative agent was revealed to be a novel coronavirus (later named SARS-CoV-2). The China CDC team quickly assessed the incubation time as 3-7 days and that the major transmission routes were respiratory and close contacts through droplets. As a result, control measures were implemented based on the epidemiological assessment, and within 100 days the epidemic in Wuhan was under good control. How did China achieve such a great goal? The so-called non-pharmacological interaction (NPI) measures have been executed very efficiently in China. They are mainly as follows: (1) strong political will; (2) science-based guidelines for prevention, control, and treatment; (3) active case finding and quarantine of close contacts; (4) public understanding and involvement; (5) public compliance with the three “big measures” of mask-wearing, social distancing, and hand-washing; (6) restricting public gathering and movement; (7) environment disinfection; (8) nucleic acid testing for a wider population once an outbreak was noticed; and (9) preventing the infodemics.

Right now, the pandemic is still in its increase-phase worldwide with no sign of decline in the near future. In fact, after the Wuhan outbreak, there have been at least six more outbreaks in China caused by imported cases from outside China. Though the approach by China cannot be copied in its entirety, there are still some experiences which can be shared as a good example of disease control as we wait for a vaccine.



**Anurag Agrawal**  
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### **Never Let a Crisis Go to Waste**

The COVID-19 pandemic in India represented a seemingly impossible challenge of providing accessible, equitable, effective, low-cost care to a billion plus people, all with limited resources. Today, with seropositivity touching 30%–50% in surveys from major cities, the initial storm seems to have passed, with country-level data suggesting the peak is here or past. From a few thousand per day 6 months ago, testing has been scaled to more than a million tests daily. Deaths per million and estimated infection fatality rate are amongst the lowest globally. While there has been concern over spread to less-developed regions with shaky health infrastructure, the combination of a younger population, fewer closed air-conditioned indoor spaces, and possibly different immunity seems to have kept severe cases low enough to be manageable. The national response also merits acknowledgement. Initially, severe limitations in essential supplies were addressed proactively through a nationwide lockdown to delay the spread, while capacity was rapidly created. Constructive engagement with global agencies for flow of information led to rapid learning about what works. Strong existing foundations in science, industry, medicine, and information technology helped in implementation. Cross-sectoral cooperation of academia, government, and industry led to production of masks, protective gear, molecular diagnostics, digital health, generic drugs, and initial vaccine candidates within this short period. A national digital health mission, among other new programs, augurs well for future pandemic preparedness. As Sir Winston Churchill said, “never let a good crisis go to waste.” It applies well to the COVID-19 pandemic in India.

**Christian Drosten**

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### Why Germany Did So Well

The German success in controlling COVID-19 is in accord with some common stereotypes: strictness regarding rules, adherence to authority, and a workplace preference over other social activities. While all of these should aid in outbreak control, it should be added that Germans are also good craftsmen. In this particular case, a home-brewed RT-PCR test for SARS-CoV-2 was up and running in labs across the country by the end of January, with no central public health authority restricting its application. Our first autochthonous cases were detected at a time when the number of hospitalized cases was zero. By mid-March, the weekly testing rate was as high as 350,000 (of our 83 million people).

Around the globe, politicians implemented lockdowns when TV images like those seen in Northern Italy came together with unambiguous proof that the virus was already in the country. Because autochthonous cases in Germany were found by lab testing rather than ICU admissions, the country went into lockdown three weeks earlier than others, relative to the accumulation of cases. The lockdown in Germany was short and involved rather mild interventions. Upon lifting of measures, incidence did not catch up for almost 4 months, causing speculations that transmission might have fallen below some kind of percolation threshold. Second wave onset was considerably delayed compared to that in other European countries, again enabling a relatively early intervention. Early availability of diagnostics enabled by low regulatory barriers may have been sufficient to put Germany in this favorable position.

**Cecilia Söderberg Naucner**

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### Science Should Guide Us through the Covid-19 Pandemic

In Sweden, the agenda for the COVID-19 strategy was not clearly delineated by the responsible authority "Folkhälsomyndigheten," but the government had full trust in them and was not open to discussion with other experts who wanted a more proactive approach to protect the public. Those scientists were publicly accused of being hobby epidemiologists, non-experts, alarmists, and worse. The result was that Sweden was not prepared for a pandemic and handled the situation with a patchwork of measures. Evidence of pre- and asymptomatic spread of the virus and aerosol transmission was disregarded, testing capacity was inadequate, and contact tracing and quarantine of household contacts were eschewed. These factors led to late responses and high death tolls. Many people are suffering from the long-term effects of COVID-19, and the societal costs of the inadequate pandemic response are enormous. The Swedish government has put their citizens at unacceptable risk, and still does. Case numbers fell during the summer but are resurging fast without significant changes in the control measures. For example, despite overwhelming evidence that face masks help protect people, the government has not even recommended mask use by caregivers of elderly and high-risk individuals in hospitals. To put people's health in the hands of a government-appointed expert authority, run by two people, is not a democratic and safe procedure. An open scientific debate is utterly important to sharpen the discussion on how to protect people and during an ever-evolving pandemic such discussions should be based upon the most up-to-date scientific evidence and multiple voices.





**Eduardo López-Collazo**  
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### Science over Politics

The pandemic caused by SARS-CoV-2 is having a strong impact on Spain. After Italy, it has been the second most affected country in Europe and it has registered the highest number of both positive cases and deaths. After a first, exemplary lockdown, which put under control the first wave of infections, a fast exit from this long quarantine was chosen to favor the recovery of the economy, leading to political disagreements and chaos in deciding preventative measures. The scientific community advised a number of measures that included extensive contact tracing, the analysis of sewage waters, the confinement of infected individuals and their environment, the control of airports, the implementation of a digital tracing app, and the constitution of an independent scientific committee that would analyze the progression of reported cases in real time. However, only a universal use of face masks was chosen, despite a lack of clear data on its effectiveness in closed spaces and on the role of aerosol transmission. Thus, some of the more populated regions experienced such an increase in cases and in bed occupation in critical care units that new lockdowns, sometimes lacking clear criteria, have been put in place. The “Spanish model” shows us how the pandemic control requires protocols founded not on political, but on scientific criteria, which are needed for a transparent and evidence-based management of new measures, highlighting the importance of technical and personnel support who can assure the control of those infected and their close contacts.



**Allyson M Pollock**  
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### Marginalization of Public Health Expertise during the Pandemic

Decades of underinvestment in public services and health services and the evisceration and depletion of public health systems go a long way to explain the excess death toll from COVID-19 and non-COVID conditions in the UK this year.

The marginalization of operational expertise in communicable disease control and public health has been a defining hallmark of the UK’s response to the epidemic. Instead of following the tried and tested principles of communicable disease control and rebuilding the public health care systems and capacity the government took an entirely different path. It chose to create parallel services for COVID-19 centralizing and privatizing its response, most notably for testing and contact tracing and surveillance activities, squandering tens of billions of pounds and failing to deliver.

Lack of health care capacity and the appalling lack of investment in health care and our public institutions drove the decision to put in place the national lock down. Once again, we are being told to stay at home and save lives in order to protect the NHS. Lack of UK hospital bed and intensive therapy unit capacity, which is well below OECD average, and cuts to services, beds, and staff have been a major issue, and once again in some parts of the country, elective care is being cancelled.

The economic and health costs of failing to put in place the necessary health and social care services are incalculable and could have been avoided or minimized. Meanwhile, the government continues to award billions of pounds of contracts to the private companies that do not have the expertise to tackle the current health care needs. This is the state we are in.



**Antonella Viola**  
Istituto di Ricerca Pediatrica

### Science, Politics, and Society

The health crisis triggered by COVID-19 has put a number of pre-existing problems in the spotlight. Those critical issues of the health system were amplified by the fast spreading of the virus. In the initial stages of the epidemic in Italy, the lack of strategic plans for emergency management was accompanied by a dramatic shortage of protective equipment and diagnostic reagents, which had to be imported from abroad with enormous difficulty, as each country, in that terrible moment, tried to secure its own stocks. Several other criticalities highlighted by COVID-19 include neglected local medicine care, the unacceptable shortage of health workers, as well as the lack of adequate infrastructure and technology. This precarious situation was also exacerbated by the short-circuit created between the Central Government and the Regions in the management of the health emergency.

To prevent this from happening again in the future, it is necessary to build a constant dialog between science, politics, and society. Scientists knew a pandemic was coming; they have been saying it for years, but the message never reached politicians. This mistake must not be repeated. Scientists have the task of providing politics with that long-term vision necessary to be prepared for future emergencies. It is also necessary to invest more in training and technology for biomedical research and public health. Ultimately, it is essential to coordinate the action of national and international task forces for health emergencies and, in this regard, the creation of a European Biomedical Advanced Research and Development Authority would be a huge step forward.



**Michael Baker**  
University of Otago

### Science, Leadership, and Courage Matter

The main lesson I have taken from contributing to New Zealand's COVID-19 response is that more than ever we need science-informed leadership and the courage to change direction. Like much of the Western world, New Zealand rolled out its familiar influenza pandemic plan to combat the COVID-19 pandemic; a good plan, but for a different virus. At the last moment we recognized that a new approach was needed, so we adopted an elimination strategy, a change of direction drawn on evidence from Asian countries that were successfully containing this virus.

Achieving elimination was tough. New Zealand implemented the most stringent lockdown of any country when we had only 102 COVID-19 cases and no deaths. It took courage by our politicians to trust the scientists and powerful empathetic communication by our prime minister to engage the public with the response. After 7 weeks, New Zealanders emerged into a virus-free country. We know there will be setbacks, but we are getting better at handling them.

New Zealand has protected its most vulnerable populations and achieved the lowest COVID-19 mortality rate in the OECD. Total all-cause mortality has dropped by 5% because of a marked decrease in respiratory infections. The economy is recovering, and the country is opening for travel to other jurisdictions that are also achieving elimination. We hope that this new confidence in science-informed leadership will translate into tackling other major threats such as climate disruption and loss of biodiversity.

### DECLARATION OF INTEREST

J.N., C.V., J.O., G.F.G., A.A., C.D., C.S.N., E.L.C., A.M.P., A.V., and M.B. declare no conflict. A.I. is a co-founder of a company, RIGImmune, and a member of its scientific advisory board.