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How Millions of Lives Might Have Been Saved From Covid-19

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This article is part of Times Opinion's reflection on the two-year mark of the Covid pandemic. Read more in a note from Alexandra Sifferlin, Opinion's health and science editor, in our Opinion Today newsletter.

We cannot step into the same river twice, the Greek philosopher Heraclitus is said to have observed. We've changed, the river has changed.

That's very true, but it doesn't mean we can't learn from seeing what other course the river could have flowed. As the pandemic enters its third year, we must consider those moments when the river branched, and nations made choices that affected thousands, millions, of lives.

What if China had been open and honest in December 2019? What if the world had reacted as quickly and aggressively in January 2020 as Taiwan did? What if the United States had put appropriate protective measures in place in February 2020, as South Korea did?

To examine these questions is to uncover a brutal truth: Much suffering was avoidable, again and again, if different choices that were available and plausible had been made at crucial turning points. By looking at them, and understanding what went wrong, we can hope to avoid similar mistakes in the future.

What happened in the first weeks: China covered up the outbreak.

Our information about what happened when the coronavirus apparently was first detected in Wuhan, China, in December 2019, remains limited. Reporters working for Western media have been kicked out, and even local citizen journalists who shared information during the early days were

jailed. But evidence strongly suggests that China knew the danger long before it told the world the truth.

The South China Morning Post, a newspaper owned by a major Chinese company, reported that Chinese officials found cases that date to Nov. 17, 2019. Several Western scientists said colleagues in China had told them of the outbreak by mid-December. Whistleblower doctors reported being silenced from mid-December on. Toward the end of December, hospitals in Wuhan were known to be quarantining sick patients, and medical staff members were falling sick — clear evidence of human-to-human transmission, the first step toward a pandemic.

Finally, on Dec. 31, 2019, as rumors were growing, the Wuhan health officials acknowledged 27 cases of an “unexplained pneumonia” caused by a virus, but claimed there was no evidence of “obvious human to human transmission.” The next day, a Chinese state media outlet announced that authorities had disciplined eight people for spreading rumors about the virus, including Dr. Li Wenliang, who had noted that the mystery pneumonia cases resembled SARS and warned colleagues to wear protective gear, and who would later die of Covid.

Not until Jan. 20, 2020, did Chinese authorities publicly admit that the virus was clearly passing from person to person. Three days later, they shut down the city of Wuhan.

At that point, the virus had had weeks to spread far beyond China’s borders and was beginning to establish outbreaks globally. A pandemic was on its way.

What could have happened: China tells the world the truth and the pandemic is avoided.

China could have notified the World Health Organization sometime in early to mid-December that it had an outbreak of a previously unknown coronavirus similar to the dreaded SARS pathogen, and immediately sequenced the virus and shared the genome, allowing tests to be developed. The rest of the world would have had to act, too. Governments could have made sure tests were immediately developed to find as many cases as possible. Health authorities could have isolated infected people and traced and quarantined their contacts. Travel restrictions and testing could have been put in place to prevent the spread outside China.

It may seem like a fantasy to suggest that the outbreak could have been extinguished before it became a pandemic, but later outbreaks of this virus were contained. This first wave could have been, too, and the pandemic might have been completely avoided, saving millions of lives and much suffering.

What happened after China covered up: The world failed to heed warnings and take action.

On Dec. 30, 2019, ProMED, a service that tracks infectious disease outbreaks globally, warned of “unexplained pneumonia” cases in Wuhan. The veteran infectious disease reporter Helen Branswell shared the news alert on Twitter the next day and said it was giving her “#SARS flashbacks.” That same day, Taiwan’s Centers for Disease Control — with its close contacts on the ground in China — fired off an email to the W.H.O. with its concerns that patients were being isolated in Wuhan — a clear sign of an outbreak with person-to-person spread.

On Jan. 11, 2020, a Chinese scientist bravely allowed an Australian colleague to upload the virus's genome to a gene bank, without official authorization. This meant that the whole world could now see this was a novel coronavirus, closely related to SARS. The next day, the scientist's lab was shut down.

Doubts over whether the virus was capable of spreading from person to person should have been swept away in mid-January 2020 by reports that a woman in Thailand and a man in Japan had tested positive without having been to the Wuhan seafood market that Chinese authorities had said was the center of the spread. Meanwhile, despite such clear evidence of the virus's transmissibility, the number of cases that China reported remained at 44. (We'd later learn that medical professionals weren't even allowed to report cases that weren't connected to the seafood market.) Yet the W.H.O. kept repeating China's line that there was no evidence of human-to-human transmission.

It wasn't until China shut down Wuhan on Jan. 23, 2020, that the rest of the world could see how serious the threat was — even then, the global response remained feeble.

What could have happened: The world sees through China's deception and takes action.

How could nations have gotten around China's smokescreen? They could have done what Taiwan did.

On Dec. 31, 2019, the same day Taiwan officials sent that email to the W.H.O., they started boarding every plane that flew there directly from Wuhan, screening arriving passengers for symptoms like fever.

"We were not able to get satisfactory answers either from the W.H.O. or from the Chinese C.D.C., and we got nervous and we started doing our preparation," foreign minister Joseph Wu told Time magazine.

Masks were rationed, to ensure there were enough for the entire population, and were distributed to schools. Soldiers were put on production lines at mask factories to increase supply. The country quickly allocated money to businesses that lost customers and revenue.

For most of 2020, Covid was rare in Taiwan. On 253 consecutive days that year there were no locally transmitted cases there, even though there had been extensive travel to China, including Wuhan, before January 2020. With extensive testing and tracing, they squashed two major outbreaks — one that started in March 2020, and more impressively, a major outbreak of the more transmissible Alpha variant in summer 2021 — bringing local cases back to zero. That shows what was possible with an early and robust response.

Taiwan has suffered 853 deaths. If the United States had suffered a similar death rate, we would have lost about 12,000 people, instead of nearly a million.

Taiwan shows that even in early January, there was enough information to be concerned about the virus, and the potential to suppress any outbreak.

What happened after the outbreak went global: The real contagious threat was ignored.

On the precipice of a pandemic, too many important officials failed to understand how the virus was spreading, despite emerging evidence, keeping them from effectively limiting its spread and costing thousands of lives.

On Feb. 3, 2020, the cruise ship Diamond Princess was ordered to stay in Yokohama harbor, in Japan, two days after a passenger who had disembarked in Hong Kong tested positive for Covid. After 10 other people on the ship were found to be infected, the ship was quarantined. Eventually there would be 712 cases, about 19 percent of those on board, with 14 deaths.

Nine public health workers attending to the ship were infected. It seemed quite unlikely, the Japanese virology professor Hitoshi Oshitani noted, that all these professionals with expertise in infection control had failed to take the recommended precautions.

At that point the guidelines from the W.H.O. and the Centers for Disease Control and Prevention were based on the assumption that this virus was spread by large droplets from the nose and mouth that quickly fell to the ground or to surfaces, because of their size. People were advised to keep enough distance from others to stay out of the range of these droplets, and to wash their hands in case they picked them up from surfaces.

If the workers became infected despite those precautions, and if passengers were infected even when they were quarantined, Oshitani suspected that the virus was probably spread by airborne transmission of tiny particles — aerosols — that could spread more widely, float around and concentrate, especially indoors.

This case for aerosol spread strengthened after 61 people attended a choir practice in Skagit, Wash., on March 10, 2020. The church followed droplet-based guidance by propping the door open so nobody would touch the door knob and avoiding handshakes or hugs. No one was six feet in front of the person suspected to have been the single initial source. Nevertheless, 52 people — 85 percent of those present — became infected.

Many Western experts, including in the United States and Europe and at the W.H.O., discounted these and other evidence of airborne transmission. Countries like the United States did not require masks to limit airborne spread but worried instead about germs spreading on people's mail and groceries.

After more evidence, and organized attempts by hundreds of aerosol scientists, minor course corrections started later in 2020, but they were halting, incomplete and underpublicized. For example, it wasn't until December 2020 that the W.H.O. started recommending that masks be worn indoors regardless of distance, and even then only if the space was poorly ventilated, and it wasn't until December 2021 — two years after it all began — that it recommended highly protective masks for health care workers.

It was also assumed that only people with symptoms — like fever — would be infectious, even though evidence to the contrary had emerged early.

On Jan. 26, 2020, the Chinese minister of health gave a news conference warning that people without symptoms could transmit the virus. The same week an article in *The Lancet* had documented a case in which infection was visible in the lungs of a patient who had shown no symptoms. An article published in the *New England Journal of Medicine*, also the same week, noted cases presenting only mild symptoms, with the authors stressing that this would make it easy to miss them. Multiple reports from German scientists soon disclosed similar conclusions based on cases there.

However, many health authorities ignored, denied and even belittled evidence of spread without symptoms. It took until well into March for officials in the United States, for example, to accept that people without symptoms could be infectious.

The failure to acknowledge this type of transmission meant that the urgency for mass testing wasn't realized and the virus spread silently, without critical precautions being taken, until explosive growth occurred in places like New York City. The need to identify and quarantine people who had come in contact with those who were infected was considered unnecessary and alarmist in the United States. The C.D.C. and the W.H.O. initially recommended masks only for the sick.

Another crucial misstep was the failure to recognize the virus's dominant pattern of spread, in large bursts.

That February, Oshitani and his colleagues concluded that a vast majority of infected people didn't transmit at all, while a small number of individuals were superspreading, in closed indoor settings like restaurants, night clubs, karaoke bars, gyms and such — especially if the ventilation was poor. They developed new approaches to trace infections to their origin, to find cluster transmission and thus look for other cases.

What could have happened: Officials put in place effective and early mitigation strategies.

The rest of the world could have understood the virus as Japanese officials did. Based on their understanding, which was arrived at in February 2020, that Covid was airborne, spread without symptoms and driven by clusters, by early March they were recommending mask-wearing, emphasizing the need for ventilation and advising the public to avoid the three Cs: closed spaces, crowded places and close-contact settings.

Americans, on the other hand, were disinfecting their groceries, and the W.H.O. kept emphasizing hand-washing and social distancing, or remaining six feet apart. Japan has had about 25,000 Covid deaths, which would be the equivalent of just under 66,000 in a country the size of the United States.

Mass testing could have detected people who were infectious before they even knew they were sick and sometimes those who never had symptoms at all. Ventilation and air filtration could have kept indoor spaces safer.

Instead of closing parks, activities could have been moved outside weather permitting, since natural ventilation more effectively dissipates the virus. The key role of masks would have been understood earlier, along with the benefits of higher quality masks. Rather than wasting money on plexiglass

barriers — which can't fully block aerosols and can even create dead zones for ventilation, increasing infection risk — schools would have begun updating their ventilation and HVAC systems, and installing HEPA air filters, which can filter viruses. Japan's cluster-busting strategy could have been adopted.

Also, even though epidemics are easier to suppress with early action, it's silent spread and superspreading that make a timely response even more important, as shown by South Korea's early response.

South Korea experienced major superspreading events in February 2020, including one in a secretive church that accounted for more than 5,000 infections, with a single person suspected as the source. The country had the highest number of cases outside of China at that point.

South Korean officials sprang into action, rolling out a mass testing program — they had been readying their testing capacity since January — with drive-through options and vigorous contact tracing.

South Korea beat back that potentially catastrophic outbreak, and continued to greatly limit its cases. They had fewer than 1,000 deaths in all of 2020. In the United States, that would translate to fewer than 7,000 deaths from Covid in 2020. Instead, estimates place the number of deaths at more than 375,000.

What happened: When vaccines were developed, rich countries hoarded them.

The greatest scientific achievement of the pandemic may have been the speedy development of safe, effective vaccines.

In January 2020, the C.E.O. of BioNTech, Ugur Sahin, started designing vaccines as soon as he read The Lancet study noting the case without symptoms, which convinced him that a pandemic was likely. He then persuaded Pfizer, his initially skeptical investor, to back him.

On May 15, 2020, the United States began Operation Warp Speed, which financed the development of six vaccine candidates. Five of them quickly proved to be highly effective — not at all a given. The first to deliver spectacular results was that produced by Pfizer and BioNTech. Moderna's quickly followed.

Supply was an immediate problem. Pfizer initially estimated it could make as many as 1.35 billion doses in 2021 — enough for about only 8.5 percent of the world's people to get two doses. Moderna, a much smaller company, wasn't expected to exceed that. AstraZeneca's vaccine, too, would not cover the gap quickly enough.

There also was too little commitment to how vaccines could be distributed fairly around the world. Instead, wealthy countries that had preordered or financed research got most of the initial doses.

Vaccine production grew, but too slowly. There was no consortium or sharing of resources to ramp up supply. Technology wasn't transferred to lower- and middle-income countries. Patents were left in place. The W.H.O. initiative to get vaccines to poorer countries, known as Covax, was not able to

buy enough doses, and what donations were made were insufficient and haphazard.

Then, in a largely unanticipated plot twist, dangerous variants of the coronavirus started emerging in late 2020 — Alpha, Delta and then Omicron.

Widespread earlier vaccination could have helped limit the possibility for these variants emerging. Plus, many variants may have arisen through persistent infections in immunocompromised people — like those who have untreated H.I.V., another terrible legacy of global health inequity.

What could have happened: Vaccine supply ramps up, with sensible distribution.

Political leaders in wealthy countries should have brought together vaccine manufacturers to arrange conditions and deals that can likely be struck only with government prodding: sharing manufacturing facilities, training experts, sharing intellectual property. Technology transfer to poorer countries could have achieved the ultimate goal: a world with many countries that can produce effective vaccines. Existing vaccine manufacturers could still profit handsomely — especially considering they, too, benefit from publicly funded research.

Countries may want to first vaccinate their own citizens, even those at much less risk. But to save the most lives, priorities should have been set globally. Health care workers, the elderly and those at high risk throughout the world should have gotten the first vaccinations.

Trials could have been immediately started to assess whether delaying second doses might work well while allowing doses to be spread more widely geographically. Early results on the protective effect of first doses were encouraging.

A few countries like Canada and Britain did lengthen the interval between doses as a strategy to protect more of their citizens — to great results. More of their vulnerable population got protected quickly. Plus, longer intervals, as some immunologists had predicted earlier, still left people protected — the unusually short three- and four-week period between the two initial shots had been put in place partly to speed up the trials. In the United States, though, such adaptive strategies could not be studied or rolled out.

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What needs to happen

When the pandemic is over, the temptation will be to move on and reclaim what had been normal life. For individuals that will be fine. But the cracks revealed in our governments and public health institutions by two years of inertia, mistakes and resistance to evidence make it crucial that a broad, tough dissection of what happened take place if we are to choose the correct course in future challenges.

National and international commissions need to help us see where we went wrong, without scapegoating, and how to respond to future outbreaks, without defensively excusing what public health authorities and national leaders did this time, even if well-meaning. In some countries, it would be easy to focus only on political leaders like President Donald Trump, who severely

damaged America's response. But top public health officials, high-level scientists and state governors made many missteps along the way. At a time of growing international distrust we need to work to increase trust and mutual cooperation. We need to better understand how to rapidly incorporate evidence into scientific policy and to better understand human response to such major, complicated events.

If we can do that, to save lives and ease suffering in the future, it will not make up for all the loss and hardship we have endured in the last two years. But we can at least say we did our best to learn from it, and let that be the one positive legacy of all this.

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