

6 lessons from China's Zhejiang Province and Hangzhou on how countries can prevent and rebound from an epidemic like COVID-19



National and local governments around the world can learn from China's response to the COVID-19 outbreak. Image: REUTERS

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- Hangzhou, the capital of Zhejiang Province, reacted quickly to COVID-19 before the city had any confirmed cases.
- The city used big data and information technology, like QR codes, to track and stop the spread of the coronavirus.
- Careful planning and clear communication lessened the impact of COVID-19 compared to Wuhan.

As COVID-19 continues to spread around the world, the measures implemented in China may be instructive for other countries now struggling to control the virus.

Hangzhou, the capital city of Zhejiang Province, more than 1,000 miles away from Wuhan, the epicentre of COVID-19, implemented multiple control and prevention measures from the very beginning of the outbreak.

Here's what we learned.

1. Speed and accuracy are the keys to identification and detection.

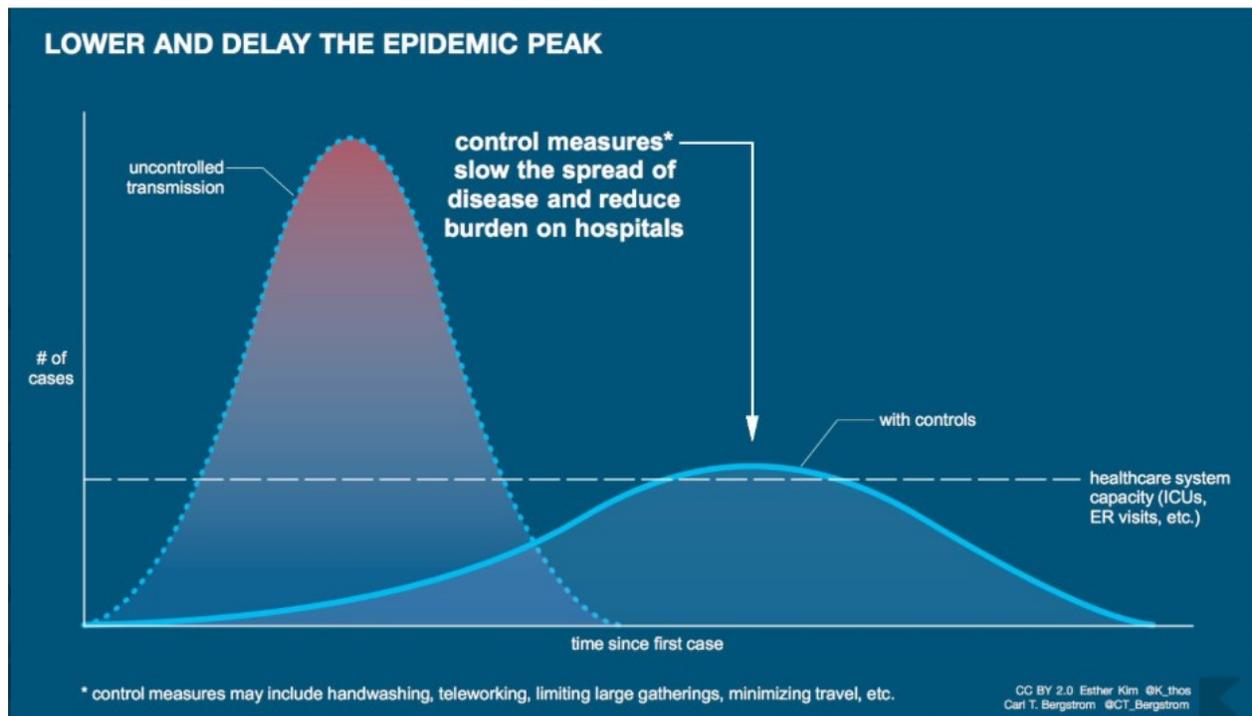
Within a week of identifying the unknown virus, China successfully sequenced it and reported the genetic information to the World Health Organization (WHO).

In comparison, it took a couple months for SARS to be identified and sequenced in 2003, and a few years in the case of HIV in the 1980s.

The identification of a virus's genetic sequence is critical to develop a vaccine and therapeutic treatments. The rapid identification of COVID-19 allowed scientists around the world to immediately start developing test kits, treatment options and vaccines.

One of the critical tools in controlling a major epidemic is having specific, reliable, accurate and fast detection methods to screen infected and non-infected people. During the early days of the outbreak in Wuhan, there were no test kits available, and screening depended on laboratory nucleic acid sequencing analysis, a labour-intensive and costly method. The National Medical Products Administration of China took immediate action to

speed up the work of biotech companies to develop detection kits. The first kit was introduced on 13 January, with a sufficient supply available two weeks later.



The flattened curve shows how a reduced rate of coronavirus infection could reduce the impact on hospitals and the wider healthcare system

Image: Esther Kim, Carl T. Bergstrom

2. Make the right decisions at the right time, the right place, for the right people.

The experience in China reinforced the importance of listening to science and public health experts during pandemic events. And overreacting is better than not reacting.

China's unprecedented systematic and proactive risk management, based on collaboration between government officials and health experts, has proven to be effective in containing and controlling COVID-19. The timely release of disease-related clinical data to the public and WHO helped many around the world prepare for the spread. For example, analysing more than 40,000 cases in China, we know 80% of COVID-19 infected patients won't need medical intervention, while 20% would need medical treatment and care.

Zhejiang Province was the first to raise the risk management response to the highest level in the early days of the outbreak, when there were no confirmed cases.

Here are lessons from Hangzhou's work to control the spread of COVID-19:

- Provide clear guidance about the degree and scope of lockdowns.
- Track implementation down to individuals, apartments, houses, communities, organizations, public facilities and city management.
- Keep essentials like food and supplies flowing through organized, government-controlled arrangements.
- Designate infectious disease care and management facilities to isolate, monitor and treat positive cases.
- Establish electronic recording and tracking systems and local response teams to handle identified cases 24/7.
- Establish centralized reporting and communication channels to keep citizens informed.

3. Big data and information technology are important to avoiding a rebound.

Hangzhou, where Alibaba is headquartered, was one of the first cities to use big data and information technology in the prevention and control of COVID-19. They named the approach "one map, one QR code, and one index."

It's been two weeks since select businesses and organizations have been allowed to reopen to workers. Here are policies they implemented:

- Businesses reopened in several phases based on priorities. For example, healthcare-related facilities were allowed to open first.
- Restrictions were eased based on track records.
- Health QR codes were established for everyone in the city and everyone who entered the city. The green code allows you to move freely. The yellow

code requires a seven-day self-quarantine. The red code requires a 14-day self-quarantine. The yellow and red codes can be turned green after the quarantine time. This health surveillance system has been applied in most cities in Zhejiang Province, and will be implemented in other provinces.

- Each individual must monitor and record their temperature and update their profile daily in order to maintain their health status level.
- The health database is closely monitored by Hangzhou's Center for Disease Control and Prevention.

杭州健康码



【绿码】

凭码通行



【黄码】

实施7天内隔离，连续
(不超过)7天健康打卡正常
转为绿码



【红码】

实施14天隔离，连续14天
健康打卡正常转为绿码

防控疫情

人人有责

These new technologies have so far proven to be very effective, at least in Hangzhou. While it's challenging to effectively detect travelers who might bring COVID-19 back to the city, the good news is, so far, there is no sign of a second surge of COVID-19 in Hangzhou.

4. Evaluate medical resources and response systems. Are we ready for a pandemic? How much stock do we need? Do we have enough health care personnel, and how do we protect them?

People in China are courageous and united in the effort to combat COVID-19. The higher mortality rate in Wuhan was attributed in part to the lack of medical resources available at the time of immediate need. Wuhan's lack of disaster control management response mechanisms led to poor disease containment, widespread cross-infection in patients and healthcare workers in hospitals and weeks of chaos.

In drastic contrast, government officials in Zhejiang Province were well prepared to mobilize immediately and allocate resources and manage and monitor the evolving epidemic in a proactive fashion with impressive results. In Hangzhou, 204 public health physicians have been investigating cases, identifying close contacts, and making sure they remain under surveillance. Also in Hangzhou, doctors completed the world's first double-lung transplant surgery on a COVID-19 patient.

The shortage of protective medical supplies and lack of knowledge about COVID-19 were the main factors causing the large number of healthcare workers to contract the virus in the early weeks of the outbreak in Wuhan. Over the past 6-8 weeks, however, 31 medical teams consisting of more than 42,000 doctors and nurses were sent to Wuhan to combat the outbreak. (Zhejiang Province sent 1,985 healthcare workers and, as of today, not one is infected.) Two new hospitals with over 1,000 beds each were built in less than 10 days in Wuhan.

At the same time, however, we also need to consider other types of patients suffering from major non-infectious epidemiological diseases such as cancer, hypertension and diabetes.

What is the World Economic Forum doing about the coronavirus outbreak?

5. Implementation of preventive measures in communities, schools, businesses, government offices and homes can influence the trajectory of this epidemic.

In fighting COVID-19, everyone is equal. Everyone has the same responsibility and shares the same risk. COVID-19 is very contagious and capable of asymptomatic spread, so it's even more important to mobilize all of society and get everyone involved in the process. The successful implementation of prevention and control measures in Hangzhou, a city of 10 million people, is an example for other parts of the world to follow. Again, the key to success is to make everyone responsible, get every unit involved and hold officials accountable. We also need to change how we have been living and be responsive to new challenges.

Careful planning and clear guidance are helpful. Hangzhou has allowed employees to go back to work in several phases. Many businesses, organizations, schools and universities are successfully implementing computer-based online learning using technology like Zoom meetings, which could be models for future development.

During an epidemic, it's advisable to avoid large gatherings and multiple person-to-person contacts. China might have lost billions of dollars by essentially stopping all business, but in the end, this will have been a wise decision and correct action.

6. Keep the public well informed.

China has provided continuous, clear communication to the public. In Hangzhou, for example, the major news outlet provides daily updates on the number of COVID-19 cases and clinical treatment outcomes, plans to be implemented and guidelines and procedures to follow.

Zhejiang University School of Public Health has been fully engaged since the beginning of the outbreak. We developed an easy-to-understand educational materials for students and the public with information about COVID-19 and how to prevent the spread. We speak on television news and write online papers. We believe it's the responsibility of all

public health experts to provide factual and scientific information to people and to lead the way in fighting the disease.

The way forward

China is restarting its economy, reopening schools and returning to normalcy. As a report from the WHO-China Joint Mission [concluded](#), a science-based, risk-informed and phased approach is being taken, with a clear recognition of and readiness for the need to immediately react to any new COVID-19 cases or clusters while elements of the containment strategy are lifted.

These are the lessons the global community could learn from China at national and local levels. This global health risk teaches us the importance of preparedness to prevent and control infectious disease outbreak. It could also help us think about how to modernize disease control and prevention in China and around the world.

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