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How China is beating covid-19

The country at the epicentre of the coronavirus pandemic now sees few cases and deaths. Donna Lu investigates the numbers and what's behind them

As the second wave of the covid-19 pandemic worsens across the northern hemisphere, life has largely returned to normal in the country where the virus first made its mark.

Restaurants and markets in Chinese cities are bustling, as are tourist sites and cinemas. In Wuhan, where a lockdown in late January first shocked and then became a precedent for the rest of the world, recent months have seen packed concerts, food festivals and pool parties.

China never imposed a nationwide lockdown, and seems to have avoided the new wave of cases seen in other countries.

According to official data, community transmission in China is low, aside from a few localised outbreaks – including one in Beijing in June, and one in Kashgar in October, which have been kept to a total of a few hundred cases.

Covid-19 spread quickly in China early in the year, with 80,000 confirmed cases at the start of March. But the rise in case numbers slowed. In the eight months since, China’s cumulative case count has grown by 7000 cases. Is the country’s success too good to be believed?

Initial under-reporting

There are reasons to be concerned over the accuracy of reported case numbers in China, says Jennifer Bouey at the RAND Corporation think tank, headquartered in Santa Monica, California.

China’s top-down system of administration means that local governments are often reluctant to escalate issues to more senior officials for fear of causing unnecessary alarm, says Bouey. “It’s very likely to cause a local government to cover up numbers,” she says, which may have occurred in the early stages of the covid-19 outbreak.

But previous experience has shown that once China’s central government becomes aware of the nature of a public health problem, it institutes severe penalties for under-reporting, says Bouey. “In 2003, they fired almost 1000 provincial officials – even someone in Beijing – because the central government suspected that they didn’t give the real numbers [of SARS cases].”

Uncertainty about a new virus and a narrow clinical definition may have contributed to initial under-reporting in the early days of the outbreak, says Ben Cowling at the University of Hong Kong.

In March, Cowling and his colleagues estimated that had criteria for covid-19 diagnosis been widened to include asymptomatic or milder cases, including those with no known links to Wuhan, 232,000 people in China may have been reported as infected by 20 February, instead of just the 55,000 confirmed cases reported at the time.

Documents leaked to CNN also suggest that numbers may have initially been higher than those disclosed to the public. For instance, about 3900 cases were reported on 10 February, but according to the documents, officials knew there were 50 per cent more cases.

Since then, testing capacity in the country has drastically increased, and diagnostic criteria have broadened. In the wake of SARS, the Chinese government created a mandatory reporting system for serious infectious diseases, which is now used to track coronavirus cases.

“With this system in place, I’m confident that there are no diagnosed patients who are not recorded,” says Cowling.

He believes the national statistics being reported now are accurate, though of course some cases are always missed. “I am sure there would be infections that go unnoticed and unreported, just like the rest of the world,” he says.

Christoffer Koch at the Federal Reserve Bank of Dallas and Ken Okamura at the University of Oxford analysed China’s covid-19 data in May using a statistical fraud-detection technique. They found “no evidence of manipulation”, concluding that China’s distribution of cases was similar to that of the US and Italy.

“I’m sceptical of the numbers initially reported by China, but it’s clear they’ve succeeded in containing the virus,” says Zoe Hyde at the University of Western Australia. “If there were major epidemics in Chinese cities today, we’d see evidence of it.”

Various signs point to a country
largely in control of the virus. Many other countries have plunged into recession but China’s economy grew in the third quarter of this year. China’s National Bureau of Statistics announced on 19 October that the country’s economy grew 4.9 per cent between July and September compared with 2019.

Domestic travel, too, has largely rebounded. Throughout China’s Golden Week national holiday, which began on 1 October, 637 million local trips were taken, according to the Ministry of Culture and Tourism, about 80 per cent of last year’s figure.

**Aggressive interventions**

China’s swift action in containing outbreaks has been key to the country’s success to date. Analysis by Xi Chen at Yale University and his colleagues suggests that more than 1.4 million infections and 56,000 deaths may have been avoided as a result of measures such as city lockdowns, domestic travel restrictions and mandatory quarantine imposed in China in late January.

In addition, China doesn’t have a strong social welfare system, and the proportion of people in jobs that can be done remotely is smaller than in countries such as the US. Both were probably factors in how decisively the Chinese government acted, in order to avoid social unrest as a result of mass unemployment, says Xi.

This is largely because of its ban on foreign nationals entering the country, says Hyde. “South Korea took a different approach, quarantining overseas arrivals instead. Although [South Korea] had many imported cases, they’ve not posed a substantial problem because the community has been protected,” she says.

China’s approach has been more stringent than those of South Korea and Japan, says Xi. This may make sense because China has fewer intensive care unit beds per capita than Japan and South Korea, he says. “From a health infrastructure perspective, China is less prepared [for large outbreaks].”

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In Beijing, which saw an outbreak linked to the Xinfadi food market in June, the government shut several districts surrounding the market, and conducted mass testing and contact tracing during that period.

“It’s extremely expensive to do that kind of aggressive intervention – much more expensive than public health measures that are used elsewhere in the world,” says Cowling.

The approach is resource-intensive, but minimises longer term disruption, says Cowling. “After those two or three weeks, everyone can get back to normal.”

China has also avoided a second wave from imported infections.

**Coronavirus deaths as of 30 November 5pm GMT**

High compliance among the Chinese population – one that remembers the devastation of SARS – has also been a factor. In early October, when two workers handling imported seafood tested positive for covid-19 in the north-eastern city of Qingdao, the municipal government tested the entire city of more than 10 million people within five days.

“People were concerned and wanted to get tested as quickly as possible,” says Fan, a Qingdao resident who lined up for 4 hours to get her test. “The masses were very cooperative. If the testing facility opened at 7am, people started queuing at about 5am.”

Because the cases were discovered just after the Golden Week holiday, when domestic travel was high, those who had visited Qingdao or had contact with its residents were also required to undergo a “2+1+7”: two sets of nasal and throat swabs, a blood test and seven days of self-isolation.

Bouey says willingness of the Chinese public to comply with lockdown orders may have been helped by a high rate of family savings. On average, Chinese people save more than a third of their household income – far more than people in most high-income countries. “A high savings rate really helped families and even small businesses to be able to stay still for a while,” says Bouey.

But as Australia and New Zealand, which have largely eliminated the virus, can attest, months of hard work can quickly be undone.

“I think infections will break through into China sooner or later, the same as in other countries,” says Cowling.

On 25 October, a covid-19 outbreak was discovered in Kashgar, in the western province of Xinjiang, after a 17-year-old girl tested positive the previous day. How she contracted the virus is uncertain. More than 180 cases have subsequently been identified, linked to a factory where the girl lives and works.

Xinjiang province is home to most of China’s Uighur population. Outbreaks there have led to concern that the virus could spread through the camps in which hundreds of thousands of Uighurs have been detained.

Kashgar was placed in lockdown, and 4.7 million people were tested in four days, according to Chinese state media.

New cases in Shanghai and Tianjin in early November, linked to frozen imported food, also led to mass testing and lockdowns.

Whether China’s success at quashing the spread of the virus will last remains to be seen, especially as the winter months drive people inside. “If China follows the same strategy to take early action, I think it should have things under control,” says Xi.