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CORONAVIRUS PANDEMIC

Covid-19: How the Brazil variant took hold of South America

Brazil has long been a pariah in the pandemic, but the consequences of its failure to control SARS-CoV-2 are manifesting across Latin America, writes **Luke Taylor**

Luke Taylor *freelance journalist*

When Brazil’s pandemic spiralled out of control in March 2021, leaders across South America scrambled to limit the regional fallout. From Colombia to Uruguay, flights were grounded, land borders were closed, and regional sports tournaments were cancelled in an effort to stop the spread of the more transmissible P.1 variant that had brought one of the region’s strongest health systems to the brink of collapse.¹

However, those actions have not prevented the spread of P.1, with the variant exploiting the favourable

conditions created by recent relaxations of health measures.

Countries such as Chile and Uruguay, previously considered models of how to manage the pandemic effectively, have lost control of it. Uruguay recorded the lowest number of cases per capita in South America in 2020 as a result of widespread testing, swift contact tracing, and strong public compliance with social distancing (fig 1).² But on 22 April 2021 it recorded 22.17 daily deaths per 100 000 people, the highest rate in the region (fig 2).

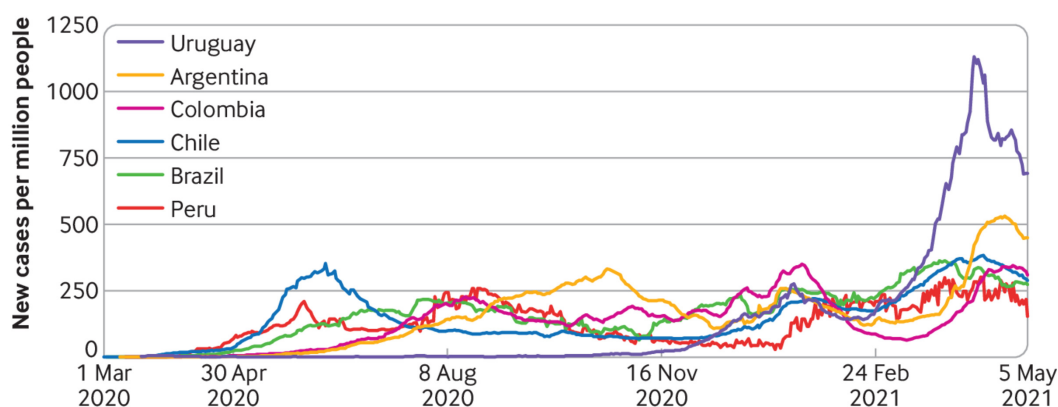


Fig 1 | Numbers of covid-19 cases in six South American countries, March 2020 to May 2021

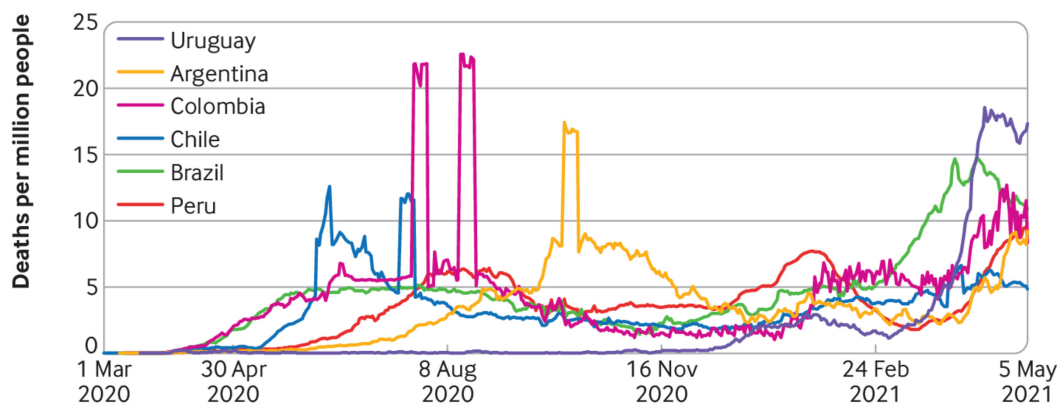


Fig 2 | Numbers of covid-19 deaths in six South American countries, March 2020 to May 2021

Others such as Colombia, where intensive care units had been expanded throughout the pandemic to prevent their collapse, are now seeing their beds reach capacity. Major cities have reimposed strict lockdowns as daily deaths reach record highs.

“Vaccine distribution is not fast enough to counteract the more contagious, seemingly-deadlier variant,” says Michael Touchton, at the University of Miami’s Observatory for the Containment of Covid-19 in the

Americas. “There is a very tough road ahead for Latin America.”

Brazil: origin of the crisis

Around 400 000 Brazilians have now died from covid-19—13% of the world’s covid-19 deaths and more than the country’s entire AIDS epidemic.

Epidemiologists say poverty, multigenerational housing, and informal labour have hindered the public health response, as they have across South America. But a large slice of the blame is put squarely on Brazil’s outspoken president, Jair Bolsonaro, who continues to play down the threat of the virus, promote unproved cures, and refuse national lockdowns, which he says will harm the economy. A parliamentary inquiry that could lead to Bolsonaro’s impeachment was opened on 27 April to investigate his administration’s role in the public health crisis.³

“We couldn’t save lives nor the economy ... It was a double and disastrous defeat for Brazil,” says Jesem Orellana, an epidemiologist at the Oswaldo Cruz Foundation (Fiocruz). Public health experts say the lacklustre response allowed the virus to spread rampantly, which caused unnecessary deaths and hospitals to collapse. This in turn allowed new, more dangerous variants of the coronavirus to evolve and spread throughout the country.

“We knew the direction in which Brazil was heading, but none of us knew it could get this bad,” says Natalia Pasternak, a microbiologist and president of the Question of Science Institute in São Paulo. More than half of the country’s covid-19 deaths were recorded in the third wave of the pandemic, fuelled by the P.1 variant, which is believed to have emerged in the Amazonian city of Manaus, Brazil, in November 2020.⁴ Studies suggest that it is 1.7 to 2.4 times more transmissible than previous variants and better at evading immunity from infection.⁵

Venezuelan president Nicolas Maduro labelled Brazil “the world’s worst threat in terms of the coronavirus” on 21 March and criticised Bolsonaro for his “irresponsible attitude.”⁶ Maduro himself has faced criticism—Venezuela’s health system was predicted to buckle quickly under the strain of the pandemic owing to the country’s economic collapse. But ironically, this may have helped, say experts, as petrol shortages have reduced mobility and thus virus transmission.

Venezuela’s government relaxed lockdowns in December, but new infections subsequently spiked. Julio Castro, an infectious diseases expert in Caracas, believes that easing of restrictions was the key driver of transmission. He had been hesitant to attribute recent increases in cases to the P.1 variant, but says its impact has become clearer in recent weeks: “Most of the transmission appears to be the Brazilian P.1 variant and it’s growing.”

To prevent P.1 and more than 90 other variants circulating in Brazil from spreading, its neighbours tried to close themselves off from it. Argentina, Colombia, and Peru banned flights from the regional pariah, and most of the countries straddling the region’s longest land border have shut it off. Brazilian sports teams had to pull out of regional competitions as they were not permitted to land in Colombia despite Brazil having a travel bubble arrangement in place.

Colombia prioritised its Amazon region for scarce vaccine supplies so it could create what its health ministry has called an “epidemiological barrier” on the frontier with Brazil to prevent P.1 slipping through the border. This may have lowered transmission there, but it has not prevented the spread of the new lineage to Bogotá and beyond.

Variant impact

“There is no doubt about it, the new variants must be playing an important part [in the recent surge in cases],” says Diego Rosselli, an epidemiologist at Bogotá’s Javeriana University. Researchers know new variants are spreading quickly but are unable to quantify their impact owing to a lack of genomic sequencing, Rosselli says. In the first year of the pandemic Colombia ran 600 genomic sequences—the same number done in London in a single day.

In the Peruvian capital of Lima, 40% of viruses sequenced on 24 March were P.1. By 5 April it was detected in nearly all regions of the country, according to Peru’s health ministry. “It is reasonable to expect that [P.1] has contributed to the fast spreading of the virus,” says Jean-Baptiste Marion, head of Doctors Without Borders’ mission in Peru.

Notably, in recent months the sick in Peru have been younger, a trend also seen in Brazil and Colombia.⁷ Scientists across South America are trying to establish why. Theories range from the knock-on effect of relaxed social distancing, collapsing health systems, vaccination of the elderly skewing infections towards the young, and, of course, P.1.

Other variants, such as P.2 (also first identified in Brazil) and B.1.1.7 (the “Kent” variant first found in the UK), have been detected across South America. Experts say they are spreading less rapidly than P.1, suggesting the Amazonian lineage has a competitive advantage, but the presence of multiple strains complicates the task of understanding the impact of individual variants.

In Bolivia, Paraguay, and Uruguay, regions near the Brazilian border have been most acutely affected. Eighty per cent of lineages detected in Rivera—a Uruguayan city sharing a dry border with Brazil—are P.1, says Rodney Colina, head of the molecular virology laboratory at the Centro Universitario de la Región Norte. Uruguay’s covid-19 advisory board has recommended more epidemiological and genomic surveillance as well as reinforced public health measures such as social distancing on account of the arrival of the “Brazilian variant.”

Although P.1 may be contributing to the long and sustained increase in cases, Colina thinks that reopening is the key factor. “This is mainly explained by the reopening of activities such as the beginning of classes in the initial, primary and secondary level of education,” he says.

Vaccines no panacea

The first cases of P.1 in Chile were identified by its Ministry of Health in March 2021. The variant is driving up transmission, says Claudia Cortés, an infectious diseases specialist at the University of Chile, but so have the relaxation of public health measures between December 2020 and March 2021—summer in the southern hemisphere and a period of holiday celebrations in many countries.

So too has public overconfidence in vaccines after a single dose of the CoronaVac vaccine.⁸ “The government was not clear enough in explaining the importance of the second dose,” Cortés says, and a false belief that people were protected resulted in them letting their guard down.

Studies have shown that vaccines remain effective against P.1. But there was dismay worldwide when news broke that Chile—which has fully vaccinated a higher percentage of its population than any other country with more than 10 million inhabitants—was facing its worst outbreak yet with a record 9151 cases on 9 April.

Vaccination rates across the rest of South America remain slow because of a lack of doses. At the time of writing, Venezuela and Paraguay had reached only 1% of their population with a single jab; Peru and Ecuador, 3%; Bolivia, 4%; and Colombia, 6%.

Covax, the World Health Organization led initiative to ensure equitable access to vaccines to all countries, hopes to get 280 million doses to Latin America, but it has been hit by delays to some of the eight manufacturers it has agreed deals with and does not expect to deliver them until the end of 2021. Cuba is the only Latin American nation to develop its own promising vaccine candidate. It has two vaccines in phase III trials and plans to export them across the region should they be effective.

This has left South American nations looking to China and Russia for vaccine supplies.

Argentina, Brazil, Chile, Mexico, and Peru have all agreed to purchase at least 30 million doses of the Chinese CanSino, Sinopharm, and Sinovac (CoronaVac) vaccines, and vaccination with Sinovac and Russia's Sputnik V are underway in at least six Latin American countries. A study of the CoronaVac vaccine in Manaus, where P.1 is dominant, found it to be 50% effective after a single dose.⁹ Touchton says governments should obtain permission to manufacture more vaccines locally, even if they are less effective.

The Pan-American Health Organisation has pleaded for countries not to rely on vaccination measures and double down on public health measures such as masks and distancing to prevent an escalation of the crisis.¹⁰

Eyes remain on Brazil. Deaths peaked around mid-April, but some models predict the country's total deaths from covid-19 will reach half a million by June. The pandemic's trajectory in Brazil could be an indicator of what is to come for its neighbours. As Paraguay's director of health surveillance, Guillermo Sequera, has said: "When Brazil sneezes, Paraguay gets a cold."⁶

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