

# School reopenings in Manaus, Brazil gave rise to COVID's Gamma variant, study shows

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19 October 2021

As schools reopen around the world, their role as vectors for the spread of the novel coronavirus is becoming increasingly clear, with growing numbers of children infected and dying.

In the United States, after schools reopened, the first week of September registered a 240 percent increase in cases in children compared to the end of July. In the last two months, 164 children died from COVID-19 in the US, an average of almost three deaths per day.

In Brazil, children and young people up to the age of 19 accounted for 2.5 percent of cases and 0.6 percent of COVID-19 deaths in December 2020. At the end of August of this year, one month after the largest school reopenings since the pandemic began, these numbers increased to 17 percent and 1.5 percent, respectively. Brazil has recorded the deaths of 2,398 children and young people up to the age of 19 from COVID-19, the highest number in the world.

This is occurring despite **several studies** published in the world's leading scientific journals having warned about the role of schools and children as vectors for the transmission of the virus. This criminal experiment with human life — particularly that of children, the most vulnerable sector of society, which should be best protected amid a pandemic that is still out of control — is a condemnation of the entire world ruling elite. It has refused to implement measures widely known to science in order to secure its profit interests.

A study published in the *Journal of Public Health Policy* at the end of August shed further light on the role of schools in the dynamics of the pandemic. Led by researcher Lucas Ferrante, from the renowned National Institute of Amazonian Research (INPA), the study “**How Brazil's President turned the country into a global epicenter of COVID-19**” showed that the reopening of schools in Manaus, capital of the state of Amazonas, in September of last year gave rise to the more contagious Gamma variant, which triggered the second wave in March-April of this year and has been responsible for two-thirds of the more than 600,000 recorded COVID-19 deaths in Brazil.

Manaus can be considered the world's largest open-air laboratory for the novel coronavirus. On two occasions, the city was the symbol of the negligent and criminal response of the Brazilian ruling elite to the pandemic, expressed most viciously

by fascistic President Jair Bolsonaro and his local ally, Governor Wilson Lima.

In the first wave, in April-May 2020, Manaus shocked the world after being the first Brazilian city to start burying COVID-19 dead in mass graves. In the second wave, in January of this year, the world watched in horror as **patients died from lack of oxygen**, while the federal government pressured the city to use hydroxychloroquine and ivermectin on COVID-19 patients, two medicines that science had already exposed as useless.

According to the article, “the return to in-person classes on 24 September 2020 can be considered to have been one of the triggers of the second wave.” Three weeks later, a period corresponding to the viral cycle, “the number of hospitalizations doubled, followed by a more gradual increase since the December 2020 health collapse.”

In a Technical Note referenced in the article, in which the epidemiological model that supports their findings is presented in detail, the authors show that the mobility of public transportation in Manaus right after the return to school increased by 20 percent. By mid-December, when the school year ended, increases of over 40 percent were registered in urban mobility in Manaus.

Based on the SEIRS model (Susceptible-Exposed-Infected-Recovered and again Susceptible), which is widely used by epidemiologists around the world, the article states that, besides the reopening of schools provoking the second wave in Manaus, it also led to the “emergence of the Gamma variant that potentiated the crisis and quickly spread throughout Brazil.”

The SEIRS model considers various parameters to understand the dynamics of the pandemic and make predictions. Among these parameters are, as the name implies, the number of people who may be infected, the number known to have been infected and the number who recovered, as well as urban mobility, the time that the infected person can transmit the virus, and the viral reproduction rate.

This predictive model, however, can also be used retrospectively, by changing its parameters to see what determined the current pandemic situation. This is what the study did. As the graph below shows, the number of daily

hospitalizations in Manaus (yellow) is better estimated when the circulation of a variant that is twice as infectious (blue line), such as the Gamma variant, is considered than the original variant (green line), responsible for the first wave. Thus, according to the study, it is possible to verify that the date of the emergence of the Gamma variant coincides with the increase in urban mobility caused by the reopening of schools.

The Technical Note says that this finding is supported by phylogenetic analyses from the leading Brazilian epidemiological institute, FIOCRUZ. According to it, no cases of the Gamma variant were detected in Manaus in November 2020, while in December the predominance of the variant in the city was 51 percent. At the end of January this year, at the peak of the second wave, this number reached 91 percent. With this, the researchers were able to rule out “the possibility that the gamma variant was generated either by the November 2020 elections or by New Year’s Eve parties,” events that only increased community transmission.

The SEIRS model, the Technical Note concludes, showed that “the second wave had already begun in October, and was fueled by the emergence of the P.1 [Gamma] variant in November.” Therefore, the cause of both this second wave and “the emergence of the P.1 [Gamma] variant by mutations due to the increased viral circulation ... with the increased urban circulation that took place in Manaus from September 24, 2020 [was] the return to in-person classes.”

The study’s findings also strengthen the understanding of the active role of children in the spread of the virus. In fact, a February study published in *Scientific Reports* showed that “viral loads in children do not differ significantly from those in adults,” while **another study** by researchers at Montreal University and George Washington University found that infections among children preceded that of adults, indicating that they were infecting their parents.

In a political condemnation of the federal and local governments, the article states, “the emergence of the gamma variant in Manaus occurred due to the ... government’s strategy of encouraging the contagion of children with the return of in-person classes so that the population would reach herd immunity.”

Recently, this was also substantiated by the revelations of the Parliamentary Commission of Inquiry (CPI) in the Brazilian Senate investigating the federal government’s response to the pandemic. The CPI report, which will be voted on next week, charges Bolsonaro with 11 crimes, including “quackery” in promoting medicines with no efficacy against COVID-19, “epidemic with resultant death,” “crime against humanity,” and “crime of commission by omission.”

The basis for the charges is the deliberate action by Bolsonaro in letting the virus spread so that the population would gain herd immunity by infection, something that science long ago ruled out with a disease as infectious and lethal as COVID-19. In Brazil, according to a study conducted by epidemiologist

Pedro Hallal, from the Federal University of Pelotas, this led to 400,000 deaths that could have been avoided if social isolation measures had been implemented and vaccines had been acquired earlier.

The Brazilian government’s herd immunity policy, according to the article on Manaus, has also threatened the world, jeopardizing “the pandemic’s control on a global scale because, if variants resistant to vaccines were to emerge in Brazil it would put other countries’ vaccination programs in check.” It concludes: “This is not a purely hypothetical scenario, as only in the last two months three new variants have been identified in Brazil, which currently has at least 92 strains in circulation and can be considered to be a hotbed of new SARS-CoV-2 variants.”

The actions of Bolsonaro, who most nakedly represents all the barbarism of a system that puts profit above human life, have clear historical references. During the pandemic, the world’s ruling elite have resurrected the worst and most reactionary anti-scientific ideologies that justified imperialist wars and fascist dictatorships — from Malthusianism to Social Darwinism to Eugenics — in order to normalize mass deaths. The article firmly places Bolsonaro’s actions in this tradition, quoting legal expert Pedro Serrano, from the Pontifical Catholic University of São Paulo, as saying, “In the field of political and moral philosophy ... Auschwitz was for the exercise of political power in times of war as Manaus is for the exercise of political power in health issues.”

On the other hand, all the scientific effort mobilized globally to fight the deadly virus and save lives throughout the pandemic has revealed the whole progressive character of science, which has converged with the interests of the vast majority of the world population.

It is on this scientific basis that the *World Socialist Web Site* and the International Workers Alliance of Rank-and-File Committees (IWA-RFC), of which the Rank-and-File Committee for Safe Education in Brazil is a part, have advocated school closures as part of a global eradication strategy through the independent mobilization of the international working class. To take this struggle forward, we call on everyone to participate in the October 24 online event **“How to end the pandemic: The case for eradication.”**



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