

Covid-19: Public Policies and Society's Responses



Quality information for refining public policies and saving lives

Policy Brief 29

More stringent policies to combat the COVID-19 epidemic are necessary as the situation worsens in São Paulo. The state government's zigzag approach has failed to prevent the spread of the virus and maintains it as the epicenter of the pandemic in Brazil.

Main Conclusions

- As we reach early April 2021, the state of São Paulo and the rest of the country remain immersed in a severe health and humanitarian crisis. Given the epidemiological growth dynamics of the pandemic and the overload of the health system, the pandemic's toll in Brazil is more severe than ever.
- In several countries, the rapid implementation of strict social distancing measures proved to be essential control strategies for the pandemic. However, that was not the case in the state of São Paulo throughout 2020 and early 2021. In 2020, the state insisted on a zigzag approach, which continued into 2021. The state continues to experience a prolonged and continuous crisis and, for the past year, has significantly struggled to control the dissemination of the coronavirus.
- In the state of São Paulo, pandemic control measures effective in March 2021 were less strict and less consistent than in March and early April 2020. The most stringent phase of the state government's containment plan, the so-called "Emergency Phase," lasted no more than 29 days.
- As the state of São Paulo insisted on a more flexible containment plan, alongside the lack of a consistent program for testing active infections, tracing contacts, and providing support for isolating people with confirmed or suspected of infection, the state continues to be the epicenter of the pandemic in the country.

Introduction

Vaccination against COVID-19 should be a mass effort and performed in the shortest time frame possible to ensure vaccination coverage of at least 90% of the population. Unfortunately, vaccination in Brazil has advanced at a sluggish pace. Even in the state of São Paulo, from January until April 9th, 2021, only 6.1% of the population aged 18+ had been administered two doses of a vaccine against Sars-CoV-2, according to data from the State Health Department (SHD).

Swift and widespread mass vaccination needs to happen alongside additional pandemic control strategies. The World Health Organization (WHO) has recommended a set of measures, such as mass testing, contact tracing, hand hygiene, adequate ventilation indoors, social distancing, and the use of masks, which have been crucial actions in several countries remain extremely timely and relevant. This policy brief discusses the control measures adopted in Brazil's largest and richest state and identifies why containment strategies are failing in São Paulo.

Among the policy interventions analyzed in this policy brief, we report on the efforts adopted concerning the closure of schools, businesses, and industries and stay-at-home orders, banning gatherings at public and private events, and mandates for face mask use in public. Our analysis is based on indicators we developed to monitor government policies as part of the "COVID-19 Government Response Tracker for the Brazilian Federation (CGRT-BRFED) project."¹ In this policy brief, we analyze the São Paulo Plan, its different stages, and how the state limited opening hours for businesses, schools, public and private events and enacted stay-at-home orders for individuals at different times of day and night from the beginning of the pandemic until April 2021.

Poorly coordinated efforts to enact measures alongside constant and sudden variations between relaxation and tightening of social distancing policies have been a characteristic of the government's response to the pandemic in the state of São Paulo throughout 2020. This situation continued into the first months of 2021, even as the pandemic worsened. The state government has been incapable of aligning and sustaining an efficient package of measures to protect the population's health. Compared to March 2020 (the first month of social distancing measures), the measures enacted in March 2021 are significantly less stringent, despite the surge in the number of COVID-19 infections and deaths.

The second part of our policy brief explores the impact of social distancing policies, RT-PCR testing policies in the public health system to detect active cases, the occupancy rate of ICU beds, and the mortality rate in the state. The data suggests a clear worsening of the pandemic in 2021. Given the lack of more coherent measures to control the flow of people and the non-expansion of testing to detect and reduce infections, trace contacts, and isolate people, the state of São Paulo will continue to endure preventable infections and deaths in 2021.

The São Paulo Plan, its Phases, and the Stringency of Containment Policies

The state of São Paulo enacted social distancing policies in March 2020, soon after the first confirmed Sars-CoV-2 infection case on February 26th, 2020. In the same week, the state registered the first COVID-19 death. These policies were enacted through decrees promulgated by the

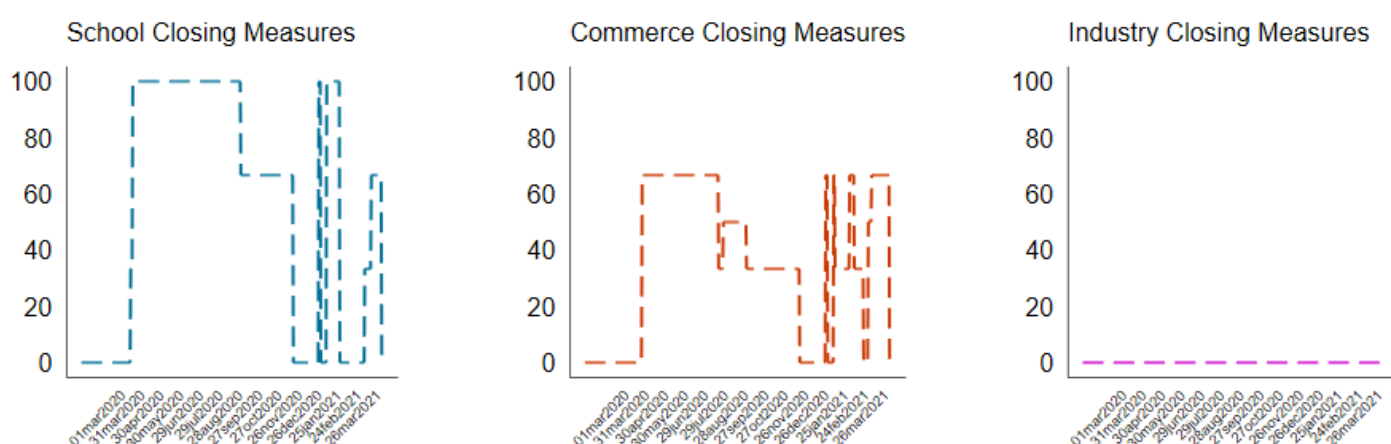
¹ Methods and data are available at: <https://github.com/cgtrbrfed/covid19brpolicyresponses>

Coronavirus Contingency Committee.² At this stage, decrees applied to all municipalities in the state. Figure 1 shows the stringency level of the policies enacted by the São Paulo state government between February 2020 and March 2021 regarding: a) closure of schools to in-person learning; b) restrictions imposed on businesses and services; c) restrictions on industry operations; d) ban on gatherings; e) stay-at-home orders, and f) mandatory use of masks. The scores of the Social Distancing Policy Stringency Index (SDPS) range from 0 (no stringency) to 100 (highest possible stringency).

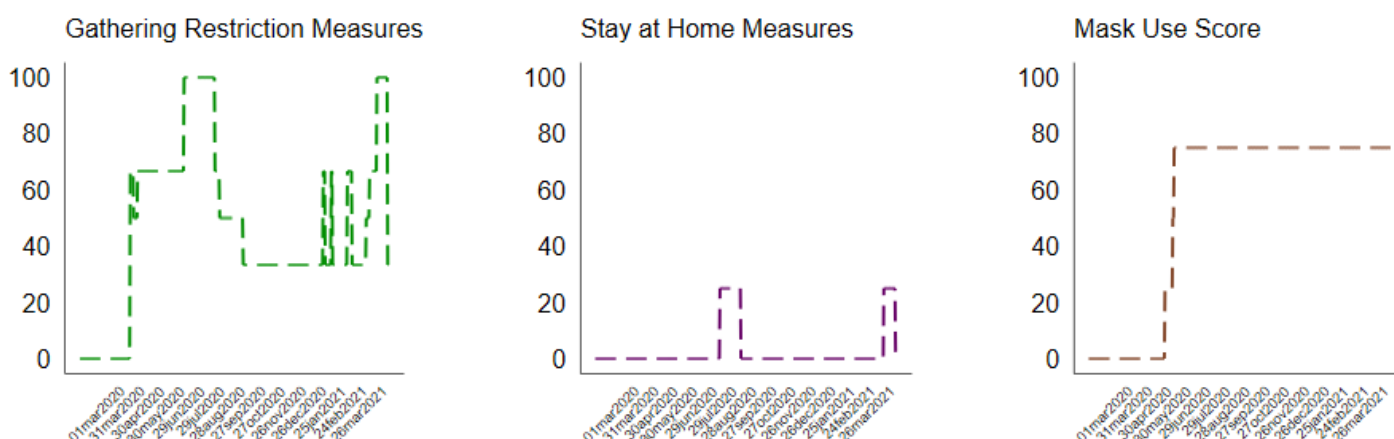
As the pandemic advanced, policies were enacted at a moderate-low stringency level. The highest score achieved by the state in the Social Distancing Policy Stringency Index (SDPS) was 61.1, from a maximum of 100, in July 2020. The average SDPS for 2020 was 34.72 out of 100. The lowest monthly scores were recorded in March (16.66), November (18.0), and December (18.0) in 2020. In the first three months of 2021, the SDPS average was 38. The lowest monthly score was recorded in February 2021 (18.0).

The state government of São Paulo was inconsistent in the enactment of social distancing policies, as shown in Figure 1. While some measures mandated the closure of businesses and services, even if only moderately, the state did not issue decrees to close other areas, such as the industrial sector. Likewise, the policies mandating the closure of in-person learning in schools and universities have been systematically more stringent than those limiting the activities of business and service sectors. Not only was there a lack of decrees mandating the complete interruption of activities in these sectors, but service and business establishments deemed essential remained open throughout the pandemic. It is worth noticing that the state of São Paulo does not define essential services under the WHO guidelines, which recommend only opening essential food and health sectors to preserve the basic well-being of the population. Hence, the inclusion of laundries, hardware stores, lottery shops as essential services suggests that the strategies adopted by the state of São Paulo were not always in compliance with the WHO.

Figure 1 - Stringency Level of Social Distance Policies adopted in the State of São Paulo between February 2020 and March 2021 (0-100)



² Methods and data are available at: <https://github.com/cgtrbrfed/covid19brpolicyresponses>. The Coronavirus Contingency Center was created by the state government on February 26, 2020. For more information, see: <https://www.saopaulo.sp.gov.br/spnoticias/governo-de-sp-cria-centro-de-contingencia-do-coronavirus/>



Source: Prepared by the authors based on data from the CGBRT-FED.

Furthermore, such measures were often modified without adequate time to gauge and prove their efficacy effectively. Figure 1 shows this fluctuation, especially in the closure of schools, businesses, services, and public or private events that involve crowds of people. Continuous surges and sharp declines in the scores suggest that very stringent measures were applied and subsequently relaxed. Another measure with limited prospects of compliance and implementation was the anticipation of public holidays, promoted by the state government at different times throughout the pandemic. These strategies brought a host of problems and monitoring difficulties as people were unable to grasp the purpose of such measures, an essential element for compliance and incorporation of more stringent measures. Furthermore, the speed at which relaxation measures were implemented (in some cases after two days)³ and later withdrawn also represents a potential obstacle to effective implementation of policies, compromising communication as to what is essential in the fight against the pandemic.

The São Paulo Plan also underwent significant changes over the course of the pandemic. The first version of the Plan, from May 27th, 2020, classified each of the 17 Regional Health Departments (RHD) into phases according to a five-level scale for economic reopening. The Plan's first update was published on June 6th, 2020. Since that date, there have been 24 updates up until April 2021. The frequency of updates obeyed intervals that varied from weeks to months, with changes in the listed activities and classification criteria. Modifications also included changes in the economic and leisure sectors in each of the Plan's four phases and the Emergency Phase.

The underlying criteria of the São Paulo Plan underwent six changes, sometimes based on more stringent and sometimes more flexible definitions of the same phases. More specifically, the criteria and rules in the Plan were modified on six key dates: 06/29/2020, 09/02/2020, 10/08/2020, 11/30/2020, 01/08/2021, and 01/22/2021.

The yellow phase, an intermediate stringency level, was the most affected by changes in the classification of sectors. A comparison between the Plan's first and last versions reveals the inclusion of sectors such as hairstylists, barbershops, gyms, and the reopening of public parks as permitted activities in the revised yellow phase. There were also changes in the criteria for risk update frequency, phase change, and regionalization: these types of changes occurred from March 6th to September 2020.

³ During the holiday period, for example, every state was only under the red phase on December 25 and 26. Detailed information about the measure may be found on Decree No. 65.415, dated December 23, 2020. In this case, the announcement of measures only two days in advance of their enactment is another contributing factor which possibly hindered their compliance, directly influencing the effectiveness of the policy.

When dividing the geographical areas affected by state measures, the São Paulo Plan initially disaggregated the RHD I, which includes the Metropolitan Region of São Paulo. Through this disaggregation, the city of São Paulo was separated from neighboring cities belonging to the Metropolitan Region when classifying stringency phases, thus creating situations that were difficult to clarify and implement. As of October 8th, 2020, an alteration encompassed the totality of RHD I within the enacted risk level, homogenizing an important region of the state because of the continuous socioeconomic interaction of the municipalities.

Table 1 summarizes the activities allowed under the different phases of the São Paulo Plan, as detailed in Decrees No. 65,460, dated January 8th, 2021, and No. 65563, dated March 11th, 2021. As shown in the Table, while specific restrictions envisaged higher reopening levels in the green phase, the most flexible level, most sectors remained open regardless of the phase of the given RHD, except for the red phase and the recently introduced emergency phase.

Table 1 - Authorized activities and economic sectors in the state of São Paulo according to phases of the São Paulo Plan⁴

Permitted Activities	Emergency Phase	Red Phase	Orange Phase	Yellow Phase	Green Phase
SHOPPING MALLS AND COMMERCIAL GALERIES	✗	✗	✓	✓	✓
COMMERCE	✗	✗	✓	✓	✓
INDUSTRY	✗	✗	✓	✓	✓
IN SITE CONSUMPTION (BARS AND RESTAURANTS)	✗	✗	✓	✓	✓
BEAUTY SALONS	✗	✗	✓	✓	✓
GYMS	✗	✗	✓	✓	✓
SCHOOLS	✗ ¹	✓ ²	✓	✓	✓
RELIGIOUS WORKSHOPS	✗ ³	✓	✓	✓	✓
EVENTS, CONVENTIONS AND CULTURAL ACTIVITIES	✗	✗	✓	✓	✓
OTHER ACTIVITIES THAT CREATE GATHERINGS	✗	✗	✓	✓	✓

Source: <https://www.saopaulo.sp.gov.br/planosp/> and <http://diariooficial.imprensaoficial.com.br/>

¹ Despite previous measures that closed some education sector activities, Decree 65,563 defined schools as essential services on March 26th, 2021.

² The Plan updates did not directly address the resumption of in-person classes, left under the responsibility of the SEEDUC and specific decrees authorizing the reopening of activities in the sector in all hitherto existing Phases, with different restriction levels. See Decree No. 65,384, dated December 17th, 2020, which details reopening procedures.

³ Religious workshops, activities, and gatherings were considered essential services under Decree No. 65,545, dated March 3rd, 2021. However, the Emergency Phase entirely suspended any religious activity that could possibly generate crowding.

⁴ The opening of activities and economic sectors under the Orange, Yellow, and Green Phases is subject to rules with varying intensities according to the location of the regions. Venue occupancy rates, opening hours, and other unspecified details in Table 1 vary among the three phases. For detailed information on the operation rules of businesses and services by phase in the São Paulo Plan see: <https://www.saopaulo.sp.gov.br/planosp/>

Social distancing measures also varied significantly in 2021, both in content and duration. Throughout January and February 2021, restrictions oscillated between sudden closures and reopenings. This period was marked by the return to in-person school activities and reopening public and private schools according to the risk classification of their respective regions. Schools in municipalities under the yellow and red phase could reopen their schools for in-person learning with an occupation limit of up to 35% of enrolled students. In municipalities classified under the green phase, occupancy rates could reach 75%. Educational institutions were restricted according to classroom occupancy rates, social distancing, and sanitization; however, room ventilation, an essential requirement for reducing infection rates, was not appraised.⁵ Stricter restrictions remained in force from March 15th to 30, when several regions entered the emergency phase and banned in-person learning activities, even in hybrid formats.

In March 2021, the state government enacted an unprecedented phase of the Plan, called 'Emergency Phase,' to contain the rapid advance of the pandemic as the state registered daily record-breaking COVID-19 infections and deaths. Changes included further restrictions on services and activities previously defined as essential (hardware stores, supermarkets, hotels, among others⁶) and even the suspension or closure of these activities as well as religious services that generate crowding. Activities recognized as infection foci, such as those performed within educational institutions – where people remain for long periods inside confined classroom spaces-were defined as essential services.⁷ The Emergency Phase, which lasted only 29 days,⁸ was subsequently reverted to a less stringent phase on April 9th.

Table 2 compares the stringency of social distancing measures in effect in March 2020 – the onset of COVID-19 policies – and March 2021. The comparison indicates that the state failed to adopt more stringent restrictions during the Emergency Phase than those enacted at the beginning of the pandemic. Restriction measures for some areas (i.e., school and university closings) were milder in this phase than in several periods, as evidenced in the comparison between late June 2020 and the Emergency Phase (see Figure 3).

⁵ These recommendations and restrictions were provided for in Decree No. 65.563.

⁶ Detailed information about the implemented changes may be found at: https://www.saopaulo.sp.gov.br/wp-content/uploads/2021/03/20210311_Fase-emergencial.pdf

⁷ On March 26, 2021, the same day the state registered a record-breaking number of registered deaths, Decree No. 65,597, dated March 26, 2021 defined "(...) as essential the activities carried out within the public education network and private educational institutions".

⁸ The Emergency Phase was announced in the 25th update of the São Paulo Plan, on March 11, 2021 and officially ended on April 9, 2021, with the announcement of the state's transition to the Red Phase (with fewer restrictions).

Table 2 - Comparison between COVID-19 pandemic control measures adopted in March 2020 and March 2021 in the state of São Paulo

Area	Active Policies - March and early April 2020	Active Policies - March 2020	Comparison - March 2021 vs. March 2020
Education (Public and Private)	Closure of in-person teaching in public schools was decreed on March 13th, 2020, while private school closure was only recommended.	Implementation of hybrid schooling system for Public and private schools. The hybrid system consists of rounds where some students attend in-person school classes while others attend remote classes. Restrictions were imposed regarding the number of in-site students, sanitary instructions, and according to regional risk classification. On March 26th, 2021, Decree 65.563 defined schools as essential services.	Relaxation of the restriction in early March 2021 allows hybrid attendance systems in public and private schools, depending on regional risk classification criteria. However, from March 15th to March 30th, 2021, risk levels were equivalent to those observed for the same period in the previous year, as the Emergency Phase was declared for the entire state territory, preventing the employment of the hybrid schooling system.
Businesses and Services	On March 24th, 2020, a partial closing of businesses was implemented. Activities considered essential by the state Decree nº 64.881 remained active at all times.	Partial closing of businesses. Activities considered essential by the state Decree nº 64.881 remained active at all times.	No significant changes. Total closure of businesses and services was not implemented at any time
Public and Private Gatherings (including Religious Services)	From March 13th, 2020, large public events were prohibited by the state government. The closing measure did not refer to private events.	Banning of public and private events (including religious services). Private events were prohibited starting from March 15th, 2021. Religious services were defined as essential activities after March 3rd, 2021, with the promulgation of Decree nº 65.545. During the Emergency Phase, religious services that could generate gatherings were also suspended.	Further restrictions from mid-March 2021, especially regarding private events. Rules targeting religious services, nonetheless, were concomitantly relaxed.
Stay-at-home Measures	Recommendation for people to leave their houses only for essential activities.	Starting from March 11th, 2021, a curfew was implemented between 8:00 pm, and 5:00 am across all state territory. This measure lasted throughout March. ⁹	Flexibilização da restrição
Mask use	Decree nº 64.949 from March 24th, 2020, recommended using masks for all citizens outside their homes.	Decree nº 64.959 from May 7th, 2020, established mandatory mask use for all citizens.	No significant changes after the determination of mandatory mask use on May 7th, 2020.

Source: Prepared by the authors based on data from the CGBRT-FED.

⁹ The curfew measure does not appear alongside other measures adopted during the Emergency Phase in Decree No. 65,563, dated March 3, 2021. The curfew was promulgated during the state government press conference when presenting the update for the Phase. See: https://www.saopaulo.sp.gov.br/wp-content/uploads/2021/03/20210311_Fase-emergencial.pdf

Furthermore, the new measures did not include substantial changes in key sectors for controlling the pandemic. Such was the case of several commerce and service activities listed as essential services, such as laundries and lotteries, which continued to operate uninterruptedly. However, the Emergency Phase did restrict other sectors and activities like bars, restaurants, and hardware stores.

In general, measures banning or restricting public and private events with gatherings were not implemented during the Emergency Phase, contrasting with previous strategies in March and throughout most of 2020. Decree 66,553, dated March 11th, 2021, listed some of the measures adopted in the Emergency Phase and stated the restriction of several events and gatherings. Additionally, the Emergency Phase measures included the unprecedented implementation of a curfew from 8 pm to 5 am between March 11 and 30, 2021. This measure, nevertheless, was not amongst those listed in Decree 66.553 and was solely mentioned in the state governments' presentation, available on the official website. However, the measure was not listed in Decree 66,553 alongside other changes and was only mentioned during the state government's briefing.

The Stringency of COVID-19 Control Policies in the city of São Paulo, the state capital

Similar to the state of São Paulo, the city of São Paulo adopted measures to control the pandemic in early March 2020 as part of an attempt to reduce contamination in the urban context. Figure 2 reports the stringency level of the policies decreed by the City of São Paulo for a) closure of in-person schooling activities; b) restrictions imposed on commerce, services, and industries; c) bans on gatherings; d) stay-at-home policies and e) mandatory mask use between February 2020 and March 2021.

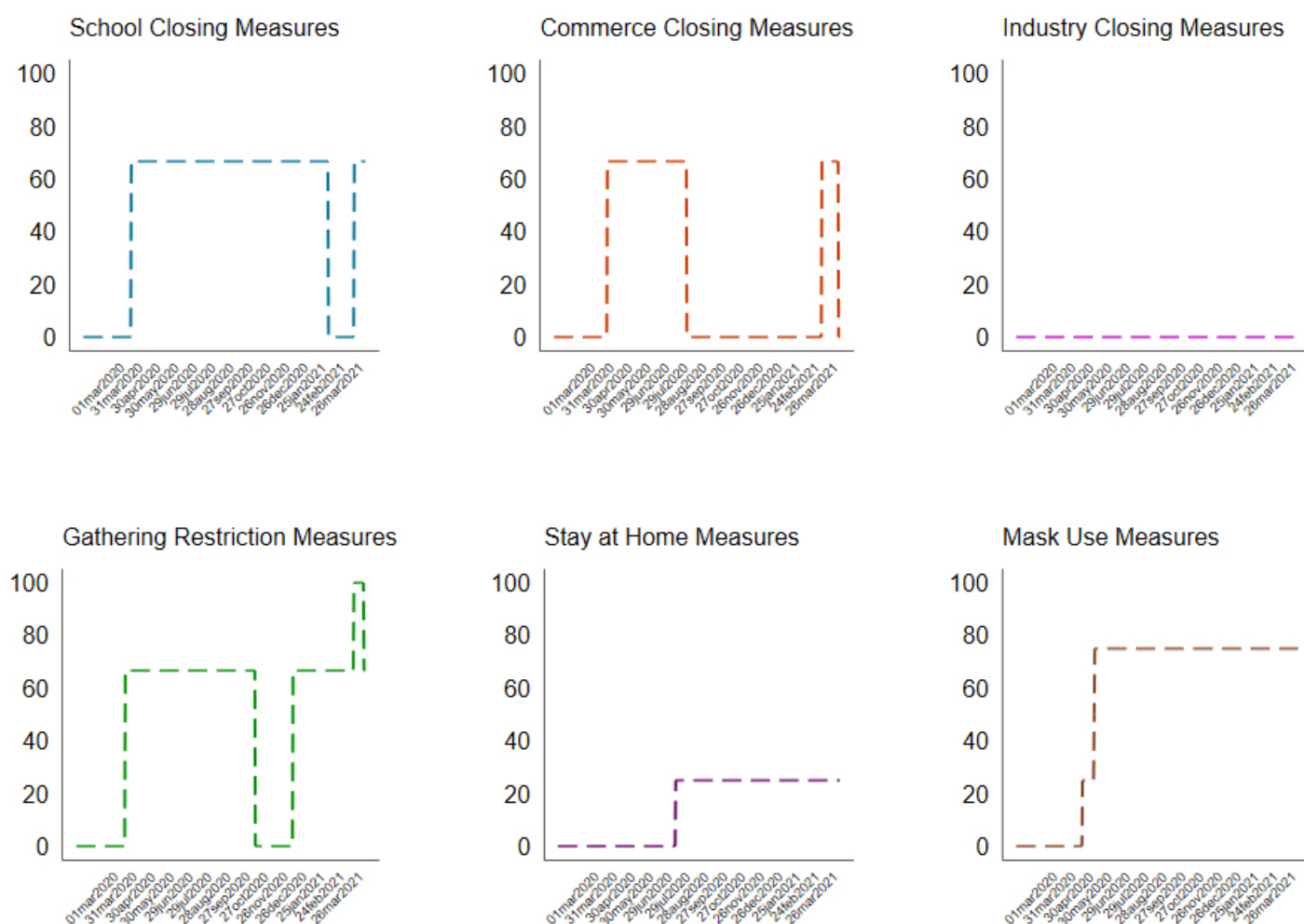
The first measures in 2020 focused mainly on closing municipal schools while only recommending private educational institutions follow the same guidelines. Furthermore, these measures mandated the closure of venues that facilitate crowding, such as museums, movie theaters, besides public events in general. Additionally, a decree from March 24th, 2020, banned commercial establishments and service sectors from providing in-person services. Similar to what we observed for the state of São Paulo, the state capital defined some commerces and service establishments as essential, allowing them to remain open at all times, despite the implementation of sanitary guidelines. This list included circa 56 activities related to healthcare, social assistance, food, hotels, religious activities, call center services, civil construction, cleaning, banking, legal services, and public and private security services. Moreover, the capital, likewise the state government, did not publish any measures to close industries, as shown in Figures 1 and 2.

Regarding the use of masks by the general population, on April 15th, 2020, the city had already published recommendations for the use of masks. Later, on May 5th, 2020, the city mandated the use of masks – whether in public transport, public areas, or in venues authorized to operate – through a decree. On the next day, the state decree adopted the same measure. Mask usage policy has been more stable since then, as shown in Figure 2. Measures implemented at the city level were continued for the most part until June 2020, when the state government first proposed to regionalize future actions.

With the implementation of the São Paulo Plan in June 2020 and the different classifications for the capital, relaxations for paralyzed commerce and services ended on July 10th, when gyms were authorized to operate in the yellow phase. Continuing the gradual relaxation, as of October 7th, 2020, the city allowed schools to open for extracurricular activities, and, as of November 3rd, the hybrid system was adopted for secondary education. The flexibilization peak occurred in October 2020, when concert halls, movie theaters, cultural venues, and some events were already allowed due to the green classification of the Regional Health District I, which includes São Paulo and its neighboring cities.

All city-level public events were once again banned on December 8th, 2020. Furthermore, to restrict crowding during the end-of-year festivities, the state government established the red phase between December 25 and 27, 2020, and January 1 and 3, 2021, which also reinstated restrictions in the capital. These restrictions included the suspension of non - essential commercial activities and services, such as shopping malls, bars, restaurants, gyms, beauty salons, barbershops, in addition to gatherings at events and venues like cinemas and theaters. The capital, in turn, decided on December 15th that the city would fully comply whenever the state enacted, through the São Paulo Plan, more stringent rules.

Figure 2 - Stringency Level of Social Distancing Policies adopted in the city of São Paulo between February 2020 and March 2021 (0-100)



With the arrival of the New Year, the city of São Paulo allowed educational establishments to reopen to in-person learning activities as of January 27, 2021. Afterward, the state decreed the Emergency Phase from March 15th to April 11th, 2021. Once again, the city government followed state guidelines, closed schools, mandated the suspension of classes, and anticipated school recess of the Municipal Education Network. The city also suspended activities in the private education network, albeit granting autonomy to private educational establishments to reorganize the school calendar, just like in 2020. In contrast, through Decree No. 60,158 published on April 1, 2021, the city government authorized the reinstatement of in-person learning activities in public and private schools on April 12th, 2021 provided the non-extension of the Emergency Phase was not reinstated.

The city of São Paulo upheld restrictions on businesses and services, as foreseen by the Red and Emergency Phases of the São Paulo Plan, on March 4 and 11, 2021, respectively, adopting state definitions through a municipal decree. By adopting and fully complying with the measures of the state decree, the city passively suspended gatherings in church services and sporting events as well as gatherings in municipal public environments.

As shown in Table 3, only a few more stringent measures were in effect in March 2021 when compared against the second half of March and early April 2020. Furthermore, if we compare the city with the state in March 2021, we observe that the city mostly adopted the same measures as the state government. Hence, it becomes evident that the capital agency had, in a general sense, a passive character, as for the most part, city-level measures only reflected state policies implemented through the São Paulo Plan.

Conversely, the city of São Paulo had greater decision-making autonomy in early 2020. Even with the São Paulo Plan, the city opted for stricter restrictions than those adopted at the state level according to the periodic risk classification across health regions (RHD). One of the most emblematic examples of this trend concerns the educational sector. While the state reopened schools for extracurricular activities on September 8th, 2020 (for all cities in the yellow phase during 28 days), the city of São Paulo opted to maintain the closing of educational establishments, even though the state government authorized schools to operate during holidays. Furthermore, the São Paulo Plan also projected the opening of authorized sectors, conditioned to municipalities' creation and implementation of health protocols. These measures, in turn, delayed the opening of some sectors during the yellow phase in June 2020 (bars, restaurants, and beauty and aesthetics services). In 2021, higher stringency levels at municipalities in comparison to the state were gradually less common.

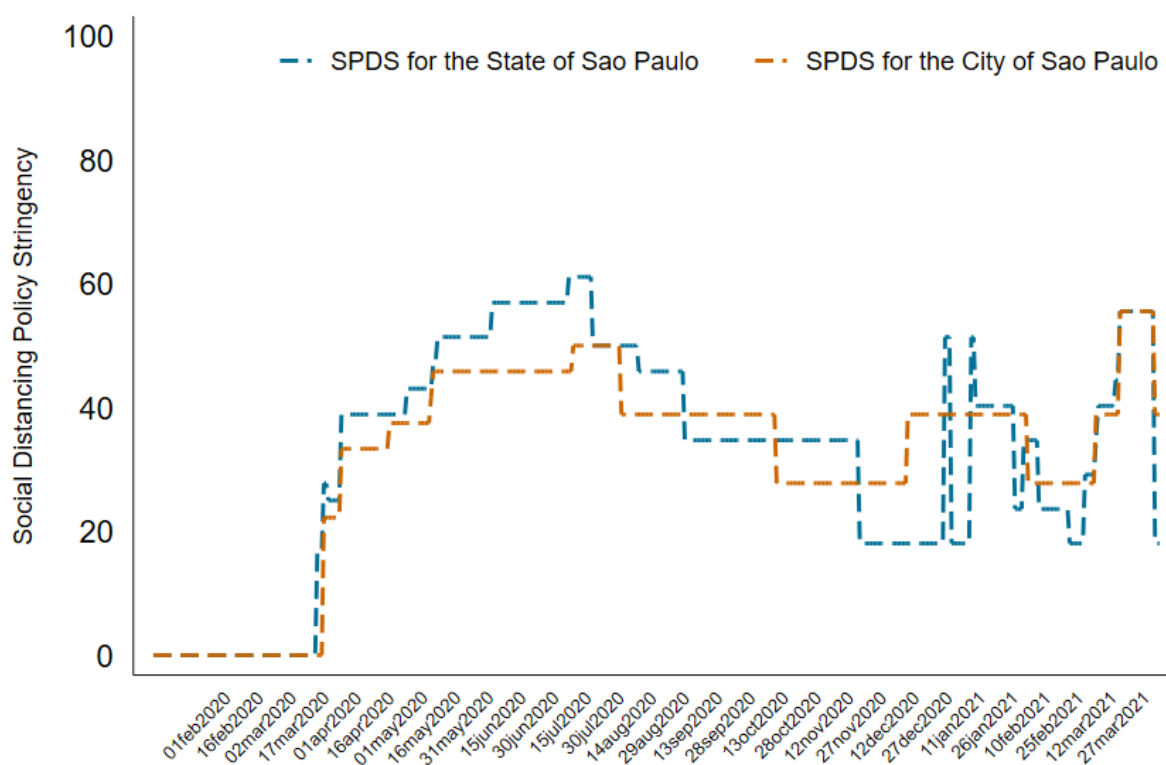
Table 3 - Comparison between COVID-19 pandemic control measures adopted in March 2020 and March 2021 in the city of São Paulo

Area	Policies in Effect - March and early April 2020	Policies - March 2021	Comparison - March 2021 vs. March 2020
Education (Public and Private)	Municipal public schools closed for in-person learning after Decree No. 59,283, dated March 16th, 2020. Guidelines suggested that private schools should also suspend classes.	Authorization for municipal schools and educational establishments, in general, to operate (including private establishments), with the possibility of optional reopening from February 1st. As of March 17th, 2021, in-person educational activities were suspended in public and private sectors, with the promulgation of Decree No. 60.118, dated March 12th, 2021.	Less stringent measures (flexibilization) in the first half of March 2021. As of March 17th, 2021, the same stringency level was observed in March 2020.
Commerce and Services	Suspension of in-person service in venues is defined as non-essential by the municipality.	Suspension of in-person service in venues is defined as non-essential by the municipality. Take away services suspended.	The same stringency level was observed in both periods.
Public and Private Gatherings	Closure of venues and public events that promote crowding. No mention of private events/gatherings. Religious Activities are defined as an essential activity on March 27th, 2020.	Closure of venues and public events that promote crowding. No mention of private events/gatherings. In the emergency phase, sports, and collective religious activities Was suspended on March 11th, 2021, by the state government.	The same stringency level was observed in both periods.
Stay-at-home Measures	No stay-at-home measures.	With the implementation of sanitary and testing protocols for economic sectors in July 2020, employees must stay at home in confirmed and suspected Covid-19 infection. The state decreed curfew as of March 11th, 2021.	Greater stringency level in March 2021 when compared to the same period in 2020.
Mandatory Mask use	The city did not enact specific mask usage measures and based itself on state government Decree n° 64,949, dated March 24th, which recommended masks for the population when leaving home.	Mandatory mask use in force as of May 2020 in the public environment and public transport and business and service venues. Greater stringency level in March 2021 when compared to the same period in 2020.	Mandatory mask use in force as of May 2020 in the public environment and public transport and business and service venues. Greater stringency level in March 2021 when compared to the same period in 2020.

Source: Prepared by the authors based on data from the CGBRT-FED.

Figure 3 shows the Social Distancing Policy Stringency Index (SDPS) scores for the state and the capital during 2020 and early 2021, combining closure and suspension measures for all sectors above. As shown below, both state and capital received only moderate-low scores in the Index, with intense oscillations – even more, pronounced in the state's case – between December 2020 and the first months of 2021. Even when some sectors received maximum scores in the Index, the relatively low scores are mainly due to stringency variations.

Figure 3 - Stringency Level of Social Distancing Policies adopted in the State of São Paulo and in the City of São Paulo between February 2020 and March 2021 (0-100)



Source: Prepared by the authors based on data from the CGBRT-FED.

Since the beginning of the pandemic, the strategy adopted by the city of São Paulo was to enact a moderate level of social distancing policies. Scores remained steady between approximately a score of 30 and 50, as observed in Figure 3:

- Closing measures for businesses and services did not receive, at any time, maximum scores in the state or the capital. This happened because none of the steps entirely banned non-essential activities (once again under the terms established by the WHO).¹⁰
- The state and the capital did not establish measures for the closure of industries at any time during the pandemic.¹¹

¹⁰ As detailed in our section addressing the WHO recommendations, health authorities limit essential services to food and health-related activities.

¹¹ The absence of measures to close industries was a trend in the country, encompassing the absolute majority of states. For more information, see: Barberia, Lorena G., Luiz GR Cantarelli, Maria Leticia Claro de Faria Oliveira, Natália de Paula Moreira, e Isabel Seelaender Costa Rosa. "The Effect of State-level Social Distancing Policy Stringency on Mobility in the States of Brazil." *Revista de Administração Pública* 55, no. 1 (2021): 27-49.

- No measures were enacted to suspend private events throughout 2020. In 2021, with the introduction of the Emergency Phase, state measures for this sector were detailed for the first time. Nonetheless, prohibitions did not mention family gatherings or even small home gatherings, a well-known Covid-19 focus of infection.
- Lastly, stay-at-home measures – among which curfew measures introduced by the Emergency Phase – were not adopted as tools to control the pandemic at any time except during the Emergency Phase.

In short, the systematic adoption of strict measures for some sectors (mandatory use of masks and closing of schools for in-person learning) contrasts with the volatile nature of policies in other sectors and even the lack of standards in some of these sectors, such as industries.

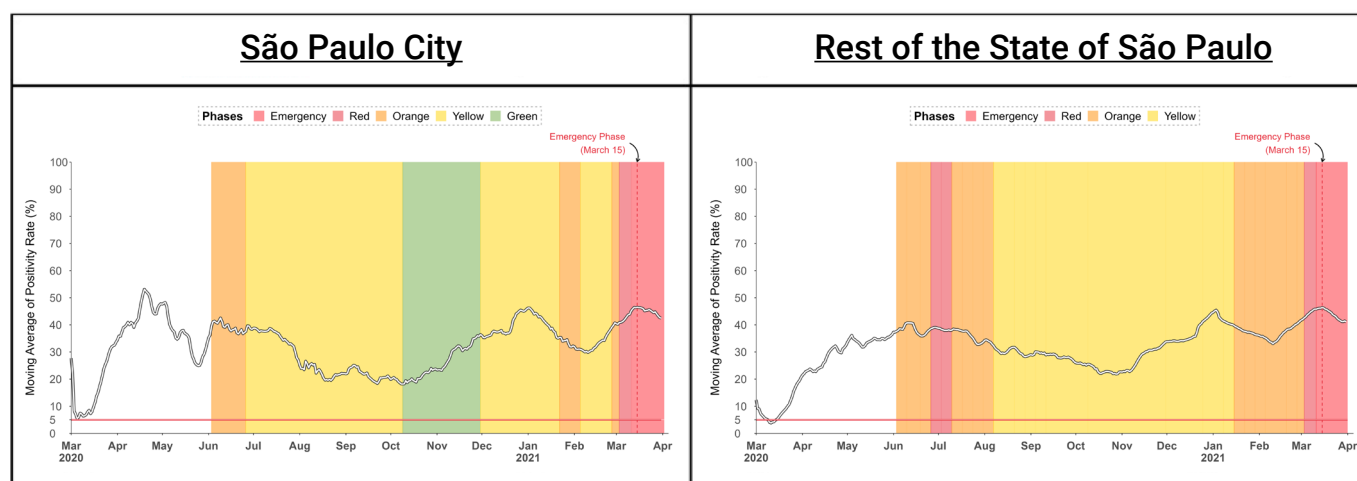
Identifying Infection Cases, Contact Tracing, and Isolation of Confirmed and Suspected Cases

Testing of those actively transmitting the virus to others should be the first line of defense against COVID-19 and, therefore, understood as the cornerstone of any containment strategy. The state of São Paulo, even with the comprehensive coverage of its network of public laboratories, whether owned or contracted by the state, registered a lower volume of testing than recommended by the WHO. For example, based on the WHO recommendation to perform 1 test per 1000 people per week, the state only completed 5% of the required level of testing in March 2021. RT-PCR tests were used much more minor than recommended by the WHO throughout 2020 and early 2021. Even with a progressive increase in RT-PCR testing throughout the pandemic, the volume is negligible relative to demand. The state of São Paulo did not implement RT-PCR testing for contacts, thus neglecting this crucial action for infection control.

The state of São Paulo did not register a positivity rate in RT-PCR testing below 5% in any epidemiological month, which is the maximum target for testing programs according to WHO guidelines. The highest positivity rate was in March 2021, with a rate of 43%, a value 22% higher when compared to the previous month. According to the moving average of the last day of March, a similar value was registered in the state capital (42.5%) and other regions of the state (41.1%). The increased positivity rate shown in Figure 4 could have been used to justify more restrictive measures, significantly anticipating the introduction of the orange or red phases. In other words, the State of São Paulo could have adopted restrictive measures earlier if testing had been incorporated into the Plan.

As the state did not adequately expand testing, nor did it use testing indicators to corroborate control decisions, the City of São Paulo followed the same trends. Although the provincial capital registered fewer stringent phases than other regions, the proportion of positive tests follows a similar trend with more periodic variations in the state, as shown in Figure 4.

Figure 4 - SRT-PCR Positivity Rate in the Public Health Network in 2020-21 and phases of the São Paulo Plan in the city of São Paulo and other regions of the state*



Sources: Adolfo Lutz Institute. Testing Dashboard – RT-PCR tests performed by the public health network in the State of São Paulo available on the Open Data portal of the Government of the State of São Paulo: <https://www.saopaulo.sp.gov.br/plano-sp/simi/dados-abertos/#:~:text=Placar%20de%20testes%20%2D%20testes%20RT,e%20idade%20do%20paciente%20testado>. Accessed on: 04/11/2021.

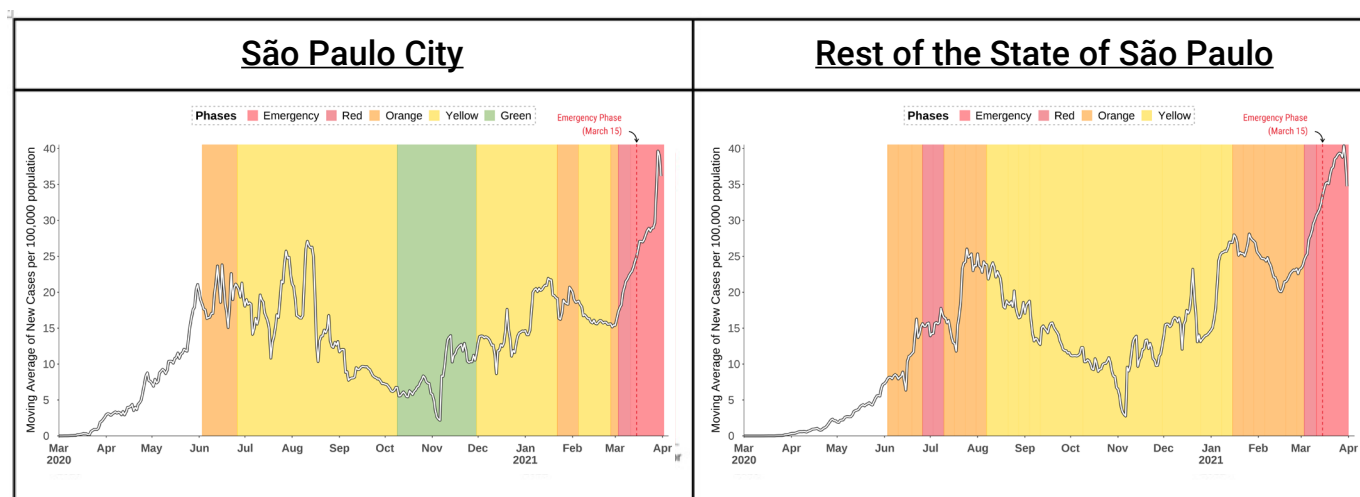
The Health and Humanitarian Crisis in the State of São Paulo in 2020 and 2021

A comparison with other countries exposes the severity of the COVID-19 epidemic in the state of São Paulo. According to the John Hopkins University data, Germany registered 2,966,789 confirmed COVID-19 cases among its more than 80 million inhabitants as of April 8th, approximately 3,567 accumulated per 100,000 inhabitants. Based on the same reference and period, the state of São Paulo, the most populous and economically powerful state in Brazil, registered fewer confirmed cases in absolute numbers compared to the European country, totaling 2,597,366 confirmed infections. However, when we analyze this number concerning the state's total population, the value is higher: 5,656 cases per 100,000 inhabitants. Regarding COVID-19 mortality rates, the total number of deaths in the form of São Paulo (80,742) is greater than the total number of lives lost in Germany across all its federative regions (78,049), which, as mentioned, has approximately double the population of the state of São Paulo. Another possible comparison is South Korea, which has around 5,000 more inhabitants than the state of São Paulo but registered 108,269 cases (209 cases accumulated per 100,000 inhabitants) and 1,764 deaths in the same period.

The graphs in Figure 5 show a surge in infections in the first months of 2021, both in the capital and other regions of the state. Throughout March, the state broke consecutive records in the number of infections.¹² On March 20th, 2021, the capital surpassed the highest previously recorded moving average of 27.1 cases per 100,000 inhabitants, registered on August 11th, 2020, and reached 27.4 new cases per 100,000 inhabitants. Since then, this rate increased rapidly and went to a maximum value on March 29th, with an average of 39.6 new cases per 100,000 people. Other regions of the state of São Paulo have also registered a rapid and steady increase in new infection cases since mid-February 2021.

¹² Source: <https://www.seade.gov.br/coronavirus/>. Accessed on: 04/08/2021.

Figure 5 - Moving Average of the Number of Daily COVID-19 Infections per 100,000 inhabitants (March 2020 – March 2021) and the phases of the São Paulo Plans in the city of São Paulo and other regions of the state*



Source: Prepared by the authors based on data from the CGBRT-FED and the Seade Foundation (2021)

*Note: The São Paulo Plan classifies each of the 17 RHDs. The figure with the phases in other state regions uses the most frequently adopted phase in the 16 RHDs, excluding RHD1, which includes the capital.

Following the same trend in the rise of COVID-19 infections, the moving averages of ICU bed occupancy rates registered a rapid surge from mid-February 2021, reaching above 90% occupancy. The provincial capital recorded the maximum value of 92.6% on March 31st, while the state registered the highest rate on March 28th, with 92.4% occupied beds, considering data analyzed until April 9th. In addition, the city of São Paulo recorded, on average, higher occupancy rates of COVID-19 ICU beds when compared to the rest of the state during the entire analyzed period. Regardless of this remarkable upsurge in recent months, both the capital and the state of São Paulo had registered rising trends in the occupancy rates of COVID-19 ICU beds, with some variations, since mid-October and early November 2020, when the lowest values were recorded in our analyzed period, 42% in the capital and 35% in the state.

As shown in Figure 6, the state had more stringent phases across its regions at the beginning of the São Paulo Plan. Nonetheless, the ICU occupancy rate increased until the end of July, while the provincial capital registered high occupancy rates at the beginning of the period, followed by a steady decline. For the remainder of the period, both curves follow similar trends regardless of the phase.

Figure 6 - Moving Average of the COVID-19 ICU Bed Occupancy Rate and evolution of the São Paulo Plan phases in the city of São Paulo and other regions of the state*, between May 2020 and March 2021

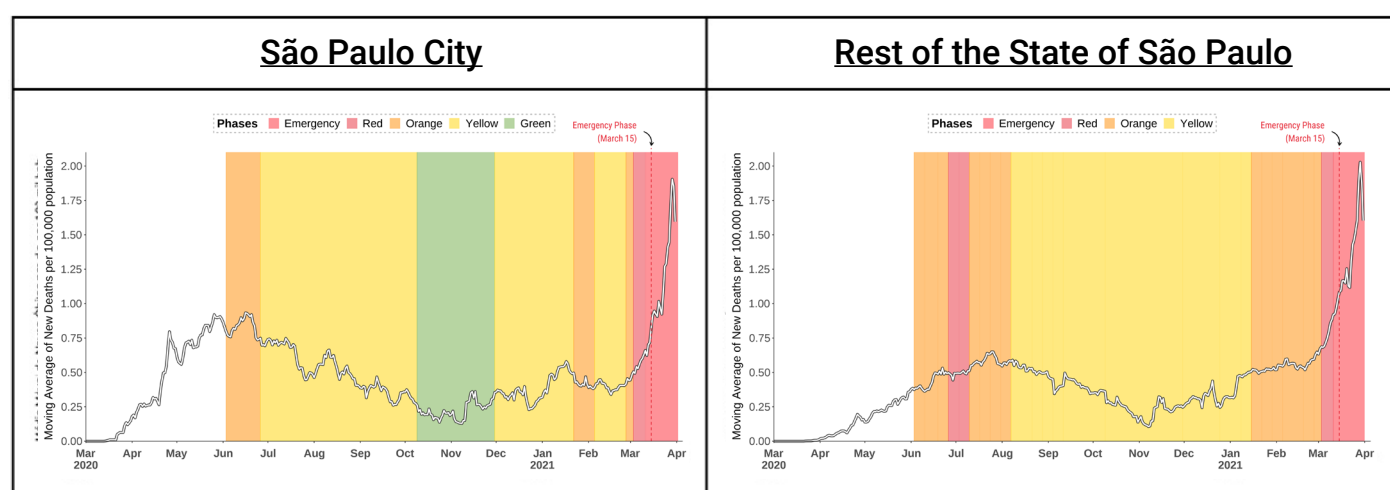


Source: Prepared by the authors based on data from the CGBRT-FED and the Seade Foundation (2021)

*Note: The São Paulo Plan classifies each of the 17 RHDs. The figure with the phases in other state regions uses the most frequently adopted phase in the 16 RHDs, excluding RHD1, which includes the capital.

Complementary to the analysis of COVID-19 infections and ICU bed occupancy rates, Figure 7 shows the evolution of the COVID-19 death rate per 100,000 inhabitants in the city and state of São Paulo. In March 2021, the state surpassed the mark of 73 thousand deaths,¹³ and on March 26th, 2021, the first of many record-breaking values were registered in the number of daily deaths: 1,193 deaths.¹⁴ In the following weeks, new record highs were reported: 1,209 deaths on March 30th and 1,160 deaths on the next day. Finally, the record set in March was again surpassed on April 6th, when 1,389 deaths were registered.¹⁵

Figure 7 - Moving average of the number of daily deaths per 100,000 inhabitants (March 2020 - March 2021) and the phases of the São Paulo Plans in the city of São Paulo and other regions of the state*



Source: Prepared by the authors based on data from the CGBRT-FED and the Seade Foundation (2021)

*Note: The São Paulo Plan classifies each of the 17 RHD. The figure with the phases in other state regions uses the most frequently adopted phase in the 16 RHDs, excluding RHD1, which includes the capital.

¹³ Source: <https://www.seade.gov.br/coronavirus/>. Accessed on: 04/08/2021.

¹⁴ Source: <https://www.seade.gov.br/coronavirus/>. Accessed on: 04/08/2021.

¹⁵ On April 6, 2021, 1389 deaths were registered, according to SEADE data.

The COVID-19 mortality rate and the occupancy rates of COVID-19 ICU beds in the state and city of São Paulo underpin the importance of pandemic control measures to reduce the number of critically ill patients. As the number of COVID-19 infections rise and, therefore, more people develop a severe clinical condition of the disease, the immediate consequence is an upsurge in demand for more complex health services and assistance, such as mechanical ventilators, sedative agents for intubation, ICU beds, and specialized medical staff. Such human and material resources are scarce and costly, with limited supply and access. Furthermore, Brazil has a high lethality rate for hospitalized COVID-19 patients, reaching circa 60% occupancy of Intensive Care Units (ICU). Therefore, measures for increasing the availability of COVID-19 ICU beds must be accompanied by efforts to reduce the virus's transmissibility and, consequently, the number of active COVID-19 cases.

The World Health Organization (WHO) Guidelines and the Risk Classification of the State and City of São Paulo

The World Health Organization (WHO) has issued recommendations for the necessary measures under different pandemic circumstances.¹⁶ According to the most recent version of the WHO guidelines, the state of São Paulo falls under the scenario characterized as the maximum risk level for transmission of the four outlined areas. According to the criteria summarized in Table 4, category 4, the most severe, corresponds to "an uncontrolled epidemic with limited or no additional health system response capacity available, thus requiring extensive measures to avoid overwhelming of health services and substantial excess morbidity and mortality."

Table 4 - COVID-19 Epidemiological Indicators and Levels to Assess Community Transmission, according to the WHO criteria

AREA	INDICATOR	DESCRIPTION	RELEVANT LIMITATIONS	COMMUNITY TRANSMISSION LEVEL			
				TC1	TC2	TC3	TC4
HOSPITALIZATION RATES	Average of new hospitalizations due to COVID-19 per 100 K inhabitants, considering a two-week interval	Sum of all cases requiring hospitalization. Indirect indicator. Unlikely to be the object of surveillance policies.	Might be influenced by hospitalization policies, i.e. when mild cases are hospitalized aiming isolation.	<5	5 to <10	10 to <30	30+
	Average deaths per 100 K inhabitants considering a two-week interval	Sum of all deaths. Indirect incidence indicator. Minimally influenced by surveillance policies if testing is effective.	Delayed incidence measure. At low levels, and in small geographical areas may be sensitive to mild fluctuations (one or two deaths)	<1	1 to <2	2 to <5	5+
INCIDENCE OF CASES	Average cases per 100 K inhabitants, considering a two-week interval	Indirect measure of incidence.	Strongly influenced by the performance of the surveillance system, by the testing policy and by the laboratorial capacity. At low levels, in small geographical areas may be sensitive to mild fluctuations - in the case of counting, particularly to the reported test allotment	<20	20 to <50	50 to <150	150+
	Positivity rate reported considering a two-week interval	Not influenced by surveillance capacity or strategy. Minimally, influenced by testing strategy and capacity.	Might not be representative of the general population if testing centers are concentrated in specific regions. Might not recognize mild or atypical cases if testing criteria require symptoms similar to those of a common cold.	<2%	2% to <5%	5% to <20%	20% +

Source: Prepared by the authors based on: WHO-2019-nCoV-Adjusting_PH_measures-2020.2-eng.pdf

¹⁶ World Health Organization. Considerations for implementing and adjusting public health and social measures in the context of COVID-19 November 4, 2020. Available at: <https://www.who.int/publications/i/item/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance>

Because of the record-breaking COVID-19 transmission levels registered by the state and city of São Paulo, as shown in the last two columns of Table 5, the WHO states that community transmission will only drop through strict mobility restriction measures. Thus, more restrictive measures must be implemented to effectively reduce Sars-CoV-2 transmission to reduce the number of active cases and, consequently, the mortality rate. Actions must include restrictions on activities and limit gatherings, and the flow of the general public in public spaces as greater mobility will generate new infections.

Table 5 - Levels for Evaluating COVID-19 Community Transmission (CT) according to the WHO and Values Presented by the State and City of São Paulo on March 31st, 2021

	TC1	TC2	TC3	TC4	Valores estado de São Paulo (sem a capital)	Valores da capital
COVID-19 hospitalizations per 100,000 inhabitants per week (considering a two-week interval)	< 5	5 - < 10	10 - < 30	30+	46,8	60,5
COVID-19 deaths per 100,000 inhabitants per week (considering a two-week interval)	< 1	1 - < 2	2 - < 5	5+	11	9,5
New COVID-19 Cases per 100,000 inhabitants per week (considering a two-week interval)	< 20	20 - < 50	50 - < 150	150+	279,9	226,2
RT-PCR Positivity Rate in the Public Health Network (considering a two-week interval)	< 2%	2% - < 5%	5% - < 20%	20%+	42,9%	44,6%

The actions suggested by WHO includes the following measures:

- Individuals should stay at home and reduce social contact with people outside their home;¹⁷
- Essential workers must receive maximum support and health safety measures in their workspaces to safely continue their work;
- Temporary closure of non-essential services and businesses or promotion of remote work;¹⁸
- All options should be considered to continue teaching-learning activities. These efforts may include in-person learning, hybrid, or remote learning strategies to limit the number of people on site (exceptions would consist of children of essential workers and their teachers).
- All long-term care facilities or homes, such as nursing homes, should consider stricter measures to reduce infection risks, such as barring personal visits.

¹⁷ On April 6, 2021, 1389 deaths were registered, according to SEADE data.

¹⁸ Once again, we reiterate the WHO definition of essential services, which includes only indispensable food and health-related sectors.

Conclusion

Despite the worsening of the COVID-19 pandemic, the measures implemented by the São Paulo state government in 2021 have been less stringent than in 2020. Furthermore, implementing these policies follows an intense oscillation pattern, which hinders their comprehension and strength. Most of the limitations imposed on sectors are still very lenient when compared to WHO recommendations. Added to this is the absence of measures to close industries or maintain steady and strict stay-at-home measures to restrict private gatherings.

The city of São Paulo followed a similar trend. In 2020, the city's response policy to the epidemic focused on specific measures, such as schooling and education. Furthermore, relaxation measures for business and service sectors were postponed. In 2021, the capital followed the measures decreed by the state government. Based on state risk criteria, the city opened municipal schools for in-person learning until the declaration of the Emergency Phase by the state government on March 15th, 2021.

On March 2021, over a year after the first confirmed COVID-19 case in the state of São Paulo, the epidemiological situation is exceptionally severe and registers record-breaking levels of infections and deaths. A critical reflection about the evolution of pandemic-control measures reveals a series of lessons, mistakes, and accomplishments that must be well-thought-out for the urgent design and planning of strategies in the state and capital.

Recommendations

1. Social distancing policies to reduce Sars-CoV-2 infection rates should be modified to ensure greater consistency and coordination. Urgent measures must be adopted to ensure safety in restriction and mobility;
2. Considering the current COVID-19 community transmission risk level, social distancing policies to reduce infection speed must be set at the most stringent classification. These measures must remain in force long enough to reduce the proportion of COVID-19 positive RT_PCR and antigen tests, new cases, mortality rate, and occupancy rate of outpatient and ICU beds, and sustained for a minimum period of 14 days after the drop;
3. RT-PCR and antigen testing must be used as a broad pandemic control measure and should not be limited to case-by-case investigations. More widespread and more frequent testing for COVID-19 diagnosis is necessary. Furthermore, a testing policy for tracing contacts must be implemented;
4. Further efforts to promote RT-PCR and antigen testing for highly vulnerable population segments which still lack vaccination coverage;
5. RT-PCR tests should be offered for vaccinated individuals whenever they show symptoms. The state must collect, investigate, and report SARS-COV-2 positive cases in vaccinated individuals. The state and capital of São Paulo must inform these investigated cases in the epidemiological bulletins;
6. The state public health network must expand active testing of infection cases with the use of antigen tests, which should be integrated into the state health network and used alongside RT PCR-type tests;
7. As of now, the São Paulo Plan does not use RT-PCR or antigen testing data to classify risk levels in the state's regions. The next version of the Plan should follow the WHO guidelines and include these results as risk assessment indicators.

ABOUT

We are over 100 researchers, actively engaged in the task of improving the quality of public policies within federal, state, and municipal governments as they seek to act amidst the Covid-19 crisis to save lives. We dedicate our energies towards rigorous data collection, devising substantial information, formulating indicators, and elaborating models and analyses to monitor and identify pathways for public policies and review the responses presented by the population.

The Solidary Research Network has researchers from all scientific fields (Humanities as well as Exact and Biological Sciences) in Brazil and overseas. For us, the combination of skills and techniques is vital as we face the current pandemic. The challenge ahead is enormous, but it is particularly invigorating.

And it would never have come to fruition if it weren't for the generous contribution of private institutions and donors who swiftly answered our calls. We are profoundly grateful to all those who support us.

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Support



This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 00