

Covid-19: Public Policies and Society's Responses



Quality information for refining public policies and saving lives

Technical Note 4

Lack of coordination between the Federal government and states undermines social distancing policies. Increased and unregulated relaxation could aggravate the pandemic

In the absence of vaccines, tests, or treatments, social distancing is the main strategy for fighting the coronavirus pandemic. Based on the results of the Brazilian states and comparing them with the subnational governments in Argentina, Spain, Italy, and the USA, this Bulletin discusses alternative scenarios for social distancing policies: maintaining current measures, partial relaxation, broader relaxation, or tougher measures with expanded enforcement strategies.

The results were:

- Brazilian states introduced social distancing decisions relatively early, but the stringency of these measures is lower than in similar regions in other countries such as Argentina, Spain, and Italy;
- Measures and compliance to social distancing in Brazilian states are similar to the policies introduced in American states;
- The social distancing measures adopted by Lombardy (Italy), Madrid (Spain), Catalonia (Spain), and the Province of Buenos Aires (Argentina) are significantly stricter and more far-reaching than in Brazil;
- A significant amount of the Brazilian states started to relax social distancing measures as from the second week of April, without coordination and lacking reliable data as to the number of infected or the expansion stage of the epidemic. As a result, in the past two weeks, compliance to social distancing has dropped, even in states that have not relaxed measures.

- The paradox is that this drop in social distancing compliance occurs during an expansion of the coronavirus and an increase in the number of deaths. The consequences of a disorderly liberation point towards the aggravation of the health crisis and greater difficulties for economic recovery.
- The results presented in this Bulletin are quite conclusive regarding the predictions of impact on compliance to social distancing across different scenarios. The projections on epidemiological and economic impacts are based on renowned international studies.

Table 1. Seven scenarios of relaxing social distancing

| Change or maintenance of social distancing policies | Impact on Quarantine Compliance | Impact on COVID-19 Transmission | Impact on the Economy |
|--|---------------------------------|---------------------------------|-----------------------|
| Maintain the current situation | ↓ | ↑ | ↓ |
| <i>Partial relaxation of policies on industry without altering other areas</i> | ↓ 3,9 % | ↑ | ↑ |
| <i>Partial relaxation of policies on trade and services without altering other areas</i> | ↓ 5,7 % | ↑ | ↑ |
| <i>Partial relaxation of policies on education without altering other areas</i> | ↓ 11,9 % | ↑ | ↑ |
| <i>Partial relaxation allowing crowding without altering other areas</i> | ↓ 5,2 % | ↑ | ↑ |
| <i>Complete relaxation of policies on industry, trade and services, education, and crowding</i> | ↓ 32 % | ↑ | ↑ |
| Increase of the <i>current restrictions</i> policies with a new policy package and enhanced surveillance | ↑ | ↓ | ↓ |

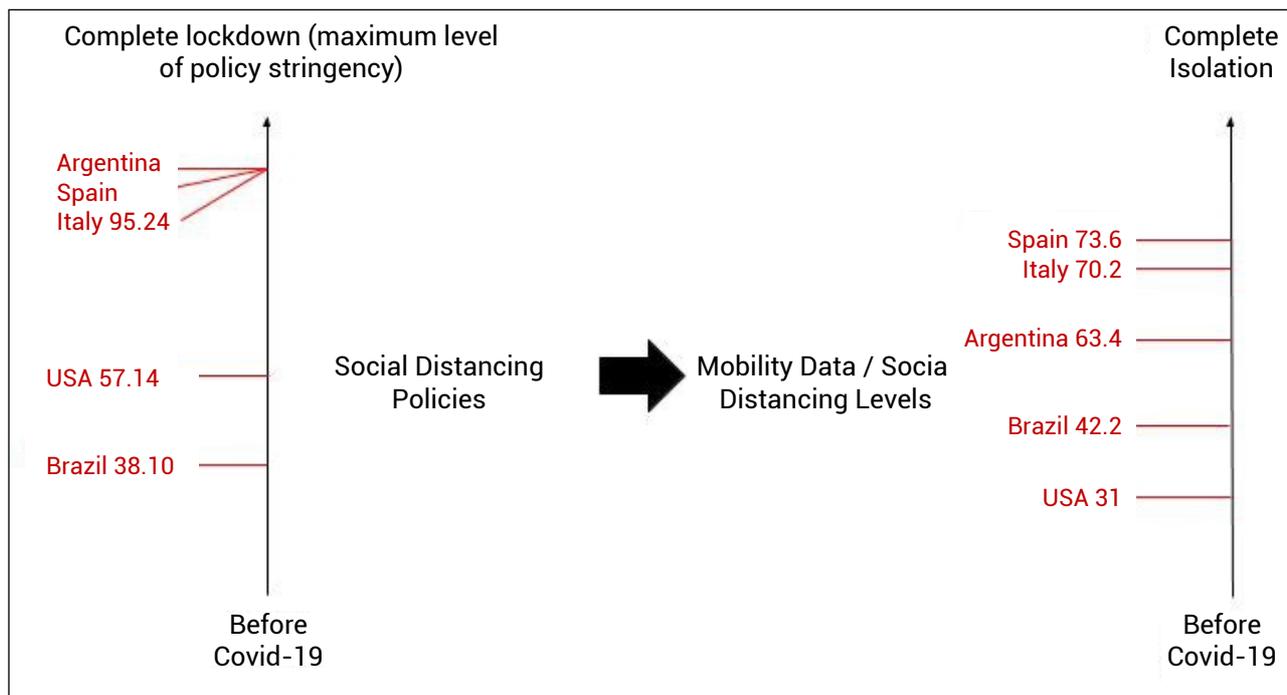
Social Distancing in Argentina, Brazil, USA, Italy, and Spain

To measure the stringency of the policies adopted by the different countries, we used the Oxford Covid-19 Government Response Tracker (OXCGRT) combined with the government efforts to enforce stay-at-home recommendations for citizens. Google Mobility indicators were adapted to compare social distancing compliance.

Figure 1 describes the situation of these countries on April 11, 2020 and allows us to understand how different levels of policy stringency relate to different levels of social distancing compliance. Spain and Italy adopted sequential measures, notifications, and fines, and, in some cases, the arrest of offenders². In a similar vein, Argentina created a hotline for denouncing non-compliance to stay-at-home orders, closed state borders, fined and notified violations with punishments and, in some case, even prison.

² Information regarding punitive measures in Argentina, Spain, and Italy were extracted from government sources.

Figure 1. Social Distancing Stringency in Argentina, Brazil, Spain, USA, and Italy on April 11, 2020



Sources: OXCGRT and Google Mobility Reports.

In Figure 1, the stringency of the measures is higher in Argentina, Spain, and Italy compared to the USA and Brazil. The most successful countries in decreasing their mobility were Spain and Italy. Since social distancing measures in the Brazilian states are closer to the policies introduced in the United States, it becomes clear that quarantine compliance is lower in Brazil when compared to other cases.

In order to compare the social distancing indices in sub-national units with the Social Distancing Stringency Index (SDII), we used the data reported by the Institute for Health Metrics and Evaluation (IHME)³ for the subnational units overseas⁴.

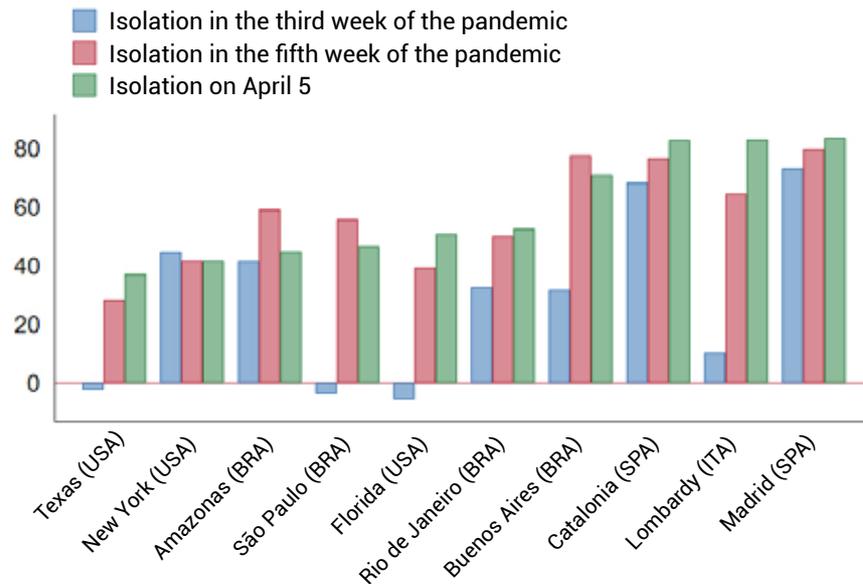
Evidence suggests that compliance to social distancing is significantly higher in Lombardy (Italy), Madrid (Spain), Catalonia (Spain), and in the Province of Buenos Aires (Argentina) than in Brazilian regions. Figure 2 compares the level of social isolation at a same given time for each country⁵. Considering that each state or region within a given country is facing the pandemic at the same moment in time, Figure 2 shows significant differences in the compliance rates to social distancing across subnational units. The analysis of location data shows that social distancing policies adopted by the Brazilian states indicate a quarantine compliance level similar to that observed in American states. This level of social distancing is substantially lower than that observed in regions in Italy and Spain.

³ Murray, Christopher JL; Institute of Health Metrics and Evaluation COVID-19 health service utilization forecasting team. 2020. "Forecasting the impact of the first wave of the COVID-19 pandemic on hospital demand and deaths for the USA and European Economic Area countries." medRxiv 2020.04.21.20074732.

⁴ Barberia, L.; Cantarelli, L.; Claro, M.; Moreira, N; Pereira, F.; Rosa, I; Schmalz, Pedro; Zamudio, M. (2020). "Confronting the COVID-19 Pandemic: Responses from Brazilian governments at the federal and state levels. Technical Report on Social Distancing Stringency (SDS) 2.0." This research had the collaboration of researchers from the Oxford Covid-19 Government Response Tracker (OXCGRT) and researchers from the University of São Paulo, Getúlio Vargas Foundation, and Fiocruz. The goal of the project is to produce the OXCGRT indicators for subnational governments in Brazil.

⁵ Since each country is at a different moment in confronting the pandemic, the third and fifth weeks of the pandemic were analyzed to enable a comparison between countries. We selected these weeks since during these periods there was already a greater understanding of the local transmission level of the virus.

Figure 2. Social distancing compliance in subnational units

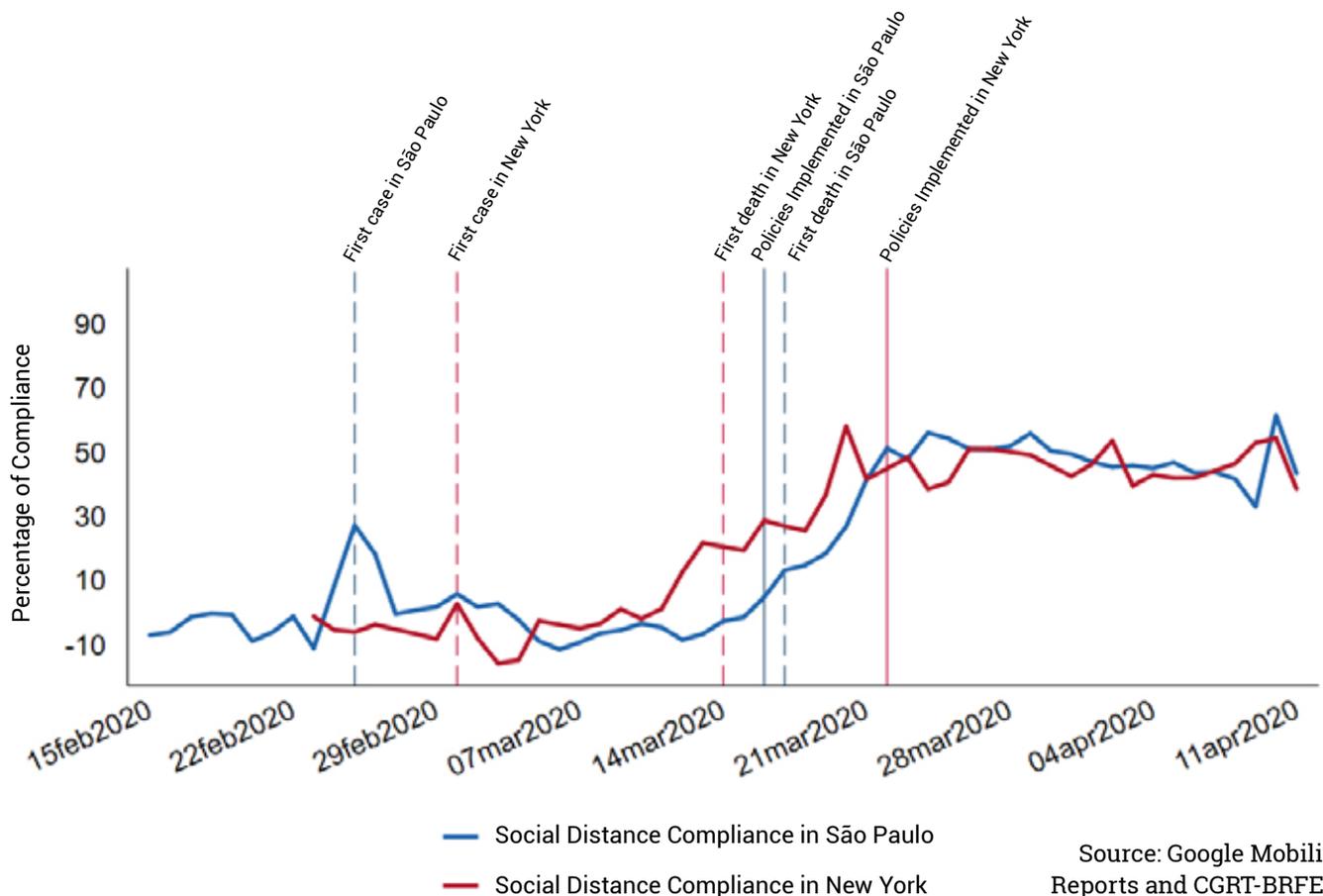


The Figure represents the first and second weeks of the pandemic and the day of April 5.

Source: Google Mobility Reports.

Figure 3 contrasts the two current epicenters of the pandemic in the USA and Brazil: New York and São Paulo. A larger share of the New York population complied to the quarantine in March compared to São Paulo. As of April, compliance rates in São Paulo and New York are similar. In both cases, social distancing compliance is much lower than found in Lombardy (Italy), Madrid (Spain), Catalonia (Spain), and in the Province of Buenos Aires (Argentina).

Figure 3. Social Distancing in São Paulo and New York (02/15 until 04/11)



Source: Google Mobility Reports and CGRT-BRFED.

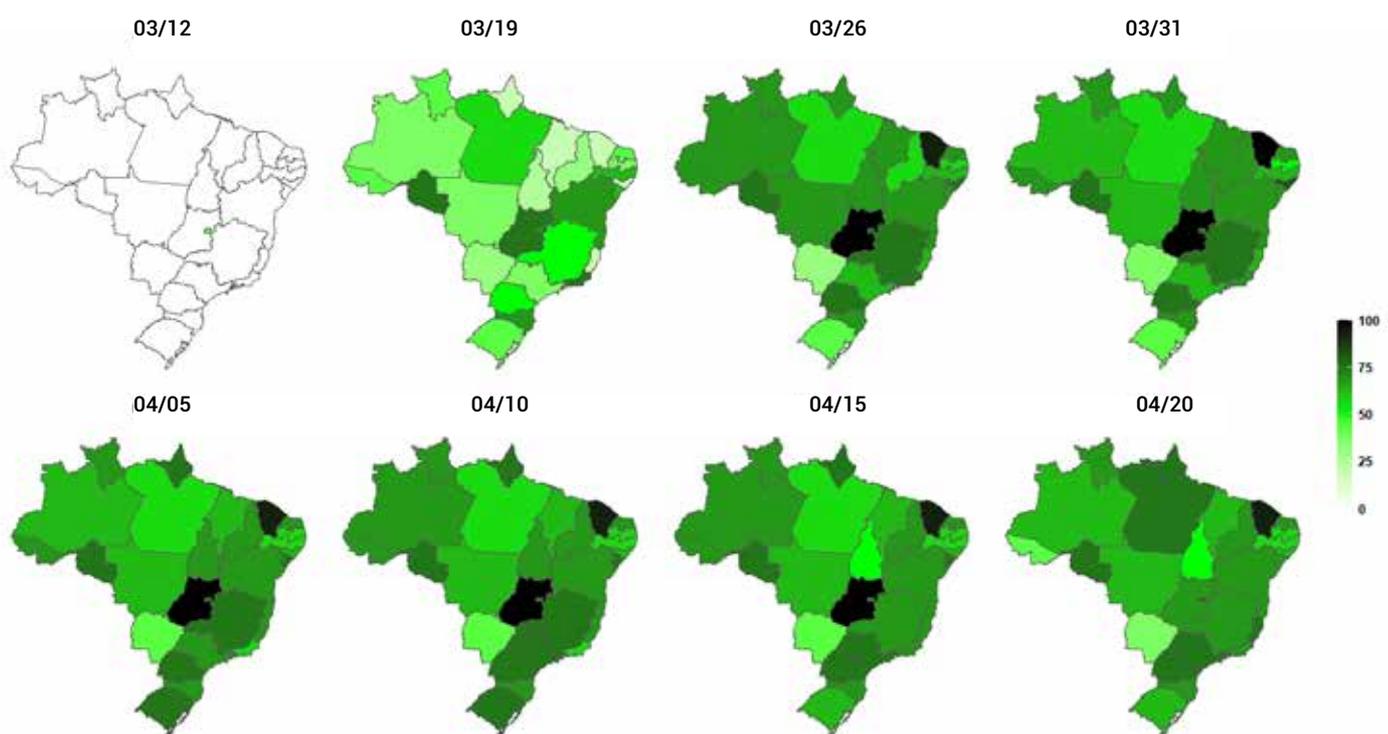
What about the Brazilian States?

In order to analyze the evolution and content of the different measures adopted by the Brazilian states, we used the Social Distancing Stringency Index (SDII), which evaluates each public policy sector according to three scales:

1. The extension of the suspension of activities. This scale ranges from 0 (zero) to 2 (two). Zero (0) indicates that no suspension measures were adopted; One (01) that there was a suggestion of suspension; and Two (02) indicates mandatory suspension.
2. The second scale assesses the geographic scope of the measures. This scale ranges from Zero (0) to One (01). Zero (0) means measures were geographically directed; and 01 means that measures were general.
3. The third dimension adds a sectoral scale to the Index. The policy coverage scale assigns a score of Zero (0) when the policies show some relaxation for non-essential sectors⁶. In the case of school closures, for example, the indicator focuses on the inclusion of public and private sectors in the measures, as well as different educational levels (Early Childhood Education, Elementary Education, Secondary Education, and others). When all sectors, except those deemed essential, are covered by suspension rules, the measures received a score of 01.

The comparison of social distancing measures adopted by the states between March 12 and April 20, 2020 reveals that state governments have adopted partial changes in social distancing policies. In general, these policies remained in effect during the analyzed period. However, some of the states began to relax or signal future relaxations of their measures as from the second week of April, especially by allowing the return of activities in the commercial and industrial sectors. States such as Acre, Goiás, Rio Grande do Sul, Sergipe, and Tocantins had some relaxation in social distancing measures in the last week.

Figure 4. Social Distancing Stringency Index (SDII) in states



Source: CGRT-BRFED.

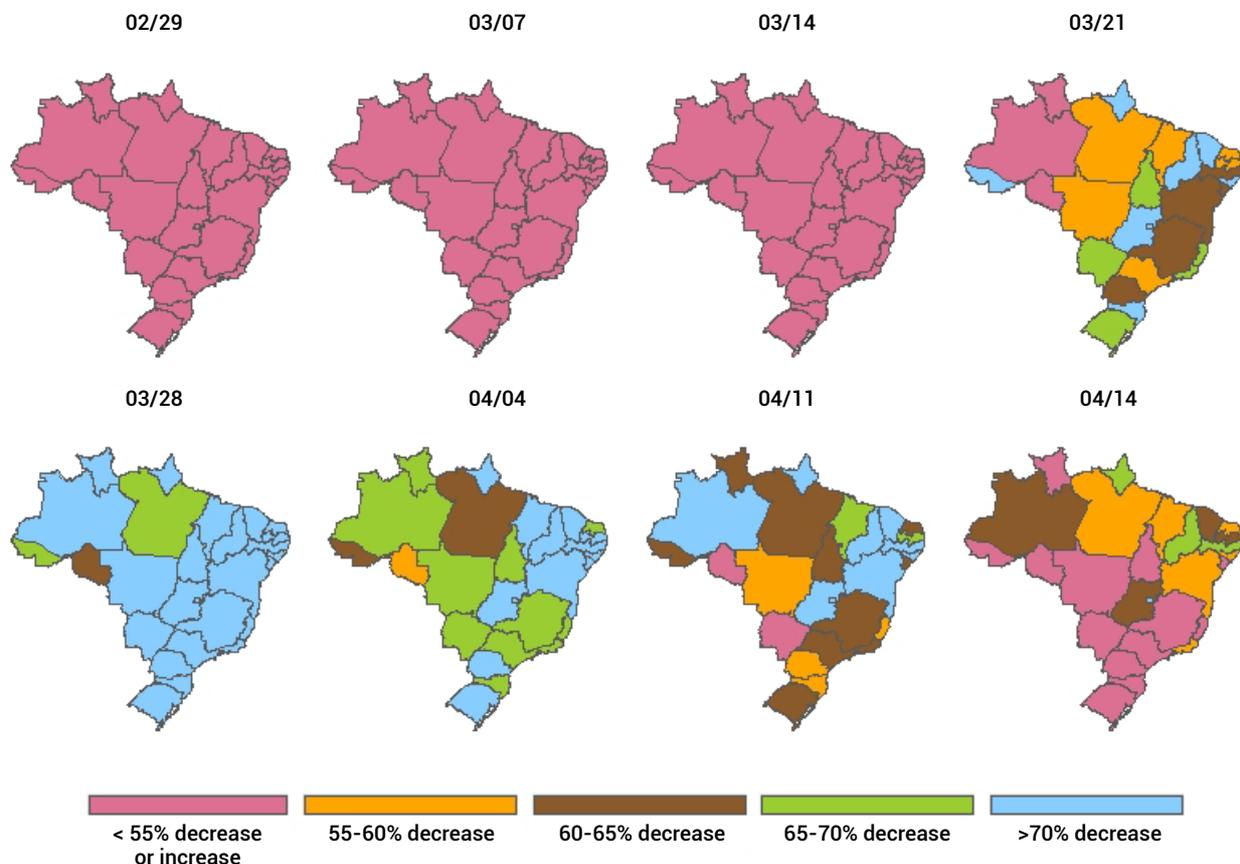
⁶ To classify essential services, we adopted the criteria used by the World Health Organization (WHO), which details which sectors must remain in operation during a global pandemic.

When we combine the three scales, Goiás and Ceará were the states that implemented more stringent social distancing measures (in black). Virtually the entire Southeast region adopted more restrictive measures, along with most states in the North region (dark green). Tocantins and Mato Grosso do Sul adopted milder social distancing measures (lighter green).

The evaluation of the population's response to social distancing measures was based on the percentage of cellphones that remained in their homes, the average distance traveled by users, and the number of non-essential trips .

Figure 5 shows, on a color scale, different degrees of quarantine compliance based on the percentage of decreasing trips to non-essential services. The March 21 map indicates significant initial compliance in several states. Quarantine compliance reached higher levels on March 28. Gradually, however, we find a reduction in social distancing. From April 11, the level of social distancing drops significantly. This becomes clear in the pink states, which indicate a reduction of less than 55% of trips.

Figure 5. Social Distancing Compliance in States.
Percentage Variation of Non-Essential trips in States



Source: Urban mobility data provided by InLoco.

Considering non-essential trips, the end of March (03/28) shows the highest percentage of decrease in trips in the vast majority of Brazilian states, indicating high compliance to social distancing. After two weeks, percentages return to the levels found in the first half of March in 12 states (04/14), including almost the entire Southeast and Midwest regions.

7 Refers to trips to establishments such as bars, bakeries, restaurants, hairdressers, bicycle shops, bookstores, shopping centers, butchers, coffee shops, car dealerships, chocolate shops, clothing and cosmetics stores, department stores, food courts, electronics store, gyms, furniture stores, computer stores, hotels, household goods stores, cinema, shoe stores, shopping centers, real estate companies, fast food restaurants, theaters, and spas.

The first conclusion that can be drawn from the trajectory of social distancing is that the stringency of the policies contributed to the population's compliance levels.

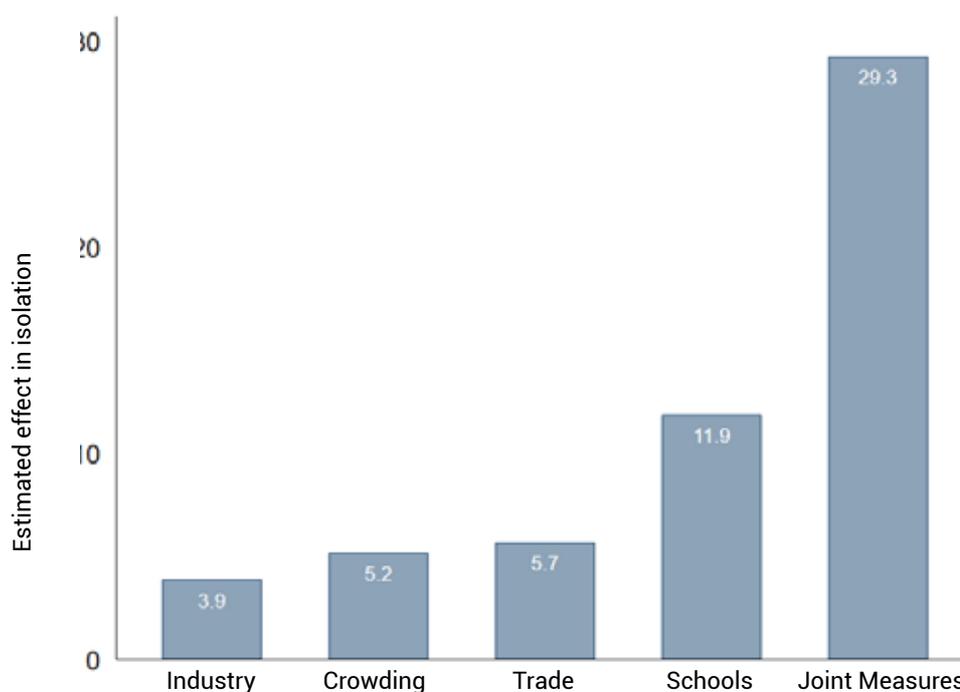
Second, the population does not immediately respond to the announcement of measures to suspend activities, which may take days or weeks.

Third, the data indicates that as of April 4, despite the growth of infections and deaths across all states in the country, compliance to social distancing dropped in all states. Despite decisions to relax restrictive measures in several states, the drop in compliance also occurred in states that did not relax their social distancing measures.

Social distancing compliance is higher in states with more stringent policies

Figure 6 indicates that the stringency of the measures relates to the increase of stay-at-home compliance by large sections of the population. More importantly, Figure 6 shows that when states adopt joint measures the effect is considerably higher, even greater than the sum of the estimated effects of each measure individually.

Figure 6. Increase in the percentage of the total population in isolation



Fonte: CGRT-BRFED.

What stands out for public managers and authorities is the importance of political coordination between the states and the federal government, as well as between the states themselves. In other words, the more consistent and cohesive the announcement of social distancing measures, the greater the positive response of the population.

At the present time, as the virus continues to expand, the number of deaths continues to increase, and we see a drop in social distancing compliance, uncoordinated relaxation will only further sharply decrease quarantine compliance.

Scenarios

In view of the possible scenarios ahead for public managers, this research designed alternatives for social distancing and population compliance based on four guidelines.

1 Maintain existing social distancing measures

- Maintaining the status quo will contribute to the continued decline in social distancing compliance levels, already very low when compared to the international context and experience. Current social distancing levels are way below those required to mitigate the effects of the pandemic. Given that the states have not yet reached the reversal of the peak of infections, higher mobility levels suggest a worsening situation in new contaminations and deaths. Nevertheless, this scenario will still have less losses than scenarios with a total or partial relaxation of social distancing measures.

2 Partial relaxation in selected sectors

- Partial relaxation of measures will contribute to the continued decline in social distancing compliance levels, which are already very low when compared to the international context. Although economic gains are expected in the short term, on account of reopening part of non-essential sectors, there is still much controversy regarding long-term gains. In general, partial relaxation tends to worsen the infection rate of the disease, population mobility, and the medium and long-term recovery of the economy⁸.

3 Increased relaxation

- Greater relaxation in population mobility suggests that the population flow will rapidly approach pre-pandemic levels, resulting in extremely high social costs. Given the present situation of contamination growth, a hypothetical return to normality can lead to swift loss of control over the evolution of the infection, with severe negative implications for society and the revival of a full functioning economy.

4 Creating more robust measures with greater enforcement

- The measures thus far adopted by Brazilian states have proved to be insufficient to engender the necessary social distancing levels. The data in this Bulletin demonstrates that joint measures for closing schools, business, and industry as well as measures that prohibit crowding result in significantly higher isolation rates than the ones obtained with the partial adoption of one or more of such measures. Countries and regions that imposed punishments for non-compliance with social distancing, such as Italy, Spain, and Argentina, although not always with the adequate timing, obtained significantly higher compliance rates. In a scenario with stronger social distancing policies, there will certainly be lower costs in the loss of lives as the COVID-19 epidemiological curve will be reversed more swiftly.

⁸ See: Correia, Luck, and Verne (2020). McKibbin and Fernando, "The Global Macroeconomic Impacts of COVID-19: Seven Scenarios". Centre for Applied Macroeconomic Analysis. Working Paper, 2020; War and pestilence as labor market shocks: U.S. manufacturing wage growth 1914–1919. *Economic Inquiry* 47(4), 711–725; and Guimbeau, Menon, and Musacchio. "The Brazilian bombshell? The long-term impact of the 1918 influenza pandemic the South American Way."

Based on these guidelines, the following table presents the alternatives, estimating their impact in social distancing compliance, the spread of COVID-19, and the economy.

The Impact of Relaxing Social Distancing Policies:
Projection of 7 possible scenarios in the short term*

| Change or maintenance of social distancing policies | Impact on Quarantine Compliance | Impact on COVID-19 Transmission** | Impact on the Economy** |
|---|---------------------------------|-----------------------------------|-------------------------|
| Maintain the current situation | ↓ | ↑ | ↓ |
| Partial relaxation of policies <i>on industry</i> , without altering other areas | ↓ 3,9 % | ↑ | ↑ |
| Partial relaxation of policies <i>on trade and services</i> , without altering other areas | ↓ 5,7 % | ↑ | ↑ |
| Partial relaxation of policies <i>on education</i> , without altering other areas | ↓ 11,9 % | ↑ | ↑ |
| Partial relaxation <i>allowing crowding</i> , without altering other areas | ↓ 5,2 % | ↑ | ↑ |
| <i>Complete</i> relaxation of policies on industry, trade and services, education, and crowding | ↓ 32 % | ↑ | ↑ |
| Increase of the <i>current restrictions</i> with new measures and enhanced surveillance | ↑ | ↓ | ↓ |

Notes: The research results are quite conclusive as to the impact predictions regarding social distancing compliance under different scenarios. Projections on epidemiological and economic impacts are based on reference international studies.

Conclusion

With more stringent social distancing measures, the maximum number of new cases per day can be reduced. This means a decrease in how long the pandemic lasts and in the amount of deaths.

The experience of other countries confirms that even with a decrease in the number of cases, countries or regions which prematurely relaxed social distancing measures experienced a resumption of the epidemic or a second wave of contamination. For this reason, the WHO has systematized the minimum required conditions so that governments may safely relax social distancing measures.

In this Bulletin, we have shown that even with more stringent measures adopted by some states, social distancing levels remain lower than the levels found in countries that managed to reduce the transmission rate of the coronavirus to the point of a reversal of the epidemiological curve.

The results presented in this Note show that the measures adopted thus far have had only a moderate effect on social distancing compliance. There is also strong evidence that the states have failed to stabilize the number of infection cases.

We are all aware that public authorities endure extremely complex situations. This Bulletin seeks to contribute so that decisions can be based on accurate information and that subjectivity and sectorial pressures do not overlay with the health of the entire Brazilian population.

Appendix

Table 1. Social Distancing Compliance in the most populous regions/states with high infection rates in Argentina, Italy, Brazil, Spain, and the USA.

| Country/Region | | First Case | Isolation one week after government measures | Isolation on the date of the first confirmed death | Isolation in the third week after the 1st case | Isolation in the fifth week | Isolation in the seventh week after the 1st case |
|----------------|----------------|------------|--|--|--|-----------------------------|--|
| Italy | | 31.01.2020 | 73.20 | -5.20 | -5.20 | 13.80 | 67.60 |
| | Lombardy | 18.02.2020 | 73.40 | -7.60 | 10.40 | 64.60 | 74.40 |
| Spain | | 27.02.2020 | 81.60 | -3.60 | 74.80 | 76.80 | |
| | Madrid | 27.02.2020 | 81.00 | 1.00 | 73.20 | 79.80 | |
| | Catalonia | 27.02.2020 | 81.60 | -3.60 | 68.40 | 76.60 | |
| USA | | 21.01.2020 | 30.40 | -10.20 | | -1.20 | -9.20 |
| | Georgia | 02.03.2020 | 27.85 | -11.48 | 29.05 | 31.37 | |
| | New York | 01.03.2020 | 48.88 | 20.32 | 44.69 | 41.68 | |
| | California | 26.01.2020 | 32.70 | -8.32 | | -9.32 | -5.64 |
| | Florida | 01.03.2020 | 41.77 | -5.24 | -5.37 | 39.45 | |
| | Texas | 12.02.2020 | 38.72 | 11.32 | -2.12 | 28.28 | 33.28 |
| | Massachusetts | 01.02.2020 | | 40.23 | | -6.33 | 38.75 |
| Argentina | | 03.03.2020 | 72.80 | 0.80 | 30.00 | 77.00 | |
| | Buenos Aires | 03.03.2020 | 72.80 | 5.80 | 31.80 | 77.60 | |
| Brazil | | 25.02.2020 | 50.40 | 10.40 | -4.40 | 56.00 | 40.80 |
| | São Paulo | 25.02.2020 | 47.60 | 13.00 | -3.60 | 55.80 | 43.60 |
| | Rio de Janeiro | 05.03.2020 | 35.80 | 32.80 | 32.80 | 50.00 | |
| | Ceará | 16.03.2020 | 58.60 | 51.20 | 56.60 | | |
| | Amazonas | 13.03.2020 | 38.20 | 40.80 | 41.60 | 59.20 | |

Note: We did not select the above cases based on their representativity in their respective countries. We selected populous states/regions in states with high incidence levels of COVID-19 infection and with different stringency measures so as to compare social distancing compliance in Brazil. In the case of Italy, we listed regions that are first level constituent entities of the Italian Republic, which constitute the second level of government. For Spain, we listed autonomous communities. For the USA, we listed the federative states. For mobility, the missing values represent cases in which the epidemic has not yet reached five or seven weeks, or cases in which Google's mobility data was not available for the corresponding week. Source: Google Mobility Reports.

ABOUT

We are over 40 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.

WHO WE ARE

Coordination Committee

Glauco Arbix (USP), João Paulo Veiga (USP), Graziela Castello (Cebrap), Fabio Senne (Nic.br), José Eduardo Krieger (InCor-Faculty of Medicine USP), Rogério Barbosa (Center for Metropolitan Studies), Luciana Lima (UFRN), and Ian Prates (Cebrap, USP, and Social Accountability International)

Scientific Coordination Lorena Barberia (USP)

Editors Glauco Arbix, João Paulo Veiga, and Lorena Barberia

Donations and contact

rededepoliticaspUBLICAS@gmail.com

Work group responsible for Technical Note 4

Coordination Lorena Barberia

Researchers Natalia de Paula Moreira (USP) • Maria Letícia Claro de F. Oliveira (USP e CEPESP/ FGV) • Luiz Guilherme Roth Cantarelli (USP) • Fabiana da Silva Pereira (USP) • Isabel Seelaender (USP e CEPESP/FGV) • Marcela Mello Zamudio (USP e CEPESP/FGV) • Pedro Schmalz (USP e CEPESP/FGV).

Instituições parceiras



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