

Covid-19: Public Policies and Society's Responses



Quality information for refining public policies and saving lives

Policy Briefing Note 11

Easing of Social Distancing Guidelines in the State of Goiás raised the death toll by 274%. A similar policy in São Paulo could triple the number of deaths in the next 30 days.

Main conclusions

1. Goiás was one of the states to adopt stringent social distancing measures. This led to an early success in containing the pandemic, but premature easing of its guidelines resulted in dramatic consequences. If Goiás had maintained social distancing measures at the higher stringency level that was in place in early April, the number of lives lost would have been 63.5% lower. This would have meant 63 deaths against the 173 deaths effectively recorded by the state of Goiás. That is, 110 deaths could have been prevented if the state had not eased social distancing measures on April 19.
2. The state of São Paulo also responded promptly by adopting policies to limit physical contact as early as March. Although such guidelines translated into only moderate levels of compliance, the state managed to slow down the expansion rate of the pandemic. However, counter to the data from its own Health Secretariat, the state decided to adopt relaxation policies as of June 1. Based on the results that were observed in Goiás and a counterfactual scenario, the Solidarity Research Network constructed two scenarios for the state of São Paulo. And in both, the death toll rises substantially.
3. In Scenario 1, if social distancing measures remain at May levels for another 30 days, the number of fatalities caused by Covid-19 would increase by 5,514 deaths. This would mean an accumulated death toll of 14,632 deaths in the state of São Paulo on July 8.

4. In Scenario 2, with the easing of social distancing measures announced at the beginning of June, the estimate is that COVID-19 deaths will increase by rise by 15,798. In other words, three times higher than the estimated 5,514 deaths if social distancing continued at May levels. Taking the situation in Goiás as reference, the total death toll in São Paulo could reach 24,986 by July 8.

Introduction

Since the novel coronavirus was first detected in Brazil at the end of February, the Solidarity Research Network has tracked the different social distancing policies across the states and showed that these measures are moderate when compared to other subnational regions in other countries¹.

Brazil's social distancing policies were much less stringent than those adopted in certain regions of Asia and Europe, which enforced more stringent lockdown rules. The Bulletins published by the Solidarity Research Network have presented evidence indicated that there is moderate adherence to social distancing across all states. Furthermore, available data have shown a sharp drop in compliance levels across several states between April and May, when mobility levels became equivalent to February 2020 levels, one month prior the adoption of the first containment measures.

Experts consensually agree that the coronavirus outbreak caused by SARS-CoV-2 has grown rapidly in Brazil, with increasing infection rates and no clear sign of stabilization².

The continued spread of the coronavirus in Brazil progresses within a context where several state and municipal governments are introducing measures to ease social distancing, including the reopening of most economic activities. These changes have taken place even in regions identified as epicenters of the pandemic in Brazil. A case in point is the state of São Paulo, which represents nearly 21 percent of the national population and accounts for approximately one fifth of all deaths attributed to Covid-19. The deaths are heterogeneously distributed, with 5 states – São Paulo, Rio de Janeiro, Ceará, Pernambuco, and Amazonas – accounting for 81% of deaths reported to date.

This Bulletin presents the case of Goiás, one of the pioneering states to adopt (successful) stricter social distancing policies, and which has since mid-April adopted relaxation measures. We then construct two possible scenarios for the state of São Paulo as it currently opts for easing social distancing policies.

Given concerns regarding low-levels of testing and underreporting of COVID-19 deaths, we performed robustness tests using alternative data sources. Therefore, in this Technical Note we based our analysis on the number of death certificates issued with a declared cause of death from Severe Acute Respiratory Failure – *Síndrome Respiratória Aguda Grave* or SRAG in the Portuguese acronym – in addition to the official number of daily deaths by COVID-19 reported by the state health secretariats of Goiás and São Paulo.³

¹ Barberia, Lorena; Cantarelli, Luiz Guilherme Roth, Moreira, Natalia de Paula, Oliveira, Maria Letícia Claro de F Seelaender, Isabel, Pereira, Fabiana da Silva, Schmalz, Pedro Zamudio, and Marcela Mello. *Bulletin # 4*. São Paulo, Solidarity Research Network on Public Policies and Society Available at: <https://redepesquisasolidaria.org/wp-content/uploads/2020/05/boletim4.pdf>.

² See, for example, Report 21 by the Imperial Health College on the evolution of Covid-19 in Brazil. Available at: <https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2020-05-08-COVID19-Report-21.pdf>.

³ The data in this report utilize the date of notification of death by Covid-19, as informed by the health secretariats, and the date of occurrence of death, as reported in the SRAG by the Ministry of Health.

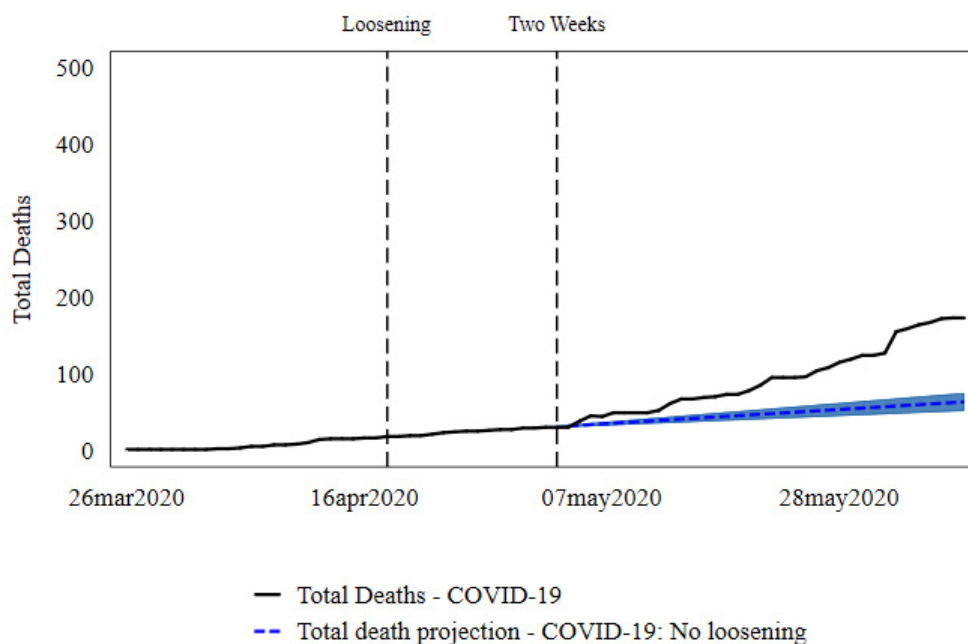
Premature Easing of Social Distancing Measures in Goiás

The relaxation of social distancing policies in the state of Goiás in April resulted in a 342% increase in the death rate from Covid-19 in May, considering the difference between the trend in the observed deaths and the trend in estimated deaths in a scenario of non-relaxation. If Goiás had continued its social distancing measures at pre-April 19 levels, the number of lives lost would have been 63.5% lower. This would have meant 63 deaths against the 173 effectively recorded. In other words, 110 deaths could have been avoided if easing had not occurred.⁴

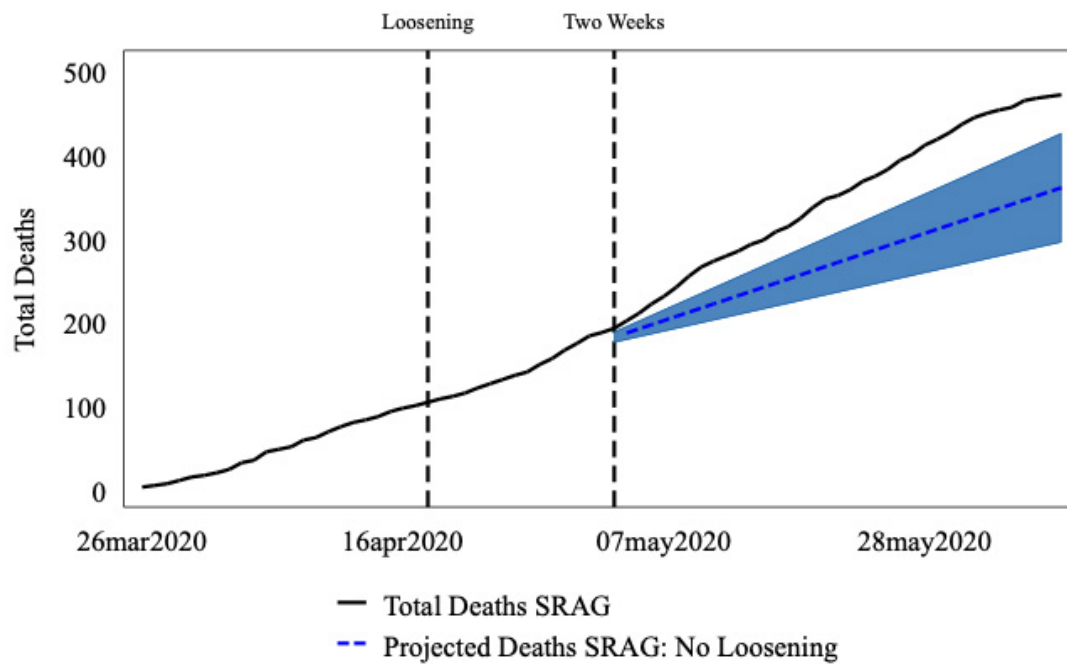
The less stringent social distancing policies that Goiás adopted in April happened concurrently with a 166% increase in the death rate by SRAG compared to March. If Goiás had maintained social distancing policies at previous levels, the number of lives lost would have been 24% lower. In other words, the state would have counted 358 deaths if prior social distancing guidelines had been upheld against the 469 deaths effectively recorded after relaxation. This means that 111 lives could have been saved.

Comparing Covid-19 versus SRAG deaths in Goiás highlights another important issue. In states where testing levels are low, there are significant differences between deaths resulting from Covid-19 and SRAG. These differences persist to this day. The data indicate that states performed an average of 700 Covid-19 tests per 100 thousand inhabitants (between February and up until June 8), while Goiás conducted only 279 tests per 100 thousand inhabitants. This further underscores the need to consider deaths registered by Covid-19 alongside other sources to mitigate uncertainty and reduce bias due to under-reporting.

Figure 1: Total Covid-19 Deaths and Projected Deaths for Goiás (03/26 - 06/08)⁵



⁴ For a comparative perspective of these numbers, the Institute of Health Metrics and Evaluation estimates that Goiás will reach 893 deaths by August 4, 2020, assuming the measures in force on May 25, 2020. See: <http://www.healthdata.org/news-release/new-ihme-projection-sees-covid-19-deaths-brazil-more-125000>. Estimates were also released for Brazilian states until May 4 by the Imperial College: <https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/report-21-brazil/>.

Figure 2: Total SRAG Deaths and Projected Deaths for Goiás (03/26 - 06/08)⁵

Reducing Social Distancing Measures in São Paulo

We constructed two scenarios for São Paulo based on data collected from states which eased social distancing measures, and use the case of Goiás.

Scenario 1: What would happen if social distancing measures remained at May levels for another 30 days?

If social distancing measures continued at May 2020 levels, the number of deaths caused by Covid-19 would increase by 5,514 until July 8. This would mean a cumulative total death toll of 14,632 in the state of São Paulo by July 8.

If social distancing measures continued at May 2020 levels, the number of deaths caused by SRAG would increase by 8,956 until July 8. This would mean a cumulative total death toll of 19,141 in the state of São Paulo by July 8.

Scenario 2: What are the projections in this Bulletin for the next 30 days due to the loosening of social distancing measures enacted in São Paulo since early June?

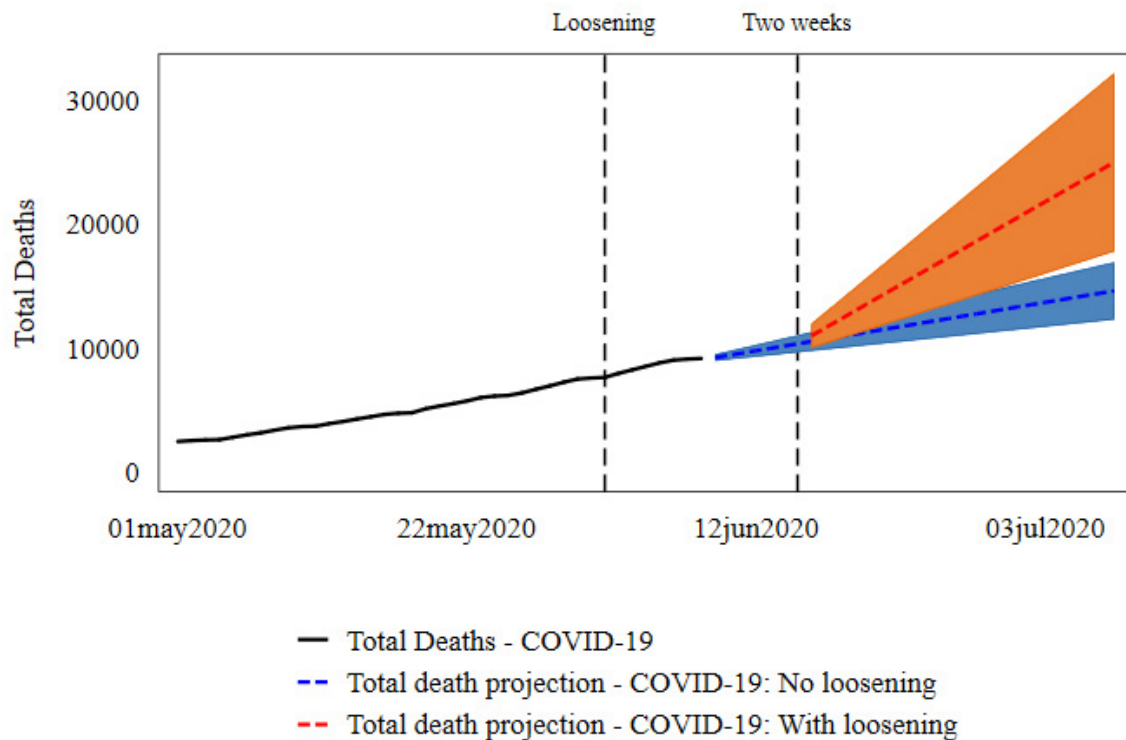
Our estimate signals a substantial increase in the amount of deaths caused by Covid-19 as a result of easing social distancing measures. Based on the consequences of easing social distancing measures in Goiás (342%), the additional number of deaths in São Paulo would be 15,798. In other words, three times higher than the 5,514 deaths projected if social distancing levels remained the same as in May. With this result, the cumulative total number of deaths in São Paulo should reach 24,986 by July 8.⁶

The projections based on an analysis of deaths by SRAG in São Paulo indicate a significant increase in deaths, based on the rate of increase in Goiás (166%). The total number of deaths in the state of São Paulo should reach 23,334 occurrences by July 8.

The projections of deaths by COVID-19 and deaths by SRAG are conservative scenarios for São Paulo given the different population densities, urbanization levels, and population size of Goiás.

⁵ We constructed these projections to allow for a precise estimate of deaths each day with a 95 percent confidence interval represented by the colored areas. The 95% confidence interval in the scenario in which social distancing measures had been maintained as they were in mid April 2020 predicts between 51 and 73 deaths. In fact, 173 deaths were reported by June 8.

Figure 3: Total Covid-19 Deaths (05/01-06/08) and Projected Deaths for São Paulo (06/09-07/08)⁷



Conclusion

Our research suggests severe risks for the population with the reduction of social distancing measures in the state of São Paulo. The population and economic structure in the state of Goiás are significantly different when compared to São Paulo. Unfortunately, the early and stringent response adopted in Goiás was soon reversed. Consequently, the state registered an increase in the transmission rate of Covid-19, thereupon reflected in the increased number of deaths.

The scenario for the state of Goiás serves as a critical warning sign for São Paulo. Since June 1, the easing of social distancing measures in a state with almost 40 million inhabitants aims to resume commerce and services in the country's economic and financial center. The nation's largest concentration of industrial activity – a sector which was never reduced or limited with formal regulations – will continue with activities, probably on a larger scale, in the upcoming weeks.

This Bulletin attempts to alert public authorities and society in general about the risks associated with the state government's decision as it directly puts precious human lives at risk.

⁶ For a comparative perspective of these numbers, the Institute of Health Metrics and Evaluation estimates that São Paulo will reach 32,043 deaths by August 4, 2020, assuming the measures in force in March 2020. See: <http://www.healthdata.org/news-release/new-ihme-projection-sees-covid-19-deaths-brazil-more-125000>. Estimates were also released for Brazilian states until May 4 by the Imperial College, see: <https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/report-21-brazil/>. The estimates by the Imperial College are considerably larger.

⁷ We constructed these projections to allow for a precise estimate of deaths each day with a 95 percent confidence interval represented by the colored areas. In the scenario with a reduction in social distancing policies, the 95% confidence interval ranges from 17,801 to 32,160 deaths, and with the maintenance of social distancing policies at May 2020 levels, the confidence interval ranges from 12,319 to 16,946.

ABOUT

We are over 70 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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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), Ian Prates (Cebrap, USP, and Social Accountability International), Graziela Castello (CEBRAP) and Lorena Barberia (USP)

Scientific Coordination Lorena Barberia (USP)

Editors Glauco Arbix, João Paulo Veiga, and Lorena Barberia

Donations and contact redpesquisasolidaria@gmail.com

Consultants Alvaro Comin (USP) • Diogo Ferrari (Universidade de Chicago) • Flavio Cireno Fernandes (Prof. da Escola Nacional de Adm. Pública e Fundação Joaquim Nabuco) • Márcia Lima (USP e AFRO-Núcleo de Pesquisa e Formação em Raça, Gênero e Justiça Racial) • Marta Arretche (USP e Centro de Estudos da Metrópole - CEM) • Renata Bichir (USP e CEM) • Guy D. Whitten (Texas A&M University) • Arachu Castro (Tulane University)

Design Claudia Ranzini

Translation Paulo Scarpa

Work group responsible for Technical Note 11

Coordination Lorena Barberia

Researchers Natália de Paula Moreira (USP) • Maria Letícia Claro de F. Oliveira (USP and CEPESP/FGV) • Luiz Guilherme Roth Cantarelli (USP) • Isabel Seelaender (USP) • Marcela Mello Zamudio (USP and CEPESP/FGV) • Pedro Schmalz (USP and CEPESP/FGV)

Partners



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