

Covid-19: Public Policies and Society's Responses



Quality information for refining public policies and saving lives

Policy Briefing Note 21

The use of masks is a low cost and efficient measure to contain the transmission of Sars-Cov-2. Brazil's Federal Government has underestimated its importance. States have used the measure as a means for relaxing social distancing policies rather than for containment.

Main Conclusions

- The use of masks to contain the spread of respiratory droplets is a proven pandemic control procedure and persistently recommended by the World Health Organization (WHO).
- According to the Institute of Health Metrics and Evaluation (IHME) at the University of Washington, the use of masks by 95% of the Brazilian population could prevent 25,000 deaths in the country by December 1.
- Brazil lacked a national mask-wearing policy as late as July. Furthermore, the Federal Government did not coordinate or regulate mask-wearing mandates.
- All Brazilian states, as well as Distrito Federal, have adopted measures requiring the use of masks. By the end of April, 13 states had adopted some measure to mandate the use of masks in public spaces. By the end of May, 24 states had enacted mandatory mask-wearing measures.
- Most states adopted measures to encourage the use of masks while simultaneously relaxing social distancing measures pertaining to businesses, services, and public crowding.

- The lack of enforcement, programs, and mass actions, along with disinformation, downgraded the importance of mask-wearing as well as the protection capacity of the most vulnerable population.
- In light of these events, counter to the experience of other countries, masks have ceased to be effective in Brazil, despite their low cost, and have had marginal impact in containing COVID-19 infection and death rates.

Introduction

Recent disputes between President Jair Bolsonaro, the National Congress, and the states have taken aim on the mandatory use of masks as a method for containing COVID-19 infection rates. Since April, several governors and state Legislative Assemblies have decreed the mandatory use of masks following the recommendations of world health authorities. At the federal level, the National Congress approved Bill 1562 in May 2020¹. On July 6, President Jair Bolsonaro vetoed 25² clauses in the bill that mandated the use of masks in public settings (Law 14.019/2020), which incited fierce opposition from Congress and the Federal Supreme Court. On August 3, Supreme Court Minister Gilmar Mendes³ overruled one of the vetoes, and established the mandatory use of masks in prison units. Finally, on August 18, the National Congress and the Senate revoked the remaining presidential vetoes⁴.

This brief summary shows that only since August 18 was the use of masks in “commercial and industrial businesses, religious temples, educational establishments, and other enclosed facilities where people gather” made legally mandatory throughout the national territory, which is more than five months after the first registered COVID-19 death in Brazil. Despite delays in responsiveness, the Judiciary and the Federal Congress played a crucial role in challenging the Executive in its systematic approach to understate the pandemic and fail to protect the population, even with the use of these low-cost devices.

In this policy brief, the Solidarity Research Network analyzes the policy stringency level regarding the mandatory use of masks in each state. The analysis encompasses the period from the beginning of the pandemic until August 20. Given the Federal Government’s uncoordinated strategies⁵, even the significant efforts of state governments to enact social distancing measures⁶ revealed their weakness in promoting the use of masks for containing the pandemic. States have adopted mask-wearing mandates together with gradually relaxing social distancing measures. These policies occurred amidst a high-risk context using the Harvard Global Health Institute classification of COVID-19-risk. As a result, the protection potential of masks to has been reduced, and mask mandates have had a limited impact on controlling infection and death rates in Brazil.

¹ The Senate amended and voted the bill on June 9. See: Brazil, Law 14.019, July 2, 2020. Amends Law No. 13.979, February 6, 2020. Diário Oficial da União, Brasília, DF, July 2. 2020. http://www.planalto.gov.br/ccivil_03/_Ato2019-2022/2020/Lei/L14019.htm.

² <https://www.camara.leg.br/noticias/673471-lei-que-obriga-o-uso-de-mascaras-em-todo-o-pais-e-sancionada-com-17-vetos>.

³ “STF - MC ADPF: 714 DF - DISTRITO FEDERAL 0097644-53.2020.1.00.0000, Rapporteur: Min. GILMAR MENDES, Trial Date: 08/03/2020, Publication Date: DJe-194 08/05/2020”

⁴ <https://www.camara.leg.br/noticias/685851-congresso-derruba-veto-de-bolsonaro-ao-uso-obrigatorio-de-mascaras-em-lojas-e-escolas>.

⁵ See: Bulletin #20 of the Solidarity Research Network

⁶ See: Bulletin #4 of the Solidarity Research Network

The use of face masks in mitigating the spread of the pandemic

Successful policies for coping with COVID-19 include a combined set of measures including: prioritizing testing, isolating people during the infectious period, tracing contacts, treating and quarantining infected people, developing antivirals, new drugs, and vaccine research. Masks belong to a set of essential non-pharmacological measures to reduce the spread of COVID-19.

As specified by the US Centers for Disease Control and Prevention (CDC),⁷ the use of masks helps to prevent respiratory droplets from traveling into the air and potentially infecting people. This source control reduces the risk of virus spread when speaking, coughing, or sneezing, especially in situations when social distancing is unfeasible, as in public transport. The use of masks is especially important when considering the transmission of the new coronavirus by asymptomatic individuals (Komplas et al, 2020), which may represent up to 70% among those infected, according to the CDC⁸.

In early April, the WHO released a specific guideline on the importance of wearing masks, a position since reiterated several times⁹. When analyzing protection at the individual level, researchers identified that masks were effective in filtering smaller (<300nm) and larger (>300nm) particles. Efficiency is even greater when masks have more than one layer of fabric, circa 80% for larger particles and 90% for smaller particles (Konda et al, 2020).

The Use of Masks in Brazil and Other Countries

The Institute of Health Metrics and Evaluation, an independent research center at the University of Washington, created different projections on the increase in COVID-19 cases and deaths in several countries. For Brazil, the Institute estimated that the use of masks by 95% of the population could prevent circa 25,000 COVID-19 deaths by December 1 (Stein et al, 2020).

Even with these projected benefits, mandated mask-wearing varied across countries as did the existence of legal provisions and the destined spaces and settings for their use.

In China, people were advised by the central government to wear disposable surgical masks in public places¹⁰. The Shanghai government, for example, mandated the use of masks in public places¹¹. In Germany, masks became imperative for public transport and commercial businesses since April.

In India, on April 3, the central government released a manual recommending the use of masks when leaving home. As in Germany, some areas in India, such as Odisha and Maharashtra, mandated the use of masks in public places¹². In the United States, similarly to Brazil, the Trump administration did not adopt measures to enforce the mandatory use of masks. Nonetheless, 20 American states have adopted mask-wearing mandates¹³.

⁸ See: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html#recent-studies>; <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html#recent-studies>.

⁹ World Health Organization. (2020). "Advice on the use of masks in the context of COVID-19: interim guidance, 6 April 2020." World Health Organization. The Portuguese text version is available at: <https://iris.paho.org/handle/10665.2/51994> and World Health Organization. (2020). "Advice on the use of masks in the context of COVID-19: interim guidance, 5 June 2020." World Health Organization.

¹⁰ <https://web.archive.org/web/20200405123936/http://en.nhc.gov.cn/att/20200207/1581067840474054531.jpg>

¹¹ http://www.xinhuanet.com/english/2020-02/08/c_138766346.htm

¹² http://psa.gov.in/sites/default/files/pdf/protective_cover_face_mouth/English.pdf

¹³ <https://www.npr.org/sections/coronavirus-live-updates/2020/07/10/889691823/more-than-20-u-s-states-now-require-face-masks-in-public>

There have been occasional fierce reactions against the use of masks in the USA, going as far as the enactment of anti-mask laws vetoing its use in different settings. In Brazil, demonstrations against the use of masks had little support, albeit always with the active participation of the President of the Republic. The lack of a national mask-wearing policy is in tune with these contestations. As has occurred in other countries, however, several states established their own measures and, at present, all states have some measure to mandate the use of masks in public settings.

Table 1 compares mask-wearing compliance rates across five countries in four different periods. Among the analyzed countries, Brazil stands out due to its lack of a national mask-wearing policy. Additionally, the data suggests that mask-wearing compliance in Brazil followed the rise in the number of deaths and infections after the month of April when mask-wearing mandates were first introduced in some states. The surge in compliance in April brought Brazil closer to countries such as the USA and Germany. Other countries, such as China and India, and in contrast, showed high and more homogeneous mask-wearing compliance rates throughout the entire analyzed period.

Table 1. Mask-wearing Compliance in Germany, Brazil, China, USA, and India according to % of respondents who claim to wear masks in public

Period	Germany	Brazil	China	USA	India
March 27-30 ^{1,2}	7%	29%	83%	17%	65%
May 25-30 ^{1,2}	64%	93%	83%	68%	82%
July 27-30 ¹	65%	–	80%	77%	–
August 5-18 ^{1,2}	–	92%	81%	81%	81%

Sources: YouGov, Datafolha, Ipsos and Petherick, Kira, Goldszmidt and Barberia (2020).

Notes (1) Data for Germany, China, USA and India were obtained from YouGov (<https://yougov.co.uk/topics/international/articles-reports/2020/03/17/personal-measures-taken-avoid-covid-19>).

(2) We obtained the March data for Brazil from the Ipsos website. The data for May refer to the data for 8 capitals in 8 states between May 7 and 27: Fortaleza, Goiânia, Manaus, Porto Alegre, Recife, Rio de Janeiro, Salvador, and São Paulo. Cf. Petherick, Anna, Beatriz Kira, Rafael Goldszmidt, and Lorena Barberia. 2020. "Do Brazil's COVID-19 government response measures meet the WHO's criteria for policy easing?" Blavatnik School Working Paper. Blavatnik School, Oxford University, June, 2020. IPSOS data can be found at: <https://www.ipsos.com/en/more-people-say-theyre-wearing-masks-protect-themselves-covid-19-march> and the Datafolha data at: <https://www1.folha.uol.com.br/equilibrioesaude/2020/08/isolamento-despenca-enquanto-sobe-otimismo-com-a-pandemia-mostra-datafolha.shtml>.

The data reveals an increase in mask-wearing compliance in Brazil since May. However, a survey conducted by Datafolha in August revealed that 92% of Brazilians claimed to wear masks in public, but 52% of these same respondents stated that they did not observe similar behavior in other people around them. This type of inconsistency motivated the researchers of the Solidarity Research Network to examine the state mandates.

State Mask-Wearing Mandates

Above all else, states mandated the use of masks as part of their preparation process for easing Social Distancing Policies. The Solidarity Research Network evaluated state decrees and laws from the beginning of the year to the present date, August 20, 2020. States that did not enact any restrictions regarding the use of masks were coded with a score of 0, while states that recommended the use of masks when leaving home (or inside establishments) received a score of 1. States that mandated the use of masks for part of the population (employees and customers in operating establishments and services, public transport) received a score of 2. Finally, states that enacted mask-wearing mandates for the entire population when leaving home received a score of 3.

We also classified each measure geographically. We classified measures as stringent if valid for state capitals, and even more stringent if applied to the entire state. For this policy brief, the index has been scaled to a measurement ranging from 0 (no stringency) to 100 (highest possible stringency).

The indicator for monitoring the use of masks is part of the Social Distancing Policy Stringency Index (SDPS) of the COVID-19 Government Response Tracker for the Brazilian Federation database¹⁴, which monitors, in on a daily basis, the policies adopted by each state for addressing the new coronavirus pandemic and the control measures adopted concerning personal mobility and economic activities. The methodology is inspired on the database developed by researchers at the Blavatnik School of Government, University of Oxford.

Table 2 shows the months in which states adopted stringent mask-wearing measures. In general, states have recommended specific sectors and groups to wear masks, such as workers exposed to constant contact with the public. The first states to mandate the use of masks were Roraima, Sergipe, and Tocantins.

On March 20, Sergipe began to demand the use and distribution of masks for employees in commercial and industrial establishments. Tocantins followed, and on March 25 established the mandatory use of masks for road transport system employees. Both measures, however, were extremely mild given their generality and limited scope.

Table 2. When did States Adopt Mask-Wearing Policies?¹⁵

Timing of mask-wearing policies	States
By the end of April	Acre, Amapá, Distrito Federal, Goiás, Maranhão, Minas Gerais, Mato Grosso, Paraíba, Piauí, Paraná, Rondônia, Santa Catarina, Sergipe
By the end of May	Alagoas, Amazonas, Bahia, Espírito Santo, Pará, Pernambuco, Rio Grande do Norte, Roraima, Rio Grande do Sul, São Paulo, Tocantins
By the end of June	Ceará, Rio de Janeiro, Mato Grosso do Sul

Source: CGRT-BRFED. Note. 1. Santa Catarina adopted mandatory mask usage, but only in private establishments. Public spaces were free to decide on mask-wearing guidelines.

¹⁴ Barberia, et al 2020

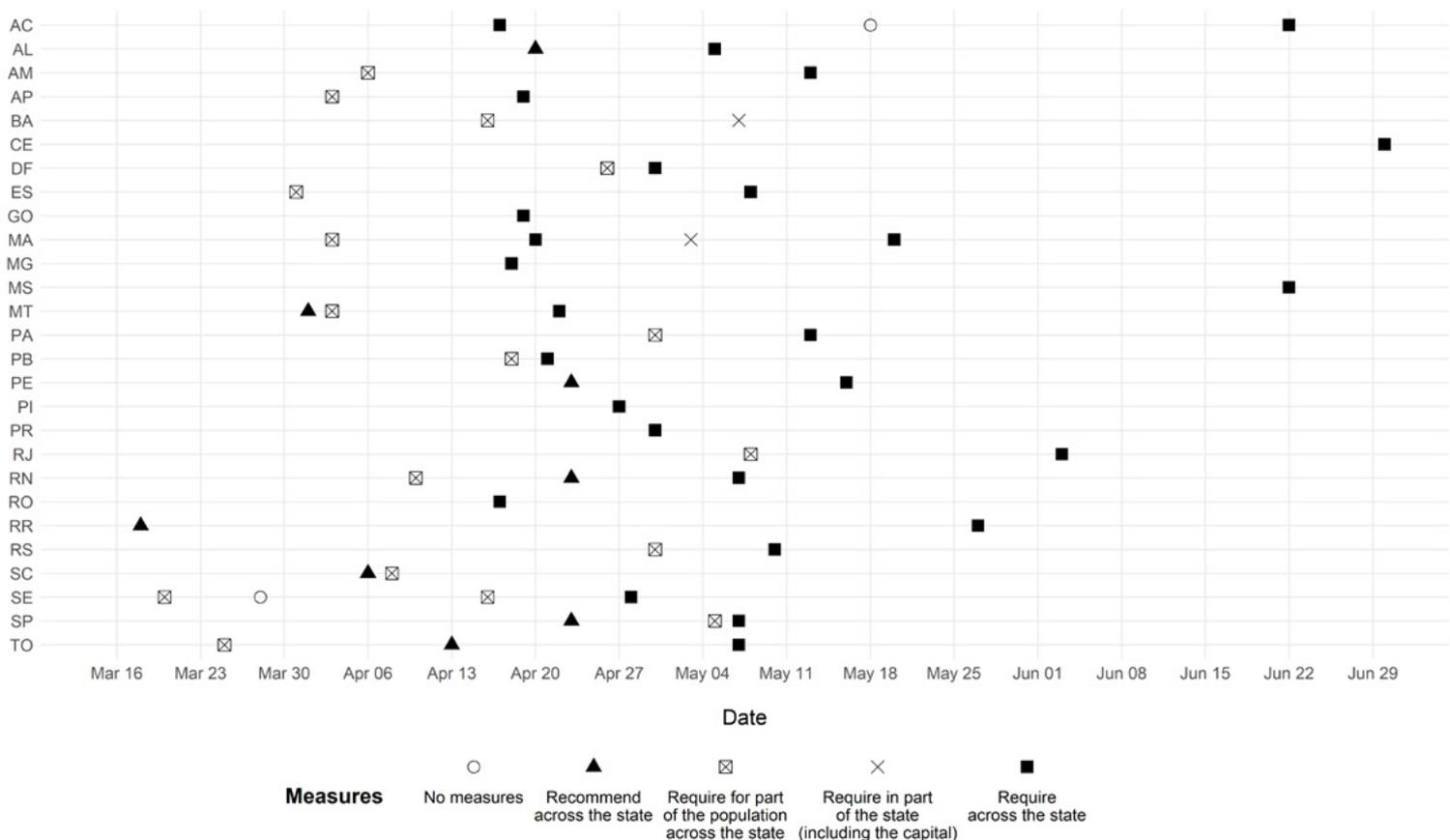
¹⁵ The date does not refer to the implementation of mask-wearing measures, but when the states effectively mandated the use of masks to reach the maximum score for this indicator in the SDPS index.

Most states first enacted stricter and broader mask-wearing policies in April. On April 17, by means of decree 5812, the state of Acre instituted the mandatory “use of facial masks for access, permanence, and flow in public and private spaces and settings open to the public”. On the same day, Rondônia also introduced a decree (#24,961), valid for the entire state, mandating the use of masks outside the home.

The first states to reach high stringency levels in mask-wearing policies were states without a high number of confirmed cases. By late April, 12 states had made masks mandatory for the entire population when leaving home. Santa Catarina was the 13th state to reach its highest stringency level that month. However, the state enacted ambiguous recommendations as to which environments demanded the use of masks, and therefore did not reach the maximum score according to the Solidarity Network indicator.

The remaining states decreed the use of masks as part of their measures to reopen commercial businesses by late June. Figure 1 shows the exact date when each state adopted measures mandating the use of masks. The states that took the longest to adopt any measure were Rio de Janeiro on June 3, Mato Grosso do Sul on June 22, and Ceará on June 30.

Figure 1. Stringency Stages of Mask-Wearing Mandates in the 26 States and Distrito Federal from March to July 2020.



Source: CGRT-BRFED

The months of April and May saw the accelerated spread of infections alongside extremely diverging toughening and easing policy strategies across states. Table 3 shows that in these same months states enacted or approved laws mandating the widespread use of masks as part of the strategy to relax social distancing measures. In previous bulletins, the Solidarity Research Network adopted the Harvard Global Health Institute criteria to classify Brazilian states according to the COVID-19 incidence risk level¹⁶. States with over 25 new cases per 100,000 inhabitants were classified as high risk; between 10 and 25 as moderate-high risk; between 1 and 10 as moderate-low risk; and states with a daily incidence lower than 1 new case as low-risk. Table 3 shows the risk level of states when they first adopted mask-wearing policies, as well as the risk level of each state on August 18.

Table 3. Date when each state reached the highest Mask-Wearing Stringency level compared to COVID-19 Risk Level

State	Date in which state reached the maximum level of stringency in mask-wearing	Policy Enactment Type	COVID-19 ³ Risk Level in the week in which the Mask Mandate was adopted	Current COVID-19 Risk Level (week of 08/18)
AC	04/17/2020	Decree	Moderate-Low	Moderate-High
AL	05/05/2020	Decree	Moderate-Low	Moderate-High
AM	05/13/2020	Decree	Moderate-High	Moderate-High
AP	04/19/2020	Decree	Moderate-Low	Moderate-High
BA	None ¹	Law	Moderate-Low	Moderate-High
CE	06/30/2020	Decree	Moderate-High	Moderate-High
DF	04/30/2020	Decree	Moderate-Low	High
ES	05/08/2020	Decree	Moderate-Low	High
GO	04/19/2020	Decree	Low	High
MA	04/20/2020	Decree	Moderate-Low	Moderate-High
MG	04/18/2020	Law	Low	Moderate-High
MS	06/22/2020	Decree	Moderate-Low	High
MT	04/22/2020	Law	Low	High
PA	05/13/2020	Law	Moderate-Low	Moderate-High
PB	04/21/2020	Decree	Low	Moderate-High
PE	05/16/2020	Decree	Moderate-Low	Moderate-High
PI	04/27/2020	Decree	Low	High
PR	04/30/2020	Law	Low	Moderate-High
RJ	06/03/2020	Law	Moderate-High	Moderate-High

¹⁶ Classification derived from the incidence of new daily COVID-19 cases per 100 thousand inhabitants in the last 7 days based on data from the state health departments.

State	Date in which state reached the maximum level of stringency in mask-wearing	Policy Enactment Type	COVID-19 ³ Risk Level in the week in which the Mask Mandate was adopted	Current COVID-19 Risk Level (week of 08/18)
RN	05/07/2020	Decree	Moderate-Low	Moderate-Low
RO	04/17/2020	Decree	Low	High
RR	05/27/2020	Decree	Moderate-High	High
RS	05/10/2020	Decree	Moderate-Low	Moderate-High
SC	None ²	Ordinances	Moderate-Low	High
SE	04/28/2020	Decree	Moderate-Low	Moderate-High
SP	05/07/2020	Decree	Moderate-Low	Moderate-High
TO	05/07/2020	Decree	Moderate-Low	High

Sources: CGRT-BRFED and risk level based on the Harvard Global Health Institute (HGHI) criteria.

Notes (1) Bahia did not achieve the maximum score as it did not generalize measures for the entire State. For more information, see Bahia. Law No. 14261, April 29, 2020: https://www.normasbrasil.com.br/norma/lei-14261-2020-ba_394181.html.

(2) Santa Catarina published several ordinances addressing the use of masks in different types of establishments (such as industrial activities, shopping malls, gyms, etc.). However, the state did not mandate the use of masks for all people attending public spaces.

By comparing the date of enactment of mask-wearing mandates, the COVID-19 incidence risk level remained the same in 4 Brazilian states and worsened in 22 states and Distrito Federal. Rio Grande do Norte was the only state in which the incidence risk remained Moderate-Low. In all other states, this value remained at alarming levels, indicating that the use of masks did not translate into an efficient policy to contain the pandemic.

Table 4 analyzes the variations in the stringency index among the groups of states that adopted mandatory mask usage within the same period. We find that the average Social Distancing Policy Stringency (SDPS) Index decreases following the implementation of mask mandates.

Table 4. Changes in Social Distancing Policy Stringency (SDPS) and Business Closures Stringency (before and after mask mandates)

Period when mask-wearing policies were adopted	Index of SDPS (average for all states) (0 to 100) 0 (no stringency) to 100		Stringency of Business Closures (average for all states) (0 to 100) 0 (no stringency) to 100 (highest possible)	
	Before mask mandates	After mask mandates	Before mask mandates	After mask mandates
(By the end of April)	61.62	56.73	72.5	63
(As of May)	57.31	55.08	60	50

Source: CGRT-BRFED.

The group of states that enacted mask mandates by the end of April had an 8% decrease in the social distancing stringency index, whereas the group that adopted such policies between May and June had an approximately 3.5% decrease in the SDPS index on average. If we only consider the index measuring business closure stringency policies, the group that adopted mask mandates earlier decreased business closure stringency by 13.1%, while a decrease of 16.6% in the stringency index was associated to the group of states that implemented such measures from May onwards.

In fact, states enacted mask-wearing policies largely as a requirement for reopening commercial businesses. Of the 24 states who enacted mask mandates, 16 went on to relax their business closure policies, thus reinforcing the overall findings for all states as reported in Table 4.

Conclusion

The Solidarity Research Network underscores that the justifications cited for relaxing COVID-19 containment measures in the states have sought to convey the notion that the pandemic is coming to an end. In this policy brief, we took into account the widespread lack of information regarding the use of masks, mainly owing to the absence of national government-led programs and campaigns. Mask-wearing, which is sporadic and restricted to targeted sectors, was never part of an integrated national strategy to combat the pandemic, thus compromising the effectiveness of this policy.

The COVID-19 virus is here to stay. Humanity will have to live with its presence for a long time, even with a vaccine, and masks tend to become part of the everyday life in societies.

Brazil surpassed the tragic mark of 110 thousand COVID-19 deaths. As such, it surpassed the US mortality rate in cases and deaths, measured in relation to 100,000 people.

It is high time that authorities and public managers fully assume their responsibilities, starting by not minimizing the protection level of masks, promoting awareness-raising campaigns for the population, and not neglecting the use of this low-cost equipment to reduce the COVID-19 incidence risk in the country.

References

Barberia, Lorena G, Natália de Paula Moreira, Anna Paula Ferrari Matos, Luiz Cantarelli, Maria Leticia Claro, Isabel Seelaender Costa Rosa, Pedro de Santana Sch-malz, Marcela Zamudio, Paulo Agabo & Dara Aparecida (2020). COVID-19 Government Response Tracker for the Brazilian Federation (CGRT-BRFED). Sao Paulo, USP.

Komplas, M, Morris, CA, Shenoy, ES. "Universal Masking in the Covid-19 Era." *New England Journal of Medicine* 2020; 383:e9. DOI: 10.1056/NEJMc2020836. 2020 July, 9.

Konda A, Prakash A, Moss GA, Schmoldt M, Grant GD, Guha S. "Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks." *ACS Nano*. 2020 Apr 24.

Stein et al. "COVID-19 Pandemic in Brazil: Institute for Health Metrics and Evaluation Projections and the Ensuing Evolution." Preprint. DOI: <https://doi.org/10.1590/SciELOPreprints.1110>

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.

Visit our site: <https://redesquisasolidaria.org/>

Follow us at



WHO DOES

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 redesquisasolidaria@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)

Design Claudia Ranzini

Translation Paulo Scarpa

Work group responsible for Technical Note 21

Coordinators Lorena Barberia (USP) and Tatiane C Moraes de Sousa (Fiocruz)

Researchers Luiz Guilherme Roth Cantarelli (DCP-USP), Maria Letícia Claro (DCP-USP and CEPESP/FGV), Isabel Seelaender Costa Rosa (DCP-USP), Pedro H. de Santana Schmalz (DCP-USP and CEPESP/FGV), and Marcela Mello Zamudio (DCP-USP and CEPESP/FGV)

Partners



Support

