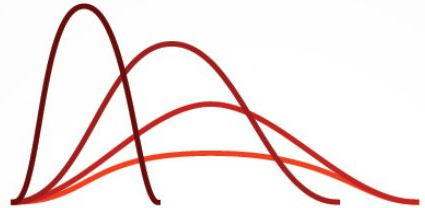

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São Paulo School of
Advanced Science on
Epidemic Preparedness

School of Public Health, Universidade de São Paulo
July 10-22, 2023

Public Policy Evaluation during COVID-19: Lessons for Pandemic Preparedness

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Saturday, July 15th 2023

Outline

1. Context
2. Case Study 1: Speed of Response, Data Quantification and Forecasting
3. Case Study 2: Hospital Beds
4. Case Study 3: Health Services Delivery Inequality
5. Concluding remarks

Context

In the middle of a health emergency, there are numerous challenges:

- limited or missing data
- high uncertainty
- power asymmetries
- information asymmetries
- sophisticated analyses/models are necessary, but insufficient
- societies/governments demand short-term problem-solving solutions
- repeated failures, lack of transparency fuel lack of public trust in our collective ability to solve problems and prepare for the future.

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Back to the Future: Pandemic Preparedness Indicators

The 140 GHS Index questions are organized across six categories:

1. PREVENTION
Prevention of the emergence or release of pathogens

2. DETECTION AND REPORTING
Early detection and reporting for epidemics of potential international concern

3. RAPID RESPONSE
Rapid response to and mitigation of the spread of an epidemic

4. HEALTH SYSTEM
Sufficient and robust health system to treat the sick and protect health workers

5. COMPLIANCE WITH INTERNATIONAL NORMS
Commitments to improving national capacity, financing plans to address gaps, and adhering to global norms

6. RISK ENVIRONMENT
Overall risk environment and country vulnerability to biological threats

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Back to the Future: Pandemic Preparedness Indicators

- What happened?
- What we do?
- What do we NEED to do NOW

Case Study 1:
Quantifying and Forecasting the Magnitude of the Crisis

Case Study 1: Quantifying and Forecasting

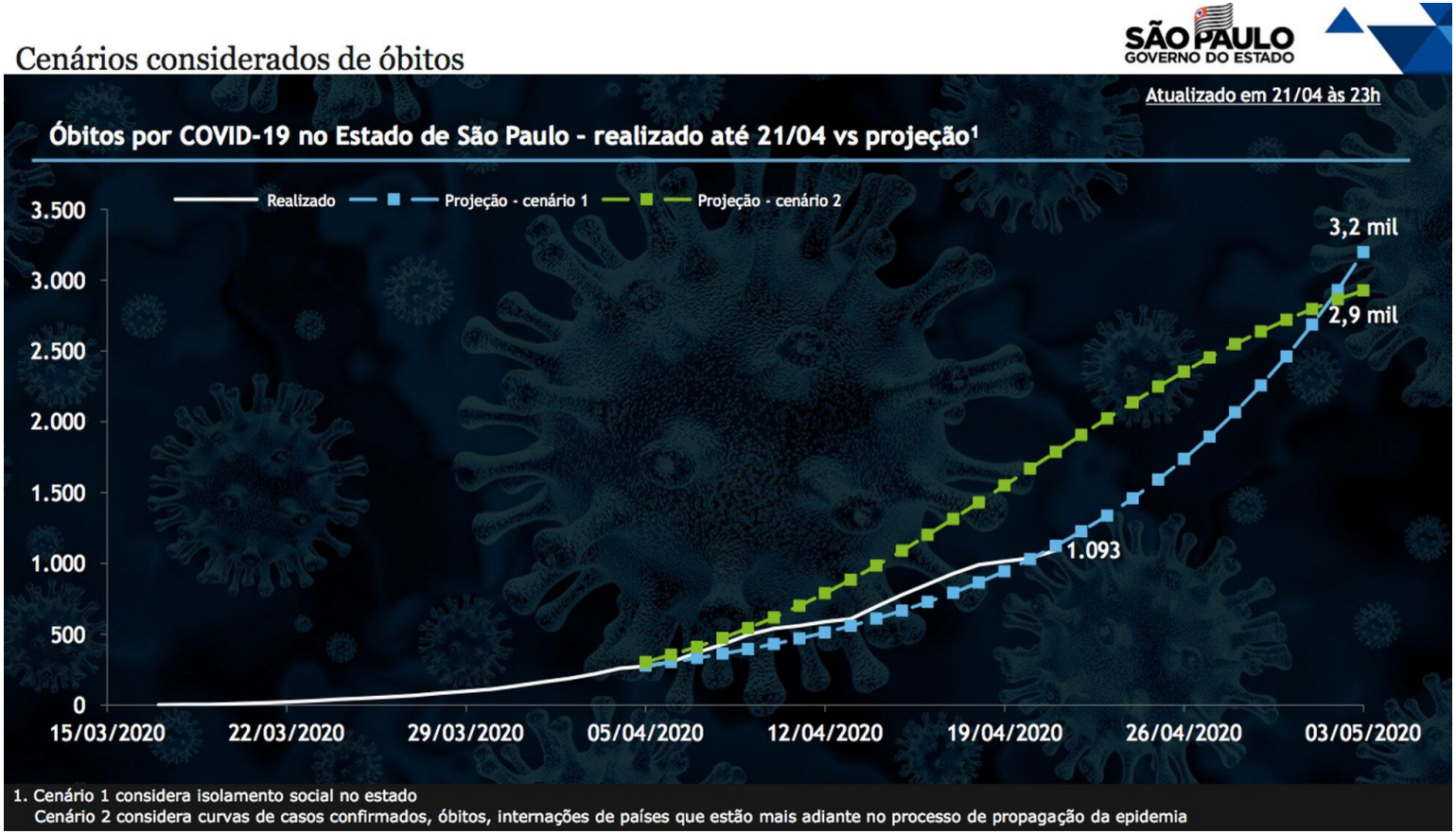
EL PAÍS Brasil ASSINE

PANDEMIA DE CORONAVÍRUS >

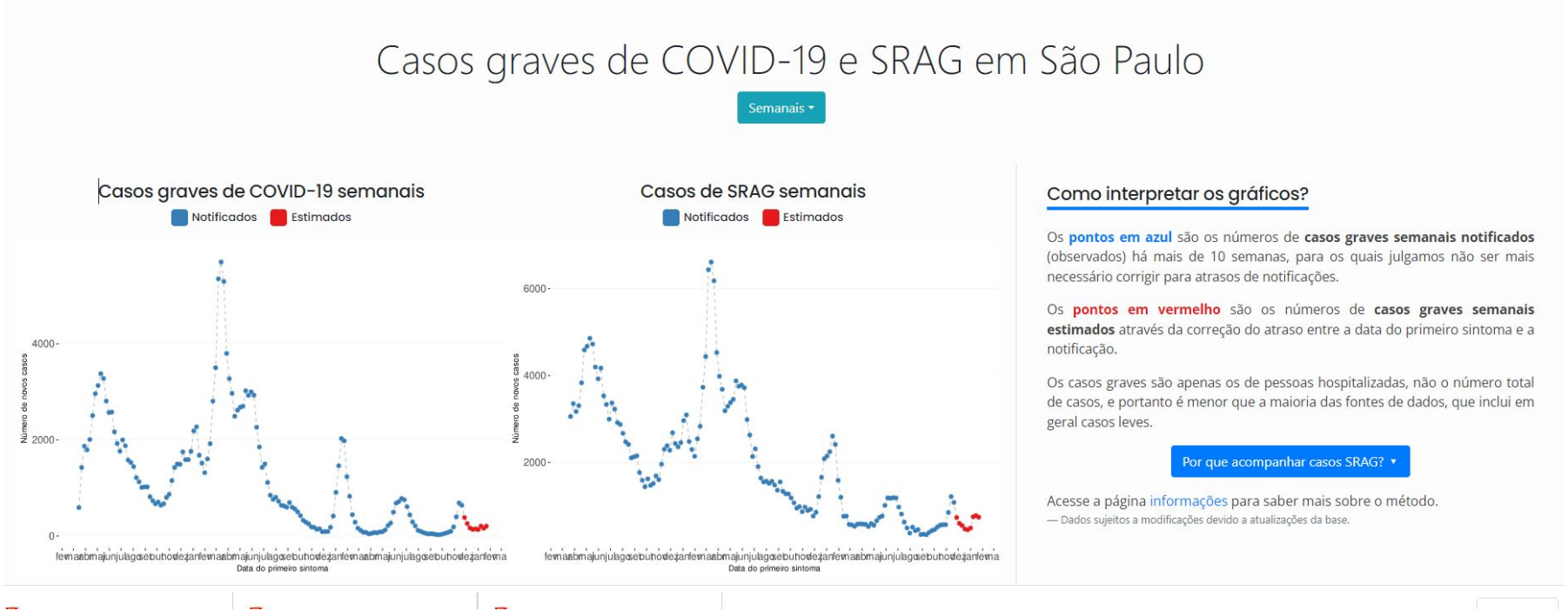
Com projeção oficial de até triplicar mortes nos próximos 10 dias, São Paulo se prepara para reabertura econômica

Pressionado por setores da indústria e do comércio, Doria anuncia plano para retomada das atividades não essenciais a partir de 11 de maio. 8 Estados relaxam quarentena

Case Study 1: Quantifying and Forecasting



Case Study 1: Quantifying and Forecasting

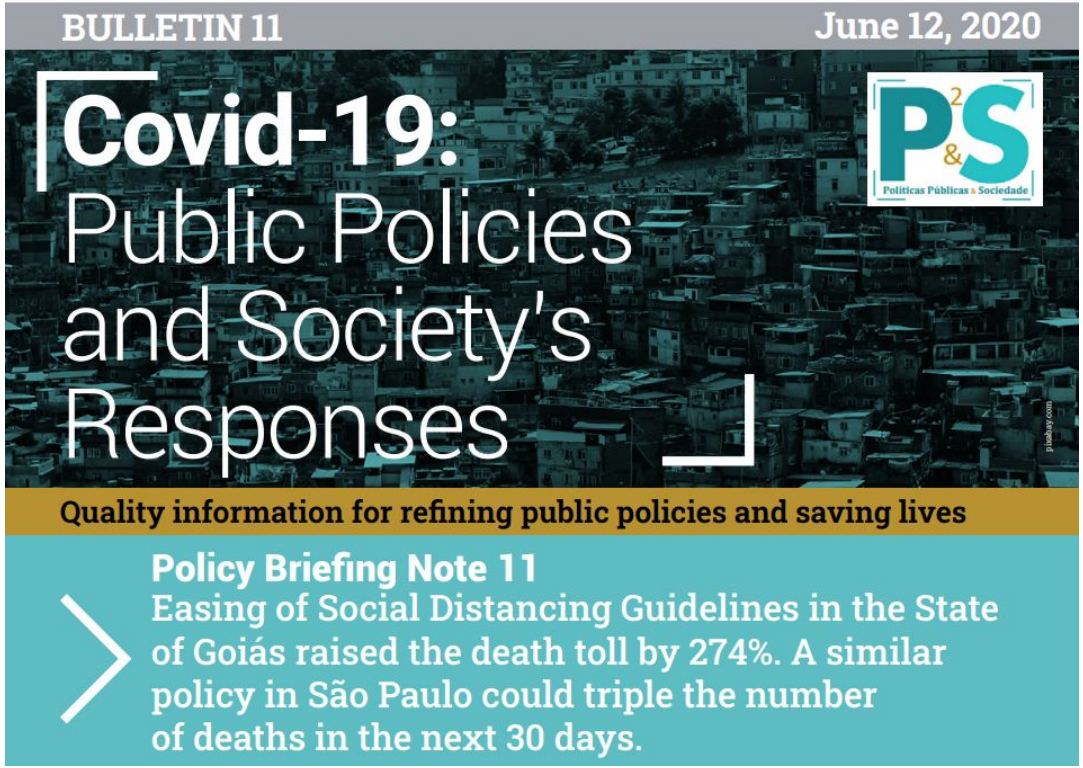


OBSERVATÓRIO COVID-19 BR

https://covid19br.github.io/

Case Study 1: Quantifying and Forecasting

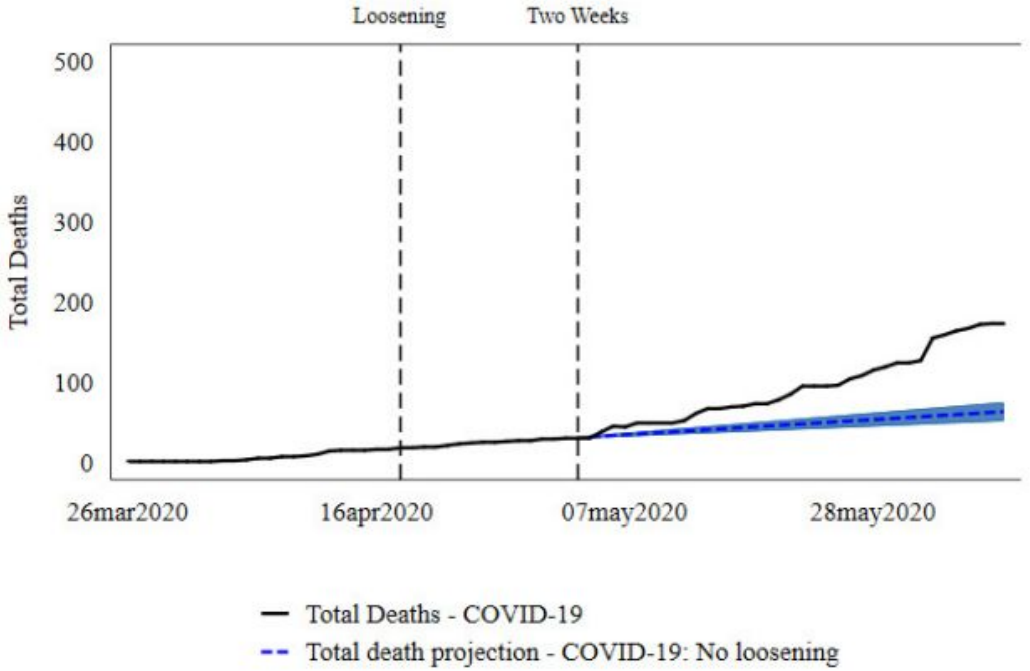
Case Study 1: Quantifying and Forecasting



What we tell society happened….

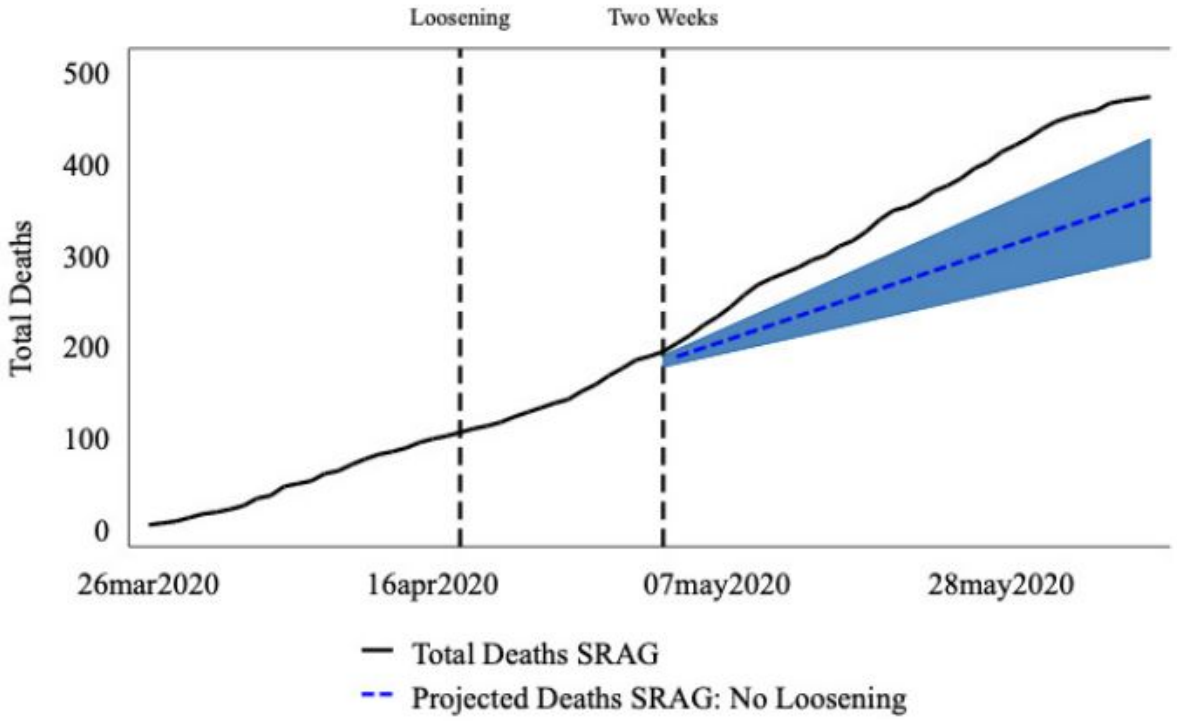
Forecasts and Policy Briefs

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



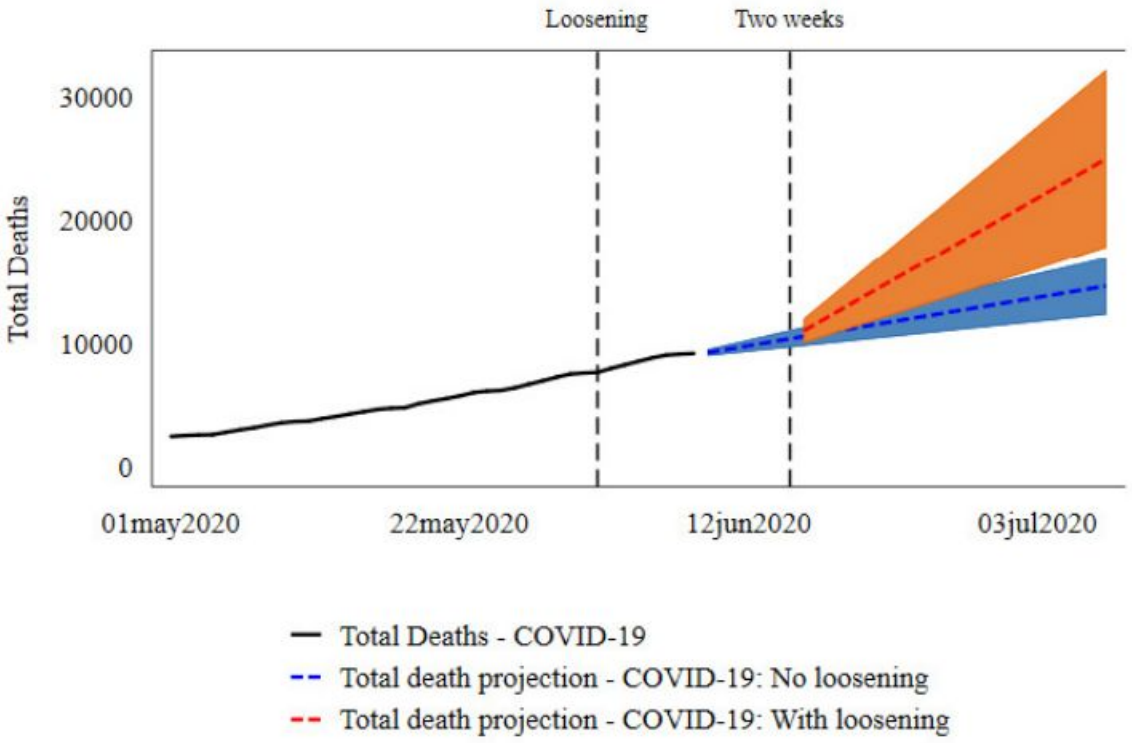
Forecasts and Policy Briefs

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



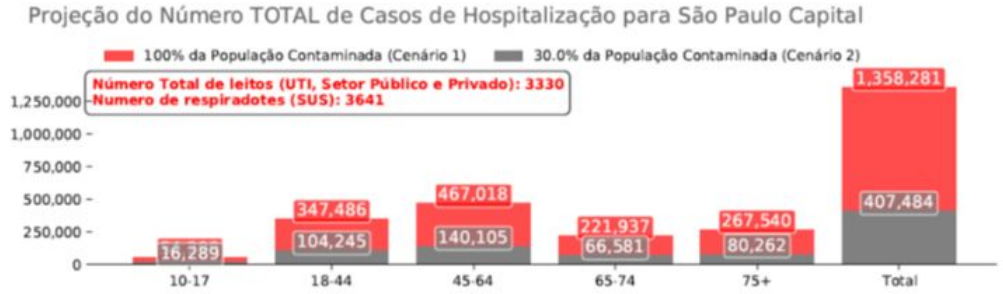
Forecasts and Policy Briefs

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



Case Study 1: Quantifying and Forecasting

Hospitalização: Possíveis Cenários



(Fonte: https://github.com/wcota/covid19br; Roche (2020a,b); IBGE, Censo 2010; Gráfico: elaboração própria)

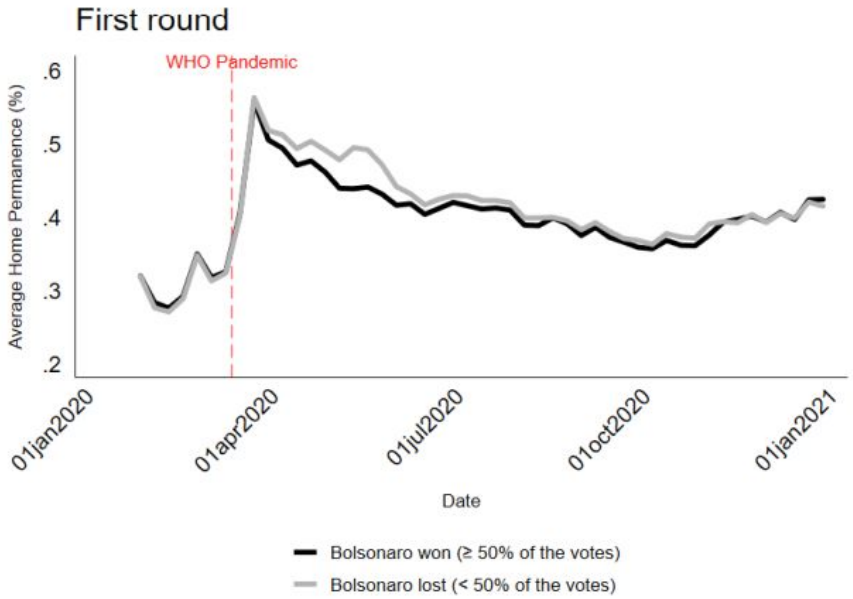
What the data suggest

bpsr

Lorena Barberia, Rebeca Carvalho, Natália Moreira, Maria Leticia Oliveira, Isabel Seelaender Costa Rosa, Marcela Zamudio

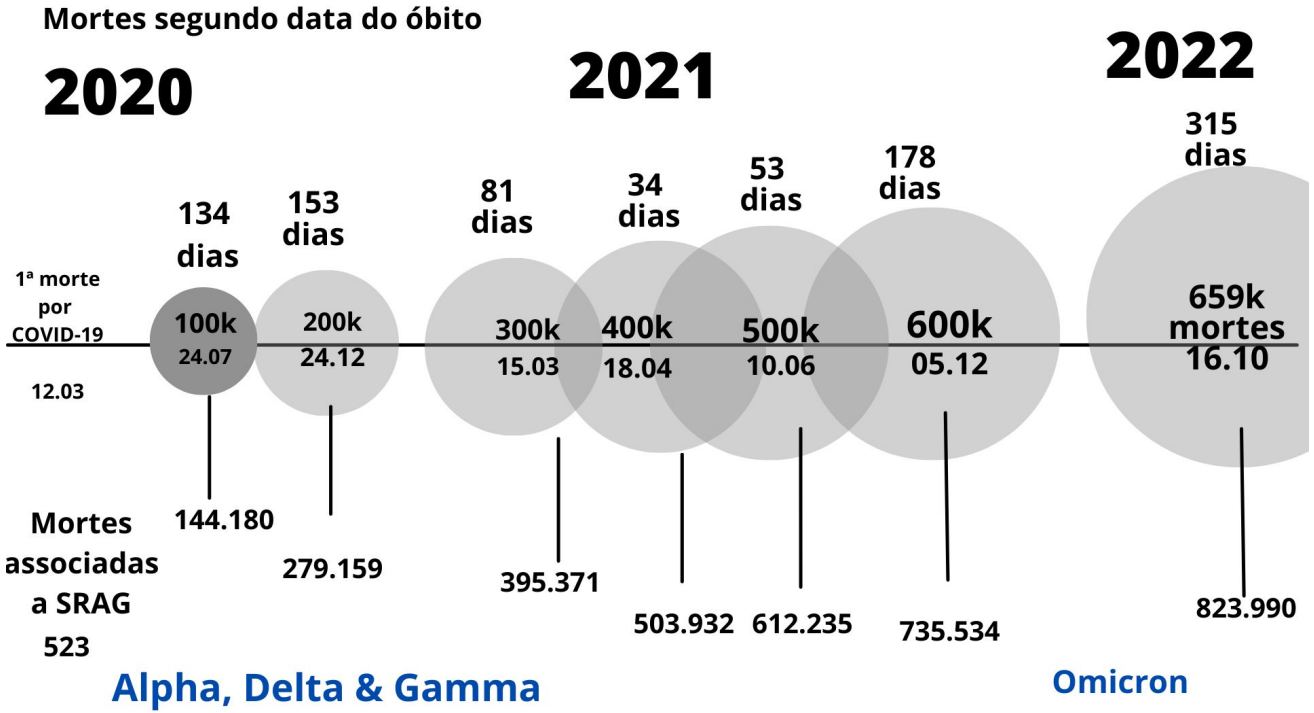
Figure 09. Average home permanence (%) in state capitals where Bolsonaro won and lost the majority of votes in the 2018 elections

Panel A. First round



- Home permanence increased before Brazilian cities and states adopted NPIs.
- Despite significant heterogeneity across these regions and significant variations in policy response, the aggregate behavior of society was quite similar.
- Once society could no longer stay at home, governments often lacked the credibility to impose stricter measures.

What the data suggest



- Deaths were much higher in Brazil during the 2nd wave when we had vaccines. NPIs were not imposed.
- Governments and societies had a much more difficult time implementing policies with pandemic fatigue, fragmented and uneven government response and economic crisis.

What does this mean for pandemic preparedness?

- Forecasting society dynamics
- Contact matrices and heterogeneity
- Scenario planning when there is noncompliance
- Planning for pandemic fatigue policies

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Case Study 2: Hospital Beds and ICU Units

Case Study 2: Occupancy Rates

- Municipal governments are not able to coordinate complex health emergencies
- Complex and decentralized system of management of hospital beds within SUS
- Both the numerator and denominator are changing, percentages are not meaningful
- Unified integration of private and public hospital beds inexistent
- Fragmented, complex and hybrid information systems

MANAGEMENT

- **Declaratory Information Challenges**
  - News and announcements regarding hospital bed management policy may influence Censo occupancy statements
  - Risk: public use request

São Paulo city hall makes agreement with private hospitals to expand SUS beds in the fight against coronavirus

Prefeitura de SP faz acordo com hospitais particulares para ampliar leitos do SUS no combate ao coronavírus

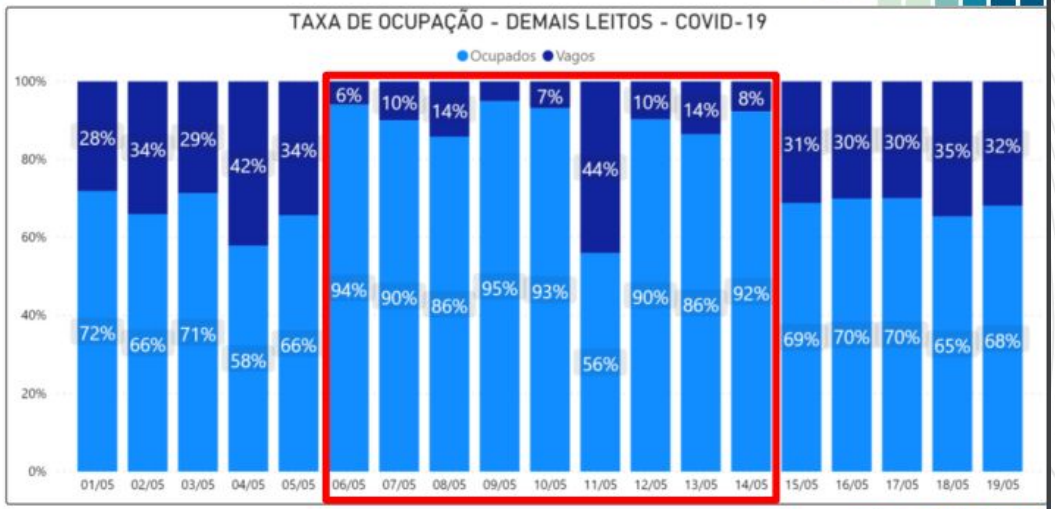
Segundo o prefeito Bruno Covas, a medida vai permitir à rede municipal ampliar em 3.456 leitos, entre os de UTI e os de enfermaria

Guilherme Caetano
06/05/2020 - 12:04 / Atualizado em 06/05/2020 - 12:26

SÃO PAULO

Prefeitura de SP abre edital solicitando mais 100 leitos de UTI da rede privada para atendimento de casos de coronavírus

Gestão municipal diz já ter entregue 835 leitos de UTI em convênios firmados com 13 hospitais da rede particular. Ampliação tenta evitar colapso do sistema com o avanço no número de casos.



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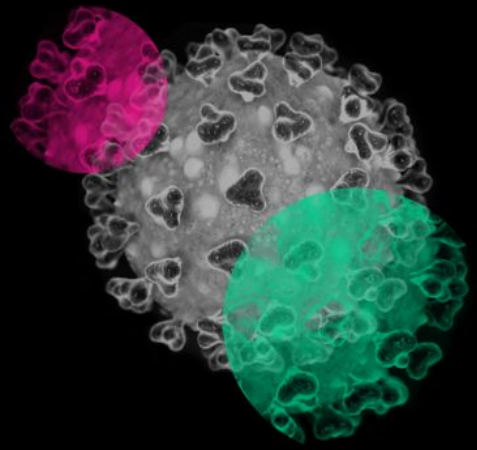
INICIO ITC-19 3.0 LEITOS VACINAÇÃO BOLETINS NA MÍDIA TOOLKITS ENTREVISTAS SOBRE VERSÕES ANTERIORES

OPEN KNOWLEDGE BRASIL

Transparência COVID-19 3.0

Dados abertos podem salvar vidas

COMPARTILHAR



ITC-19 3.0 LEITOS VACINAÇÃO

Monitor de qualidade dos dados do Censo Hospitalar

VEJA COMO ESTÁ A TRANSPARÊNCIA DA OCUPAÇÃO DE LEITOS NO PAÍS

Desde abril de 2020, todos os **estabelecimentos de saúde** do país têm a obrigação de preencher **diariamente** o chamado "Censo Hospitalar". Trata-se de um sistema do Ministério da Saúde para registro da oferta e ocupação de leitos públicos e privados, sejam

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Case Study 2: Hospital Beds and ICU Units

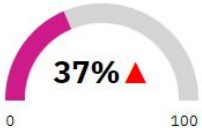
Dados gerais

Total de estabelecimentos hospitalares
1.551

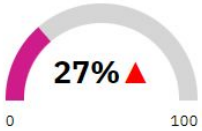
Painel atualizado em
09/12/2021
Às 19:01:17

Atualização dos dados

Estabelecimentos desatualizados há 7 dias ou mais



Estabelecimentos desatualizados há 90 dias ou mais



Estabelecimentos desatualizados há 7 dias ou mais - Série histórica

Case Study 2: Occupancy Rates

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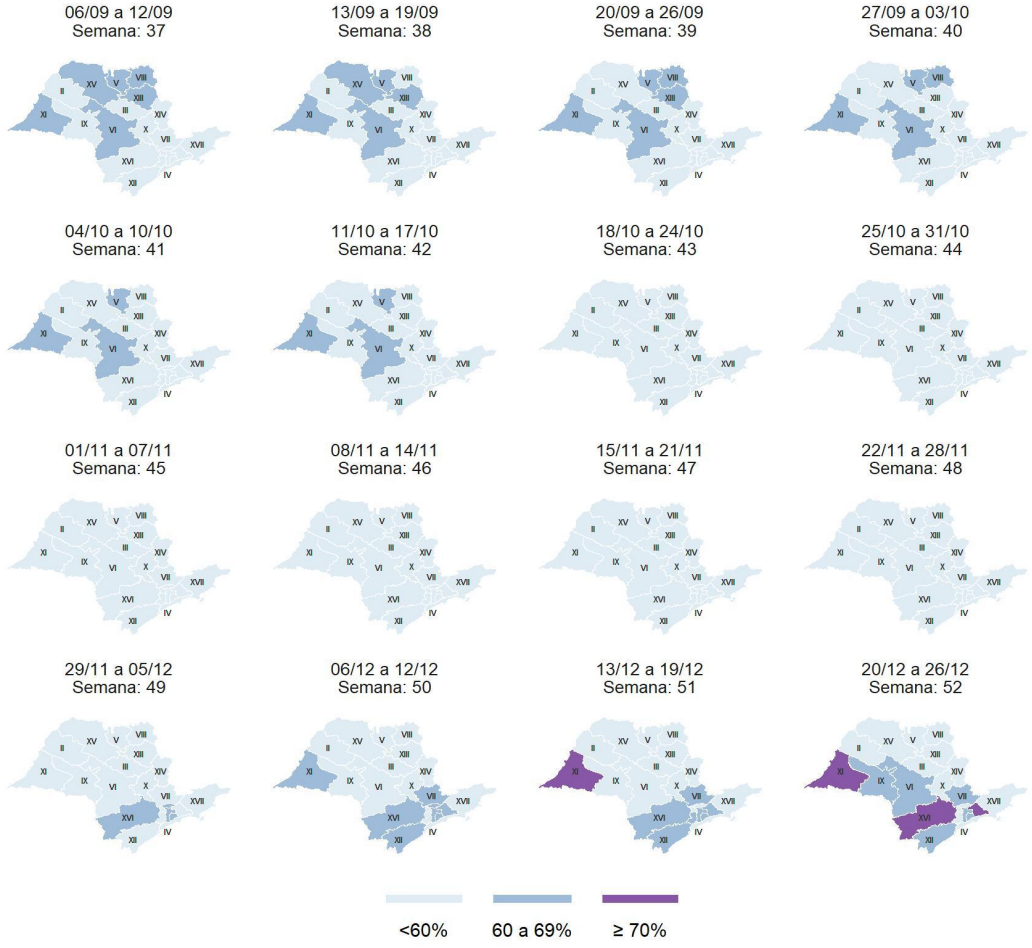
ICU Occupancy Rates for COVID-19 in the Public and Private Health Systems



Fonte: Seade (2021).

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Case Study 2: Hospital Beds and ICU Units

What does this mean for pandemic preparedness?

- Hospital bed census and processing for daily updating
- Occupancy rates need to be tracked by type of bed and the staffing needed
- Need to develop warning systems to detect upsurge and downsurges
- Improving inter-governmental and public/private health system integration

Case Study 3:
Data for Action on Inequality

CAIXA ABERTA

Obrigada por estarmos juntas e juntos nessa!

Saber como e quando seremos vacinadas e vacinados é um direito e o governo tem obrigação de nos trazer essas respostas! Siga nossas atualizações através das

#CaixaAberta

#TransparenciaVacina

#QueremosVacina

A campanha #CaixaPretadaVacina agora é:

#CaixaAberta #TransparenciaVacina #QueremosVacina

Informações de raça/cor

Como está o preenchimento de raça e cor nos municípios?

Veja por categoria a % de preenchimento e, no centro, a quantidade de municípios nessa condição

categoria	municípios
Todos os registros têm cor e raça	0
Falta cor e raça em até 10% dos vacinados	0
Falta cor e raça em até 25% dos vacinados	0
Falta cor e raça em até 50% dos vacinados	0
Falta cor e raça em mais da metade dos vacinados	0

SÃO PAULO
GOVERNO DO ESTADO

SP + Digital

/governosp

A+ A-

#VacinaJá

VACIVIDA

Programa de Imunização do Governo de São Paulo

DRS
(All)

GVE
(All)

Município
(All)

Atualização dos Dados:
7/14/2023 6:30:29 PM

Total de Doses Aplicadas

Total Aplicado	1ª Dose (D1)	2ª Dose (D2)	3ª Dose (D3)	Reforço Bivalente	1º Reforço	2º Reforço	3º Reforço	Dose Única * (DU)	Dose Adicional ** (DA)
138,662,770	43,884,881	41,109,045	124,748	7,863,495	29,522,671	14,729,200	211,548	967,057	156,897

Case Study 3:
Data for Action on Inequality

Vaccine xxx (xxxx) xxx

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

Uncovering inequities in Covid-19 vaccine coverage for adults and elderly in Brazil: A multilevel study of 2021–2022 data

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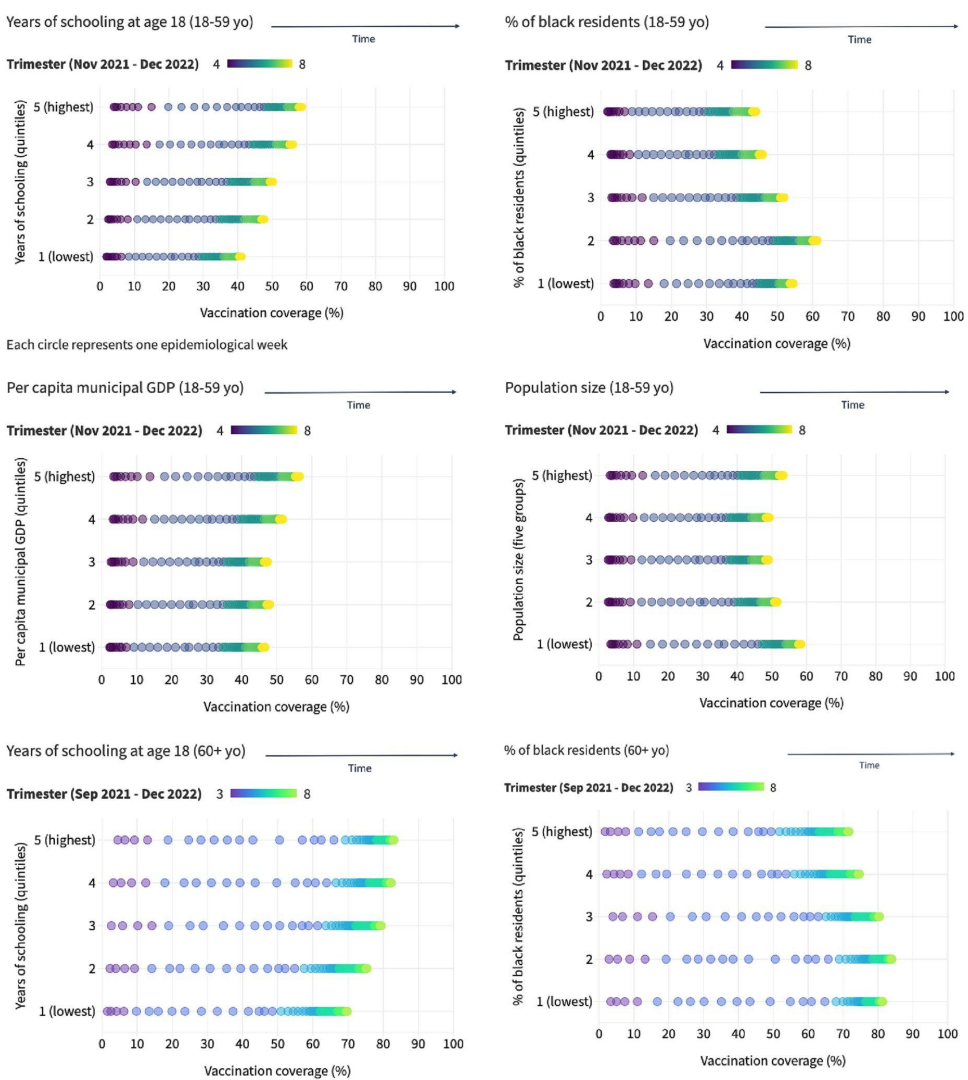
ABSTRACT

Vaccination is crucial for reducing severe COVID-19 cases, hospitalizations, and deaths. However, vaccine access disparities within countries, particularly in low- and middle-income nations, may leave disadvantaged regions and populations behind. This study aimed to investigate potential inequalities in vaccine coverage among Brazilian aged 18 years and older based on demographic, geographic, and socioeconomic characteristics at the municipal level. A total of 389 million vaccination records from the National Immunization Program Information System were analyzed to calculate vaccine coverage rates for the first, second, and booster doses among adults (18–59 years) and elderly (60 + years) vaccinated between January 2021 and December 2022. We analyzed the data by gender and used a three-level (municipalities, states, regions) multilevel regression analysis to assess the association between vaccine coverage and municipal characteristics. Vaccination coverage was higher among the elderly than among adults, particularly for the second and booster doses. Adult women showed

Fig. 2. Covid-19 vaccine booster dose coverage (%) according to the quintiles of proportion (%) of Black residents



What does this mean for pandemic preparedness?

- Universal **and targeted** programs and metrics
- Information systems need to be unified, updated and corrected
- Trade-off between decentralization and centralization of data
- Data transparency and availability

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Back to the Future: Pandemic Preparedness Indicators

Preparedness is not clearly defined, the construction of what constitutes “preparedness” is a *political process*.

Researchers and society should be driving the discussion, but often not engaged or working with governments.

Concluding Remarks

There are significant lessons, and challenges from COVID-19.

The time to be working on these priorities is now.

The persistent experience of repeated failures and lack of transparency fuel lack of public trust in our collective ability to solve problems and prepare for the future.

Preparedness depends on our commitment to prioritizing and mobilizing society, researchers, media, and governments to allocate resources to these needs.