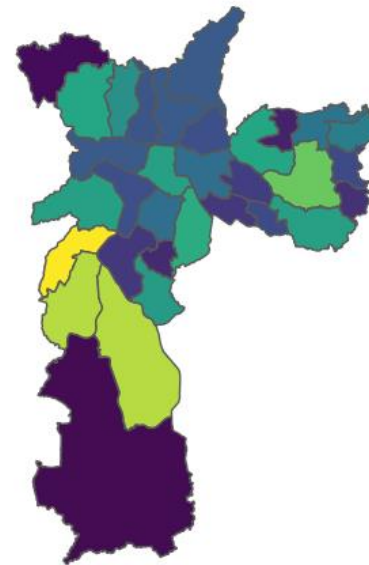
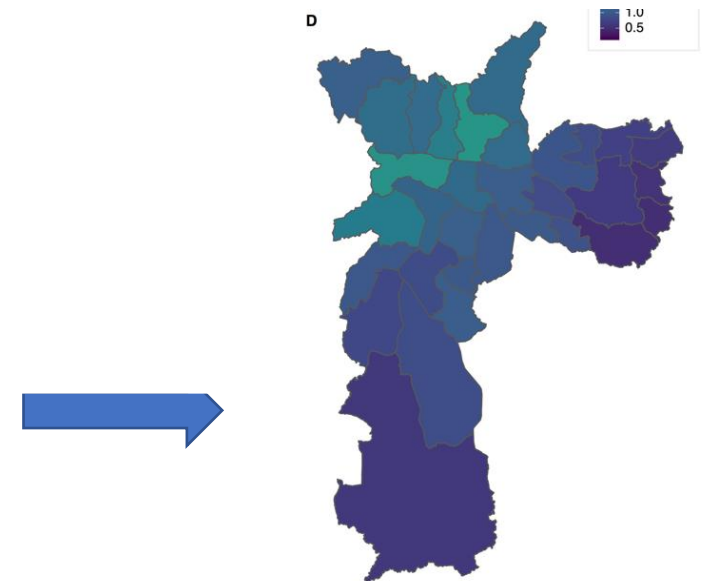


Blood donor study in Brazil

- Based on NHLBI- REDS program infrastructure
 - Total of 8 capitals (most populated)
 - Retrospectively – Mar-Jul/20 – Abbott anti N
 - Prospectively Aug /20 – Apr/21 Abbot anti N
 - Apr-Nov 21 Abbott anti-S (7 cities)
-
- ~800- 1000 samples per month.
 - Samples were geographically stratified using donor zip code (except Manaus)
 - System to control sample testing

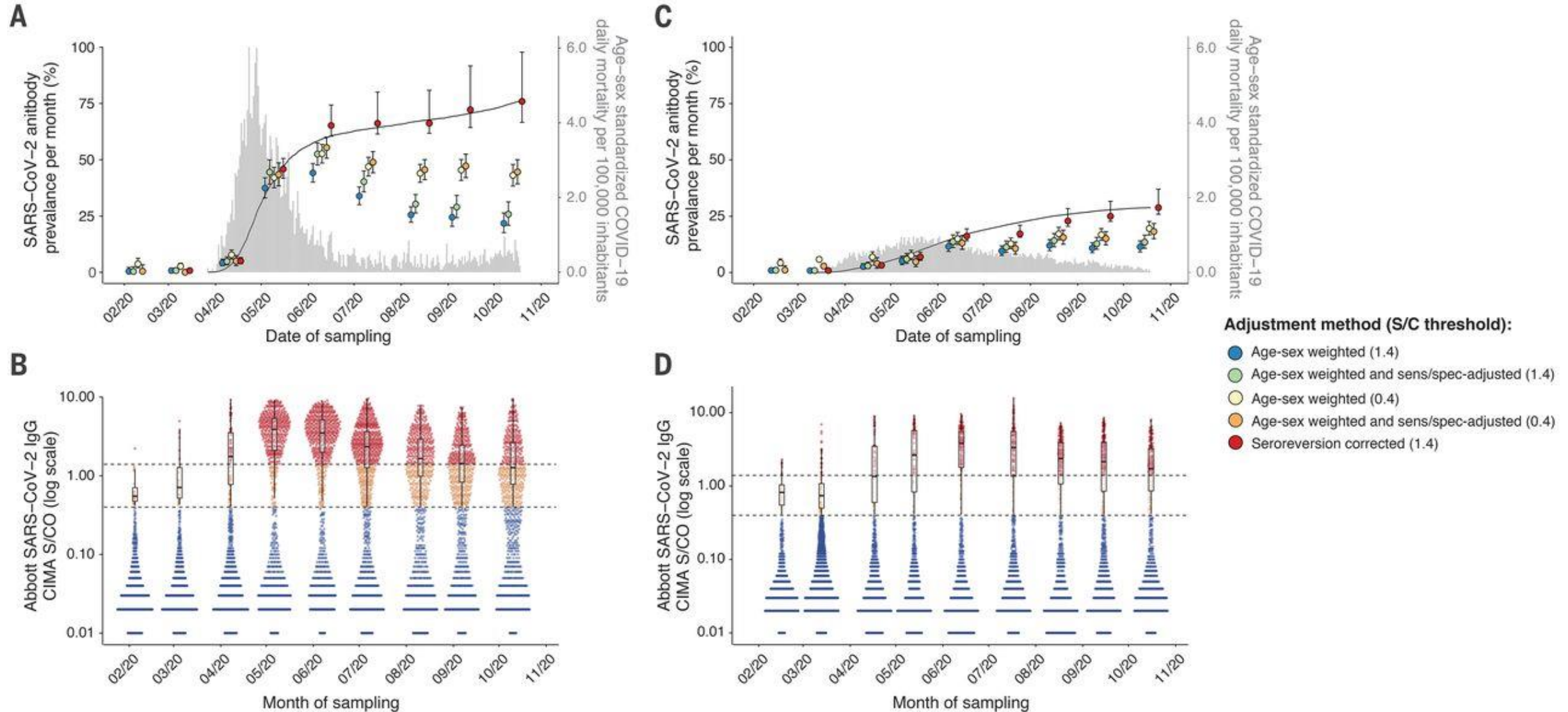


Blood donors



Study participant

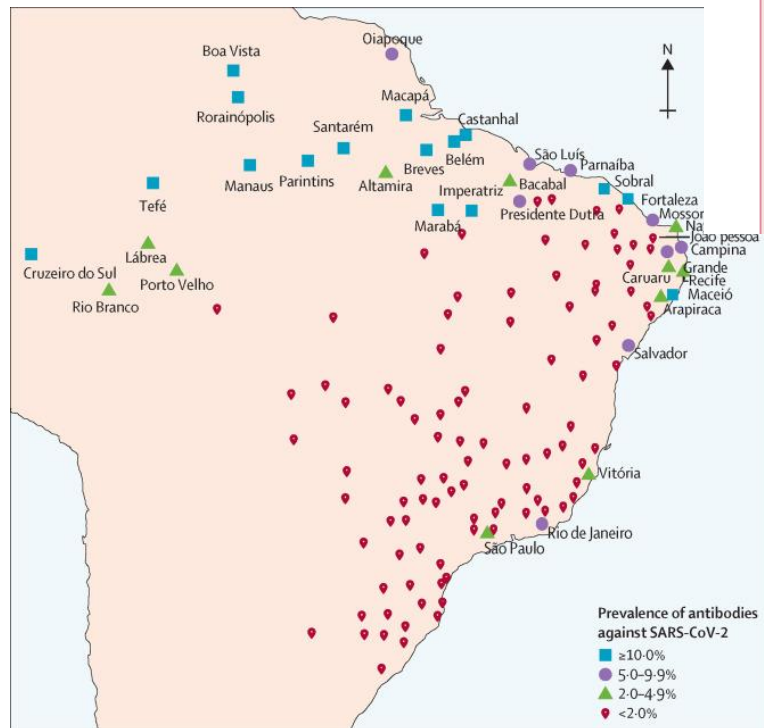
First results from Manaus and Sao Paulo



SARS-CoV-2 antibody prevalence in Brazil: results from two successive nationwide serological household surveys

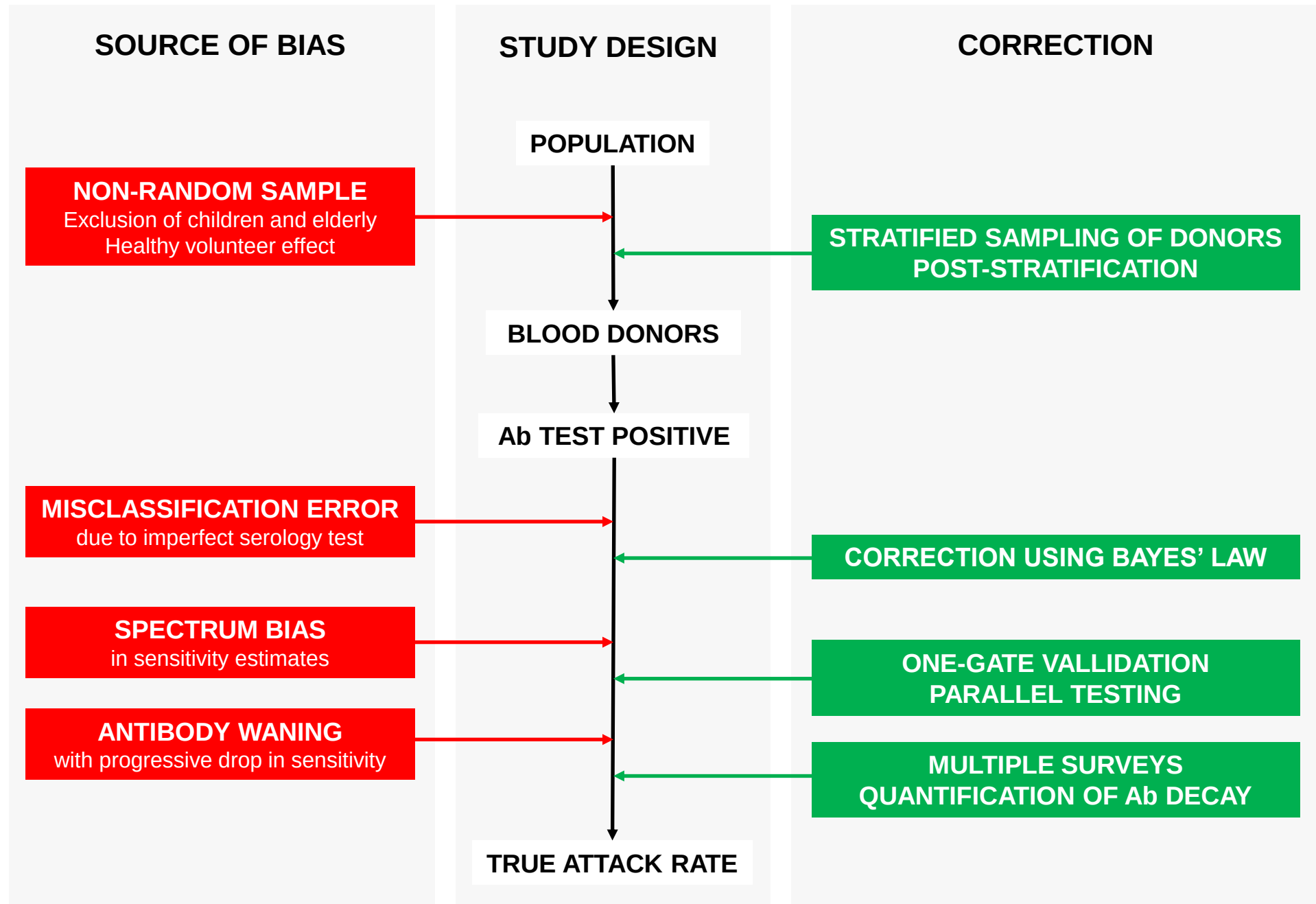


Pedro C Hallal, Fernando P Hartwig, Bernardo L Horta, Mariângela F Silveira, Claudio J Struchiner, Luís P Vidaletti, Nelson A Neumann, Lucia C Pellanda, Odir A Dellagostin, Marcelo N Burattini, Gabriel D Victora, Ana M B Menezes, Fernando C Barros, Aluísio J D Barros, Cesar G Victora



Region	First survey			Second survey			p values for comparisons over time	
	Positive tests	Adjusted for sampling design (estimate [95% CI])	Adjusted for sampling design and test validity (estimate [95% CI])	Positive tests	Adjusted for sampling design (estimate [95% CI])	Adjusted for sampling design and test validity (estimate [95% CI])	Unadjusted	Adjusted
Northeast	46/6552	0.7% (0.5–1.0)	0.8% (0.5–1.1)	273/9801	2.8% (2.4–3.2)	3.2% (2.8–3.7)	p<0.001	p<0.001
North	272/5064	5.4% (4.7–6.1)	6.3% (5.4–7.2)	419/5449	7.7% (6.9–8.5)	9.0% (8.0–10.1)	p<0.001	p<0.001
Centre-west	0/2477	0% (0.0–0.1)	0%	13/3565	0.4% (0.2–0.6)	0.4% (0.2–0.7)	*	*
Southeast	22/5833	0.4% (0.2–0.6)	0.4% (0.2–0.7)	45/7778	0.6% (0.4–0.8)	0.6% (0.4–0.9)	p=0.099	p=0.177
South	7/5069	0.1% (0.0–0.4)	0.1% (0.0–0.6)	3/4569	0.1% (0.0–0.2)	0% (0.0–0.3)	p=0.281	p=0.476

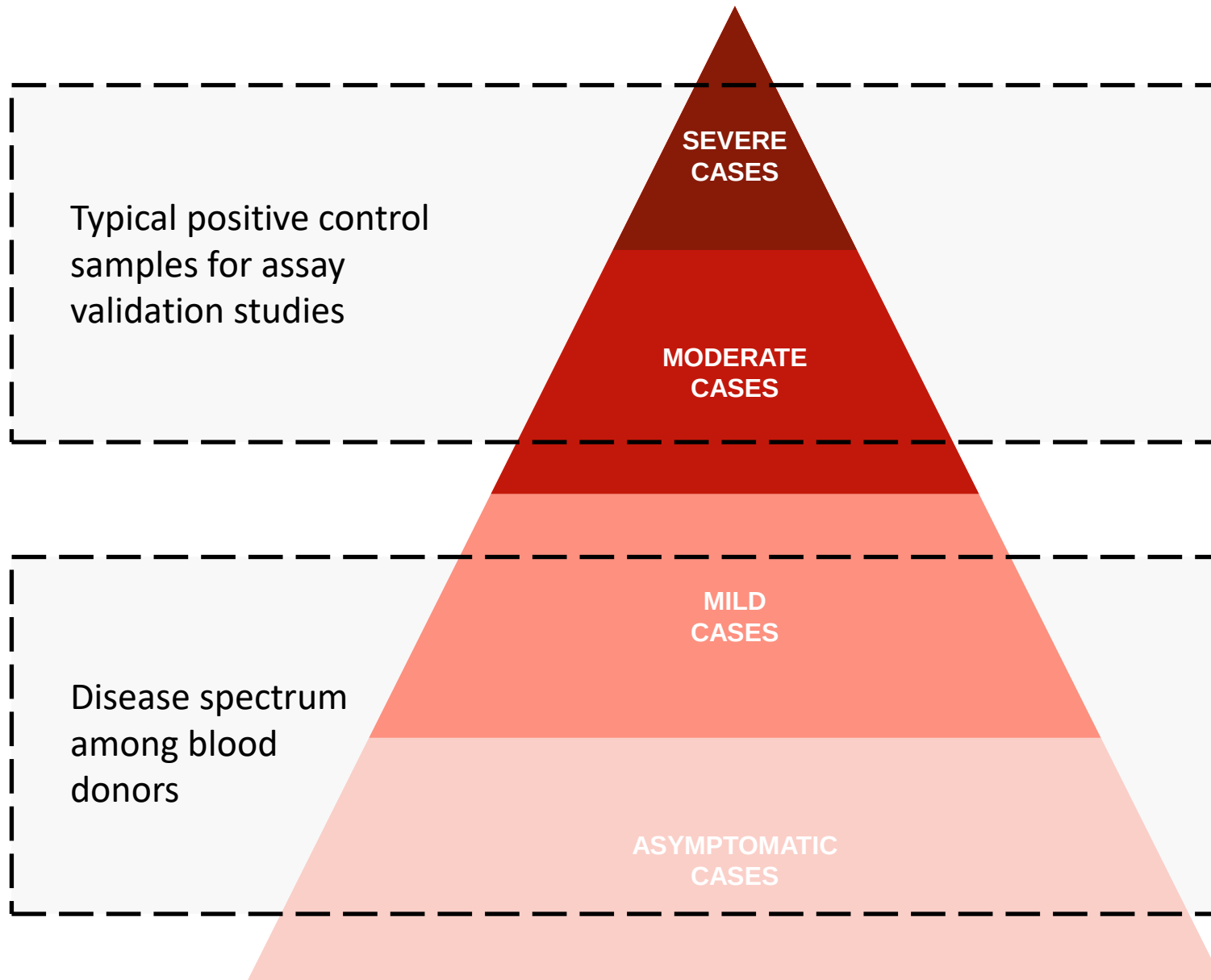
Household surveys
133 mesoregions of Brazil
May 14–21 25 000 participants
June 4–7 32 000 participants
Rapid test (wondfo)



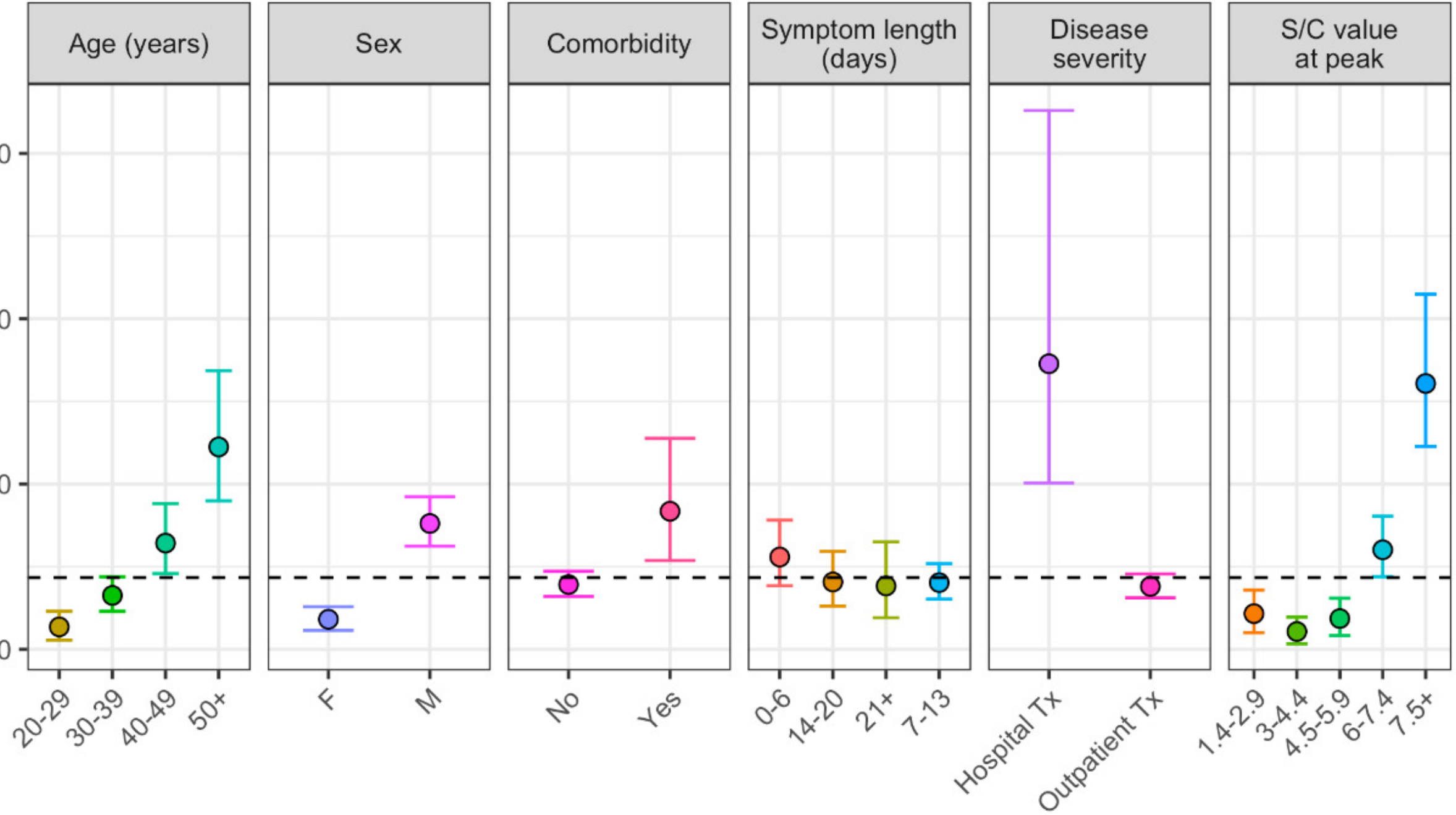


Are blood donors reactivity different than the general population

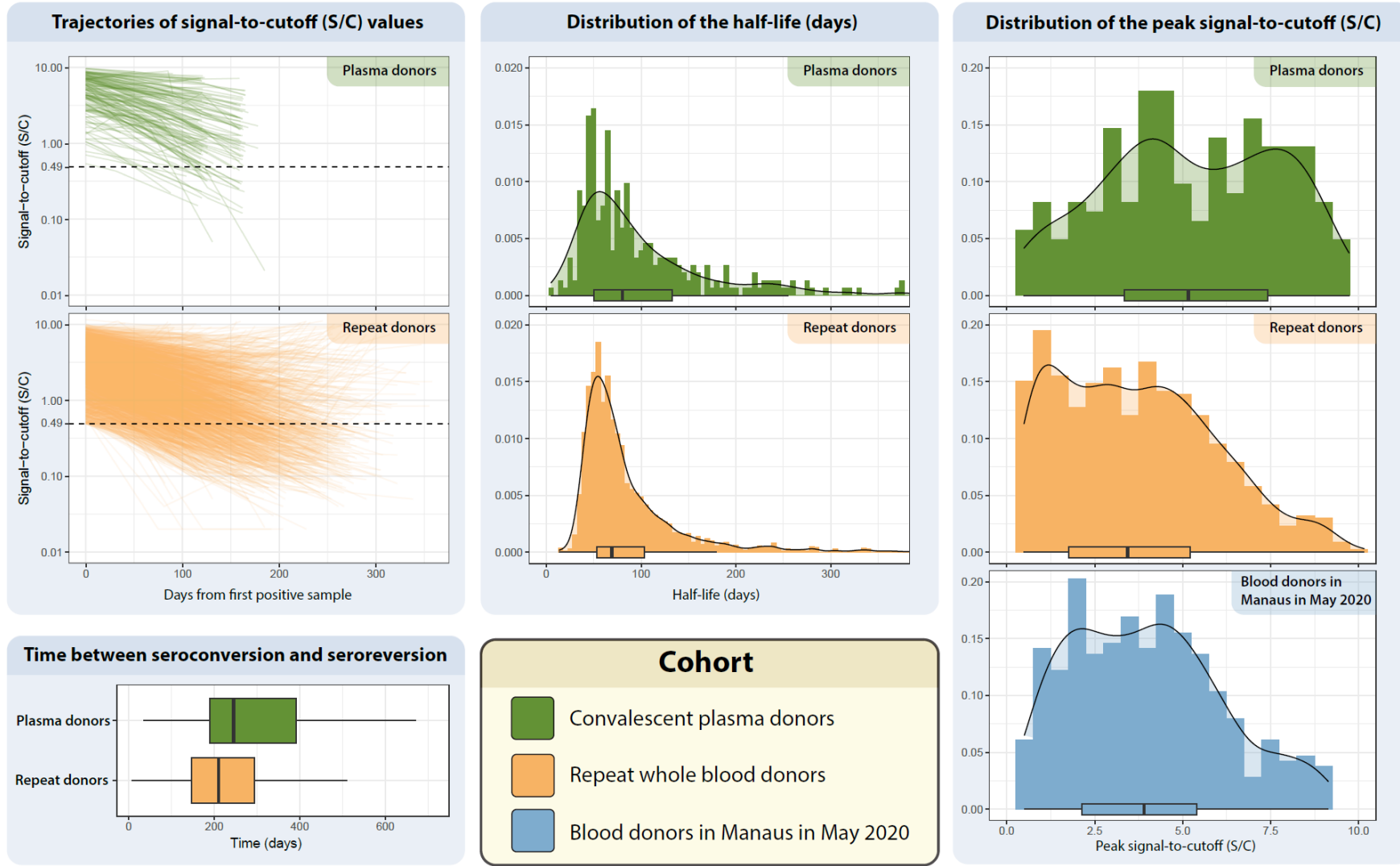
Results EIA	Ever donated %		Donated last year %	
SARS-COV-2	YES	NO	YES	NO
Positive	10.7	9.4	9.7	10.8
Negative	88.4	89.3	89.7	88.2
Inconclusive	1.0	1.4	0.6	1.0



Abbott IgG CIMA S/C half life (days)



Antibody waning and disease spectrum



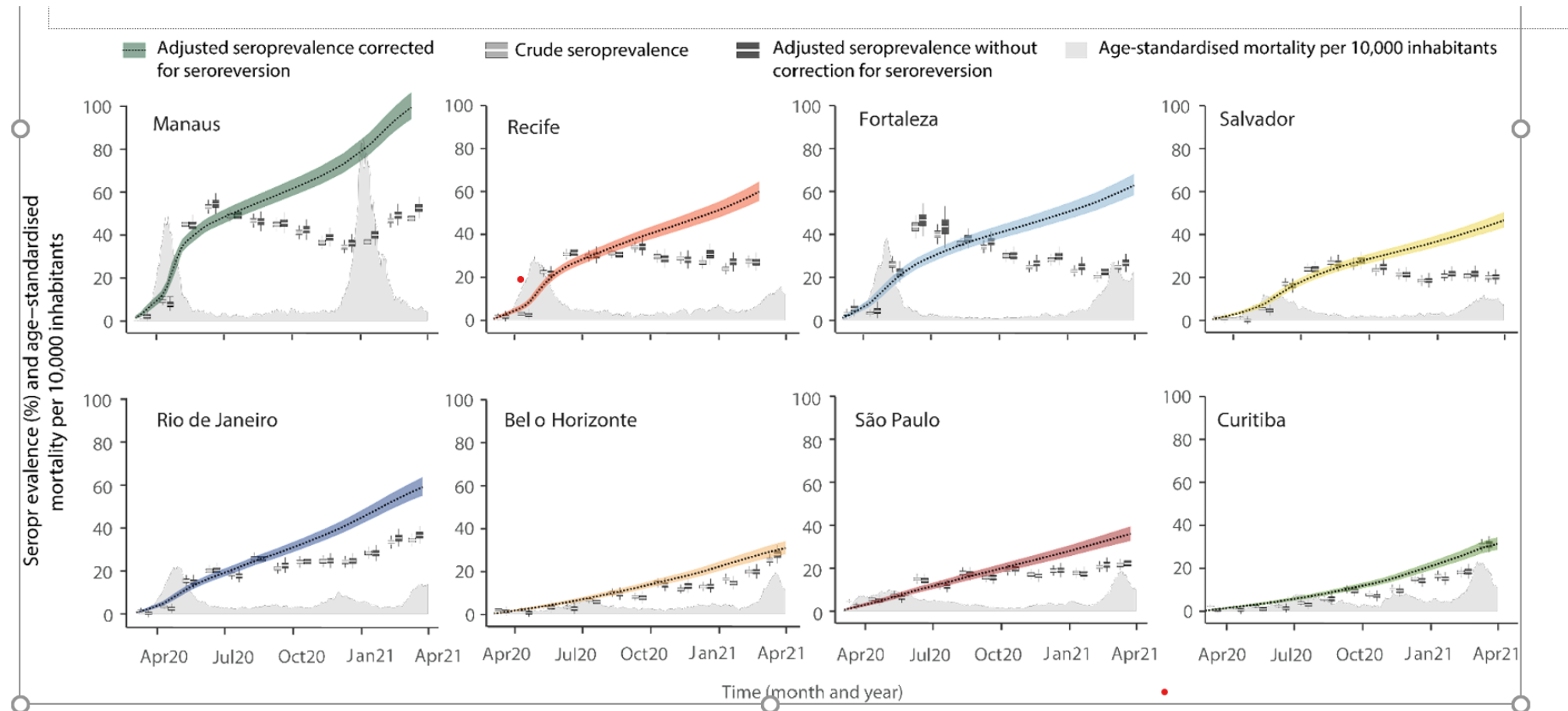


Distribution of the delay between seroconversion and seroreversion

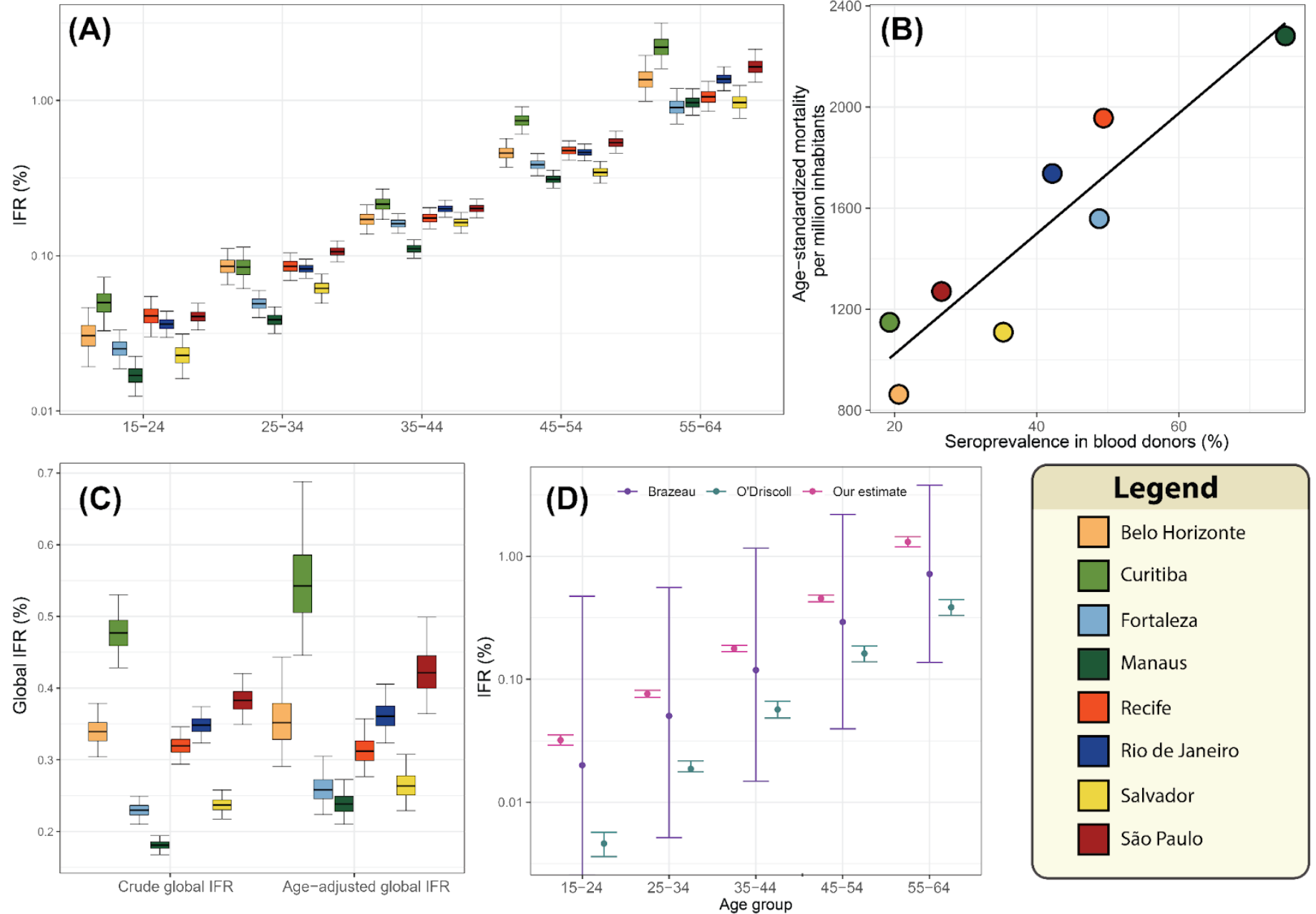
Our proposed Bayesian model

Seroprevalence corrected for seroreversion

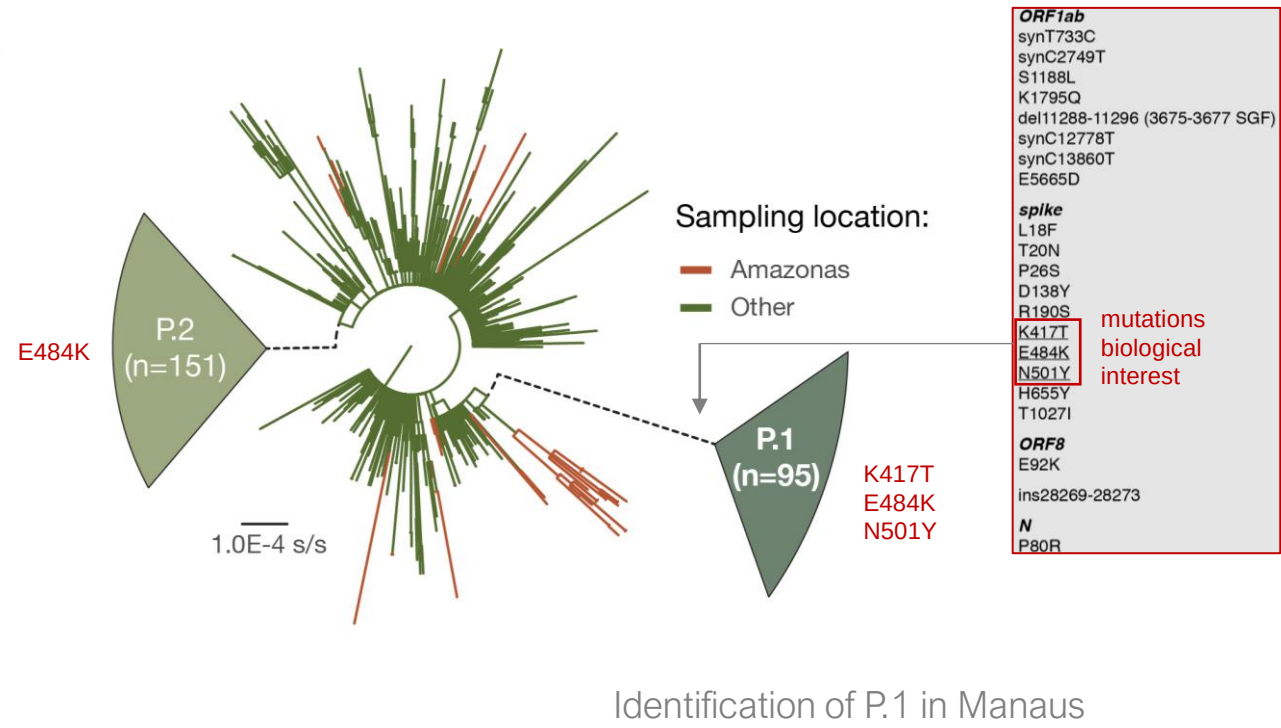
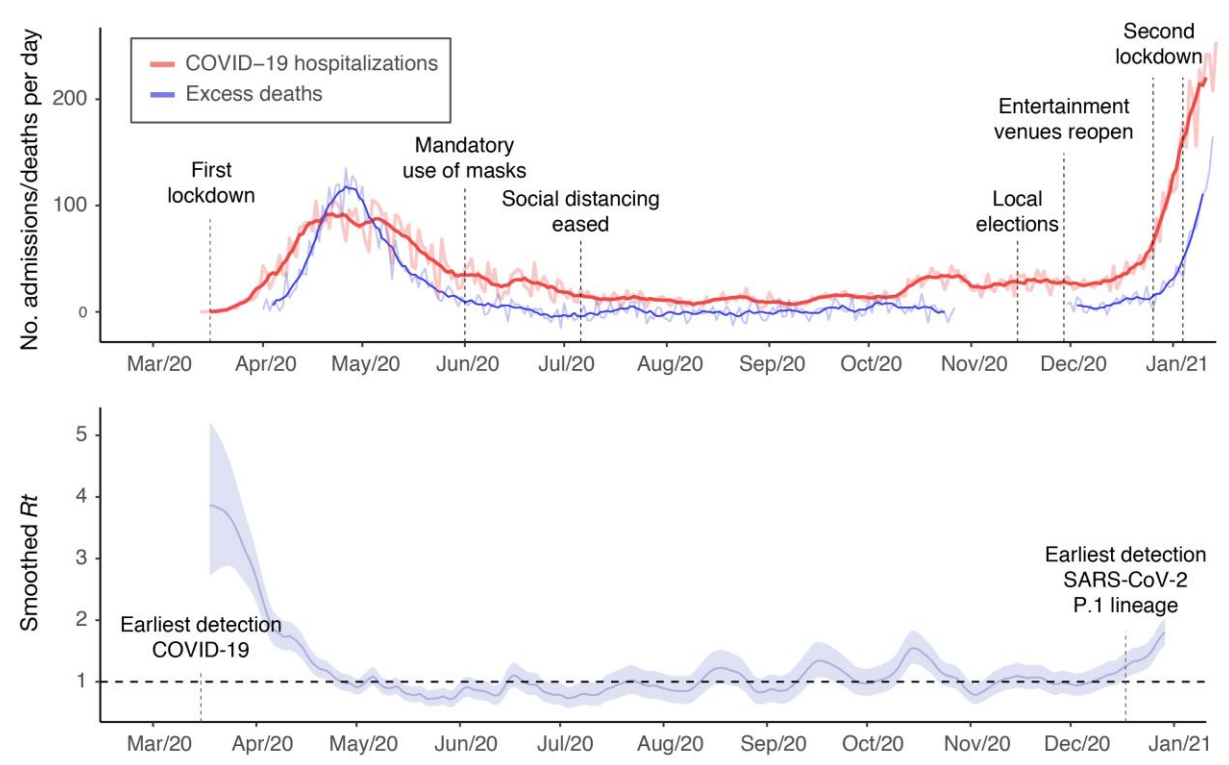
Adjusted seroprevalence in eight Brazilian capitals



IFR according to age and location



Resurgence of SARS-CoV-2 in Manaus, despite seroprevalence



RESEARCH

Open Access



Reinfection by the SARS-CoV-2 Gamma variant in blood donors in Manaus, Brazil

Carlos A. Prete Jr¹, Lewis F. Buss², Renata Buccheri³, Claudia M. M. Abraham⁴, Tassila Salomon⁵, Myuki A. E. Crispim⁴, Marcio K. Oikawa⁶, Eduard Grebe^{3,7,8}, Allyson G. da Costa⁴, Nelson A. Fraiji⁴, Maria do P. S. S. Carvalho⁴, Charles Whittaker⁹, Neal Alexander¹⁰, Nuno R. Faria^{2,9,11}, Christopher Dye¹¹, Vítor H. Nascimento¹, Michael P. Busch^{3,7} and Ester Cerdeira Sabino^{2*}

Proportion of reinfection cases in 2021:

- V curve 13.6%, (95% CI [7.0%, 24.5%])
- +Probable 22.7% (95% CI [14.3%, 34.2%])
- +Possible 39.3% (95% CI [29.5%, 50.0%])

Rates of reinfection in individuals positive in 2020

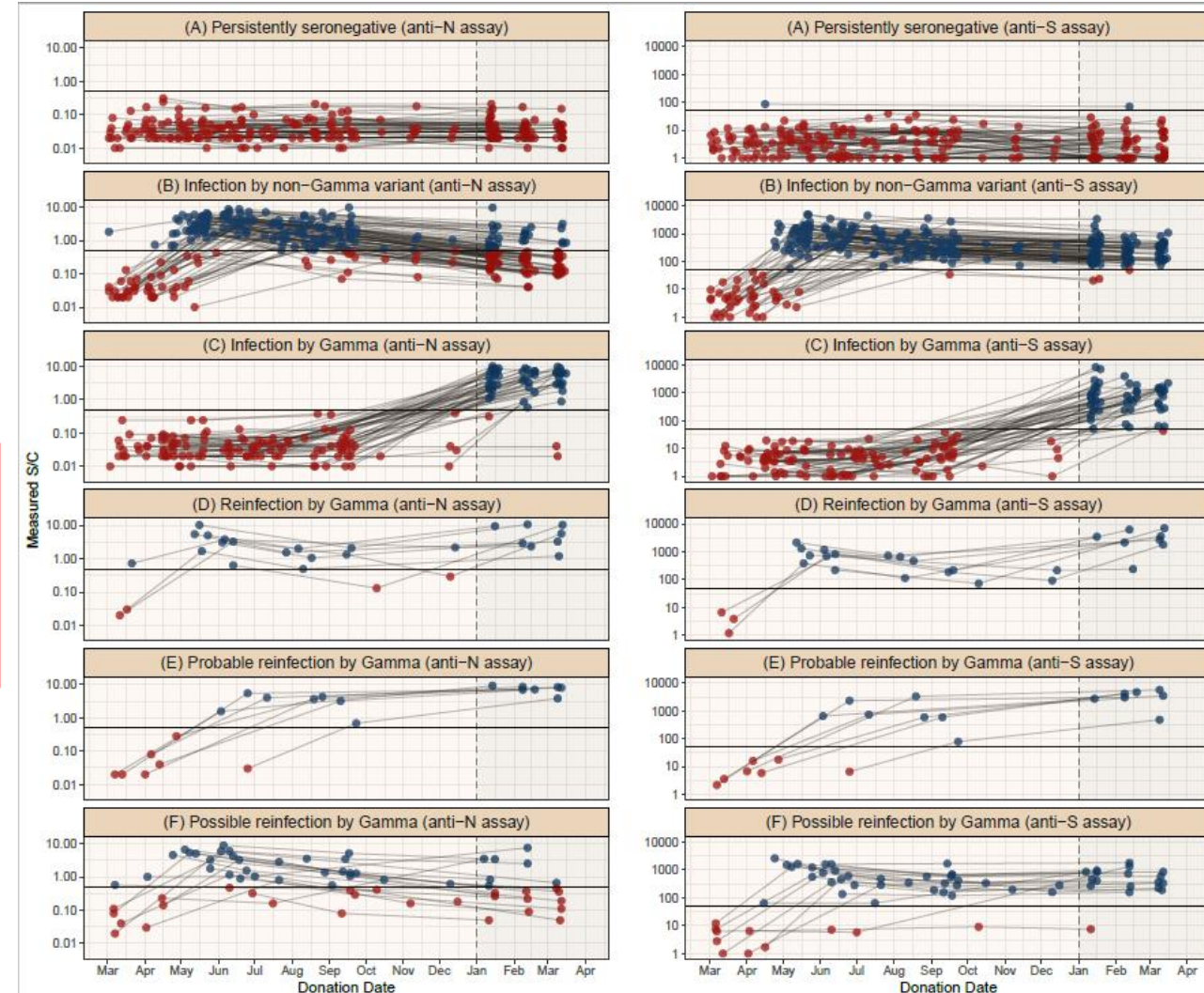
- V curve 6.5% (95% CI [3.3%, 12.3%])
- +Probably 12.2% (95% CI [7.5%, 19.1%])
- +Possible 26.8% (95% CI [19.8%, 35.3%])

Rates of gamma infection in negative samples

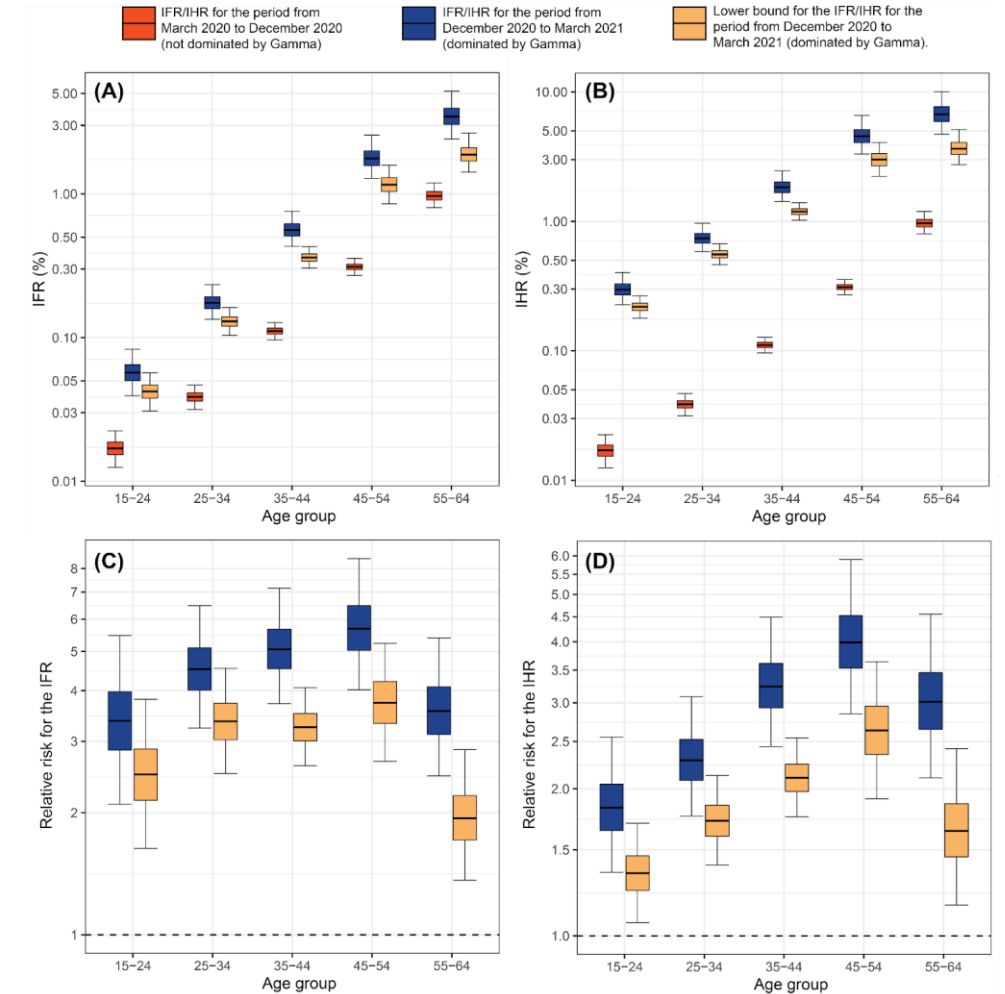
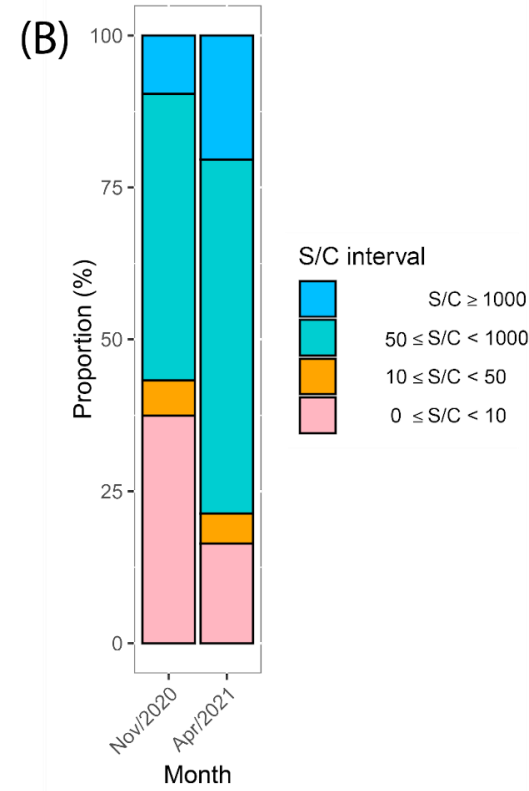
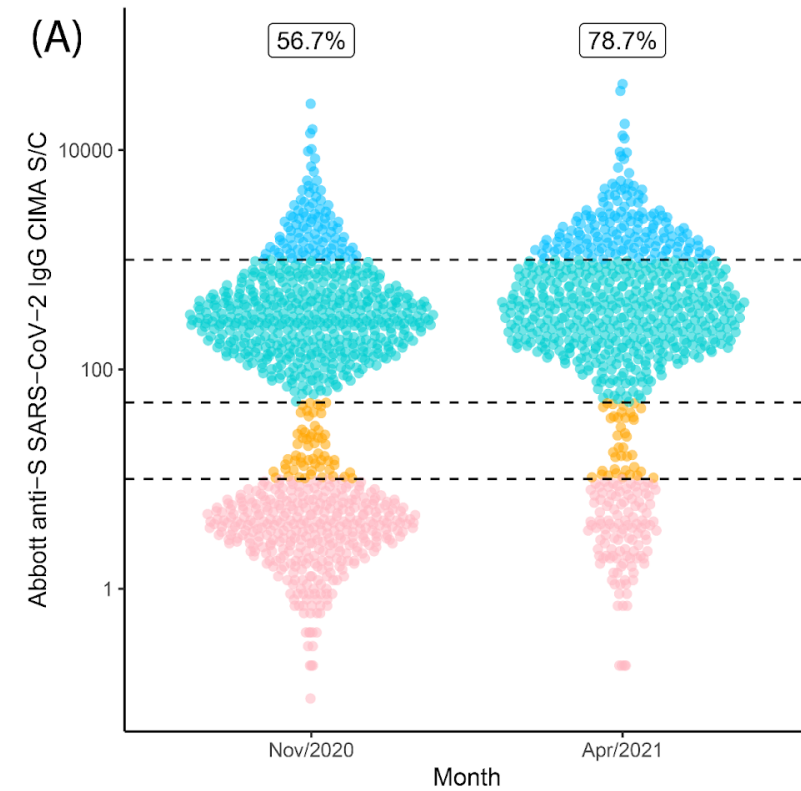
- 115 negative in 2020: 51 infected in 2021 (44.3%, 95% CI [35.6%, 53.5%]).

The protection against reinfection conferred by previous infection

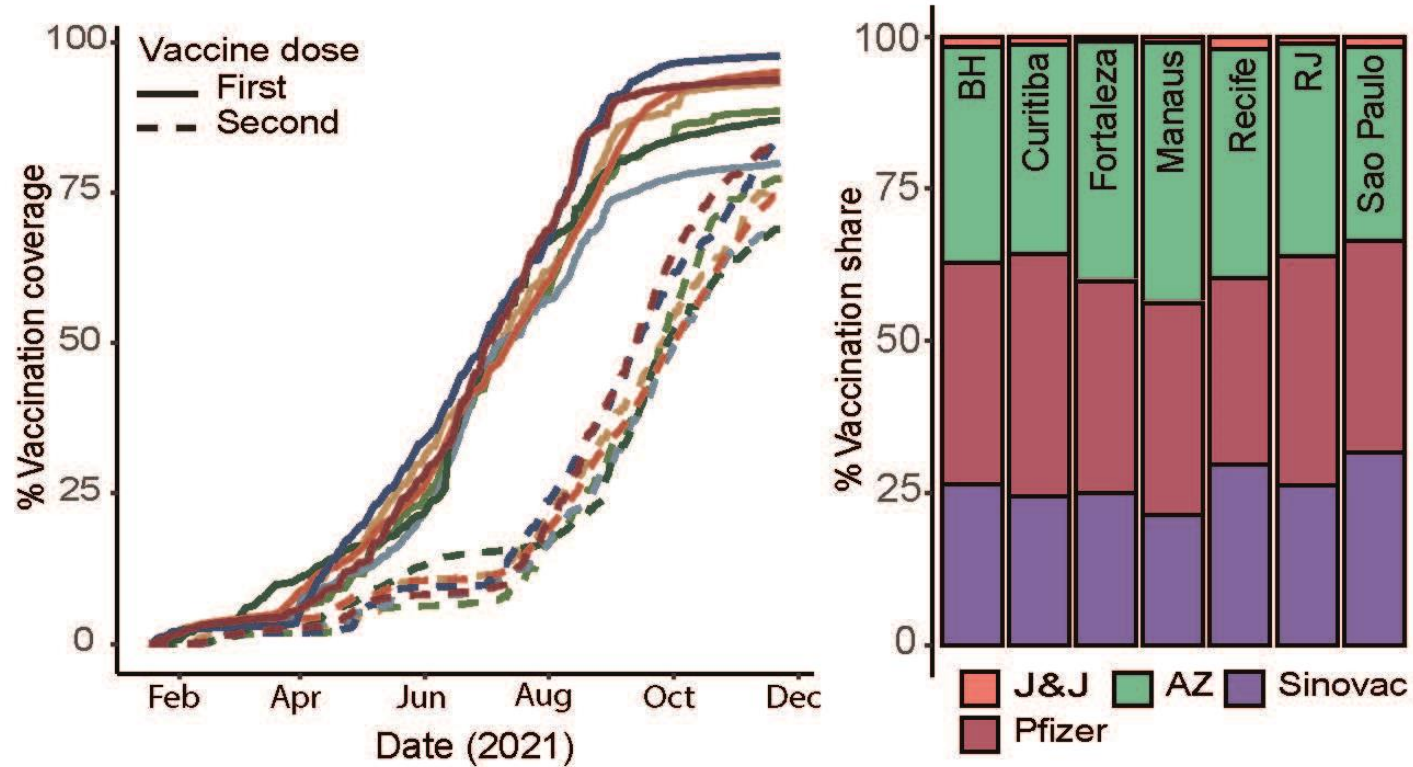
- V curve 85.3% (95% CI [71.3%, 92.7%]),
- + probably 72.5% (95% CI [54.7%, 83.6%])
- + possible 39.5% (95% CI [14.1%, 57.8%])

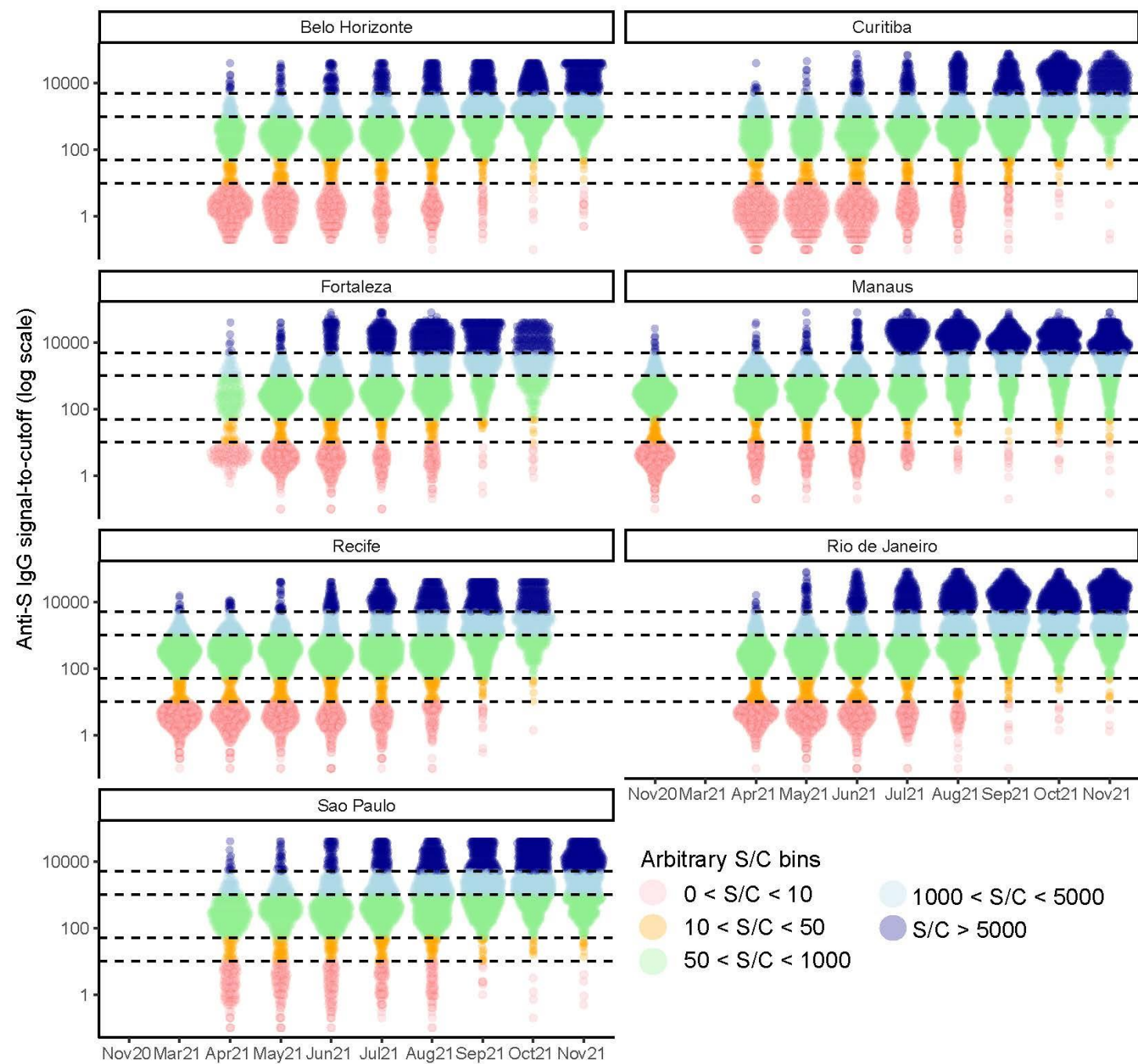


2nd wave had a lower attack rate and a higher morbidity/mortality

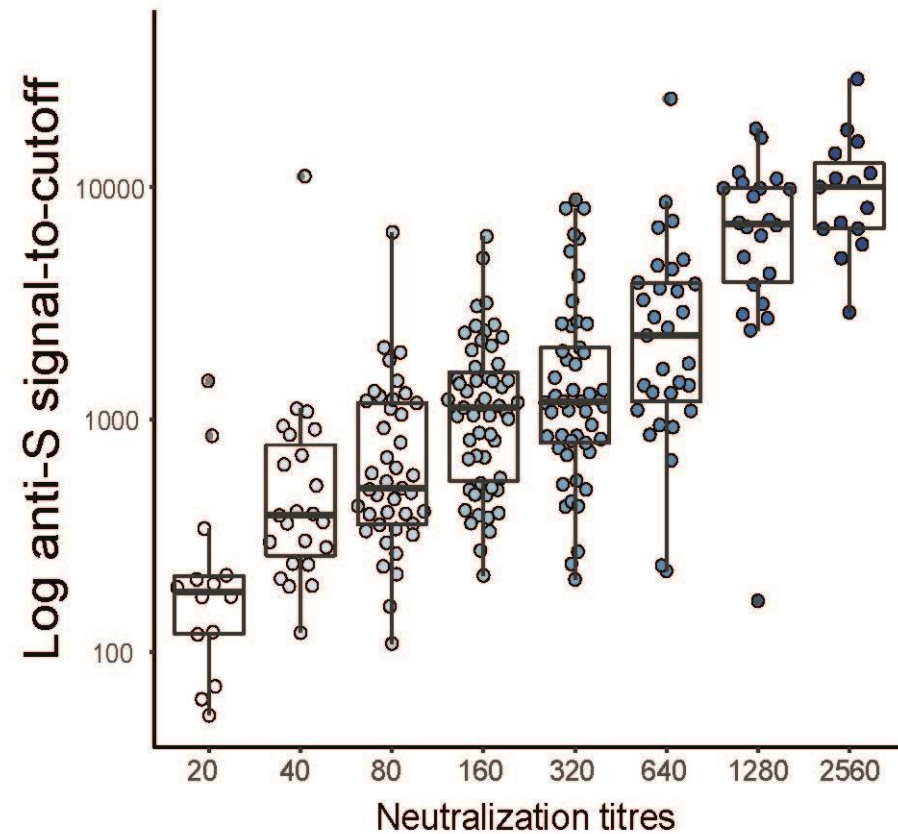


Vaccination coverage in blood donor eligible age range





Converting Abbott S/N anti-S IgG to neutralization titres on a cohort of plasma donors.



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DONOR INFECTIOUS DISEASE TESTING | [Free Access](#)

Correlation between SARS-COV-2 antibody screening by immunoassay and neutralizing antibody testing

Alfredo Mendrone-Junior, Carla Luana Dinardo , Suzete Cleuza Ferreira, Anna Nishya, Nanci Alves Salles
... [See all authors](#) 

First published: 25 January 2021 | <https://doi.org/10.1111/trf.16268> | Citations: 16

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ARTICLES

<https://doi.org/10.1038/s41591-021-01377-8>

 Check for updates

Neutralizing antibody levels are highly predictive of immune protection from symptomatic SARS-CoV-2 infection

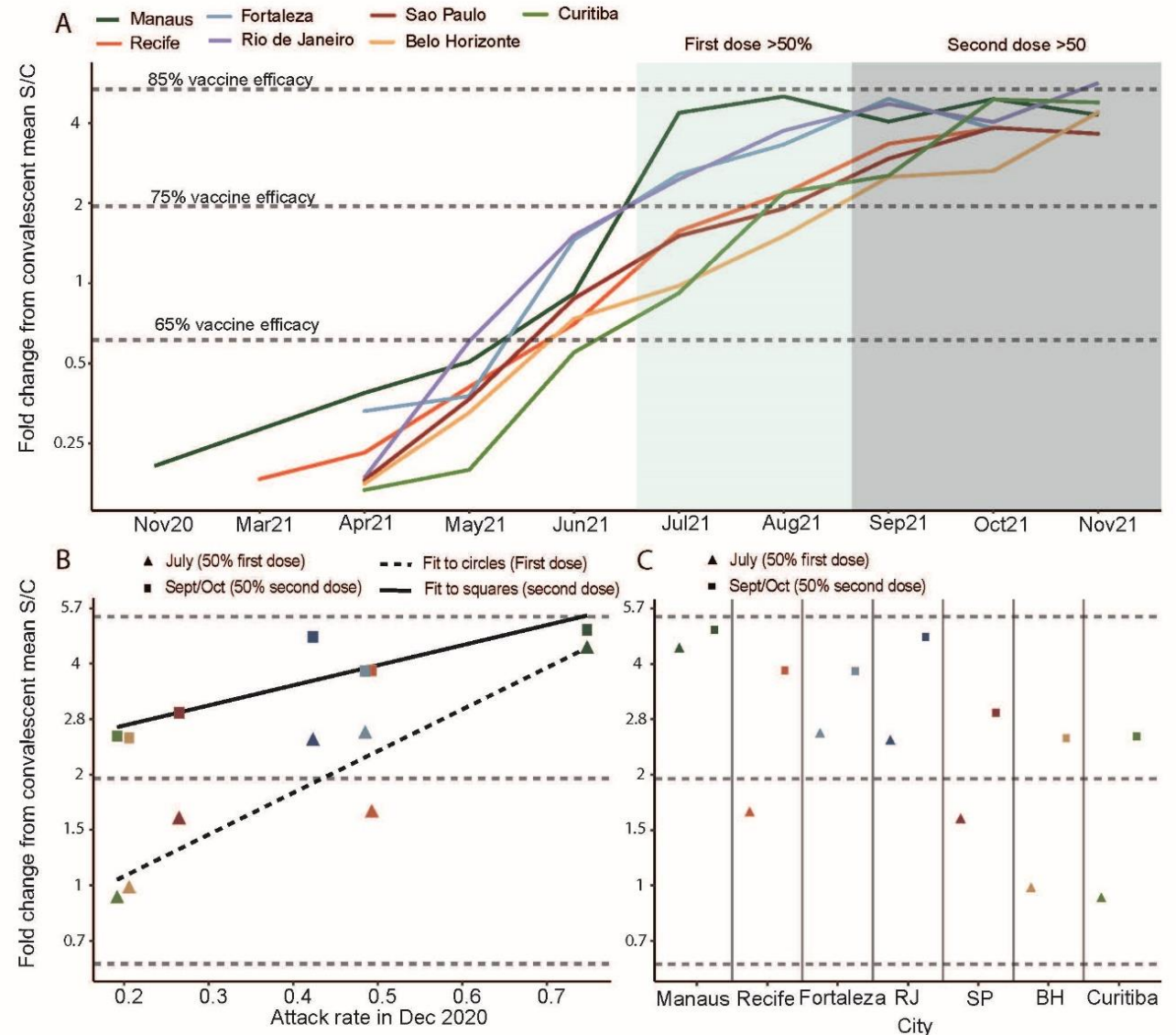
David S. Khoury^{1,9}, Deborah Cromer^{1,9}, Arnold Reynaldi¹, Timothy E. Schlub^{1,2}, Adam K. Wheatley³, Jennifer A. Juno³, Kanta Subbarao^{3,4}, Stephen J. Kent^{3,5,6}, James A. Triccas^{7,8} , and Miles P. Davenport^{1,5} 



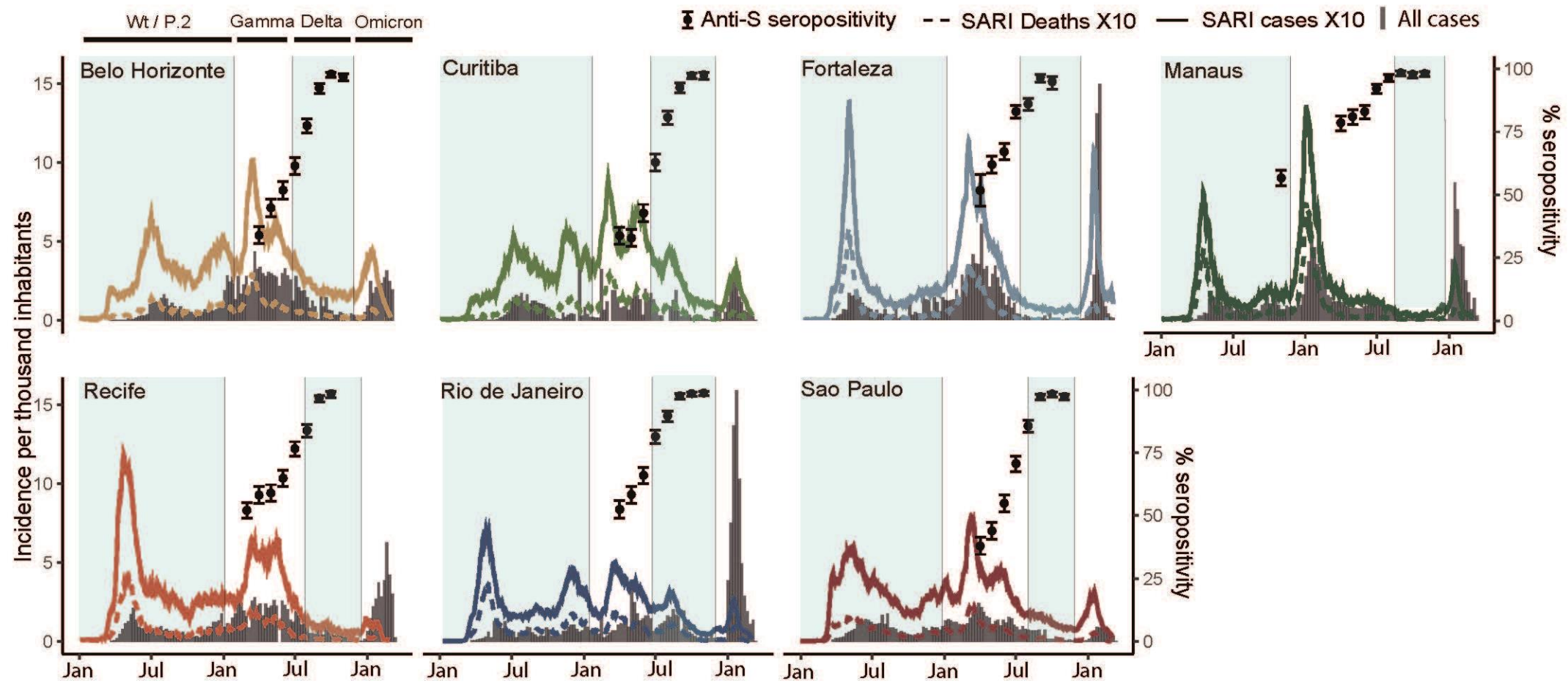
Article

Predicting SARS-CoV-2 Variant Spread in a Completely Seropositive Population Using Semi-Quantitative Antibod Measurements in Blood Donors

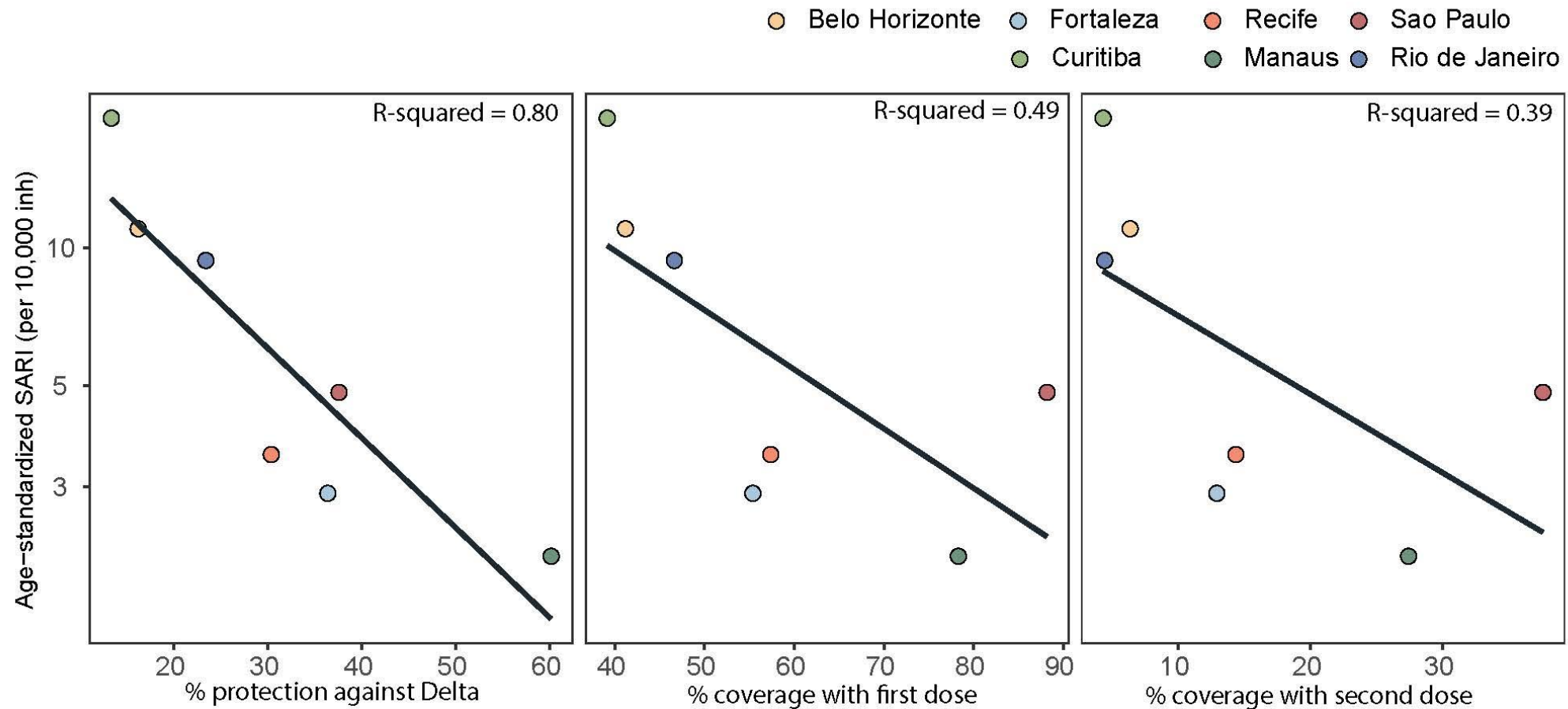
Lewis Buss ^{1,*}, Carlos A. Prete, Jr. ^{2,†}, Charles Whittaker ^{1,†}, Tassila Salomon ^{3,†}, Marcio K. Oikawa ⁴, Rafael H. M. Pereira ⁵, Isabel C. G. Moura ³, Lucas Delerino ⁶, Rafael F. O. Franca ⁶, Fabio Miyajima ⁶, Alfredo Mendrone Jr. ⁸, Cesar Almeida-Neto ⁸, Nanci A. Salles ⁸, Suzete C. Ferreira ⁸, Karine A. Fladzin ⁹, Luana M. de Souza ⁹, Luciane K. Schier ⁹, Patricia M. Inoue ⁹, Lilyane A. Xabregas ¹⁰, Myuki A. E. Crispin Nelson Fraiji ¹⁰, Luciana M. B. Carlos ¹¹, Veridiana Pessoa ¹¹, Maisa A. Ribeiro ¹², Rosivaldo E. de Souza Anna F. Cavalcante ¹³, Maria I. B. Valença ¹³, Maria V. da Silva ¹³, Esther Lopes ¹⁴, Luiz A. Filho ¹⁴, Sheila O. G. Mateos ¹⁴, Gabrielle T. Nunes ¹⁴, David Schlesinger ¹⁵, Sônia Mara Nunes da Silva ¹², Alexander L. Silva-Junior ^{10,16}, Marcia C. Castro ¹⁷, Vítor H. Nascimento ², Christopher Dye ¹⁸, Michael P. Busch ^{19,20}, Nuno R. Faria ^{1,18,21,22} and Ester C. Sabino ^{21,*}



Results normalized by convalescent plasma donor S/C



Antibody level correlated better with protection against delta than vaccination coverage



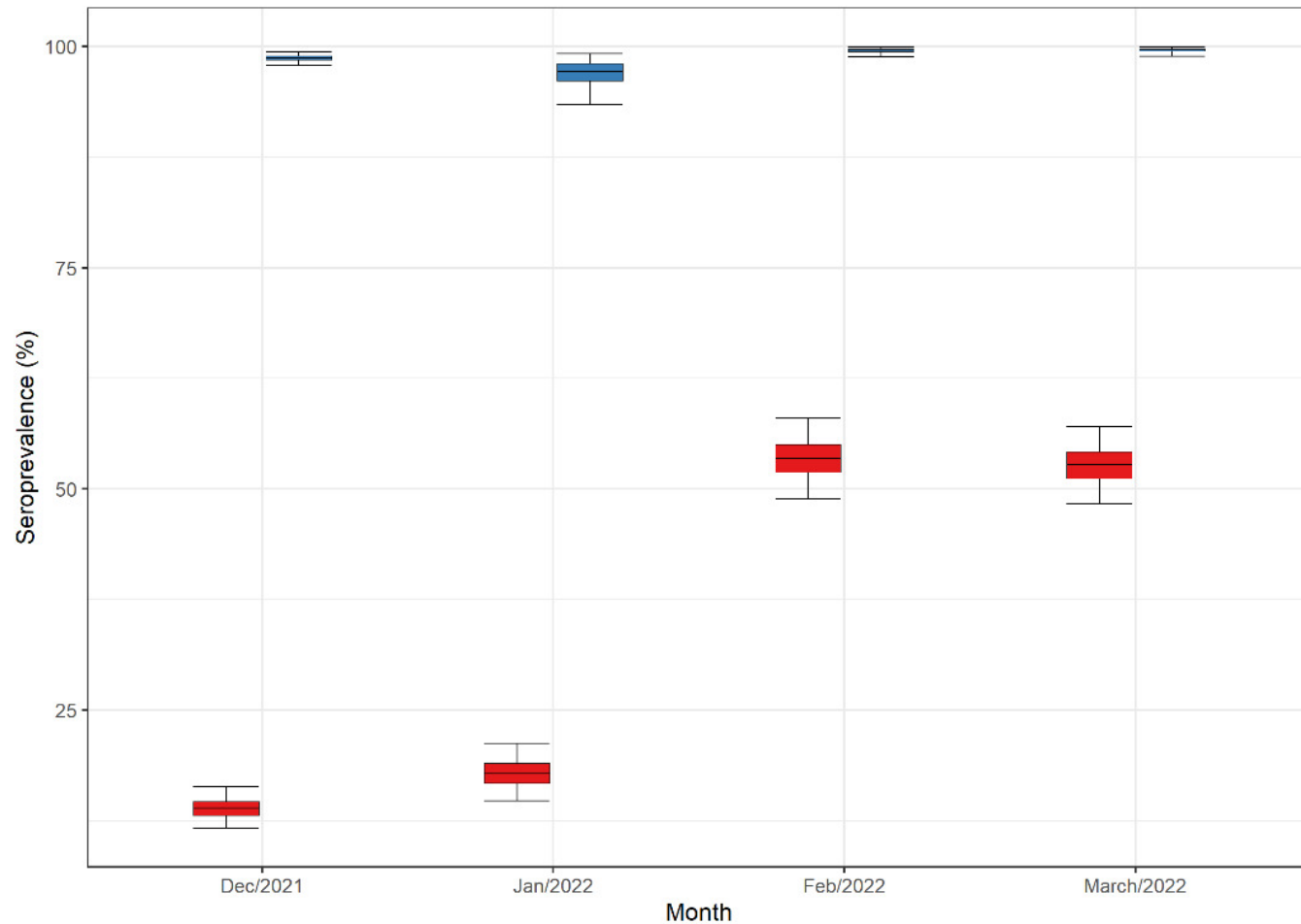
Casos



Mortes



Crude prevalence of Abbott anti-N and anti-S before and after Omicron 1 wave in the city of Sao Paulo



Anti-N Abbott as a proxy of recent infection?

Conclusion

- Blood donors can provide important insights during an emergency
- Studies are needed to compare rates of disease among donors and general population as a preparation for next crisis.

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