Lessons and impact for meningitis in the COVID-19 era: Findings from the IRIS initiative, with a focus on Brazil, and commenting on the situation in Latin America

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Disclosure Statement

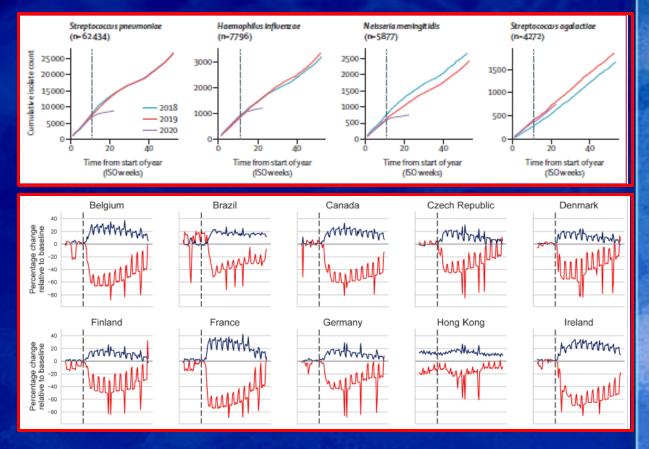
Marco Aurélio Sáfadi MD, PhD

- Consultant for SAGE from the WHO
- Consultant AdHoc for ANVISA
- Member of the CEPI Scientific Committee.
- Member of the Brazilian NIP Advisory Committee for the Ministry of Health
- Research grants, speaker's fee and participation in *advisory boards from* Pfizer, GSK and Sanofi.
- I don't own shares of any of these pharmaceutical companies.
- My prerequisites for participating in these activities are the autonomy of scientific thought, the independence of opinions and freedom of expression.

Significant reductions in invasive bacterial infections during the COVID-19 pandemic.

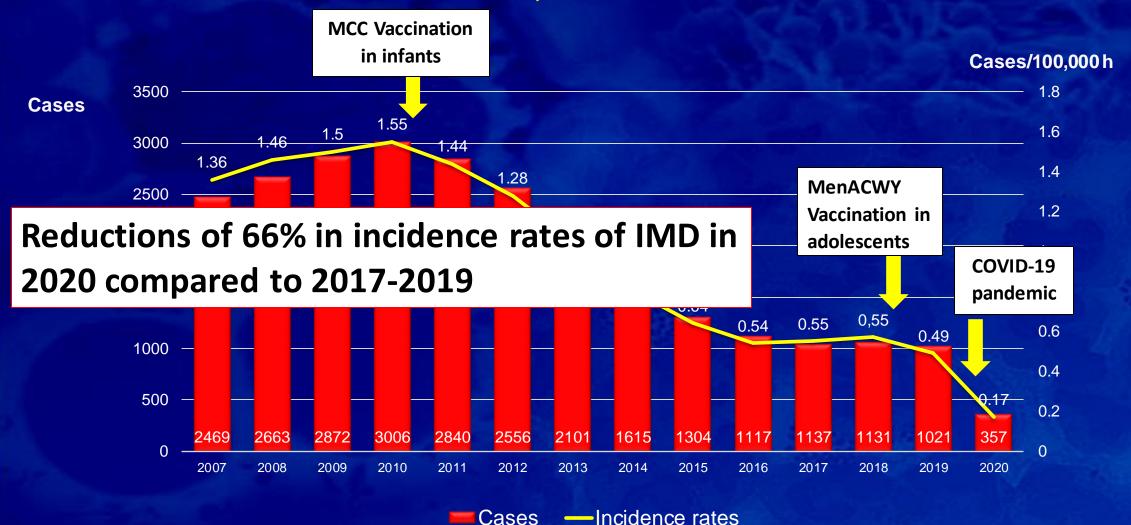
Laboratories in 26 countries across six continents submitted data on cases of invasive disease due to S pneumoniae, H influenzae and N meningitidis from 1 January 2018 to 31 May 2020

- All countries experienced a significant, sustained reduction in invasive diseases due to S pneumoniae, H influenzae and N meningitidis, but not S agalactiae, in early 2020, coinciding with the COVID-19 containment measures.
 - There was no evidence of a specific effect due to enforced school closures.

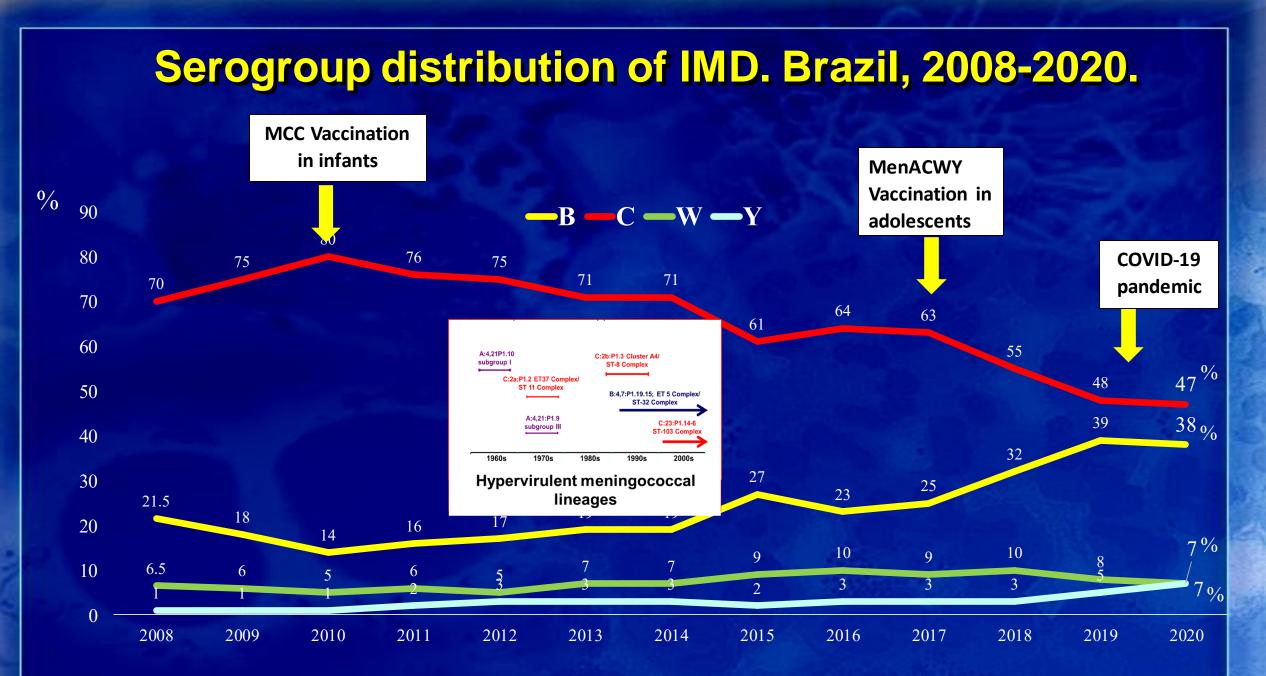


Brueggmann et al. Lancet Digit Health 2021; 3: e360-70

Number of cases and Incidence Rates of IMD. Brazil, 2007-2020



SINAN, MS 2021. http://tabnet.datasus.gov.br/cgi/deftohtm.exe?sinannet/cnv/meninbr.def



Fonte: SIAPI/CGPNI

Impact of the COVID-19 on incidende rates of IMD according to age groups. Brazil.

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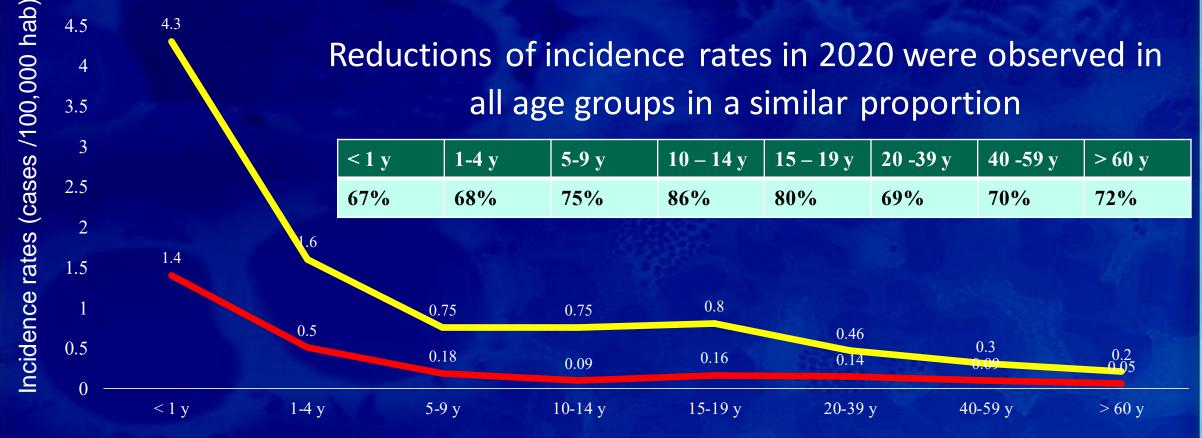
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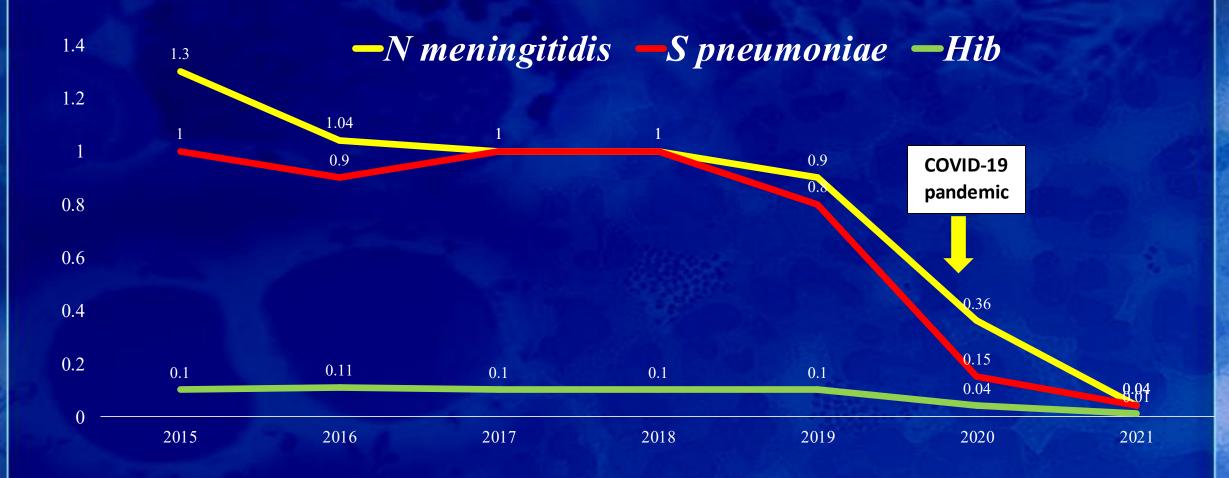
-2017 - 2019 - 2020

Reductions of incidence rates in 2020 were observed in all age groups in a similar proportion



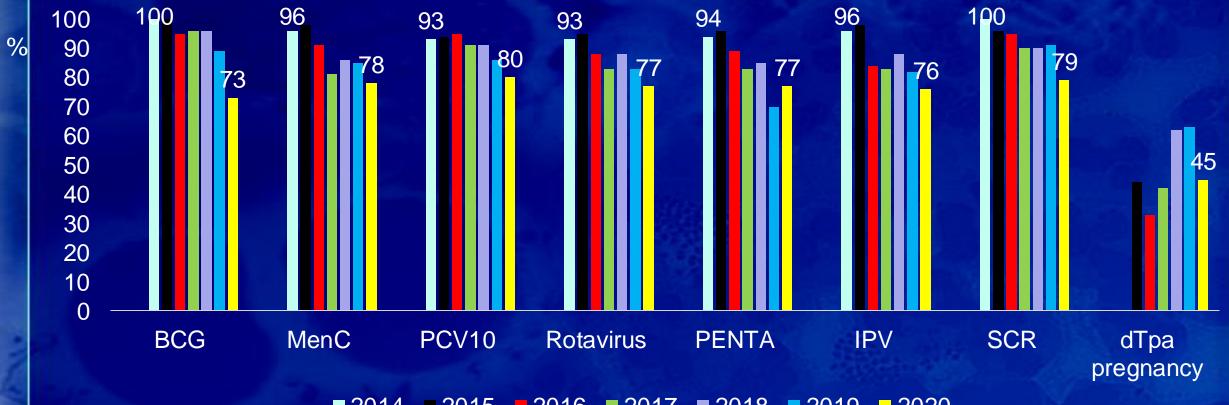
http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sinannet/cnv/meninbr.def

Incidence rates of bacterial meningitis. Sao Paulo, 2008-2021.



https://www.saude.sp.gov.br/cve-centro-de-vigilancia-epidemiologica-prof.-alexandre-vranjac/areas-de-vigilancia/doencas-de-transmissao-respiratoria/agravos/meningites/dados-estatisticos

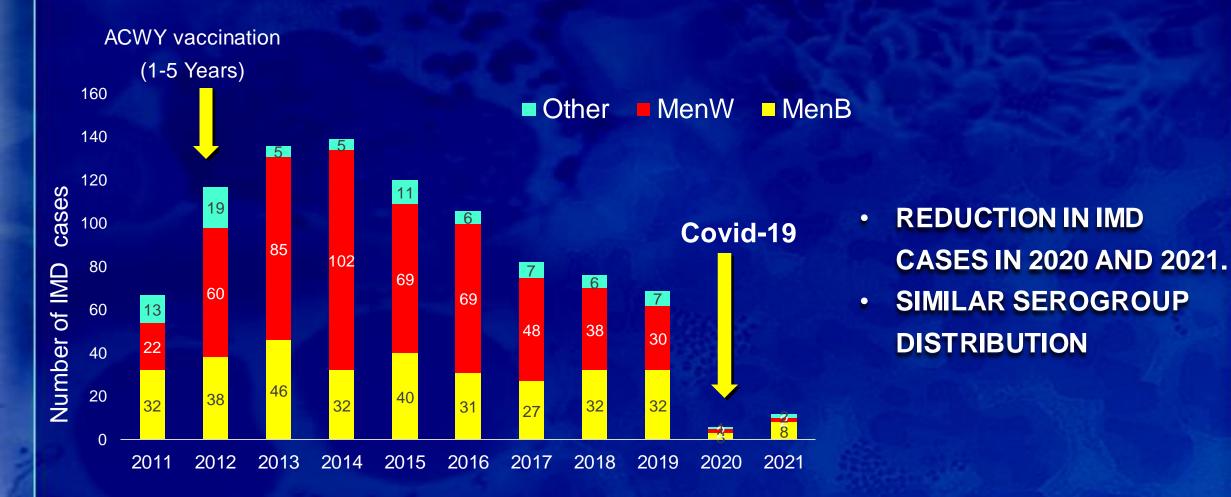
Coverage rates of vaccines. Brazil 2014-2020



■ 2014 ■ 2015 **■** 2016 **■** 2017 **■** 2018 **■** 2019 **■** 2020

Fonte:http://pni.datasus.gov.br*Dados acessados em 15/07/2019. Destaque em vermelho para CV < meta (90% BCG e Rotavirus; 95% demais vacinas

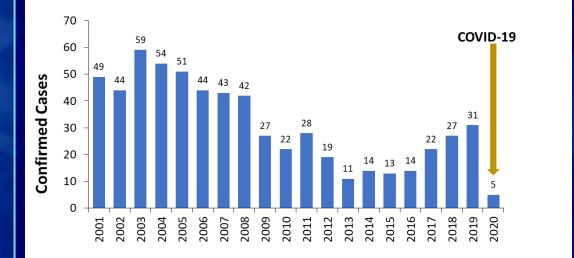
IMD cases by serogroup in Chile, 2011-2021



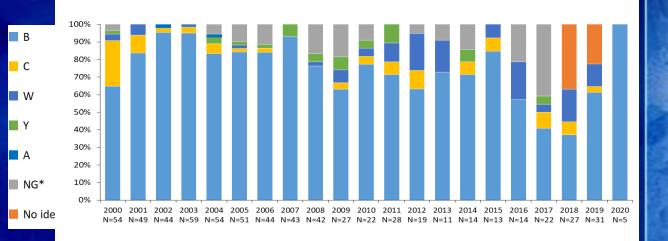
•https://www.ispch.cl/andid/gestion-de-la-informacion/vigilancia-laboratorios-de-agentes-infecciosos/

Meningococcal Disease in Uruguay. 2001-2020

Number of annual confirmed cases of IMD



Serogroup distribution of IMD

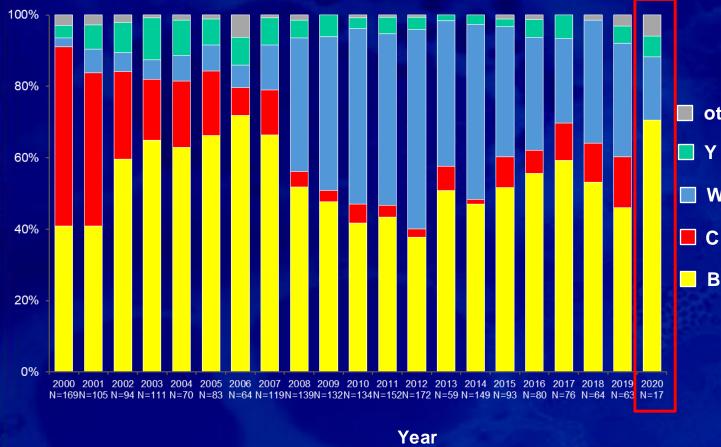


A 72% reduction was observed in 2020 comparing to the period between 2013-2019

MenB, the predominant serogroup causing IMD, was responsible for all identified cases in 2020

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Serogroup distribution of IMD cases in Argentina

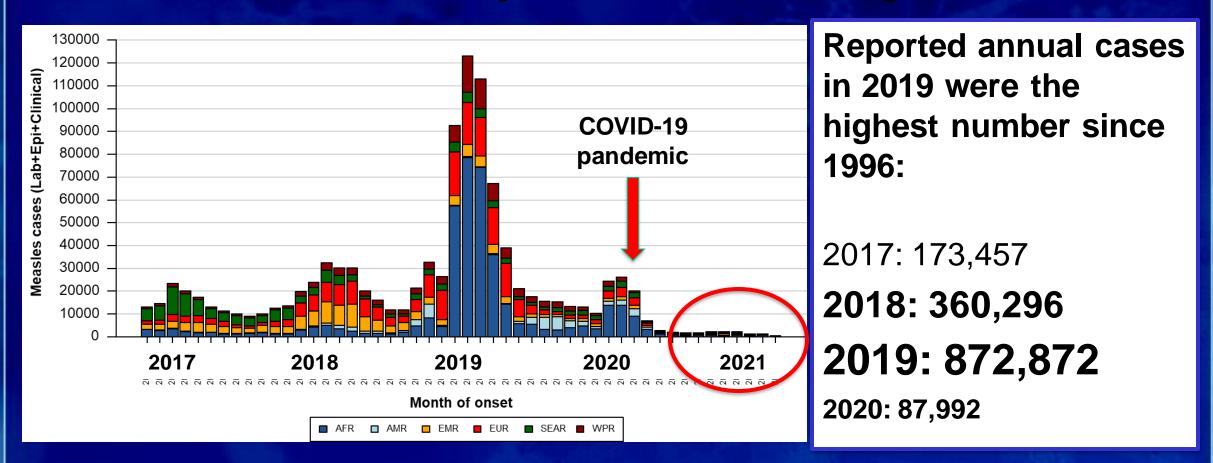


Only 17 isolates of *N* others/NG* meningitidis in 2020, Y against an average of W 76 [63-149] in the c period between 2014-B 2019. No changes in the serogroup distribution.

Number of samples

Adaptado del Informe Regional de SIREVA II, 2000-2015. Washington, DC: Organización Panamericana de la Salud. https://www.paho.org/hq/index.php?option=com_content&view=article&id=5536:2011-sirevaii&Itemid=3966&Iang=es (acceso Octubre 2019); . Adaptado de Antimicrobianos. SIREVA-Argentina. Informe Argentina 2016-2019. SIREVA II. Servicio Antimicrobianos. Dpto. Bacteriología, Instituto Nacional de Enfermedades Infecciosas (INEI) - ANLIS "Dr. Carlos G. Malbrán. http://antimicrobianos.com.ar/category/resistencia/sireva/ (acceso Enero 2021).

Measles case distribution by month and WHO Region (2017-2021*)

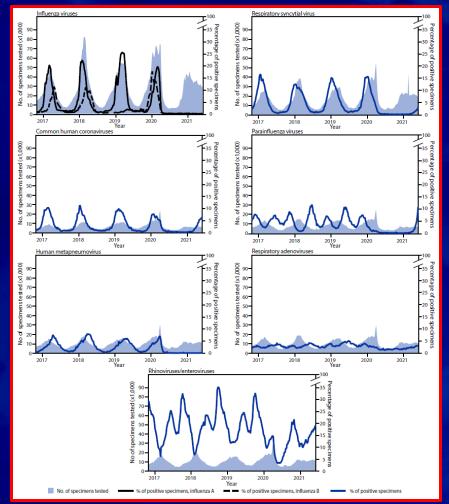


In 2020, the notification of suspected measles and rubella cases in the Americas region decreased in 73% in comparison with 2019. The low notification trend continues, with a median of 132 cases for the first semester of 2021.

Based on data received 2021-03 - Data Source: IVB Database. *Data as of epidemiological week 26, 2021 (ending on 3 July 2021). Source: Surveillance country reports sent to PAHO.

Changes in Influenza and Other Respiratory Virus Activity During the COVID-19 Pandemic — United States, 2020–2021

Number of specimens tested and the percentage of positive tests for influenza, RSV, common human coronaviruses, parainfluenza viruses, HMP, respiratory adenoviruses, and rhinoviruses/enteroviruses



Summary

What is already known about this topic?

Nonpharmaceutical interventions introduced to mitigate the impact of COVID-19 reduced transmission of common respiratory viruses in the United States.

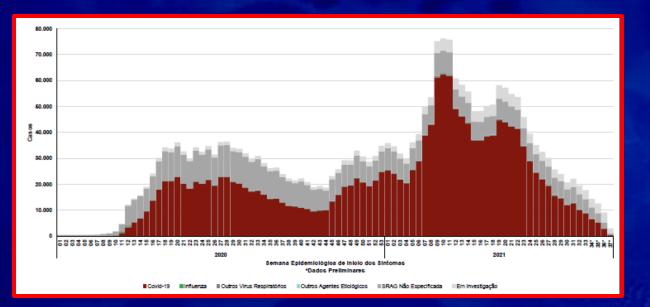
What is added by this report?

Influenza viruses and human metapneumovirus circulated at historic lows through May 2021. In April 2021, respiratory syncytial virus activity increased. Common human coronaviruses, parainfluenza viruses, and respiratory adenoviruses have been increasing since January or February 2021. Rhinoviruses and enteroviruses began to increase in June 2020.

What are the implications for public health practice?

Clinicians should be aware of increased circulation, sometimes off season, of some respiratory viruses and consider multipathogen testing. In addition to recommended preventive actions, fall influenza vaccination campaigns are important as schools and workplaces resume in-person activities with relaxed COVID-19 mitigation practices.

Hospitalizations and deaths from Severe Acute Respiratory Syndrome. Brazil, 2020 to 2021, until SE 37



	Óbitos por Síndrome Respiratória Aguda Grave (SRAG)							
Falxa etárla (em anos)	covid-19	Influenza	Outros vírus respiratórios	Outros agentes etiológicos	Não específicado	Em Investigação	Total	
<1	360	1	74	4	428	25	892	
1 a 5	181	0	30	7	217	3	438	
6 a 19	704	0	19	10	350	18	1.101	
20 a 29	5.383	3	8	26	751	39	6.210	
30 a 39	19.306	5	10	51	1.550	106	21.028	
40 a 49	39.556	18	18	56	2.841	213	42.702	
50 a 59	66.473	25	26	64	4.778	353	71.719	
60 a 69	81.415	34	34	103	7.515	418	89.519	
70 a 79	73.257	24	59	119	8.813	439	82.711	
80 a 89	46.173	23	43	93	7.961	362	54.655	
90 ou mais	13.746	6	22	38	3.239	142	17.193	
Sexo								
Masculino	192.346	82	179	348	20.435	1.143	214.533	
Feminino	154.166	57	164	223	18.003	974	173.587	
Ignorado	42	0	0	0	5	1	48	
Total geral	346.554	139	343	571	38.443	2.118	388.168	

Hospitalizations -	TOTAL 2021	Deatha		
Hospitalizations -	n	%	Deaths	
Covid-19	1.093.423	73,5%	Covid-19	
Influenza	940	0,1%	Influenza	
Outros Vírus Respiratórios	10.751	0,7%	Outros vírus respiratórios	
Outros Agentes Etiológico	3.182	0,2%	Outros agentes etiológicos	
Não Especificada	247.149	16,6%	Não especificada	
Em Investigação	132.057	8,9%	Em investigação	
TOTAL	1.487.502	100,0%	TOTAL	

Deaths	TOTAL 2021 (até SE 37)			
Deaths	n	%		
Covid-19	346.554	89,3%		
Influenza	139	0,0%		
Outros vírus respiratórios	343	0,1%		
Outros agentes etiológicos	571	0,1%		
Não especificada	38.443	9,9%		
Em investigação	2.118	0,5%		
TOTAL	388.168	100,0%		

chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.gov.br%2Fsaude%2Fpt-br%2Fmedia%2Fpdf%2F2021%2Fsetembro%2F24%2Fboletim_epidemiologico_covid_81final24set.pdf&clen=10023428&chunk=true

Key Learnings

- A dramatic reduction in incidence rates of invasive diseases caused by pathogens of respiratory transmission
- Despite a unique opportunity to further control of IMD, Vaccination coverage rates are dramatically decreased representing a potential risk not only of a rebound in the IMD rates, but also of resurgence of diseases that were reduced, controlled, or even eliminated in the region.
- IMD was not eliminated from these regions, highlighting the need of maintaining surveillance system to inform health authorities on the current burden of these invasive diseases, including data on carriage rates.

Obrigado! Thank You!



