



COVID-19

Omicron: Implications for clinical management

February 10th, 2022

Clinical Management Team
IMST for the COVID-19 response
Pan American Health Organization

Scope of the presentation

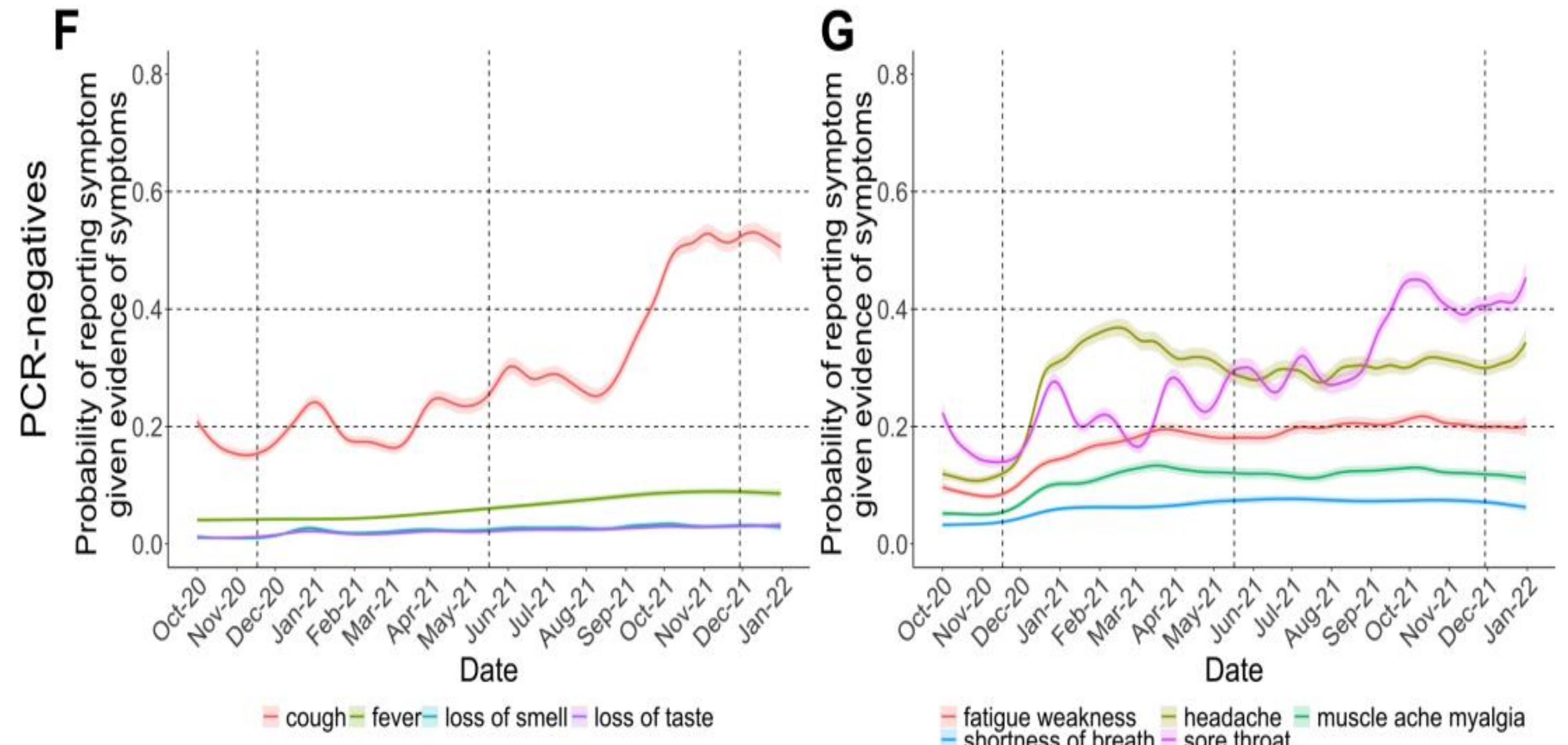
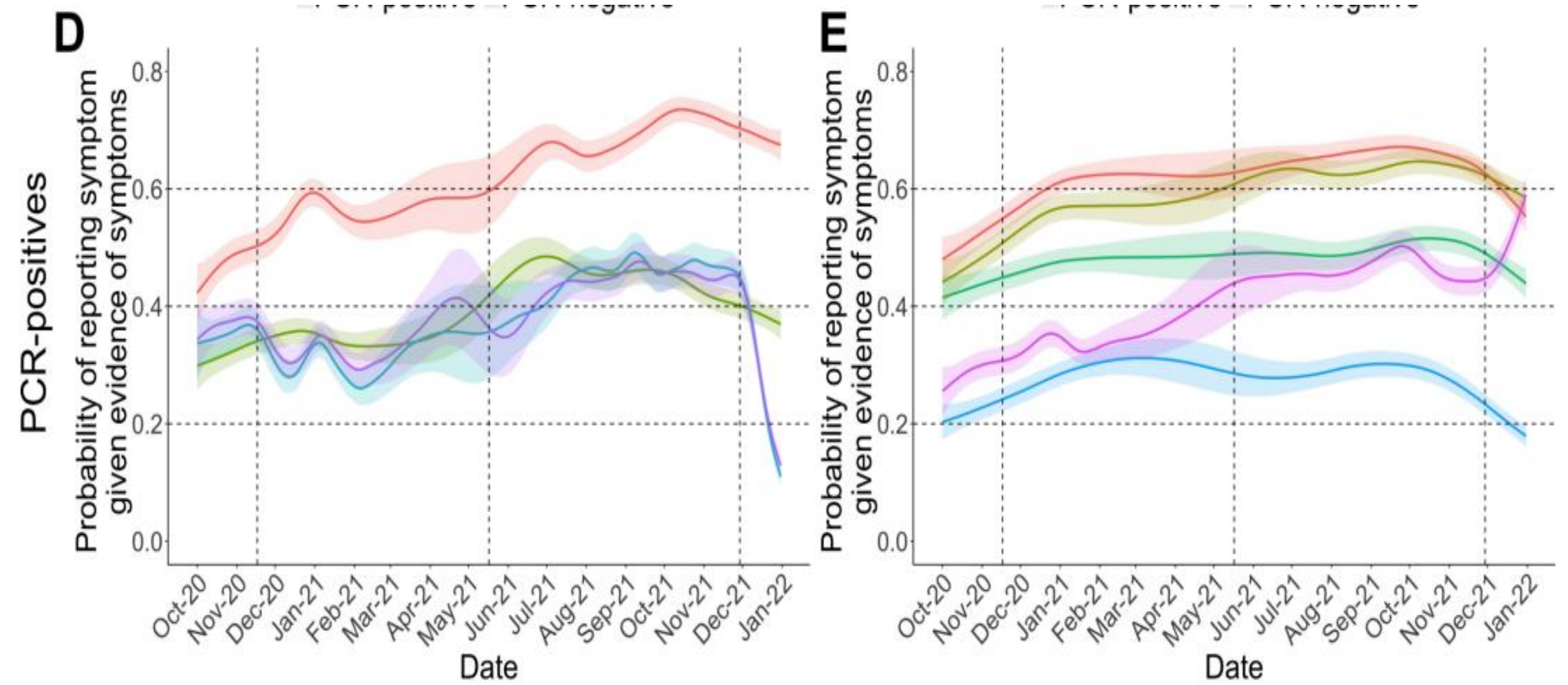
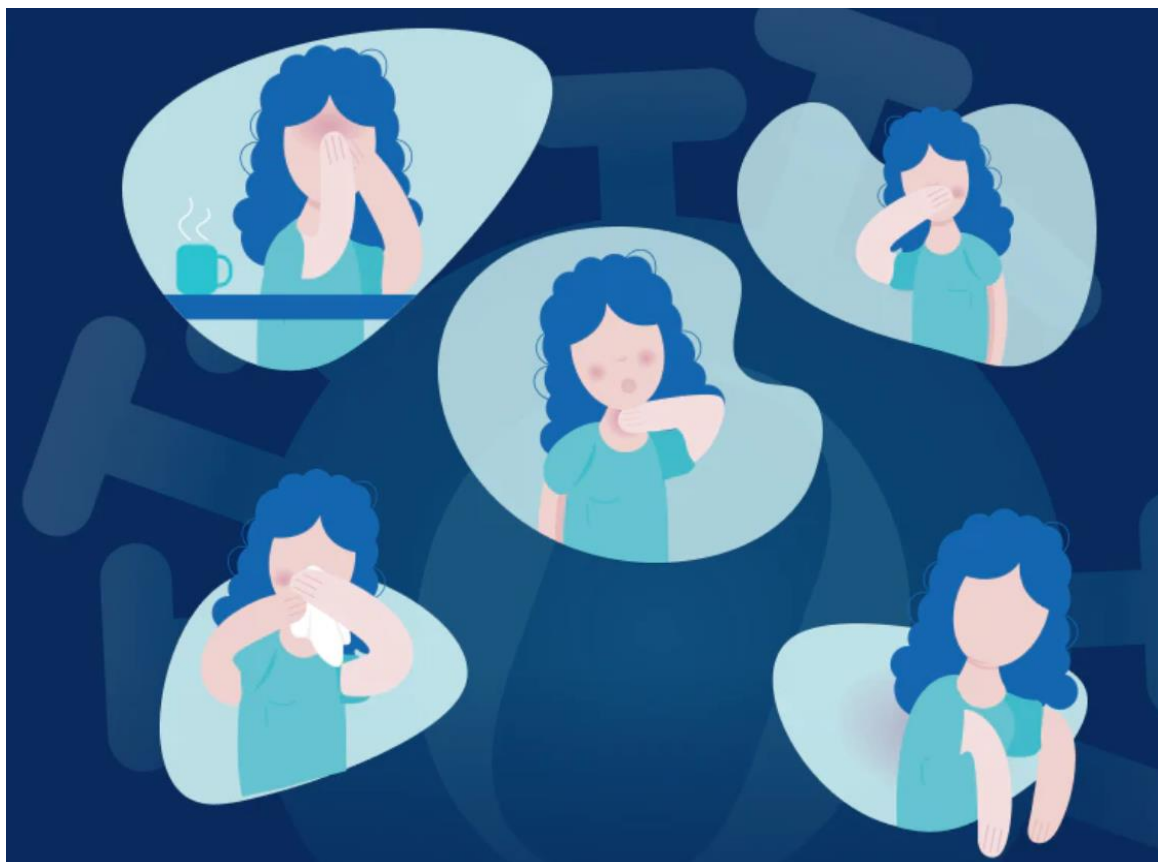
- ❖ **Clinical symptoms**
- ❖ **Risk of hospitalization, disease severity and mortality**
- ❖ **Pathogenesis**
- ❖ **Considerations for clinical providers**
- ❖ **Summary**

Rapid Search

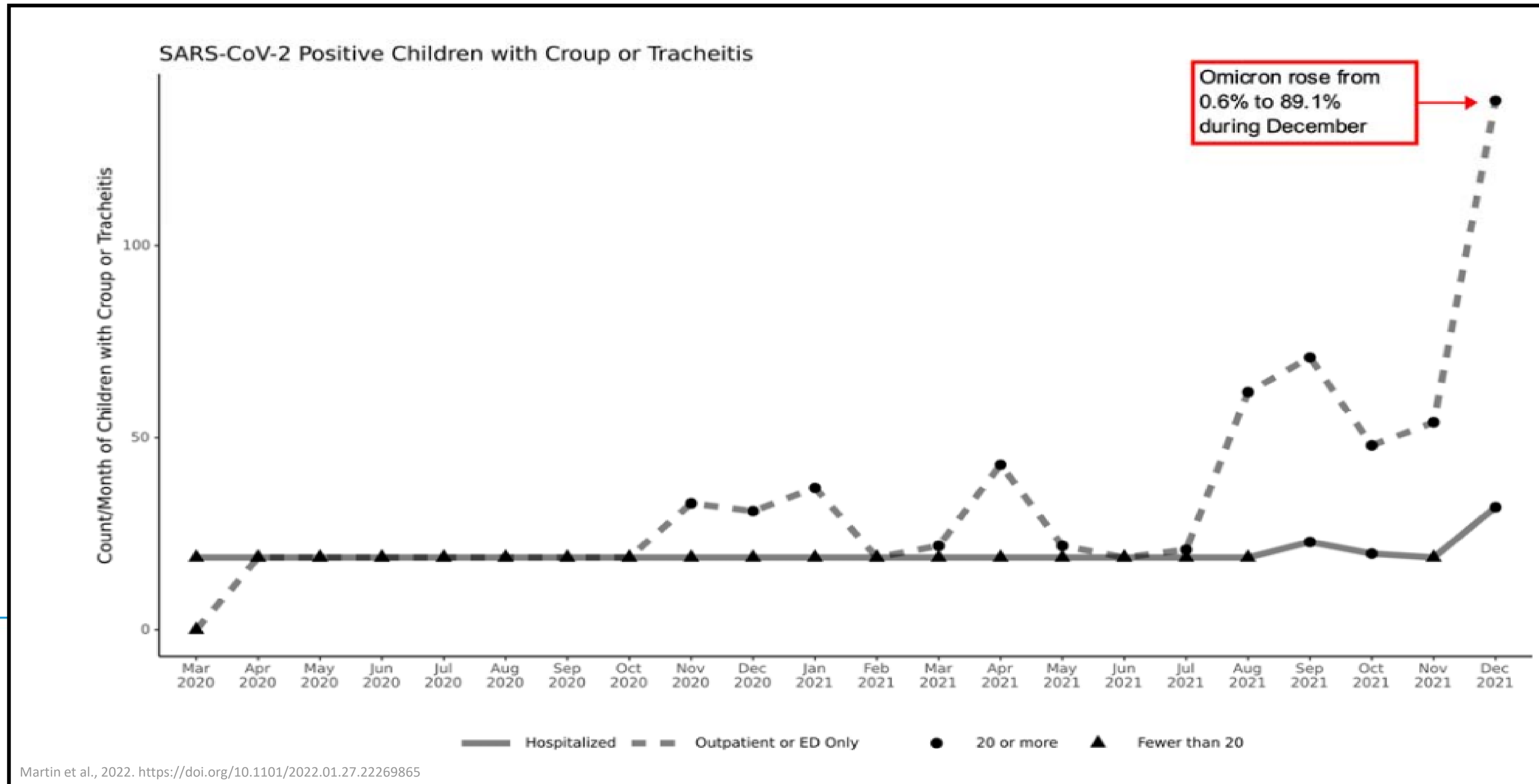
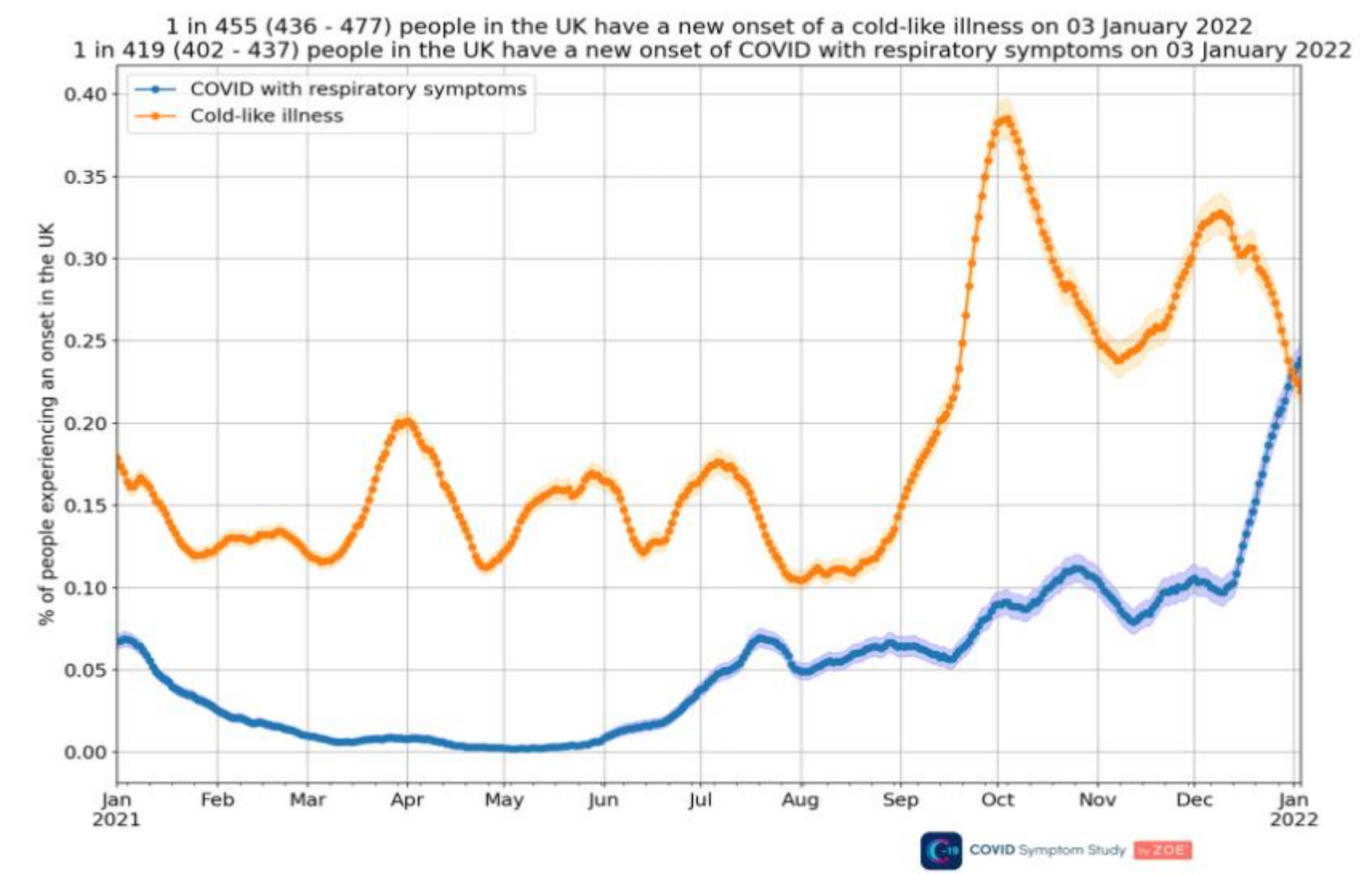
Pubmed, Embase, Epistemonikos, MedRxiv, BioRxiv
Reports and publications from Public Health Agencies, app studies, etc;

❖ Symptoms

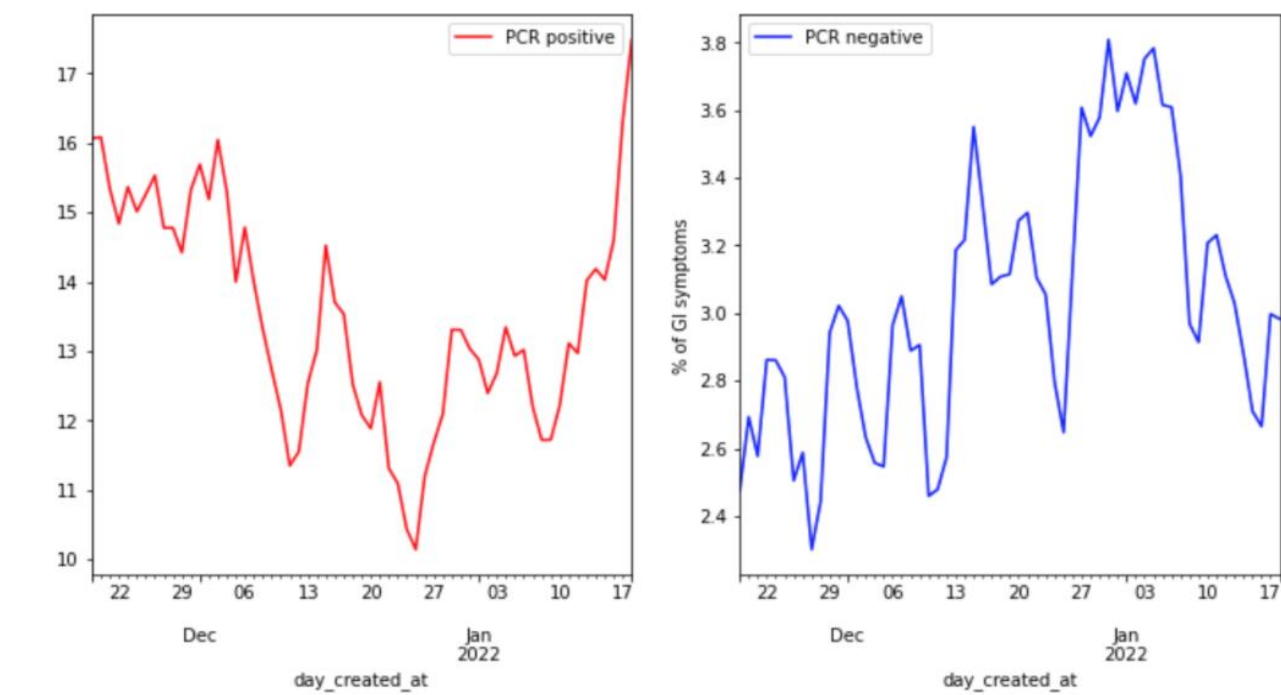
- Early reports associate Omicron with fewer lower and more upper respiratory tract symptoms
- Loss of smell and taste are less common
- Presence and severity of symptoms can be affected by vaccination status, comorbidities, age, prior infection.



- Consider other circulating viruses with similar symptomatology.
- Croup or Tracheitis - Clinical phenotype of pediatric infection by the Omicron
- Understanding new clinical phenotypes will support therapeutic decision making and health resource planning



COVID infection vs Cold-like illness



GI symptoms- PCR positive and negative

<https://joinzoe.com/learn/omicron-symptoms>

BE AWARE. PREPARE. ACT.
www.paho.org/coronavirus

Is Omicron a mild form of COVID-19?

Early studies suggest that Omicron has reduced risk of hospitalization and disease severity compared to other variants.

Country of study	Risk of hospitalization	Risk of ICU admission	Risk of mortality	Source
South Africa*	aOR 0.2, [0.1; 0.3]	-	-	(Wolter et al., 2022).
South Africa	-	-	aHR 0.27 [0.19; 0.38]	(Davies et al., 2022)
Portugal (BA.1 vs Delta)	aHR 0.25 [0.15; 0.43]	-	aHR 0.14 [0.00; 1.12]	(Peralta-Santos et al., 2022)
UK (BA.1 VS Delta)	aHR 0.55 [0.51; 0.59]	-	-	(Ferguson et al., 2021)
Scotland	0.32 [0.19; 0.52]	-	-	(Sheikh et al., 2021)
France (Omicron vs Delta)	-	reduced by 64%	-	(Vieillard-Baron et al., 2022)
Canada (BA.1 vs Delta)	HR 0.35, [0.26, 0.46]	-	HR 0.35 [0.26; 0.46]	(Ulloa et al, 2021)
USA (vs Alpha & Delta)*	OR 0.21 [0.18; 0.22]	-	OR 0.15 [0.11; 0.21]	(Christensen et al., 2022)
USA	aHR 0.48 (0.36; 0.64) ,	aHR 0.26 (0.10, 0.73)	HR 0.09 [0.01; 0.75]	(Lewnard et al., 2022)

*Peer reviewed; aOR- Adjusted Odds Ratio; aHR- Adjusted Hazard Ratio; OR- Odds Ratio; BA.1- Omicron

THE LANCET

ARTICLES | VOLUME 399, ISSUE 10323, P437-446, JANUARY 29, 2022

Early assessment of the clinical severity of the SARS-CoV-2 omicron variant in South Africa: a data linkage study

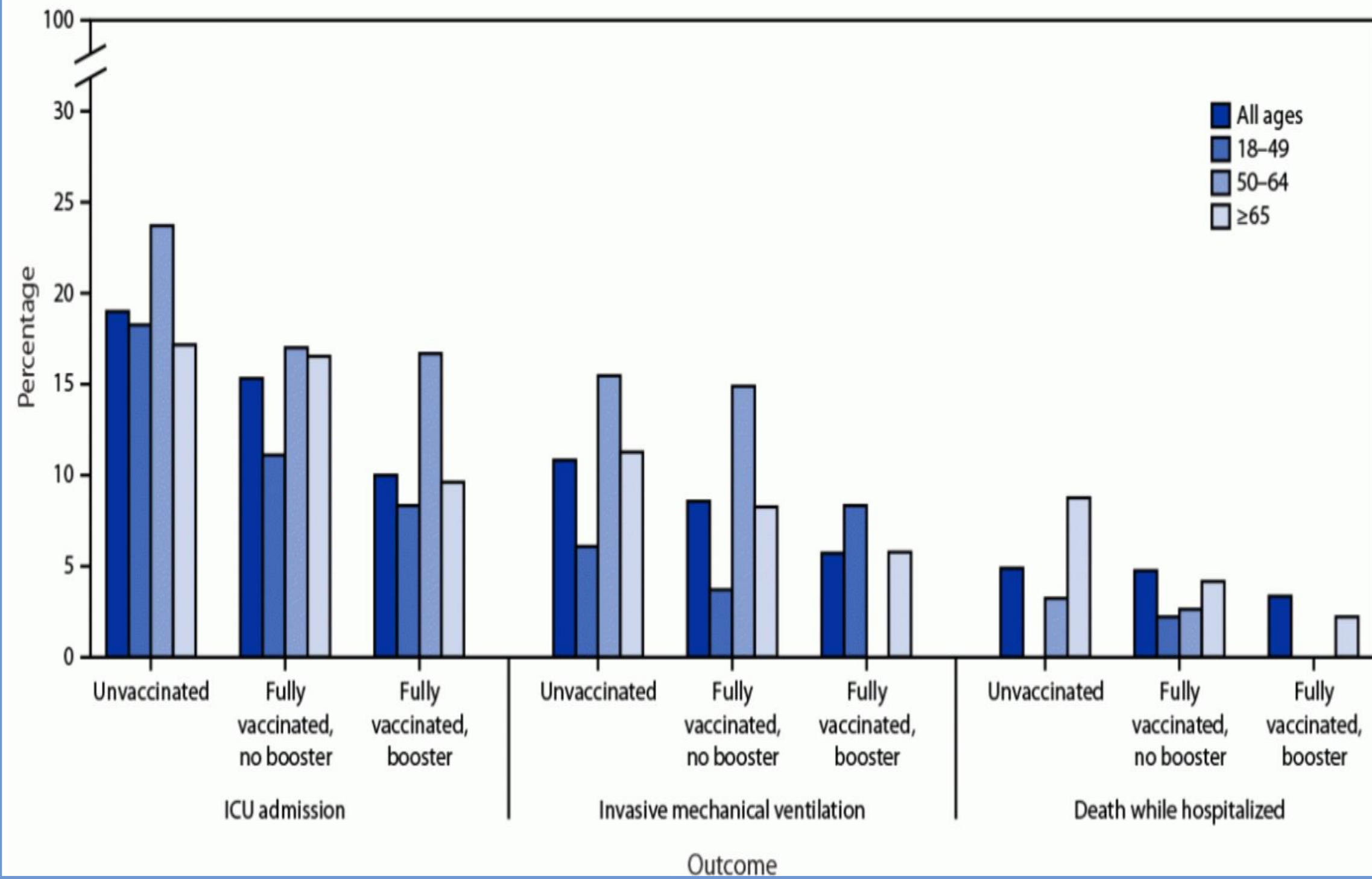
Nicole Wolter, PhD - Waasila Jassat, MMED - Sibongile Walaza, PhD - Richard Welch, BSc - Harry Moultrie, PhD - Michelle Groome, PhD - et al. Show all authors - Show footnotes

Signals of significantly increased vaccine breakthrough, decreased hospitalization rates, and less severe disease in patients with COVID-19 caused by the Omicron variant of SARS-CoV-2 in Houston, Texas

Paul A. Christensen - Randall J. Olsen - S. Wesley Long - ... Robert Olson - Jimmy Gollihar - James M. Musser - Show all authors - Show footnotes

Published: February 03, 2022 - DOI: <https://doi.org/10.1016/j.ajpath.2022.01.007>

FIGURE. Intensive care unit admission, use of invasive mechanical ventilation, and death while hospitalized among 737 adults hospitalized with SARS-CoV-2 infection during Omicron variant predominance, by age group and vaccination status*† — one hospital, California, December 21, 2021– January 27, 2022



Clinical Characteristics and Outcomes Among Adults Hospitalized with Laboratory-Confirmed SARS-CoV-2 Infection During Periods of B.1.617.2 (Delta) and B.1.1.529 (Omicron) Variant Predominance — One Hospital, California, July 15–September 23, 2021, and December 21, 2021–January 27, 2022. (Modes et al., 2022)

Omicron (BA.1) SARS-CoV-2 variant is associated with reduced risk of hospitalization and length of stay compared with Delta (B.1.617.2). (Peralta-Santos et al., 2022)

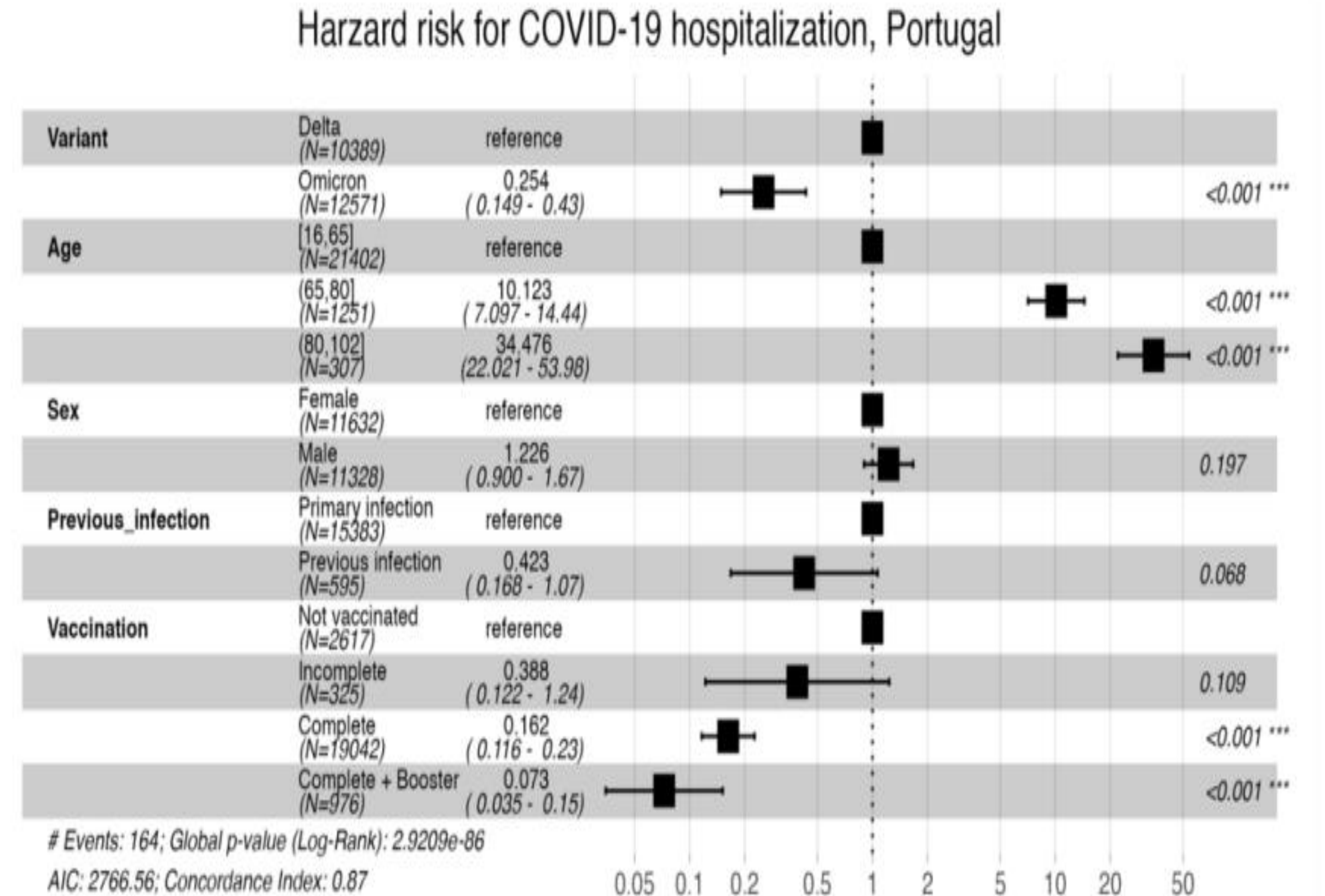


Figure 1. The hazard ratio for hospitalization in the fully adjusted cox model

❖ Considerations and limitations

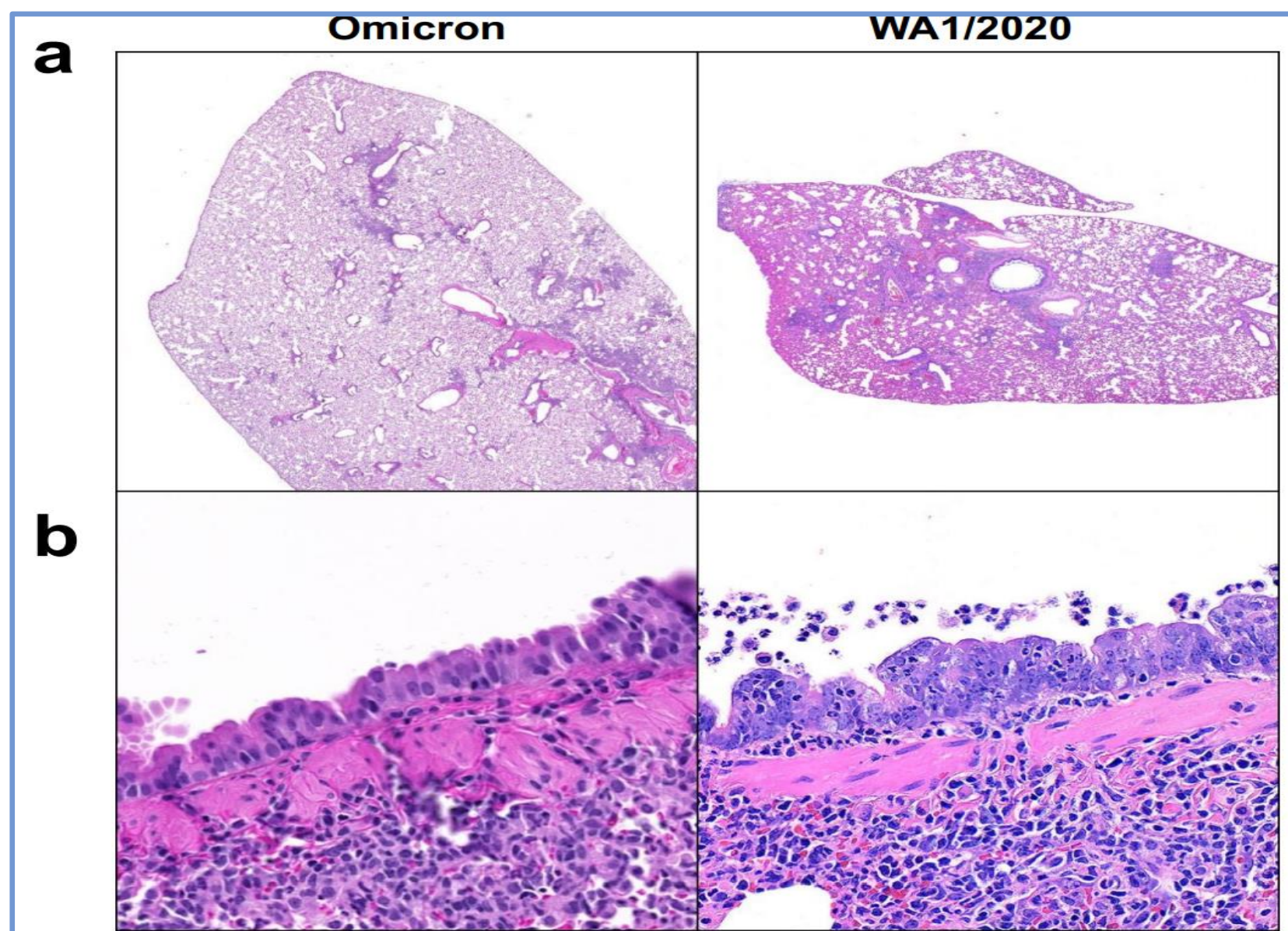
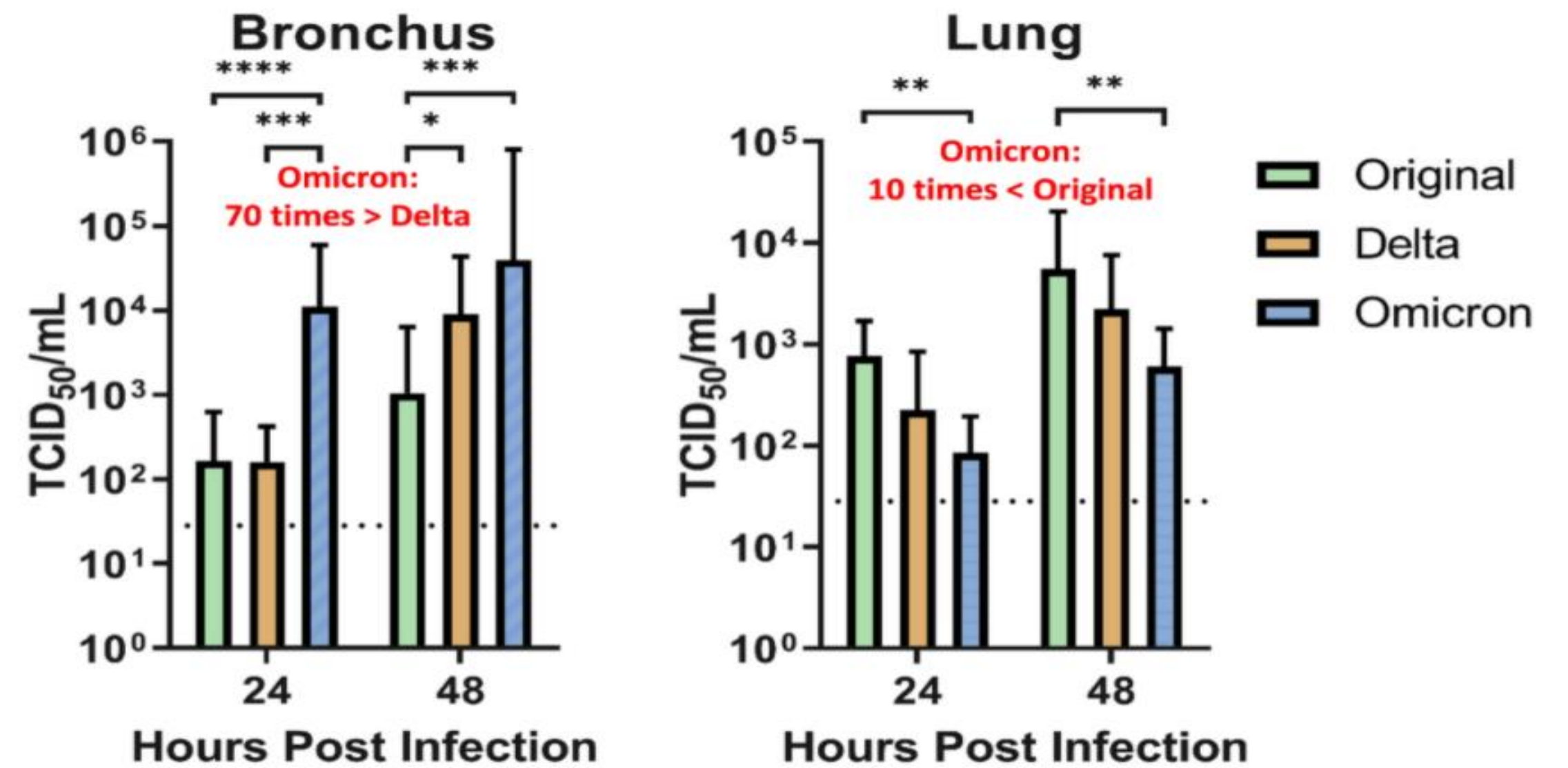
- Several weeks for the accumulation of clinical outcomes
- Improved treatment options
- Prior infections/ Vaccination
- Under-ascertained reinfections
- With the available data, it is not possible to disentangle the relative contributions of high levels of population immunity versus lower intrinsic virulence to the observed lower disease severity.
- The clinical profile of Omicron may change with upcoming evidence

❖ Pathogenesis

SARS-CoV-2 Omicron variant replication in human respiratory tract ex vivo

> Michael C. W. Chan, Kenrie PY Hui, John Ho, Man-chun Cheung, Ka-chun Ng, Rachel Ching, Ka-ling Lai, Tonia Kam, Haogao Gu, Ko-Yung Sit, Michael Hsin, Wing-Kuk Au, Leo Poon, Malik Peiris, John Nicholls

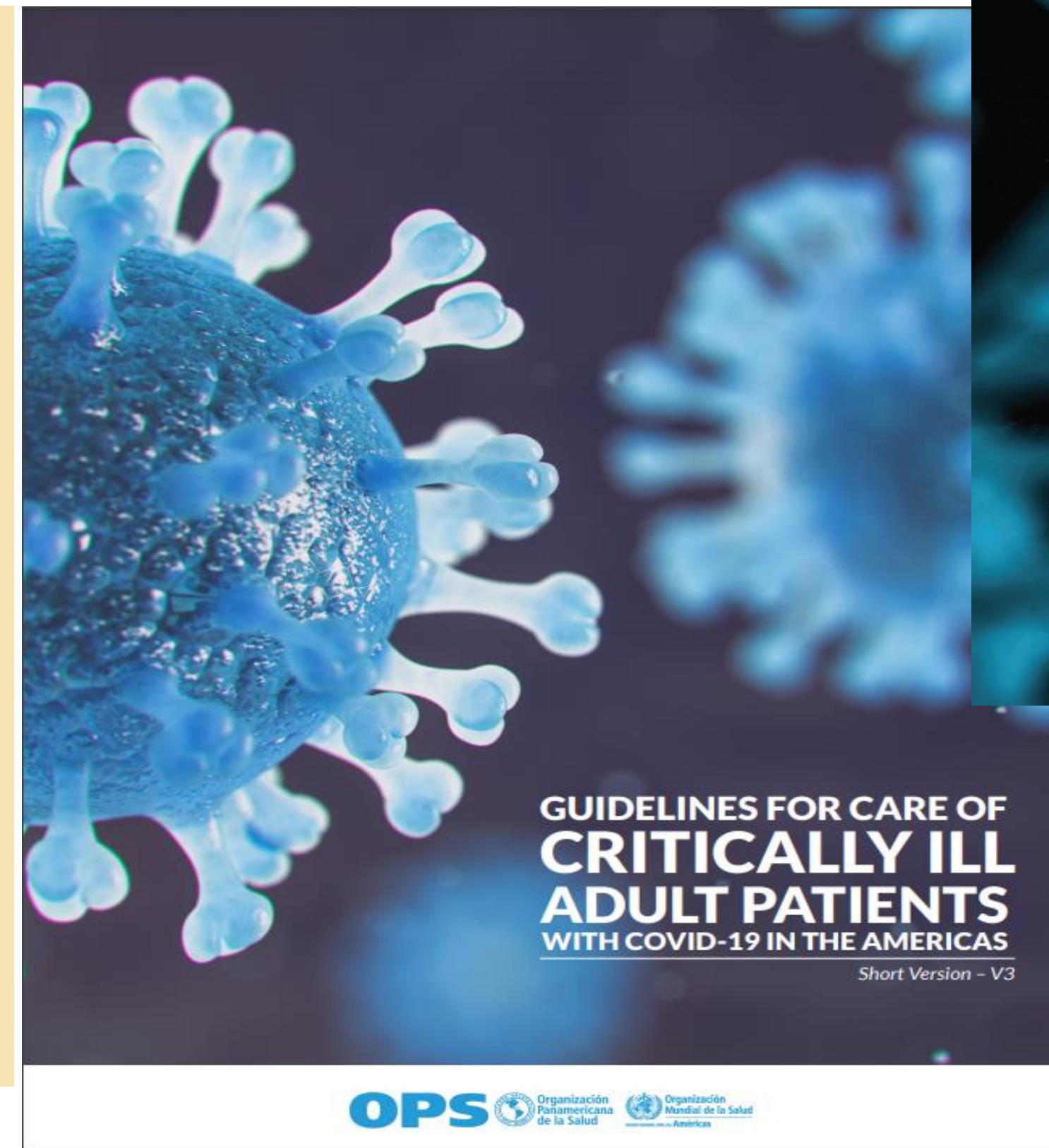
- Omicron seems to prefer infecting and replicating in the upper respiratory tract, compared to Delta and other strains which prefer the lower respiratory tract.
- Omicron variant replicates faster than the original SARS-CoV-2 virus and Delta variant in the human bronchus (Chan et al., 2021)



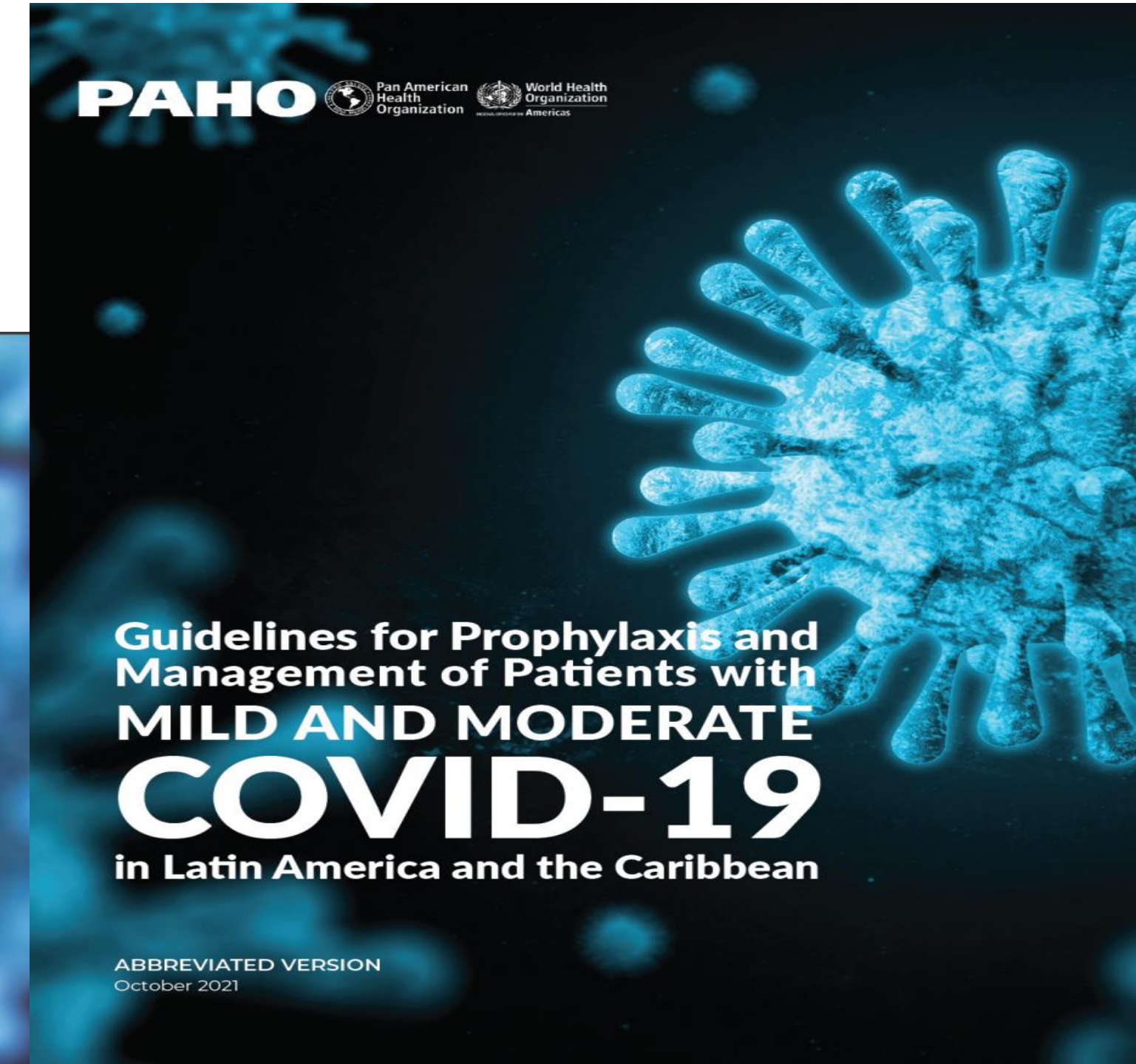
- Early studies from animal models show a reduced pathogenesis.
- Omicron-infected animals show fewer clinical signs and have less severe disease
- Omicron infection still led to lung pathology, including patchy consolidation, bronchiolar epithelial degeneration, and endothelialitis

❖ Considerations for clinical providers

- Administer clinical care of patients with COVID-19 infected with any SARS-CoV-2 variant according to **evidence-based guidelines**.
- Adapted appropriately for **local context and resource settings**
- Coincident with other circulating viruses, changes in symptomatology may influence clinical and testing policy.
- Use of **symptom base testing algorithms** will be challenging



<https://iris.paho.org/handle/10665.2/52719>



<https://iris.paho.org/handle/10665.2/55068>

COVID-19 CLINICAL CARE PATHWAY



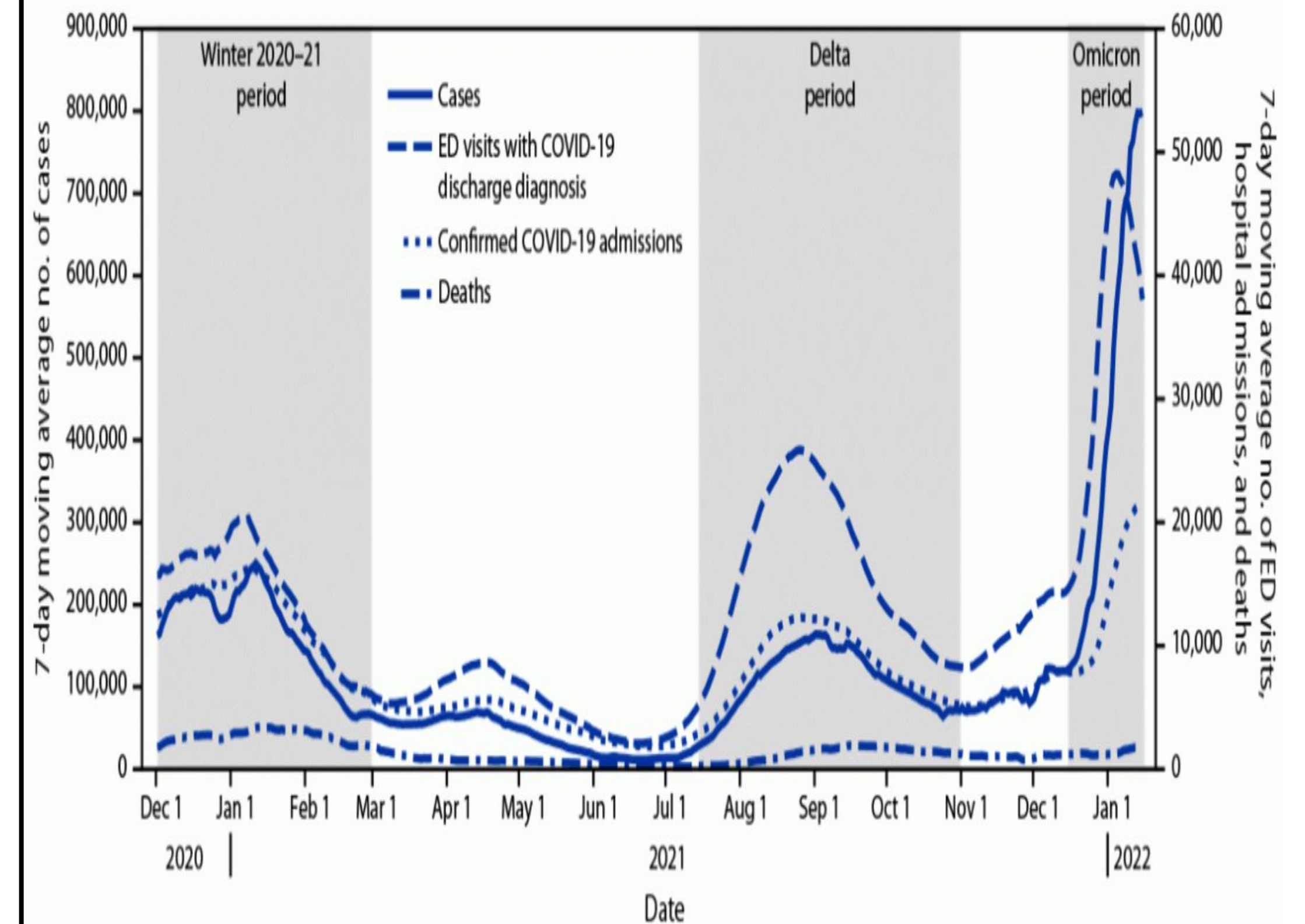
Confirm Assess Respond Evaluate

[COVID-19 Clinical Care Pathway \(who.int\)](https://www.who.int/coronavirus/clinical-care-pathway)

❖ Considerations for clinical providers

- High rates of infection in the community have overwhelmed health-care systems.
- **High absolute numbers of hospitalizations and deaths.**
- Pandemic health care burden exacerbated by non-COVID admissions, testing positive, requiring isolation rooms and PPE.
- In-hospital severity indicators should continue to be monitored for changes or differential effects among subpopulations.
- More data is required, and we encourage member states to contribute to [The WHO Global Clinical Platform for COVID-19](#)

FIGURE. Seven-day moving average number of COVID-19 cases, emergency department visits, hospital admissions, and deaths — United States,* December 1, 2020–January 15, 2022



Sources: CDC state-reported data (cases and deaths), Unified Hospital dataset (admissions), and National Syndromic Surveillance Program (ED visits with COVID-19 discharge diagnoses).

Trends in Disease Severity and Health Care Utilization During the Early Omicron Variant Period Compared with Previous SARS-CoV-2 High Transmission Periods — United States, December 2020–January 2022

Weekly / January 28, 2022 / 71(4):146–152

On January 25, 2022, this report was posted online as an MMWR Early Release.

❖ Summary

- Omicron appears to have a reduced risk of severe disease and hospitalizations
 - Some of this reduction is likely a result of high population immunity.
- The fundamentals of the clinical management in the response to COVID-19 has not changed.
- Significant numbers of hospitalized patients as a result of the high levels of transmission
- **People at greater risk of COVID-19 include those:**
(e.g., Unvaccinated, with obesity, older age, hypertension, Diabetes mellitus, cardiac disease, chronic disease, cerebrovascular disease, immunosuppression)
- **Pediatric cases-** severe illness seen with chronic medical condition or co-infections with respiratory disease (RSV, Influenza, parainfluenza)
- Implementation of **concurrent prevention strategies** including **vaccination, masking**, and appropriate infection mitigation strategies

Thank you

Refereneces:

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