COVID-19 Update

Sherrill Brown, MD
Medical Director, Infection Prevention

12/21/2021

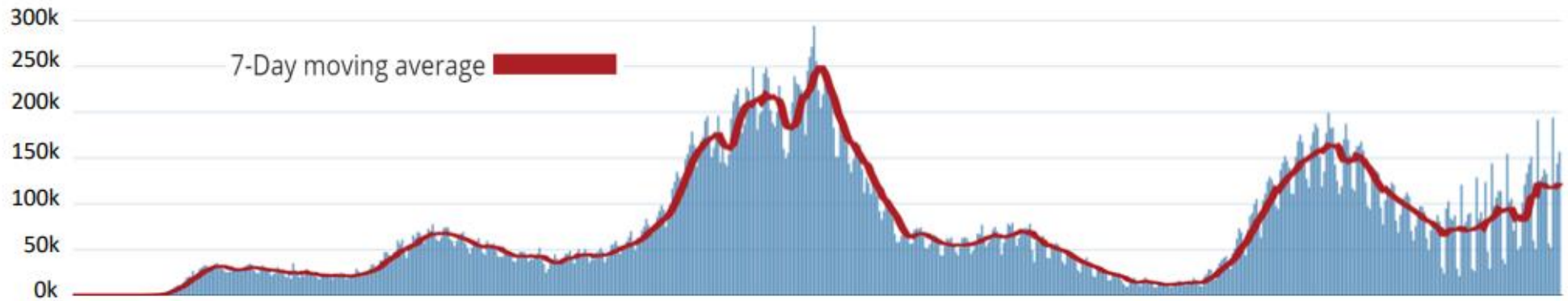
AltaMed
QUALITY CARE WITHOUT EXCEPTION™

Main Points of Discussion

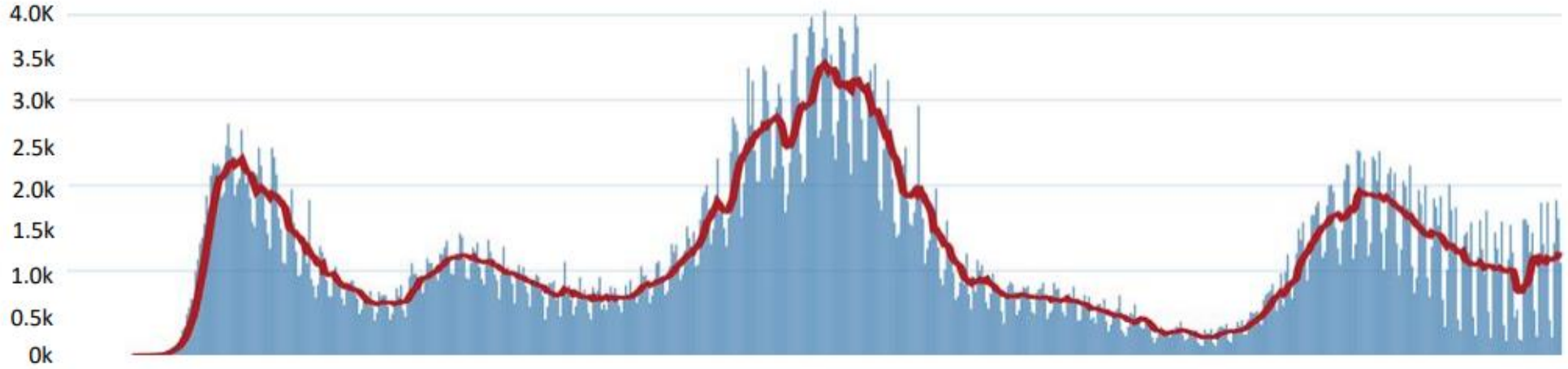
- Where are we at with COVID in the US?
- Omicron Update
- Influenza season so far
- Why get vaccinated for COVID
- Improving COVID testing access for patients/community at AltaMed
- Questions

Daily Number of COVID-19 Cases and Deaths, U.S. January 23, 2021 - December 16, 2021 – CDC COVID Data Tracker

Cases



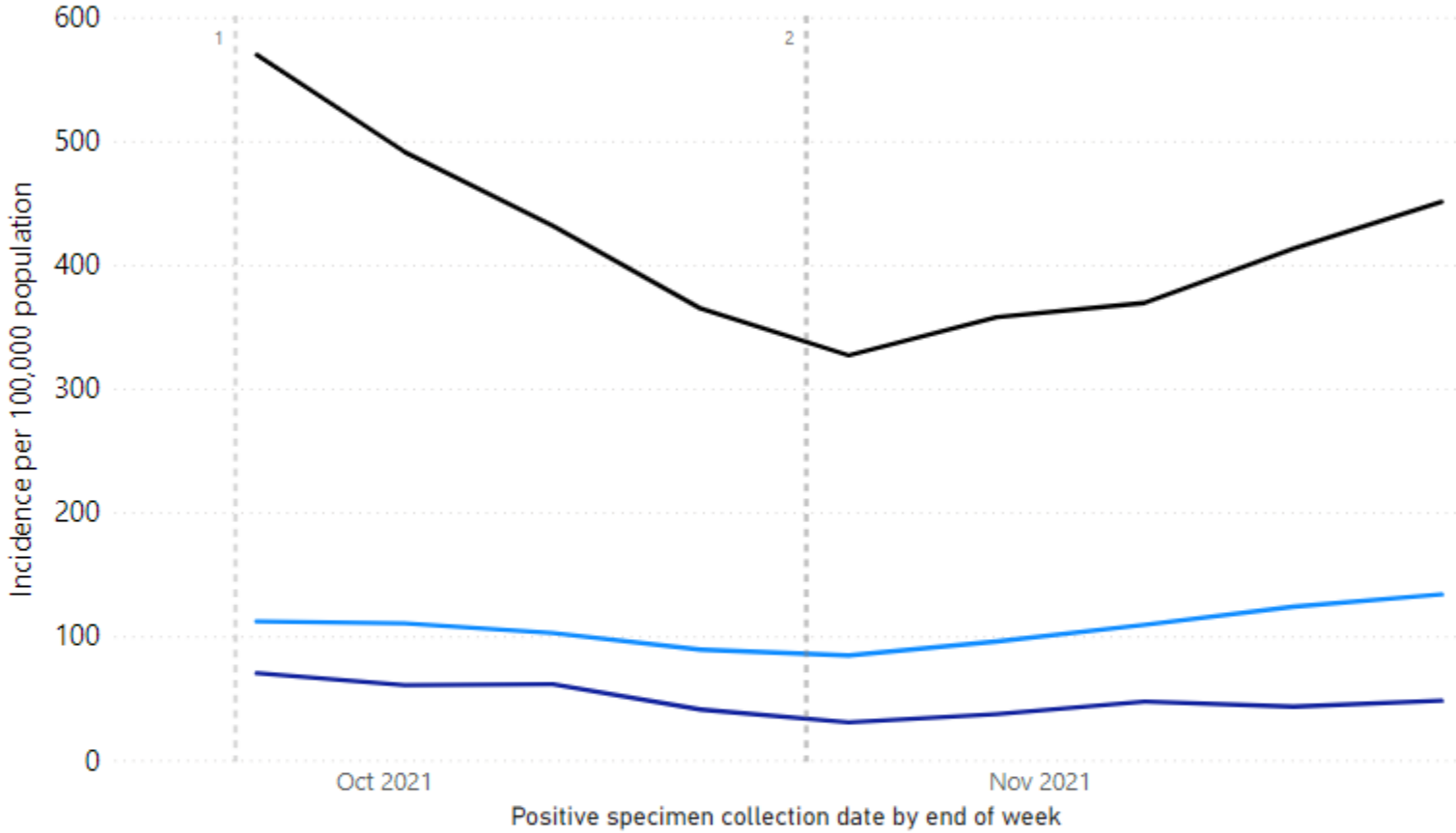
Deaths



https://covid.cdc.gov/covid-data-tracker/#trends_dailytrends

Rates of COVID-19 Cases by Vaccination and Additional or Booster Status

September 19 - November 20, 2021 (17 U.S. jurisdictions)



Unvaccinated

Fully Vaccinated without Additional or Booster ...

Fully Vaccinated with Additional or Booster Dose

Line	Vaccine Recommendation
1	CDC recommendation for a Pfizer-BioNTech booster dose for adults 65+ years old and people in certain populations and high risk occupational and institutional settings
2	CDC recommendation for a booster dose for adults 18+ years old who received Janssen vaccine and for Pfizer or Moderna recipients 65+ years old or in certain populations and high risk occupational and institutional settings

In October, unvaccinated persons had:

10X
Risk of Testing Positive for COVID-19

AND

20X
Risk of Dying from COVID-19

compared to fully vaccinated persons with additional/booster doses

This Week's COVID-19 News

1. *CDC endorsed ACIP's updated COVID-19 vaccine recommendations for boosting J and J recipients with an mRNA vaccine.*
2. *A paper published this week in JAMA demonstrated substantial boosting of humoral immunity after breakthrough infection, despite patients having predominantly mild disease. Patients exhibited improved immune potency against Delta, suggesting that protective immunity is broadened by breakthrough .*
3. *A paper posted online provided in vivo evidence of SARS-CoV-2 infection in human adipose tissue and underscored the importance of the inflammation associated with adipose tissue infection that may help explain the link between obesity and severe COVID-19 .*
4. *A JAMA perspectives piece notes that only 27% of parents of 5 to 11-year-olds plan to immunize their children against COVID-19; 30% said they definitely will not vaccinate their children and another one-third of parents said they would "wait and see" before deciding.*
5. *A study in the New England Journal found that early treatment with molnupiravir reduced risks for hospitalization or death in at-risk, unvaccinated adults.*
6. *A JAMA paper published in November from Israel quantitated the booster response to the Pfizer vaccine in subjects 60 years and older and found a nearly 58-fold increase in IgG antibody directed against the spike protein.*
7. *An editorial in the A paper from this week's JAMA summarizes the expanding and evolving role for extracorporeal membrane oxygenation for patients with severe COVID-19.*

References available in the chat

Basics about Omicron

- Super Infectious
- Protection Against Severe Disease best in Infection +Vaccination/Booster
  - No Prior Infection<Prior Infection/Prior Vaccine Primary Series<Prior Infection +Vaccination/Primary Series +Booster
- Milder Infection in Those with some baseline Immunity
- Rapidly replaced Delta and predominant Variant in the US

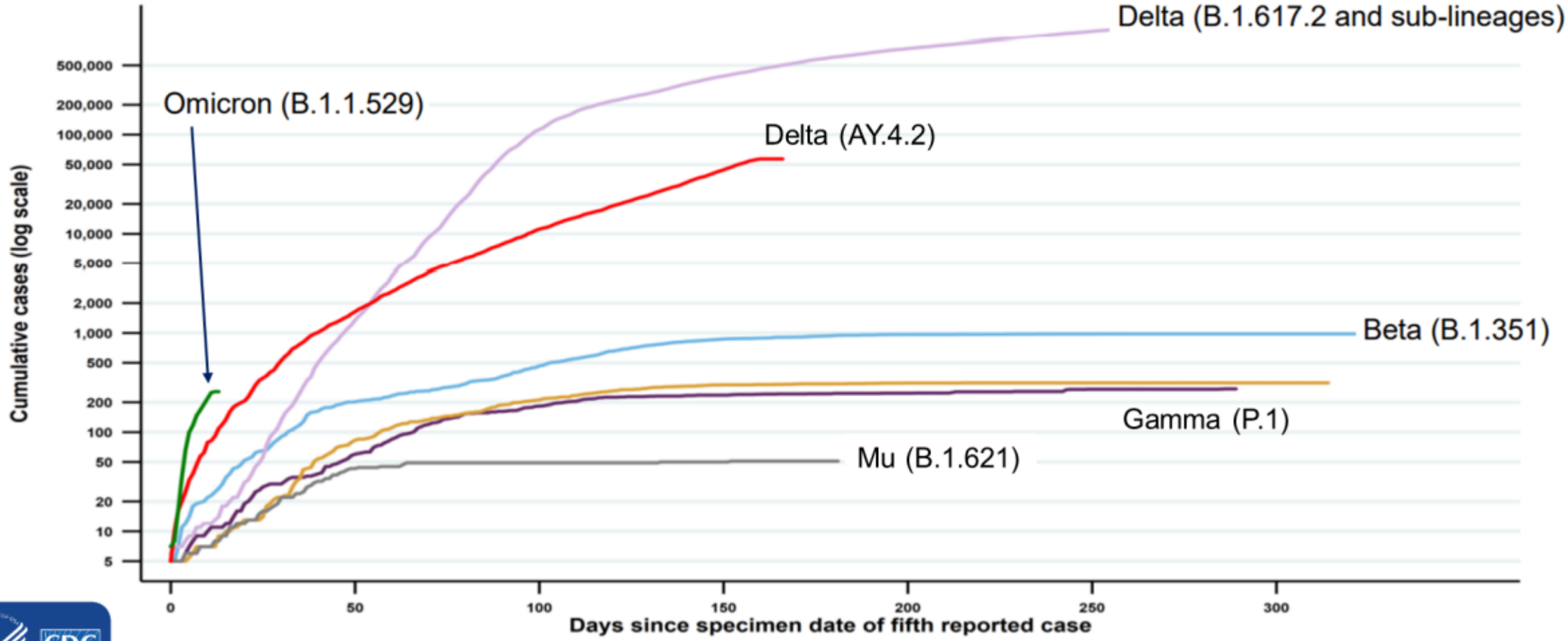
Four Key Questions

1. How transmissible is Omicron?
2. How virulent is Omicron compared to other variants?
3. How well do vaccines and prior infection protect against infection, transmission, clinical disease and death with Omicron?
4. How do populations understand these dynamics, perceive risk and follow control measures, including public health and social measures.

https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states

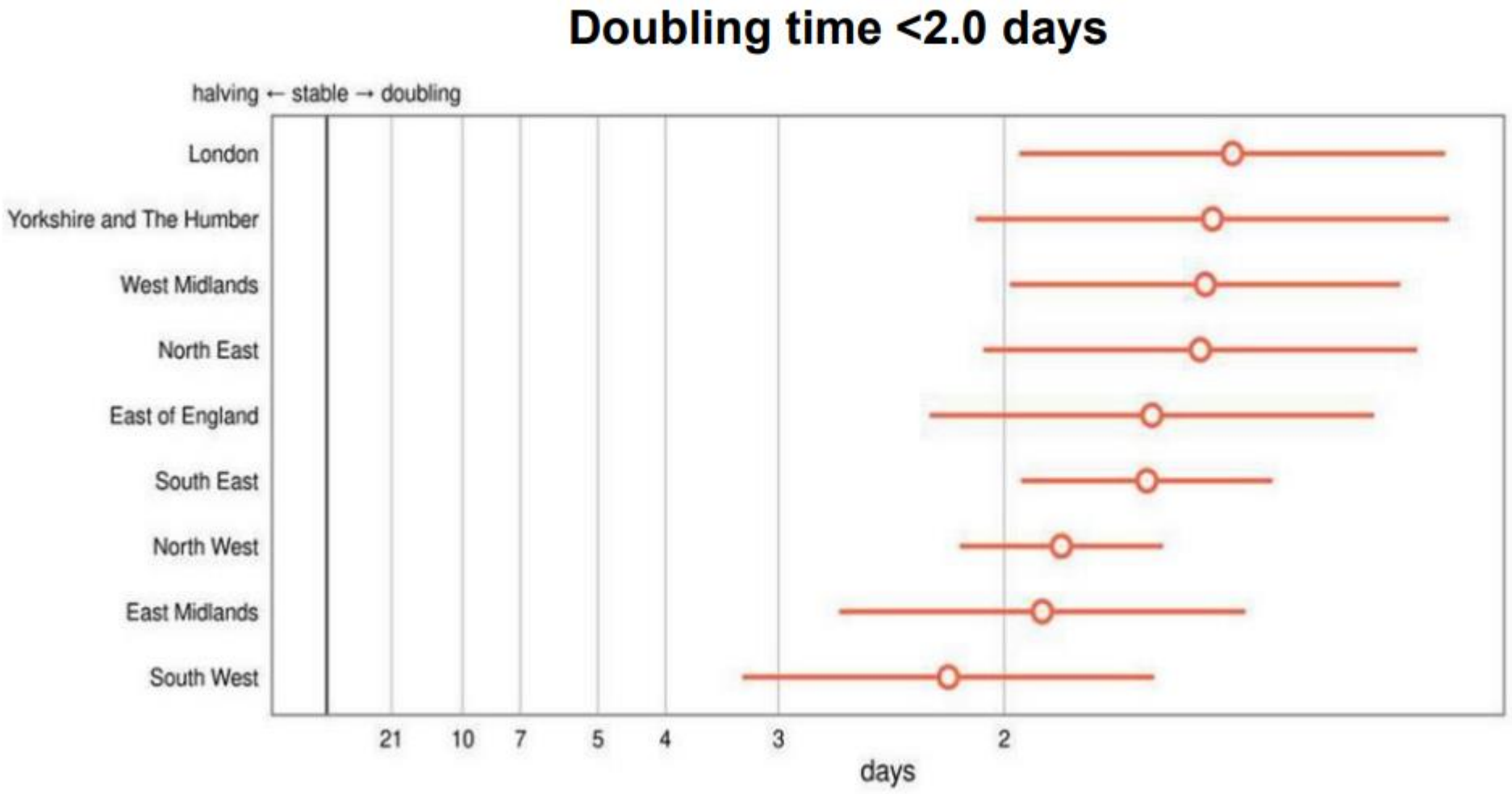
In U.K., Omicron cases growing rapidly, despite Delta

With growth rate of 0.35 per day, Omicron predicted to surpass Delta by mid-December



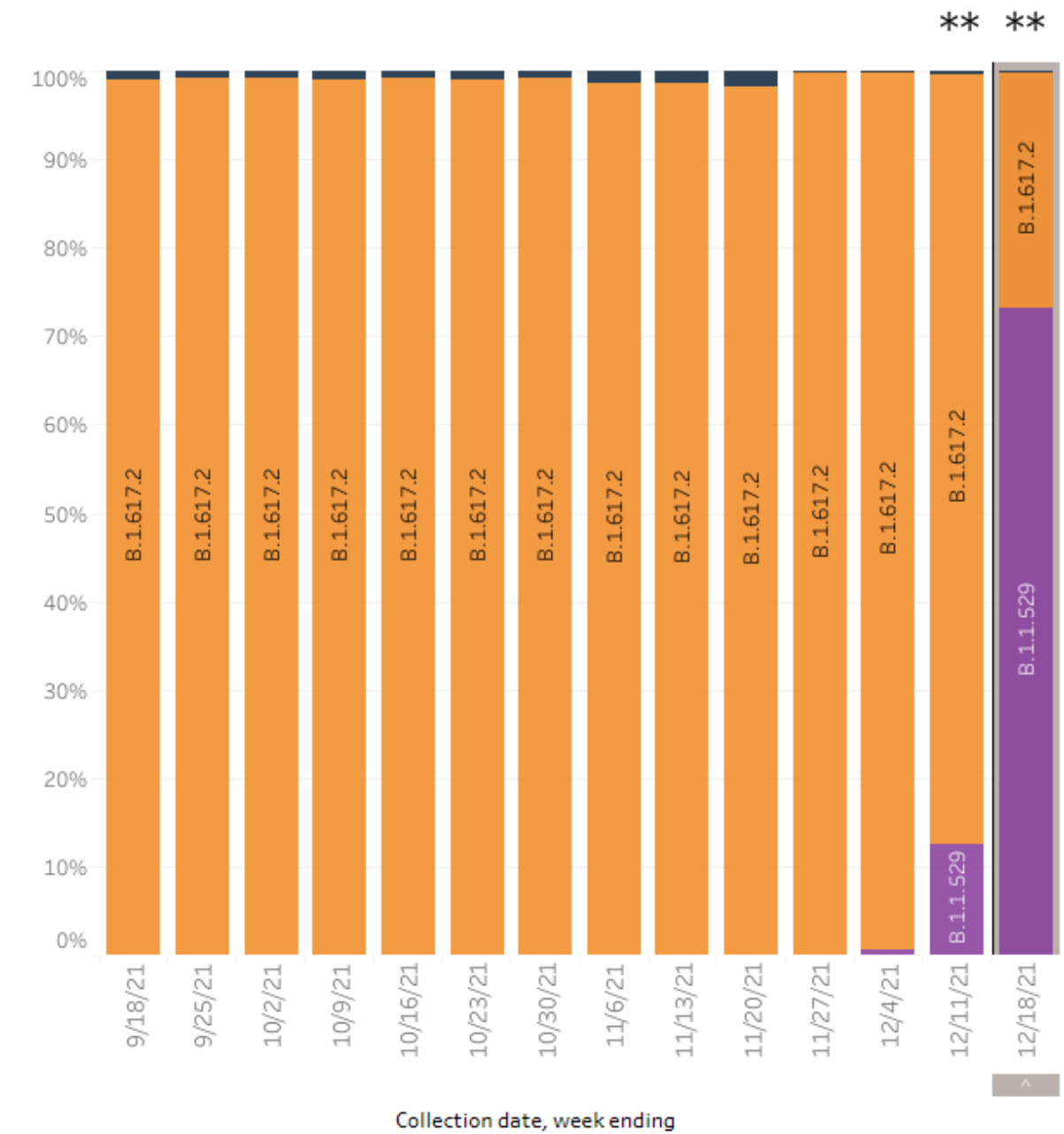
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1040076/Technical_Briefing_31.pdf

In U.K., Omicron cases growing rapidly, despite Delta



https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1040076/Technical_Briefing_31.pdf

United States: 9/12/2021 – 12/18/2021



United States: 12/12/2021 – 12/18/2021 NOWCAST

USA

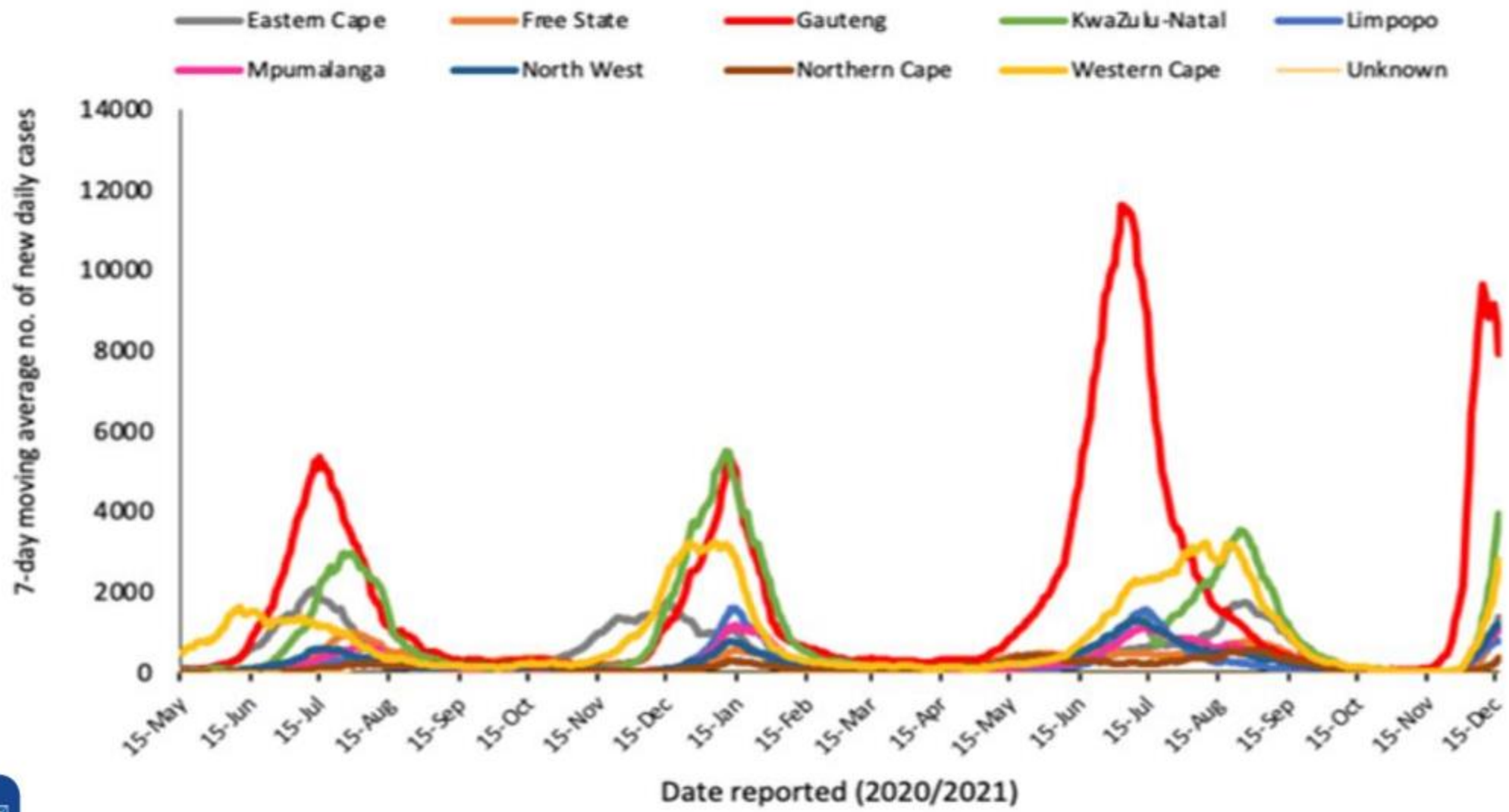
WHO label	Lineage #	US Class	%Total	95%PI
Delta	B.1.617.2	VOC	26.6%	5.1-65.8%
Omicron	B.1.1.529	VOC	73.2%	34.0-94.9%
Other	Other*		0.1%	0.0-0.4%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

AY.1-AY.125 and their sublineages are aggregated with B.1.617.2. BA.1 and BA.2 are aggregated with B.1.1.529.

New cases by province – South Africa, 2020-2021
December 17, 2021



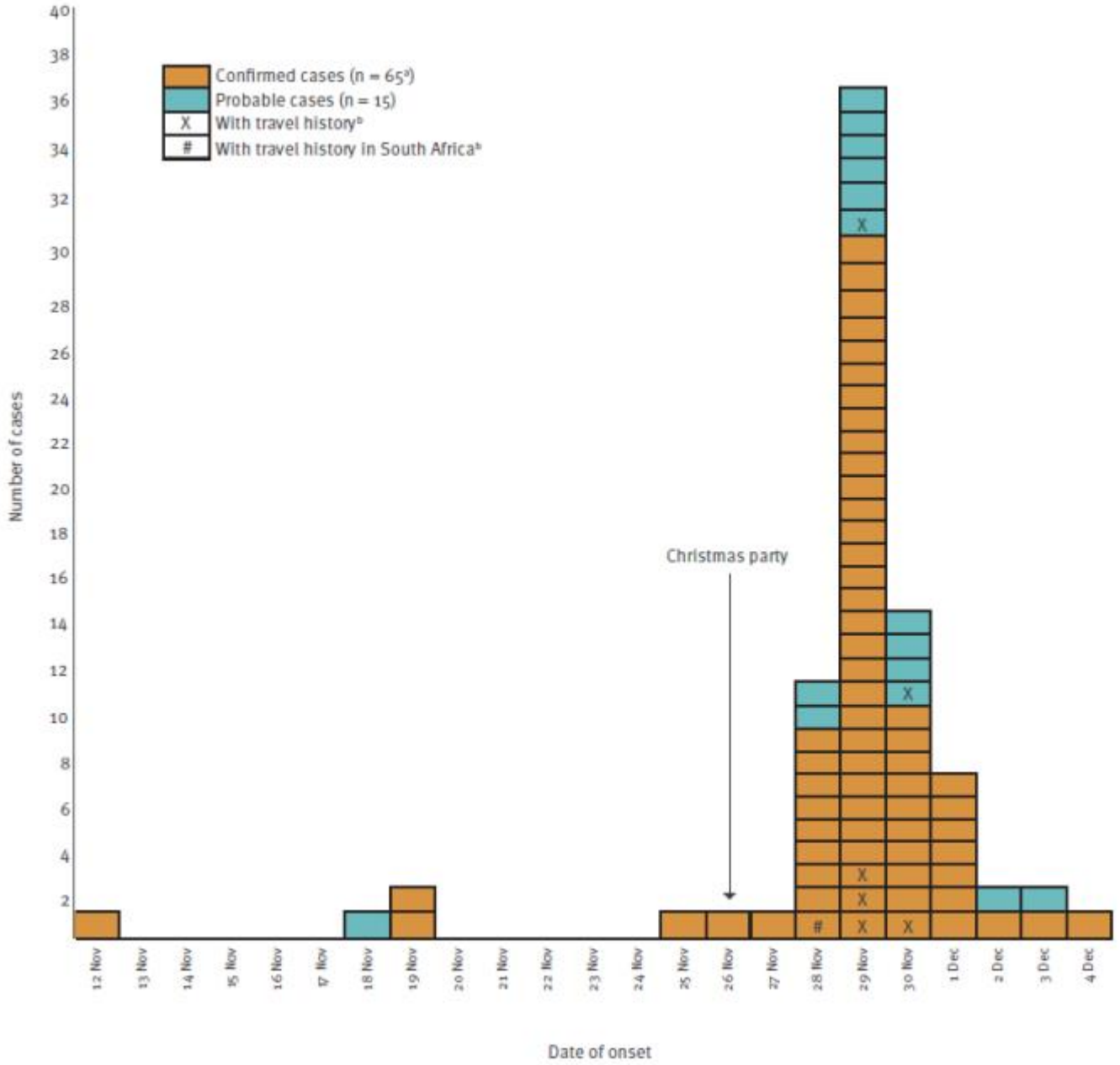
https://www.nicd.ac.za/latest-confirmed-cases-of-covid-19-in-south-africa-17-december-2021/

Findings on Omicron from other countries

Christmas Party Outbreak (Oslo Norway)

- Held at a restaurant in a separate room 145m^2 (1,560 ft^2)
- Among 117 guests, attack rate over 70%
  - 98% of cases fully vaccinated (median 79 days since last dose)
  - Median incubation period 3 days (IQR: 3-4)
- No facemask use required
- 70 other restaurant patrons diagnosed with COVID-19
  - 53 confirmed Omicron
- No hospitalizations
  - 77.5% fully and 3.4 % partially vaccinated as of 16-Dec-2021

https://www.fhi.no/en/news/2021/preliminary-findings-from-outbreak-investigation-after-christmas-party-in-o/
Brandal 2021, Euro Surveill;26(50):pii=2101147. https://doi.org/10.2807/1560-7917.ES.2021.26.50.2101147
https://ourworldindata.org/covid-vaccinations



Brandal 2021, Euro Surveill;26(50):pii=2101147. https://doi.org/10.2807/1560-7917.ES.2021.26.50.2101147

Findings on Omicron from other countries: Severity

Danish review of their first 785 Omicron infections

Characteristics of SARS-CoV-2 Delta and Omicron variant cases, Denmark, 22 November–7 December 2021

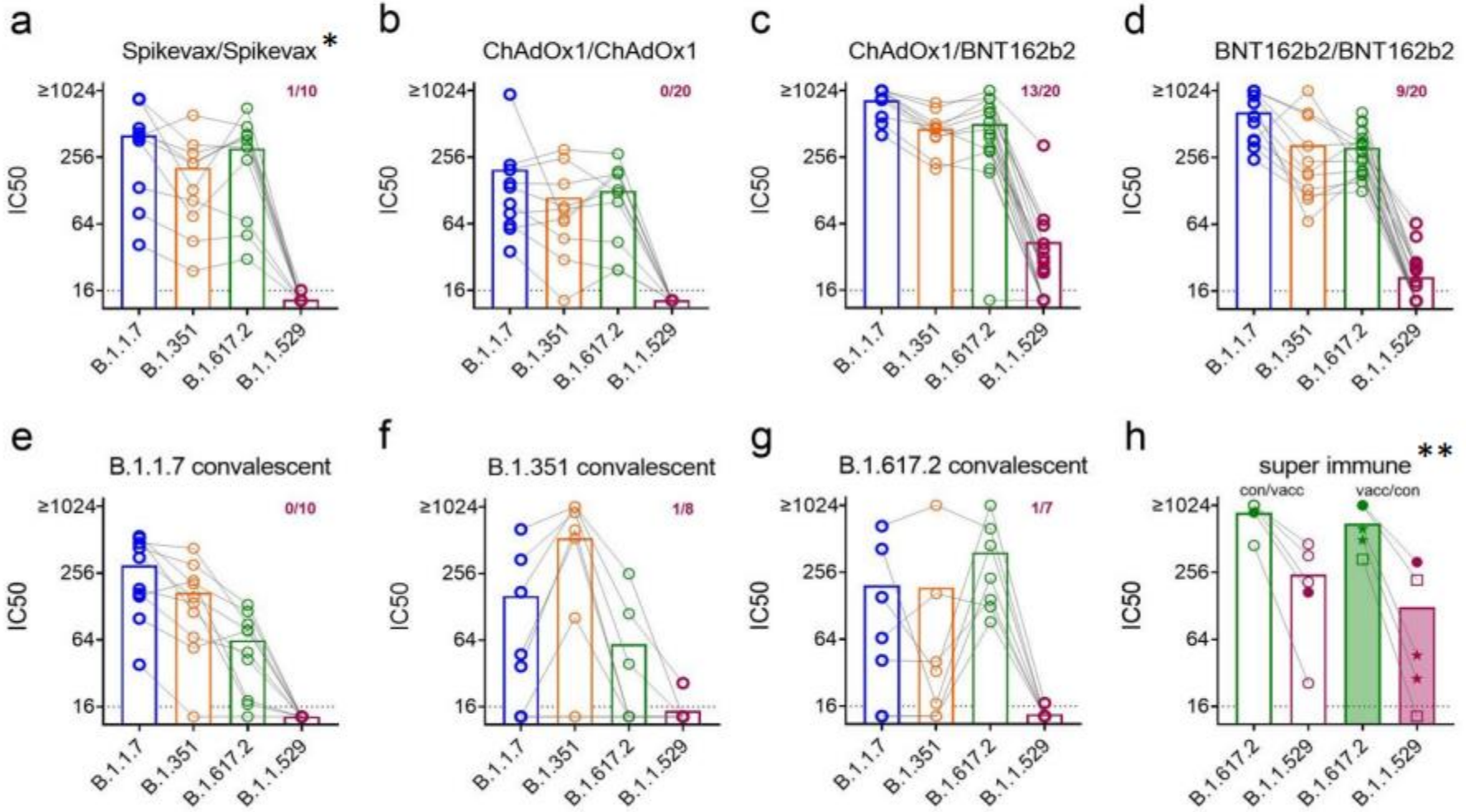
	Number of Delta[a] cases (n=19,137)	% of all Delta[a] cases	Number of Omicron cases (n=785)	% of all Omicron cases
Hospitalisation				
Yes	290	1.5	9	1.2
Intensive care treatment				
Yes	22	0.11	1	0.13
Death				
Yes	14	0.07	0	0

Imperial College report

Hospitalization and asymptomatic infection indicators were not significantly associated with Omicron infection, suggesting at most limited changes in severity compared with Delta.

Epidemiological characterisation of the first 785 SARS-CoV-2 Omicron variant cases in Denmark, December 2021. Espenhain *et al.* Eurosurveillance (December 16, 2021)
Ferguson et al. 2021, Growth, population distribution and immune escape of the Omicron in England. Imperial College London (16-12-2021), https://doi.org/10.25561/93038

Omicron has extensive but incomplete escape of other vaccine- and infection-elicited neutralization as well



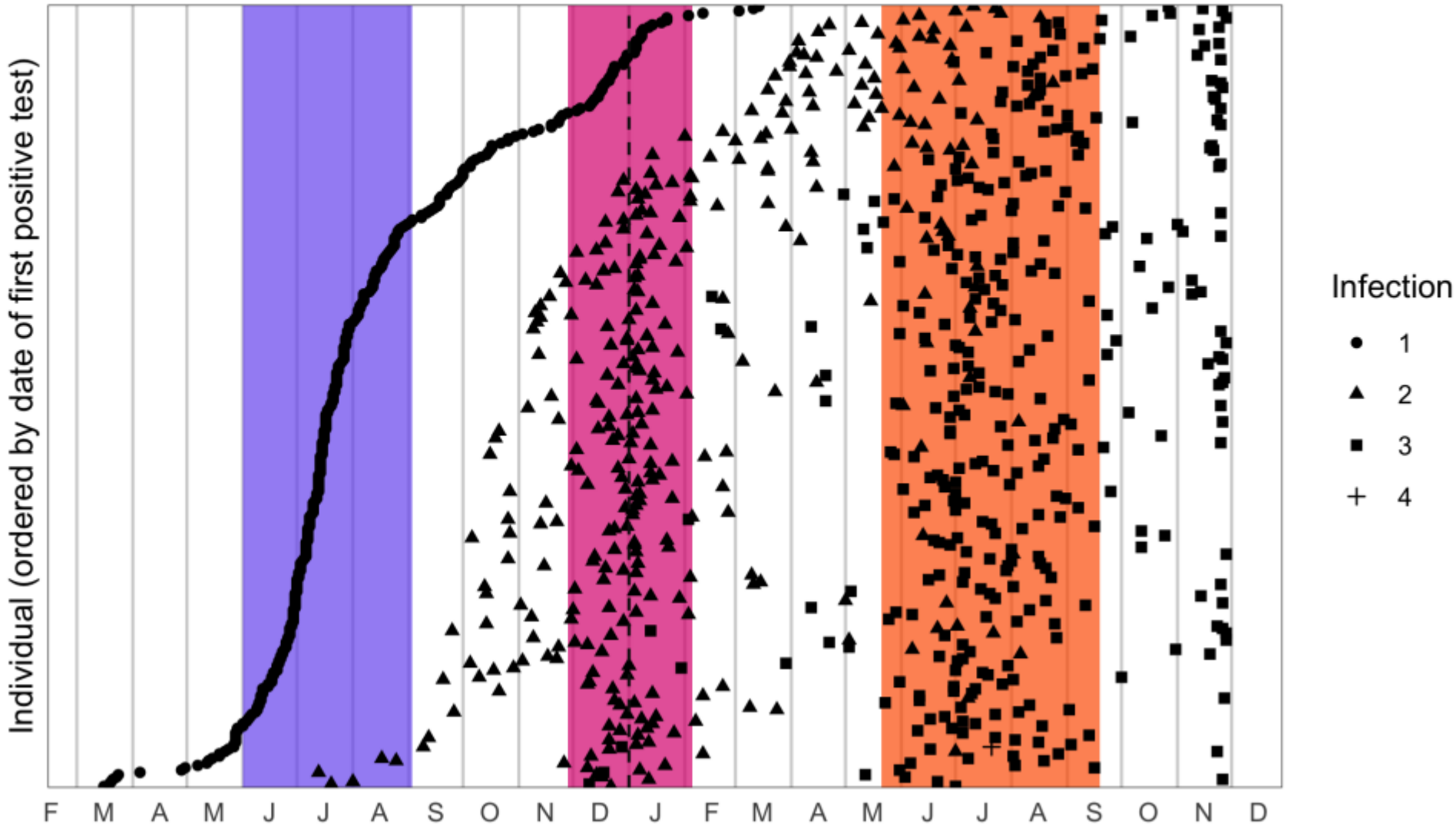
* Moderna mRNA-1273 vaccine

** convalescent/vaccinated or vaccinated/convalescent individuals

Source: Roessler et al. 2021, medRxiv; https://doi.org/10.1101/2021.12.08.21267491.

Individuals with multiple reinfections

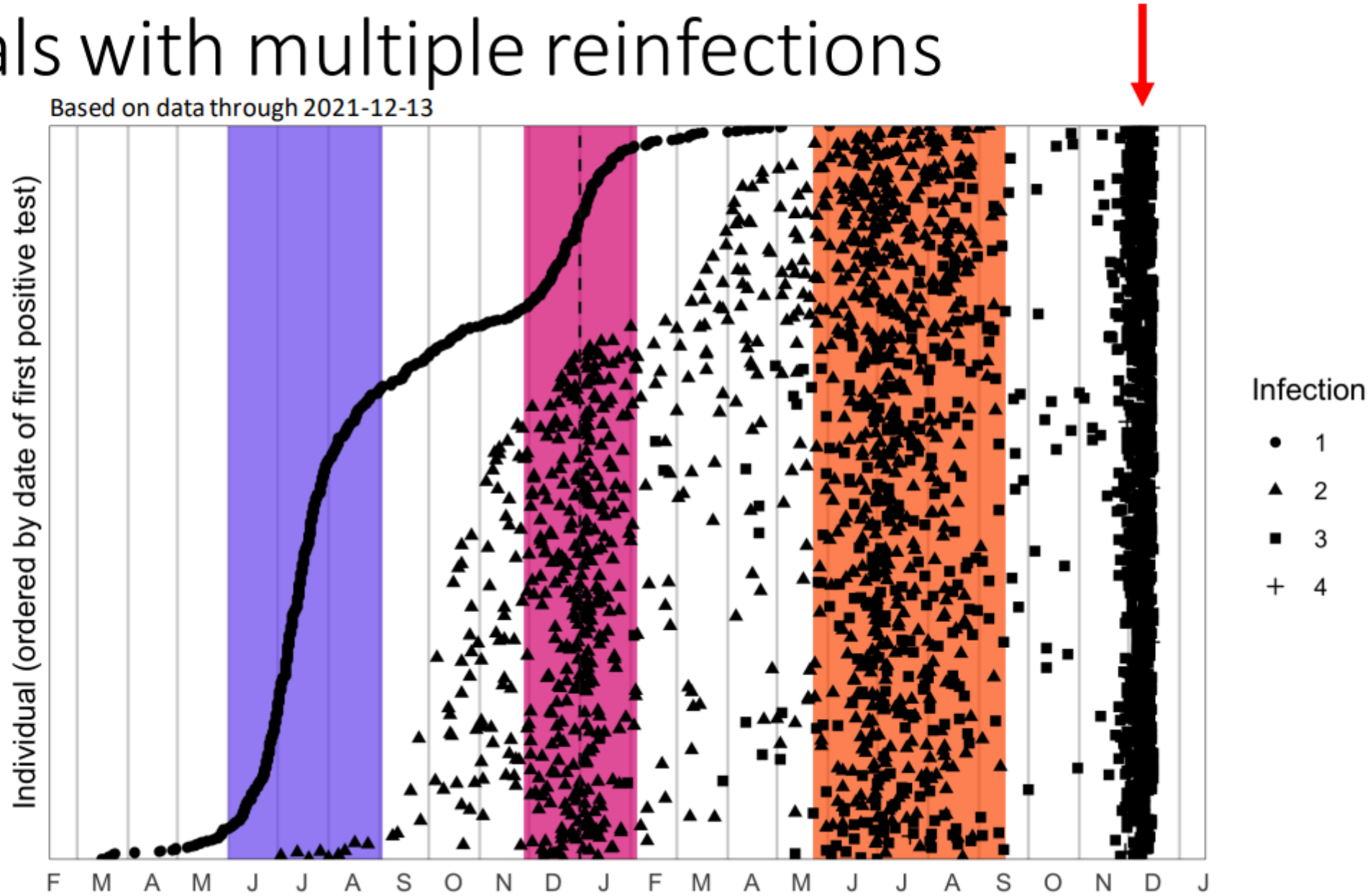
- Emerging signal of increase in individuals who have already had 2 or more infections



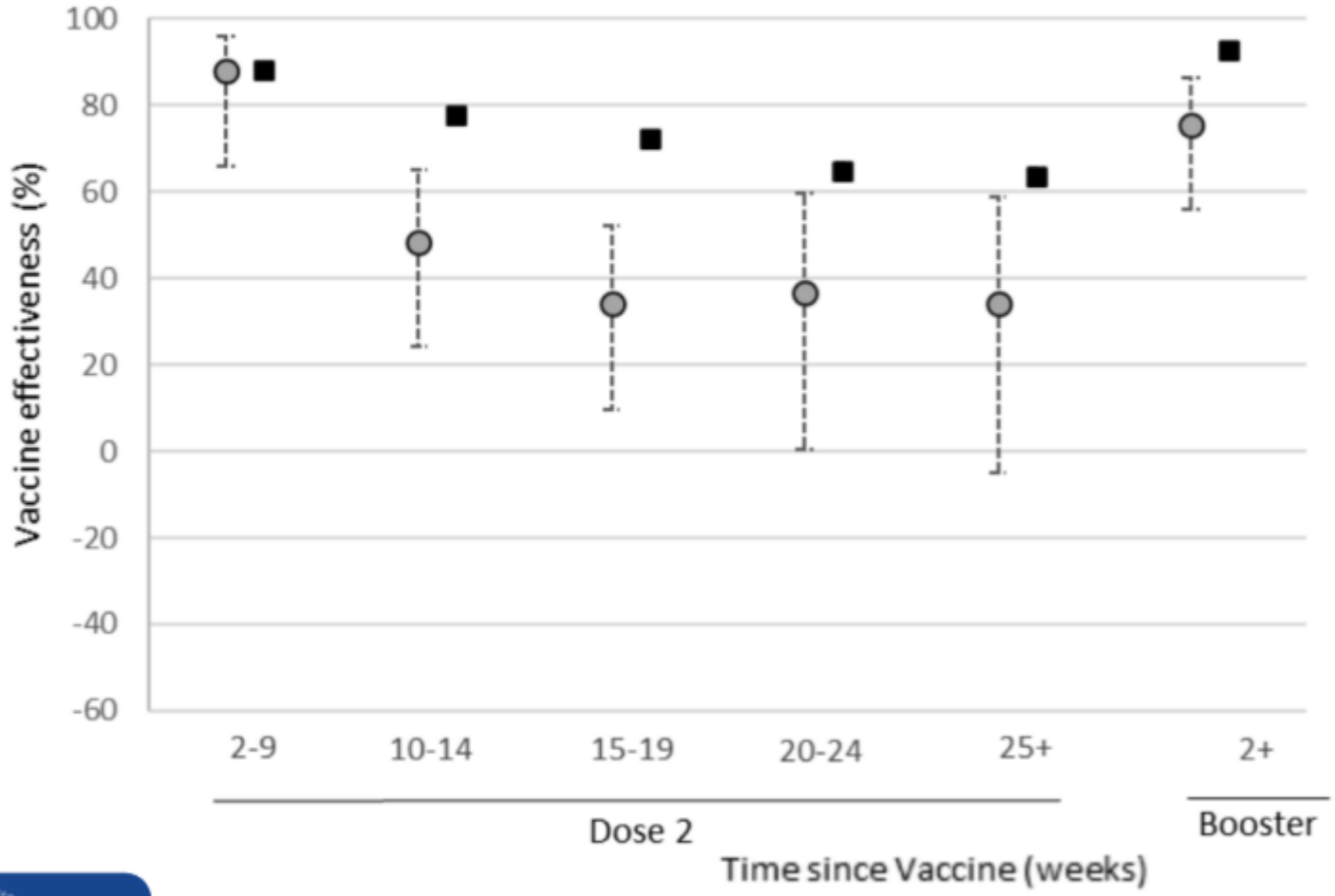
Based on data through 2021-11-27

Individuals with multiple reinfections

- Strong signal of increase in individuals who have already had 2 or more infections
- 659 of 945 (69.7%) of suspected 3rd infections since 1 Nov



Pfizer BNT162b2 mRNA vaccine effectiveness (VE) against Delta and Omicron variant infections

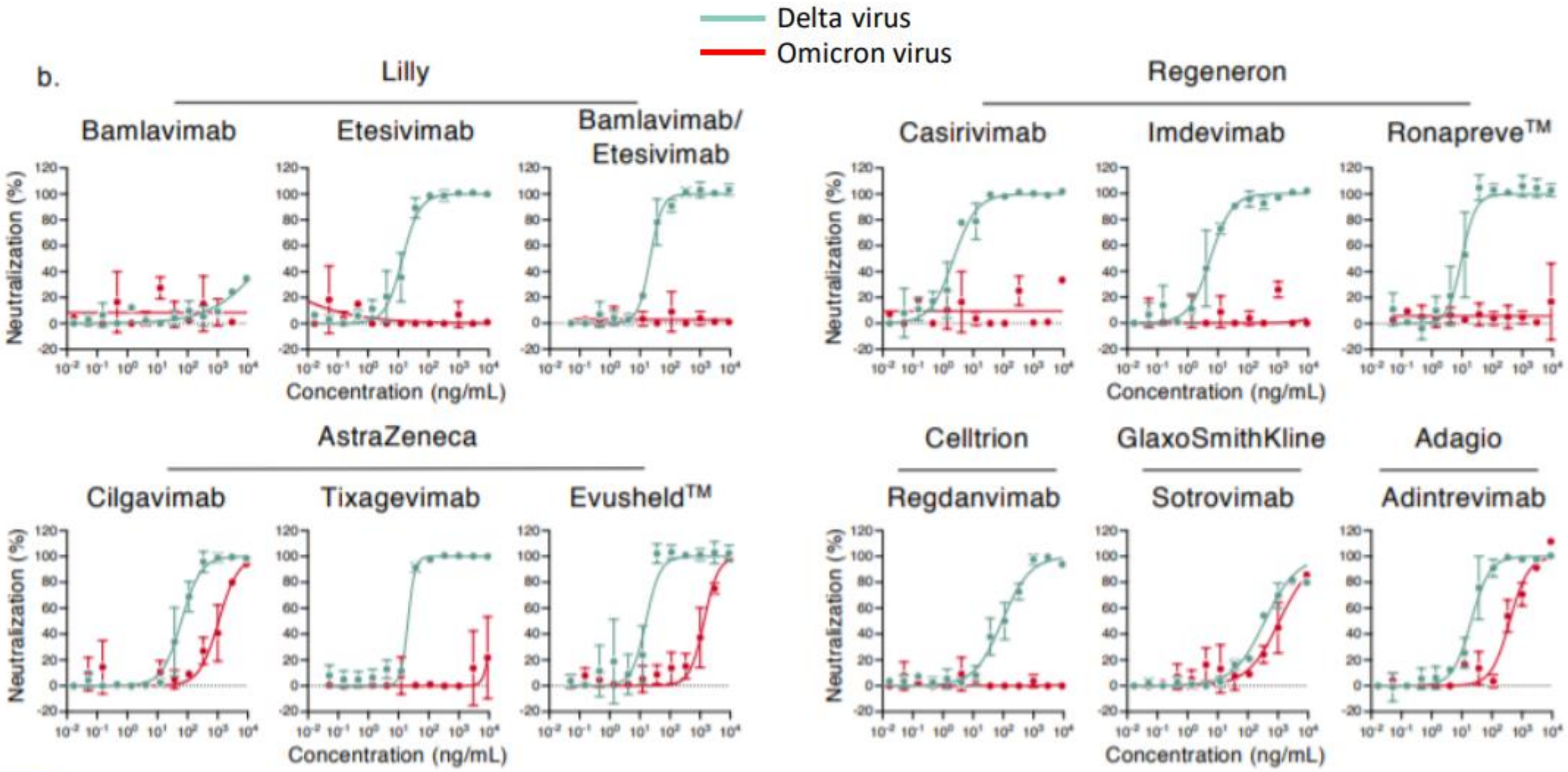


- Delta
- Omicron

- Increased waning of VE for Omicron vs. Delta
  - 35% vs. 64% at 25+ weeks
- VE 2 after 3rd dose (booster) Omicron vs. Delta
  - 75% vs. 93% at 2+ weeks

Andrews 2021, medRxiv; https://www.medrxiv.org/content/10.1101/2021.12.14.21267615v1.full.pdf

Virus neutralization with additional monoclonals



Source: Planas et al. Considerable escape of SARS-CoV-2 variant Omicron to antibody neutralization. bioRxiv (December 15, 2021)

Prevention strategies to slow US spread of Omicron variant

- Vaccination against COVID-19
  - Recommended for everyone aged ≥5 years
  - Boosters recommended for all persons aged ≥18 years
    - ≥2 months after initial Janssen vaccine, or
    - ≥6 months after completing primary series of Pfizer-BioNTech or Moderna
- Increased use of masking
- Improved ventilation
- Wider and more frequent testing, including self-testing
- Adherence to guidance on quarantine and isolation

https://www.cdc.gov/mmwr/volumes/70/wr/mm7050e1.htm?s_cid=mm7050e1_w

Four Key Questions

1. How transmissible is Omicron?
   - Highly infectious and moves quickly

2. How virulent is Omicron compared to other variants?
   - Not clearly less virulent, milder disease in persons immunized by vaccination and prior infection

3. How well do vaccines and prior infection protect against infection, transmission, clinical disease and death with Omicron?
   - Preliminary evidence suggest likely at least equally protective against severe illness and death from Omicron infection as from Delta infection but limited data for medically fragile, elderly and children

Four Key Questions

4. How do populations understand these dynamics, perceive risk and follow control measures, including public health and social measures.

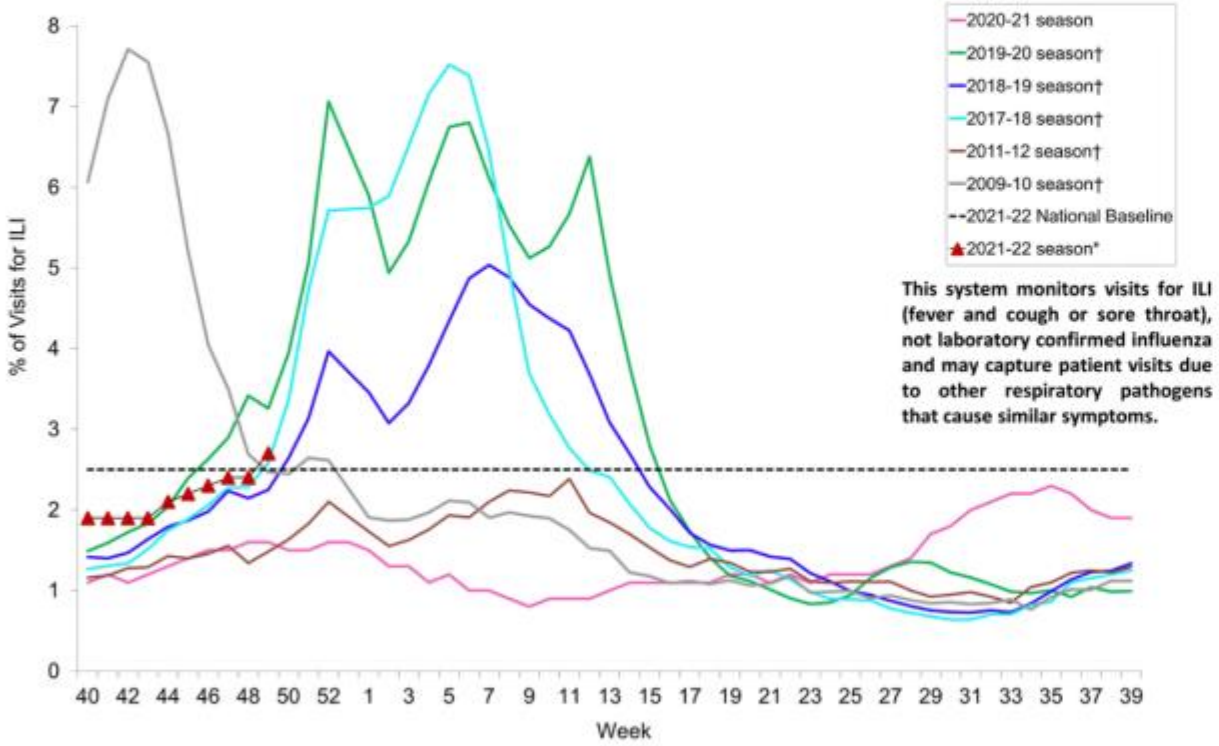
https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states

Key messages

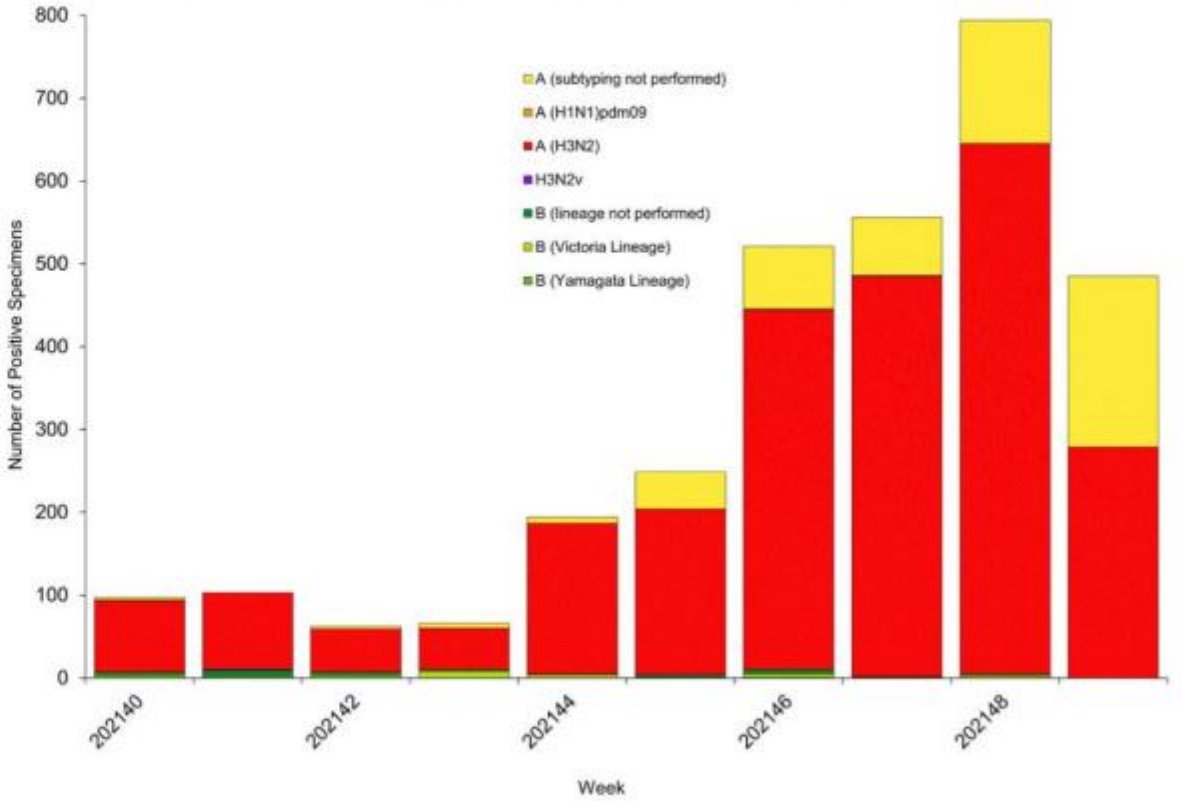
- Reinfection risk has increased markedly, with timing consistent with the emergence of the Omicron variant
- Reinfections are occurring in:
  - people whose primary infection occurred in all 3 prior waves
  - people who had already experienced 2 infections prior to the emergence of Omicron
- Preliminary data suggest prior infection and vaccination may reduce severity of a second infection
  - No robust data yet on severity of Omicron in unvaccinated people without a prior infection
  - Given low detection rates in South Africa, best data likely to come from elsewhere

Weekly U.S. Influenza Surveillance

Percentage of Outpatient Visits for Respiratory Illness Reported By The U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2021-2022* and Selected Previous Seasons



Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, October 3, 2021 – December 11, 2021



https://www.cdc.gov/flu/weekly/index.htm

Why get vaccinated with Omicron?

- **Will likely still keep safe from severe disease.**
- **Booster is the best bet for defense if you are due.**
- **Vaccination will super protect those with prior infection.**
- **Kids may be more impacted if unvaccinated by Omicron.**
- **Create a vaccine bubble for those that cannot be vaccinated and or are vulnerable.**

All Hands Event

- **Know how COVID is spread**
  - Respiratory aerosols
  - Higher risk in smaller indoor settings,
    - 6 foot distancing is not magic if no ventilation.
  - Higher risk if people are talking loud/singing
  - Higher risk if not masked
  - Higher risk if people are not vaccinated
- **Stay home if you are sick**
  - Test yourself even if you think it's "allergies"
- **Rapid testing before and after events.**
  - Demand guests to get tested, wear masks and get vaccinated.

Efforts to Improve Access to Testing During Winter Surge

1. **We will be handing out free rapid at home COVID-19 test kits (Quidel QuickVue) at the clinic front doors, 5 per person.**
    1. Anyone can get them, just limit to 5 per patient to start.
    2. Order more as they are exhausted.
    3. Need to hand out testing packets with tests.
2. **We will allow patients on MyAltaMed and calling into the PSC to schedule COVID-19 testing themselves.**
    1. Nursing will determine appropriate test to do based on available options.
    2. Molecular ID Now for symptoms 7 days or less
    3. PCR for exposure or Symptoms more than 7 days
    4. Antigen test if they do not meet criteria above.
    5. Need to hand out test packets including Test info sheet for ID now and antigen test.

FAQs

Turn 12 before 2nd dose of Peds Pfizer vaccine?

- Vaccinate according to age on the day of vaccination.

Someone had a bad allergic reaction to the first vaccine series, what should they do about 2nd doses or boosters?

- refer to Immunology is my rec. Ok to write letter for temp medical exemption until they are seen by immunology. They have to protect themselves like crazy though.

Someone tested positive for COVID based on an antigen test.

Presume they are positive and give Iso/Quarantine recs. If needing confirmation, get rapid molecular test or PCR. Consider MAB.