

# Update on COVID-19 Projections

Science Advisory and Modelling Consensus Tables

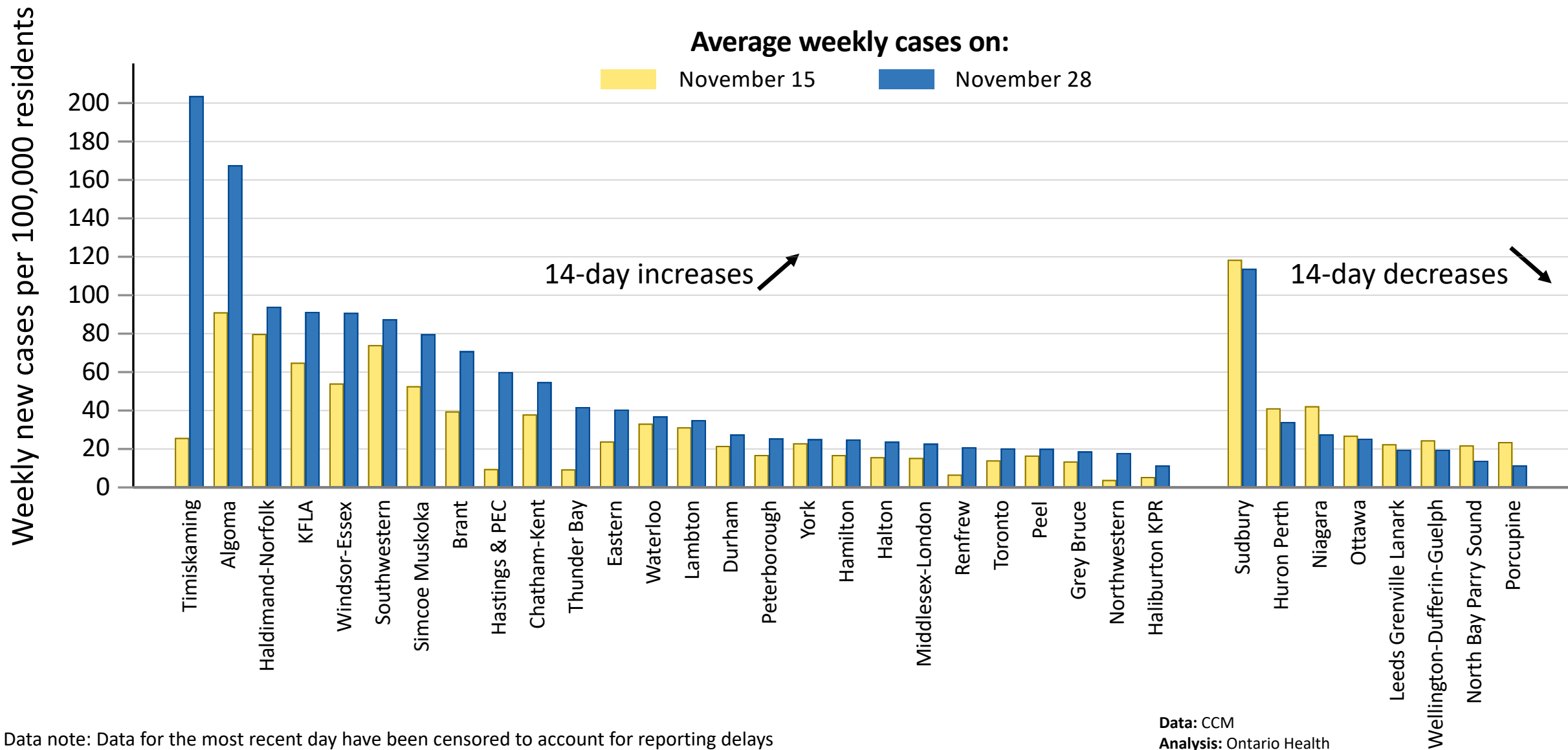
December 7, 2021



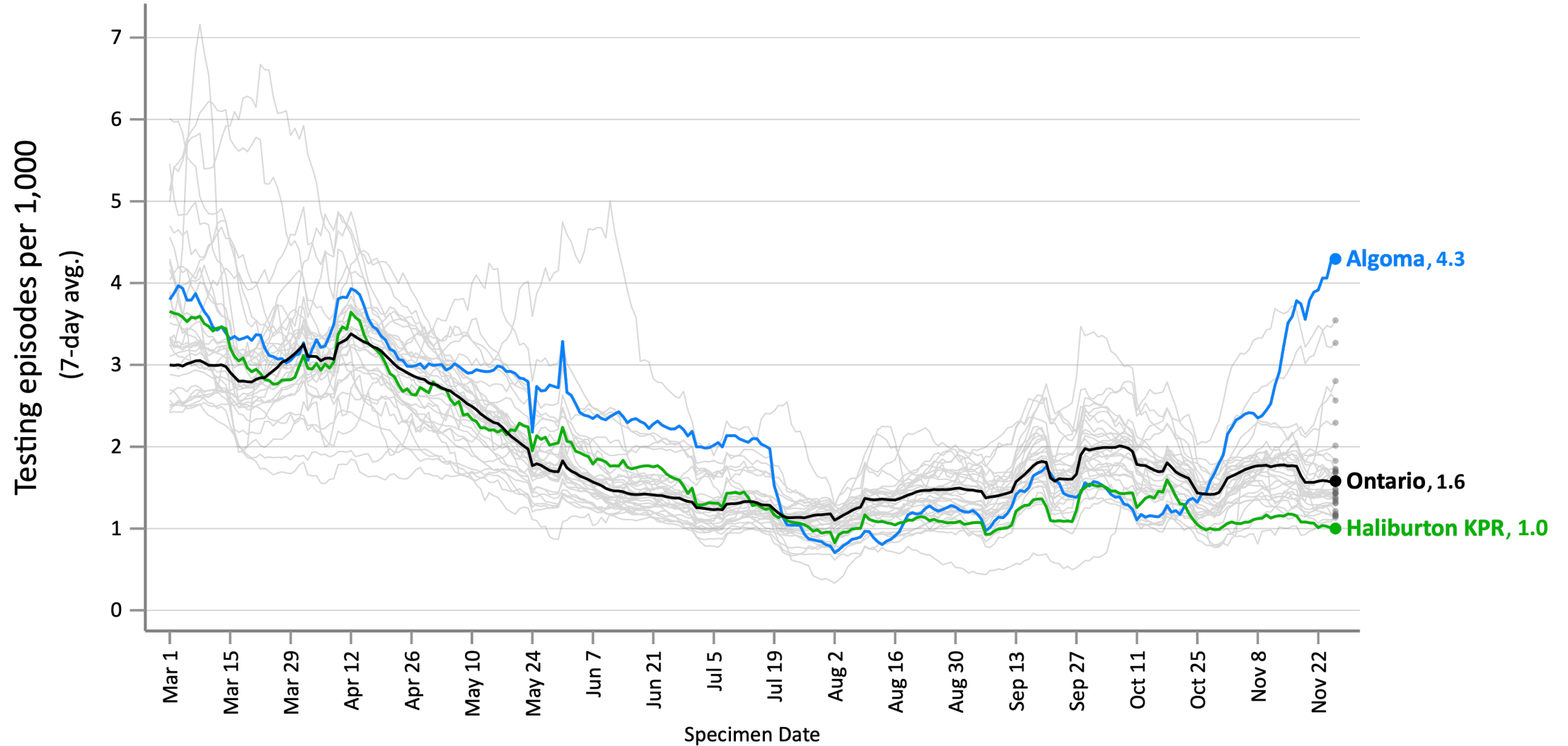
# Key findings

- COVID-19 cases are rising in most Public Health Units due to the Delta variant. Testing has not increased, but positivity is rising. This is a real rise in cases.
- Vaccine effectiveness in Ontario remains very high but experience in other countries suggests we will need to boost immunity with third doses.
- Even without Omicron, ICU occupancy will likely grow to 250-400 beds in January, putting hospitals under strain again.
- To control cases and the impact on our health system, we need to **increase vaccination** (particularly 5-11 year-olds) and **continue to use public health measures** to reduce transmission now.
- Spread of the new Omicron variant will likely drive COVID-19 cases above current projections.
- In South African data, vaccination appears to protect against serious illness due to Omicron and most hospitalizations are in the unvaccinated. There is likely an increased risk of re-infection even amongst people those who have had COVID-19, emphasizing the importance of vaccination.
- Low global vaccine coverage means that we can expect new variants to arise.

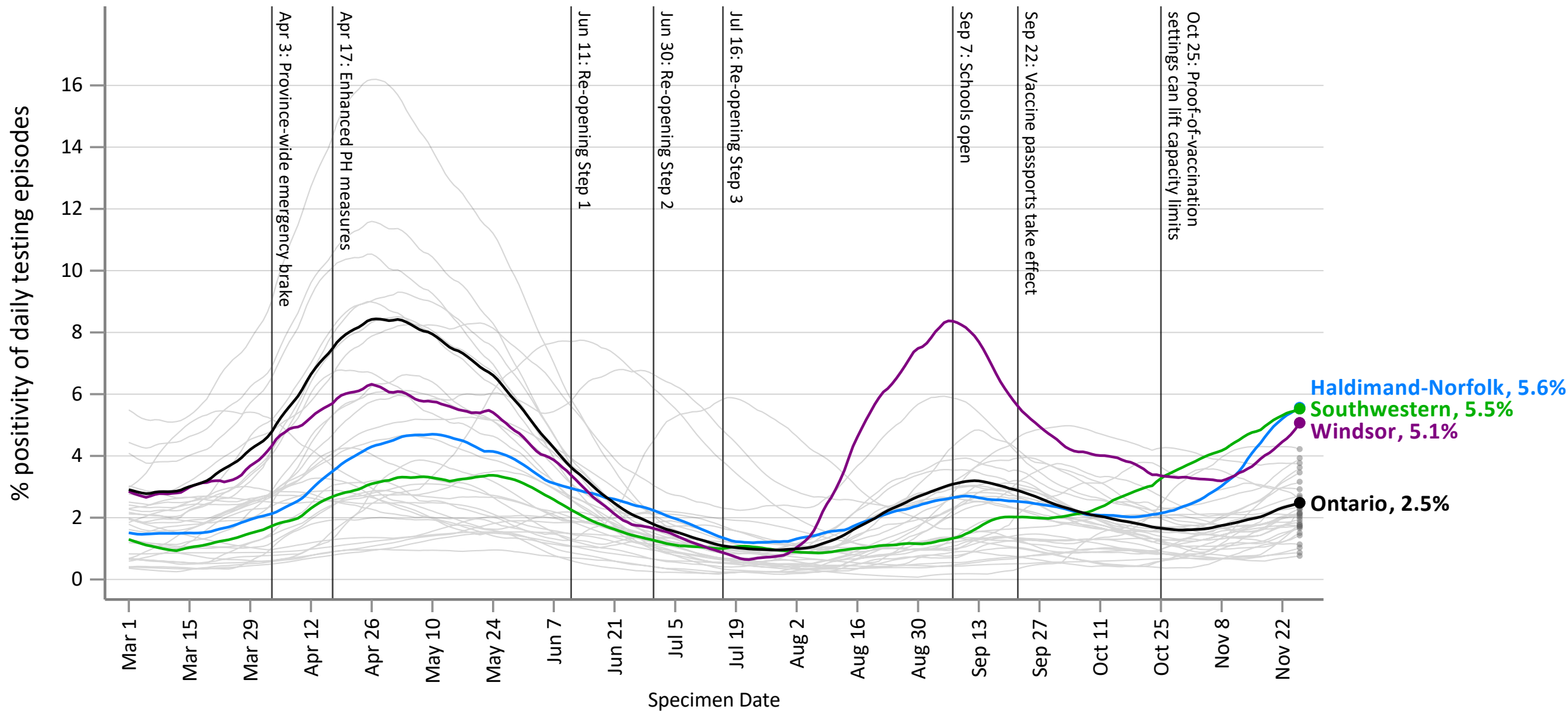
# Cases are increasing in most public health units while Delta is the dominant variant



# Testing rates are flat since mid-July



# Even with unchanged testing rates, test positivity is rising

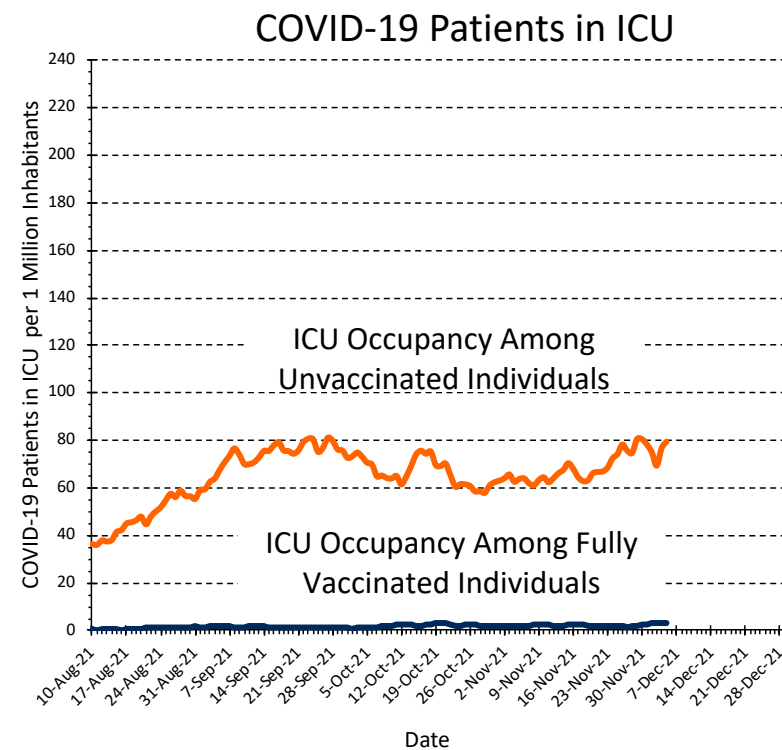
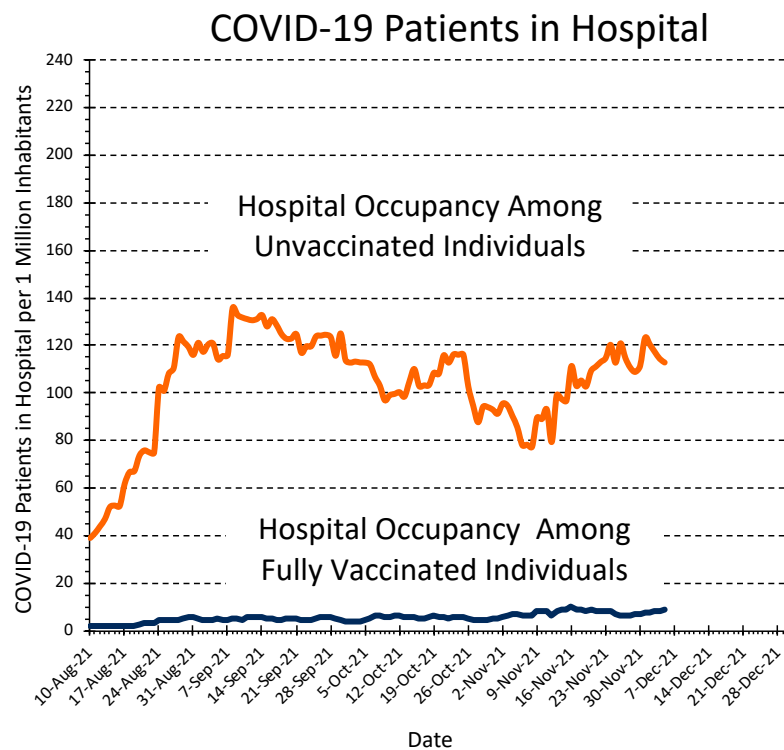
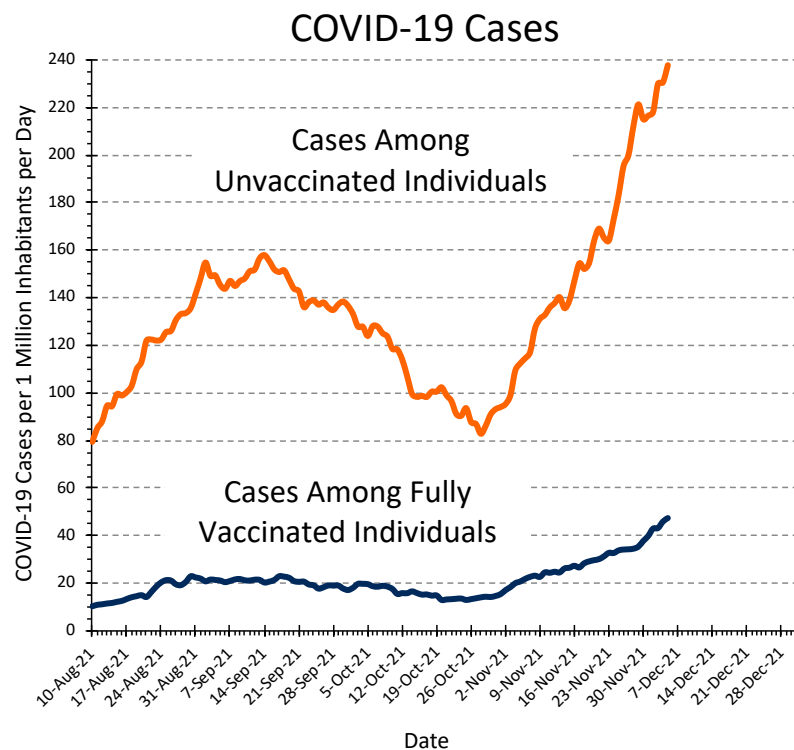


The most recent 3 days have been removed to account for incomplete data. Data are smoothed.

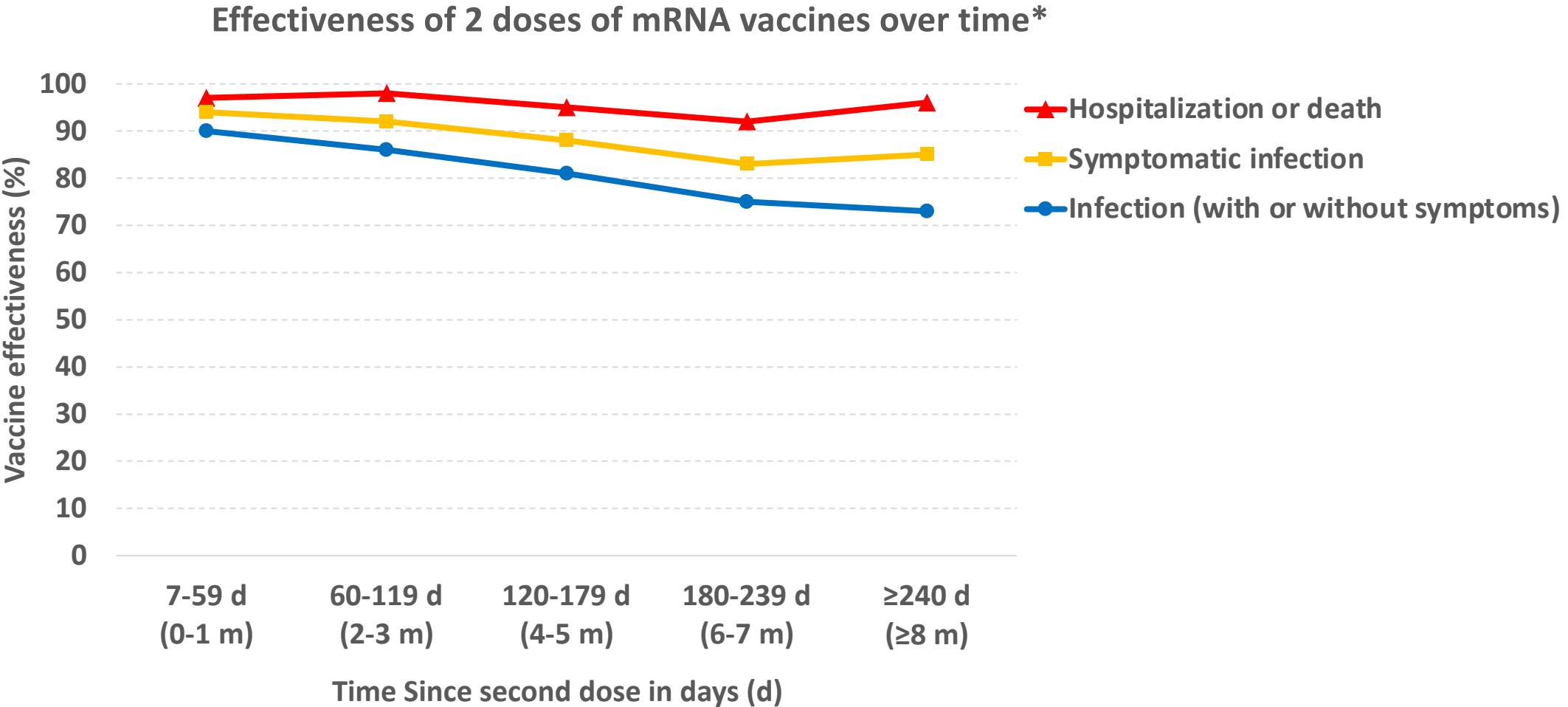
Data: OLIS via SAS VA, data up to November 26  
Analysis: Ontario Health

# Vaccination continues to be highly effective

Unvaccinated people have a 5-fold higher risk of symptomatic COVID-19 disease, a 13-fold higher risk of being in the hospital and 23-fold higher risk of being in the ICU compared to the fully vaccinated



# Ontario data shows vaccines maintaining high effectiveness

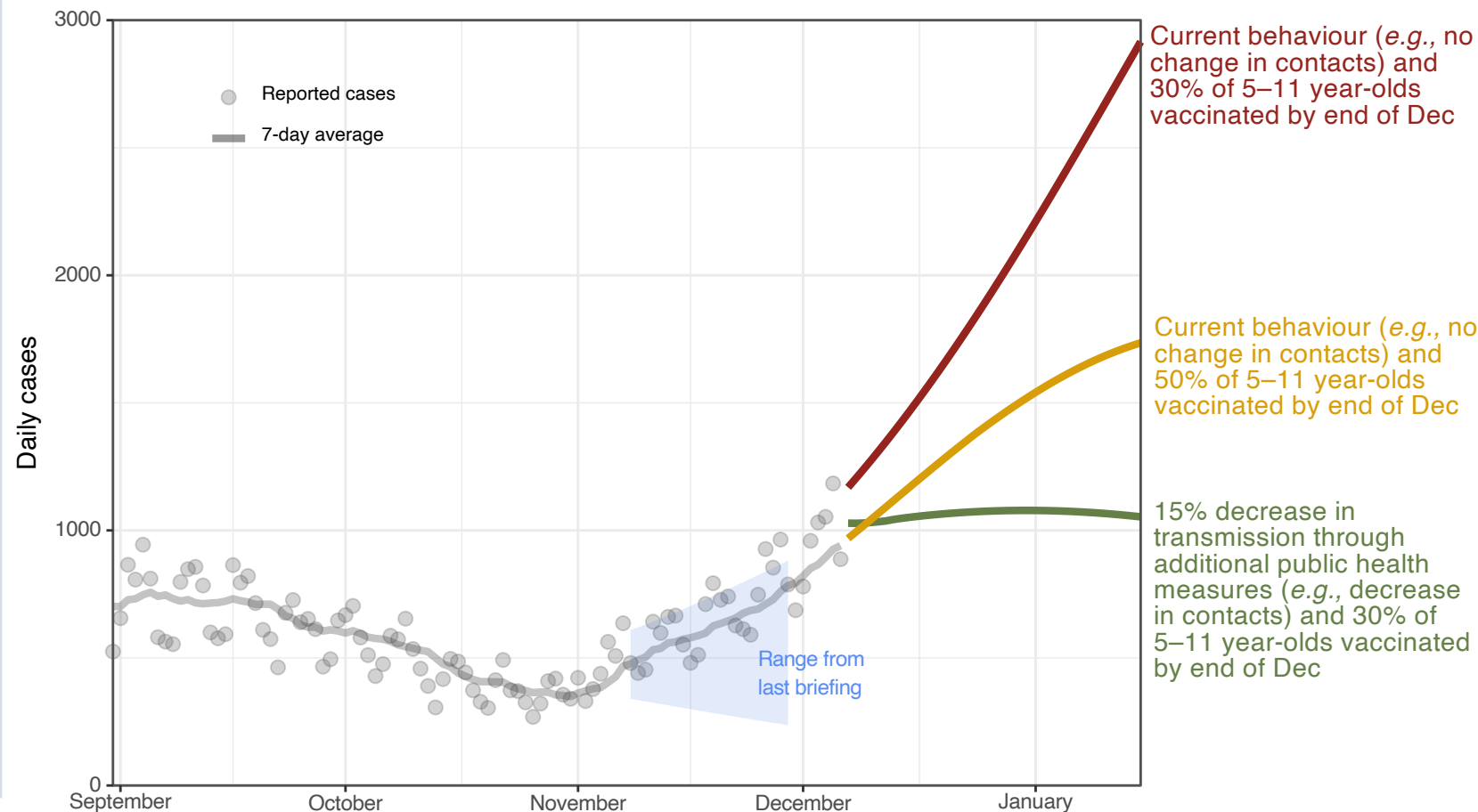


\* Ontario, test-negative design, ≥16 years, any SARS-CoV-2 lineage, data to 1 Nov 2021

# Cases continue to rise substantially, even without Omicron. To flatten the curve, we need to reduce transmission by increasing vaccination and public health measures.

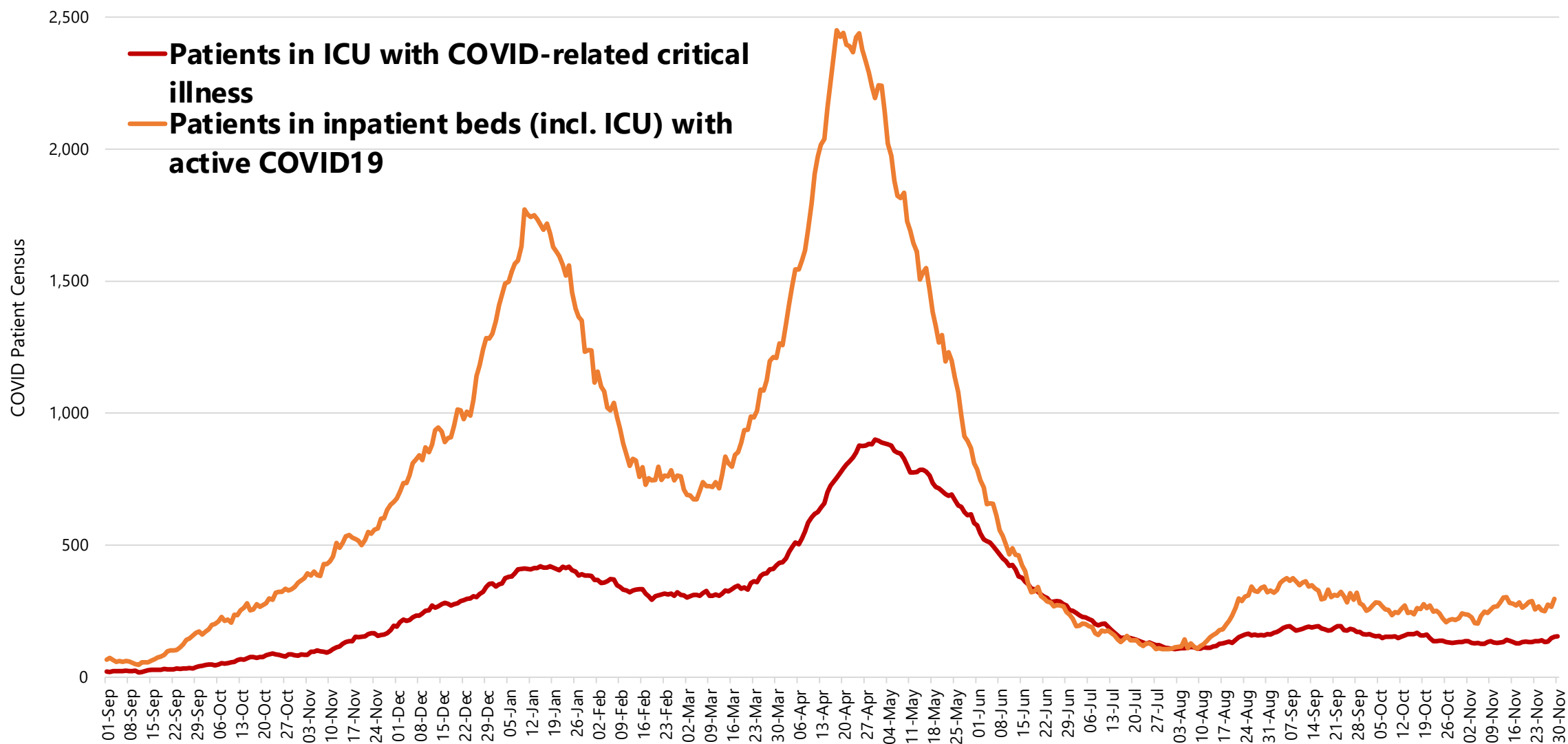
Figure shows predictions based on a consensus across models from 4 scientific teams.

- All scenarios assume continuing current public health measures.
- All scenarios include vaccinating kids 5-11 years of age, but differ on the proportion of kids vaccinated by end of December.
- Different models use different approaches and assumptions.
- Omicron not included in these scenarios, and would likely worsen these projections.

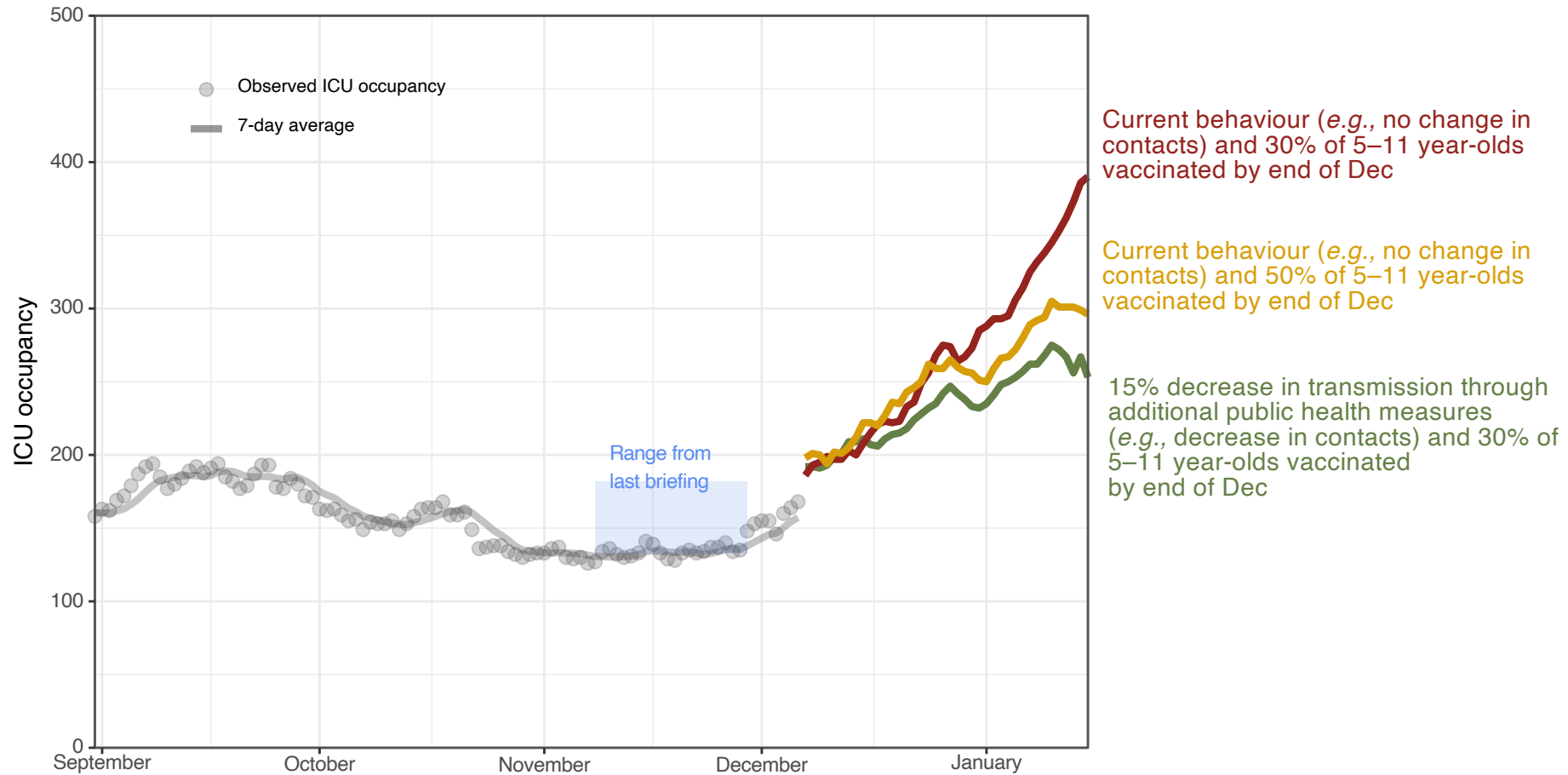




# COVID-19 hospitalizations and ICU admissions are stable for now

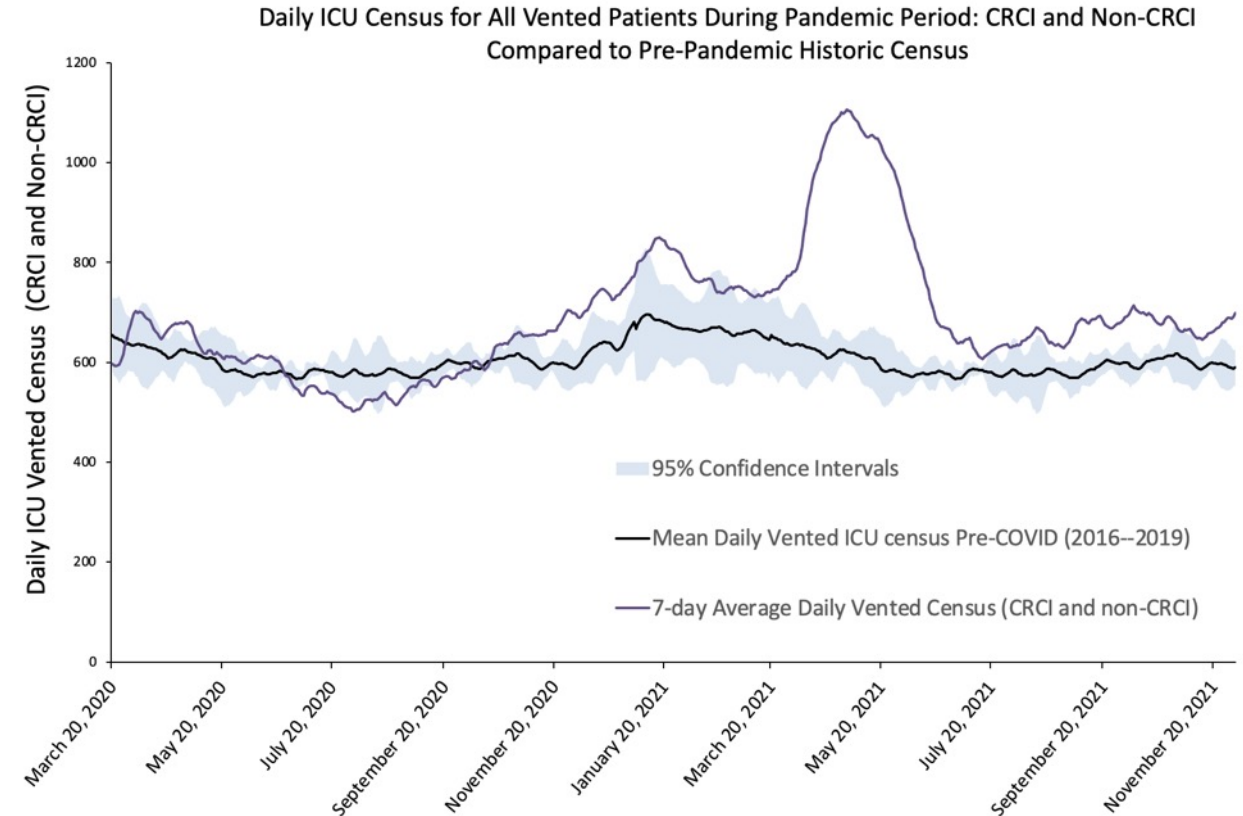


# As cases increase, ICU occupancy will also increase, likely exceeding 250 by end of December without accounting for Omicron



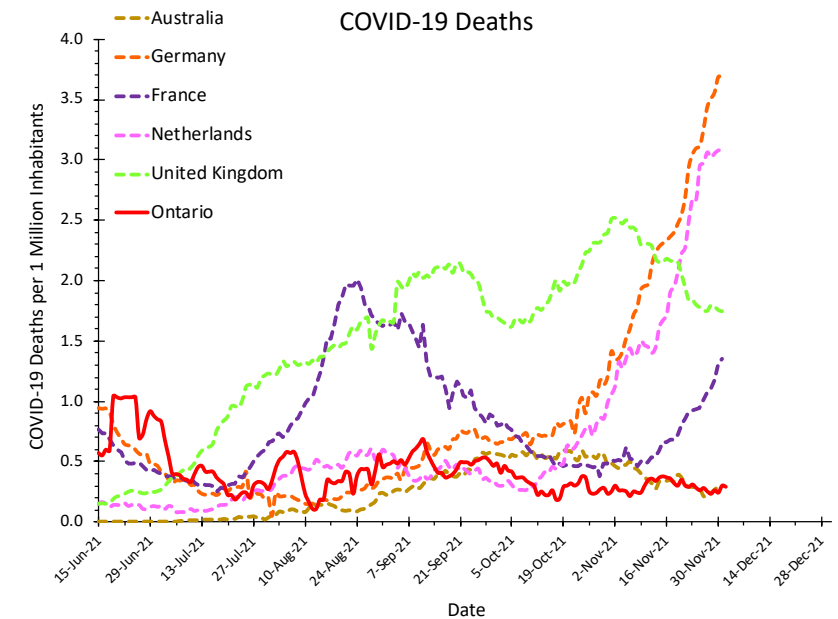
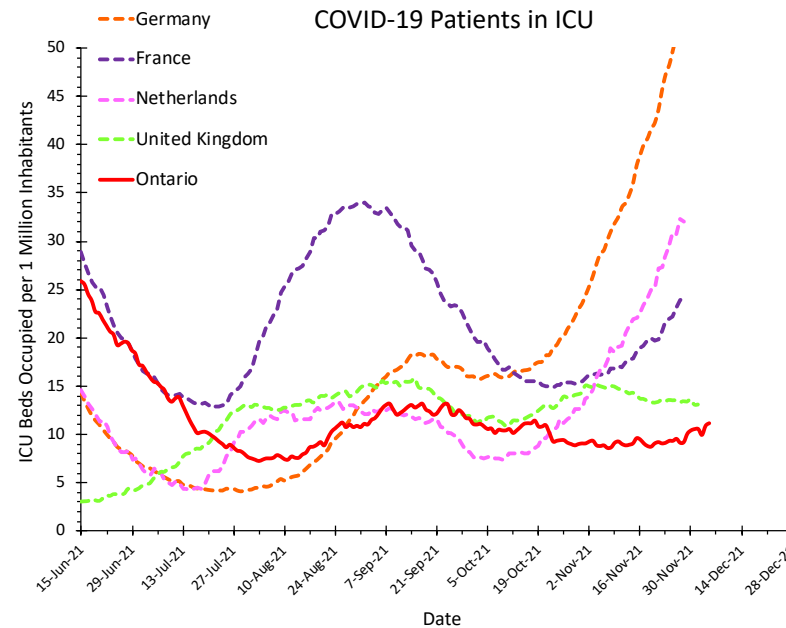
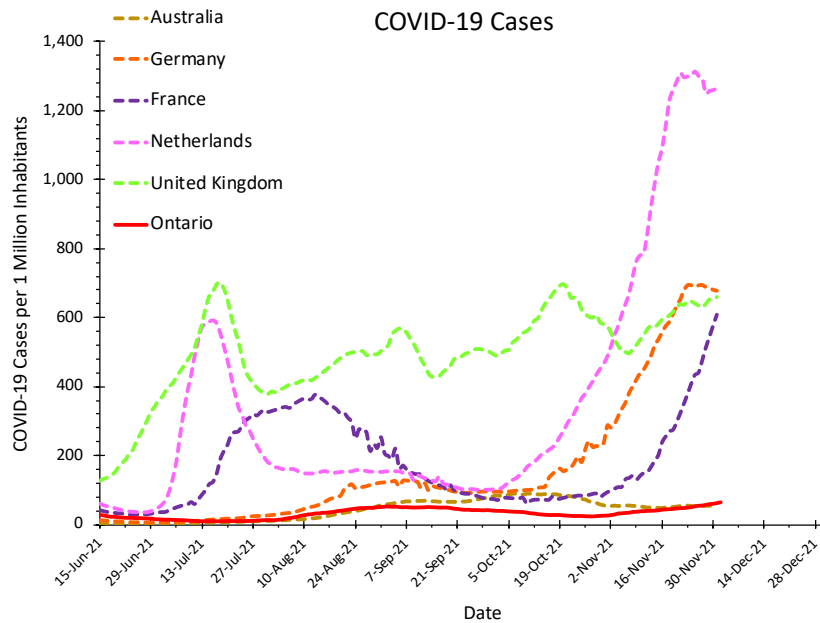
# Ontario ICUs have been under unprecedented pressure and will have trouble responding to another surge in patients

- Due to the need for urgent non-COVID-19 patient care, fewer staff are available to be redeployed and fewer staffed surge spaces are available
- Number of patients on ventilators has been above average for over a year; the pressure on ICUs has not let up
- There is a growing crisis in staffing for critical care patients with significant contribution from health care worker burnout
- Despite new beds and strong management, ICUs will be challenged in responding to any new surge in patients because of staffing constraints



CRI: COVID-19 related critical illness

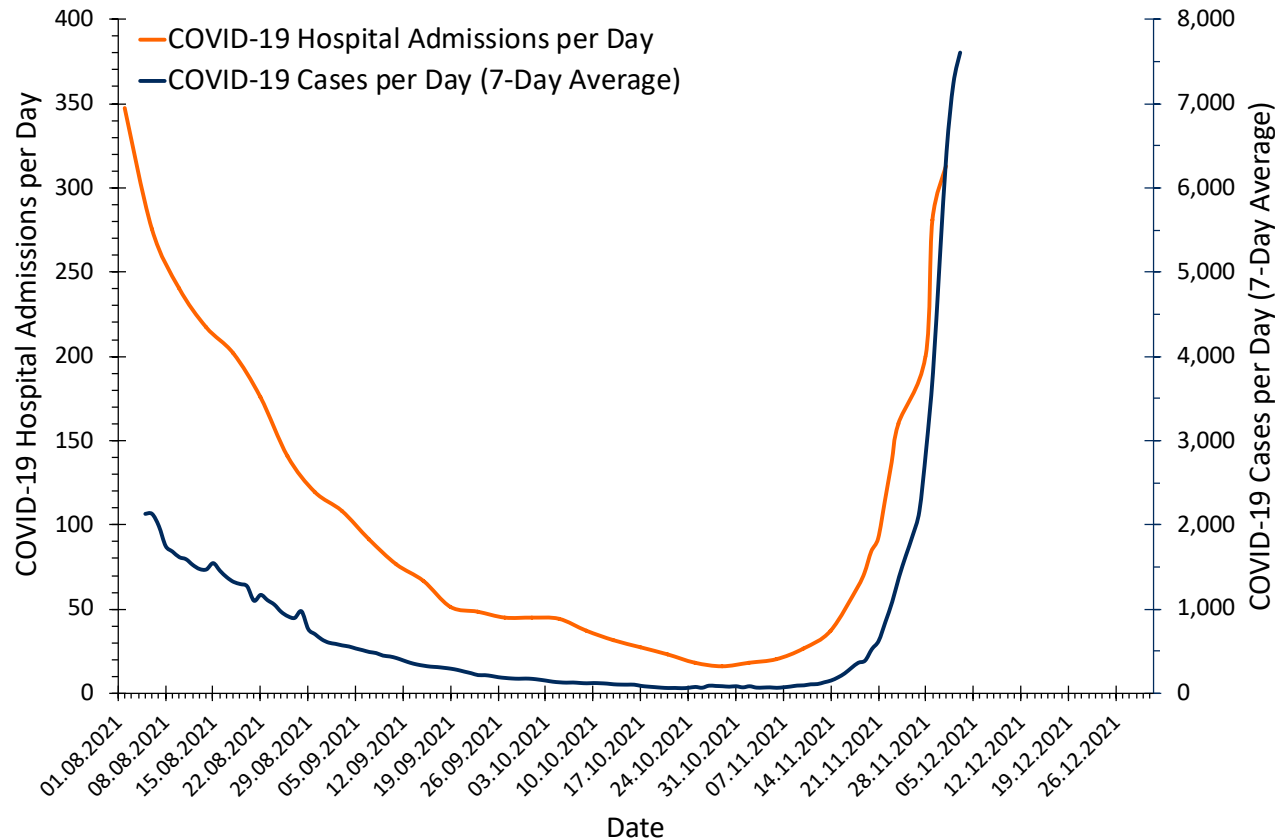
# Rising cases, ICU occupancy, and deaths in European peer jurisdictions show potential risk



The Ontario Stringency Index (44) is similar to UK (47); the Netherlands are at 56, Australia, France and Germany are at  $\geq 67$ .  
Ontario vaccine coverage (77% of population fully vaccinated) similar to Netherlands and Australia (74%),  
higher than remaining peer countries ( $\sim 68\%$ ).

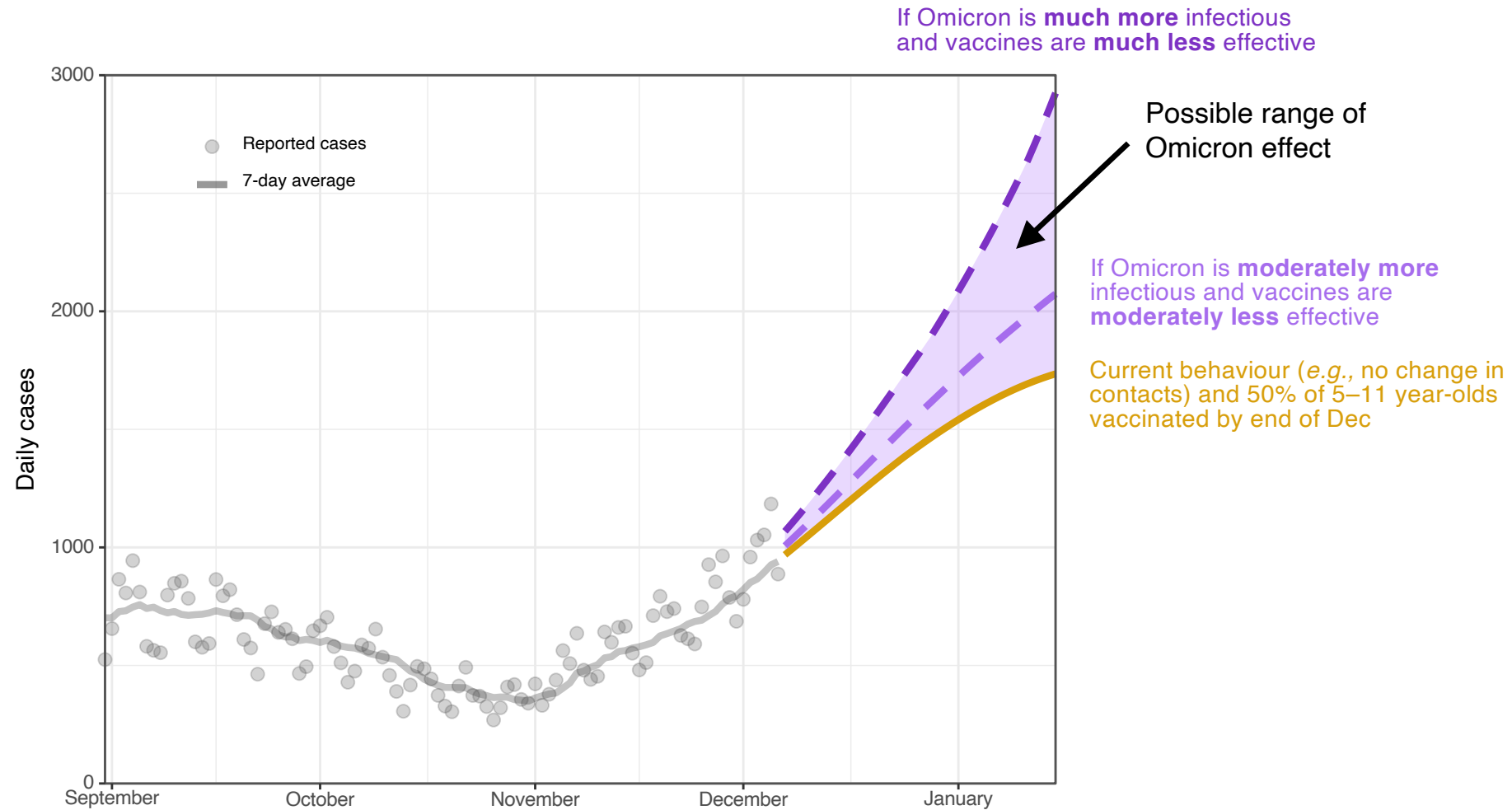
# A new variant of concern called Omicron became rapidly dominant and caused a steep increase in cases in the province of Gauteng, South Africa

Number of Daily COVID-19 Cases and Hospital Admissions in Gauteng, South Africa (15.8 Million Inhabitants)

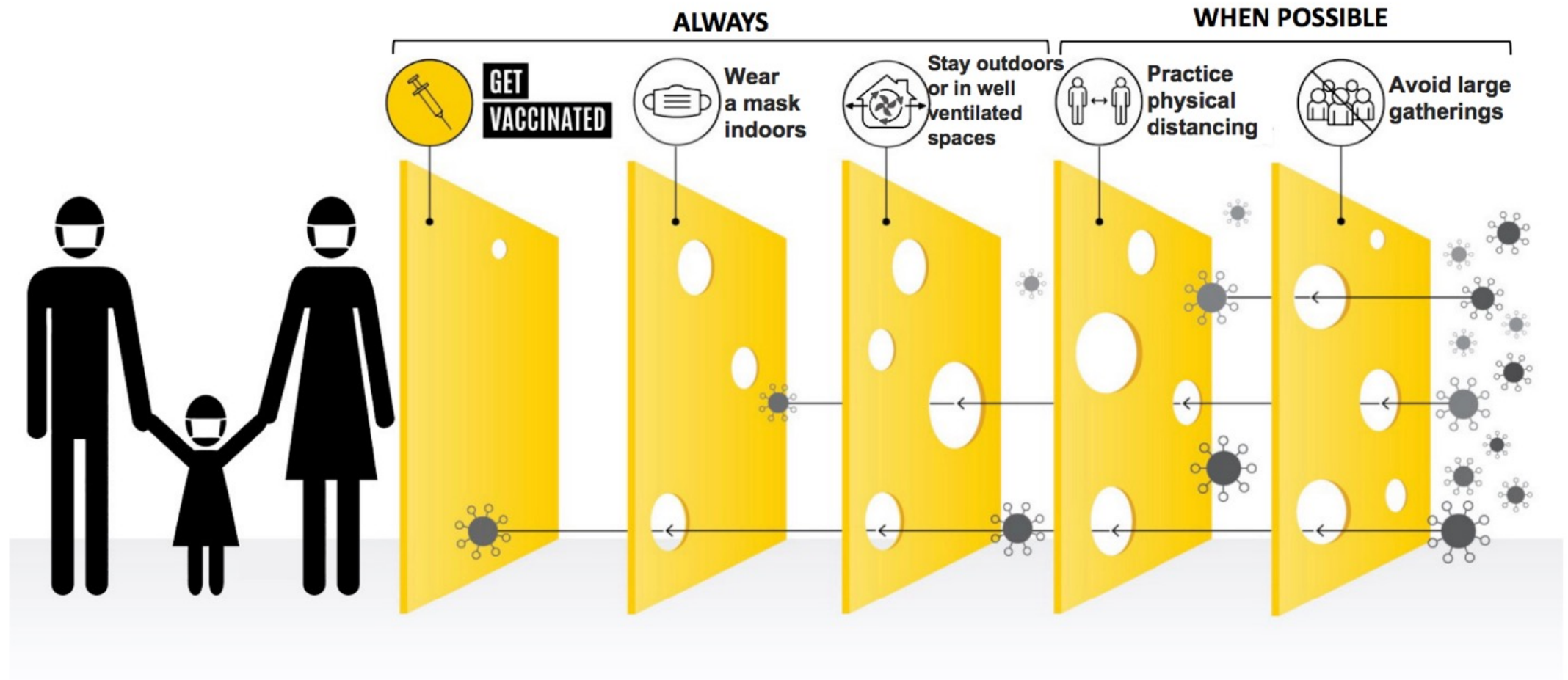


- Rapid increase in daily cases in Gauteng indicates that Omicron is more transmissible than Delta.
- Previously infected people have an increased risk of reinfection, suggesting partial evasion of immunity by Omicron.
- Hospital and ICU admissions are increasing because of steep increase in cases.
- Early data suggests vaccination protects against hospital admission caused by Omicron. Most patients admitted to hospital are unvaccinated.
- Omicron is transmitted exactly the same way as previous SARS-CoV-2 strains. Public health measures still work.

# The current situation is very uncertain, but the potential impact of Omicron on cases could be substantial



# Current public health measures are effective against Omicron



# Key findings

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- Low global vaccine coverage means that we can expect new variants to arise.



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For table membership and profiles, please visit the [About](#) and [Partners](#) pages on the Science Advisory Table website.