

Update on COVID-19 Projections

Science Advisory and Modelling Consensus Tables

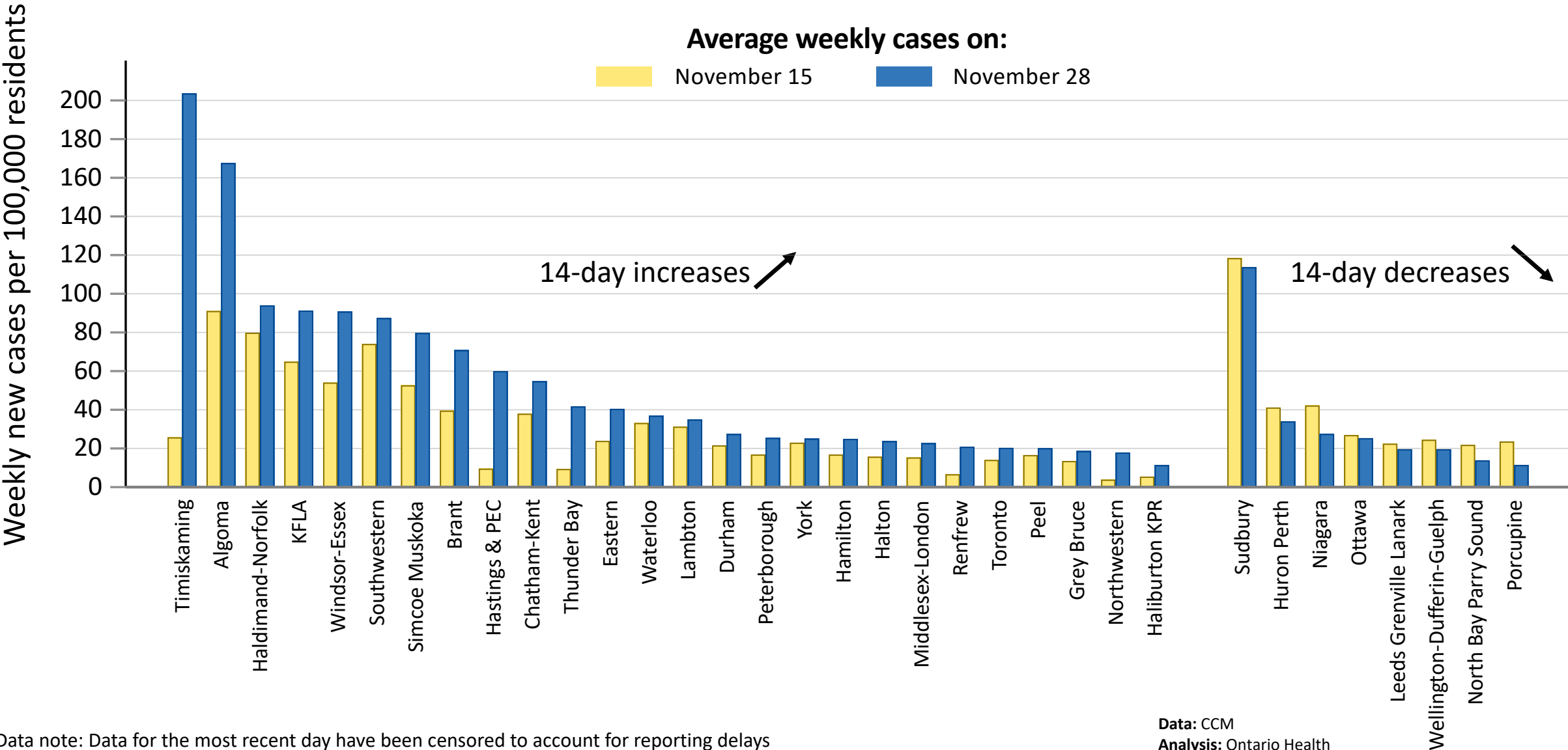
December 7, 2021



Key findings

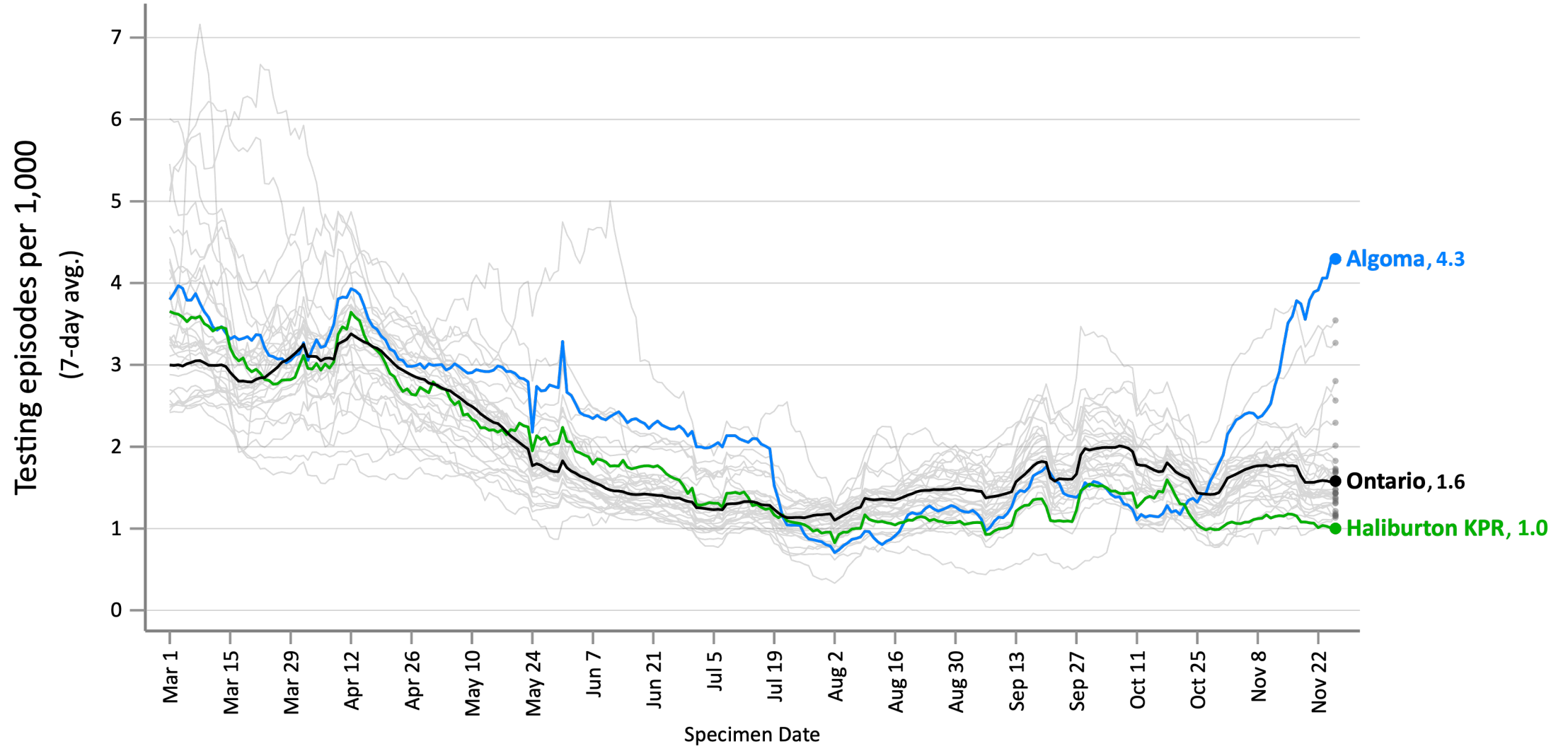
- COVID-19 cases are rising in most Public Health Units due to the Delta variant. Testing has not increased, but positivity is rising. This is a real rise in cases.
- Vaccine effectiveness in Ontario remains very high but experience in other countries suggests we will need to boost immunity with third 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

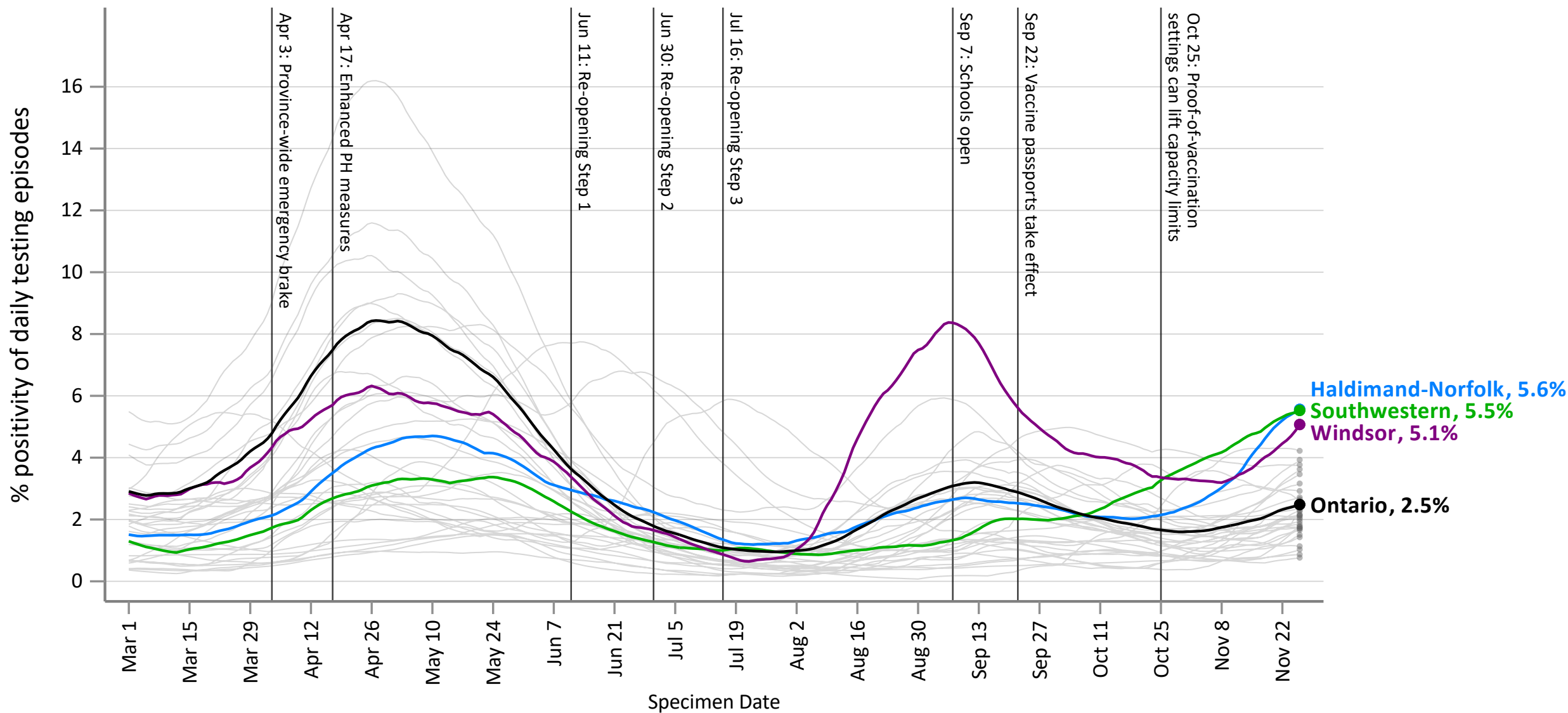


Data note: Data for the most recent day have been censored to account for reporting delays

Testing rates are flat since mid-July



Even with unchanged testing rates, test positivity is rising

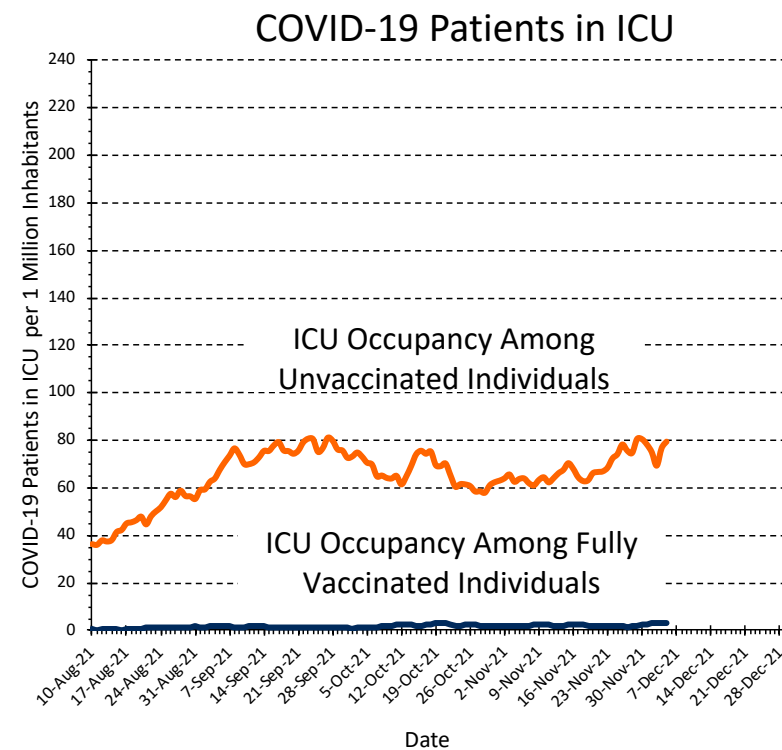
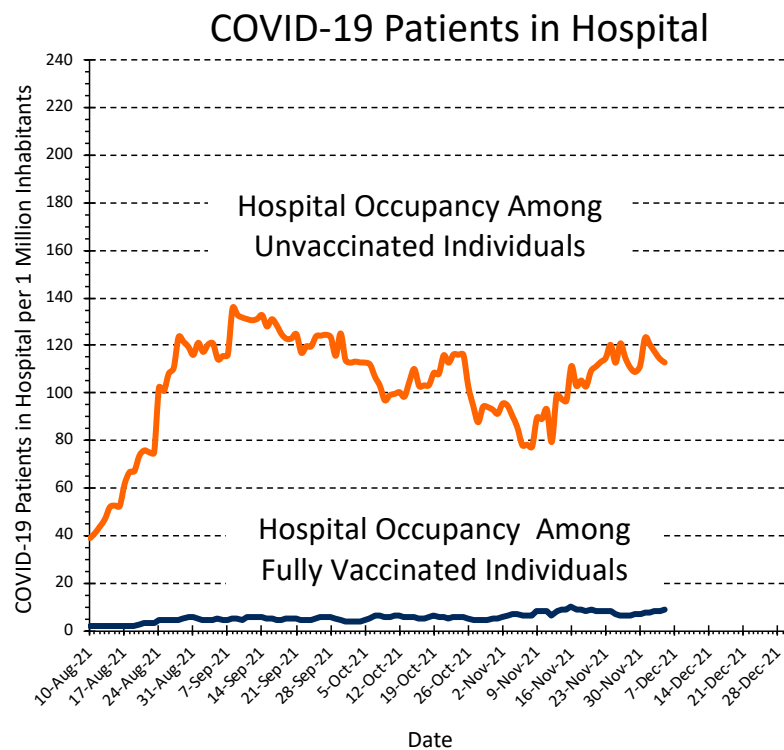
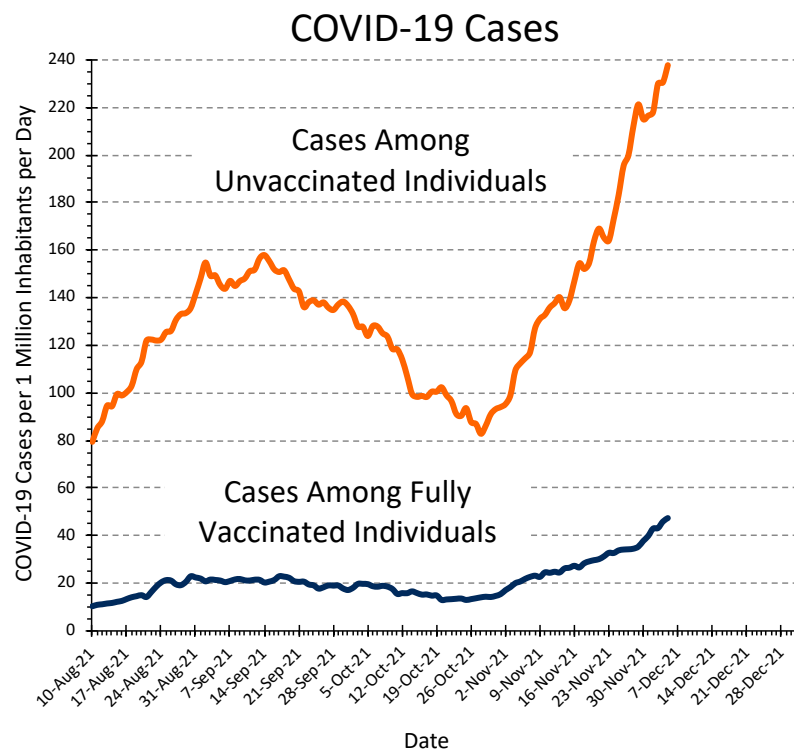


The most recent 3 days have been removed to account for incomplete data. Data are smoothed.

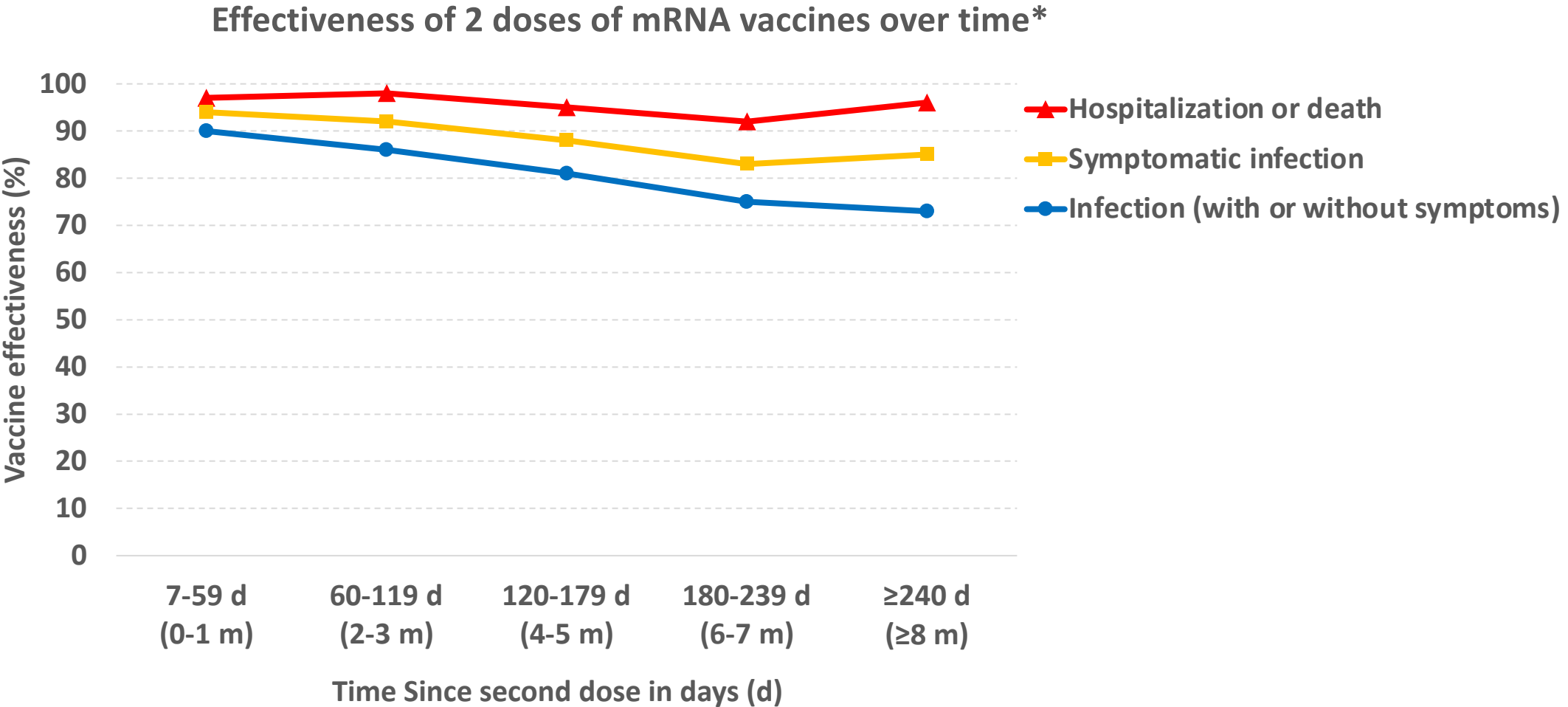
Data: OLIS via SAS VA, data up to November 26
Analysis: Ontario Health

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

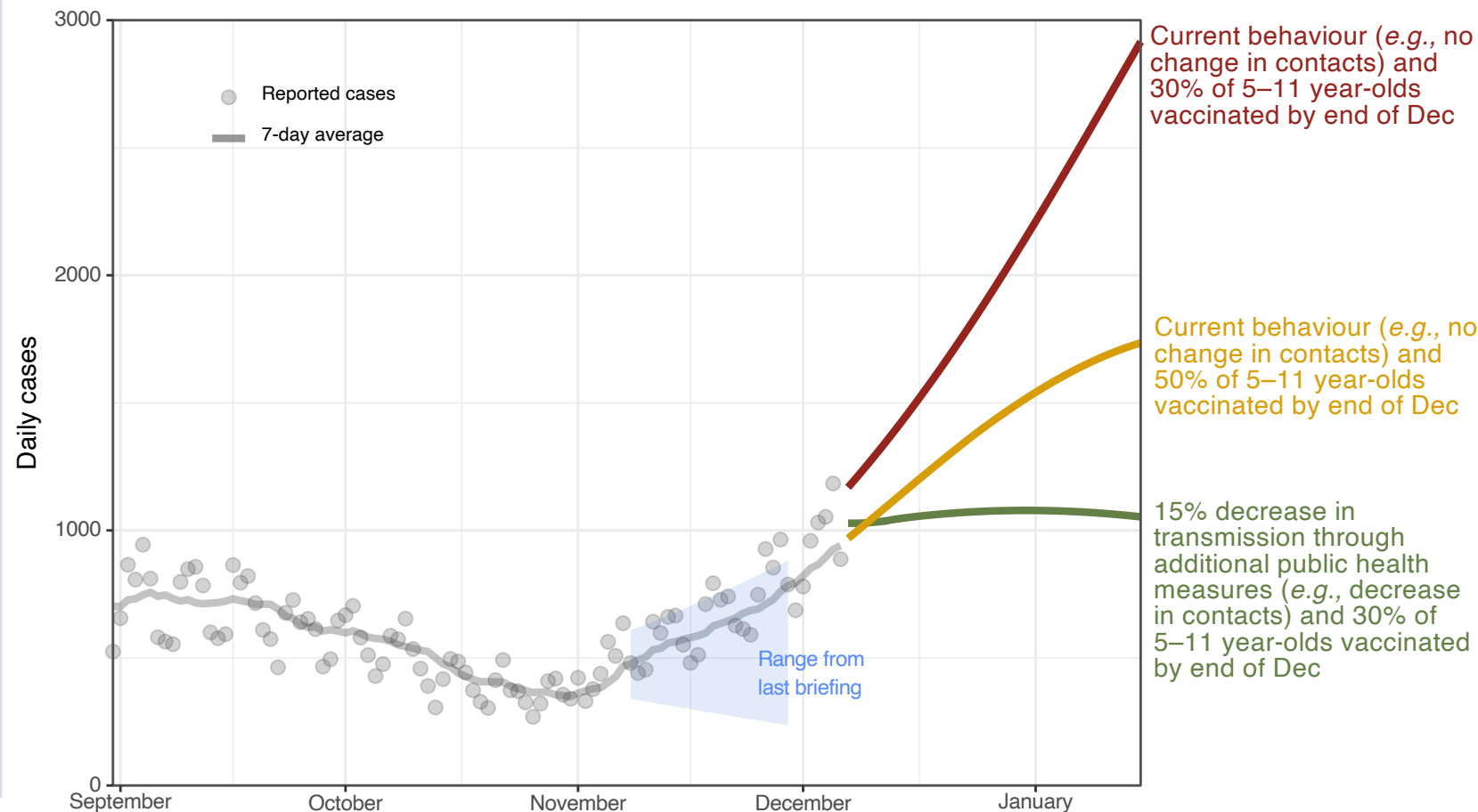


* Ontario, test-negative design, ≥16 years, any SARS-CoV-2 lineage, data to 1 Nov 2021

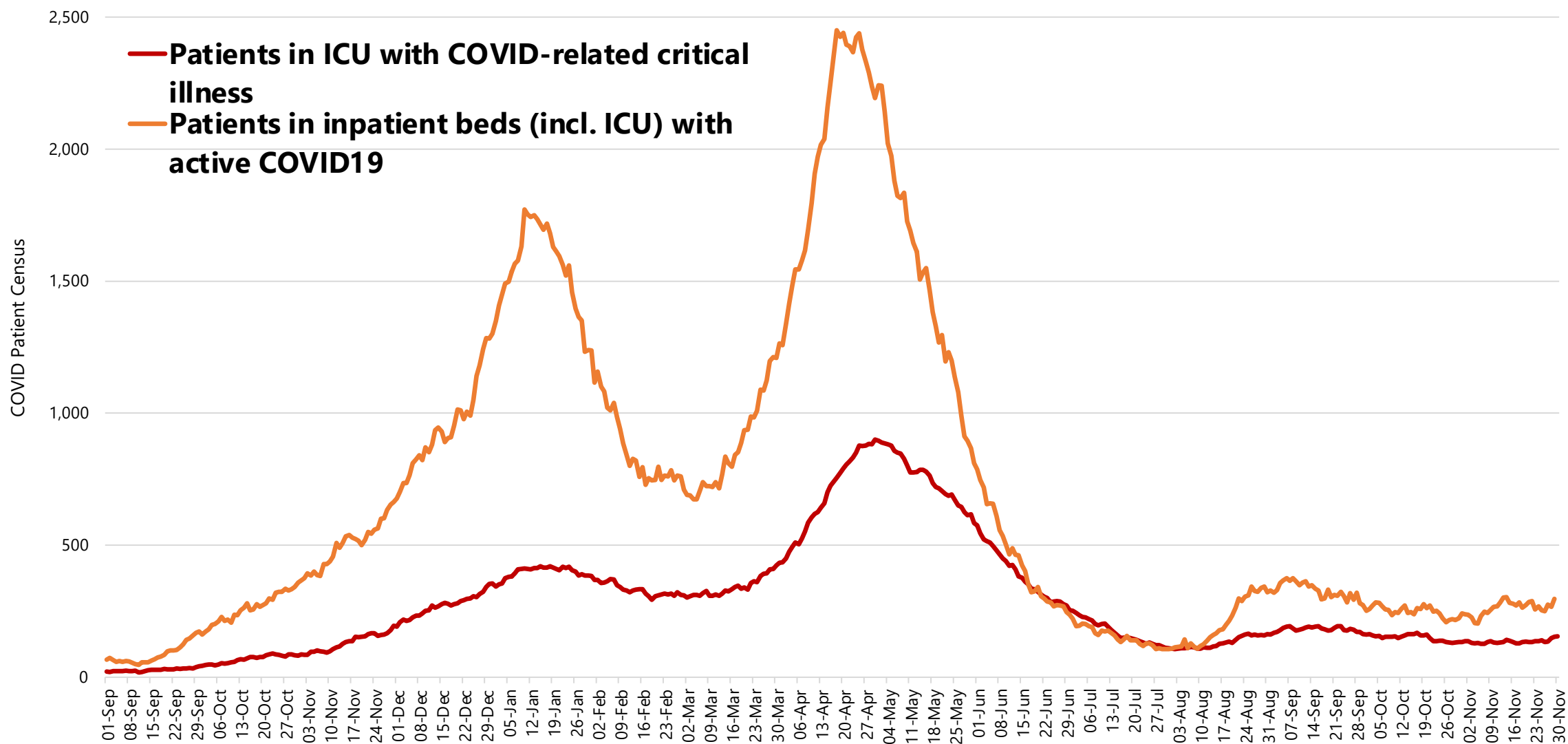
Cases continue to rise substantially, even without Omicron. To flatten the curve, we need to reduce transmission by increasing vaccination and public health measures.

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

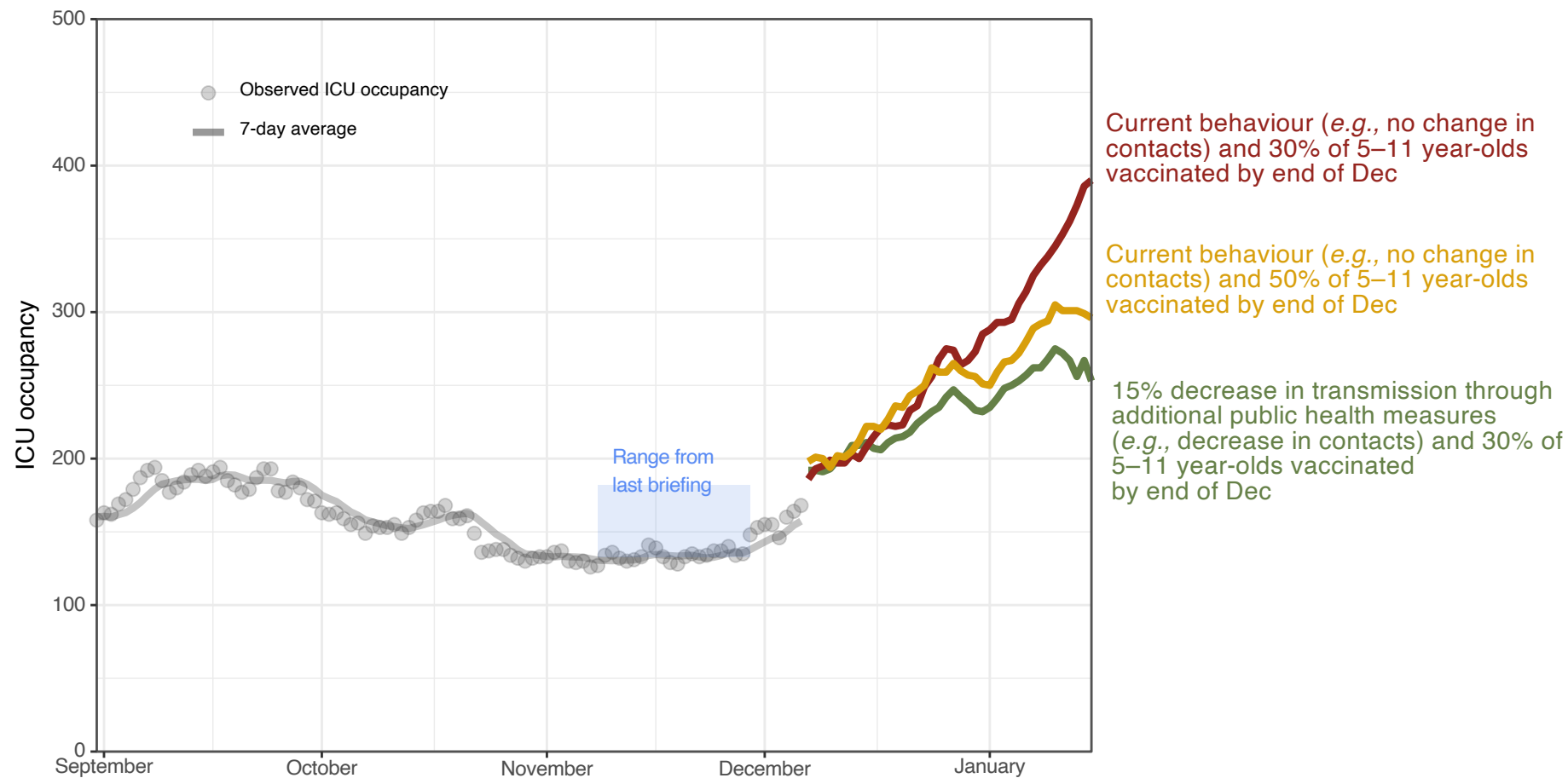
- All scenarios assume continuing current public health measures.
- All scenarios include vaccinating kids 5-11 years of age, but differ on the proportion of kids vaccinated by end of December.
- Different models use different approaches and assumptions.
- Omicron not included in these scenarios, and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



COVID-19 hospitalizations and ICU admissions are stable for now

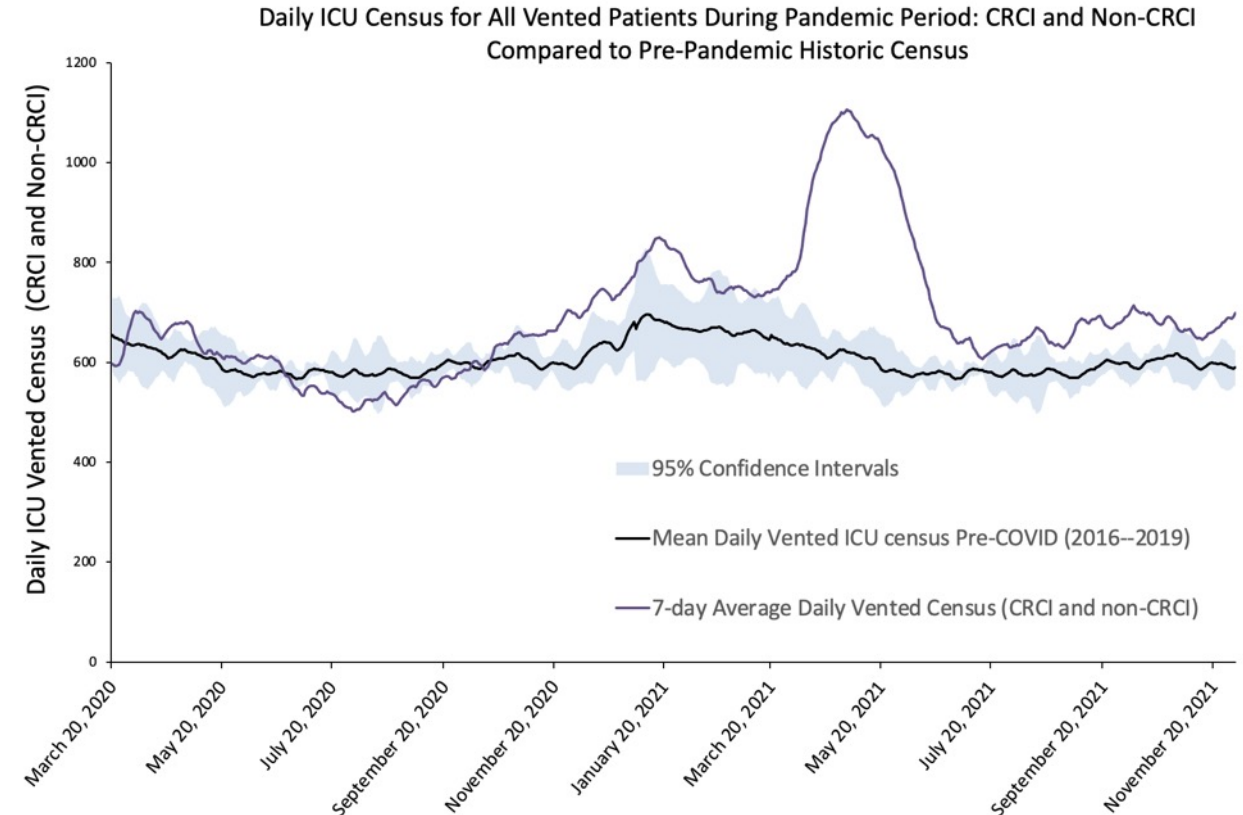


As cases increase, ICU occupancy will also increase, likely exceeding 250 by end of December without accounting for Omicron



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



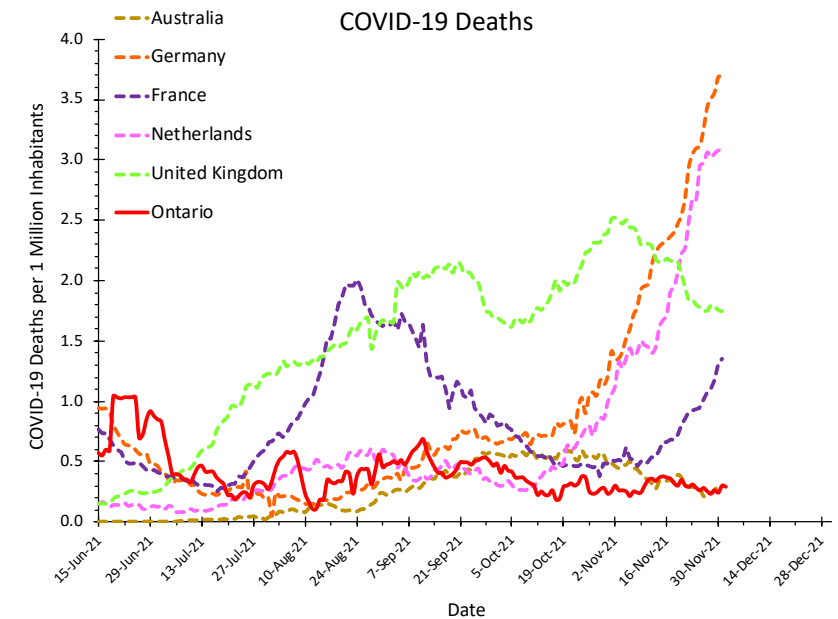
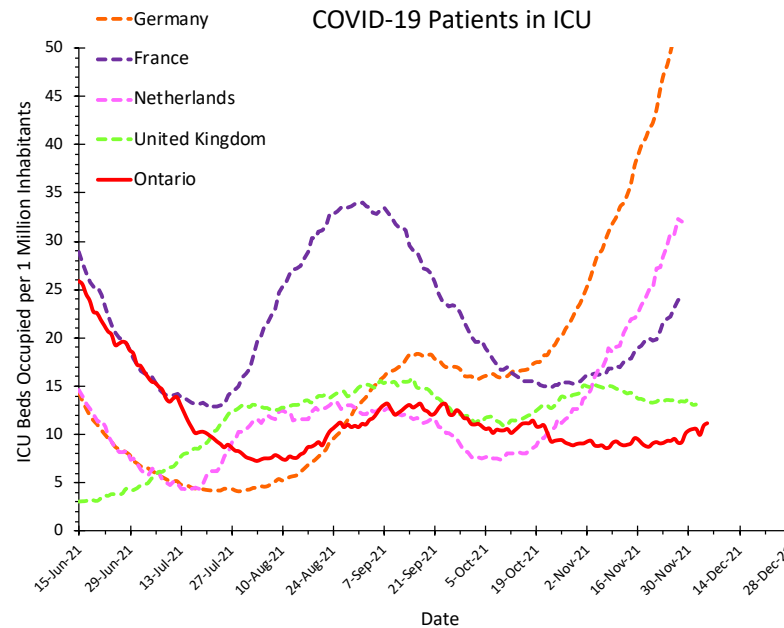
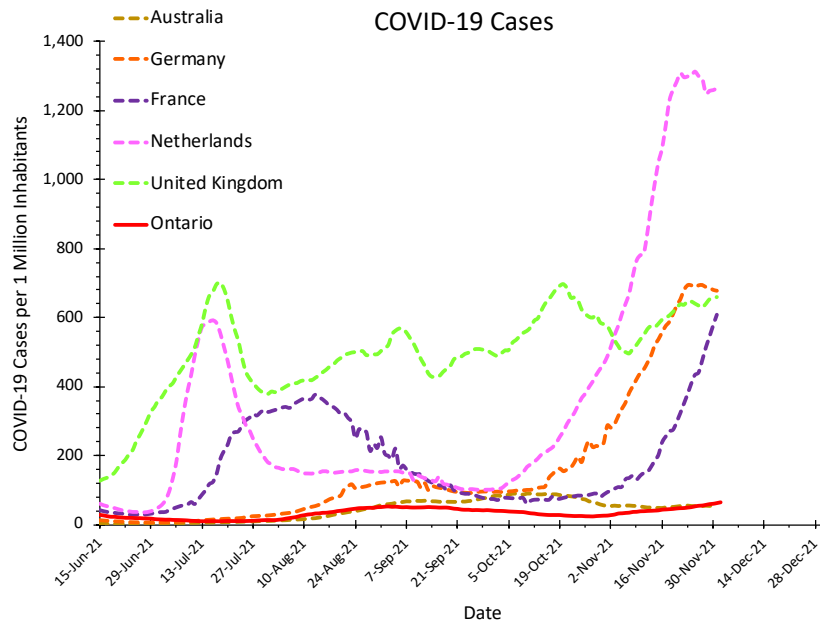
CRI: COVID-19 related critical illness

Source: Science Briefs of the Ontario COVID-19 Science Advisory Table (<https://doi.org/10.47326/ocsat.2021.02.51.1.0>)

Analysis: Secretariat of the Science Advisory Table

Data: CCSO

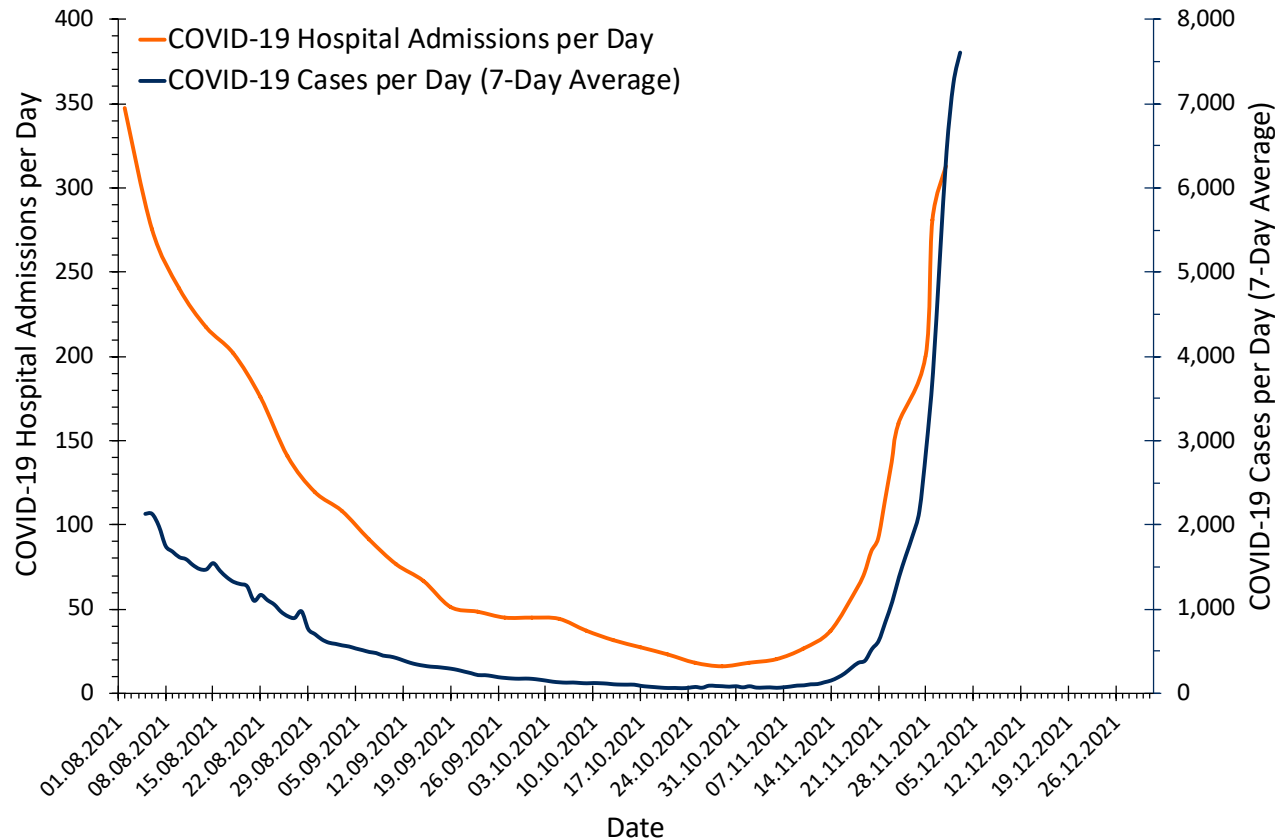
Rising cases, ICU occupancy, and deaths in European peer jurisdictions show potential risk



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

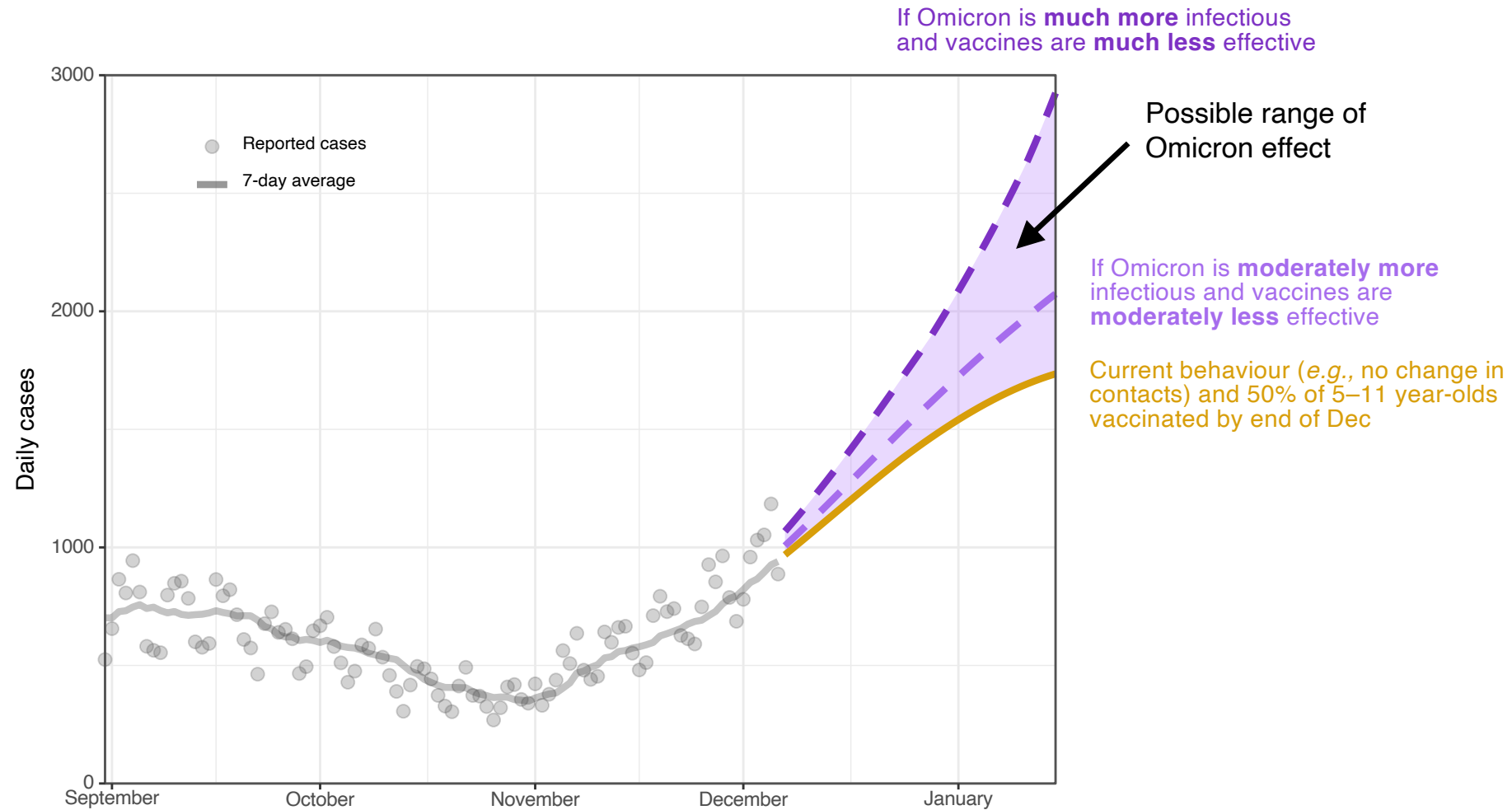
A new variant of concern called Omicron became rapidly dominant and caused a steep increase in cases in the province of Gauteng, South Africa

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

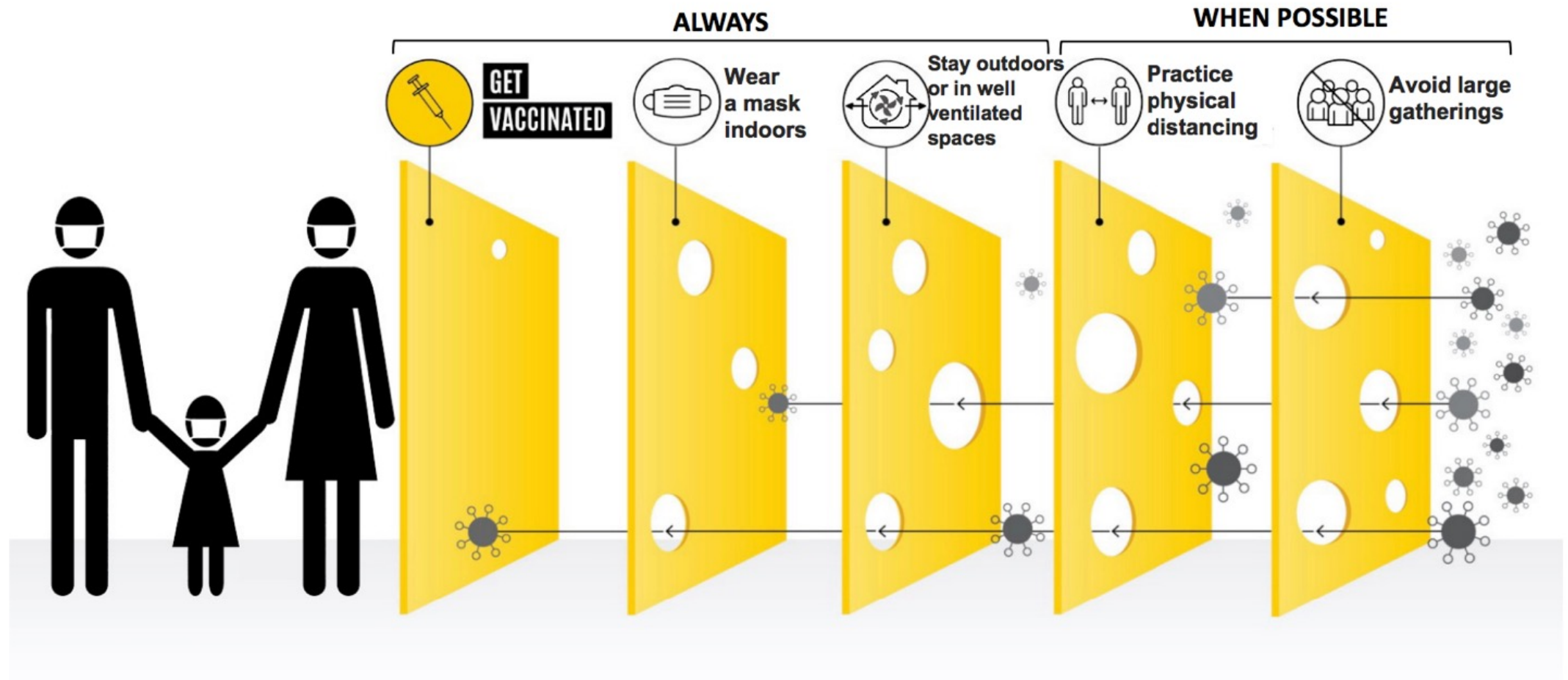


- Rapid increase in daily cases in Gauteng indicates that Omicron is more transmissible than Delta.
- Previously infected people have an increased risk of reinfection, suggesting partial evasion of immunity by Omicron.
- Hospital and ICU admissions are increasing because of steep increase in cases.
- 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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- Even without Omicron, ICU occupancy will likely grow to 250-400 beds in January, putting hospitals under strain again.
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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.