Update on COVID-19 Projections

Science Advisory and Modelling Consensus Tables

January 28, 2021
Key Findings

• Cases and positivity are down across Public Health Units but testing volumes are also slightly down. Sustained high testing volumes will be important to control of the pandemic.

• Cases are declining across long-term care homes but deaths continue to rise (215 in the last seven days). We are still likely to surpass total deaths from the first wave. Interventions to reduce deaths in long-term care will be critical.

• Hospitalizations are declining but strained ICU capacity continues. COVID-19 has an outsized impact on our health system. This access to care deficit continues to grow and will have short and longer-term negative impacts on health.

• There has been some reduction in mobility. But essential work is still strongly associated with risk of infection. Safe workplaces will be important to control COVID-19.

• The new variant of concern (B.1.1.7) is spreading in Ontario and is a significant threat to control of the Pandemic. However, modelling and international examples suggest that maintaining public health interventions will support continued reductions in cases, even with a return to school.
Total new cases per 100,000 residents per week across PHUs

Data source: Case and Contact Management System, data up to January 24
COVID-19 testing percent positivity across PHUs

Data source: Ontario Laboratories Information System (OLIS), data up to January 24
Cases and percent positivity have declined across most age groups but testing volumes have also fallen.
Cases are dropping but mortality in long-term care continues to increase (215 resident deaths in the last seven days)

Current status

256 LTC homes have COVID-19 outbreaks (41% of all homes), 80 outbreaks involve just one case

Since January 1st 596 LTC residents have died of COVID-19 and 3 staff deaths have been reported

The number of resident cases has been decreasing for the past 10 days (peaked on Jan 14th)

Data Source: Ministry of Long Term Care Tracker, Jan 25th extraction based on data reported up to 3:30 pm Jan 24th, 2021. Data are self-reported by the long-term care homes to the Ministry of Long-Term Care. Daily case and death figures may not immediately match the numbers posted by the local public health units (i.e. iPHIS database) due to lags in reporting time.
Long-term Care Outbreaks
January 7, 2021

Public Health Unit
2226 Algoma Public Health Unit
2227 Brant County Health Unit
2230 Durham Region Health Department
2233 Grey Bruce Health Unit
2234 Halton-Middlesex Health Unit
2235 Haliburton, Kawartha, Pine Ridge District Health Unit
2236 Halton Region Health Department
2237 Hamilton Public Health Services
2238 Hastings & Prince Edward Counties Health Unit
2240 Chatham-Kent Health Unit
2241 Kingston, Frontenac and Lennox & Addington Health Unit
2242 Lambton Health Unit
2243 Leeds, Grenville & Lanark District Health Unit
2244 Middlesex-London Health Unit
2246 Niagara Region Public Health Department
2247 North Bay Parry Sound District Health Unit
2249 Northwestern Health Unit
2251 Ottawa Public Health
2253 Peel Public Health
2255 Peterborough Public Health
2256 Renfrew County & District Health Unit
2258 Eastern Ontario Health Unit
2260 Simcoe Muskoka District Health Unit
2261 Sudbury and District Health Unit
2262 Thunder Bay District Health Unit
2263 Timiskaming Health Unit
2265 Region of Waterloo Public Health
2266 Wellington-Dufferin-Guelph Health Unit
2268 Windsor-Essex County Health Unit
2270 York Region Public Health
3895 Toronto Public Health
4913 Southwestern Public Health
5183 Huron Perth Health Unit

Size of outbreak (staff and residents)
Long-term Care Outbreaks
January 24, 2021

Size of outbreak (staff and residents)
Stay-at-home order has reduced overall mobility
Stay-at-home order reduced mobility by a small amount
Communities with highest proportion of essential workers continue to have the highest case numbers
Countries that have maintained public health measures are seeing declines in cases despite increased B117 prevalence

Mean decrease in daily number of cases since most recent peak:
- Netherlands: 2%
- Germany: 3%
- UK: 4%
- Denmark: 4%
- Ontario: 3%
Cases are decreasing. This is driving decreased hospitalization but not yet decreased ICU occupancy.

Predictions informed by modeling from COVID-19 ModCollab, Fields Institute, McMasterU, PHO, QueensU, YorkU; recent growth in new daily cases; reported case trajectories in peer jurisdictions.

Data (Observed Cases): covid-19.ontario.ca
Projections: COVID-19 ICU occupancy 150-300 beds end of February
ICU capacity remains strained in most regions with about half of all hospitals with only 1 or 2 beds free.
COVID-19 creates a high burden on hospitals
And access to non COVID-19 care continues to decline
The Novel SARS-CoV-2 variant B.1.1.7 appears to be much more easily transmitted

• The novel SARS-CoV-2 variant B.1.1.7 emerged in England in November and is spreading in Ontario

• Transmissibility is likely at least 30% higher
  • UK: Transmissibility is 56% higher (95% credible interval 50-74%)
  • UK: Secondary Attack Rate is 36% higher
  • Denmark: Reproduction number (R) is 1.36 compared to other variants (95% CI 1.19; 1.53)

• Current UK evidence summary notes potential for higher mortality “realistic possibility that infection with VOC B.1.1.7 is associated with an increased risk of death compared to infection with non-VOC viruses”

• Vaccines likely still effective

• Other variants of concern: B.1.351, P.1 (both with increased transmissibility, increased risk of re-infection)

• Other variants likely to emerge

Sources: Public Health England Technical Reports; NERVTAG report; Davies NG et al (LSHTM); Statens Serum Institut Denmark Ekspertrapport af den 15. Januar 2021
With public health measures, cases should decline even with school opening. Infection control will be critical in schools.

Effect of school operating status with VOC present starting from 1% on 9 Dec, 2020

Reported Cases
Schools open
Schools closed

Predictions: COVID-19 ModCollab.
Cumulative COVID-19 vaccine dose administrations (295,816 doses to January 25th, 2021)

Current status

Since December 15, 2020, 295,816 vaccine doses have been administrated in Ontario.

These administrations include Pfizer and Moderna vaccines.

90% of vaccine administrations have been since Jan 1 2021.

Data Source: COVAX. Data extracted 8:00pm nightly (Health Data Branch, MOH). Includes Pfizer and Moderna vaccines. Excludes records where dose administration status is not known.
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