

Media release

## **Pandemic Modelling by the Canadian Institute of Actuaries Shows Fourth Wave Likely in Most Scenarios**

*Ontario will need to achieve nearly 90% full vaccination of total population to lessen risk of fourth wave in late 2021*

**Ottawa, August 11, 2021** – New research by the Canadian Institute of Actuaries (CIA) provides enhanced modelling of potential COVID-19 scenarios in Ontario to help account for factors such as new variants, vaccines, seasonality, and dynamic government intervention measures.

Based on a range of optimistic, pessimistic, and baseline scenarios for the period up to April 2022, the CIA's model indicates that a fourth wave is likely unless the province nears 90% full vaccination of the total population. Without 90% vaccination, it is only a question of how severe the fourth wave will be.

“In an effort to find solutions and next steps in the aftermath of the pandemic and its unprecedented effects on the health and financial well-being of Canadians, our actuaries are well placed to contribute their expertise in risk modelling and predictive analytics,” says Jacqueline Friedland, FCIA, CIA President. “We hope this research provides governments and the public with greater understanding of the interaction and relative impact of various COVID-19 risks.”

The CIA collaborated with Drs. Ashleigh Tuite, David Fisman, and Amy Greer at the University of Toronto to build on [their model](#), enhancing it with additional factors that influence the spread of COVID-19, including seasonality, updated experience and assumptions from Ontario data, vaccination data, interventions, and the effect of new variants.

“Even though the starting model was for Ontario, we believe the CIA's findings and conclusions apply to other jurisdictions as well,” says Alison Rose, FCIA, Chair of the CIA's Research Council. “The CIA's rigorous peer review process involved many members and external collaborators, and we are confident that this model offers a valuable perspective for decision-makers both now and in the future as we continue to update it with new data and variables.”

In addition to reinforcing the importance of setting and achieving high vaccination targets, the CIA model indicates that public willingness to vaccinate is the most important factor in ending the pandemic, above even vaccine effectiveness.

The model also indicates that government interventions do provide short-term relief and can prevent health-care system overrun, but that when interventions are lifted, infections will continue to spread at an exponential rate. Additionally, unvaccinated individuals will be at increased risk in future waves given the rise of variants.

“I believe the most important take-away from our findings is that there are ways to mitigate the risks of COVID-19 going forward. There are good reasons to be optimistic,” says Garrett Klus, FCIA, member of the CIA Pandemic Modelling Project Team. “Understanding how these different risk factors interact means we can build policies and actions that more effectively address pandemic factors in evolving ways.”

The CIA Pandemic Modelling Project Team authors are Spencer Bateman, Luis Dizon, Garrett Klus, Jacques Leduc, Brad Lee, Tommy Nguyen, and Jake Seok.

Read the highlighted findings in a special CIA insight statement: [Modelling the Future of COVID-19 in Ontario](#)

Read the full CIA research paper: [The Future of COVID-19 in Ontario: Variants, Vaccines, and Avoiding Future Waves](#)

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**Media contact**

Sandra Caya

Director, Communications and Public Affairs, Canadian Institute of Actuaries

[sandra.caya@cia-ica.ca](mailto:sandra.caya@cia-ica.ca)

613-236-8196 ext. 116

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