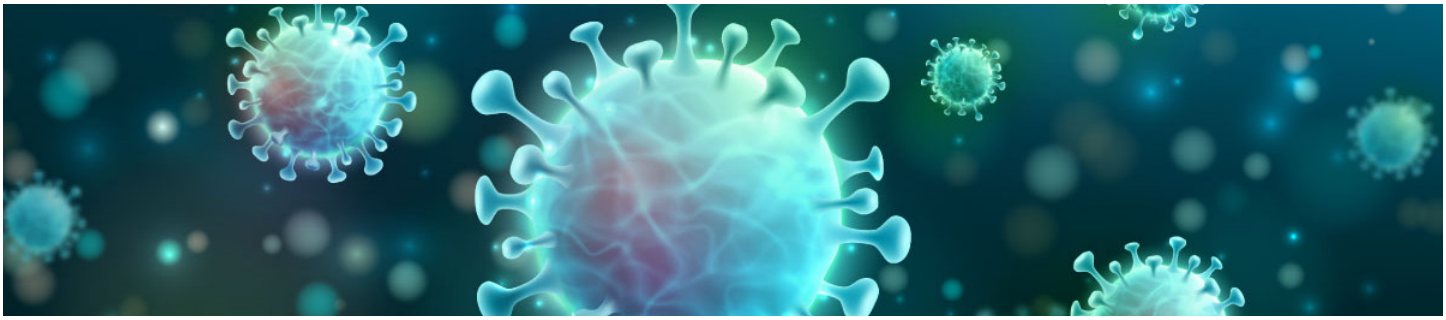
Canadian International COVID-19 Surveillance Border Study

Interim Results Backgrounder



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Background

In September 2020, McMaster HealthLabs (MHL) launched an academic research study of arriving international passengers at Toronto Pearson, aged 18+, primarily focused on gathering data to explore the effectiveness of various quarantine periods, to help determine if an airport-based COVID-19 surveillance program is feasible, and whether home based self-collection of COVID-19 testing is effective.

The border study, supported by the Government of Canada and conducted in partnership with Air Canada and the Greater Toronto Airports Authority, is the largest of its kind in the world. Most other border testing studies have used a "test and release" approach. The MHL study is unique in collecting COVID-19 test data from individuals at three different time points: upon arrival and at days seven and fourteen. The study also looked at the psychological impact of quarantine – offering comprehensive data for policy makers. While the study took place between September 3 to November 14, 2020, the interim report is based on data collected between September 3 and October 2. A preliminary independent analysis has been completed by the study team; additional analysis and full results are expected to be shared and submitted for peer-review publication in January of 2021. It is anticipated that final results will be based on more than 16,000 participants completing 40,000 tests with more than 10,000 completed on Day 14.

Study Objectives

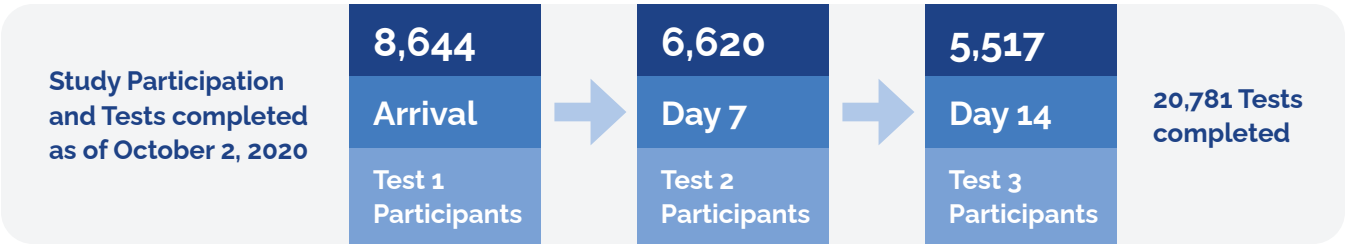
- To assess the proportion of arriving international travelers that have COVID-19 infection upon arrival (day 1), as well as at day 7 and at day 14 of quarantine
- To assess the health, well-being and attitudes of quarantined travelers
- To determine the acceptability and quality of self-collected specimens for detection of COVID-19 infection in asymptomatic participants
- To help determine if an airport-based surveillance program is feasible

Study Methodology

The study was conducted in accordance with research ethics board-approved scientific protocols.

- Cohort of international passengers at Toronto Pearson Airport Terminal 1 arriving September 3 through October 31, 2020 *(these interim results represent those recruited through October 2)*
- Inclusion criteria: age ≥18; GTA final destination and live within 100 km of airport, speaks English and/or French and provides consent
- Exclusion criteria: taking a connecting flight, no internet access, symptoms of COVID-19 on arrival, exempted from quarantine
- Eligible and consenting passengers were shown how to self-collect a nasal/cheek swab on arrival and provided with two additional kits for day 7 and day 14
- Couriers dispatched to pick up test kits and questionnaires completed at baseline and follow-up
- Samples analyzed using polymerase chain reaction (PCR) testing at the Research Institute of St. Joe's in Hamilton, Ontario
- Under the research protocol participants that tested "non-negative" were provided information regarding confirmatory testing and follow-up through a` provincial assessment centre

Topline Interim Results



Overall Rates of COVID-19

- 99% of study participants tested negative for COVID-19 with 1% testing positive.
  - Of the 8,644 people who participated in the study – 89 tested positive with the majority of results
    - 68.5% - identified on Day 1, with a further 25.8% testing positive on Day 7, and 5.6% on Day 14
- **Breakdown of positive cases by test period:**
  - 0.7% detected on arrival (61 divided by 8644)
  - 0.3% detected on day 7 (23 divided by 6620)
  - <0.1% detected on day 14 (5 divided by 5517)

Preliminary Insights

- The results support a test and reduced quarantine approach:
  - An arrival PCR test would detect about 70% of positives.
  - A second test on day 7 would capture the majority of the remaining positives.
  - This approach is similar to the one being used as part of the Alberta COVID-19 Border Testing Pilot Program.
    - In the Alberta COVID-19 Border Testing Pilot Program if an individual tests negative, they may leave quarantine but must follow all required preventative measures, including daily check-ins and taking a second COVID-19 test on the sixth or seventh day, and staying in Alberta for the full 14 days.
    - **www.alberta.ca/international-border-pilot-project.aspx**
- The pilot phase has demonstrated the feasibility of airport-based testing with self-collected nasal/oral swabs as well as home-based collection during quarantine.

Full Results to be Released in January, 2021

Full results will include information on infection rates by geographic region, rates within different age groups, the impact of quarantine on mental health and deeper insights into the data set will be conducted by the study team and is expected to be released and submitted to peer-reviewed journals for publication in January 2021.

About McMaster HealthLabs

McMaster HealthLabs (MHL) is a non-profit organization that develops COVID-19 research initiatives and testing solutions to keep Canadians safe and to get them back to work. MHL works with scientists and doctors affiliated with McMaster University, The Research Institute of St. Joe's Hamilton, and other Canadian universities and research organizations. MHL is focused on curbing the human, economic and social costs of COVID-19 by creating scientific research initiatives that help Canadian leaders make evidence-based decisions.

For more information about the Canadian International COVID-19 Surveillance Border Study and the work of McMaster HealthLabs, visit mcmasterhealthlabs.ca.