

WEEKLY EPIDEMIOLOGICAL SUMMARY

COVID-19 in Ontario: Focus on April 17, 2022 to April 23, 2022

Due to changes in the Ministry of Health's <u>updated guidance on testing and case</u>, <u>contact and outbreak management</u>, case counts in this report are an underestimate of the true number of individuals with COVID-19 in Ontario. In addition, data for hospitalizations, intensive care unit (ICU) admission and deaths in the most recent reporting period should be interpreted with caution due to data entry and reporting lags.

Introduction

This report includes the most current information available from CCM as of April 26, 2022.

Please visit the interactive <u>Ontario COVID-19 Data Tool</u> to explore recent COVID-19 data by public health unit, age group, sex, and trends over time.

A <u>daily summary</u> is available and provides an epidemiologic summary of recent COVID-19 activity in Ontario. This weekly report provides an epidemiologic summary of COVID-19 activity in Ontario over time.

The term public health unit reported date in this document refers to the date local public health units were first notified of the case. Data corrections or updates can result in case records being removed and or updated from past reports. Thus comparisons of case counts by public health unit reported date may not align with daily change in cases publicly reported by the province for the same time period, which reflects the difference in cumulative counts between one day and the next.

Highlights

- There are a total of 1,243,739 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to April 23, 2022.
- For the period with a public health unit (PHU) reported date between April 17 to 23, 2022 (Week 16):
 - A total of 21,550 cases were reported to public health compared to 22,976 cases the previous week (April 10 to 16, 2022 or week 15). The number of cases should be interpreted with caution due to changes in testing availability.
 - Between week 15 (April 10 to 16, 2022) and week 16 (April 17 to 23, 2022), the rate of
 confirmed cases increased 22.7% in those ages 80 years and older, while there was a
 smaller (4.3%) increase in those 60-79 years old. These increases may be attributed to
 broadened testing eligibility in more recent weeks among those 70 years and older.
 - Deaths among confirmed cases of COVID-19 have been higher in week 15 (April 10 to 16, 2022) and week 16 (April 17 to 23, 2022), following a period of decline and stabilization that spanned week 4, 2022 (January 23 to 29, 2022) to week 14 (April 3 to 9, 2022).

Cases Over Time

105,000 100,000 ■ Number of cases 95,000 ■ Subject to reporting lag 90,000 85,000 80,000 75,000 70,000 Number of cases 65,000 60,000 55,000 50,000 45,000 40,000 35,000 30,000 25,000 20,000 15,000 10,000 5,000 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 2 5 8 11 14 17 20 23 26 29 32 35 38 41 44 47 50 1 4 7 10 13 16 Reported week

Figure 1. Confirmed cases of COVID-19 by public health unit reported week: Ontario

Note: Include cases with reported dates ranging from week-4 (January 19 and 25, 2020) to Week 16 (April 17 and 23, 2022). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates. Changes in testing eligibility went into effect on December 31, 2021, limiting access to testing and resulting in a change in the population being tested.

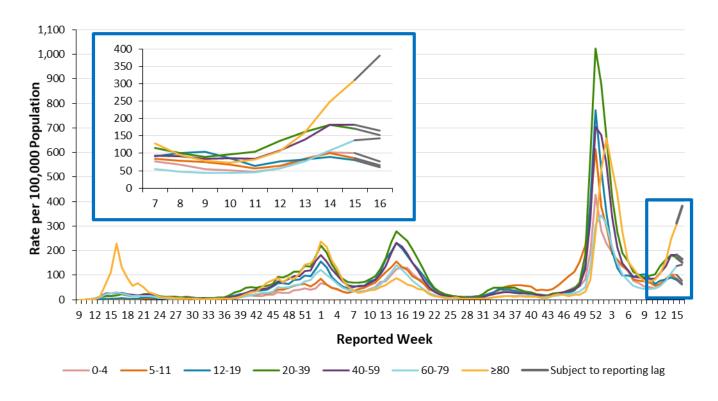
Case Characteristics

Table 1. Summary of confirmed cases of COVID-19 by public health unit reported date: Ontario

| | Reported week 15 (April 10 to 16, 2022) | Reported week 16 (April 17 to 23, 2022) | Cumulative case count up to April 23, 2022 | Cumulative rate per 100,000 population |
|-----------------------------|---|---|--|--|
| Total number of cases | 22,976 | 21,550 | 1,243,739 | 8,441.3 |
| Sex: Male | 8,949 | 8,364 | 581,285 | 7,985.3 |
| Sex: Female | 13,801 | 13,026 | 654,931 | 8,785.6 |
| Ages: 0-4 | 733 | 552 | 37,079 | 5,128.4 |
| Ages: 5-11 | 934 | 712 | 72,979 | 6,766.5 |
| Ages: 12-19 | 1,069 | 810 | 103,503 | 7,785.2 |
| Ages: 20-39 | 7,095 | 6,355 | 471,872 | 11,365.2 |
| Ages: 40-59 | 7,122 | 6,463 | 348,127 | 8,936.6 |
| Ages: 60-79 | 3,981 | 4,154 | 152,532 | 5,260.1 |
| Ages: 80 and over | 2,037 | 2,500 | 57,235 | 8,727.0 |
| Number resolved | N/A | N/A | 1,204,370 | N/A |

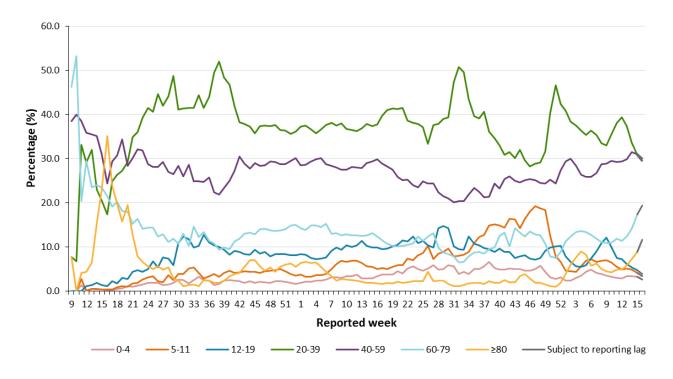
Note: Not all cases have an age or sex reported. Interpret information for the most recent week with caution due to reporting lags.

Figure 2a. Rate of confirmed cases of COVID-19 per 100,000 population by age group and public health unit reported week: Ontario



Note: Not all cases have an age reported. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from week 9 (February 23 and 29, 2020) to Week 16 (April 17 and 23, 2022). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

Figure 2b. Percentage of confirmed cases of COVID-19 by age group and public health unit reported week: Ontario



Note: Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to Week 16 (April 17 and 23, 2022). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

Deaths

Subject to reporting lag

150

150

150

1 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 2 5 8 11 14 17 20 23 26 29 32 35 38 41 44 47 50 1 4 7 10 13 16

Peath week

Figure 3. Deaths among confirmed cases of COVID-19 by week of death: Ontario

Note: Cases without a death date are not included in the figure. Include cases with date of death ranging from week-4 (January 19 and 25, 2020) to Week 16 (April 17 and 23, 2022). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

Table 2. Summary of deaths among confirmed cases of COVID-19 by public health unit reported week: Ontario

| Deaths | Reported week 15 (April 10 to 16, 2022) | Reported week 16 (April 17 to 23, 2022) | Cumulative case count up to April 23, 2022 | Cumulative rate per 100,000 population |
|----------------------|---|---|--|--|
| Number of deaths | 62 | 18 | 12,770 | 86.7 |
| Sex: Male | 27 | 8 | 6,726 | 92.4 |
| Sex: Female | 35 | 10 | 5,980 | 80.2 |
| Ages: 19 and under | 0 | 0 | 15 | 0.5 |
| Ages: 20- 39 | 1 | 1 | 137 | 3.3 |
| Ages: 40- 59 | 6 | 0 | 908 | 23.3 |
| Ages: 60- 79 | 18 | 5 | 4,300 | 148.3 |
| Ages: 80 and over | 37 | 12 | 7,409 | 1,129.7 |

Note: Age and sex may not be reported for all cases. Reported week is the week the case was reported to the public health unit. This is different than the "week of death" presented in Figure 3 which reflects the week the case was reported to have a 'Fatal' outcome. Interpret information for the most recent week with caution due to reporting lags.

Sub-populations of interest

Table 3. Summary of cases of COVID-19 among health care workers: Ontario

| Health care workers | Reported week 15 (April 10 to 16, 2022) | Reported week 16 (April 17 to 23, 2022) | Cumulative case count up to April 23, 2022 |
|---------------------|---|---|--|
| Number of cases | 1,615 | 1,273 | 49,088 |
| Ever hospitalized | 0 | 2 | 510 |
| Ever in ICU | 0 | 0 | 101 |

Note: Interpret information for the most recent week with caution due to reporting lags.

Data Source: CCM

Table 4. Summary of cases of COVID-19 associated with long-term care home outbreaks: Ontario

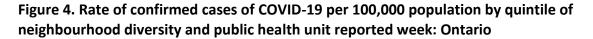
| Long-term care home associated cases | Reported week 15 (April 10 to 16, 2022) | Reported week 16 (April 17 to 23, 2022) | Cumulative case count up to April 23, 2022 |
|--------------------------------------|--|--|--|
| Residents | 662 | 898 | 28,235 |
| Deaths among residents | 12 | 5 | 4,461 |
| Health care workers | 133 | 155 | 12,402 |
| Deaths among health care workers | 0 | 0 | 10 |

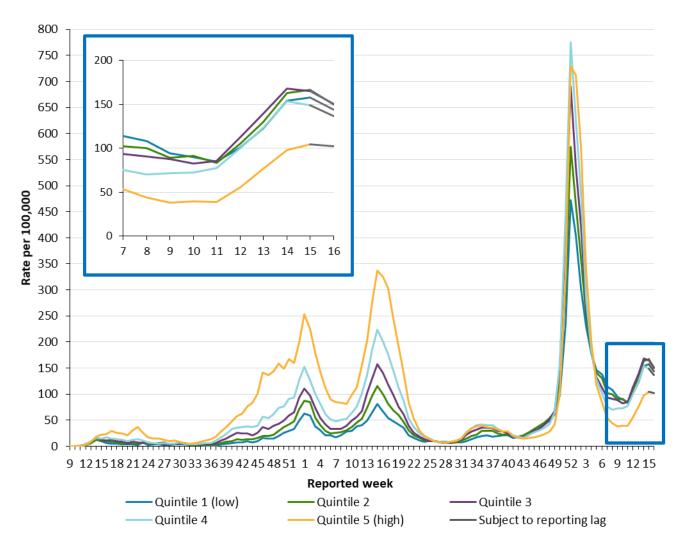
Note: Information on how long-term care home residents and health care workers are identified is available in the technical notes. Interpret information for the most recent week with caution due to reporting lags.

Table 5: Summary of reinfection cases of COVID-19 by age group and public health unit reported week: Ontario

| Age Group | Reported week 15 (April 10 to 16, 2022) | Reported week 16 (April 17 to 23, 2022) | Cumulative count from November 1, 2020 up to April 23, 2022 | Percent of reinfection cases |
|-------------------------|---|---|---|------------------------------|
| Ages: 0-4 | 6 | 7 | 160 | 1.0% |
| Ages: 5-11 | 13 | 10 | 296 | 1.9% |
| Ages: 12-19 | 29 | 19 | 740 | 4.8% |
| Ages: 20-39 | 273 | 261 | 7,428 | 48.2% |
| Ages: 40-59 | 207 | 204 | 4,526 | 29.4% |
| Ages: 60-79 | 70 | 73 | 1,399 | 9.1% |
| Ages: 80 and over | 54 | 71 | 863 | 5.6% |
| Total reinfection cases | 652 | 645 | 15,412 | 100.0% |

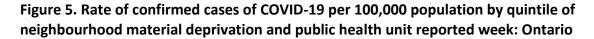
Note: Cases identified as reinfections meeting the <u>provincial definition</u> as either a laboratory-based reinfection or a time-based reinfection, as indicated by public health units. The provincial confirmed reinfection case definition was updated January 17, 2022 to include a time-based reinfection definition. Cumulative counts include cases of COVID-19 reinfection reported starting week-45 (November 1 to 7, 2020). Not all cases have a reported age or sex. Data corrections or updates can result in case records being removed and or updated from past reports and may result in subset totals (i.e., age group, sex) differing from past publicly reported case counts.

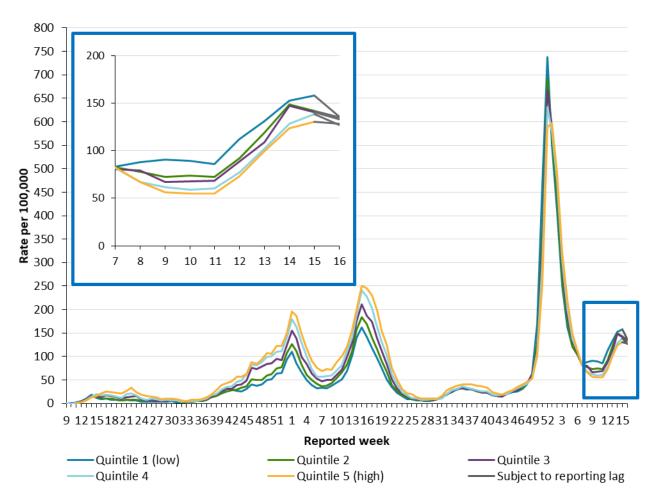




Note: Neighbourhood diversity is measured using the ethnic concentration dimension of the Ontario Marginalization Index. The ethnic concentration dimension is based on the proportion of non-white and non-Indigenous residents and/or the proportion of immigrants that arrived in Canada within the past five years. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from weeks 9 (February 23 to 29, 2020) to Week 16 (April 17 to 23, 2022). As of June 8, 2021, all rate denominators were changed to the 2021 OHIP RPDB population, and as a result, rates shown here may differ from previous reports. See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM, Ontario Marginalization Index





Note: Neighbourhood material deprivation is measured using the material deprivation dimension of the Ontario Marginalization Index. The material deprivation dimension uses Canadian census data on income, quality of housing, educational attainment and family structure characteristics to assess the ability of individuals and communities to access and attain basic material needs. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from weeks 9 (February 23 to 29, 2020) to Week 16 (April 17 to 23, 2022). As of June 8, 2021, all rate denominators were changed to the 2021 OHIP RPDB population, and as a result, rates shown here may differ from previous reports. See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM, Ontario Marginalization Index

Table 6: Summary of cases of COVID-19 by quintile of neighbourhood diversity and public health unit reported week: Ontario

| | Cases Reported week 15 (April 10 to 16, 2022) | Cases Reported week 16 (April 17 to 23, 2022) | Cumulative case count up to April 23, 2022 | Cumulative rate per 100,000 population up to April 23, 2022 |
|-------------------|---|---|--|---|
| Quintile 1 | | | | |
| (least | 3,505 | 3,204 | 114,322 | 5,146.8 |
| diverse) | | | | |
| Quintile 2 | 3,949 | 3,541 | 144,311 | 6,093.9 |
| Quintile 3 | 4,271 | 3,908 | 185,153 | 7,143.0 |
| Quintile 4 | 4,656 | 4,264 | 261,890 | 8,373.4 |
| Quintile 5 | | | | |
| (most diverse) | 4,516 | 4,412 | 449,650 | 10,403.1 |

Note: Neighbourhood diversity is measured using the ethnic concentration dimension of the Ontario Marginalization Index. The ethnic concentration dimension is based on the proportion of non-white and non-Indigenous residents and/or the proportion of immigrants that arrived in Canada within the past five years. Cumulative counts and rates include cases of COVID-19 reported starting week 9 (February 23 to 29, 2020). **Data Source:** CCM, Ontario Marginalization Index

Table 7: Summary of cases of COVID-19 by quintile of neighbourhood material deprivation and public health unit reported week: Ontario

| | Cases Reported week 15 (April 10 to 16, 2022) | Cases Reported week 16 (April 17 to 23, 2022) | Cumulative case count up to April 23, 2022 | Cumulative rate per 100,000 population up to April 23, 2022 |
|--|---|---|--|---|
| Quintile 1 (least material deprivation) | 5,443 | 4,674 | 243,857 | 7,076.2 |
| Quintile 2 | 4,414 | 4,196 | 225,856 | 7,274.7 |
| Quintile 3 | 3,903 | 3,693 | 220,428 | 7,949.3 |
| Quintile 4 | 3,640 | 3,331 | 221,215 | 8,419.0 |
| Quintile 5 (most material deprivation) | 3,497 | 3,435 | 243,970 | 9,103.3 |

Note: Neighbourhood material deprivation is measured using the material deprivation dimension of the Ontario Marginalization Index. The material deprivation dimension uses Canadian census data on income, quality of housing, educational attainment and family structure characteristics to assess the ability of individuals and communities to access and attain basic material needs. Cumulative counts and rates include cases of COVID-19 reported starting week 9 (February 23 to 29, 2020).

Data Source: CCM, Ontario Marginalization Index

Outbreaks

Table 8. Number of public health unit declared COVID-19 outbreaks by setting type: Ontario

| Setting Type | Reported week 16 (April 17 to 23, 2022) | Number of ongoing outbreaks | Cumulative number of outbreaks reported to April 23, 2022 |
|-------------------------------------|---|-----------------------------|---|
| Congregate Care | 140 | 474 | 5,598 |
| Long-term care homes | 42 | 214 | 2,491 |
| Retirement homes | 56 | 171 | 1,763 |
| Hospitals | 42 | 89 | 1,344 |
| Congregate Living | 59 | 143 | 2,742 |
| Correctional facility | 1 | 11 | 148 |
| Shelter | 3 | 22 | 573 |
| Group Home/supportive housing | 55 | 110 | 2,021 |
| Total number of outbreaks* | 199 | 617 | 8,340 |

Note: Reported week is based on the outbreak reported date, and if unavailable, the date the public health unit created the outbreak. Ongoing outbreaks are those that are reported in CCM as 'Open' and without a 'Declared Over Date' recorded. Interpret information for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Ongoing re-classification of settings for reported outbreaks can result in outbreak counts that may differ from previously reported counts. Outbreaks in settings outside of Ontario are excluded from all outbreak counts.

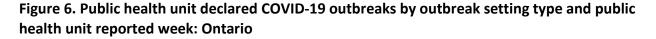
*Only includes outbreaks in the setting types above

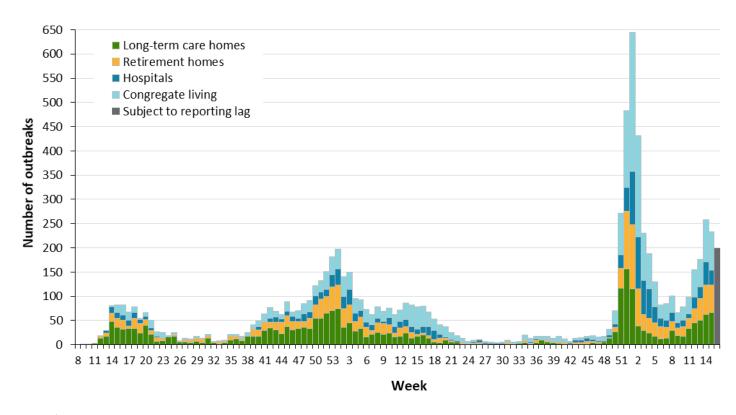
Table 9. Confirmed cases of COVID-19 associated with COVID-19 outbreaks by setting type and public health unit reported week: Ontario

| Cases associated with the outbreak setting type | Reported week 15 (April 10 to 16, 2022) | Reported week 16 (April 17 to 23, 2022) | Cumulative number of cases |
|---|--|--|----------------------------|
| Congregate Care | 1,938 | 2,221 | 86,394 |
| Long-term care homes | 1,138 | 1,308 | 54,209 |
| Retirement homes | 525 | 588 | 18,578 |
| Hospitals | 275 | 325 | 13,607 |
| Congregate Living | 365 | 323 | 19,604 |
| Correctional facility | 45 | 74 | 5,552 |
| Shelter | 42 | 20 | 5,088 |
| Group Home/supportive housing | 278 | 229 | 8,964 |
| Total number of cases* | 2,303 | 2,544 | 105,998 |

Note: Interpret case counts for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Ongoing re-classification of settings for reported outbreaks can result in outbreak counts that may differ from previously reported counts. Outbreaks in settings outside of Ontario are excluded from all outbreak counts.

^{*}Only includes cases associated to outbreaks in the setting types above





Note: If public health unit outbreak reported date is unavailable, the date the public health unit created the outbreak is used. Week 8 refers to February 16 and 22, 2020 and Week 16 refers to April 17 and 23, 2022. Congregate living includes group homes, shelters, and correctional facilities.

Technical Notes

Data Sources

- The data for this report were based on information successfully extracted from the Public Health Case and Contact Management Solution (CCM) for all PHUS by PHO as of **April 26, 2022 at 1 p.m.** for cases reported from May 1, 2021 onwards and as of **April 25, 2022 at 9 a.m.** for cases reported up to April 30, 2021.
- Ontario population estimate data were sourced from Statistics Canada. Population estimates 2001-2020: Table 1 annual population estimates by age and sex for July 1, 2001 to 2020, health regions, Ontario [unpublished data table]. Ottawa, ON: Government of Canada; 2021 [received April 22, 2021].
- Statistics Canada Postal Code Conversion File Plus (PCCF+), version 7E.
- The health equity (neighbourhood-level diversity and material deprivation) analyses use data from the 2016 Ontario Marginalization Index (ON-Marg), and population counts from the Ontario Health Insurance Plan (OHIP) Registered Person Database (RPDB) as of May 1, 2021 (provided by the Institute for Clinical Evaluative Sciences [ICES]):
 - Matheson FI; van Ingen T. 2016 Ontario marginalization index. Toronto, ON: Providence St. Joseph's and St. Michael's Healthcare; 2018. Joint publication with Public Health Ontario.
 - Chung H, Fung K, Ishiguro L, Paterson M, et al. Characteristics of COVID-19 diagnostic test recipients, Applied Health Research Questions (AHRQ) # 2021 0950 080 000. Toronto: Institute for Clinical Evaluative Sciences; 2020.

Data Caveats and Methods: Case Data

- Due to changes in the availability of testing, driven by increasing COVID-19 cases related to the Omicron variant, case counts in this report are an underestimate of the true number of individuals with COVID-19 in Ontario. As such, data should be interpreted with caution.
- The data represent case information reported to public health units and recorded in CCM. As a
 result, all counts are subject to varying degrees of underreporting due to a variety of factors,
 such as disease awareness and medical care seeking behaviours, which may depend on severity
 of illness, clinical practice, changes in laboratory testing, and reporting behaviours.
- Observed trends over time should be interpreted with caution for the most recent period due to reporting and/or data entry lags.
- Only cases meeting the confirmed case classification as listed in the <u>MOH Case Definition</u> –
 Coronavirus Disease (COVID-19) document are included in the report counts from CCM.
- Cases of confirmed reinfection, as defined in the provincial case definitions, are counted as unique investigations.
- Case classification information may be updated for individuals with a positive result issued from a point-of-care assays.

- COVID-19 cases from CCM for which the Classification and/or Disposition was reported as ENTERED IN ERROR, DOES NOT MEET DEFINITION, IGNORE, DUPLICATE, or any variation on these values have been excluded. The provincial case count for COVID-19 may include some duplicate records, if these records were not identified and resolved.
- Reported date is the date the case was reported to the public health unit. This is different than
 the daily change in cases released by the Province for the same time period, which reflects the
 difference in cumulative counts reported to the Province between one day and the next.
- Reported weeks were created to align with the Public Health Agency of Canada (PHAC) influenza surveillance weeks.
- Cases with unknown or missing ages were excluded from age-specific analyses.
- Health care worker includes cases that reported 'Yes' to any of the following occupations: health care worker, doctor, nurse, dentist, dental hygienist, midwife, other medical technicians, personal support worker, respiratory therapist, first responder.
- For surveillance purposes, a COVID-19 death is defined as a death resulting from a clinically compatible illness unless there is a clear alternative cause of death that cannot be related to COVID-19 (e.g., trauma, medically assisted death). There should be no period of complete recovery from COVID-19 between illness and reported death.
- Deaths are determined by using the outcome and Type of Death fields in CCM. COVID-19 deaths
 are counted where the Outcome value is 'Fatal' and the Type of Death value is not 'DOPHS was
 unrelated to cause of death' or 'Under PHU Review'.
 - COVID-19 deaths are placed in time using the 'Date of Death' field in CCM. If the date of death is missing, the outcome date field is used as a proxy.
- Resolved cases are determined only for COVID-19 cases that are not considered COVID-19 deaths. The following cases are classified as resolved:
 - Cases that are reported as 'recovered' in CCM based on local public health unit assessment
 - Cases that are not hospitalized and are 14 days past their symptom onset date or specimen collection date (where symptom onset date is not known)
 - Cases that are currently hospitalized (no hospitalization end date entered) and have a status of 'closed' in CCM (indicating public health unit follow up is complete) and are 14 days past their symptom onset date or specimen collection date
 - Cases that died with a Type of Death = "DOPHS was unrelated to cause of death". These are considered resolved for the purpose of COVID-19 surveillance and reporting.
- Data on hospital admissions, ICU admissions and deaths are likely under-reported as these
 events may occur after the completion of public health follow up of cases. Cases that were
 admitted to hospital or died after follow-up was completed may not be captured in CCM.

- Hospitalization includes all cases hospitalized (or that had their hospital stay extended) because
 of COVID-19. It includes cases that have been discharged from hospital as well as cases that are
 currently hospitalized. Includes Intensive Care Unit (ICU) cases but not emergency room visits.
 Hospitalizations were identified by a reported hospital admission date or reported 'Yes' for
 hospitalization/ICU.
- ICU admission includes all cases for which an ICU admission date was reported at the time of data extraction. It is a subset of the count of hospitalized cases. It includes cases that have been treated or that are currently being treated in an ICU.
- Male/Female information presented in this report are sourced from the Sex field in CCM and are
 intended to represent sex assigned at birth. On October 14, 2021, changes were made in CCM to
 enable reporting on the Sex field where this data field is supplemented by archived
 Male/Female information previously entered in the Gender field.
- 'Long-term care home residents' includes cases that reported 'Yes' to the risk factor 'Resident of a long-term care home'; or 'Yes' to the risk factor 'Resident of nursing home or other chronic care facility' and reported to be part of an outbreak assigned as a long-term care home (via the Outbreak number or case comments field); or were reported to be part of an outbreak assigned as a long-term care home (via the outbreak number or case comments field) with an age over 70 years and did not report 'No' to the risk factors 'Resident of long-term care home' or 'Resident of nursing home or other chronic care facility'. 'Long-term care home residents' excludes cases that reported 'Yes' to any of the health care worker occupational risk factors.
- 'Health care workers associated with long-term care outbreaks' includes 'health care workers'
 reported to be part of an outbreak assigned as a long-term care home (via the outbreak number
 or case comments field). Excludes cases that reported 'Yes' to risk factors 'Resident of long-term
 care home' or 'Resident of nursing home or other chronic care facility' and 'Yes' to the
 calculated 'health care workers' variable.
- Orientation of case counts by geography is based on the permanent health unit. This is
 equivalent to the diagnosing health unit (DHU) in iPHIS. DHU refers to the case's public health
 unit of residence at the time of illness onset and not necessarily the location of exposure. Cases
 for which the DHU was reported as MOH-PHO (to signify a case that is not a resident of Ontario)
 have been excluded from the analyses.
 - GTA health units include: Durham Region Health Department, Peel Public Health, Toronto Public Health and York Region Public Health
- Ongoing outbreaks are those that are reported in CCM as 'Open' and without a 'Declared Over Date' recorded. Closed outbreaks are 'Closed' or have a 'Declared Over Date' recorded in CCM or where the outbreak start date (determined by the onset date of first case, or if missing the reported date, or if missing the created date) is more than 5 months from the current date, even for outbreaks where the outbreak status value selected in CCM is 'OPEN'.
- Outbreaks are declared by the local medical officer of health or their designate in accordance to the Health Protection and Promotion Act and criteria outlined in Ministry guidance documents.

Data Caveats and Methods: ON-Marg

- ON-Marg is a data tool that combines a wide range of demographic indicators into multiple
 distinct dimensions of marginalization. It is an area-based index which assigns a measure of
 marginalization based on neighbourhood versus individual characteristics. As such, the broader
 demographic trends of an area may not reflect all residents of a neighbourhood owing to the
 inherent heterogeneity of demographic characteristics which can vary substantially especially
 across large rural geographies. For more information, please visit PHO's ON-Marg website.
- Neighbourhood diversity is defined using the ethnic concentration dimension of ON-Marg,
 which measures populations who may experience marginalization related to racism and
 discrimination. It is based on the proportion of non-white and non-Indigenous residents (visible
 minority) and/or the proportion of immigrants that arrived in Canada within the past five years.
 'Visible minority' is a term used by Statistics Canada that, although is considered to be outdated,
 is used here to be consistent with the Canadian census.
- Neighbourhood material deprivation is defined using the material deprivation dimension of ON-Marg, which is closely connected to poverty. It refers to the inability of individuals and communities to access and attain basic material needs. The indicators included in this dimension measure income, quality of housing, educational attainment and family structure characteristics.
- "Neighbourhoods" are considered to be Statistic Canada dissemination areas (DA). Cases were
 probabilistically matched to a DA based on their postal code using Statistics Canada's PCCF+
 version 7E file, and subsequently assigned to a quintile of marginalization that contained 20% of
 Ontario neighbourhoods. The quintiles for the ethnic concentration and the material deprivation
 dimensions are ordered from quintiles 1 to 5, with quintile 1 having the lowest level of
 marginalization (i.e., least diverse or least deprived) and quintile 5 having the highest level of
 marginalization (i.e., most diverse or most deprived).
- The following were not included in analyses that summarize the impact of COVID-19 among Ontarians who may experience marginalization:
 - People who have tested positive for COVID-19 that reside in institutional and congregate settings are not included in the census data from which the marginalization indicators (ethnic concentration and material deprivation) are derived. Although these cases represent a large number of cases overall and deaths, their exclusion ensures appropriate comparisons since institutional and congregate setting residents are excluded from ON-Marg.
 - People who have tested positive for COVID-19 that reside in census dissemination areas
 where data has been suppressed, and cases that have missing or invalid postal codes could
 not be assigned to a quintile of marginalization.
 - Due to data suppression for some census indicators on Indian Reserves in Ontario, residents of Indian Reserves could not be included in ON-Marg and therefore people who have tested positive for COVID-19 and are living on Indian Reserves could not be assigned to a quintile of marginalization. While Indigenous individuals living off reserves are included in this analysis, Indigeneity data is not currently collected or captured in dimensions of ON-Marg.

- Population counts used in rate denominators were provided by ICES. Individuals alive and eligible for the Ontario Health Insurance Plan (OHIP) as of January 1st, 2021 using the OHIP RPDB were included.
 - Individuals residing in long-term care (LTC) homes were excluded. Recent health care
 transaction records (e.g., OHIP physician billings, Ontario Drug Benefit [ODB] Plan claims)
 and Resident Assessment Instrument (RAI) assessments from the Continuing Care
 Reporting System (CCRS) were used to identify individuals residing in a LTC home near the
 period prior to the index date.
 - Postal codes were assigned to individuals according to the most recent residential address available in the OHIP RPDB.
- This work is supported by the Applied Health Research Questions (AHRQ) Portfolio at ICES, which is funded by the Ontario Ministry of Health, and Ontario Health Data Platform (OHDP), a Province of Ontario initiative to support Ontario's ongoing response to COVID-19 and its related impacts. Parts of this material are based on data and information compiled and provided by the Ontario Ministry of Health. The analyses, conclusions, opinions and statements expressed herein are solely those of the authors and do not reflect those of ICES, the OHDP or the funding or data sources; no endorsement is intended or should be inferred. For more information on AHRQ and how to submit a request, please visit www.ices.on.ca/DAS/AHRQ.

Appendix A

Table 1A. Confirmed cases of COVID-19 by public health unit reported week: Ontario

| Reported Week | Start date | End date | Number of cases | Cumulative count |
|---------------|-------------------|-------------------|-----------------|-------------------------|
| 2 | January 5, 2020 | January 11, 2020 | 0 | 0 |
| 3 | January 12, 2020 | January 18, 2020 | 0 | 0 |
| 4 | January 19, 2020 | January 25, 2020 | 3 | 3 |
| 5 | January 26, 2020 | February 1, 2020 | 0 | 3 |
| 6 | February 2, 2020 | February 8, 2020 | 2 | 5 |
| 7 | February 9, 2020 | February 15, 2020 | 0 | 5 |
| 8 | February 16, 2020 | February 22, 2020 | 1 | 6 |
| 9 | February 23, 2020 | February 29, 2020 | 13 | 19 |
| 10 | March 1, 2020 | March 7, 2020 | 15 | 34 |
| 11 | March 8, 2020 | March 14, 2020 | 148 | 182 |
| 12 | March 15, 2020 | March 21, 2020 | 447 | 629 |
| 13 | March 22, 2020 | March 28, 2020 | 1,327 | 1,956 |
| 14 | March 29, 2020 | April 4, 2020 | 2,793 | 4,749 |
| 15 | April 5, 2020 | April 11, 2020 | 3,165 | 7,914 |
| 16 | April 12, 2020 | April 18, 2020 | 4,257 | 12,171 |
| 17 | April 19, 2020 | April 25, 2020 | 3,649 | 15,820 |
| 18 | April 26, 2020 | May 2, 2020 | 2,899 | 18,719 |
| 19 | May 3, 2020 | May 9, 2020 | 2,353 | 21,072 |
| 20 | May 10, 2020 | May 16, 2020 | 2,223 | 23,295 |
| 21 | May 17, 2020 | May 23, 2020 | 2,617 | 25,912 |
| 22 | May 24, 2020 | May 30, 2020 | 2,611 | 28,523 |
| 23 | May 31, 2020 | June 6, 2020 | 2,301 | 30,824 |

| Reported Week | Start date | End date | Number of cases | Cumulative count |
|---------------|--------------------|--------------------|-----------------|-------------------------|
| 24 | June 7, 2020 | June 13, 2020 | 1,472 | 32,296 |
| 25 | June 14, 2020 | June 20, 2020 | 1,225 | 33,521 |
| 26 | June 21, 2020 | June 27, 2020 | 1,250 | 34,771 |
| 27 | June 28, 2020 | July 4, 2020 | 1,085 | 35,856 |
| 28 | July 5, 2020 | July 11, 2020 | 866 | 36,722 |
| 29 | July 12, 2020 | July 18, 2020 | 931 | 37,653 |
| 30 | July 19, 2020 | July 25, 2020 | 993 | 38,646 |
| 31 | July 26, 2020 | August 1, 2020 | 808 | 39,454 |
| 32 | August 2, 2020 | August 8, 2020 | 591 | 40,045 |
| 33 | August 9, 2020 | August 15, 2020 | 610 | 40,655 |
| 34 | August 16, 2020 | August 22, 2020 | 728 | 41,383 |
| 35 | August 23, 2020 | August 29, 2020 | 849 | 42,232 |
| 36 | August 30, 2020 | September 5, 2020 | 976 | 43,208 |
| 37 | September 6, 2020 | September 12, 2020 | 1,508 | 44,716 |
| 38 | September 13, 2020 | September 19, 2020 | 2,371 | 47,087 |
| 39 | September 20, 2020 | September 26, 2020 | 3,123 | 50,210 |
| 40 | September 27, 2020 | October 3, 2020 | 4,224 | 54,434 |
| 41 | October 4, 2020 | October 10, 2020 | 5,040 | 59,474 |
| 42 | October 11, 2020 | October 17, 2020 | 5,277 | 64,751 |
| 43 | October 18, 2020 | October 24, 2020 | 6,041 | 70,792 |
| 44 | October 25, 2020 | October 31, 2020 | 6,388 | 77,180 |
| 45 | November 1, 2020 | November 7, 2020 | 7,601 | 84,781 |
| 46 | November 8, 2020 | November 14, 2020 | 10,442 | 95,223 |
| 47 | November 15, 2020 | November 21, 2020 | 10,036 | 105,259 |
| 48 | November 22, 2020 | November 28, 2020 | 11,138 | 116,397 |

| Reported Week | Start date | End date | Number of cases | Cumulative count |
|---------------|-------------------|-------------------|-----------------|------------------|
| 49 | November 29, 2020 | December 5, 2020 | 12,683 | 129,080 |
| 50 | December 6, 2020 | December 12, 2020 | 13,062 | 142,142 |
| 51 | December 13, 2020 | December 19, 2020 | 15,662 | 157,804 |
| 52 | December 20, 2020 | December 26, 2020 | 15,621 | 173,425 |
| 53 | December 27, 2020 | January 2, 2021 | 20,456 | 193,881 |
| 1 | January 3, 2021 | January 9, 2021 | 24,873 | 218,754 |
| 2 | January 10, 2021 | January 16, 2021 | 21,380 | 240,134 |
| 3 | January 17, 2021 | January 23, 2021 | 16,405 | 256,539 |
| 4 | January 24, 2021 | January 30, 2021 | 12,768 | 269,307 |
| 5 | January 31, 2021 | February 6, 2021 | 9,777 | 279,084 |
| 6 | February 7, 2021 | February 13, 2021 | 7,898 | 286,982 |
| 7 | February 14, 2021 | February 20, 2021 | 7,457 | 294,439 |
| 8 | February 21, 2021 | February 27, 2021 | 7,681 | 302,120 |
| 9 | February 28, 2021 | March 6, 2021 | 7,934 | 310,054 |
| 10 | March 7, 2021 | March 13, 2021 | 9,480 | 319,534 |
| 11 | March 14, 2021 | March 20, 2021 | 11,022 | 330,556 |
| 12 | March 21, 2021 | March 27, 2021 | 14,390 | 344,946 |
| 13 | March 28, 2021 | April 3, 2021 | 18,942 | 363,888 |
| 14 | April 4, 2021 | April 10, 2021 | 25,580 | 389,468 |
| 15 | April 11, 2021 | April 17, 2021 | 30,885 | 420,353 |
| 16 | April 18, 2021 | April 24, 2021 | 28,345 | 448,698 |
| 17 | April 25, 2021 | May 1, 2021 | 25,205 | 473,903 |
| 18 | May 2, 2021 | May 8, 2021 | 20,751 | 494,654 |
| 19 | May 9, 2021 | May 15, 2021 | 16,525 | 511,179 |
| 20 | May 16, 2021 | May 22, 2021 | 12,644 | 523,823 |

| Reported Week | Start date | End date | Number of cases | Cumulative count |
|---------------|--------------------|--------------------|-----------------|------------------|
| 21 | May 23, 2021 | May 29, 2021 | 7,757 | 531,580 |
| 22 | May 30, 2021 | June 5, 2021 | 5,211 | 536,791 |
| 23 | June 6, 2021 | June 12, 2021 | 3,484 | 540,275 |
| 24 | June 13, 2021 | June 19, 2021 | 2,417 | 542,692 |
| 25 | June 20, 2021 | June 26, 2021 | 1,882 | 544,574 |
| 26 | June 27, 2021 | July 3, 2021 | 1,474 | 546,048 |
| 27 | July 4, 2021 | July 10, 2021 | 1,226 | 547,274 |
| 28 | July 11, 2021 | July 17, 2021 | 1,044 | 548,318 |
| 29 | July 18, 2021 | July 24, 2021 | 1,106 | 549,424 |
| 30 | July 25, 2021 | July 31, 2021 | 1,349 | 550,773 |
| 31 | August 1, 2021 | August 7, 2021 | 1,904 | 552,677 |
| 32 | August 8, 2021 | August 14, 2021 | 3,169 | 555,846 |
| 33 | August 15, 2021 | August 21, 2021 | 4,140 | 559,986 |
| 34 | August 22, 2021 | August 28, 2021 | 4,775 | 564,761 |
| 35 | August 29, 2021 | September 4, 2021 | 5,184 | 569,945 |
| 36 | September 5, 2021 | September 11, 2021 | 5,055 | 575,000 |
| 37 | September 12, 2021 | September 18, 2021 | 4,917 | 579,917 |
| 38 | September 19, 2021 | September 25, 2021 | 4,396 | 584,313 |
| 39 | September 26, 2021 | October 2, 2021 | 3,953 | 588,266 |
| 40 | October 3, 2021 | October 9, 2021 | 3,843 | 592,109 |
| 41 | October 10, 2021 | October 16, 2021 | 2,903 | 595,012 |
| 42 | October 17, 2021 | October 23, 2021 | 2,626 | 597,638 |
| 43 | October 24, 2021 | October 30, 2021 | 2,501 | 600,139 |
| 44 | October 31, 2021 | November 6, 2021 | 3,291 | 603,430 |
| 45 | November 7, 2021 | November 13, 2021 | 3,983 | 607,413 |

| Reported Week | Start date | End date | Number of cases | Cumulative count |
|---------------|-------------------|-------------------|-----------------|-------------------------|
| 46 | November 14, 2021 | November 20, 2021 | 4,578 | 611,991 |
| 47 | November 21, 2021 | November 27, 2021 | 5,432 | 617,423 |
| 48 | November 28, 2021 | December 4, 2021 | 6,601 | 624,024 |
| 49 | December 5, 2021 | December 11, 2021 | 9,007 | 633,031 |
| 50 | December 12, 2021 | December 18, 2021 | 19,093 | 652,124 |
| 51 | December 19, 2021 | December 25, 2021 | 52,625 | 704,749 |
| 52 | December 26, 2021 | January 1, 2022 | 100,664 | 805,413 |
| 1 | January 2, 2022 | January 8, 2022 | 89,270 | 894,683 |
| 2 | January 9, 2022 | January 15, 2022 | 71,931 | 966,614 |
| 3 | January 16, 2022 | January 22, 2022 | 46,318 | 1,012,932 |
| 4 | January 23, 2022 | January 29, 2022 | 31,466 | 1,044,398 |
| 5 | January 30, 2022 | February 5, 2022 | 22,168 | 1,066,566 |
| 6 | February 6, 2022 | February 12, 2022 | 17,780 | 1,084,346 |
| 7 | February 13, 2022 | February 19, 2022 | 13,538 | 1,097,884 |
| 8 | February 20, 2022 | February 26, 2022 | 12,400 | 1,110,284 |
| 9 | February 27, 2022 | March 5, 2022 | 11,380 | 1,121,664 |
| 10 | March 6, 2022 | March 12, 2022 | 11,383 | 1,133,047 |
| 11 | March 13, 2022 | March 19, 2022 | 11,297 | 1,144,344 |
| 12 | March 20, 2022 | March 26, 2022 | 14,377 | 1,158,721 |
| 13 | March 27, 2022 | April 2, 2022 | 18,047 | 1,176,768 |
| 14 | April 3, 2022 | April 9, 2022 | 22,445 | 1,199,213 |
| 15 | April 10, 2022 | April 16, 2022 | 22,976 | 1,222,189 |
| 16 | April 17, 2022 | April 23, 2022 | 21,550 | 1,243,739 |

Table 2A. Confirmed cases of COVID-19 by public health unit and region: Ontario

| Public Health Unit Name | Cases reported week 15 | Rate per 100,000 population Reported week 15 | Cases reported week 16 | Rate per 100,000 population Reported week 16 |
|--|------------------------------|--|------------------------------|--|
| Northwestern Health Unit | 338 | 416.3 | 191 | 235.3 |
| Thunder Bay District Health Unit | 406 | 257.4 | 423 | 268.2 |
| TOTAL NORTH WEST | 744 | 311.4 | 614 | 257.0 |
| Algoma Public Health | 335 | 284.3 | 275 | 233.4 |
| North Bay Parry Sound District Health Unit | 257 | 198.8 | 296 | 228.9 |
| Porcupine Health Unit | 121 | 142.4 | 141 | 165.9 |
| Public Health Sudbury & Districts | 428 | 208.5 | 416 | 202.7 |
| Timiskaming Health Unit | 95 | 280.4 | 78 | 230.2 |
| TOTAL NORTH EAST | 1,236 | 216.4 | 1,206 | 211.1 |
| Ottawa Public Health | 1,277 | 122.4 | 1,274 | 122.1 |
| Eastern Ontario Health Unit | 295 | 136.7 | 281 | 130.2 |
| Hastings Prince Edward Public Health | 441 | 255.2 | 389 | 225.1 |
| Kingston, Frontenac and Lennox & Addington Public Health | 756 | 361.3 | 796 | 380.4 |
| Leeds, Grenville & Lanark District Health Unit | 339 | 188.4 | 330 | 183.4 |
| Renfrew County and District Health Unit | 157 | 144.7 | 165 | 152.1 |
| TOTAL EASTERN | 3,265 | 169.2 | 3,235 | 167.7 |
| Durham Region Health Department | 1,118 | 157.1 | 1,044 | 146.7 |

| Public Health Unit Name | Cases reported week 15 | Rate per 100,000 population Reported week 15 | Cases reported week 16 | Rate per 100,000 population Reported week 16 |
|--|------------------------------|--|------------------------------|--|
| Haliburton, Kawartha, Pine Ridge District Health Unit | 314 | 164.6 | 348 | 182.5 |
| Peel Public Health | 1,271 | 81.3 | 1,385 | 88.6 |
| Peterborough Public Health | 261 | 176.2 | 164 | 110.7 |
| Simcoe Muskoka District Health Unit | 1,329 | 219.8 | 1,084 | 179.3 |
| York Region Public Health | 1,533 | 127.7 | 1,449 | 120.7 |
| TOTAL CENTRAL EAST | 5,826 | 131.8 | 5,474 | 123.9 |
| Toronto Public Health | 4,300 | 143.9 | 4,157 | 139.1 |
| TOTAL TORONTO | 4,300 | 143.9 | 4,157 | 139.1 |
| Chatham-Kent Public Health | 279 | 261.7 | 223 | 209.2 |
| Grey Bruce Health Unit | 334 | 189.6 | 286 | 162.4 |
| Huron Perth Public Health | 157 | 107.4 | 219 | 149.8 |
| Lambton Public Health | 313 | 235.4 | 270 | 203.1 |
| Middlesex-London Health Unit | 738 | 144.5 | 663 | 129.8 |
| Southwestern Public Health | 340 | 155.3 | 289 | 132.0 |
| Windsor-Essex County Health Unit | 846 | 196.3 | 759 | 176.1 |
| TOTAL SOUTH WEST | 3,007 | 174.6 | 2,709 | 157.3 |
| Brant County Health Unit | 272 | 177.1 | 204 | 132.8 |
| City of Hamilton Public Health Services | 1,246 | 214.2 | 1,171 | 201.3 |
| Haldimand-Norfolk Health Unit | 213 | 177.5 | 186 | 155.0 |
| Halton Region Public Health | 814 | 133.3 | 727 | 119.1 |

| Public Health Unit Name | Cases reported week 15 | Rate per 100,000 population Reported week 15 | Cases reported week 16 | Rate per 100,000 population Reported week 16 |
|---|------------------------------|--|------------------------------|--|
| Niagara Region Public Health | 851 | 176.7 | 830 | 172.3 |
| Region of Waterloo Public Health and Emergency Services | 748 | 123.6 | 617 | 101.9 |
| Wellington-Dufferin-Guelph Public Health | 454 | 145.5 | 420 | 134.6 |
| TOTAL CENTRAL WEST | 4,598 | 160.5 | 4,155 | 145.0 |
| TOTAL ONTARIO | 22,976 | 155.9 | 21,550 | 146.3 |

Note: Interpret information for the most recent week with caution due to reporting lags.

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Public Health Ontario

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