

Epidemiologic Summary

COVID-19 in Ontario: January 15, 2020 to May 28, 2020

This report includes the most current information available from the integrated Public Health Information System (iPHIS) as of **4 p.m. May 28, 2020**, from the Toronto Public Health Coronavirus Rapid Entry System (CORES) and the Ottawa Public Health COVID-19 Ottawa Database (The COD), and Middlesex-London COVID-19 Case and Contact Management tool (CCMtool) as of **2 p.m. May 28, 2020**.

Please visit the interactive [Ontario COVID-19 Data Tool](#) to explore recent COVID-19 data by public health unit, age group, sex, and view trends over time.

Purpose

- This daily report provides an epidemiologic summary of COVID-19 activity in Ontario to date.

Highlights

- There are 27,210 confirmed cases of COVID-19 in Ontario reported to date. This represents an increase of 344 confirmed cases from the previous report.
 - 43.4% of cases are male, 55.7% are female.
 - 40.2% of cases are 60 years of age and older.
 - Greater Toronto Area public health units account for 65.8% of cases.
 - 12.5% of cases were hospitalized.
- 2,230 deaths have been reported (please note there may be a reporting delay for deaths). This is an increase of 41 deaths from the previous report.
- 300 outbreaks have been reported in long-term care homes. This is an increase of 2 outbreaks from the previous report.

Case Characteristics

Table 1. Summary of cases of COVID-19: Ontario, January 15, 2020 to May 28, 2020

	Number	Percentage
Number of cases ¹	27,210	N/A
Change from previous report	344	1.3% increase
Gender: Male	11,818	43.4
Gender: Female	15,162	55.7
Ages: 19 and under	948	3.5
Ages: 20-39	6,992	25.7
Ages: 40-59	8,310	30.5
Ages: 60-79	5,551	20.4
Ages: 80 and over	5,394	19.8
Number of cases in health care workers	4,634	17.0

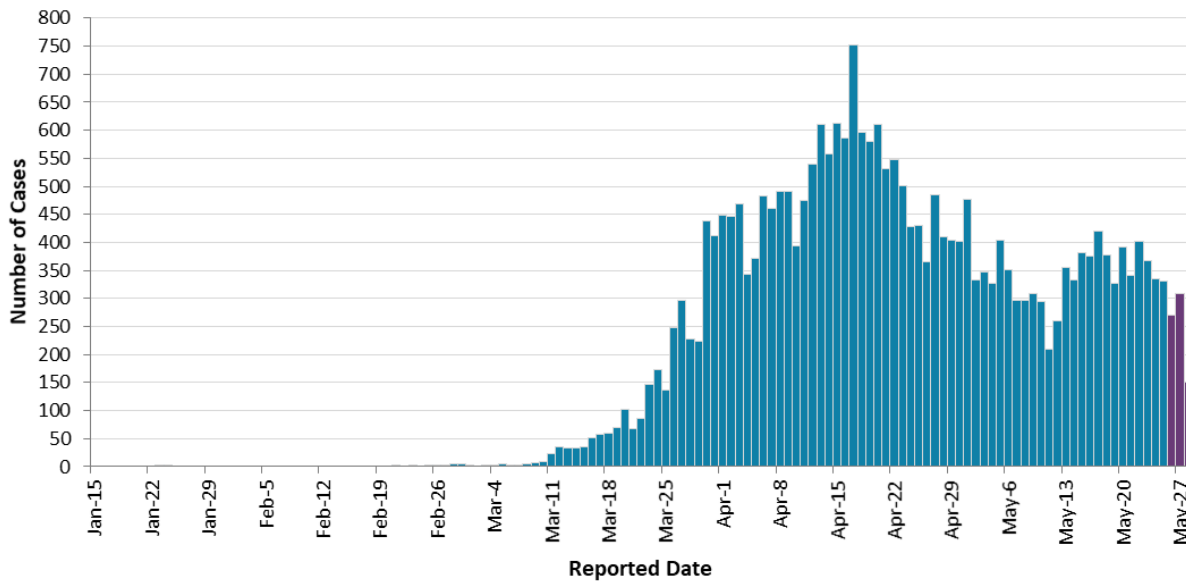
¹ Cases and rates by public health units are provided in [Appendix A](#).

Note: 230 cases did not specify male or female. 15 cases had an unknown age.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

Time

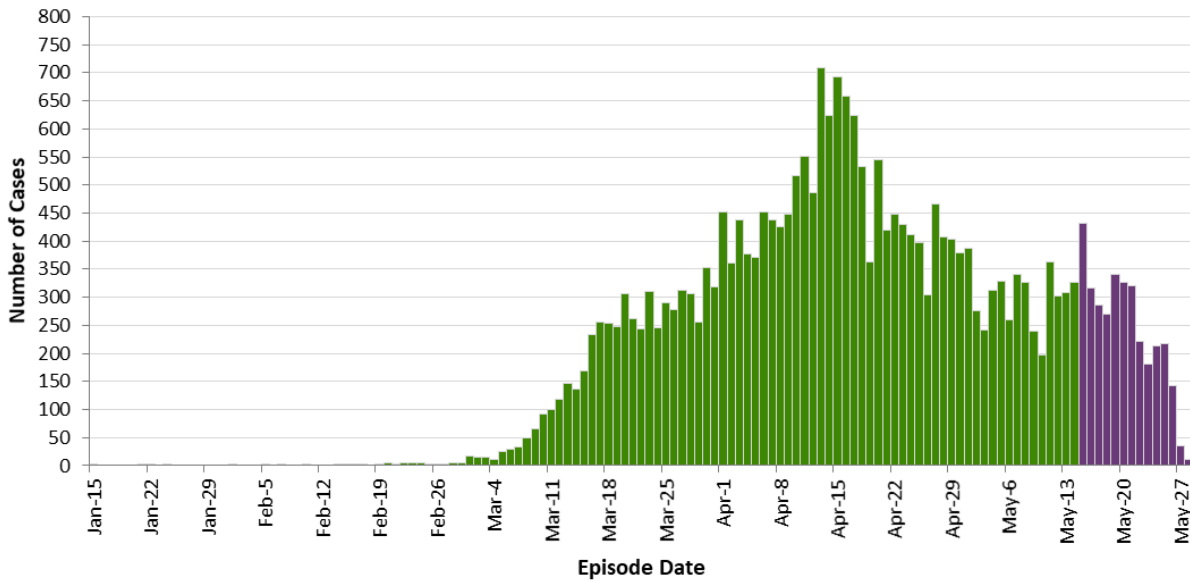
Figure 1. Confirmed cases (n=27,210) of COVID-19 by reported date: Ontario, January 15, 2020 to May 28, 2020¹



¹ Interpret case counts for the most recent days (approximately 3 days, as shown in purple) with caution due to reporting lags.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

Figure 2. Confirmed cases (n=27,207¹) of COVID-19 by an approximation of symptom onset date²: Ontario, January 15, 2020 to May 28, 2020³



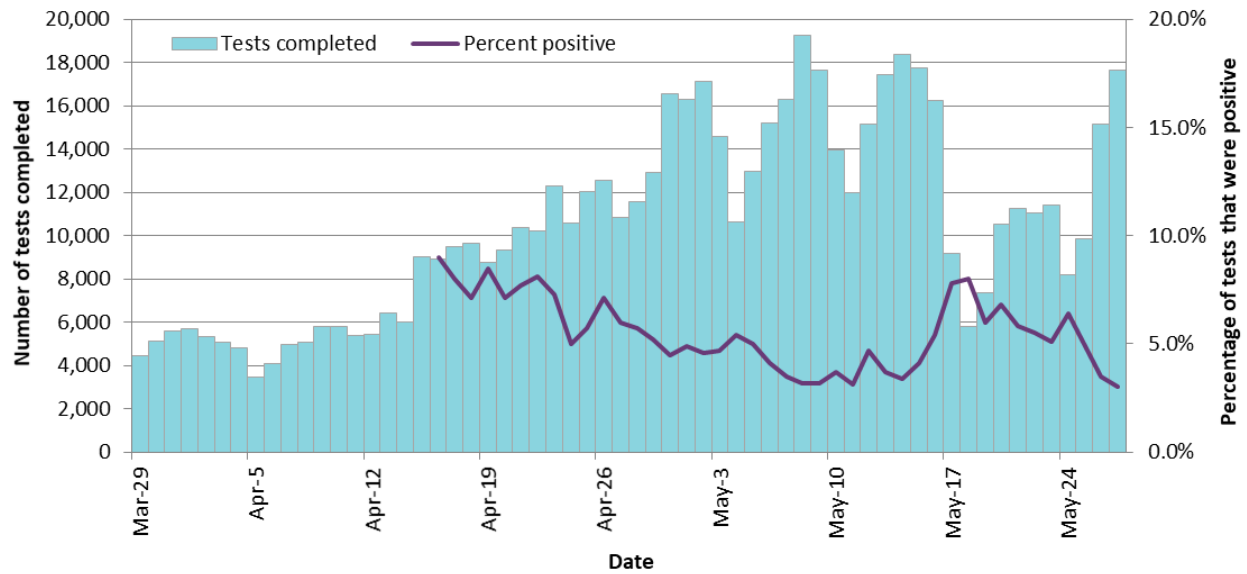
¹ This count excludes 3 cases that did not have an episode date.

² This date, referred to as episode date, is intended to approximate symptom onset date. It is calculated based on either the date of symptom onset, specimen collection/test date, or the date reported to public health.

³ Interpret case counts for the most recent days (approximately 14 days, as shown in purple) with caution due to reporting lags.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

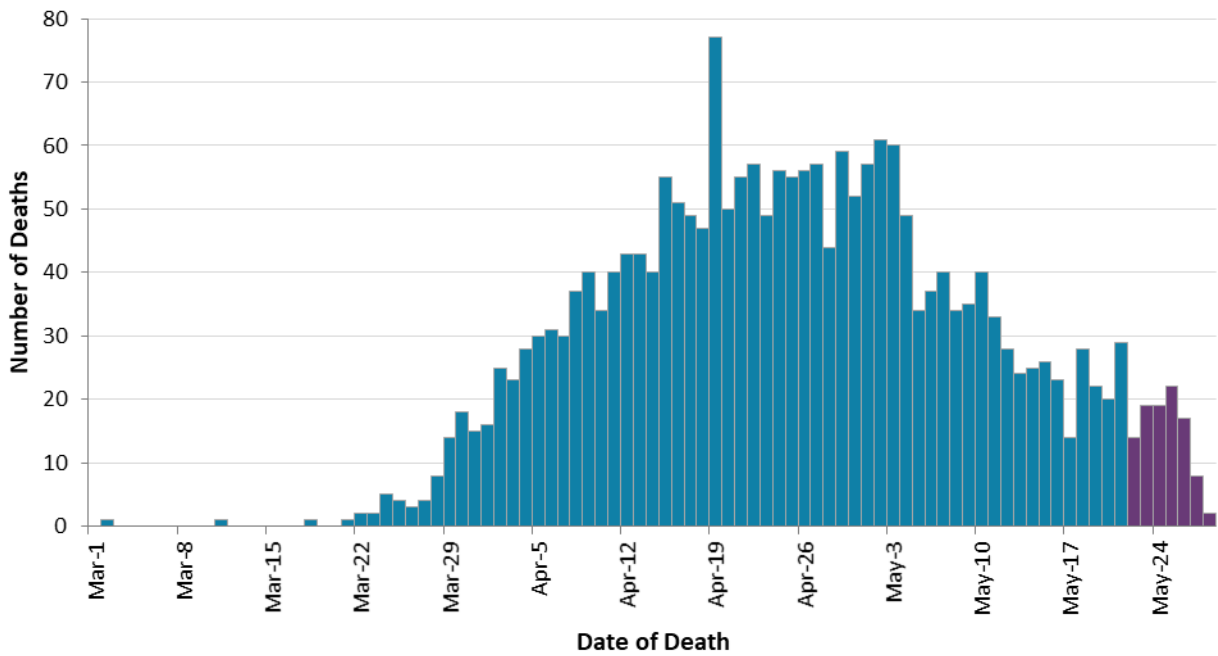
Figure 3. Number of COVID-19 tests completed¹ and percent positivity: Ontario, March 29, 2020 to May 27, 2020



¹The number of tests performed does not reflect the number of specimens or persons tested. More than one test may be performed per specimen or per person. As such, the percentage of tests that were positive does not necessarily translate to the number of specimens or persons testing positive.

Data Source: The Provincial COVID-19 Diagnostics Network, data reported by member microbiology laboratories.

Figure 4. Confirmed deaths (n=2,228¹) among COVID-19 cases by date of death: Ontario, March 1, 2020 to May 28, 2020²



¹This count excludes 2 cases that did not have a date of death reported.

²Interpret case counts for the most recent days (approximately 7 days, as shown in purple) with caution due to reporting lags.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

Exposure

Table 2. Confirmed cases (n=27,210) of COVID-19 by likely source of acquisition: Ontario, January 15, 2020 to May 28, 2020

	Number	Percentage
Travel ¹	1,526	5.6
Outbreak-associated ² or close contact of a confirmed case	16,653	61.2
No known epidemiological link ³	5,128	18.8
Information missing or unknown ⁴	3,903	14.3

¹ Travel outside of Ontario during the incubation period, where close contact with a confirmed case or link to an outbreak was not reported.

² Includes cases indicating a link to a local outbreak.

³ Includes cases that could not be classified as travel, outbreak-associated or close contact. Sporadic community transmission was re-labelled to no known epidemiological link on May 27. This name change does not represent a change in the way cases are categorized.

⁴ Includes cases that only identified unknown exposure or risk factor data, as well as cases with no information.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

Severity

Table 3. Confirmed cases (n=27,210) of COVID-19 by severity: Ontario, January 15, 2020 to May 28, 2020

	Number	Percentage
Cumulative deaths reported (please note there may be a reporting delay for deaths in iPHIS)	2,230	8.2
Change from previous report	41	1.9% increase
Deaths reported in ages: 19 and under	0	0.0
Deaths reported in ages: 20-39	8	0.1
Deaths reported in ages: 40-59	87	1.0
Deaths reported in ages: 60-79	586	10.6
Deaths reported in ages: 80 and over	1,549	28.7
Cumulative intensive care ¹	728	2.7
Cumulative hospitalized ¹	3,388	12.5
Number of resolved ² cases	20,983	77.1

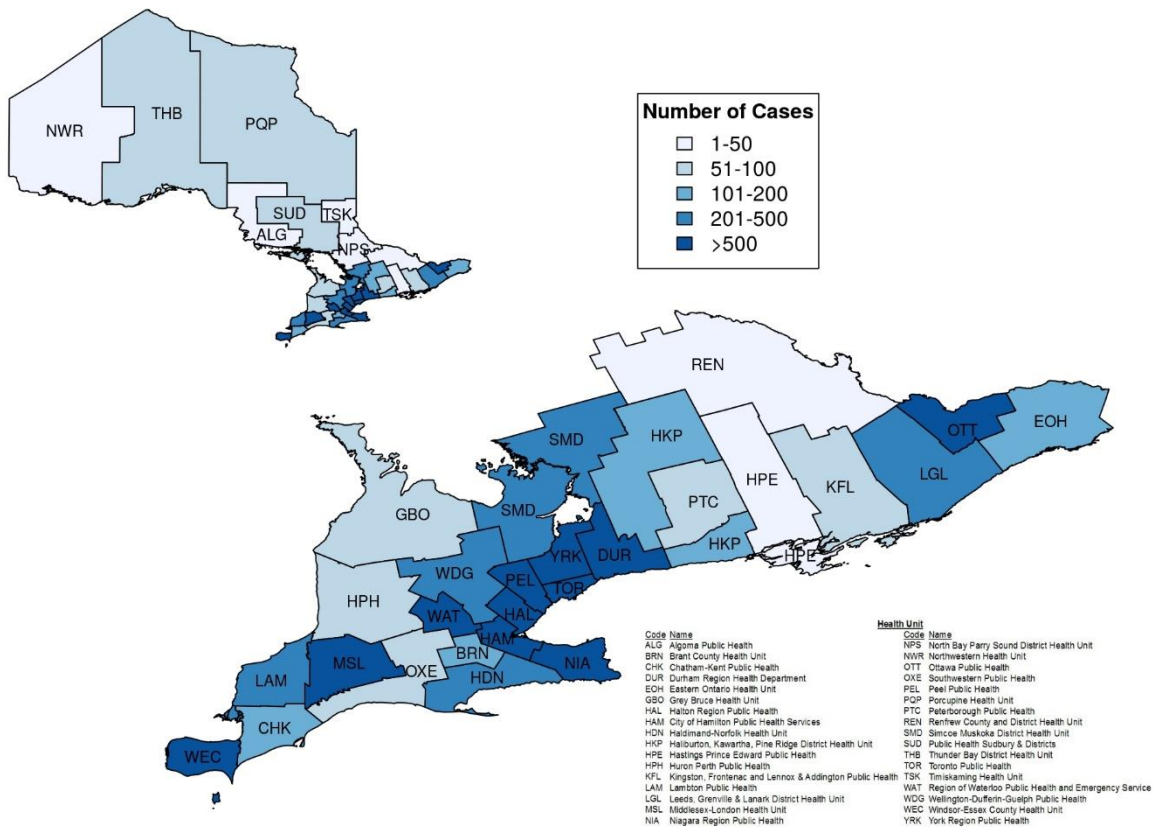
¹ These refer to all hospitalized or ICU admitted cases, not cases that are currently hospitalized or in ICU.

² Cases that are 14 days past symptom onset (if available) or 14 days past the episode date are classified as resolved for non-fatal cases that are not currently listed as hospitalized. Cases are also classified as resolved if the case is reported as “recovered” in iPHIS.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

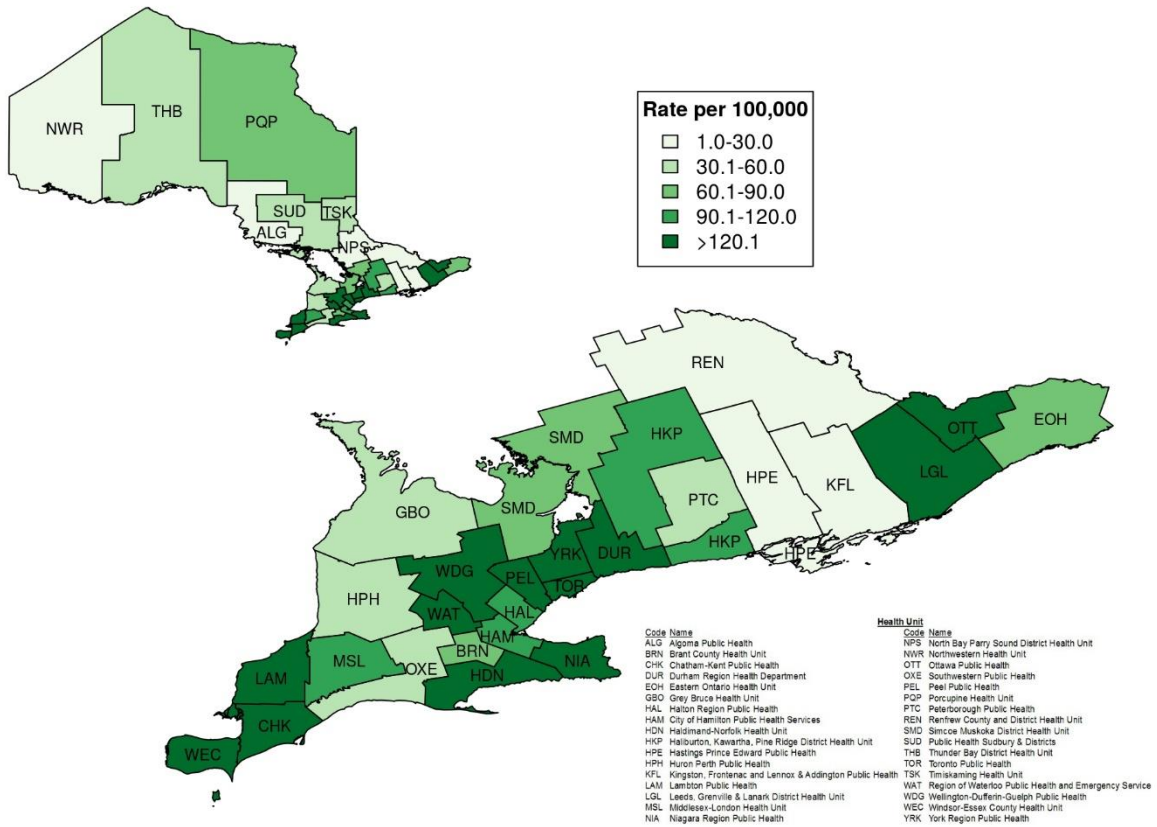
Geography

Figure 5. Confirmed cases (n=27,210) of COVID-19 by public health unit: Ontario, January 15, 2020 to May 28, 2020



Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

Figure 6. Rate of confirmed cases of COVID-19 by public health unit: Ontario, January 15, 2020 to May 28, 2020



Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case and Contact Management tool (CCMtool).

Outbreaks in Institutions and Public Hospitals

Table 4a. Confirmed COVID-19 outbreaks reported in long-term care homes, retirement homes and hospitals by status: Ontario, January 15, 2020 to May 28, 2020

Institution type	Number of ongoing outbreaks ¹	Cumulative number of outbreaks reported
Long term care homes	190	300
Retirement homes	91	140
Hospitals	48	84

¹ Includes all outbreaks that are 'Open' in iPHIS without a 'Declared Over Date' recorded.

Data Source: integrated Public Health Information System (iPHIS) database.

Table 4b. Confirmed cases of COVID-19 in long-term care homes⁶: Ontario, January 15, 2020 to May 28, 2020

Indicator	Number	Percentage
Cases among long-term care home residents ^{1,2,3}	4,989	18.3% of all cases
Cases among health care workers ^{2,3,4} , associated with long-term care outbreaks	1,775	6.5% of all cases
Deaths ⁵ reported for residents in long-term care homes ^{1,2,3}	1,412	63.3% of all deaths
Deaths ⁵ reported for health care workers ^{2,3,4} in long-term care homes	5	0.2% of all deaths

¹ Includes cases that reported '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 factor 'Resident of nursing home or other chronic care facility'.

² Excludes cases that reported 'Yes' to both risk factors: 'Resident of nursing home or other chronic care facility' and 'health care worker'.

³ There is a lag between when cases are reported and when risk factors are updated.

⁴ Health care worker includes cases that reported 'Yes' to any of the occupations health care worker, doctor, nurse; and for health care workers associated with a long-term care outbreak those reported to be part of an outbreak assigned as a long-term care home (via the outbreak number or case comments field).

⁵ Deaths are determined by using the outcome field. Any case marked 'Fatal' is included in the deaths data. Deaths are included whether or not COVID-19 was determined to be a contributing or underlying cause of death as indicated in iPHIS or local case management systems.

⁶ Counts of cases and deaths for long term care home residents and staff are now being calculated using individual level data as opposed to aggregate data. As a result, they are being reported separately from the aggregate counts in table 4c.

Data Source: integrated Public Health Information System (iPHIS) database, Coronavirus Rapid Entry System (CORES) database, The COVID-19 Ottawa Database (The COD), COVID-19 Case Contact Management tool (CCMtool).

Table 4c. Aggregate case counts (confirmed and epidemiologically linked) reported for COVID-19 outbreaks in retirement homes and hospitals:¹ Ontario, January 15, 2020 to May 28, 2020

Indicator	Retirement Homes	Hospitals
Total number of cases ^{2,3,4} reported as part of the confirmed COVID-19 outbreaks	986	725
Cases reported among residents/patients	649	351
Cases reported among staff	337	366
Total number of deaths ^{2,3,4} reported as part of the confirmed COVID-19 outbreaks	135	66
Deaths reported among residents/patients	135	66
Deaths reported among staff	0	0

¹ Counts of cases and deaths for long term care home residents and staff are now being calculated using individual level data as opposed to aggregate data. These are available in table 4b.

² Includes all outbreak-related cases and deaths reported in aggregate outbreak summary counts, regardless of whether the case was laboratory confirmed (deaths among non-laboratory confirmed cases reported here are not included in Table 3).

³ May include cases and deaths other than residents/patients or staff, such as volunteers. As a result, the total number of cases and deaths may be greater than the number of cases and deaths reported in residents or staff.

⁴ Counts may fluctuate from previous reports due to updates made by health units as additional information about the outbreak is reported.

Data Source: integrated Public Health Information System (iPHIS) database.

Technical Notes

Data Sources

- The data for this report were based on:
 - Information extracted from the Ontario Ministry of Health (MOH) integrated Public Health Information System (iPHIS) database, as of **May 28, 2020 at 4 p.m.**
 - Information successfully uploaded to the Ministry from Local Systems: Toronto Public Health (Coronavirus Rapid Entry System) CORES, The Ottawa Public Health COVID-19 Ottawa Database (The COD) and Middlesex-London COVID-19 Case and Contact Management Tool (CCMtool) as of **May 28, 2020 at 2 p.m.**
- iPHIS, CORES, The COD and COVID-19 CCMtool are dynamic disease reporting systems, which allows ongoing updates to data previously entered. As a result, data extracted from iPHIS and the Local Systems represent a snapshot at the time of extraction and may differ from previous or subsequent reports.
- Ontario population projection data for 2020 were sourced from Ontario Ministry of Health, IntelliHEALTH Ontario. Data were extracted on November 26, 2019.
- COVID-19 test data were based on information from The Provincial COVID-19 Diagnostics Network, reported by member microbiology laboratories.

Data Caveats:

- The data only represent cases reported to public health and recorded in iPHIS and the Local Systems (e.g., CORES, The COD, COVID-19 CCMtool). As a result, all counts will be 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.
- Lags in iPHIS and Local Systems data entry due to reduced holiday and weekend staffing may result in lower case counts than would otherwise be recorded.
- Only cases meeting the confirmed case classification as listed in the MOH [COVID-19 case definition](#) are included in the report counts from iPHIS the Local Systems.
- Case episode date is based on an estimate of the best date of disease onset. This date is calculated based on either the date of symptom onset, specimen collection/test date, or the date reported to public health.
- Orientation of case counts by geography is based on the diagnosing health unit (DHU). 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 (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

- Likely source of acquisition is determined by examining the exposure and risk factor fields from iPHIS and local systems to determine whether a case travelled, was associated with an outbreak, was a contact of a case, had no known epidemiological link (sporadic community transmission) or was reported to have an unknown source/no information was reported. Cases with multiple exposures or risk factors were assigned to a single likely acquisition source group which was determined hierarchically in the following order:
 - For cases with an episode date *on or after* April 1, 2020: Outbreak-associated > close contact of a confirmed case > travel > sporadic community transmission > information missing or unknown
 - For cases with an episode date *before* April 1, 2020: Travel > outbreak-associated > close contact of a confirmed case > sporadic community transmission > information missing or unknown
- Deaths are determined by using the outcome field in iPHIS or Local Systems. Any case marked 'Fatal' is included in the deaths data. Deaths are included whether or not COVID-19 was determined to be a contributing or underlying cause of death as indicated in the iPHIS field Type of Death.
 - The date of death is determined using the outcome date field for cases marked as 'Fatal' in the outcome field.
- iPHIS cases for which the Disposition Status was reported as ENTERED IN ERROR, DOES NOT MEET DEFINITION, DUPLICATE-DO NOT USE, or any variation on these values have been excluded.
- To provide a measure of the impact of COVID-19 on long-term care homes and hospitals, the number of outbreaks and the associated cases are reported. To obtain the case and deaths data for these outbreaks, the aggregate counts recorded by public health units in the outbreak's summary counts section of iPHIS is used. This information is presented in Table 4.
 - Previously only a select number of persons in institutional outbreaks would be tested for COVID-19, and there could still be circumstances where not all individuals end up being tested (e.g., the person dies before they can be tested).
 - These counts may not be updated as frequently as the information for laboratory-confirmed cases.
 - The information in the aggregate counts can not necessarily be reconciled with the laboratory-confirmed case data.

Appendix A

Table 1. Confirmed cases (n=27,210) of COVID-19 by public health unit: Ontario, January 15, 2020 to May 28, 2020

Public Health Unit Name	Cases	Rate per 100,000 population
Northwestern Health Unit	22	25.1
Thunder Bay District Health Unit	81	54.0
TOTAL NORTH WEST	103	43.3
Algoma Public Health	21	18.4
North Bay Parry Sound District Health Unit	25	19.3
Porcupine Health Unit	65	77.9
Public Health Sudbury & Districts	62	31.2
Timiskaming Health Unit	18	55.1
TOTAL NORTH EAST	191	34.1
Ottawa Public Health	1,932	183.2
Eastern Ontario Health Unit	148	70.9
Hastings Prince Edward Public Health	44	26.1
Kingston, Frontenac and Lennox & Addington Public Health	61	28.7
Leeds, Grenville & Lanark District Health Unit	347	200.4
Renfrew County and District Health Unit	26	23.9
TOTAL EASTERN	2,558	132.8
Durham Region Health Department	1,428	200.4
Haliburton, Kawartha, Pine Ridge District Health Unit	171	90.5
Peel Public Health	4,221	262.8

Public Health Unit Name	Cases	Rate per 100,000 population
Peterborough Public Health	83	56.1
Simcoe Muskoka District Health Unit	459	76.6
York Region Public Health	2,339	190.8
TOTAL CENTRAL EAST	8,701	194.2
Toronto Public Health	9,908	317.5
TOTAL TORONTO	9,908	317.5
Chatham-Kent Public Health	144	135.4
Grey Bruce Health Unit	88	51.8
Huron Perth Public Health	53	37.9
Lambton Public Health	261	199.3
Middlesex-London Health Unit	513	101.1
Southwestern Public Health	72	34.0
Windsor-Essex County Health Unit	940	221.3
TOTAL SOUTH WEST	2,071	122.5
Brant County Health Unit	115	74.1
City of Hamilton Public Health Services	658	111.1
Haldimand-Norfolk Health Unit	204	178.8
Halton Region Public Health	632	102.1
Niagara Region Public Health	631	133.5
Region of Waterloo Public Health and Emergency Services	1,058	181.1
Wellington-Dufferin-Guelph Public Health	380	121.8
TOTAL CENTRAL WEST	3,678	129.1
TOTAL ONTARIO	27,210	183.1

Disclaimer

This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication.

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For Further Information

For more information, email cd@oahpp.ca.

Public Health Ontario

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