

Enhanced Epidemiological Summary

COVID-19 in Long-Term Care Homes in Ontario: January 15, 2020 to February 28, 2021

This report includes the most current information available from Public Health Case and Contact Management Solution (CCM) for all public health units (PHUs) in Ontario as of **March 3, 2021**.

Purpose

This report provides a focused analysis of confirmed COVID-19 cases and outbreaks reported among long-term care home (LTCH) residents and health care workers (HCW) in Ontario. A comparison between LTCH cases and outbreaks reported in wave 1 (defined in this report as January 15, 2020 to August 2, 2020) and wave 2 (defined in this report as August 3, 2020 to February 28, 2021) is summarized in this report. August 2, 2020 was used as the end of wave 1 because this date had the lowest number of reported cases of COVID-19 prior to a subsequent increase in cases.

Cases with information indicating they were residing in a LTCH were classified as LTCH residents. HCW associated with a LTCH were those reported to be part of an outbreak at a long-term care home. Additional information is provided in the [Technical Notes](#).

Please visit the interactive [Ontario COVID-19 Data Tool](#) to explore recent COVID-19 data by public health unit, age group, sex, and trends over time. The [Daily Epidemiological Summary](#), [Weekly Epidemiological Summary](#), and [additional Epidemiological Reports](#) are available on the Public Health Ontario website.

Highlights

- From January 15, 2020 to February 28, 2021, there were 14,960 confirmed cases of COVID-19 in Ontario among LTCH residents. LTCH residents accounted for 15.0% and 3.4% of all reported cases in wave 1 and 2, respectively. Overall, 65.5% were female and 88.1% were 70 years of age and older. Gender and age-specific trends remained consistent between wave 1 and wave 2.
- LTCH residents 70 years and older had higher age-specific case fatality rates, and a lower risk of hospitalization or admittance to ICU, when compared to persons of the same age not residing in LTCH. These trends remained consistent in wave 2 compared to Wave 1, although at a reduced level.
- The number of cases of COVID-19 in LTCH residents peaked in Ontario in mid-April during wave 1 and early January during wave 2, following similar trends in reported non-LTCH cases. The trend in the daily number of deaths among LTCH residents exceeded deaths among non-LTCH cases in wave 1; however, this trend was reversed when wave 2 was declining.
- There were 390 and 899 LTCH outbreaks in wave 1 and wave 2, respectively. Overall, 48.9% of confirmed LTCH outbreaks had only staff cases, with a lower proportion in wave 1 compared to wave 2 (38.5% vs. 53.3%). The median outbreak duration decreased from 14 days in wave 1, to 5 days in wave 2.

Case Characteristics

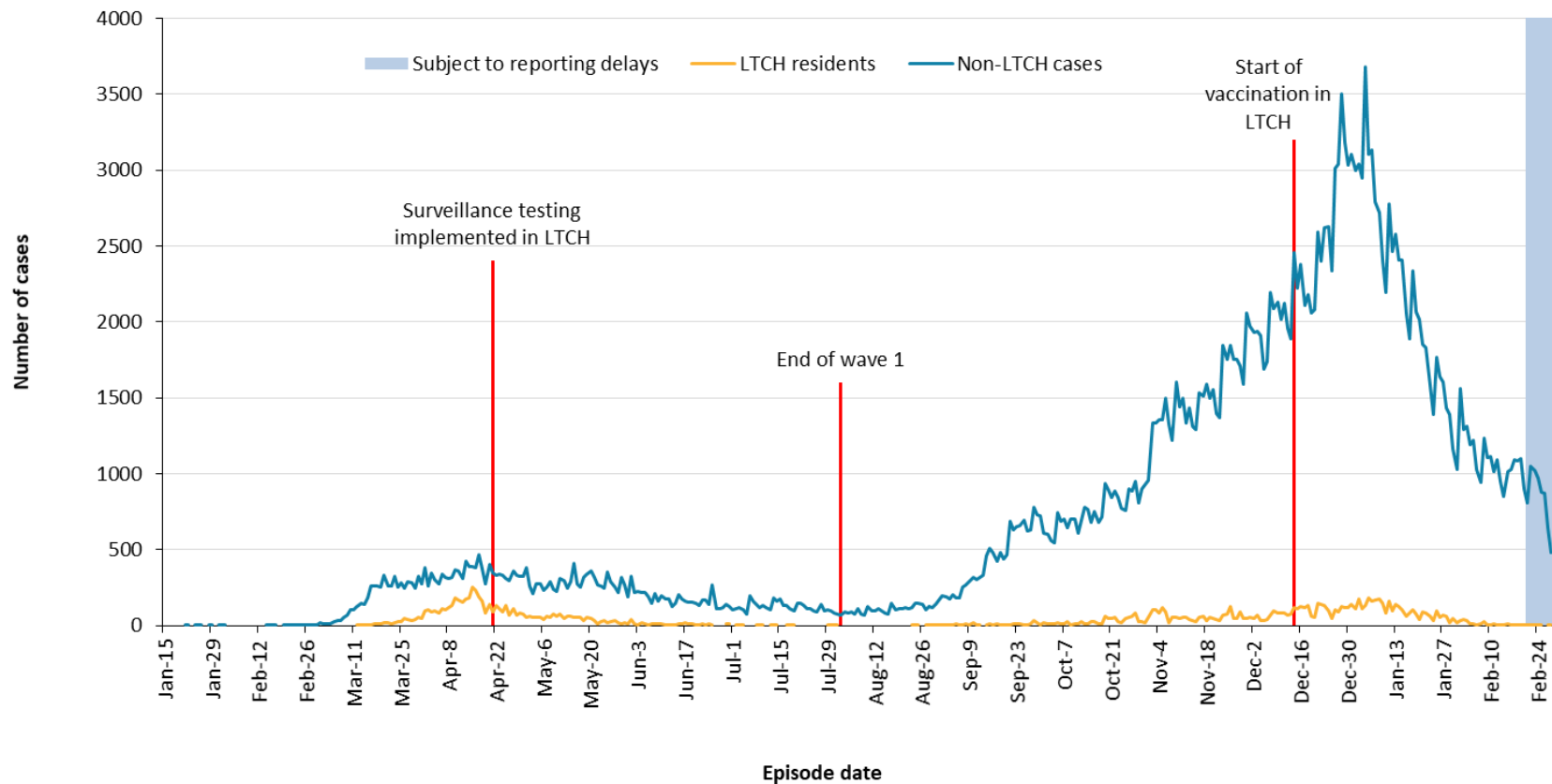
Table 1. Confirmed cases of COVID-19 (n=303,737) by LTCH residential status: Ontario, January 15, 2020 to February 28, 2021

	Wave 1: Cases among LTCH residents	Wave 1: Percent among LTCH residents	Wave 2: Cases among LTCH residents	Wave 2: Percent among LTCH residents	Wave 1: Cases among non- LTCH	Wave 1: Percent among non- LTCH	Wave 2: Cases among non- LTCH	Wave 2: Percent among non- LTCH
Number of cases	5,941	N/A	9,019	N/A	33,673	N/A	255,104	N/A
Gender: Male	2,058	34.6%	2,973	33.0%	16,444	48.8%	128,021	50.2%
Gender: Female	3,814	64.2%	5,986	66.4%	17,102	50.8%	125,776	49.3%
Gender: Unknown	69	1.2%	60	0.7%	127	0.4%	1,307	0.5%
Ages: <60 years	230	3.9%	303	3.4%	26,169	77.7%	213,127	83.5%
Ages: 60-69 years	572	9.6%	678	7.5%	3,812	11.3%	23,392	9.2%
Ages: 70-79 years	1,026	17.3%	1,771	19.6%	1,770	5.3%	10,576	4.1%
Ages: 80-89 years	2,258	38.0%	3,388	37.6%	1,281	3.8%	5,753	2.3%
Ages: ≥90 years	1,855	31.2%	2,876	31.9%	640	1.9%	2,196	0.9%
Age: Unknown	0	0.0%	3	0.0%	1	0.0%	60	0.0%
Cases in LTCH HCW	N/A	N/A	N/A	N/A	2,533	7.5%	4,108	1.6%

Data Source: CCM

Temporal Trends

Figure 1. Confirmed cases of COVID-19 by LTCH residential status¹ and approximation of symptom onset date²: Ontario, January 15, 2020 to February 28, 2021

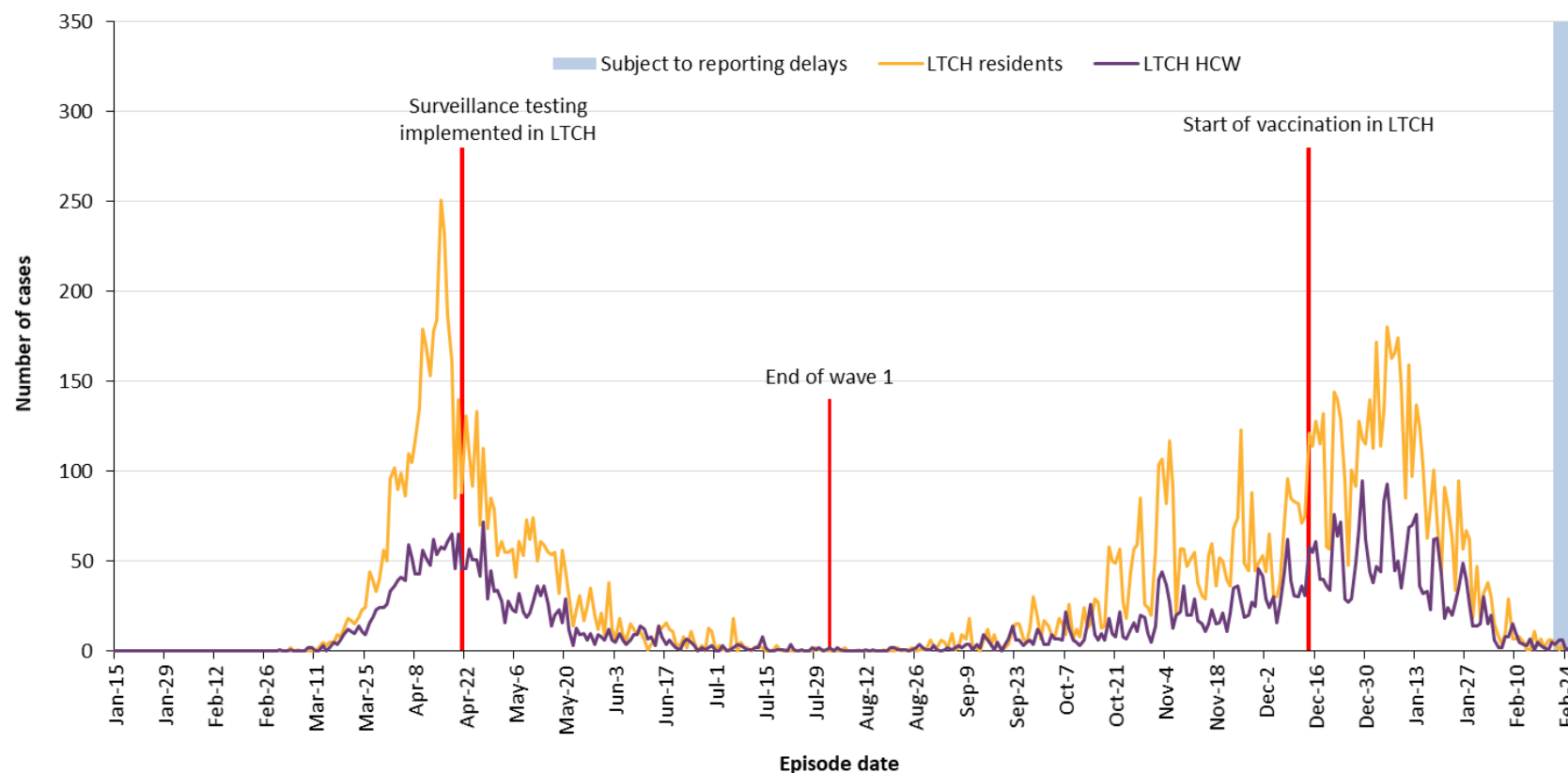


¹ This count excludes 17 cases with unknown or inaccurate episode date.

² This date, referred to as episode date, is intended to approximate symptom onset date. It is calculated using the first available date of symptom onset, specimen collection/test date, date reported to public health.

Data Source: CCM

Figure 2. Confirmed cases and outbreaks of COVID-19 among LTCH residents and LTCH HCW¹, by an approximation of symptom onset date²: Ontario, January 15, 2020 to February 28, 2021

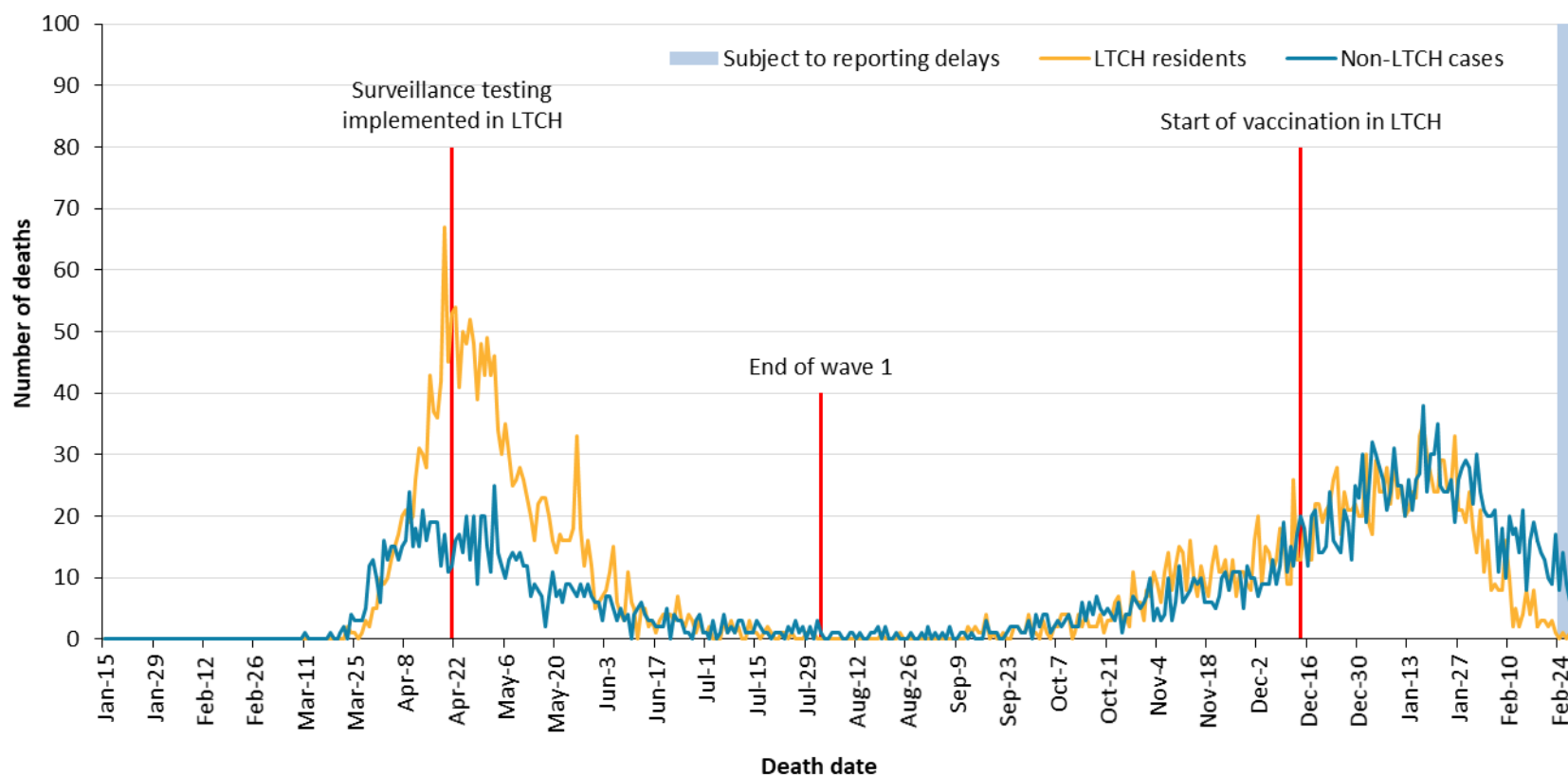


¹ This count excludes one case with unknown or missing episode date.

² This date, referred to as episode date, is intended to approximate symptom onset date. It is calculated using the first available date based on the hierarchy: date of symptom onset > specimen collection/test date > date reported to public health.

Data Source: CCM

Figure 3. Deaths among confirmed cases¹ of COVID-19 residing in a LTCH and non-LTCH cases, by date of death: Ontario, January 15, 2020 to March 3, 2021²



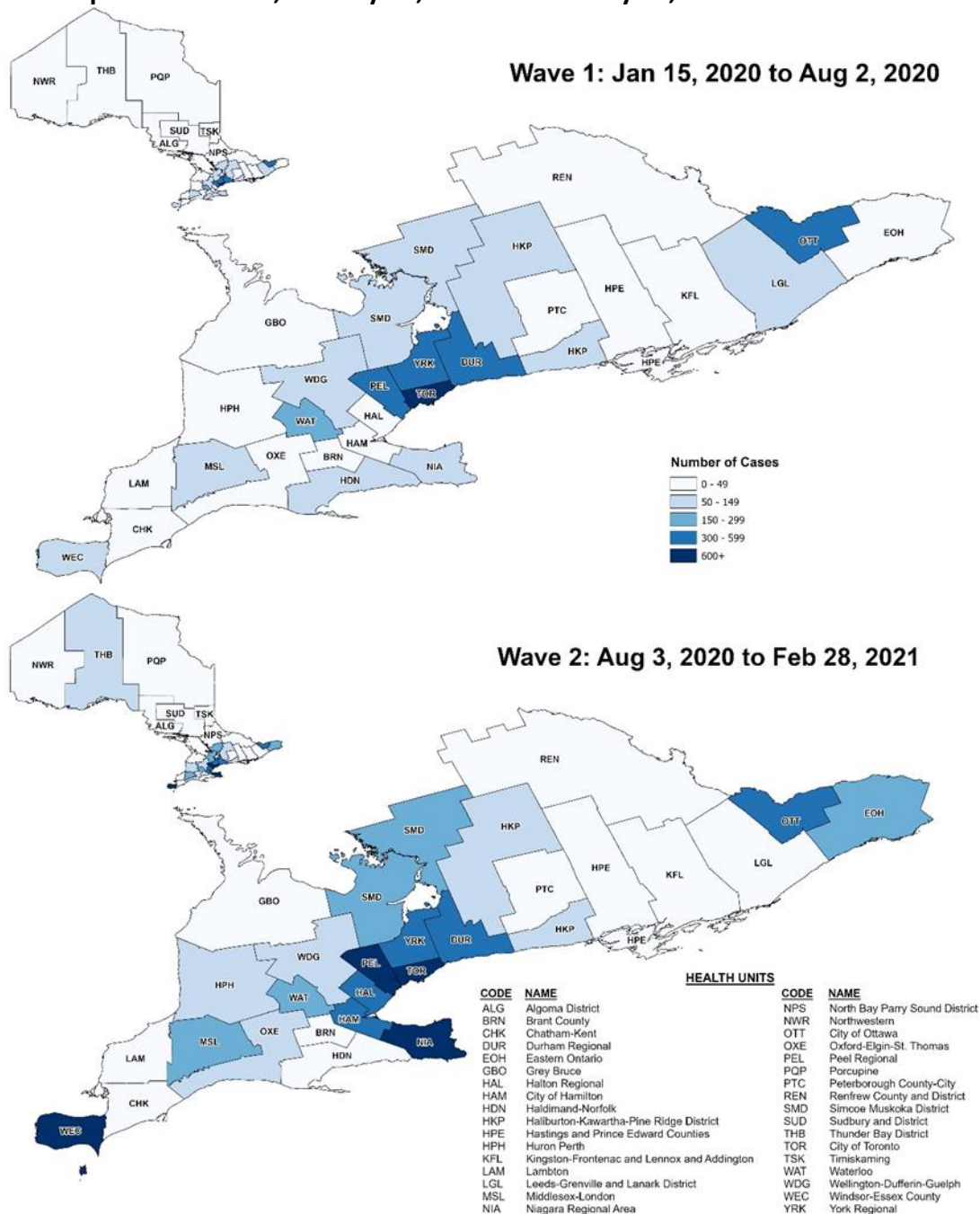
¹This count excludes 38 cases with unknown or missing date of death.

²Interpret case counts for the most recent days (approximately 7 days) with caution due to reporting lags. The light blue shading indicates the most recent period during which death counts are likely to be updated. Deaths may have occurred any time up to the date of data extraction on March 3, 2021.

Data Source: CCM

Geography

Figure 4. Number of confirmed cases of COVID-19 among LTCH residents by public health unit and time period: Ontario, January 15, 2020 to February 28, 2021



Note: The number of outbreaks may vary depending on the population size and the number of LTCH within a PHU. Please refer to Appendix A for PHU rates per 100,000 population.

Data Source: CCM

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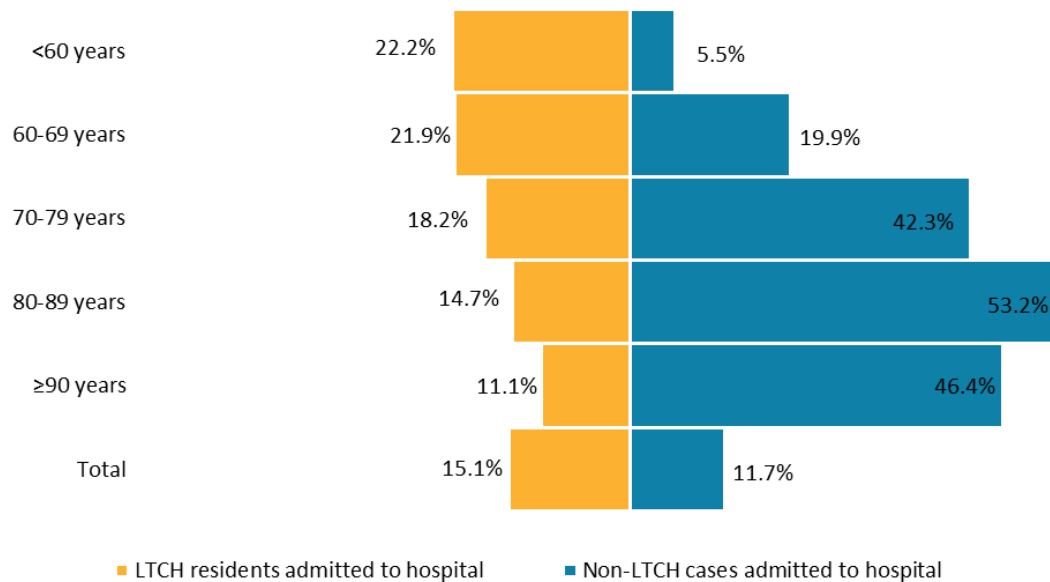
Severity

Table 2. Summary of confirmed COVID-19 case outcomes among LTCH residents and HCW, by time period: Ontario, January 15, 2020 to February 28, 2021

LTCH outcomes	Number reported in Wave 1	Percent of cases in Wave 1	Number reported in Wave 2	Percent of cases in Wave 2	Cumulative number reported
Cases reported among residents	5,941	N/A	9,019	N/A	14,960
Hospitalized cases among residents	900	15.1%	1,006	11.2%	1,906
ICU admissions among residents	67	1.1%	70	0.8%	137
Deaths reported among residents	1,937	32.6%	1,934	21.4%	3,871
Cases reported among HCW	2,533	N/A	4,108	N/A	6,641
Hospitalized cases among HCW	75	3.0%	47	1.1%	122
ICU admissions among HCW	21	0.8%	10	0.2%	31
Deaths reported among HCW	8	0.3%	2	0.0%	10

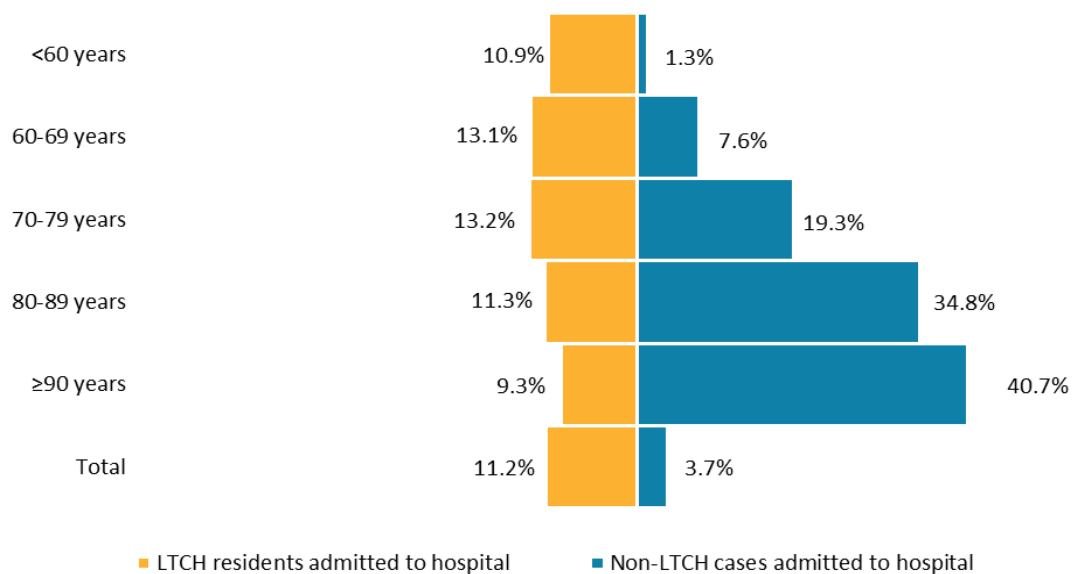
Data Source: CCM

Figure 6a. Age-specific percentage of confirmed COVID-19 cases admitted to hospital by LTCH residential status, Wave 1: Ontario, January 15, 2020 to August 2, 2020



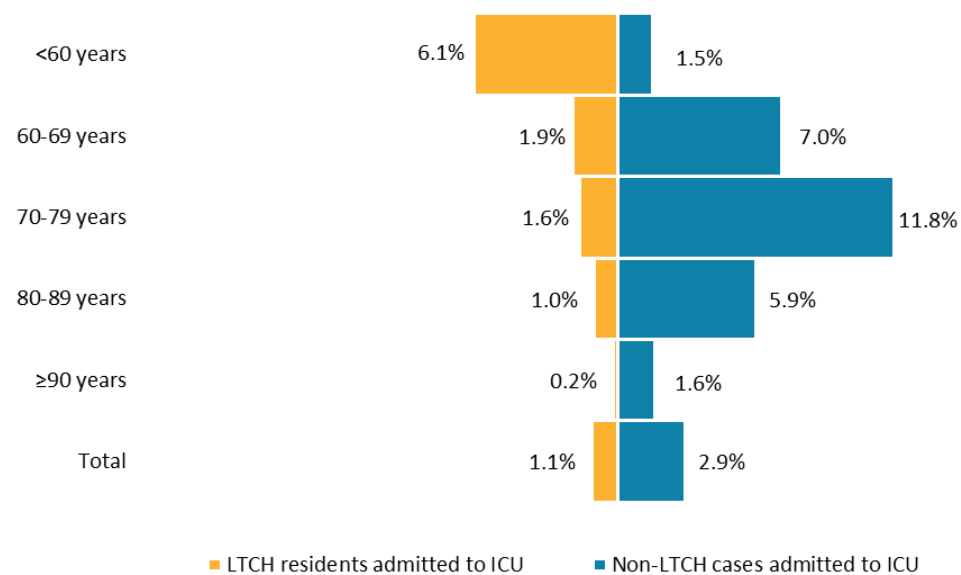
Data Source: CCM

Figure 6b. Age-specific percentage of confirmed COVID-19 cases admitted to hospital by LTCH residential status, Wave 2: Ontario, August 3, 2020 to February 28, 2021



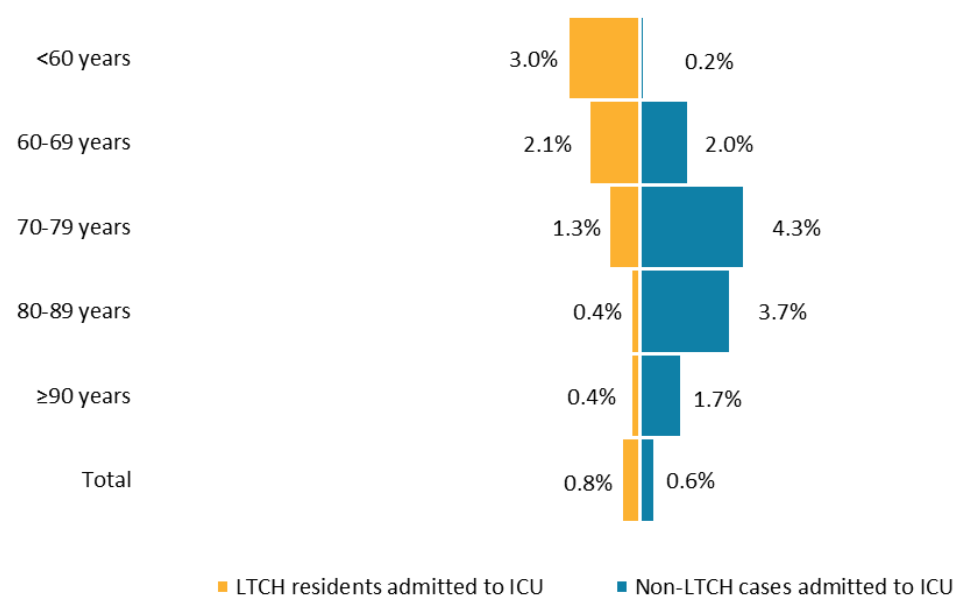
Data Source: CCM

Figure 7a. Age-specific percentage of confirmed COVID-19 cases admitted to ICU by LTCH residential status, Wave 1: Ontario, January 15, 2020 to August 2, 2020



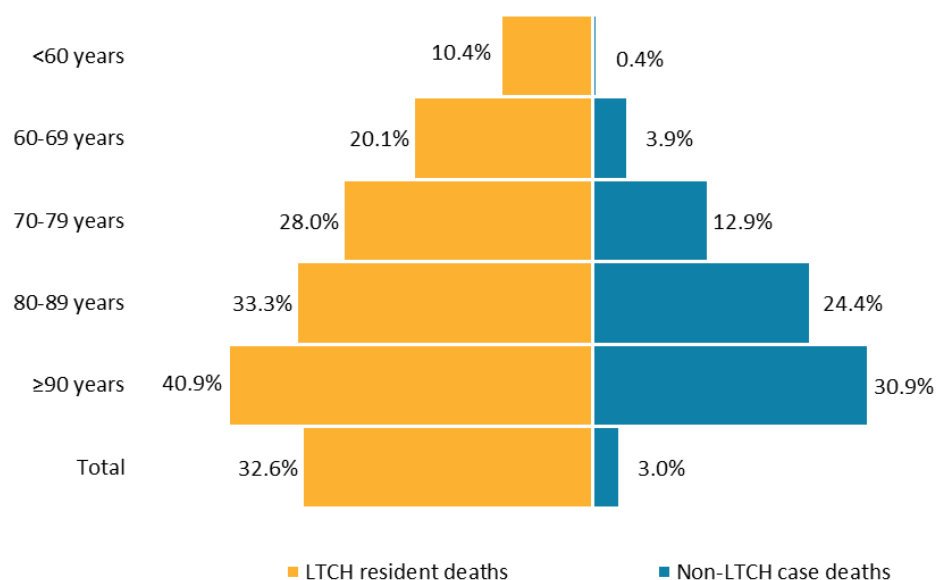
Data Source: CCM

Figure 7b. Age-specific percentage of confirmed COVID-19 cases admitted to ICU by LTCH residential status, Wave 2: Ontario, August 3, 2020 to February 28, 2021



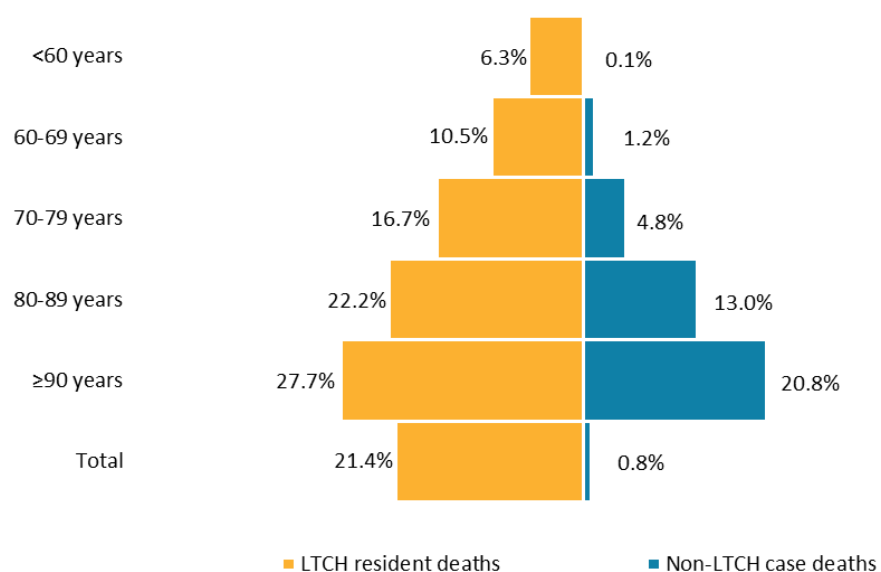
Data Source: CCM

Figure 8a. Age-specific COVID-19 case fatality rate by LTCH residential status compared to cases not residing in a LTCH, Wave 1: Ontario, January 15, 2020 to August 2, 2020



Data Source: CCM

Figure 8b. Age-specific COVID-19 case fatality rate by LTCH residential status compared to cases not residing in a LTCH, Wave 2: Ontario, August 3, 2020 to February 28, 2021



Data Source: CCM

Outbreaks

Table 3. Summary of COVID-19 LTCH outbreak cases¹ and duration² by time period: Ontario, January 15, 2020 to February 28, 2021

	Wave 1	Wave 2	Cumulative Total
Number of confirmed outbreaks	390	899	1,289
Confirmed outbreaks ¹ with only staff cases (%)	38.5% (143/371)	53.3% (462/867)	48.9% (605/1,238)
Confirmed outbreaks with zero days duration ³ (%)	30.5% (110/361)	33.9% (259/765)	32.8% (369/1,126)
Median number of cases per outbreak (range)	2 (1-316)	2 (1-320)	2 (1-320)
Median number of resident cases per outbreak (range)	1 (0-206)	0 (0-182)	0 (0-206)
Median number of staff cases per outbreak (range)	1 (0-109)	1 (0-139)	1 (0-139)
Median outbreak duration (range) in days	14 (0-113)	5 (0-103)	8 (0-113)

¹Due to reporting delays and potential variations in data entry processes across PHUs, there may be additional COVID-19 cases that have not yet been entered in CCM, or have not been entered as linked to an outbreak. As such, 51 outbreaks in LTCH with zero linked cases have been excluded.

²The median duration of outbreaks was only measured for outbreaks with a “Closed” Outbreak Status. Outbreak length was calculated using the “Outbreak Date” as the start date and the “Outbreak Date End” as the end date. The “Outbreak Date” is a calculated field used to determine the outbreak declared date using the following hierarchy of date fields: Onset date of the first case > Reported Date > Created Date. The “Outbreak Date End” is also a calculated field, used to determine the end date of the outbreak using the following hierarchy of date fields: Onset date of the last case > Date the outbreak was declared over. This can result in LTCH outbreaks having a duration length of 0 days (i.e., if only a single case is linked to an outbreak, the symptom onset date for the first and last case will be the same).

³Only outbreaks with a “Closed” Outbreak Status were included in these calculations.

Data Source: CCM

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 March 3, 2021 at 1 p.m.
- CCM is a dynamic disease reporting system, which allows ongoing updates to data previously entered. As a result, data extracted from CCM 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 Ministry, IntelliHEALTH Ontario. Data were extracted on November 26, 2019.

Data Caveats

- The data only represent cases and outbreaks reported to public health units and recorded in CCM. 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.
- Only cases meeting the confirmed case classification as listed in the MOH [COVID-19 case definition](#) are included in the report counts from CCM. This includes persons with a positive detection of serum/plasma immunoglobulin G (IgG) antibodies to SARS-CoV-2, which was added to the confirmed case definition on August 6, 2020.
- Cases of confirmed reinfection, i.e. where genome sequencing indicates the two episodes are caused by different viral lineages, added to the confirmed case definition on November 20, 2020, are counted as unique investigations.
- Only confirmed outbreaks in LTCH settings are included in this report. 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](#). The data also do not include cases linked to these settings as an exposure.
- 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 the public health unit.
- Hospitalization includes all cases for which a hospital admission date was reported at the time of data extraction. It includes cases that have been discharged from hospital as well as cases that are currently hospitalized. Emergency room visits are not included in the number of reported hospitalizations.
- 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.

- 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-PHO (to signify a case that is not a resident of Ontario) have been excluded from the analyses.
- Deaths are determined by using the outcome field in CCM. Any case marked 'Fatal' is included in the deaths data. The CCM field Type of Death is not used to further categorize the data.
 - The date of death is determined using the outcome date field for cases marked as 'Fatal' in the outcome field.
- 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. Duplicate records may exist if these records were not identified and resolved.
- Ongoing outbreaks include all outbreaks that are 'Open' in CCM without a 'Declared Over Date' recorded, or where the outbreak started more than five months ago, even for outbreaks where the Outbreak Status value selected in CCM/iPHIS is 'OPEN'. The start of the outbreak is determined by the onset date of first case, or if missing the outbreak reported date, or else if that is also missing, then the outbreak created date.
- '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.
- The 'health care workers' variable includes cases that reported 'Yes' to any of the occupation of health care worker, doctor, nurse, dentist, dental hygienist, midwife, other medical technicians, personal support worker, respiratory therapist, first responder.
- '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.

Appendix A

Table A1. Confirmed cases of COVID-19 in LTCH by public health unit: Ontario, January 15, 2020 to February 28, 2021

Public Health Unit	Wave 1: Number of confirmed COVID-19 outbreaks	Wave 1: Cases reported among residents	Wave 1: Rate ¹ among residents per 100,000	Wave 1: Deaths reported among residents	Wave 1: Cases reported among LTCH HCW	Wave 2: Number of confirmed COVID-19 outbreaks	Wave 2: Cases reported among residents	Wave 2: Rate ¹ among residents per 100,000	Wave 2: Deaths reported among residents	Wave 2: Cases reported among LTCH HCW
Northwestern Health Unit	0	0	0.0	0	0	6	9	10.3	0	3
Thunder Bay District Health Unit	1	0	0.0	0	1	11	93	62.0	23	37
TOTAL NORTH WEST	1	0	0.0	0	1	17	102	42.9	23	40
Algoma Public Health	1	3	2.6	0	0	3	0	0.0	0	9
North Bay Parry Sound District Health Unit	4	2	1.5	0	3	3	3	2.3	0	0
Porcupine Health Unit	5	3	3.6	0	2	4	49	58.7	15	6
Public Health Sudbury & Districts	10	6	3.0	1	10	9	15	7.5	2	7
Timiskaming Health Unit	2	3	9.2	0	3	4	0	0.0	0	4

Public Health Unit	Wave 1: Number of confirmed COVID-19 outbreaks	Wave 1: Cases reported among residents	Wave 1: Rate ¹ among residents per 100,000	Wave 1: Deaths reported among residents	Wave 1: Cases reported among LTCH HCW	Wave 2: Number of confirmed COVID-19 outbreaks	Wave 2: Cases reported among residents	Wave 2: Rate ¹ among residents per 100,000	Wave 2: Deaths reported among residents	Wave 2: Cases reported among LTCH HCW
TOTAL NORTH EAST	22	17	3.0	1	18	23	67	12.0	17	26
Ottawa Public Health	24	574	54.4	221	334	81	348	33.0	59	242
Eastern Ontario Health Unit	6	36	17.2	12	20	25	227	108.8	47	92
Hastings Prince Edward Public Health	3	10	5.9	3	2	2	0	0.0	0	1
Kingston, Frontenac and Lennox & Addington Public Health	1	0	0.0	0	4	5	2	0.9	0	4
Leeds, Grenville & Lanark District Health Unit	3	127	73.3	39	37	3	0	0.0	0	5
Renfrew County and District Health Unit	1	0	0.0	0	6	9	4	3.7	0	3
TOTAL EASTERN	38	747	38.8	275	403	125	581	30.2	106	347

Public Health Unit	Wave 1: Number of confirmed COVID-19 outbreaks	Wave 1: Cases reported among residents	Wave 1: Rate ¹ among residents per 100,000	Wave 1: Deaths reported among residents	Wave 1: Cases reported among LTCH HCW	Wave 2: Number of confirmed COVID-19 outbreaks	Wave 2: Cases reported among residents	Wave 2: Rate ¹ among residents per 100,000	Wave 2: Deaths reported among residents	Wave 2: Cases reported among LTCH HCW
Durham Region Health Department	18	420	59.0	139	253	44	311	43.7	62	234
Haliburton, Kawartha, Pine Ridge District Health Unit	5	52	27.5	15	26	13	84	44.5	25	29
Peel Public Health	27	592	36.9	187	424	77	793	49.4	178	706
Peterborough Public Health	2	6	4.1	1	9	7	22	14.9	3	5
Simcoe Muskoka District Health Unit	9	66	11.0	23	49	32	211	35.2	89	177
York Region Public Health	22	518	42.3	159	83	58	388	31.7	85	98
TOTAL CENTRAL EAST	83	1,654	36.9	524	844	231	1,809	40.4	442	1,249
Toronto Public Health	101	2,733	87.6	887	836	122	2,902	93.0	534	921
TOTAL TORONTO	101	2,733	87.6	887	836	122	2,902	93.0	534	921
Chatham-Kent Public Health	0	0	0.0	0	1	7	46	43.3	6	27

Public Health Unit	Wave 1: Number of confirmed COVID-19 outbreaks	Wave 1: Cases reported among residents	Wave 1: Rate ¹ among residents per 100,000	Wave 1: Deaths reported among residents	Wave 1: Cases reported among LTCH HCW	Wave 2: Number of confirmed COVID-19 outbreaks	Wave 2: Cases reported among residents	Wave 2: Rate ¹ among residents per 100,000	Wave 2: Deaths reported among residents	Wave 2: Cases reported among LTCH HCW
Grey Bruce Health Unit	5	22	13.0	0	24	5	0	0.0	0	5
Huron Perth Public Health	7	9	6.4	4	12	21	124	88.7	24	73
Lambton Public Health	5	26	19.9	10	31	14	38	29.0	1	11
Middlesex-London Health Unit	16	62	12.2	23	51	44	243	47.9	67	210
Southwestern Public Health	3	0	0.0	0	16	18	149	70.4	33	92
Windsor-Essex County Health Unit	21	140	33.0	45	67	22	758	178.4	160	191
TOTAL SOUTH WEST	57	259	15.3	82	202	131	1,358	80.3	291	609
Brant County Health Unit	5	1	0.6	0	3	12	1	0.6	0	17
City of Hamilton Public Health Services	12	31	5.2	6	14	49	521	88.0	131	193
Haldimand-Norfolk Health Unit	9	74	64.9	32	41	14	5	4.4	0	18
Halton Region Public Health	15	13	2.1	2	12	43	447	72.2	102	96

Public Health Unit	Wave 1: Number of confirmed COVID-19 outbreaks	Wave 1: Cases reported among residents	Wave 1: Rate ¹ among residents per 100,000	Wave 1: Deaths reported among residents	Wave 1: Cases reported among LTCH HCW	Wave 2: Number of confirmed COVID-19 outbreaks	Wave 2: Cases reported among residents	Wave 2: Rate ¹ among residents per 100,000	Wave 2: Deaths reported among residents	Wave 2: Cases reported among LTCH HCW
Niagara Region Public Health	21	105	22.2	24	55	51	922	195.1	220	442
Region of Waterloo Public Health and Emergency Services	18	246	42.1	82	74	46	195	33.4	40	101
Wellington- Dufferin- Guelph Public Health	8	61	19.6	22	30	35	109	34.9	28	49
TOTAL CENTRAL WEST	88	531	18.6	168	229	250	2,200	77.2	521	916
TOTAL ONTARIO	390	5,941	40.0	1,937	2,533	899	9,019	60.7	1,934	4,108

¹Rate calculations based on the total population of each public health unit.

Data Source: CCM

Disclaimer

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For Further Information

For more information, email cd@oahpp.ca.

Public Health Ontario

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