COVID-19 Epidemiology Weekly Supplement

OTTAWA PUBLIC HEALTH. Report compiled on June 17, 2020, 11:00 am

Contents

Purpose

This Weekly Supplement provides an epidemiologic summary of COVID-19 activity in Ottawa to date. The report includes the most current information available from the COVID-19 Ottawa Database (COD) and the integrated Public Health Information System (iPHIS) as of 2:00 p.m. June 16, 2020.

Please visit the Ottawa COVID-19 Dashboard for additional information on cases and deaths, outbreaks and core indicators for COVID-19 monitoring.

Summary

- As of 2:00 p.m. on June 16, 2020, OPH is investigating **2,036** lab-confirmed cases among Ottawa residents.
- Females have a higher rate (226 per 100,000) of confirmed COVID-19 infections than males (159 per 100,000).
- Adults aged 90 years and older have the highest rate (2215 per 100,000) of confirmed infections of any age group due to the burden of institutional outbreaks.
- No source was identified for 33% of the 40 non-institutionalized cases with episode dates during June 1 – June 14; these cases are considered to be community-acquired.
- A total of 237 (12%) Ottawa residents with confirmed COVID-19 have been hospitalized, including 57 (3%) who were admitted to the ICU.
- There have been **260 deaths** in total.
- There are 8 ongoing outbreaks in institutions and no ongoing community outbreaks.
- The special focus is occupation and COVID-19.

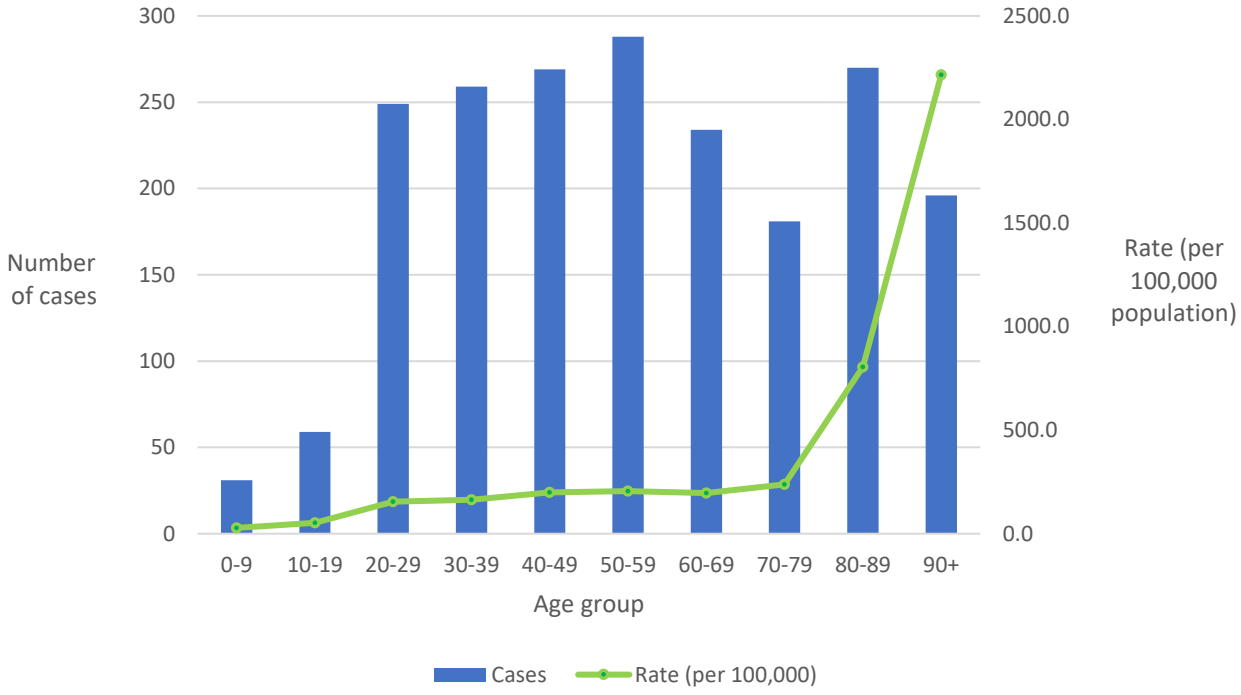
Cases

Table 1. Ottawa residents with confirmed COVID-19 (n=2,036), by gender

Gender	Number of cases (%)	Rate (per 100,000 population)
Female	1212 (59.5%)	225.9
Male	824 (40.5%)	159.0
Unknown	0	0

Notes:
1. Data on cases are from the COD as of 2:00 p.m. on June 16, 2020.
2. Confirmed cases are those with a confirmed COVID-19 laboratory result as per the Ministry of Health Public health management of cases and contacts of COVID-19 in Ontario. March 25, 2020 version 6.0.
3. Rates per 100,000 were calculated using Ottawa population projection data for 2020 from Ontario Ministry of Health, IntelliHEALTH Ontario, extracted on November 26, 2019.

Figure 1: Ottawa residents with confirmed COVID-19 (n=2,036), by age group



Notes:
1. Data on cases are from the COD as of 2:00 p.m. on June 16, 2020.
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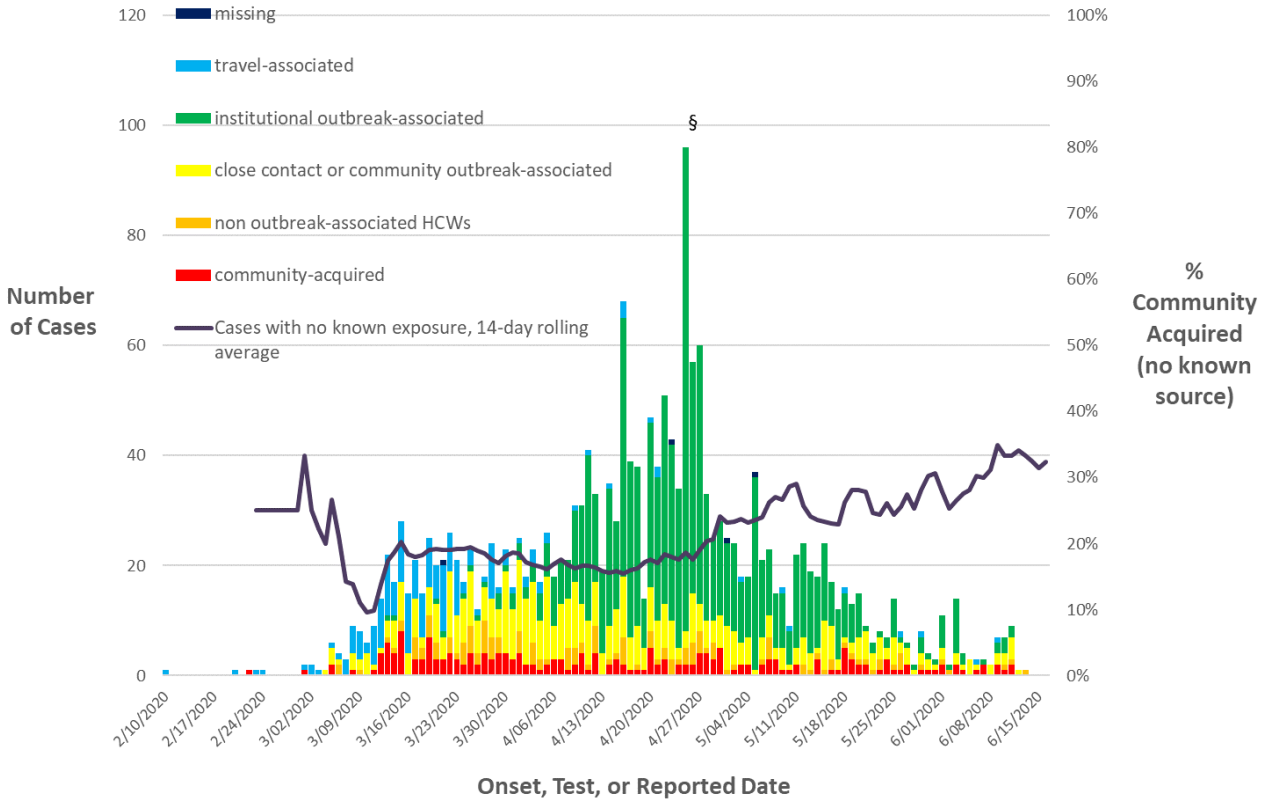
3. Rates per 100,000 were calculated using Ottawa population projection data for 2020 from Ontario Ministry of Health, IntelliHEALTH Ontario, extracted on November 26, 2019.

Source of infection

No source was identified for 37% of the 38 non-institutionalized cases with episode dates during June 1 – June 14; these cases are considered to be community-acquired.

Figure 2: Epidemiological curve of Ottawa residents with confirmed COVID-19, by the earliest of onset, test and reported date, by source of infection (n=2,036)

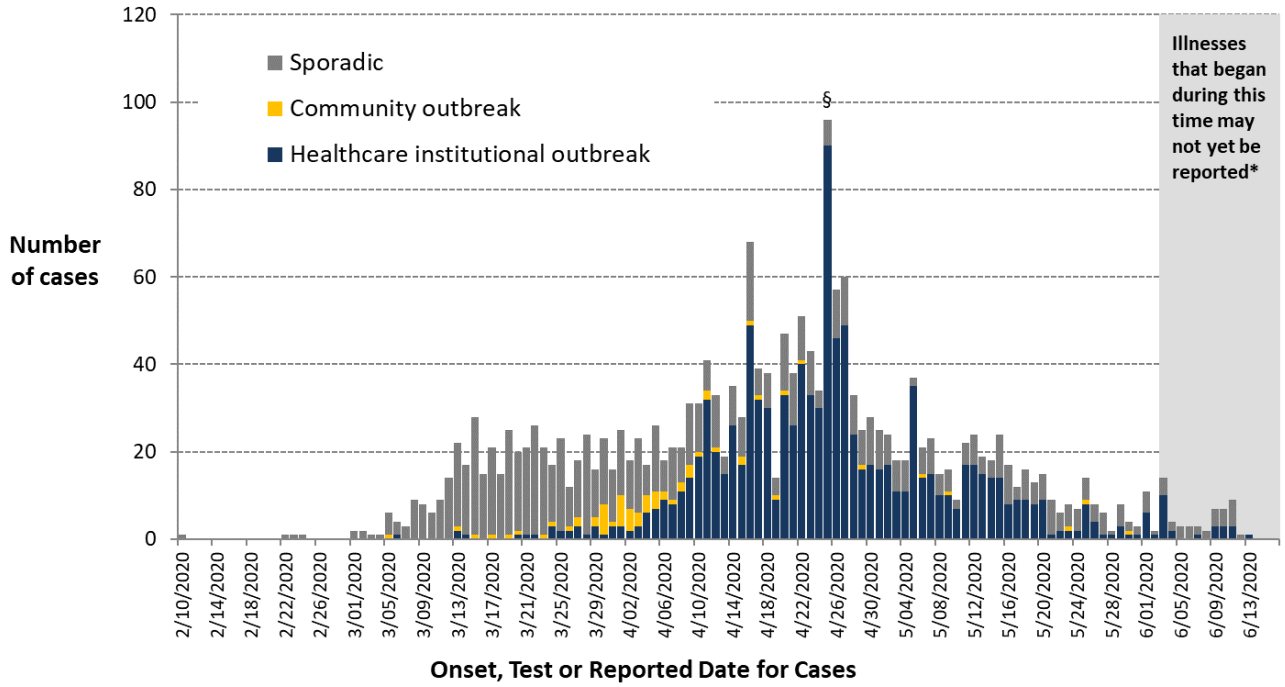


Notes:

1. Data are from the COD as of 2:00 pm on June 16, 2020.
2. Source of infection is allocated using a hierarchy: Related to travel prior to April 1, 2020 > Linked to an institutional outbreak > Close contact of a known case or linked to a community outbreak > Non outbreak-associated healthcare workers (HCWs) and frontline workers and healthcare workers in institutions whose episode dates precede that of all residents > Related to travel since April 1, 2020 > Community transmission > Missing.
3. Community-acquired refers to infection from an unidentified source. Cases that are the result of community transmission would be individuals who did not travel outside Ontario, are not part of an institutional outbreak, are not part of a community outbreak, are not able to identify someone with COVID-19 from whom they might have acquired infection; and are not healthcare workers or other first responders who would be expected to come into contact with many individuals potentially infected with COVID-19.
4. The percent of cases believed to be community-acquired is calculated as the proportion of cases, over the current day and previous 13 days, with no identified source of infection, among non-institutionalized cases for whom the source of infection was assessed.
5. The distribution of source of infection among confirmed cases are impacted by the provincial guidance on testing.
6. The percent of cases that are community-acquired presented is a rolling average of the 14 days ending on a given day.
7. The percentage of community-acquired cases is unstable during time periods with few cases.
8. As cases are investigated and more information is available, the distribution of cases by date and source of infection are updated.

9. Confirmed cases are those with a confirmed COVID-19 laboratory result as per the Ministry of Health Public health management of cases and contacts of COVID-19 in Ontario. March 25, 2020 version 6.0.
10. A patient's exposure may have occurred up to 14 days prior to onset of symptoms. Symptomatic cases occurring in approximately the last 14 days are likely under-reported due to the time for individuals to seek medical assessment, availability of testing, and receipt of test results.
11. § Surveillance testing for COVID-19 began in long term care facilities on April 25, 2020.
12. The number of reported cases underestimates the actual number of infections. Information on overall infection rates in Canada will not be available until large studies on COVID-19 antibody presence in blood serum are conducted. Based on available information, the actual number of infections may lie from 5 to 30 times or more than the reported number of cases.

Figure 3. Epidemiological curve of Ottawa residents with confirmed COVID-19, by the EARLIEST of onset, test and reported date, by outbreak association† (n=2,036)



Notes:

1. Data are from the COD as of 2:00 p.m. on June 16, 2020.
2. As the case is investigated and more information is available, the dates in the graph are updated.
3. Confirmed cases are those with a confirmed COVID-19 laboratory result as per the Ministry of Health Public health management of cases and contacts of COVID-19 in Ontario. March 25, 2020 version 6.0.
4. †Cases are associated with a specific, isolated community outbreak; a healthcare institutional outbreak; or no known outbreak (i.e., sporadic).
5. A patient's exposure may have occurred up to 14 days prior to onset of symptoms.
6. *Symptomatic cases occurring in approximately the last 14 days are likely under-reported due to the time for individuals to seek medical assessment, availability of testing, and receipt of test results.
7. Healthcare institutions include long term care facilities, retirement homes, and hospitals.
8. § Surveillance testing for COVID-19 began in long term care facilities on April 25, 2020.
9. The number of reported confirmed community cases underestimates the actual number of infections. Information on overall infection rates in Canada will not be available until large studies on COVID-19 antibody presence in blood serum are conducted. Based on available information, the actual number of infections may lie from 5 to 30 times or more than the reported number of cases.[1]

[1] Richterich P. Severe underestimation of COVID-19 case numbers: Effect of epidemic growth rate and test restrictions. *medRxiv.* April 2020: 2020.04.13. doi.org/10.1101/2020.04.13.20064220

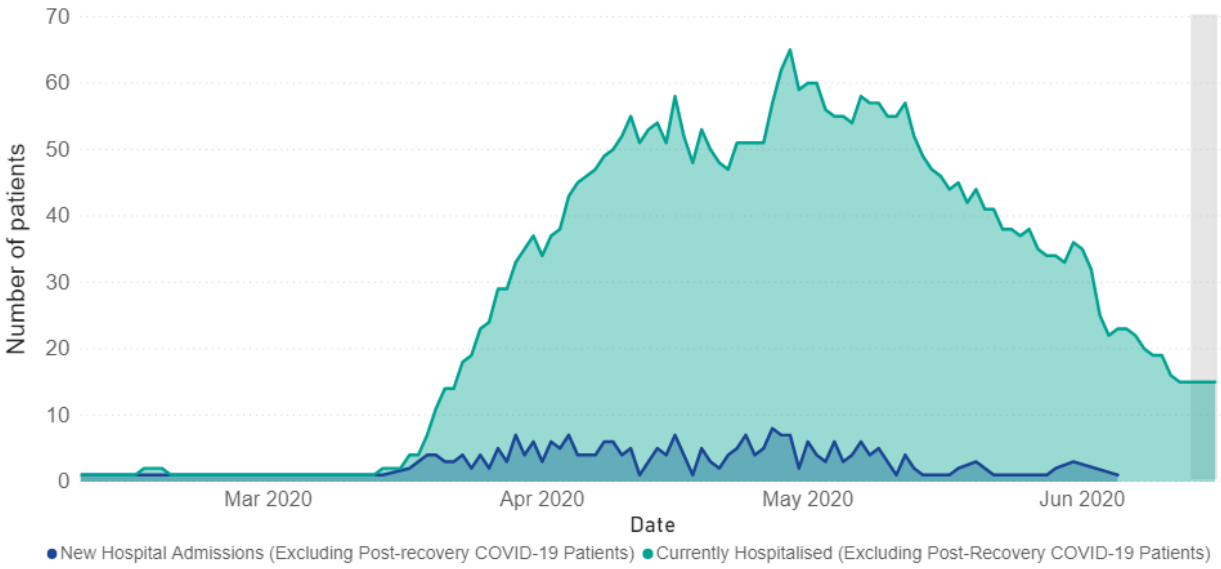
Severity of Cases

The data in Figure 4 present information about Ottawa residents with COVID-19 who have been admitted to hospitals in Ottawa. These indicators help us monitor the level and severity of infection within the City.

The number of hospital admissions recorded in the past 3-5 days should be considered preliminary as hospital data are still being received and entered for this time period.

This measure is intended to be an indicator of hospitalizations from new COVID-19 infections. Therefore, the data do not include hospitalizations for Ottawa residents with confirmed COVID-19 whose COVID-19 infection was deemed resolved and are subsequently hospitalized, due to sequelae (lingering effects) of COVID-19 or reasons other than COVID-19.

Figure 4. Number of Ottawa residents with confirmed COVID-19 newly admitted to hospital and number currently hospitalized, by day



Notes:

1. Data are from the COD as of 2:00 p.m. on June 16, 2020. Confirmed cases are those with a confirmed COVID-19 laboratory result as per the Ministry of Health Public health management of cases and contacts of COVID-19 in Ontario. March 25, 2020 version 6.0.
2. The light green curve represents the number of COVID-19 patients hospitalized. The dark blue curve represents the number of newly hospitalized COVID-19 patients.
3. This measure is intended to be an indicator of hospitalizations from new COVID-19 infections. Therefore, the data do not include hospitalizations for Ottawa residents with confirmed COVID-19 whose COVID-19 infection was deemed resolved and are subsequently hospitalized, due to sequelae (lingering effects) of COVID-19 or reasons other than COVID-19.
4. New admissions, discharges, deaths, and data entry lags contribute to daily fluctuations in the number of patients currently in hospital making comparisons to the previous day difficult. New hospital admissions and counts of currently in hospital may lag and are subject to change as the hospitalization information is tied to case investigation. Comparisons should not be made between the number of patients currently in hospital and new hospital admissions since hospitalization information is only updated once a patient's COVID-19 infection is confirmed. Admission information would then be updated retrospectively. For example, there can be a delay between when a patient is admitted to hospital, tested for COVID-19, and receive test results. If positive results are received, a case investigation begins and their hospitalization information is updated, resulting in a lag in the newly admitted and currently hospitalized information.

Table 2. Age of Ottawa residents with confirmed COVID-19 that have been hospitalized (cumulative) and in intensive care (cumulative) (n=2,036)

Measure	Hospitalizations (% of cases within age group)	ICU Admissions (% of cases within age group)	Deaths (% of cases within age group)
Age Group			
0 to 9 years	0	0	0
10 to 19 years	0	0	0
20 to 29 years	4 (2%)	0	0
30 to 39 years	11 (4%)	3 (1%)	1 (<1%)
40 to 49 years	15 (6%)	6 (2%)	0
50 to 59 years	37 (13%)	15 (5%)	7 (2%)
60 to 69 years	49 (21%)	14 (6%)	18 (8%)
70 to 79 years	47 (26%)	12 (7%)	37 (21%)
80 to 89 years	49 (18%)	6 (2%)	105 (39%)
90+ years	25 (13%)	1 (<1%)	92 (47%)
Unknown	0	0	0
Median age	71 years	63 years	87 years
Age range	24 – 102 years	32 – 90 years	39 – 105 years
Total	**237 (12%)**	**57 (3%)**	**260 (13%)**

Notes:

1. Data are from the COD as of 2:00 p.m. on June 16, 2020.
2. This measure is intended to be an indicator of hospitalizations from new COVID-19 infections. Therefore, the data do not include hospitalizations for Ottawa residents with confirmed COVID-19 whose COVID-19 infection was deemed resolved and are subsequently hospitalized, due to sequelae (lingering effects) of COVID-19 or reasons other than COVID-19.
3. The percent of hospitalizations, ICU admissions, and deaths by age group uses the number of cases for each age group as the denominator.

Table 3. COVID-19 volume, Ottawa hospitals (includes patients who live outside of Ottawa)

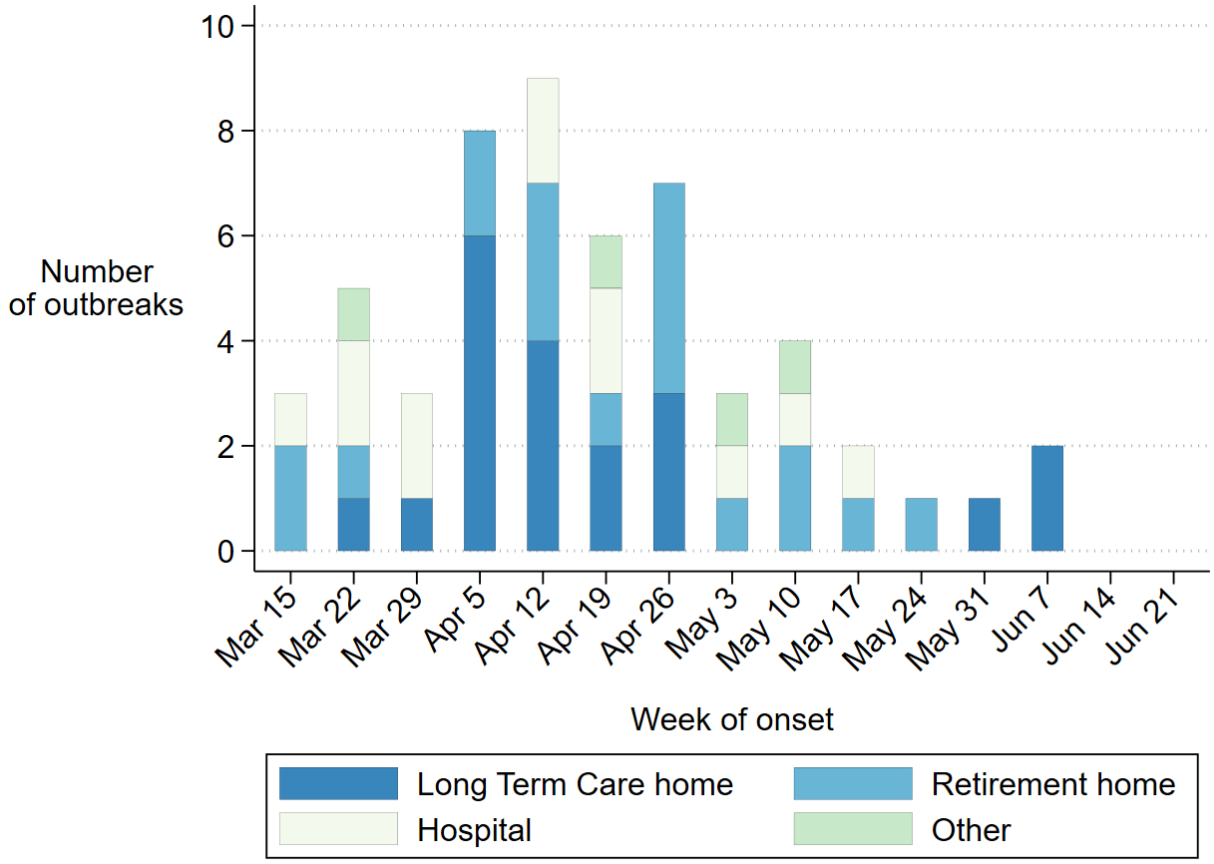
Measure	June 16, 2020	7-day median	30-day median
Currently hospitalized	9	16	39
Newly hospitalized*	0	1	1
Currently in intensive care	0	0	1
Currently in intensive care and vented	0	0	0

Notes:

1. Data are from the Ministry of Health COVID-19 Regional Hospital Dashboard from the Bed Census Summary Tool and the Critical Care Information System report, reported by hospitals and the Critical Care Information System report, as of June 16, 2020.
2. Data represent all lab confirmed COVID-19 patients cared for at Ottawa hospitals, including both patients who reside in Ottawa (captured in the COD) and patients who reside out-of-Ottawa who receive care at Ottawa hospitals.
3. Ottawa hospitals reporting inpatient data include The Children's Hospital of Eastern Ontario, The Ottawa Hospital, Queensway Carleton Hospital, The Montfort Hospital, The University of Ottawa Heart Institute, The Royal Ottawa, and Bruyère Continuing Care.
4. Ottawa hospitals reporting intensive care data include The Children's Hospital of Eastern Ontario, The Ottawa Hospital, Queensway Carleton Hospital, The Montfort Hospital and The University of Ottawa Heart Institute.
5. *Newly hospitalized refers to most current day for which data are available.

Outbreaks

Figure 5: Total number of COVID-19 outbreaks in Ottawa institutions[4]



Notes:
1. Data from iPHIS as of 2:00 pm on June 16, 2020.
2. 46 outbreaks are closed and 8 are active. Investigation and data entry are ongoing.
3. These outbreaks reflect the definitions at the time they were declared open.
4. Institutions include long-term care homes, retirement homes, public hospitals, and other institutions (e.g. group homes, shelters, assisted living).

There have been four community outbreaks in Ottawa. There are currently no ongoing community outbreaks.

Table 1. Community outbreaks of confirmed COVID-19 in Ottawa

Setting	Ongoing Outbreaks	Closed Outbreaks	# Cases	# Deaths
Workplace	0	3	48	0
Residential	0	1	14	0
Total	**0**	**4**	**62**	**0**

Notes:
1. Data are from the COD as of 2:00 p.m. on June 16, 2020.
2. In workplace settings, the occurrence of two or more cases of laboratory-confirmed COVID-19 with an epidemiological link (i.e., there is reasonable probability of acquisition in the workplace) is considered an outbreak.

Special Focus: Occupation

Information on the occupations of those infected with COVID-19 can improve our understanding of who is most at risk and how the disease is spreading. We have compared the occupations of Ottawa workers with laboratory-confirmed COVID-19 to occupation data available from the 2016 Census for Ottawa. The categories used are based on the 10 broad occupational categories of the National Occupational Classification.

- 62% of COVID-19 cases with known employment were health care workers.
- Health care workers (personal support workers, nurses, doctors) are at the highest risk. Although personal protective equipment helps prevent infection, regular encounters with COVID-19 infected patients, difficulties physically distancing in the workplace, and limited ability to work from home increase risk.
- Approximately 7% (553/7965) of all health care workers providing clinical care in Ottawa have been infected with COVID-19.
- Of the 553 health care workers, 392 (71%) were involved in healthcare institutional outbreaks including 325 working in long-term care homes.
- Health care workers have 21 (95%CI 19.0 - 23.4) times the risk of lab-confirmed COVID-19 compared to the total of those with known occupation; however, there is some ascertainment bias because health care workers are more likely to be tested and have their occupation accurately recorded.
- Of the 769 retired persons, 648 (84%) were involved in healthcare institutional outbreaks including 577 living in long-term care homes.

Table 5. Occupations reported by confirmed COVID-19 cases up to June 14, 2020, compared to reported occupations, Ottawa workers ages 15 and older

Occupation Category	Number of Cases[1] (% of Total)	Number of Residents[2]	Rate per 1000	Relative Risk (95% CI)
Management	16 (2%)	38,635	0.4	0.1* (0.08 - 0.21)
Business, finance and administration	28 (3%)	32,580	0.9	0.3* (0.18-0.38)
Natural and applied sciences	35 (4%)	48,445	0.7	0.2 (0.16 – 0.31)
Health care	553 (62%)	7,965	69.4	21.1* (19.0 - 23.4)
Education, law and social, community and government services	97 (11%)	31,275	3.1	0.9 (0.76 – 1.16)
Art, culture, recreation and sport	9 (1%)	8,815	1.0	0.3* (0.16 – 0.60)
Sales and service	119 (13%)	55,915	2.1	0.6* (0.53 – 0.78)
Trades, transport and equipment operators	31 (3%)	39,860	0.8	0.2* (0.16 – 0.34)
Natural resources, agriculture and related production occupations	3 (<1%)	4,155	0.7	0.2* (0.07-0.68)
Manufacturing and utilities	4 (<1%)	3,865	1.0	0.3* (0.12 – 0.84)
Total	**895**	**271,510**	3.3	Reference
Missing	257	-	-	-
Not in Labour Force	829	-	-	-
Retired	769	-	-	-
Stay at home	4	-	-	-
Student	25	-	-	-
Unemployed	31	-	-	-

Notes:

1. *indicates a statistically significant different risk compared to the Total group based on whether the 95% confidence interval (CI) of the relative risk includes 1.0.
2. The Total group was chosen as the reference due to the high number of missing occupations in non-health care occupations.
3. Data are from the COD as of 2:00 p.m. on June 14, 2020.
4. Labour force data from Statistics Canada, 2016 Census of Population, Statistics Canada Catalogue no. 98-400-X2016295. Accessed June 13, 2020.

Limitations

Confirmed cases in non-health care occupations are underestimated and the relative risk of infection among health care workers is likely overestimated for several reasons:

- Health care workers are more likely to be tested for COVID-19 because of earlier eligibility for testing in Ontario, job requirements, and surveillance testing in long-term care homes.
- 257 cases between 15 and 69 years old were missing information on occupation.
- Health care worker occupation is more likely to be accurately captured due to provincial reporting requirements.
- In some cases, it was not possible to exclude non-clinical workers from the health care worker category.
- The labour force data are based on a 25% sample in the 2016 Census of Canada, and do not account for growth in the health care category or changes in other categories up to 2020.

Any case with retired noted in the COD file or aged 70 and over was considered retired. This could incorrectly categorize some cases still working over the age of 70.

Please use the following citation when referencing this document:

Ottawa Public Health. COVID-19 Epidemiology Weekly Supplement. June 17, 2020. Ottawa (ON): Ottawa Public Health; 2020.

For further information about COVID-19 in Ottawa, visit ottawapublichealth.ca.

Data Tables

Data table for Figure 1 (Age of Ottawa residents with confirmed COVID-19)

Age	Number of Cases	Population	Rate (per 100,000)
0-9 years	31	109,973	28.2
10-19 years	59	113,243	52.1
20 to 29 years	249	161,498	154.2
30 to 39 years	259	158,259	163.7
40 to 49 years	269	134,815	199.5
50 to 59 years	288	139,786	206.0
60 to 69 years	234	118,913	196.8
70 to 79 years	181	75,781	238.8
80 to 89 years	270	33,540	805.0
90+ years	196	8,848	2215.2
Total	**2036**	**1,054,656**	**193.0**

Data table for Figure 2 will be available on Open Ottawa (Excel file) shortly.
Data table for Figure 3 are available on Open Ottawa (csv file).
Data table for Figure 4 are available on Open Ottawa (csv file).
Data table for Figure 5 are available on Open Ottawa (csv file).