

## Enhanced Epidemiological Summary

# (ARCHIVED) COVID-19 in Health Care Workers in Ontario

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### ARCHIVED DOCUMENT

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This report includes the most current information available from iPHIS and other local case management systems (iPHIS plus) as of **June 22, 2020**.

## Purpose

This report provides a focused analysis of COVID-19 among health care workers in Ontario using data from the integrated Public Health Information System (iPHIS) and the local case management systems.

Health care workers include cases that reported 'Yes' to any of the occupations: health care worker, doctor, nurse, dentist, dental hygienist, midwife, other medical technicians, personal support worker, respiratory therapist, or first responder. Additional information is provided in the [Technical Notes](#).

All data in this report are preliminary and may change as more case reports and case details are received. Further details on the status of all COVID-19 cases in Ontario are provided in the [Daily Epidemiologic Summary](#) and the interactive [Ontario COVID-19 Data Tool](#) to explore recent COVID-19 data by public health unit, age group, sex, and trends over time.

## Highlights

- There are 5,815 confirmed cases of COVID-19 in health care workers (HCW) reported in Ontario as of June 22, 2020.
  - 81.0% are female, 18.7% are male.
  - Nurses comprise the largest proportion of HCW cases with a specified occupation (22.0% of COVID-19 cases in health care workers overall and 70.4% of health care workers who specified type of occupation).

- 44.5% of HCW cases were not associated with an outbreak; of the outbreak-associated cases, 69.1% occurred in a long-term care home setting
- 13 deaths have been reported among health care workers for an overall case fatality of 0.2% (please note there may be a reporting delay for deaths in iPHIS).

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## Case Characteristics

**Table 1. Summary of confirmed cases of COVID-19 (n=5,815) by health care worker status: Ontario, January 15, 2020 to June 22, 2020**

	Number of HCW	Percentage of HCW	Number of non-HCW	Percentage of non-HCW
Number of cases	5,815	N/A	28,038	N/A
Gender: Male	1,090	18.7	14,304	51.0
Gender: Female	4,711	81.0	13,476	48.1
Gender: Unknown	14	0.2	258	0.9
Ages: 19 and under	61	1.0	1,502	5.4
Ages: 20-39	2,225	38.3	7,405	26.4
Ages: 40-59	2,885	49.6	7,452	26.6
Ages: 60-79	635	10.9	5,878	21.0
Ages: 80 and over	8	0.1	5,792	20.7
Age: Unknown	1	0.0	9	0.0

**Data Source:** iPHIS plus

**Table 2. Summary of confirmed cases of COVID-19 among health care workers by occupation: Ontario, January 15, 2020 to June 22, 2020**

Occupation	Number of cases	Percentage
Nurse	1,278	22.0%
Personal Support Worker	302	5.2%
Physician	123	2.1%
First Responder	97	1.7%
Other <sup>1</sup>	16	0.3%
Unspecified HCW occupation	3,999	68.8%
<b>Total HCW</b>	<b>5,815</b>	<b>100.0%</b>

<sup>1</sup> Other includes midwives, medical technicians, dental hygienists, respiratory therapists.

**Data Source:** iPHIS plus

**Table 3. Summary of confirmed cases of COVID-19 among health care workers (n=5,815) by outbreak setting<sup>1</sup>: Ontario, January 15, 2020 to June 22, 2020**

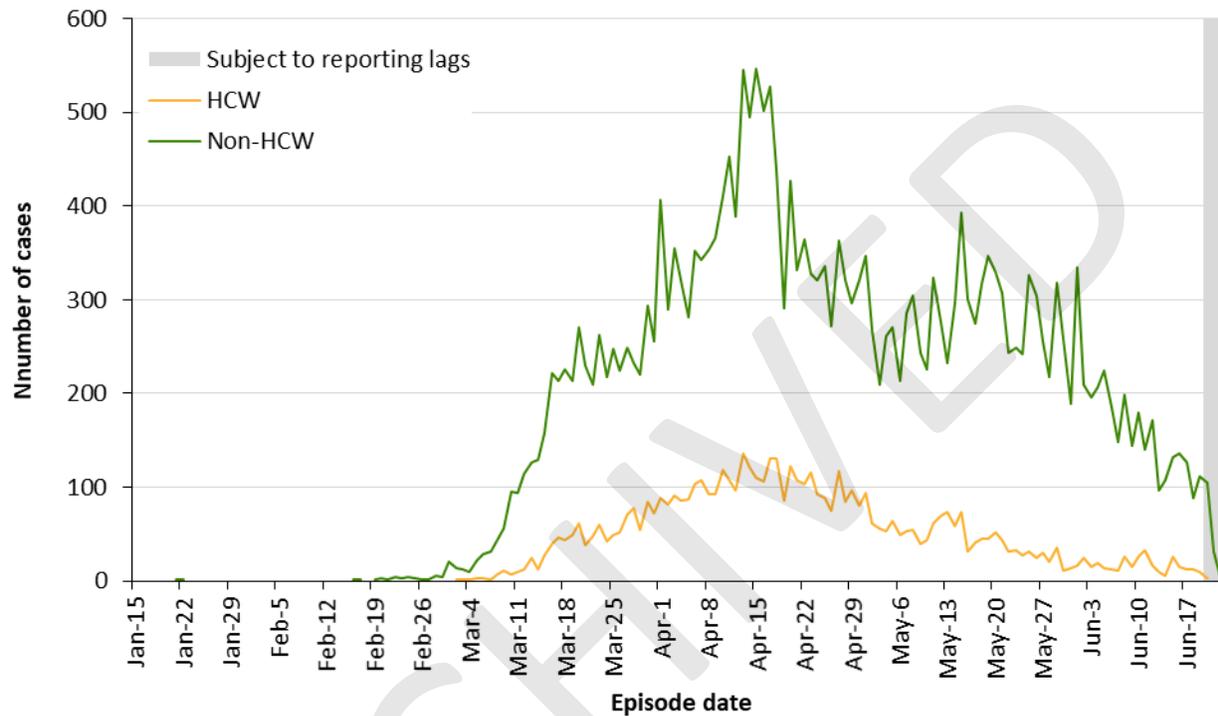
<b>Outbreak Setting</b>	<b>Number of cases</b>	<b>Percentage</b>
Long-term care home	2,227	38.3%
Hospital	433	7.4%
Retirement home	366	6.3%
Group home	136	2.3%
Hospice	20	0.3%
Shelter	15	0.3%
Health care clinic	7	0.1%
Other	21	0.4%
Non-outbreak associated cases among HCW	2,590	44.5%
<b>Total HCW</b>	<b>5,815</b>	<b>100.0%</b>

<sup>1</sup> All cases associated with public health unit-specific outbreaks are assigned an outbreak setting. Cases not linked to an outbreak are considered 'non-outbreak associated cases' and do not have an outbreak setting assigned.

**Data Source:** iPHIS

## Temporal Trends

**Figure 1. Confirmed cases of COVID-19 by health care worker status and approximation of symptom onset date<sup>1</sup>: Ontario, January 15, 2020 to June 22, 2020<sup>2</sup>**

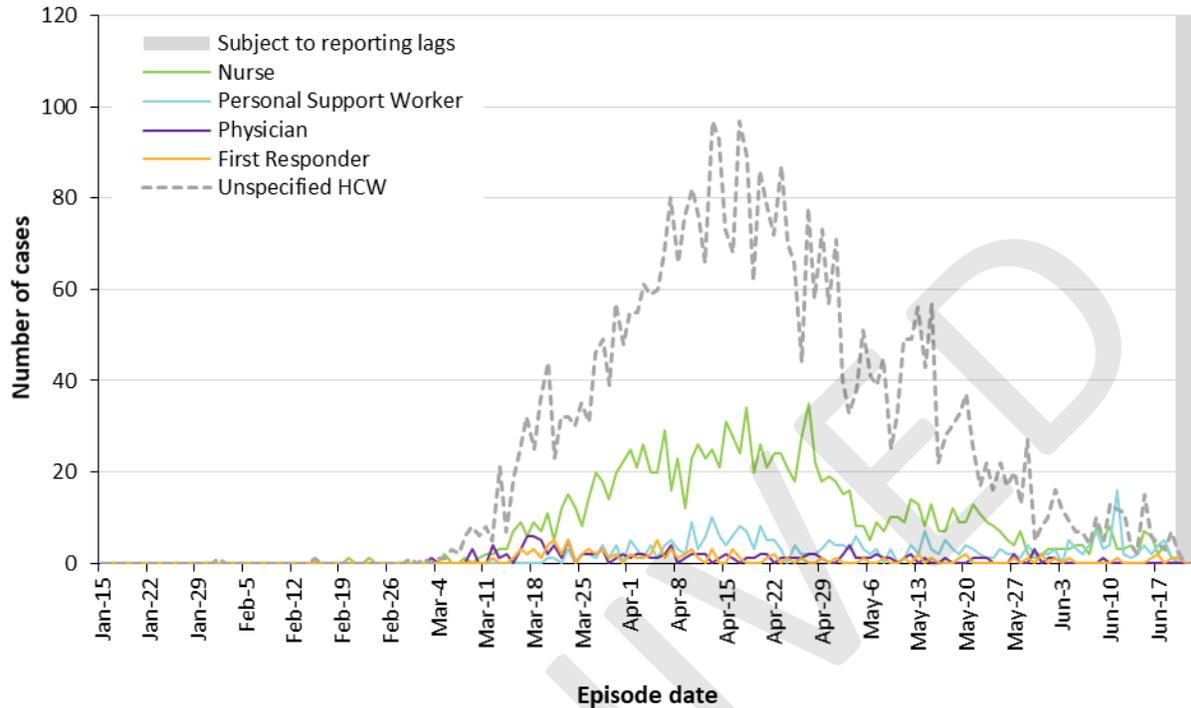


<sup>1</sup> This date, referred to as episode date, is intended to approximate symptom onset date. It is calculated using the first available date based on the hierarchy: date of symptom onset > specimen collection/test date > date reported to public health.

<sup>2</sup> Interpret case counts for the most recent days (approximately 3 days) with caution due to reporting lags. The light grey shading indicates the most recent period during which case counts are likely to be updated.

**Data Source:** iPHIS plus

**Figure 2. Confirmed cases of COVID-19 among health care workers by occupation and approximation of symptom onset date<sup>1</sup>: Ontario, January 15, 2020 to June 22, 2020<sup>2</sup>**



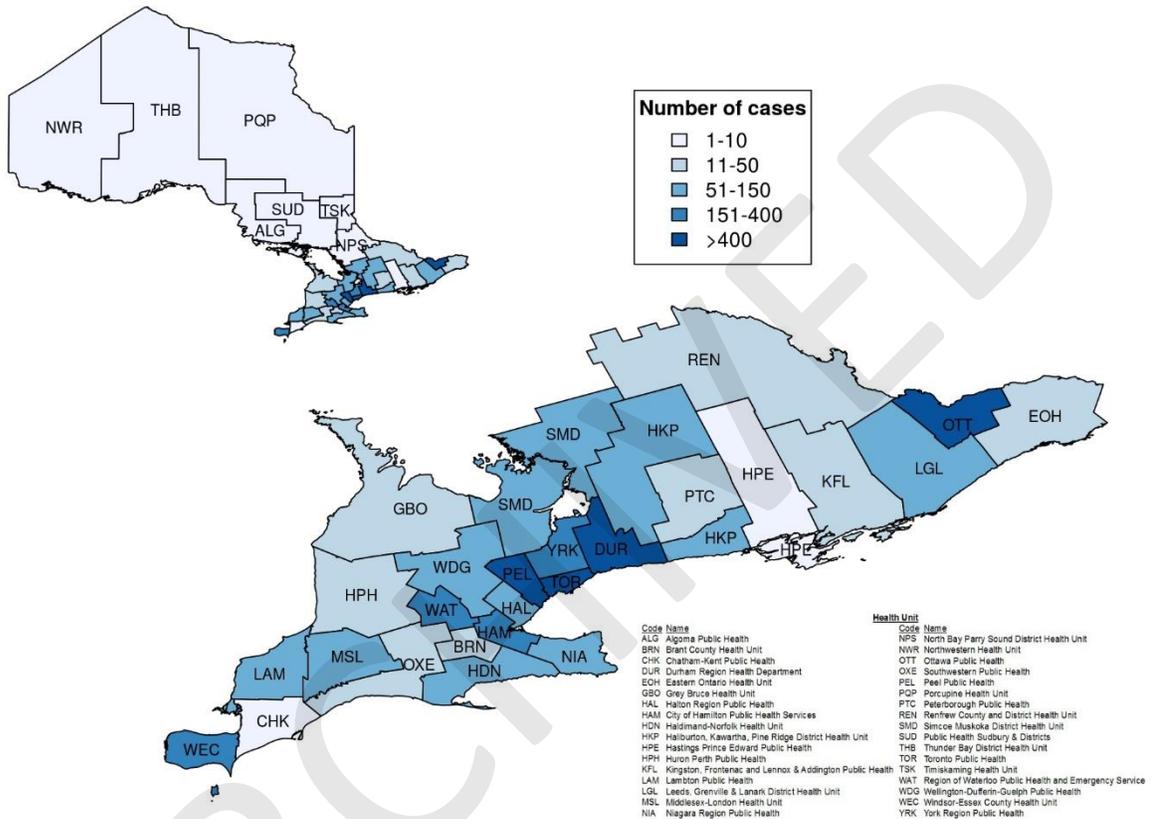
<sup>1</sup> This date, referred to as episode date, is intended to approximate symptom onset date. It is calculated using the first available date based on the hierarchy: date of symptom onset > specimen collection/test date > date reported to public health.

<sup>2</sup> Interpret case counts for the most recent days (approximately 3 days) with caution due to reporting lags. The light grey shading indicates the most recent period during which case counts are likely to be updated.

**Data Source:** iPHIS plus

# Geography

**Figure 3. Number of confirmed cases of COVID-19 among health care workers (n=5,815) by public health unit: Ontario, January 15, 2020 to June 22, 2020<sup>1</sup>**



<sup>1</sup> Cases and rates by public health unit are provided in Table 4.

**Data Source:** iPHIS plus

**Table 4. Confirmed cases of COVID-19 among health care workers (n=5,815) by public health unit: Ontario, January 15, 2020 to June 22, 2020**

Public Health Unit Name	Cases	Rate per 100,000 total population
Northwestern Health Unit	10	11.4
Thunder Bay District Health Unit	6	4.0
<b>TOTAL NORTH WEST</b>	16	6.7
Algoma Public Health	4	3.5
North Bay Parry Sound District Health Unit	3	2.3
Porcupine Health Unit	9	10.8
Public Health Sudbury & Districts	10	5.0
Timiskaming Health Unit	6	18.4
<b>TOTAL NORTH EAST</b>	32	5.7
Ottawa Public Health	444	42.1
Eastern Ontario Health Unit	37	17.7
Hastings Prince Edward Public Health	9	5.3
Kingston, Frontenac and Lennox & Addington Public Health	17	8.0
Leeds, Grenville & Lanark District Health Unit	85	49.1
Renfrew County and District Health Unit	12	11.0
<b>TOTAL EASTERN</b>	604	31.4
Durham Region Health Department	436	61.2
Haliburton, Kawartha, Pine Ridge District Health Unit	53	28.1
Peel Public Health	916	57.0
Peterborough Public Health	26	17.6
Simcoe Muskoka District Health Unit	109	18.2

Public Health Unit Name	Cases	Rate per 100,000 total population
York Region Public Health	312	25.5
<b>TOTAL CENTRAL EAST</b>	<b>1,852</b>	<b>41.3</b>
Toronto Public Health	1,887	60.5
<b>TOTAL TORONTO</b>	<b>1,887</b>	<b>60.5</b>
Chatham-Kent Public Health	6	5.6
Grey Bruce Health Unit	35	20.6
Huron Perth Public Health	23	16.5
Lambton Public Health	68	51.9
Middlesex-London Health Unit	143	28.2
Southwestern Public Health	28	13.2
Windsor-Essex County Health Unit	207	48.7
<b>TOTAL SOUTH WEST</b>	<b>510</b>	<b>30.2</b>
Brant County Health Unit	29	18.7
City of Hamilton Public Health Services	155	26.2
Haldimand-Norfolk Health Unit	59	51.7
Halton Region Public Health	121	19.5
Niagara Region Public Health	146	30.9
Region of Waterloo Public Health and Emergency Services	284	48.6
Wellington-Dufferin-Guelph Public Health	120	38.5
<b>TOTAL CENTRAL WEST</b>	<b>914</b>	<b>32.1</b>
<b>TOTAL ONTARIO</b>	<b>5,815</b>	<b>39.1</b>

## Severity

**Table 5. Confirmed cases of COVID-19 among health care workers by severity: Ontario, January 15, 2020 to June 22, 2020**

Age group	Number of cases	Number of hospital admissions	Age-specific hospital admissions (%)	Number of ICU admissions	Age-specific ICU admissions (%)	Number of deaths	Age-specific case fatality (%)
<20 years	61	0	0.0	0	0.0	0	0.0
20-39 years	2,225	33	1.5	3	0.1	0	0.0
40-59 years	2,885	128	4.4	35	1.2	6	0.2
60-79 years	635	60	9.4	16	2.5	3	0.5
≥80 years	8	4	50.0	0	0.0	4	50.0
Unknown age	1	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>5,815</b>	<b>225</b>	<b>3.9</b>	<b>54</b>	<b>0.9</b>	<b>13</b>	<b>0.2</b>

Data Source: iPHIS plus

**Table 6. Confirmed cases of COVID-19 among non-health care workers by severity: Ontario, January 15, 2020 to June 22, 2020**

Age group	Number of cases	Number of hospital admissions	Age-specific hospital admissions (%)	Number of ICU admissions	Age-specific ICU admissions (%)	Number of deaths	Age-specific case fatality (%)
<20 years	1,502	25	1.7	2	0.1	1	0.1
20-39 years	7,405	251	3.4	44	0.6	11	0.1
40-59 years	7,452	858	11.5	270	3.6	96	1.3
60-79 years	5,878	1,570	26.7	441	7.5	690	11.7
≥80 years	5,792	1,303	22.5	98	1.7	1,808	31.2
Unknown age	9	1	11.1	0	0.0	0	0.0
<b>Total</b>	<b>28,038</b>	<b>4,008</b>	<b>14.3</b>	<b>855</b>	<b>3.0</b>	<b>2,606</b>	<b>9.3</b>

Data Source: iPHIS plus

# Technical Notes

## Data Sources

- The data for this report were based on:
  - Information extracted from the Ontario Ministry of Health (Ministry) integrated Public Health Information System (iPHIS) database, as of **June 22, 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 **June 22, 2020 at 2 p.m.**
- iPHIS and iPHIS plus (which includes iPHIS, CORES, The COD and COVID-19 CCMtool) are dynamic disease reporting systems, which allow 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 Ministry, 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 units and recorded in iPHIS plus. 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.
- Health care workers reported 'Yes' to any of the occupations: health care worker, first responder, doctor, nurse, dentist, dental hygienist, midwife, other medical technicians, personal support worker, respiratory therapist
  - Occupational fields for dental hygienist, midwife, other medical technicians, personal support worker, and respiratory therapist were added to iPHIS on May 29, 2020. Data for new fields can be entered for cases reported prior to May 29, 2020, however, ascertaining additional information for these historical cases may be limited.
- Lags in iPHIS plus data entry due to 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 plus.

- Case episode date is based on an estimate of the best date of disease onset. 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.
- 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.
- 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.
- Deaths are determined by using the outcome field in iPHIS plus. 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.

## 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](mailto:cd@oahpp.ca).

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