

ENHANCED EPIDEMIOLOGICAL SUMMARY

Invasive Group A Streptococcal (iGAS) Disease in Ontario: October 1, 2023 to March 31, 2024

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Introduction

This report provides an epidemiologic summary of iGAS activity in Ontario from October 1, 2023 to March 31, 2024, compared to the previous season's iGAS activity from October 1, 2022 to March 31, 2023, based on information entered in the Ontario Ministry of Health (MOH) integrated Public Health Information System (iPHIS) database. For comparison purposes, data on monthly confirmed iGAS case counts for the five pre-pandemic seasons (October 1, 2014 – September 30, 2019) are included in [Appendix A](#). Additional data for the most recent pre-pandemic seasons relating to age distribution of cases, severity, geographic distribution and *emm* typing, can be found in the [Invasive Group A Streptococcal \(iGAS\) Disease in Ontario: October 1, 2022 to September 30, 2023 report](#).

An iGAS season is defined as the period spanning from October 1 to September 30.

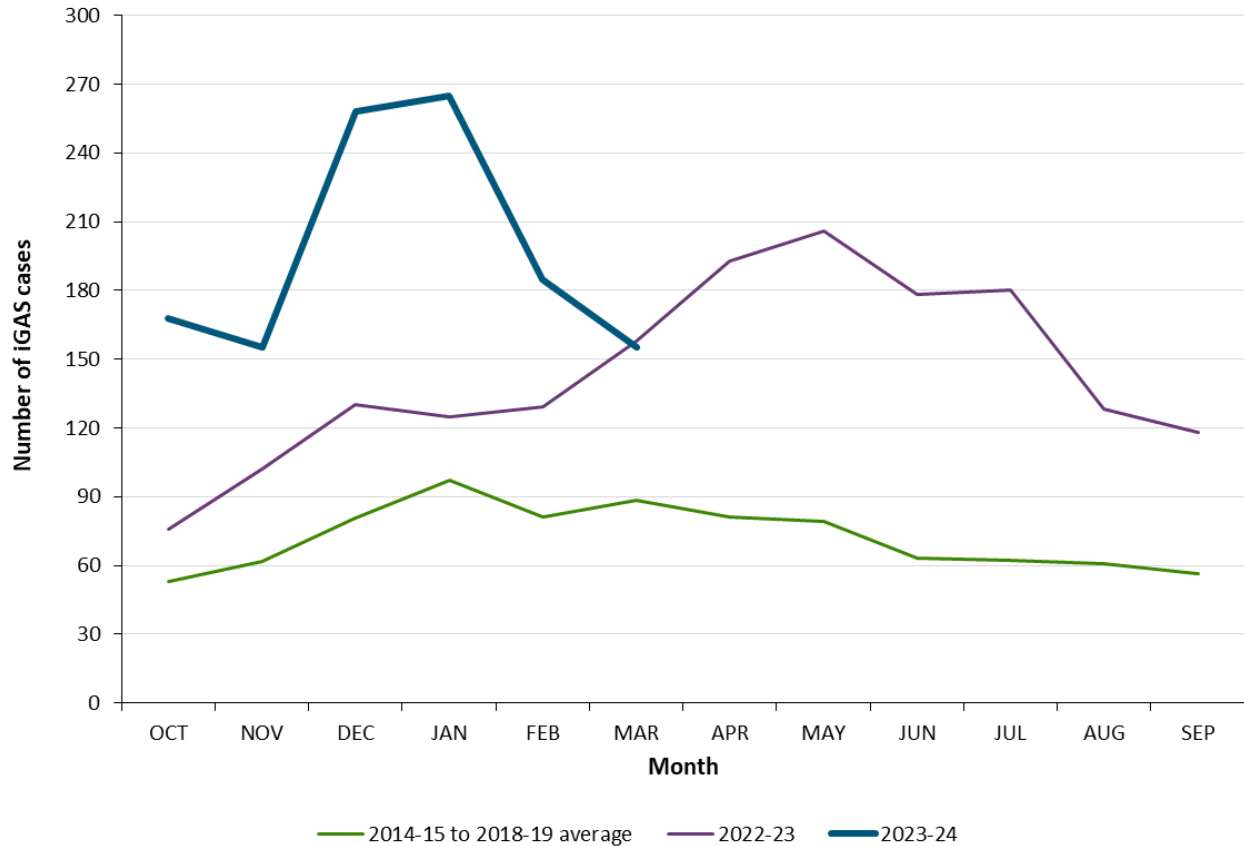
Highlights

- A total of 1,186 confirmed iGAS cases were reported in Ontario between October 1, 2023 and March 31, 2024, corresponding to an overall incidence rate of 7.6 cases per 100,000 population.
- There was an overall decrease in the number of iGAS cases reported in March 2024 (n=155) compared to February 2024 (n=185) ([Figure 1](#)), continuing the decline from January's peak. The number of iGAS cases among those under 18 years of age has remained relatively stable since declining from the peak in December 2023 (n=46) with monthly case counts ranging from 20 to 25 cases ([Figure 2](#)).
- In March 2024, rates of confirmed iGAS cases were highest in Northwestern Health Unit, followed by Peterborough Public Health, Haliburton, Kawartha, Pine Ridge District Health Unit, and North Bay Parry Sound District Health Unit ([Figure 3](#)). Northwestern Health Unit and Hastings Prince Edward Public Health have reported the highest average monthly rates for the season thus far ([Figure 4](#)).
- Those 65 years of age and older reported the highest incidence rate (13.2 cases per 100,000 population), followed by those in the five to nine age group (8.9 cases per 100,000) ([Table 1](#)). Compared to the 2022-23 season, the largest rate increases in 2023-24 were seen in those aged five to nine years (242.3% increase) and 10 to 13 years (135.7% increase).

- The overall proportion of iGAS cases requiring hospitalization this season to date is slightly higher than the corresponding proportion for the previous season (78.2% vs. 75.7%, [Table 2](#)).
- As of March 31, 2024, 7.3% (11/150) of iGAS cases under 18 years of age have had a fatal outcome reported, which is higher than the corresponding proportion for the previous season (5.0% of cases under 18 years of age). In the 2023-24 season, 11 deaths among those under 18 years of age have been reported to date, which is approximately 91.7% of the total number of pediatric deaths reported for all of the 2022-23 season (12 cases) ([Table 2](#)).¹
- Among iGAS cases in the 2023-24 season to date, *emm* types were available for 60.0% of cases 18 years of age and above, and for 63.3% of cases under 18 years of age ([Table 3](#)), however these percentages are expected to increase because *emm* types are often confirmed after initial public health notification and follow up with the case. So far this season, the most commonly reported *emm* types overall are *emm1*, *emm12* and *emm80*.

Trends

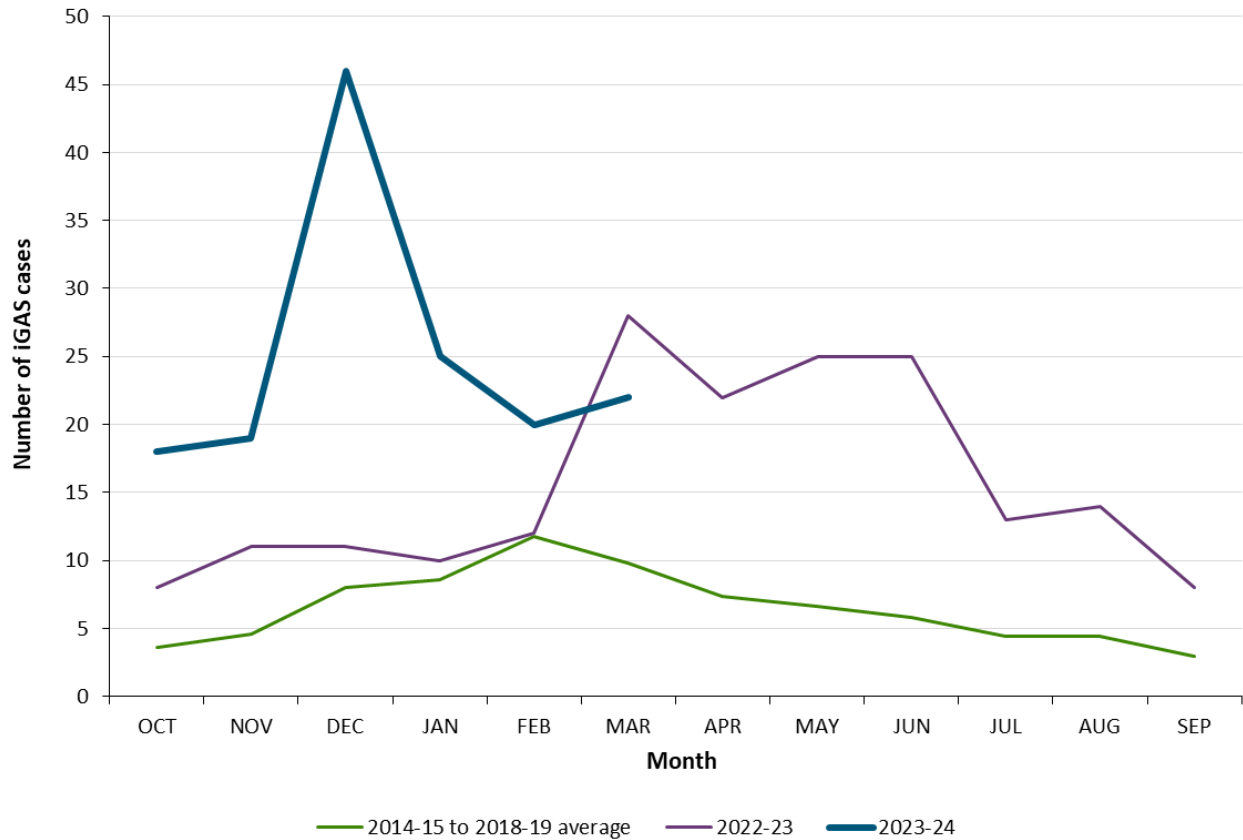
Figure 1: Confirmed iGAS Case Counts by Month for all Ages: Current Season (October 1, 2023 – March 31, 2024)* Compared to the 2022-23 Season (October 1, 2022 – September 30, 2023) and the Five Pre-Pandemic Season Average (October 1, 2014 – September 30, 2019)



Data source: iPHIS

*Data for the 2023-2024 season includes cases reported up to March 31, 2024. Data for the most recent reporting month should be interpreted with caution due to reporting and/or data entry lags.

Figure 2: Confirmed iGAS Case Counts by Month in Children 0-17 Years of Age: Current Season (October 1, 2023 – March 31, 2024)* Compared to the 2022-23 Season (October 1, 2022 – September 30, 2023) and the Five Pre-Pandemic Seasons (October 1, 2014 – September 30, 2019)



Data source: iPHIS

*Data for the 2023-2024 season includes cases reported up to March 31, 2024. Data for the most recent reporting month should be interpreted with caution due to reporting and/or data entry lags.

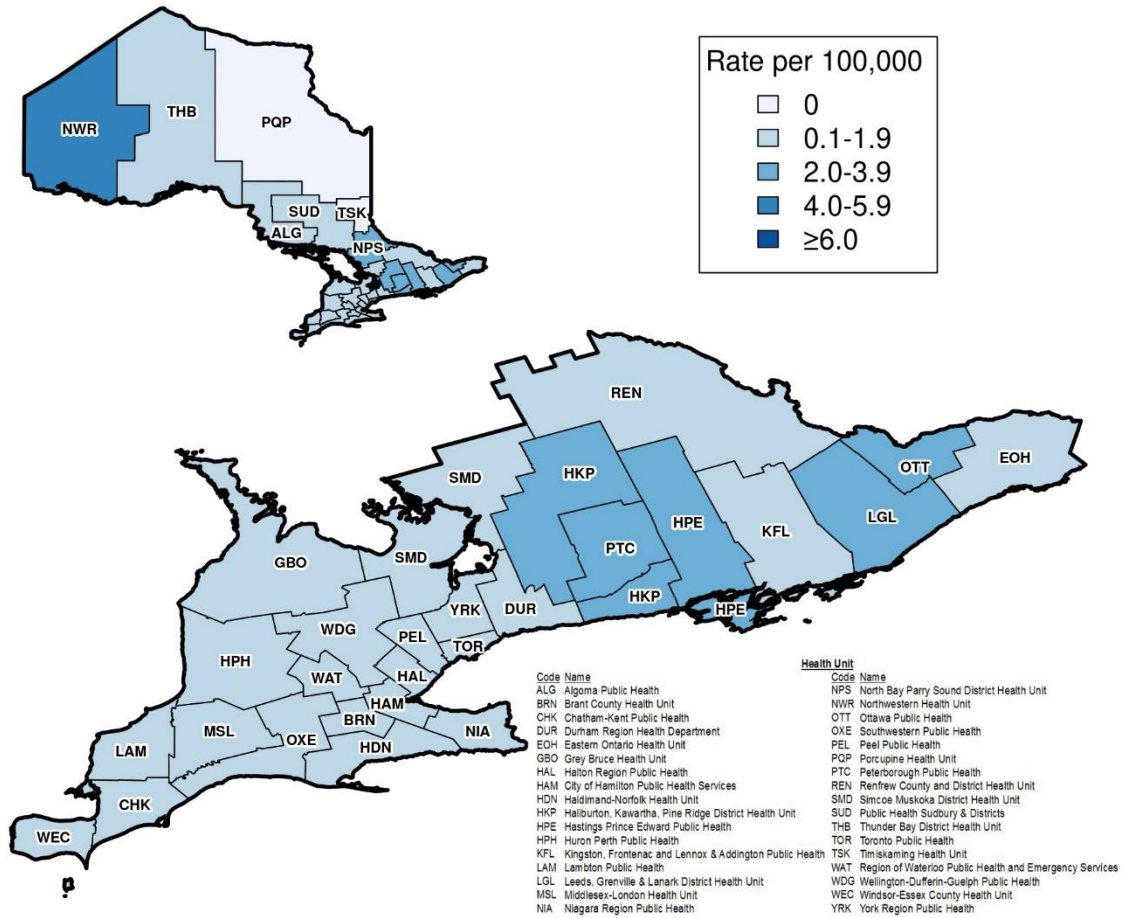
Table 1: Confirmed iGAS Cases and Rate (per 100,000 Population) by Age Group in Ontario: Current Season (October 1, 2023 – March 31, 2024) Compared to the 2022-23 Season (October 1, 2022 – March 31, 2023)*

Age group (years)	Current season: Total number of cases reported (October 1, 2023 – March 31, 2024)	Current season: Rate per 100,000 population (October 1, 2023 – March 31, 2024)	Previous season: Total number of cases reported (October 1, 2022 – March 31, 2023)	Previous season: Rate per 100,000 population (October 1, 2022 – March 31, 2023)	Percentage change in current season rate compared to 2022-23 season
< 1	6	4.0	9	6.1	-34.4%
1 – 4	48	8.2	36	6.2	+32.3%
5 – 9	69	8.9	20	2.6	+242.3%
10 – 13	21	3.3	9	1.4	+135.7%
14 – 17	6	0.9	6	0.9	0.0%
18 – 64	642	6.5	391	4.0	+62.5%
≥ 65	391	13.2	249	8.7	+51.7%
Unknown	3	N/A	0	N/A	N/A
Total	1,186	7.6	720	4.7	+61.7%

Data source: iPHIS

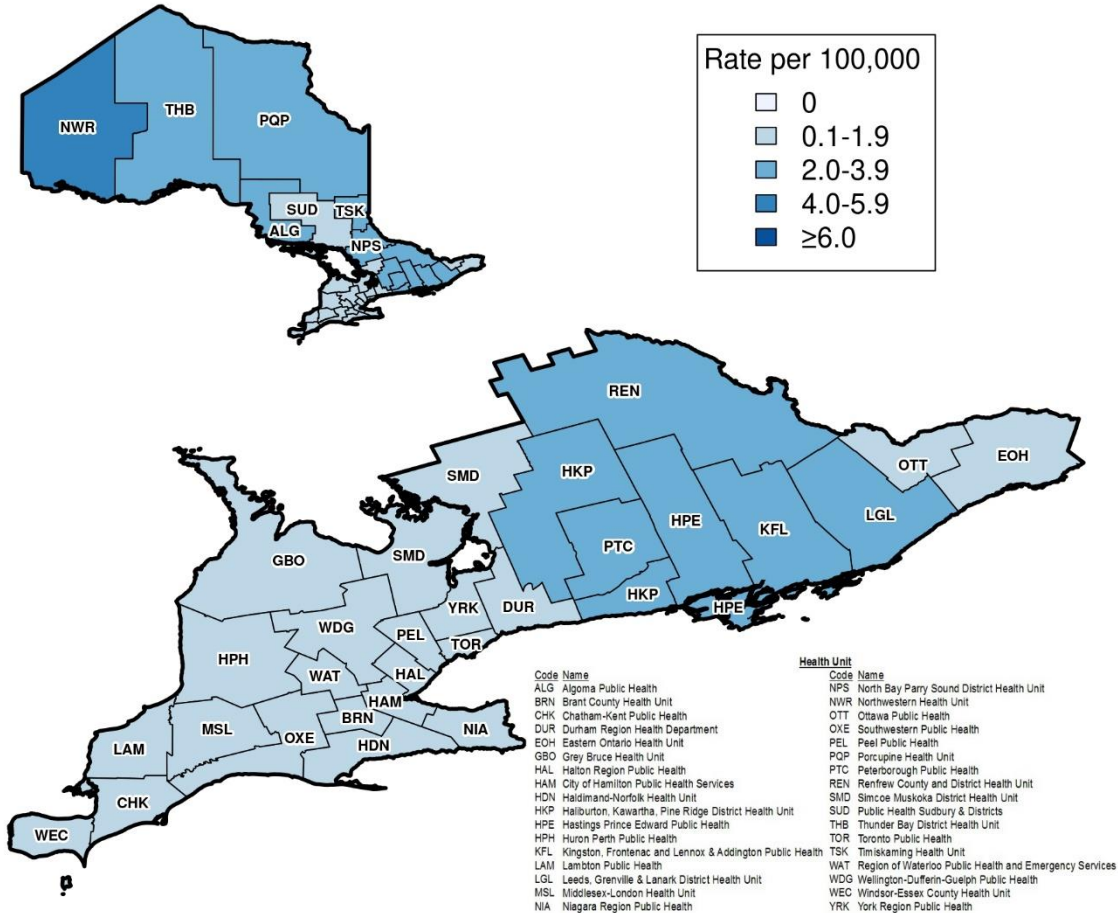
*For the previous season, only data for confirmed iGAS cases reported October 1, 2022 – March 31, 2023 are presented for comparability to the current iGAS season.

Figure 3: Rate of Confirmed Cases of iGAS Reported in March 2024 by Public Health Unit in Ontario



Data source: iPHIS

Figure 4. Monthly rate of confirmed cases of iGAS reported in the current season (October 1, 2023 – March 31, 2024) by public health unit: Ontario*



Data source: iPHIS

*The monthly rate was determined by dividing the cumulative rate of confirmed iGAS cases for each PHU by the number of months included in the reporting period (i.e., for data captured until March 31, 2024, the cumulative rate was divided by six to determine the monthly rate for each PHU).

Severity

Table 2: Severe Outcomes for Confirmed iGAS Cases by Age Group and Season in Ontario: Current Season (October 1, 2023 – March 31, 2024) Compared to the 2022-23 Season (October 1, 2022 – March 31, 2023)*

Age group (years)	Current season: Number (%) of cases hospitalized (October 1, 2023 – March 31, 2024)	Previous season: Number (%) of cases hospitalized (October 1, 2022 – March 31, 2023)	Current season: Number (%) of cases with a fatal outcome (October 1, 2023 – March 31, 2024)	Previous season: Number (%) of cases with a fatal outcome (October 1, 2022 – March 31, 2023)
< 1	5/6 (83.3%)	6/9 (66.7%)	1/6 (16.7%)	0/9 (0.0%)
1 – 4	39/48 (81.3%)	32/36 (88.9%)	4/48 (8.3%)	3/36 (8.3%)
5 - 9	61/69 (88.4%)	15/20 (75.0%)	5/69 (7.2%)	1/20 (5.0%)
10 - 13	15/21 (71.4%)	6/9 (66.7%)	1/21 (4.8%)	0/9 (0.0%)
14 - 17	5/6 (83.3%)	5/6 (83.3%)	0/6 (0.0%)	0/6 (0.0%)
18 - 64	491/642 (76.5%)	288/391 (73.7%)	80/642 (12.5%)	42/391 (10.7%)
≥65	311/391 (79.5%)	193/249 (77.5%)	66/391 (16.9%)	53/249 (21.3%)
Unknown	0/3 (0.0%)	0/0 (0.0%)	0/3 (0.0%)	0/0 (0.0%)
Total	927/1,186 (78.2%)	545/720 (75.7%)	157/1,186 (13.2%)	99/720 (13.8%)

Data source: iPHIS

*For the previous season, only data for confirmed iGAS cases reported October 1, 2022 – March 31, 2023 are presented for comparability to the current iGAS season.

Table 3: Number (%) of Most Commonly Reported *Emm* Types Among Confirmed iGAS Cases in Ontario by Age Group*: Current Season (October 1, 2023 – March 31, 2024) Compared to the 2022-23 Season (October 1, 2022 – March 31, 2023)**

Most commonly reported <i>emm</i> type by rank	Current season: ≥ 18 years of age (October 1, 2023 – March 31, 2024)	Previous season: ≥ 18 years of age (October 1, 2022 – March 31, 2023)	Current season: < 18 years of age (October 1, 2023 – March 31, 2024)	Previous season: < 18 years of age (October 1, 2022 – March 31, 2023)
<i>emm1</i>	213 (34.4%)	37 (7.7%)	68 (71.6%)	24 (40.7%)
<i>emm80</i>	38 (6.1%)	40 (8.3%)	0 (0.0%)	0 (0.0%)
<i>emm12</i>	37 (6.0%)	55 (11.4%)	9 (9.5%)	23 (39.0%)
<i>emm82</i>	33 (5.3%)	58 (12.0%)	0 (0.0%)	0 (0.0%)
<i>emm59</i>	32 (5.2%)	7 (1.4%)	0 (0.0%)	0 (0.0%)
<i>emm74</i>	31 (5.0%)	22 (4.6%)	0 (0.0%)	0 (0.0%)
<i>emm49</i>	28 (4.5%)	67 (13.9%)	1 (1.1%)	3 (5.1%)
<i>emm41</i>	27 (4.4%)	15 (3.1%)	0 (0.0%)	1 (1.7%)
<i>emm92</i>	23 (3.7%)	14 (2.9%)	0 (0.0%)	0 (0.0%)
<i>emm2</i>	22 (3.5%)	5 (1.0%)	4 (4.2%)	2 (3.4%)
<i>emm76</i>	16 (2.6%)	10 (2.1%)	0 (0.0%)	1 (1.7%)
<i>emm28</i>	14 (2.3%)	11 (2.3%)	1 (1.1%)	2 (3.4%)
Other	106 (17.1%)	142 (29.4%)	12 (12.6%)	3 (5.1%)
Total with <i>emm</i> type	620 (60.0%)	483 (75.5%)	95 (63.3%)	59 (73.8%)
Total without <i>emm</i> type	413 (40.0%)	157 (24.5%)	55 (36.7%)	21 (26.3%)
Total	1,033 (100.0%)	640 (100.0%)	150 (100.0%)	80 (100.0%)

Data source: iPHIS

* Cases with an unknown age are excluded from this table.

**For the previous season, only data for confirmed iGAS cases reported October 1, 2022 – March 31, 2023 are presented for comparability to the current iGAS season.

Technical Notes

- The data for this report were based on information entered in iPHIS as of:
 - **April 8, 2024 at 9 a.m.** for cases reported October 1, 2022 onwards
 - **October 10, 2023 at 9 a.m.** for cases reported during the five pre-pandemic seasons (October 1, 2014 – September 30, 2019)
- iPHIS is a dynamic disease reporting system that allows ongoing updates to previously entered data. As a result, data extracted from iPHIS represent a snapshot at the time of extraction and may differ from previous or subsequent reports.
- These data only represent laboratory-confirmed cases of iGAS reported to public health and recorded in iPHIS. As a result, all case counts are subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours that may depend on severity of illness, clinical practices, and changes in laboratory testing and reporting behaviours.
- Population estimates used to calculate rates for total cases were calculated using the Ontario 2023 and 2024 population projections², sourced from the Ontario Ministry of Finance.
- Only iGAS cases meeting the confirmed case classification as listed in the Ontario Ministry of Health (MOH) surveillance case definitions are included in the reported case counts.
 - Provincial surveillance case definitions available online under the Infectious Diseases Protocol are the most current.
 - Changes to provincial surveillance case definitions and disease classifications have occurred over the years and thus may impact the analysis of trends over time. Cases are classified in iPHIS based on the Ontario MOH surveillance case definitions in use at the time the case was identified.
 - PHO's technical report "Factors Affecting Reporting Diseases in Ontario: Case Definition Changes and Associated Trends 1991-2016" and its associated appendix provide more detailed information on this topic.
- Cases are reported based on the Episode Date, which is an estimate of the onset date of disease for a case. In order to determine this date, the following hierarchy exists in iPHIS: Onset Date > Specimen Collection Date > Lab Test Date > Reported Date.
 - For example: If an Onset Date exists, it will be used as the Episode Date. If Onset Date is not available, then the next available date in the hierarchy (i.e., Specimen Collection Date) will be used, and so on.
- Hospitalized iGAS cases were determined based on a reported intervention type description of "Hospitalization" or "ICU" (Intensive Care Unit) and a reported intervention start date on or after the case's episode date.
- Fatal iGAS cases were determined based on a case outcome description of "Fatal" and the type of death not being reported as "Reportable disease was unrelated to cause of death."
- Cases for which the Diagnosing Health Unit (DHU) was reported as Ontario Ministry of Health and Long-Term Care (MOHLTC) (to signify a case that is not a resident of Ontario) or MUSKOKA-PARRY SOUND (a public health unit that no longer exists) were excluded from this analysis.

References

1. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Invasive Group A Streptococcal (iGAS) Disease in Ontario: October 1, 2022 to September 30, 2023. Toronto, ON: King's Printer for Ontario; 2023. Available from: https://www.publichealthontario.ca/-/media/Documents/I/2022/igas-enhanced-epi-children-0-to-17-years-of-age.pdf?rev=9d287b2b6d974631aead33cc73242984&sc_lang=en
2. Population Reporting. Population projections public health unit, 2022-2046 [data file]. Toronto, ON: Ontario. Ministry of Finance [producer]; Toronto, ON: Ontario. Ministry of Health, IntelliHealth Ontario [distributor]; [data extracted 2023 May 10].

Appendix A

Table A1: Confirmed iGAS Case Counts by Month Across all Ages: Current Season (October 1, 2023 - March 31, 2024)* Compared to the 2022-23 Season and the Five Pre-Pandemic Seasons (October 1, 2014 – September 30, 2019)

Month	2014 – 2015	2015 – 2016	2016 – 2017	2017 – 2018	2018 – 2019	2022 – 2023	2023 – 2024
October	31	29	55	81	70	76	168
November	42	41	63	63	99	102	155
December	72	47	95	92	96	130	258
January	78	76	96	138	97	125	265
February	42	75	87	121	80	129	185
March	62	69	102	96	114	158	155
April	55	53	82	126	89	193	-
May	63	52	76	106	99	206	-
June	49	40	68	83	75	178	-
July	41	45	72	73	79	180	-
August	39	44	61	74	85	128	-
September	35	50	55	61	81	118	-
Total	609	621	912	1,114	1,064	1,723	1,186

Data source: iPHIS

*Data for the 2023-2024 season includes cases reported up to March 31, 2024. Data for the most recent reporting month should be interpreted with caution due to reporting and/or data entry lags.

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Invasive Group A Streptococcal (iGAS) Disease in Ontario: October 1, 2023 to March 31, 2024. Toronto, ON: King's Printer for Ontario; 2024.

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