Infectious Disease Prevention and Control

Health Status by Program Area

Population Health Assessment
Southwestern Public Health
June 2019

Authors

Hadia Hussain, MPH
Epidemiologist/Program Evaluator
Foundational Standards
Southwestern Public Health

Melissa MacLeod, M.Sc.
Epidemiologist
Foundational Standards
Southwestern Public Health

Acknowledgements

We would like to thank the Infectious Disease Prevention and Control team for their engagement as well as our reviewers:

- Cara-Lee Coghill, Public Health Nurse, Infectious Disease Prevention and Control
- Robyn Latendresse, Public Health Nurse, Infectious Disease Prevention and Control
- Laura Gibbs, Program Manager, Foundational Standards
- Elaine Reddick, Program Manager, Infectious Disease Prevention and Control
- Susan MacIsaac, Program Director, Infectious Disease Prevention and Control
- Cynthia St. John, Chief Executive Officer (CEO)

How to cite this document:
Hussain H, MacLeod M. Infectious disease prevention and control: health status by program area. Southwestern Public Health; 2019.

Contents

Summary

This report is intended to complement the 2019 health status report titled Understanding our Communities' Health, which aimed to provide a high-level overview of the current health status of people residing in the Southwestern Public Health (SWPH) region.[1] This report includes many of the same indicators, but highlights differences by sociodemographic characteristics such as age, sex, income and education, where possible. These indicators were chosen based on the data needs of SWPH's Infectious Disease Prevention & Control team. The information included in this report may assist in program planning and be used to increase community awareness of health issues. The data may be used to develop other knowledge translation products as needed. The overarching trends for each topic are summarized below.

Vaccine Preventable Diseases

- In the SWPH region, a higher percentage of the population living in urban areas reported getting the seasonal flu shot less than one year ago compared to those living in rural areas.
- A large proportion of the population who did not receive the seasonal influenza vaccine did not think it was necessary. Other reasons for not getting the flu shot included a lack of belief in its benefits, a lack of time, an adverse reaction to previous flu shot and fear/discomfort.
- Incidence rates for pertussis as well as hospitalization rates for varicella were highest among children under 5 years of age. The incidence rate for invasive pneumococcal disease was highest among people aged 65 years and over.

Other Infectious Diseases

- The rates of other infectious disease remain low and comparable to Ontario. The incidence rate of invasive group A streptococcal disease was higher among people aged 65 years and over compared to those aged 5 to 19 years and 20 to 64 years.

Infectious Disease Prevention and Control

Vaccine Preventable Diseases

The vaccine preventable diseases section of the report includes data about confirmed cases of influenza and influenza immunization in the community, confirmed cases of pertussis (whooping cough) and invasive pneumococcal disease, hospitalizations for varicella and reports of adverse events following immunization. Incidence rates are presented by age, where possible, in order to emphasize higher risk sub-populations.

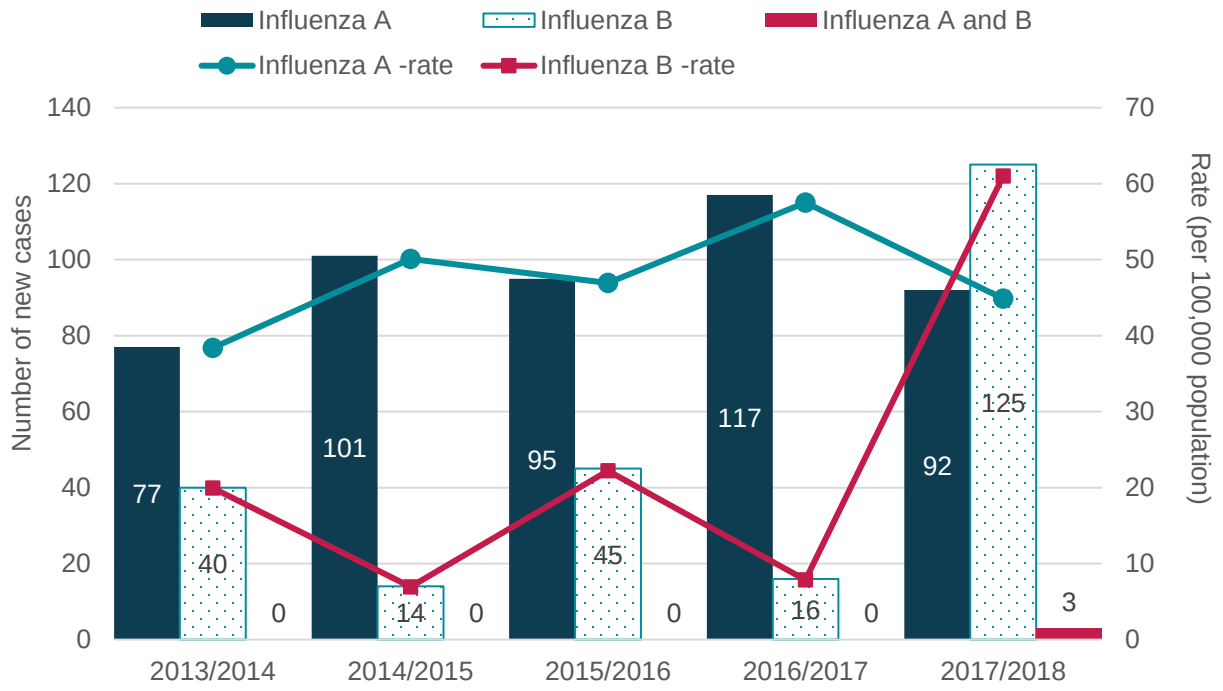
> **The data presented in this report may differ slightly from previous reports; data in the report titled Understanding our Communities' Health was age-standardized to compare local data to Ontario, but the data presented in this report is not age-standardized and focuses on local differences between subgroups of the population.**

Influenza

In the Southwestern Public Health (SWPH) region, there were a total of 220 confirmed cases for the 2017/2018 influenza season,[a] with the majority being influenza B cases (56.8%) (Figure 1). This was different from previous influenza seasons in which most cases were influenza A. There were three confirmed cases of influenza A and B co-infection in the 2017/2018 influenza season and none in the previous influenza seasons. There may be co-infected cases present each season that were not lab confirmed and would not be included in these counts.

[a] As a result of changes in respiratory virus laboratory testing starting September 20, 2017, some indicators of respiratory virus will not be comparable to past seasons. Due to discontinued multiplex testing, no routine respiratory virus testing from ambulatory and emergency department patients and no further testing of influenza-positive specimens tested by PCR, the number of confirmed cases detected may be underestimated in the 2017/2018 influenza season compared to previous seasons. Additionally, lab confirmed cases in general are an underestimation of the total number of influenza cases in the population since many cases are seen in outpatient settings or do not seek care.

Figure 1. Count and crude incidence rate (per 100,000 population) of confirmed influenza cases by type, Southwestern Public Health, 2013/2014-2017/2018 influenza seasons

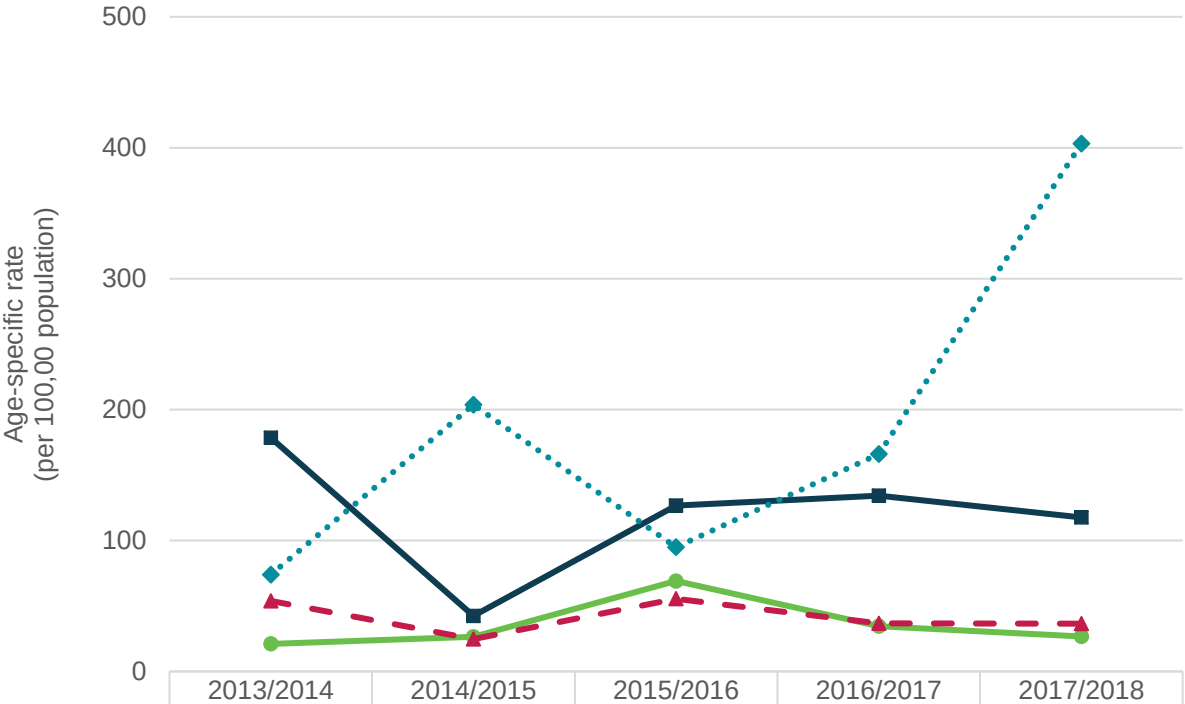


Source: iPHIS (2013-2018), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

In the 2014/2015, 2016/2017 and 2017/2018 influenza seasons, age-specific rates of influenza were highest among people age 65 and older, followed by children less than five years of age (Figure 2). In the 2013/2014 and 2015/2016 seasons, children aged less than five years had the highest incidence rate of influenza (Figure 2).

The difference in incidence rates may be due to seasonal variations in dominant circulating strains that have varying high risk age groups (Table 1) as well as changes in the respiratory virus testing algorithm. For example, since routine testing of specimens from ambulatory or emergency department settings was no longer offered in the 2017/2018 influenza season, most specimens under the new algorithm would be from inpatient settings or institutions, which may inflate the rate of older age groups since they make up a large proportion of these populations.

Figure 2. Crude incidence rate (per 100,000 population) of influenza by age group, Southwestern Public Health, 2013/2014-2017/2018 influenza seasons



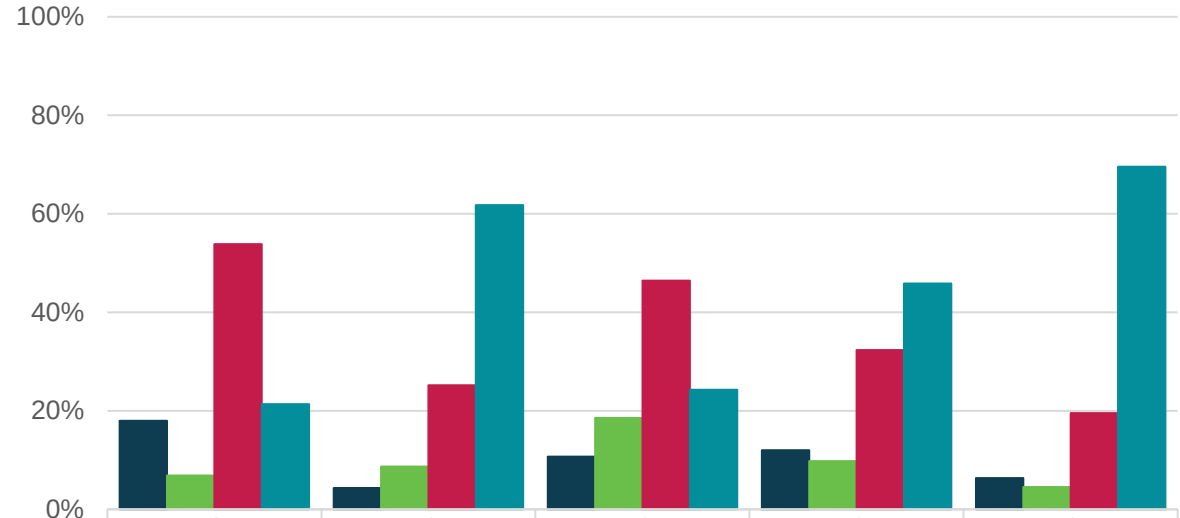
	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
<5	178.5	42.5	126.7	134.4	117.6
5-19	21.0	26.4	69.1	34.7	26.7
20-64	53.9	24.8	55.5	36.7	36.5
65+	74.0	203.8	95.0	166.0	403.0

Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: September 6, 2018 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

People aged 65 and older had the highest incidence rate and represented the largest proportion of cases during the 2014/2015, 2016/2017 and 2017/2018[b] influenza seasons (Figures 2 and 3). Although the incidence rate of influenza was highest among children under five years of age during the 2013/2014 and 2015/2016 influenza season, people aged 20 to 64 years represented the largest proportion of cases during those seasons.

[b] Recent changes in the testing algorithm may affect these rates.

Figure 3. Proportion of influenza cases by age group, Southwestern Public Health, 2013/2014-2017/2018 influenza seasons



	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
<5	18%	4%	11%	12%	6%
5-19	7%	9%	19%	10%	5%
20-64	54%	25%	46%	32%	20%
65+	21%	62%	24%	46%	70%

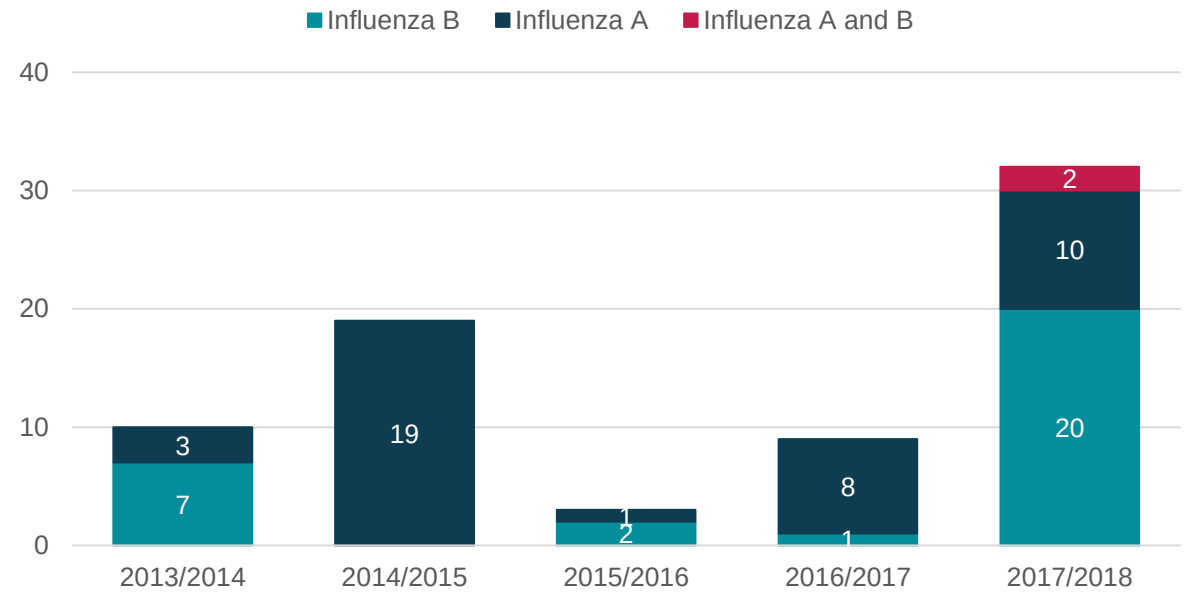
Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019

Table 1. Dominant circulating strains by influenza season, Ontario, 2013/2014-2017/2018 influenza seasons[2-6]

Influenza Season	Influenza A Strain	Influenza B Strain
2013/2014	H1N1pdm09	B/Massachusetts/02/2012
2014/2015	H3N2	B/Massachusetts/02/2013
2015/2016	H1N1pdm09	B/Brisbane/60/2008- like
2016/2017	H3N2	B/Phuket/3073/13-like
2017/2018	H3N2	B/Phuket/3073/13-like

The influenza season with the highest number of institutional influenza outbreaks was 2017/2018, followed by 2014/2015 (Figure 4). The variations in institutional outbreaks may be due to different circulating strains each season, variations in vaccine effectiveness from season to season and immunization coverage of the populations within these institutions.

Figure 4. Number of institutional influenza outbreaks by season, Southwestern Public Health, 2013/2014-2017/2018

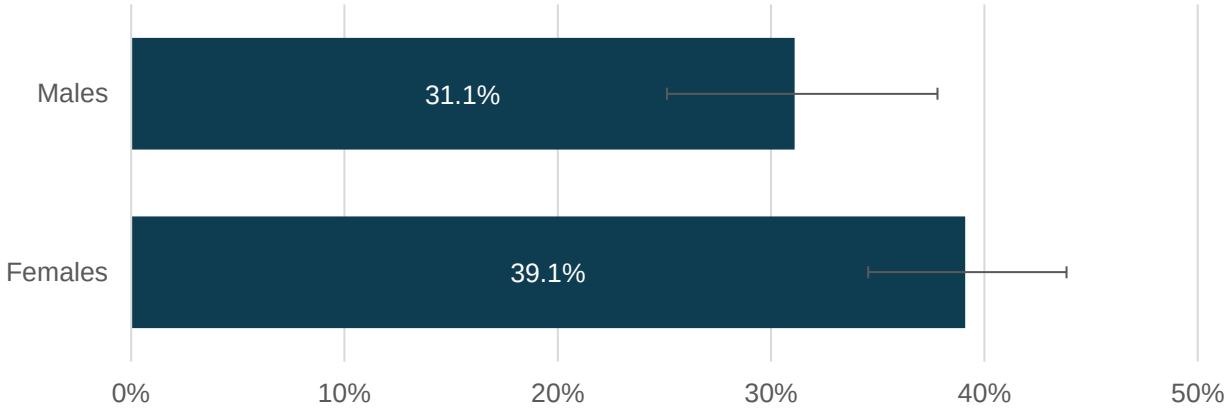


Source: iPHIS (2013-2017), Date Extracted: January 24, 2019

Influenza immunization

In the SWPH region, the proportion of the population that reported getting the seasonal flu shot in the past 12 months was similar between males and females (Figure 5). There was also no difference in the proportion people reporting getting the seasonal flu shot less than one year ago by household income and education level.

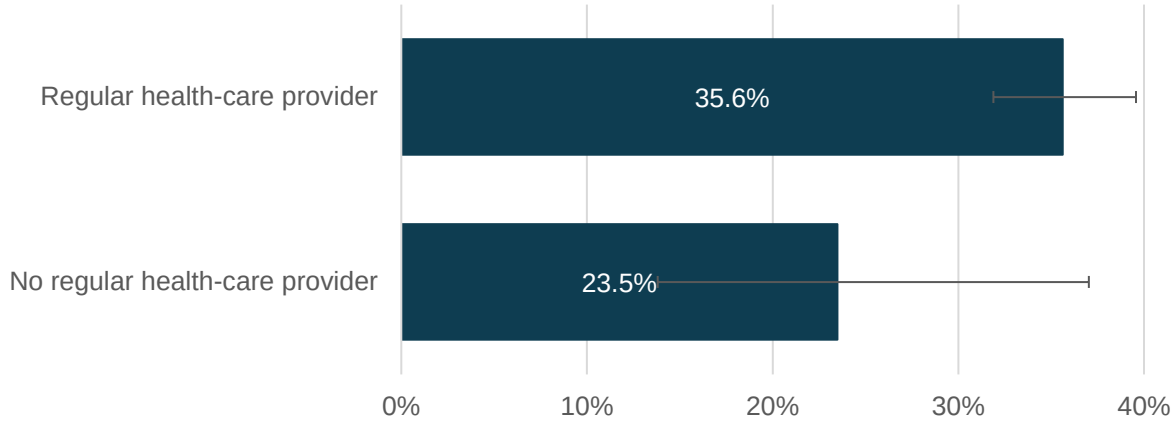
Figure 5. Proportion of population who reported getting the seasonal flu shot in the past 12 months by sex, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

The proportion of people in the SWPH region who reported getting the seasonal flu shot in the past 12 months was not statistically significantly different between people with a regular health-care provider compared to those without a regular health-care provider (Figure 6).

Figure 6. Proportion of population who reported getting the seasonal flu shot in the past 12 months by health-care provider access, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC

The proportion of the population who reported getting the seasonal flu shot in the past 12 months was higher among those living in the urban municipalities of the SWPH region compared to the rural municipalities (Figure 7). This difference between urban and rural municipalities may be due to differences in access to health care or differences in beliefs about the influenza vaccine (flu shot).

Figure 7. Proportion of the population who reported getting the seasonal flu shot in the past 12 months by urban or rural residence, Southwestern Public Health, 2015-2016

From 2015 to 2016, 39.9% (95% CI: 35.2%-44.8%) of the population living in the urban municipalities (i.e., St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock) reported getting the seasonal flu shot in the past 12 months.

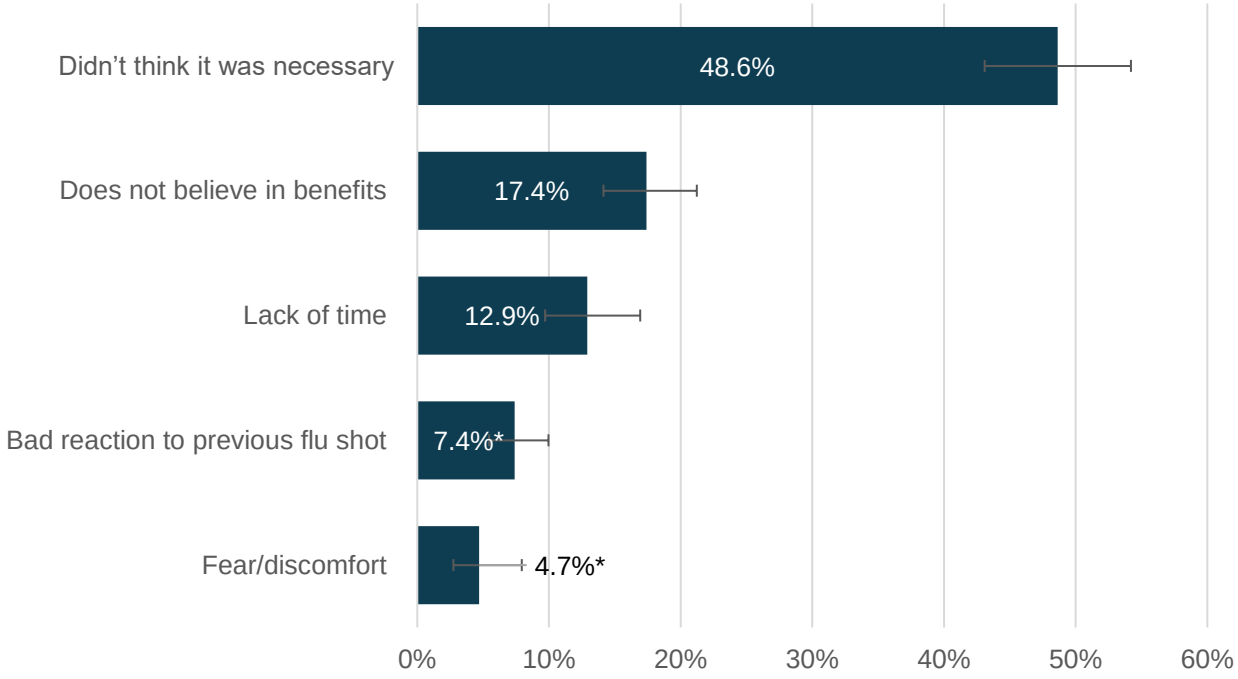
From 2015 to 2016, 28.1% (95% CI: 23.3%-33.5%) of the population living in the rural municipalities (i.e., Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford) reported getting the seasonal flu shot in the past 12 months.

Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC

Reasons for not getting the flu shot

Approximately half (48.6%) of the population in the SWPH region that did not get the flu shot in the past 12 months reported that they made this decision because they did not think it was necessary and almost one-fifth (17.4%) did not believe in its benefits (Figure 8). Other reasons for not getting the flu shot in the past 12 months were lack of time, an adverse reaction to previous flu shot and fear or discomfort.

Figure 8. Reasons for not getting the seasonal flu shot in the past 12 months, Southwestern Public Health, 2015-2016



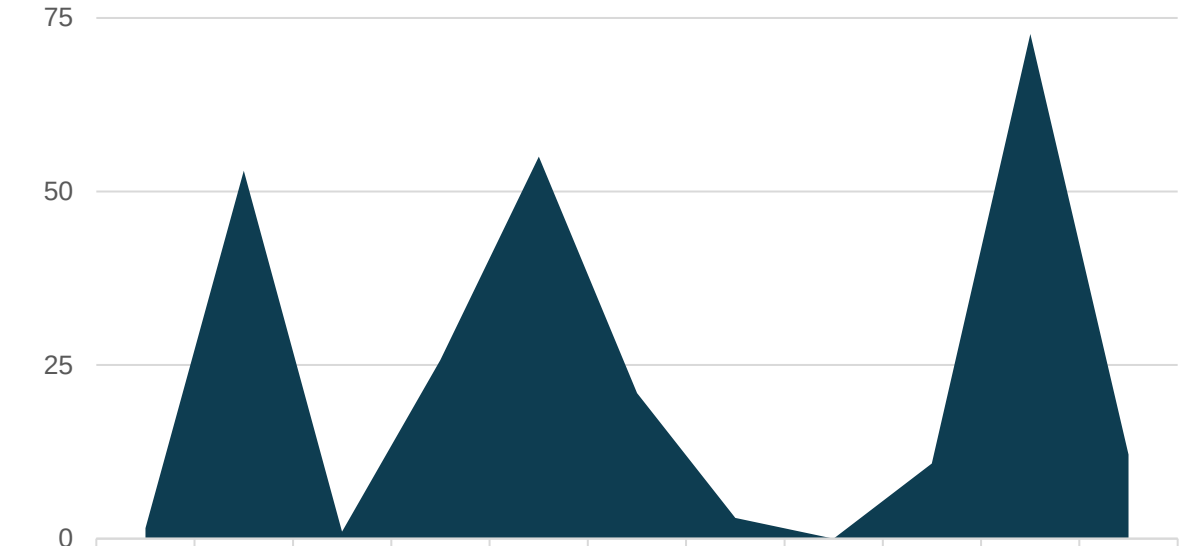
***** Interpret with caution due to high variability.

Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Pertussis

The rates of pertussis (whooping cough) in the SWPH region follow a cyclical pattern with outbreaks occurring approximately every three to four years (Figure 9). The peaks in the rate of pertussis coincide with the three outbreaks that have occurred since 2008, although all cases (sporadic and outbreak cases) are included in these estimates.

Figure 9. Crude incidence rate (per 100,000 population) of confirmed cases of pertussis, Southwestern Public Health, 2008-2018

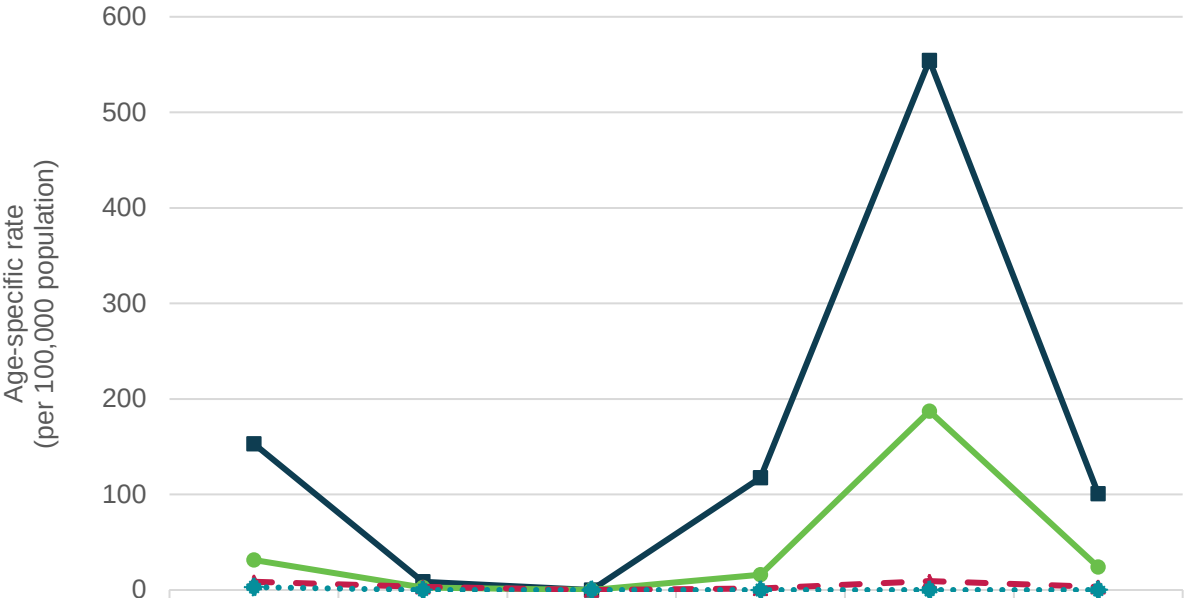


	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SWPH	1.5	53.0	1.0	25.7	55.0	20.9	3.0	0.0	10.8	72.7	12.1

Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017-2018), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

The incidence rate of pertussis was highest among children under five years of age, followed by people aged 5 to 19 years (Figure 10). There was a sharp increase in the age-specific rates for the younger age groups in 2017, which corresponds to an outbreak of pertussis in the community.

Figure 10. Crude incidence rate (per 100,000 population) of pertussis by age group, Southwestern Public Health, 2013-2018



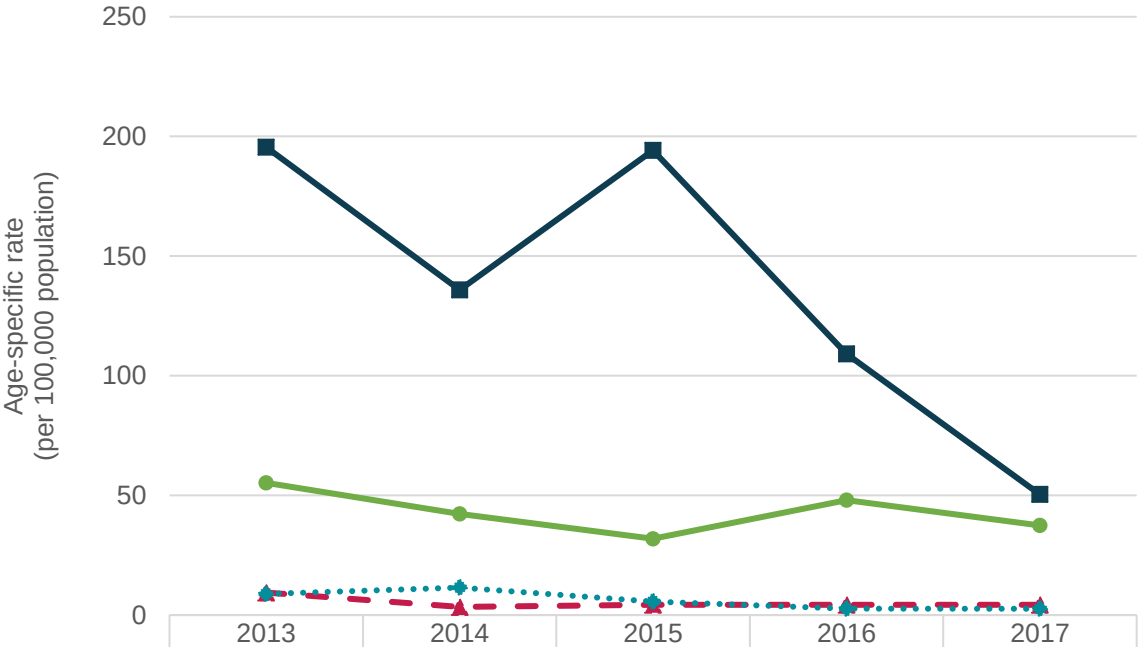
	2013	2014	2015	2016	2017	2018
<5	153.0	8.5	0.0	117.6	554.3	100.8
5-19	31.6	2.6	0.0	16.0	187.1	24.0
20-64	8.5	3.4	0.0	1.7	9.3	3.4
65+	3.0	0.0	0.0	0.0	0.0	0.0

Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

Varicella

Age-specific rates of emergency department (ED) visits due to varicella (chicken pox) were consistently highest among children under five years of age between 2013 and 2017, followed by people aged 5 to 19 years (Figure 11). The incidence rate among children under five years of age appears to be decreasing over time but the rate among people aged 5 to 19 years seems relatively stable. The decrease could be attributed to the 2011 expansion to a two-dose immunization schedule for varicella and the addition of varicella to the *Immunization of School Pupils Act (ISPA)* for children born in 2010 or later.[7] Because only a small proportion of cases are seen in an ambulatory setting, these rates are likely an underestimate of the true rate of varicella in the population because they do not include cases that were seen in primary care or those that did not seek care.

Figure 11. Crude incidence rate (per 100,000 population) of emergency department visits due to varicella by age group, Southwestern Public Health, 2013-2017



	2013	2014	2015	2016	2017
<5	195.5	135.9	194.2	109.2	50.4
5-19	55.3	42.3	31.9	48.0	37.4
20-64	9.4	3.4	4.3	4.3	4.2
65+	8.9	11.5	5.6	2.7	2.6

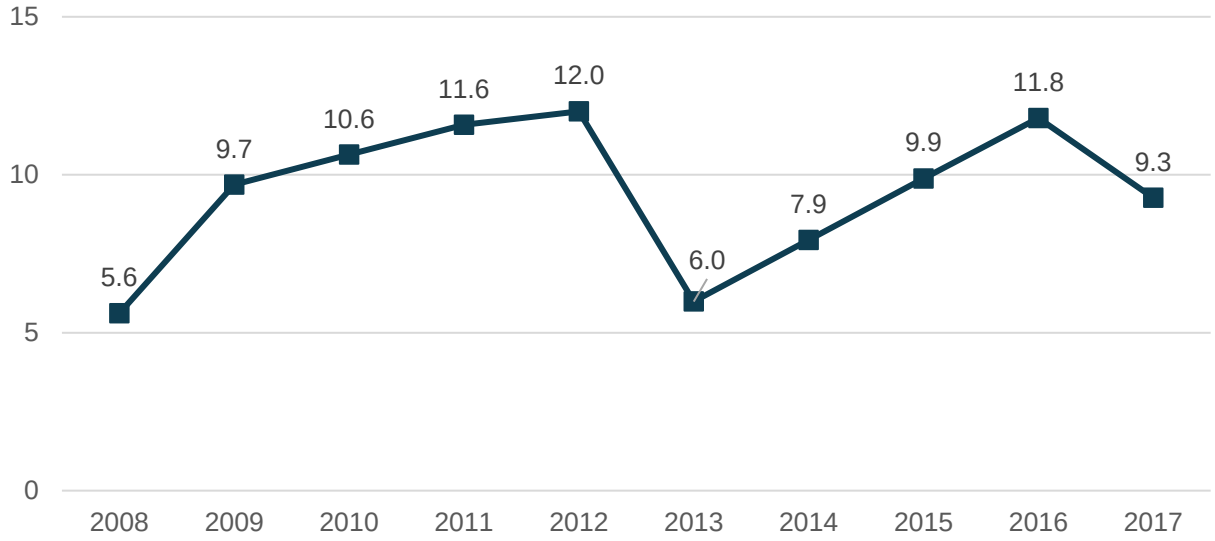
Source: National Ambulatory Emergency External Cause (2013-2017), IntelliHEALTH ONTARIO, Ontario Ministry of Health and Long-Term Care, Date Extracted: September 17, 2018 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

Invasive Pneumococcal Disease

In 2017, there were 9.3 cases of invasive pneumococcal disease (IPD) per 100,000 population, which has remained similar over time (Figure 12). Of those cases with a known immunization status between 2013 and 2017, 49% were up to date on their vaccination.[c] Because 40% of cases were excluded from the calculation due to an unknown immunization status, this proportion may be inflated.

[c] This proportion does not take serotype into account, meaning it is unable to determine whether those who were vaccinated contracted a non-vaccine serotype.

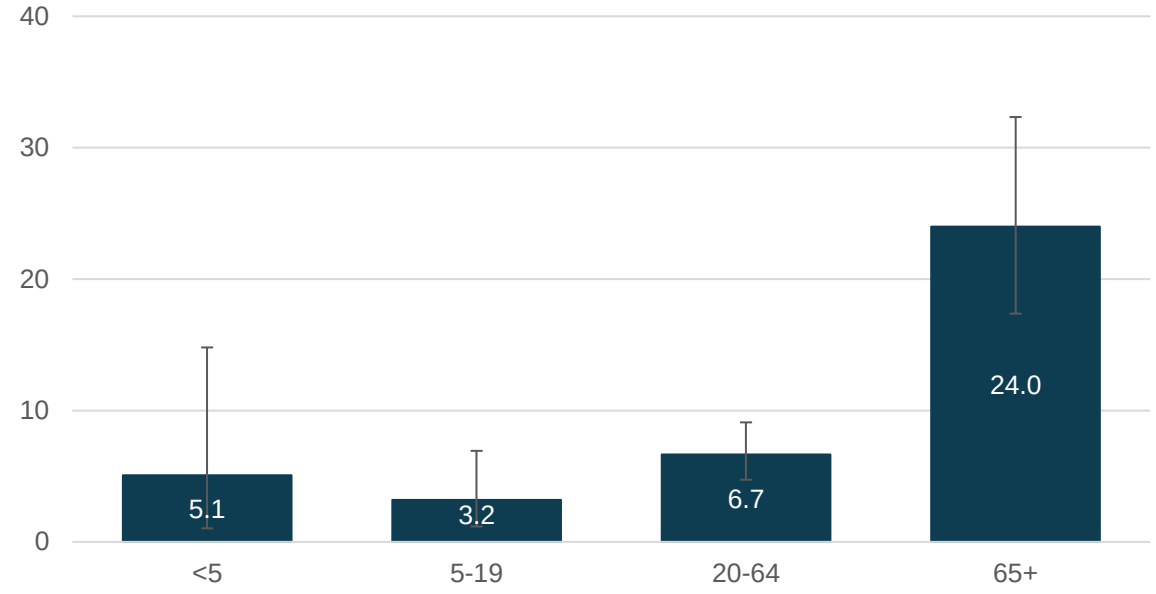
Figure 12. Crude incidence rate (per 100,000 population) of confirmed cases of invasive pneumococcal disease, Southwestern Public Health, 2008-2017



Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019.

The incidence rate of invasive pneumococcal disease between 2013 and 2017 was highest among people aged 65 years and older (Figure 13).

Figure 13. Crude incidence rate (per 100,000 population) of invasive pneumococcal disease by age group, Southwestern Public Health, 2013-2017 (combined)



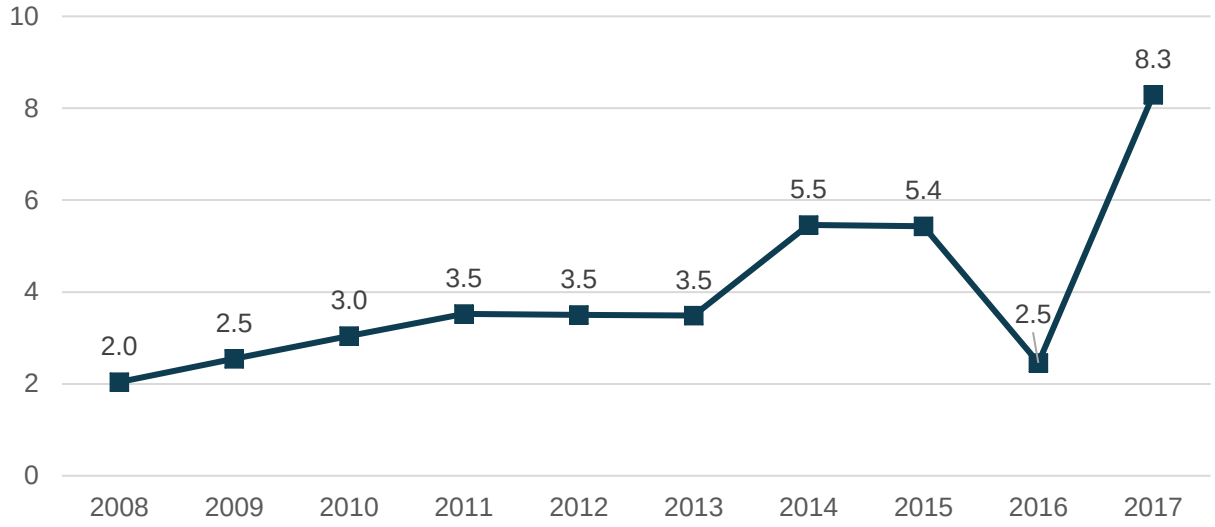
Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

Other Infectious Diseases

Invasive Group A Streptococcal Disease

In 2017, the rate of invasive group A streptococcal disease (iGAS) was 8.3 per 100,000 population (Figure 14). Overall, the rate of iGAS in the SWPH region increased slightly from 2008 to 2017. Of the cases with known risk factors, the most commonly reported risk factor was chronic illness or underlying medical condition (65.1%). This was followed by reporting a dermatological condition, chronic dermatitis or a condition that would causing a break in skin integrity (61.9%), diabetes (35.1%) and compromised immune response (18.8%).

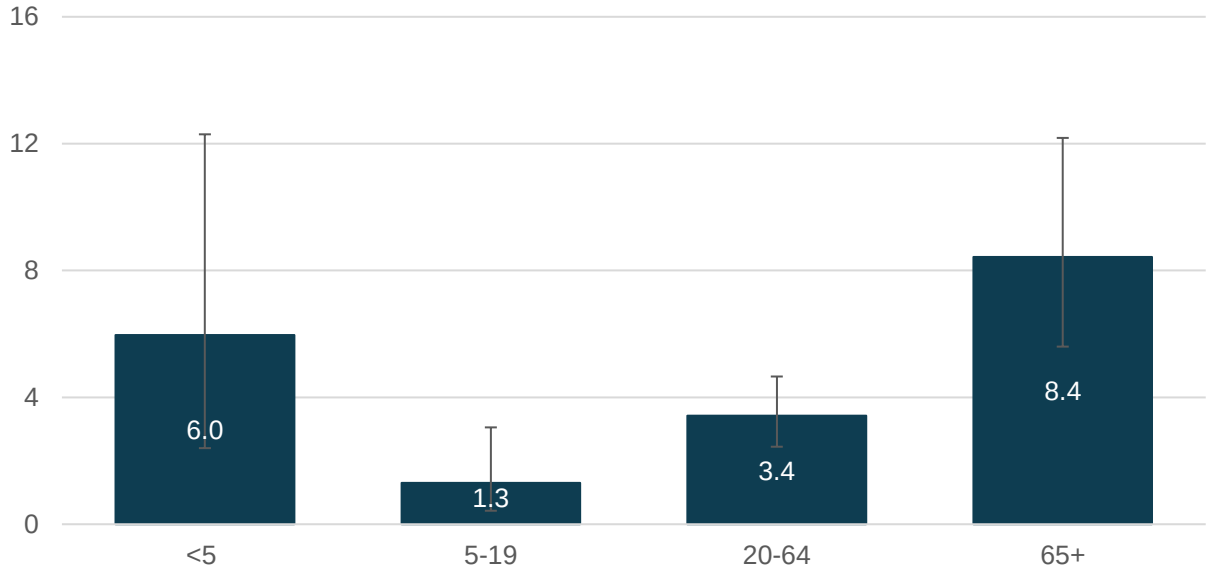
Figure 14. Crude incidence rate (per 100,000 population) of confirmed cases of invasive group A streptococcal disease, Southwestern Public Health, 2008-2017



Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019.

The rate of iGAS was higher among those aged 65 years and older compared to those aged 5 to 19 years and 20 to 64 years (Figure 15). This difference may be due to increased prevalence of chronic diseases and underlying medical conditions, which are commonly reported risk factors among iGAS cases.[8]

Figure 15. Crude incidence rate (per 100,000 population) of invasive group A streptococcal disease by age group, Southwestern Public Health, 2008-2017 (combined)



Source: Public Health Ontario. Infectious disease query. Toronto, ON: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Date Extracted: January 4, 2019 & Population Estimates (2008-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

Tuberculosis

Overall, there were 10 cases of tuberculosis between 2013 and 2017, of which seven completed treatment and three did not complete treatment due to death or non-compliance. Most treatment (for 80% of the cases) was administered using directly observed therapy (DOT).[9]

TB-drug resistance remains low in the SWPH region. Among the isolates tested for TB in the SWPH region between 2013 and 2017, one exhibited drug resistance to pyrazinamide and the remaining were sensitive to all four first-line TB drugs: isoniazid, pyrazinamide, rifampin and ethambutol.[9] There was one confirmed case which exhibited isoniazid resistance in 2018.

Latent tuberculosis

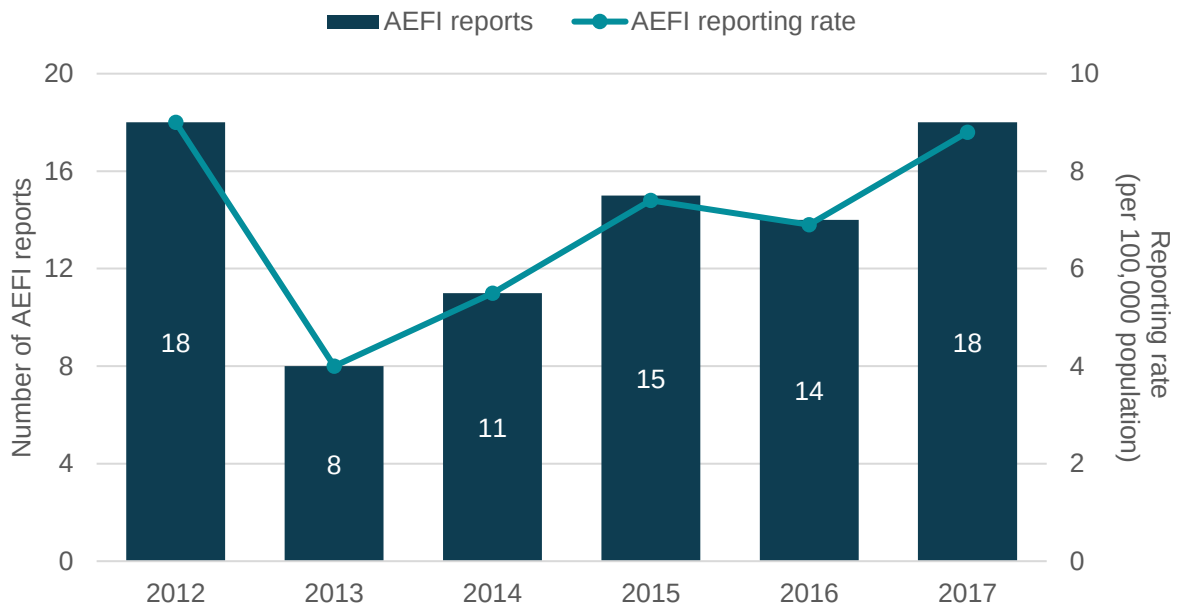
On average, there were approximately 35 cases of latent tuberculosis infection (LTBI) reported to SWPH each year between 2013 and 2017. The crude rate of LTBI in the SWPH region was 17.7 per 100,000 population (95% CI: 15.2-20.5) during that time.[9]

Reportable Incidents

Adverse Events Following Immunization

The overall adverse events following immunization (AEFI) reporting rate from 2013 to 2017 was 6.5 reports per 100,000 population (95% CI: 5.0-8.3; Figure 16). Although there were annual fluctuations in the number of AEFI reports, there have been no unusual increases to the rate; it remains low and relatively consistent from year to year.

Figure 16. Number of AEFI reports and reporting rate (per 100,000), Southwestern Public Health, 2012-2017

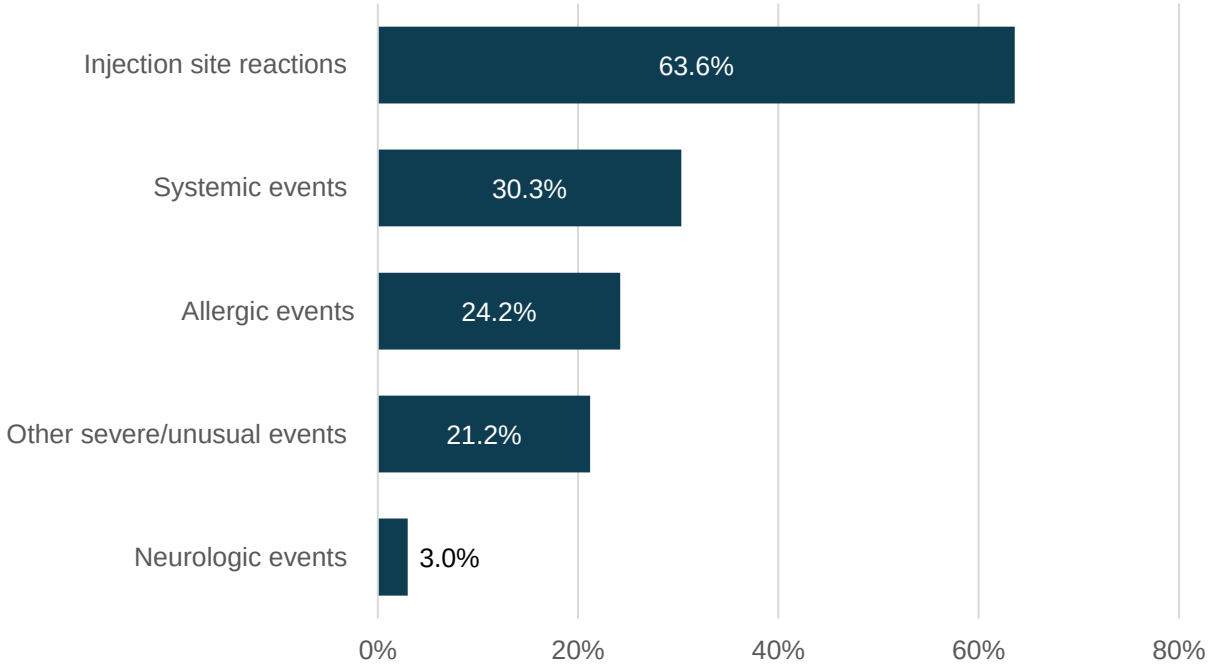


Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Vaccine safety surveillance [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2019 January 16]. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/pages/aefi.aspx.Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

In the SWPH region, injection site reactions, such as pain/redness/swelling and cellulitis, were the most reported adverse event (63.6% of all AEFI reports), followed by systemic events (30.3% of all AEFI reports), which include rash, fever and vomiting/diarrhea (Figure 17).[8] Allergic events such as reactions on skin or anaphylaxis represented 24.2% of all AEFI reports. Only 3% of AEFIs reported neurologic events which included anaesthesia/paraesthesia and convulsions/seizures.[10]

Around 37% of AEFIs were reported by a physician or nurse practitioner, 23.9% were reported by family members and 22.4% were reported by other health care professionals. Only 3% of AEFIs were self-reported.

Figure 17. Per cent of all AEFI reports by adverse event type, Southwestern Public Health, 2013-2017 (combined)

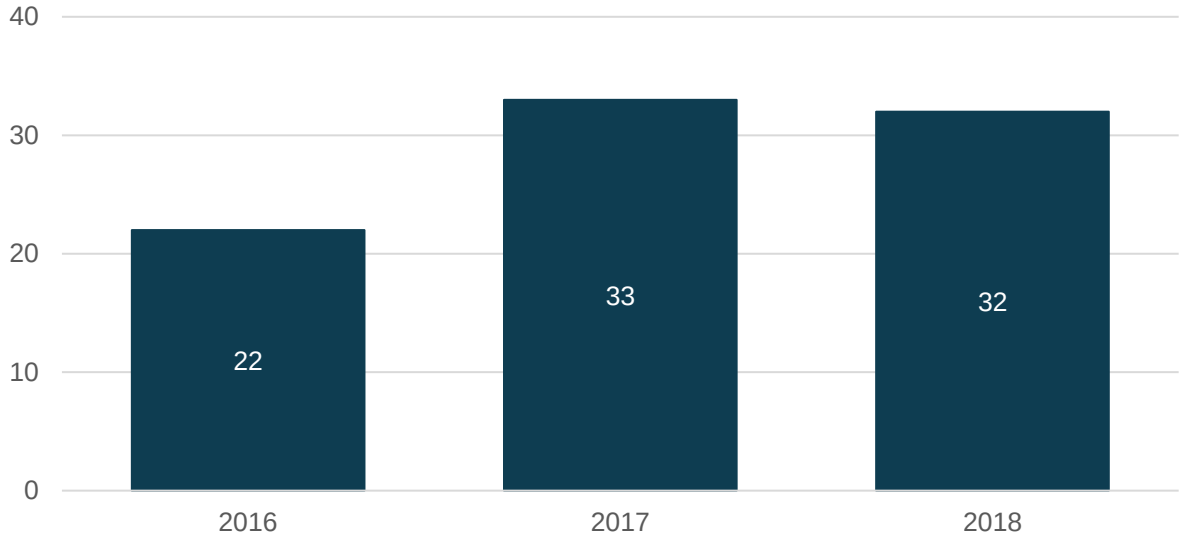


Source: iPHIS (2013-2017), Date Extracted: January 24, 2019

Cold Chain Incidents

The number of cold chain incidents appears to have increased slightly over time since 2016 (Figure 18). The most common cause of cold chain incidents between 2016 and 2018 was due to equipment or refrigerator/freezer malfunctions, accounting for 25.3% of all incidents. This was followed by human error (20.7%) which includes improper storage, refrigerator/freezer doors left open and an unmonitored refrigerator/freezer.

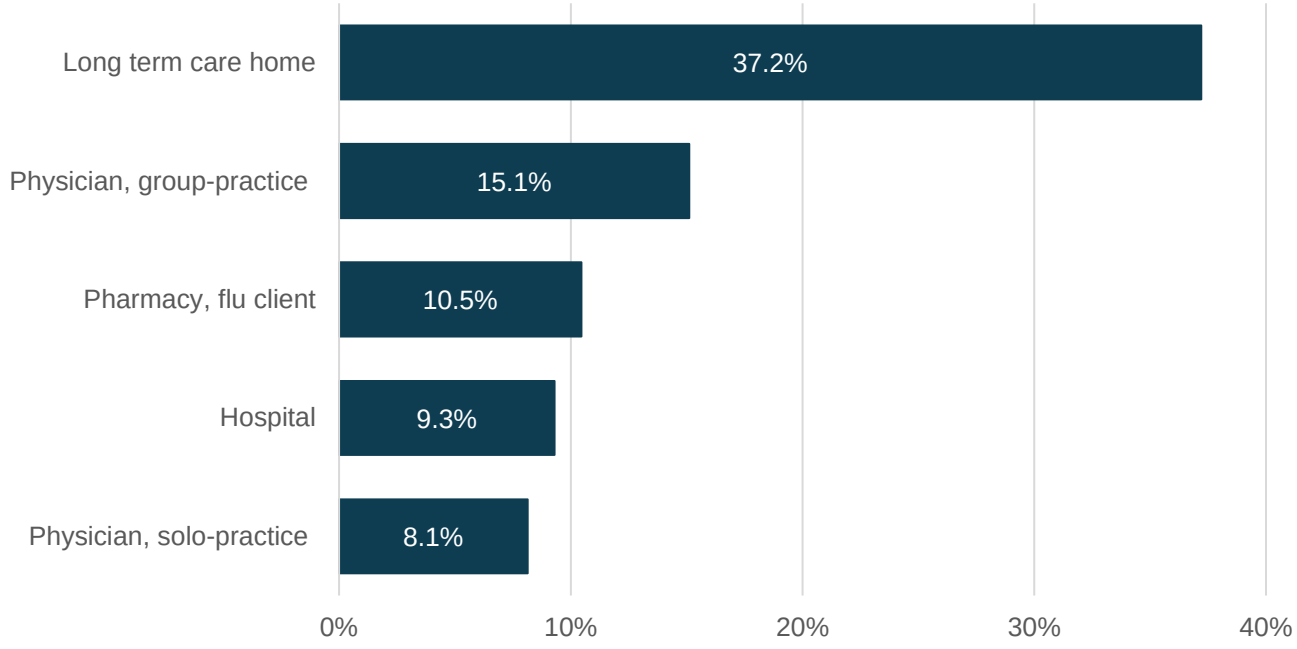
Figure 18. Number of Cold Chain Incidents by year, Southwestern Public Health, 2016-2018



Source: PEAR (2016-2018), Date Extracted: March 5, 2019

From 2016 to 2018, the largest proportion of cold chain incidents occurred in long-term care homes (Figure 19). This was followed by group-practice clinics, pharmacies, hospitals and solo-practice clinics.

Figure 19. Proportion of cold chain incidents by setting, Southwestern Public Health, 2016-2018 (combined)



Source: PEAR (2016-2018), Date Extracted: March 5, 2019

References

1. MacLeod M, Hussain H. Understanding our communities' health: current health status of people residing in the Southwestern Public Health region. Southwestern Public Health; 2019.

2. Public Health Ontario. Ontario Respiratory Virus Bulletin | 2013-2014. Toronto, ON; Queen's Printer for Ontario; 2014. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Documents/Ontario_Respiratory_Virus_Bulletin-2013-2014_Season_Summary.pdf

3. Public Health Ontario. Ontario Respiratory Virus Bulletin | 2014-2015. Toronto, ON; Queen's Printer for Ontario; 2015. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Documents/Ontario_Respiratory_Virus_Bulletin-2014-2015_Season_Summary.pdf

4. Public Health Ontario. Ontario Respiratory Virus Bulletin | 2015-2016. Toronto, ON; Queen's Printer for Ontario; 2016. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Documents/Ontario_Respiratory_Pathogen_Bulletin-Season_Summary_-_2015-16.pdf

5. Public Health Ontario. Ontario Respiratory Virus Bulletin | 2016-2017. Toronto, ON; Queen's Printer for Ontario; 2017. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Documents/Ontario%20Respiratory%20Pathogen%20Bulletin%20-Season%20Summary%20-%202016-17.pdf

6. Public Health Ontario. Ontario Respiratory Virus Bulletin | 2017-2018. Toronto, ON; Queen's Printer for Ontario; 2018. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics//Documents/Ontario%20Respiratory%20Pathogen%20Bulletin%20-%20Season%20Summary%20-%202017-18.pdf

7. Ontario Ministry of Health and Long-Term Care. Two-Dose Varicella Immunization Schedule. Toronto, ON: Queen's Printer for Ontario. Available from: http://www.health.gov.on.ca/en/public/programs/immunization/docs/qa_2dose.pdf

8. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Invasive Group A streptococcal disease in Ontario: 2016-17 seasonal summary. Toronto, ON, Queen's Printer for Ontario; 2018.

9. iPHIS (2013-2017), Extracted: January 24, 2019 & Population Estimates (2008-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018

10. Ontario Ministry of Health and Long-Term Care. Appendix B: provincial case definitions for reportable diseases: adverse events following immunization (AEFIs), 2015. Toronto, ON: Queen's Printer for Ontario; 2015. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/aefi_cd.pdf

Appendix A: Technical Notes

This section summarizes information from a variety of data sources available to Public Health. The methods used, and geography presented depends on the data source, described below.

Integrated Public Health Information System (iPHIS)

The Integrated Public Health Information System (iPHIS) is used to report case information on all reportable communicable diseases for provincial surveillance, as per the *Health Protection and Promotion Act (HPPA)*. Cases in iPHIS are classified according to the case definitions by the Ontario Ministry of Health and Long-Term Care (MOHLTC). The data represents only cases reported to public health and recorded in iPHIS. Therefore, due to differences in medical seeking and reporting behaviours, there may be some degree of underreporting. iPHIS was used to extract data regarding confirmed cases of communicable disease in the SWPH region as well as the number of AEFI reports and type.

National Ambulatory Care Reporting System (NACRS)

NACRS contains information about unscheduled emergency department (ED) visits. The data submitted by EDs is validated by CIHI and released to public health units on a quarterly basis through IntelliHEALTH ONTARIO. This information was used to capture ED visits due to varicella (chicken pox). Table 1 outlines the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA) codes included for varicella (chicken pox). These ICD-10-CA codes do not include ED visits for shingles.

Table 1. ICD-10-CA codes used to categorize emergency department visits for varicella[2]

Description	ICD-10-CA codes
Varicella meningitis	B010
Varicella meningitis	B011
Varicella pneumonia	B012
Varicella with other complications	B018
Varicella without complication	B019

Canadian Community Health Survey (CCHS)

The Canadian Community Health Survey (CCHS) is a national telephone survey that collects information about health from the population aged 12 years and older. The CCHS excludes people living on reserves and other Indigenous settlements, full-time members of the Canadian Forces and people living in institutions. Data is self-reported and may be subject to recall bias and social desirability bias. 'Don't know' and 'not stated' responses were removed from analysis when they represented less than 10% (combined) of the unweighted sample. This assumes that data are missing at random, which is not always the case. Data from 2015-2016 onwards is not comparable to previous years due to substantial changes in sampling methodology and content.

The error bars in figures are the confidence intervals (CIs). Each estimate is based on the survey sample and a CI is a range of values that describes the uncertainty surrounding an estimate. The 95% CI shows a range of values that have a 95% chance of including the true estimate in the population if the survey was repeated. The larger a 95% CI, the more caution should be used when using the estimate. CIs that don't overlap show statistically significant differences between groups. Statistically significant results indicate the finding is unlikely to be due to chance alone. Only statistically significant differences between groups are presented in this report.

Population Estimates and Projections

Population estimates and projections were used as the denominator to calculate rates. Population estimates are produced by the Demography Division at Statistics Canada and were obtained through IntelliHEALTH ONTARIO.

Southwestern Public Health
www.swpublichealth.ca

St. Thomas Site
1230 Talbot Street
St. Thomas, ON N5P 1G9

Woodstock Site
410 Buller Street
Woodstock, ON N4S 4N2