

Influenza Surveillance 2016–2017

Week 09 (Feb.26–Mar.4, 2017)

Data extracted Mar.10, 2017 at 11:00 am

Laboratory-confirmed influenza cases:

This week:

- Influenza A cases: **41** ↓
- Influenza B cases: **11** ↑

Since Sept. 1, 2016:

- Influenza A cases: **327**
- Influenza B cases: **34**

Laboratory

Cases and incidence rates (cases per 10,000 population) since Sept. 1, 2016:

- Winnipeg: **122** (16.2)
- Southern: **79** (40.7)
- Interlake-Eastern: **28** (22.0)
- Prairie Mountain: **120** (71.2)
- Northern: **12** (15.8)

Regional Health Authority

Severe outcomes associated with laboratory-confirmed diagnosis of influenza:

This week:

- Hospitalizations: **7**
- ICU admissions: **1**
- Deaths: **0**

Since Sept. 1, 2016:

- Hospitalizations: **88**
- ICU admissions: **18**
- Deaths: **6**

*ICU admissions were also included in hospitalizations.

Severity

Calls to Influenza Service at Health Links–Info Santé this week: **19** ↑

Visits to sentinel physicians due to ILI this week: **1.3%** ↓

ILI patients in Emergency Department this week: **156** ↑

Influenza-Like-Illness (ILI)

Laboratory-confirmed Influenza outbreaks:

This week:

- Influenza A outbreaks: **2** ↓
- Influenza B outbreaks: **1** ↑

Since Sept. 1, 2016:

- Influenza A outbreaks: **24**
- Influenza B outbreaks: **2**

Outbreak

Units of Oseltamivir dispensed from community retail pharmacies:

- This week: **85** ↑
- Since Oct. 1, 2016: **1058**

Isolates resistant to antiviral since Sept. 1, 2016 in Manitoba:

- Oseltamivir: **0**
- Zanamivir: **0**

Antiviral

The percentage of Manitoban residents immunized with the seasonal influenza vaccine as of Mar. 4, 2017: **22.0%**

Immunization

The seasonal influenza activity level in Manitoba this week has been low. While influenza A activity this week slightly declined from the previous week, influenza B activity has increased, but has remained at low levels. In the last two weeks, the percentage of tests positive for influenza has been over 20% compared to 5% at the beginning of the season. Now laboratory influenza A and B detections account for over 60% of all respiratory detections. Influenza associated severe outcomes continue to be reported. 70% of the hospitalized influenza patients are aged 65 and older.

Nationally, the overall decline in influenza activity in Canada has been slow compared with previous seasons. Many parts of Canada were still reporting elevated activity in Week 08.

As of Feb. 19, influenza activity in the temperate zone of the northern hemisphere continued to be elevated in some countries. In East Asia and Europe, influenza activity appeared to have peaked. Influenza A(H3N2) virus was predominant. The majority of influenza viruses characterized were antigenically similar to the reference viruses contained in vaccines for the 2016–2017 northern hemisphere influenza season.

Summary: Low Activity

Note. Numbers are subject to change. Missed events in the current report due to a delay of submission to MHSAL will be included in later reports when data become available.

Laboratory Surveillance

Reports of influenza nucleic acid detection, culture isolation, and enzyme immunoassay (EIA) detections are received from Cadham Provincial Laboratory (CPL) and occasionally other laboratories. These reports are forwarded to Epidemiology and Surveillance (E&S) within 24 hours of confirmation. CPL also performs testing for other respiratory viruses including parainfluenza, RSV, adenovirus, rhinovirus, coronavirus, enterovirus, and bocavirus, which are reported to E&S on a weekly basis.

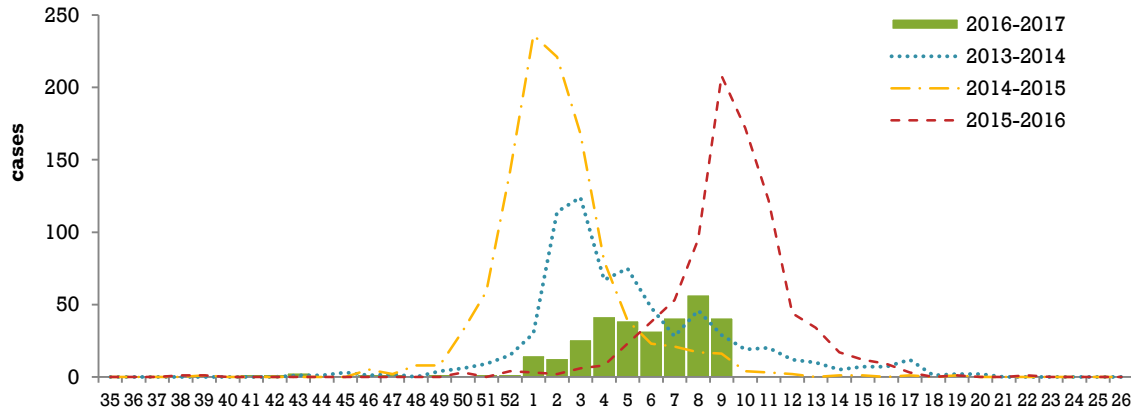


Figure 1. Weekly incidence of lab-confirmed influenza A, Manitoba, 2016–2017

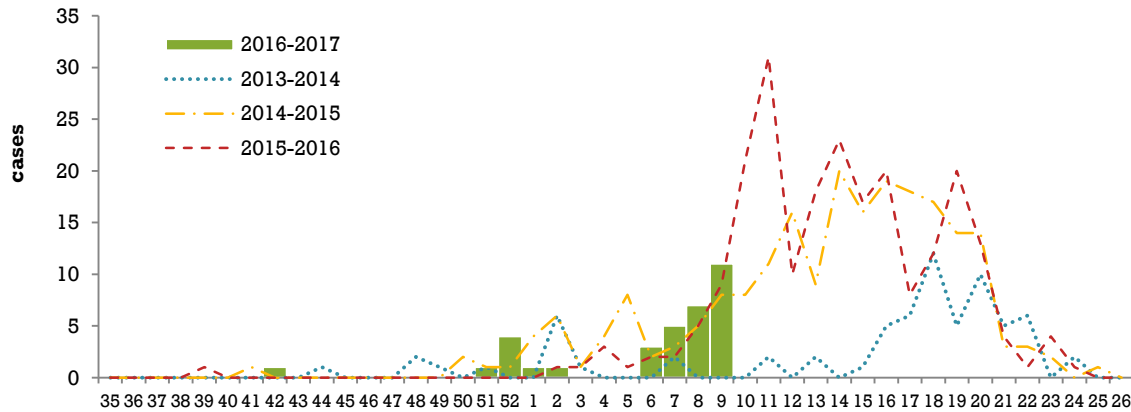


Figure 2. Weekly incidence of lab-confirmed influenza B, Manitoba, 2016–2017

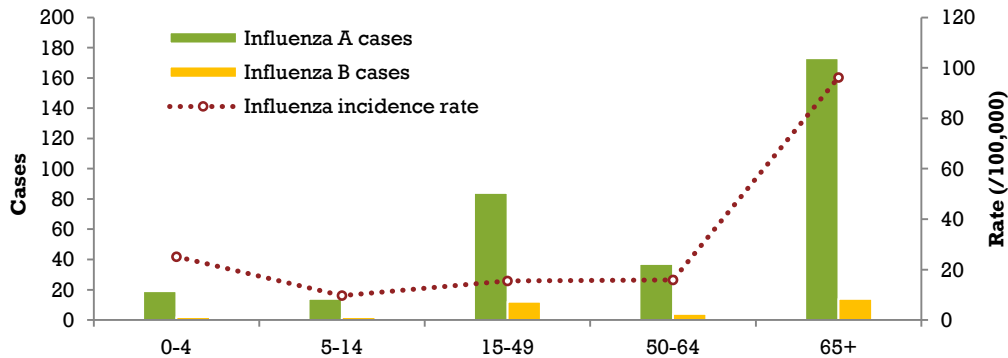


Figure 3. Influenza A and B cases by age group, Manitoba, 2016–2017

Outbreaks

Outbreaks are directed to E&S by a phone call or email from public health staff within Regional Health Authorities (RHAs) or from CPL advising the assignment of an outbreak code. CPL submits both positive and negative laboratory results related to outbreaks to E&S. Outbreak investigations are reported from RHAs to E&S by completing an outbreak summary report form on paper or electronically through the Canadian Network for Public Health Intelligence (CNPHI).

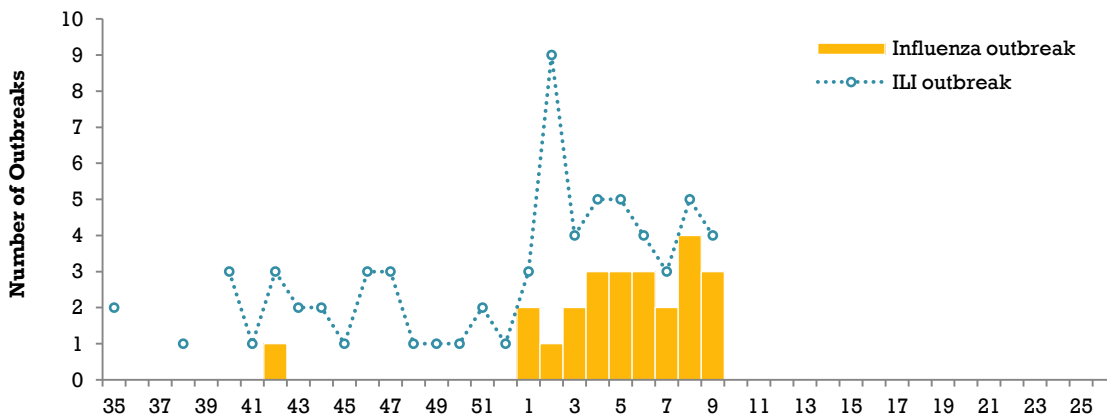


Figure 4. Weekly lab-confirmed influenza and ILI outbreaks, Manitoba, 2016-2017

Health Links – Info Santé

Health Links–Info Santé is a 24-hour, 7-days a week telephone information service. It is staffed by registered nurses with the knowledge to provide answers to health care questions and guidance to appropriate care over the phone. When a caller phones Health Links–Info Santé and selects Influenza Service, they are given an option to select information on (1) the groups of individuals who are at an increased risk of serious illness, (2) how to arrange an influenza vaccine, (3) the annual influenza immunization campaign, or (4) the management of influenza and its potential complications.

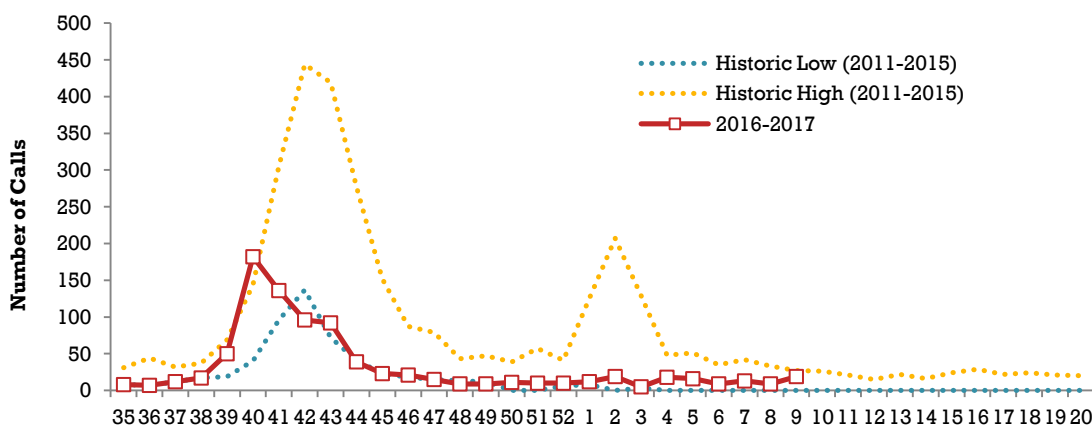


Figure 5. Weekly calls to Health Links – Info Santé, Manitoba, 2016-2017

ILI

ILI visits to sentinel physicians

Manitoba participates in *FluWatch*, the Canada’s national surveillance system co-ordinated by Public Health Agency of Canada (PHAC), which monitors the spread of influenza and ILI on a year-round basis. *FluWatch*

consists of a network of laboratories, hospitals, doctor’s offices and provincial and territorial ministries of health. In 2016–2017, there were 19 sentinel physicians recruited throughout Manitoba reporting to *FluWatch* weekly. E&S receives weekly reports from *FluWatch* which present the ILI rate for Manitoba and for each of the participating sentinel physicians. Note that the reporting sentinel physicians are different by week and their reports may not be representative of ILI activity across the province.

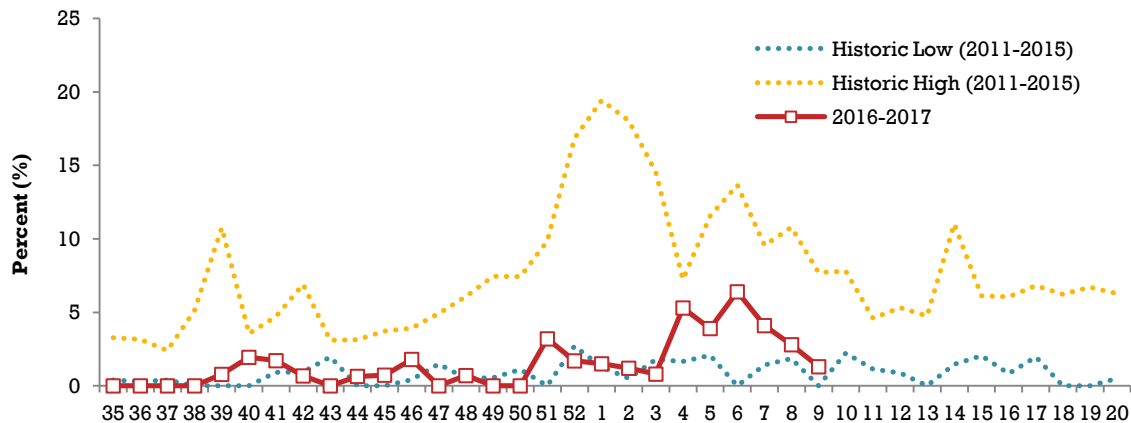


Figure 6. Weekly percentage of patient visits to sentinel physicians due to ILI, Manitoba, 2016–2017

ILI visits to Emergency Rooms

Daily ILI related visits to Emergency Department (ED) at Winnipeg Regional Health Authority (WRHA) are submitted to E&S weekly. ILI cases are defined as patients whose triage chief complaints contain either of these symptoms: weakness, shortness of breath, cough, headache, fever, cardiac/respiratory arrest, sore throat, and upper respiratory tract infection complaints.

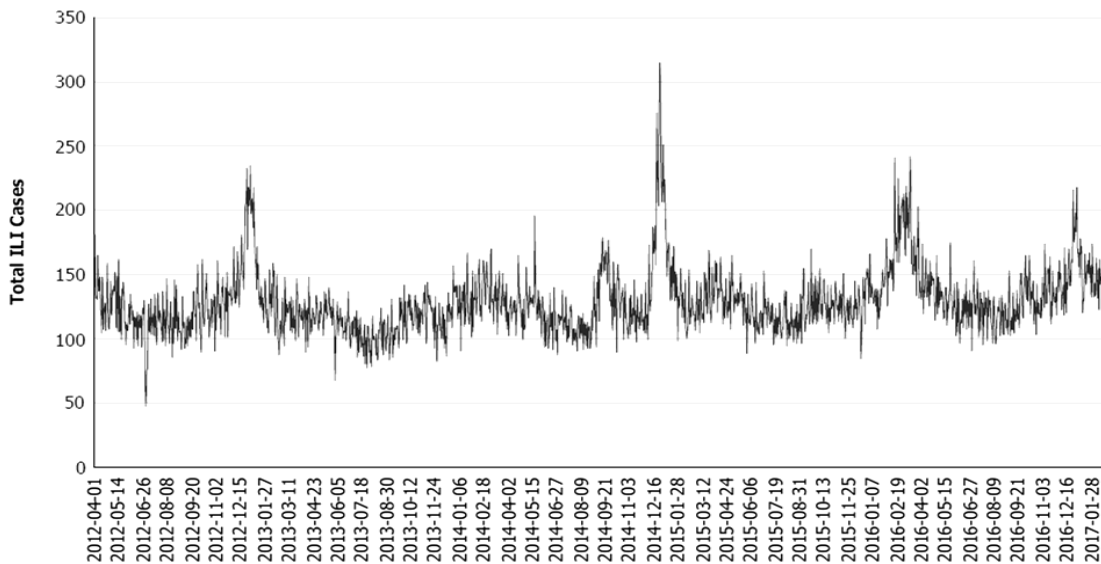


Figure 7. Weekly visits due to ILI in Emergency Rooms, WRHA, Manitoba

Influenza Associated Severe Outcomes

Each influenza season, RHAs are asked to submit a line list of influenza associated hospitalizations, ICU admissions, and deaths to E&S at MHHLS on a weekly basis, which includes the lab requisition number, age, reporting RHA, and type/subtype of influenza. Aggregate numbers of hospitalizations, ICU admissions and deaths are also reported to PHAC for national surveillance on a weekly basis. The reason for hospitalization, ICU



admission, or death does not have to be attributable to influenza. Instead, a temporal association with a positive influenza laboratory result is sufficient for reporting. Influenza associated deaths may also be reported from other sources.

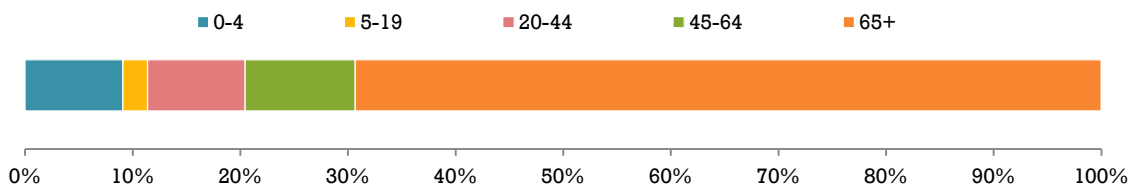


Figure 8 Percent of hospitalized influenza patients by age, Manitoba, 2016-2017

Antiviral dispensing

The units of antiviral drug, Oseltamivir (Tamiflu®), dispensed since October, 1, 2015 to Manitoba residents during the influenza season are reported to E&S from Drug Programs Information Network (DPIN) on a weekly basis. Only drugs dispensed from community retail pharmacies were included in this report. Antiviral drugs dispensed to in-patients or through nursing stations could not be included due to lack of data.

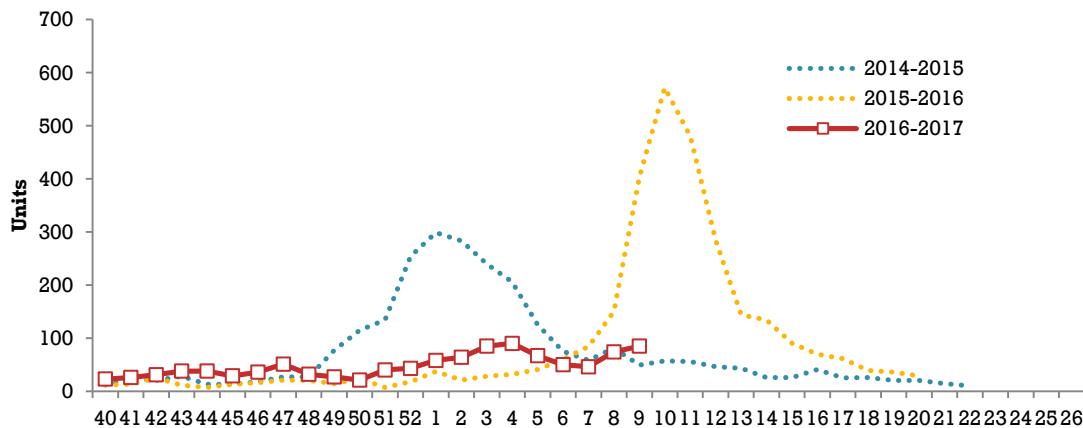


Figure 9. Weekly units of Oseltamivir dispensed, Manitoba, 2016-2017

Antiviral Resistance

Influenza and Respiratory Viruses Section of National Microbiology Laboratory (NML) undertakes enhanced surveillance, investigations, and research on influenza and other respiratory pathogens. A random sample of positive influenza specimens isolated by culture is referred from each provincial laboratory to NML for strain characterization and antiviral resistance testing. The aggregate level information is then shared with provinces and territories on a weekly basis.

Table 1. Antiviral resistance of isolates by influenza type and subtype since September 1, 2016 in Canada and Manitoba, 2016-2017

		Oseltamivir		Zanamivir		Amantadine	
		# Resistant	# Sensitive	# Resistant	# Sensitive	# Resistant	# Sensitive
Canada	A(H3N2)	1	547	0	548	148	0
	A(H1N1)	0	22	0	21	20	0
	B	0	68	0	69	N/A	N/A
Manitoba	A(H3N2)	0	23	0	23	10	0
	A(H1N1)	0	0	0	0	0	0
	B	0	5	0	5	N/A	N/A

Immunization

As per World Health Organization (WHO), all seasonal quadrivalent influenza vaccines for 2016–2017 in the northern hemisphere contain:

- A/Hong Kong/4801/2014 (H3N2)-like virus
- A/California/7/2009 (H1N1)pdm09-like virus
- B/Brisbane/60/2008-like virus
- B/Phuket/3073/2013-like virus

For the 2016–2017 influenza season, MHSAL has been allotted the quadrivalent inactivated vaccines (QIV), Fluzone® Quadrivalent (Sanofi Pasteur) and FluLaval Tetra® (GlaxoSmithKline), and quadrivalent live attenuated influenza vaccine (QLAIV) FluMist® Quadrivalent (AstraZeneca), as part of the province's Publicly-Funded Seasonal Influenza Immunization Program.

Circulating Strain

NML antigenically characterizes influenza viruses received from Canadian laboratories year-round. In Manitoba, a random sample of positive influenza specimens isolated by culture is referred from CPL to NML for strain characterization.

Since September 1, 2016, NML has characterized 458 influenza A and B viruses.

1. 968 influenza A(H3N2) viruses:
 - 285 influenza A(H3N2) viruses characterized were antigenically similar to A/Hong Kong/4801/2014, the influenza A(H3N2) component of the 2016–2017 Northern Hemisphere influenza vaccine. Of those viruses characterized, 240 belonged to genetic group 3C.2a and 38 belonged to genetic group 3C.3a. Sequencing is pending for the remaining 7 isolates.
 - 683 influenza A(H3N2) viruses did not grow to sufficient hemagglutination titers for antigenic characterization by hemagglutination inhibition (HI) assays. Therefore, genetic characterization was performed. Sequence analysis of the hemagglutinin (HA) gene of these viruses showed that they all belonged to genetic group 3C.2a. The vaccine strain, A/Hong Kong/4801/2014(H3N2)-like virus, also belongs to genetic group 3C.2a.
2. 25 influenza A(H1N1) viruses:
 - 25 influenza A(H1N1) viruses characterized were antigenically similar to A/California/7/2009, the influenza A(H1N1) component in the vaccine.
3. 81 influenza B viruses:
 - 32 influenza B viruses antigenically similar to B/Brisbane/60/2008-like (Victoria lineage), the influenza B component in the vaccine.
 - 49 influenza B viruses were characterized as B/Phuket/3073/2013 (Yamagata lineage), the influenza B component in the quadrivalent vaccine.

Table 2. Influenza Strain Characterization reported by NML since September 1, 2016, Canada, 2016–2017

Strain	Number of viruses	
	Canada	Manitoba
A/Hong Kong/4801/2014 (H3N2)-like	285	9
A/California/7/2009(H1N1)-like	25	0
B/Brisbane/60/2008-like	32	0
B/Phuket/3073/2013-like	49	7

Abbreviations

- CPL = Cadham Provincial Laboratory
- E&S = Epidemiology and Surveillance
- ICU = Intensive Care Unit
- ILI = Influenza-Like-Illness
- LTCF = Long Term Care Facility
- MHSAL= Manitoba Health, Seniors and Active Living
- NML = National Microbiology Laboratory
- PHAC = Public Health Agency of Canada
- RHA = Regional Health Authority
- RSV = Respiratory Syncytial Virus
- WRHA = Winnipeg Regional Health Authority

Explanatory Notes and Definitions

Cumulative data

Cumulative data include updates to previous weeks; due to reporting delays or amendments, the sum of weekly report totals may not add up to cumulative totals.

Data extraction date

Manitoba-specific information contained within this update is based on data confirmed at 11:00 am on the date of data extraction.

Epidemiology week

Time trends in this report were analyzed by [epidemiology week](#), a schedule used by the national FluWatch program coordinated by the Public Health Agency of Canada (PHAC).

Incidence rate

Incidence rate measures the frequency with which influenza occurs in a region. It is calculated as the total number of new cases this influenza season multiplied by 100,000 and divided by the total population in each region. Regional populations are based on the Manitoba Health Population Report 2015.

ILI in the general population

Acute onset of respiratory illness with fever and cough and with one or more of the following – sore throat, arthralgia, myalgia, or prostration, which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

ILI outbreaks

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI.

Hospitals and residential institutions: Two or more cases of ILI within a seven-day period.

Other settings: Two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. workplace, closed communities.

Specimen collection date

The date the laboratory specimen was taken is used to assign cases to the appropriate week in this report. Occasionally, if the specimen collection date is not available, the laboratory report date will be used.

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For other Epidemiology and Surveillance reports, please view the Manitoba Health internet website:
<http://www.gov.mb.ca/health/publichealth/surveillance/index.html>

For national surveillance data, refer to:
<http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>