

Influenza Surveillance 2015–2016

Week 16 (Apr. 17–23, 2016)

Data extracted Apr. 29, 2016 at 11:00 am

Next report date: May 13 (Apr. 24–May 7)

Laboratory-confirmed influenza cases this week:

- 9 cases of influenza A ↓
- 18 cases of influenza B ↑

Since Sept. 1, 2015:

- 844 cases of influenza A
- 162 cases of influenza B

Laboratory

Cases and cumulative incidence rates (cases per 100,000 population) since Sept. 1, 2015:

- Winnipeg: 360 (48.3)
- Southern: 150 (78.6)
- Interlake-Eastern: 90 (71.0)
- Prairie Mountain: 211 (125.7)
- Northern: 195 (258.8)

Regional Health Authority

Severe outcomes associated with laboratory-confirmed influenza diagnosis this week:

- 1 hospitalizations ↓
- 0 ICU admissions ↓
- 0 deaths →

Since Sept. 1, 2015:

- 273 hospitalizations
- 76 ICU admissions
- 22 deaths

Severity

Calls to Influenza Service at Health Links–Info Santé this week: 11 ↑

Percent of visits to sentinel physicians due to ILI this week: 0.8% ↓

In Emergency Department this week:

- 144 ILI cases per day on average ↑
- 16–20% of visits due to ILI →

Influenza-Like-Illness (ILI)

Laboratory-confirmed outbreaks this week:

- 0 outbreaks of influenza A ↓
- 0 outbreaks of influenza B →

Since Sept. 1, 2015:

- 15 outbreaks of influenza A
- 1 outbreak of influenza B
- 1 outbreak of influenza A and B

Outbreak

Oseltamivir dispensed from community retail pharmacies:

- This week: 70 units ↓
- Since Oct. 1, 2015: 2,837 units

Isolates resistant to antiviral since Sept. 1, 2015 in Canada:

- Oseltamivir: 8
- Zanamivir: 0

Antiviral

As of Mar. 31, 2016:

- Percent of Manitobans immunized with the seasonal influenza vaccine: 22.2%

The quadrivalent influenza vaccine, available in Manitoba, protects people from four influenza strains that appear to be circulating.

- Fluzone® Quadrivalent (Sanofi Pasteur) vaccines are still available.

Immunization

The overall influenza activity in Manitoba continued to decrease according to most surveillance indicators. Influenza B continued to be the dominating influenza type this week. RSV was the dominant circulating non-influenza respiratory virus since beginning of March.

Nationally, after the peak early March, lower and sustained influenza activity continued across the country. Overall this season, hospitalizations have been reported more frequently among adults aged 65+. The largest proportion of ICU admissions was reported in adults aged 45–64 and the highest proportion of fatal cases was reported in adults aged 65+.

The majority of recently circulating influenza viruses are susceptible to the neuraminidase inhibitor antiviral medications including oseltamivir and zanamivir. However, rare sporadic instances of oseltamivir-resistant influenza A(H1N1)pdm09 and A(H3N2) viruses have been detected worldwide.

Summary: Decreasing activity

Note. Numbers are subject to change. Missed events in the current weekly report due to a delay of submission to MHLS will be reported in later weeks 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. The specimen collection date for the lab confirmation of influenza was used to assign cases to epidemiology weeks.

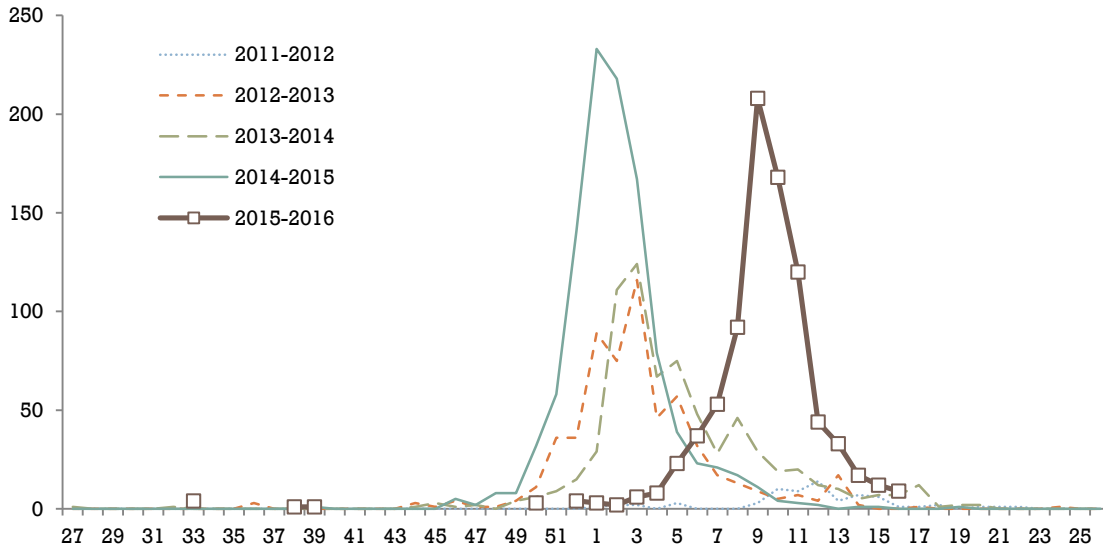


Figure 1. Laboratory-confirmed influenza A cases by week, Manitoba, 2015-2016

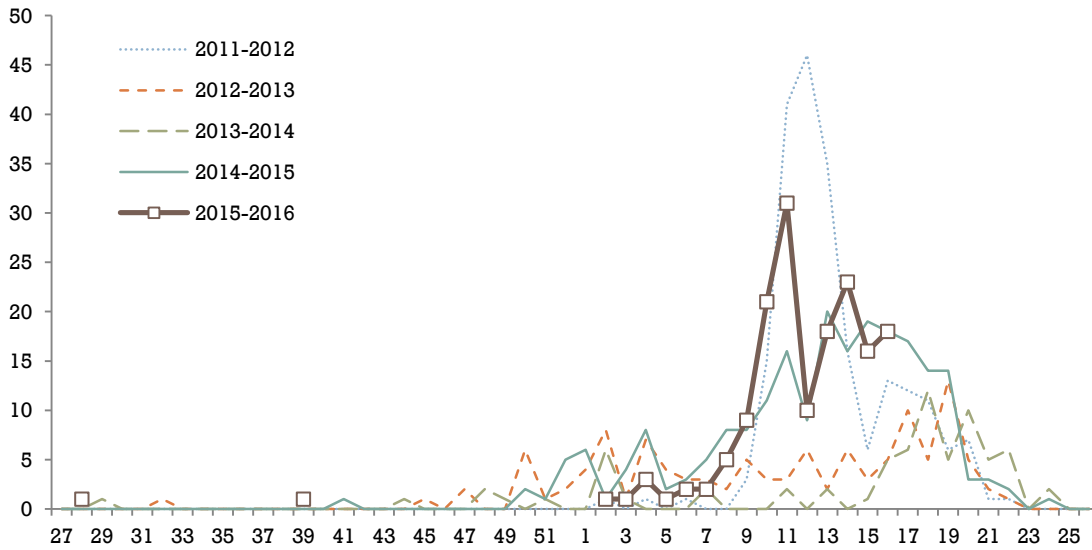


Figure 2. Laboratory-confirmed influenza B cases by week, Manitoba, 2015-2016

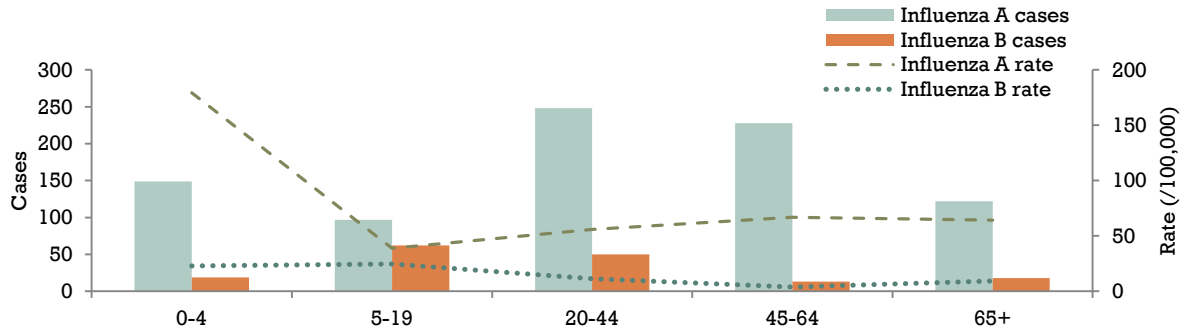


Figure 3. Influenza cases and rate by influenza type and age group, Manitoba, 2015–2016

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.

The number of calls to Health Links – Info Santé overall continued to be low after a small peak in Week 10.

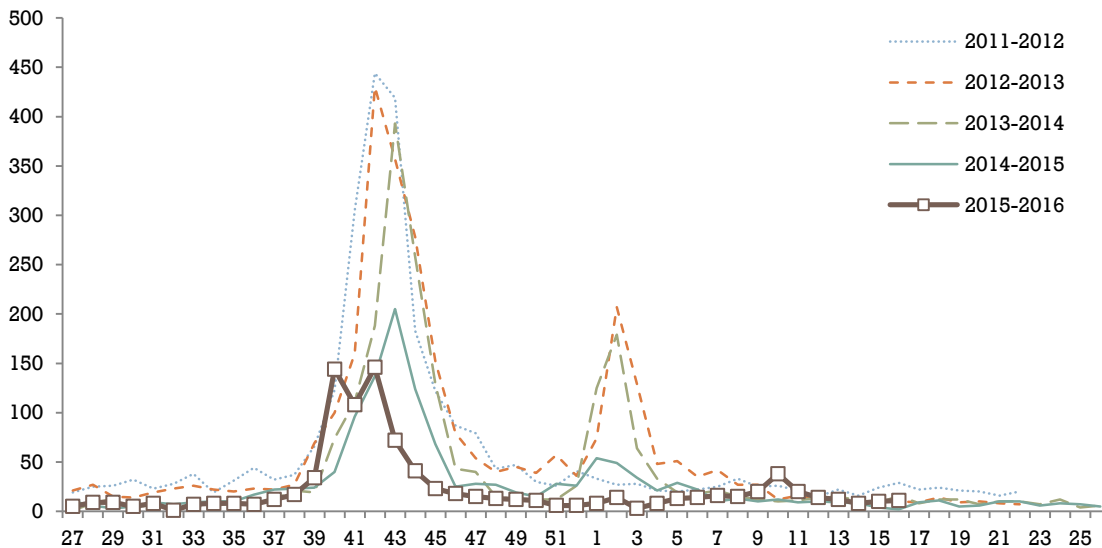


Figure 4. Calls to Health Links – Info Santé by week, Manitoba, 2015–2016

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 2015–2016, there were 19 sentinel physicians recruited throughout Manitoba. They are requested to report 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.

The weekly percentage of patient visits to sentinel physicians due to ILI overall decreased since Week 10.

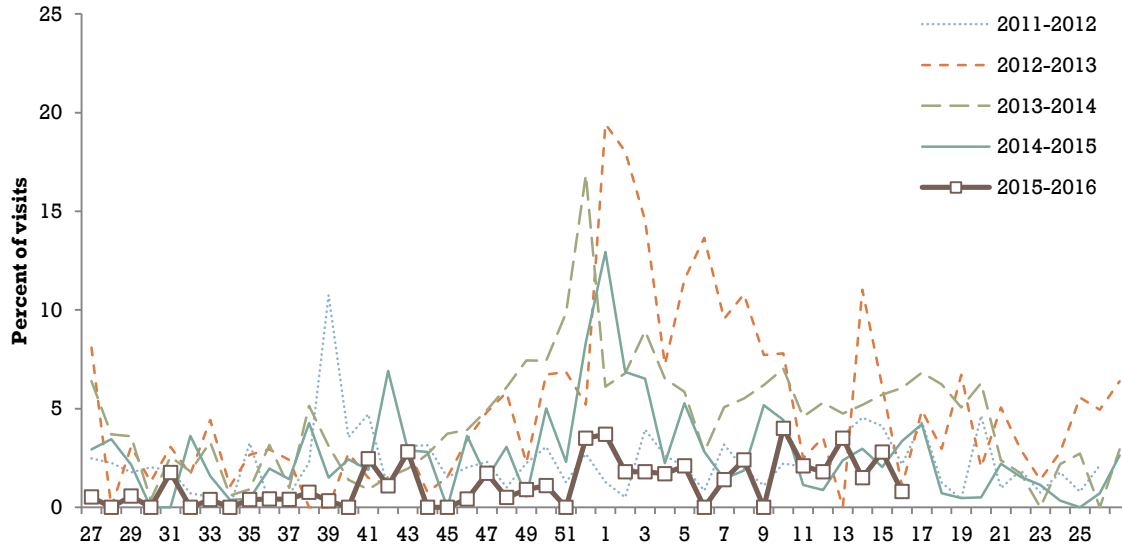


Figure 5 Percent of patient visits to sentinel physicians due to ILI by week, Manitoba, 2015-2016

ILI visits to Emergency Department

E&S receives the summary report for the daily ILI related visits to Emergency Department at Winnipeg Regional Health Authority (WRHA) on a weekly basis. 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.

The number of ILI cases and as % of total visits to Emergency Department was similar to the previous week.

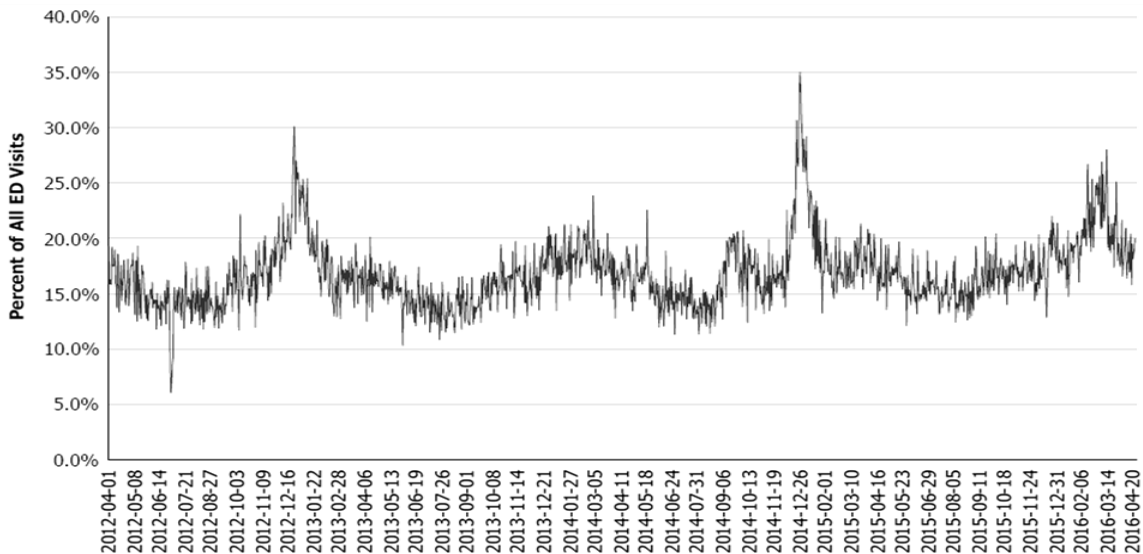


Figure 6 ILI cases as % of all visits in Emergency Department at WRHA by day, 2012-2016, Manitoba

Influenza Associated Severe Outcome

Influenza is a reportable disease. All positive influenza laboratory results are to be reported to MHHS and referred by MHHS to regional Public Health Offices for follow-up. Upon receiving the laboratory results, regional Public Health Offices are required to collect information on patients who were admitted into hospitals and ICUs or have died, and subsequently report the information to MHHS on a weekly basis. Influenza associated deaths are also reported from Clinical Notification of Reportable Diseases and Conditions forms. Other sources may report influenza associated deaths to MHHS as well, such as outbreak summaries.

The reason for admission or death does not have to be directly attributable to influenza; rather, the admission or death is temporally associated with a positive influenza laboratory result. The specimen collection date for the lab confirmation of influenza is used to assign cases to epidemiology weeks. Aggregate data from the weekly public health surveillance are also reported to PHAC for national surveillance on a weekly basis.

This week, the number of hospitalized influenza patients including those ICU admitted continued to decrease since Week 9.

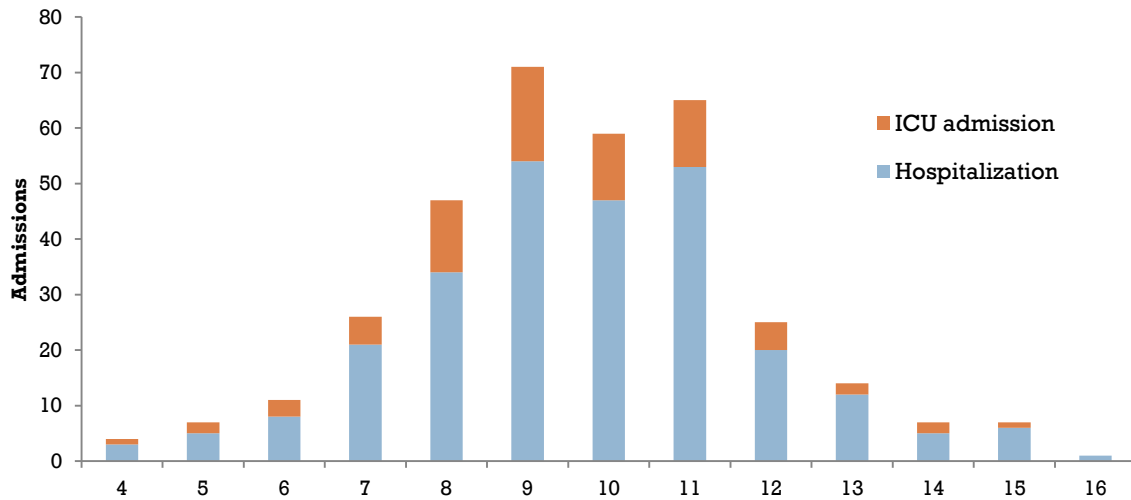


Figure 7 Hospitalized influenza patients by week, Manitoba, 2015–2016

Most hospitalized influenza patients this season were aged below 65 years. Around 10% of all ICU admitted patients were aged below 5 years and only 15% were aged 65 years and older.

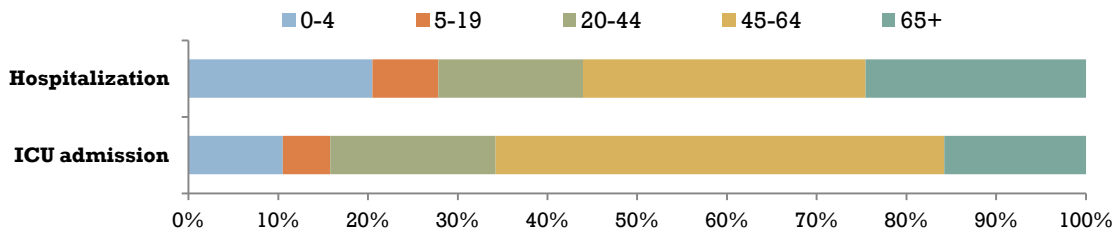


Figure 8 Percent of hospitalized influenza patients by age, Manitoba, 2015–2016

Antiviral Dispensing

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

The units of antiviral drug dispensed continued to decrease since Week 10.

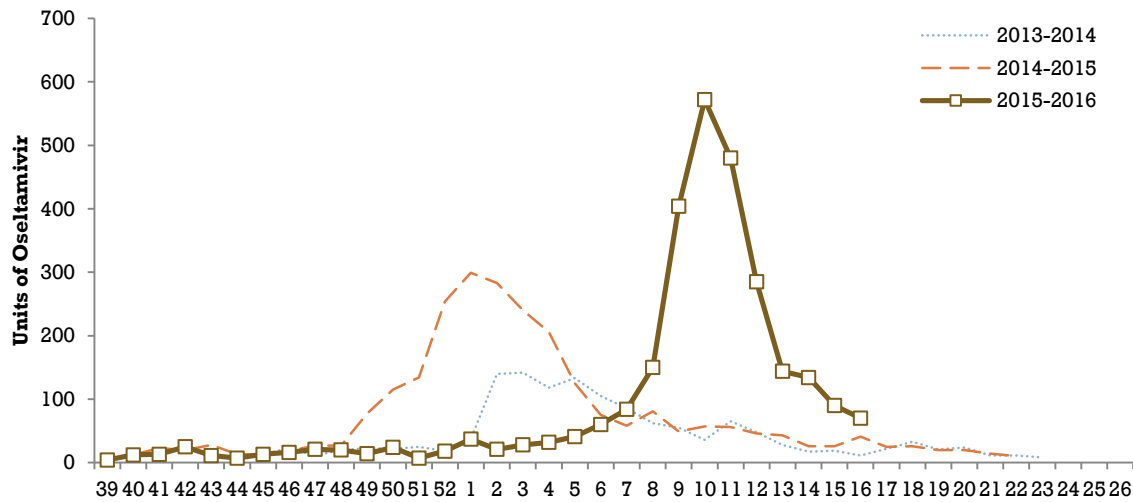


Figure 9 Units of Oseltamivir dispensed by week, Manitoba, 2015–2016

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.

In Canada, all influenza viruses tested to date were sensitive to Zanamivir. Of all the viruses tested, eight H1N1 viruses were resistant to Oseltamivir with an H275Y mutation. In comparison, almost all viruses tested were resistant to Amantadine.

Table 1. Antiviral resistance of isolates by influenza type and subtype since September 1, 2015 in Canada and Manitoba, 2015–2016

		Oseltamivir		Zanamivir		Amantadine	
		# Resistant	# Sensitive	# Resistant	# Sensitive	# Resistant	# Sensitive
Canada	A(H3N2)	0	157	0	157	200	1
	A(H1N1)	8	786	0	796	1,147	1
	B	0	337	0	337	N/A	N/A
Manitoba	A(H3N2)	0	2	0	2	2	0
	A(H1N1)	0	16	0	16	37	0
	B	0	4	0	4	N/A	N/A

N/A = Not applicable

Immunization

2015–2016 Season

As per World Health Organization (WHO), all seasonal quadrivalent influenza vaccines for 2015–2016 in the northern hemisphere contain:

- A/Switzerland/9715293/2013(H3N2)-like virus;
- A/California/7/2009(H1N1)pdm09-like virus;
- B/Phuket/3073/2013-like virus;
- B/Brisbane/60/2008-like virus (quadrivalent vaccines).

For the 2015–2016 influenza season, MHLS is allotted quadrivalent inactivated vaccine (QIV), Fluzone® Quadrivalent (Sanofi Pasteur), and quadrivalent live attenuated influenza vaccine (QLAIV) FluMist® Quadrivalent (AstraZeneca), as part of the province's Publicly-Funded Seasonal Influenza Immunization Program.

2016–2017 Season

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 (quadrivalent vaccines).

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.

Since September 1, 2015, NML has characterized 2,117 influenza A and B viruses.

1. 194 influenza A(H3N2) viruses:

- 50 influenza A(H3N2) viruses were antigenically characterized as A/Switzerland/9715293/2013, the influenza A(H3N2) component in the 2015–2016 influenza vaccine.
- 144 influenza A(H3N2) viruses did not grow to sufficient hemagglutination titers for antigenic characterization by hemagglutination inhibition assays. Therefore, genetic characterization was performed. Sequence analyses showed that those influenza A(H3N2) viruses belonged to a genetic group in which most viruses were antigenically related to A/Switzerland/9715293/2013.

2. 1,188 influenza A(H1N1) viruses:

- 1,188 influenza A(H1N1) viruses characterized were antigenically similar to A/California/7/2009, the influenza A(H1N1) component in the vaccine.

3. 735 influenza B viruses:

- 154 influenza B viruses characterized were antigenically similar to B/Phuket/3073/2013 (Yamagata lineage), the influenza B component in the vaccine.
- 581 influenza B viruses were characterized as B/Brisbane/60/2008-like (Victoria lineage), the influenza B component in the quadrivalent vaccine.

Table 2 Influenza Strain Characterization reported by NML since September 1, 2015, Canada, 2015–2016

Strain	Number of viruses	
	Canada	Manitoba
A/Switzerland/9715293/2013(H3N2)-like	50	0
A/California/7/2009(H1N1)-like	1,188	41
B/Phuket/3073/2013-like	154	3
B/Brisbane/60/2008-like	581	8

Abbreviations

CPL = Cadham Provincial Laboratory
E&S = Epidemiology and Surveillance
ICU = Intensive Care Unit
ILI = Influenza Like Illness
LTCF = Long Term Care Facility
MHLS = Manitoba Health, Healthy Living and Seniors
NML = National Microbiology Laboratory
PHAC = Public Health Agency of Canada
RHA = Regional Health Authority
WHO = World Health Organization
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 in SIS databases 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 10,000 and divided by the total population in each region. Regional populations as of June 1, 2014 are provided by Information Management & Analytics at MHLS.

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, including at least one laboratory confirmed case.

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. However, hospitalized/ICU cases are reported based on laboratory report date.

Epidemiology and Surveillance
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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>