

British Columbia Influenza Surveillance Bulletin

Influenza Season 2015-16, Number 1, Weeks 39-40

September 27 to October 10, 2015

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More Reports of Influenza A(H3N2) Outbreaks in BC Long-term Care Facilities

This is the first bulletin for the 2015-16 influenza season. In weeks 39-40 (September 27 to October 10, 2015), low-level influenza A(H3N2) activity continued in BC, including reports of influenza outbreaks in long-term care facilities (LTCF).

Since our last bulletin 2 weeks ago, 3 new lab-confirmed influenza A outbreaks were reported in LTCFs in the Lower Mainland region of BC with onset in weeks 39-40. A total of 5 LTCF influenza outbreaks have now been reported since mid-August. By comparison, 3 LTCF influenza outbreaks were reported during this same period of the A(H3N2)-dominant 2014-15 season. In general, however, summer and/or early fall reporting of LTCF outbreaks is atypical and warrants monitoring for possible early A(H3N2) activity for the 2015-16 season.

Sporadic influenza activity continues to be detected at the BC provincial laboratory, mostly in elderly adults aged ≥ 65 years. In weeks 39-40, 23 (7%) patients tested positive for influenza virus; almost all (>90%) were influenza A. Enteroviruses remained the most commonly detected viruses during this period.

Other surveillance indicators, including sentinel ILI consultation rates and ILI visits to BC Women's and Children's Hospital ER, also showed a slight increasing trend over this period.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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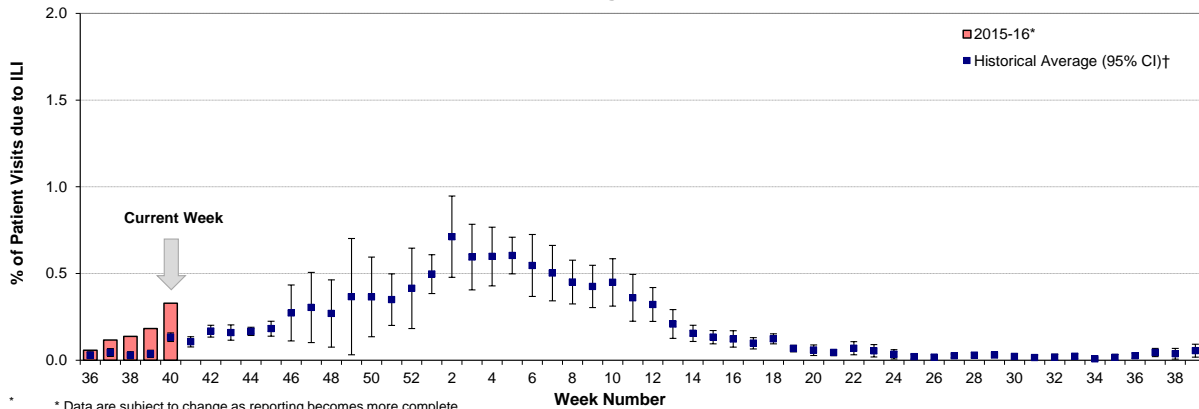
Report Disseminated: October 15, 2015

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel sites was 0.2% in week 39 and 0.3% in week 40 and has been significantly higher than expected for this time of year for the past 4 weeks. To date, 55% and 42% of sentinel sites have reported data for weeks 39 and 40, respectively.

Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2015-16

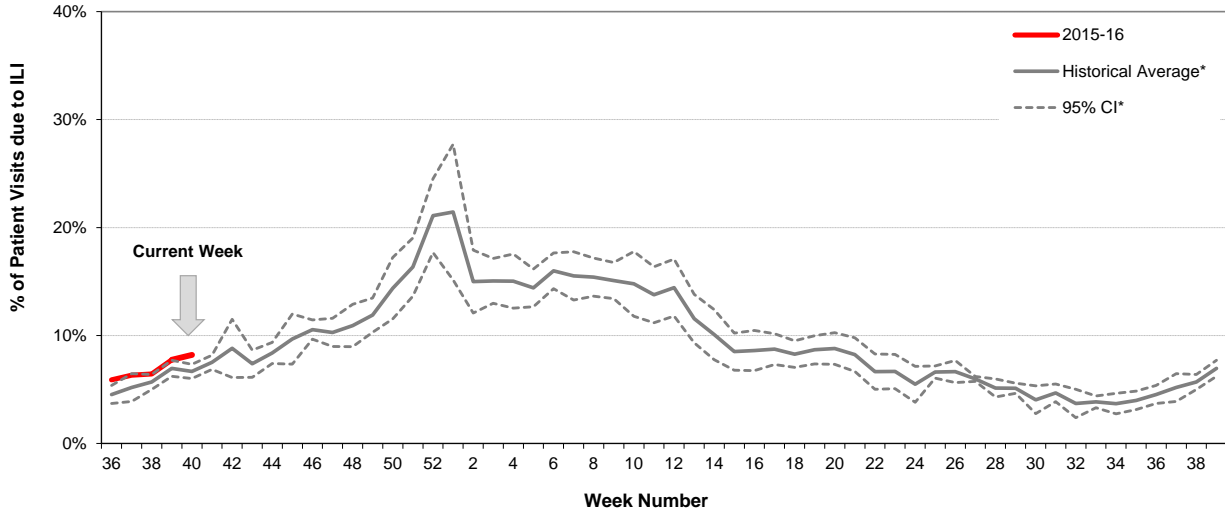


* Data are subject to change as reporting becomes more complete.
† Historical average based on 2003-04 to 2014-15 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children’s Hospital Emergency Room

In weeks 39-40, the proportion of visits to BC Children’s Hospital Emergency Room (ER) attributed to ILI was 8%, slightly higher than the 5-year historical average.

Percent of patients presenting to BC Children’s Hospital ER attributed to influenza-like illness (ILI), British Columbia, 2015-16

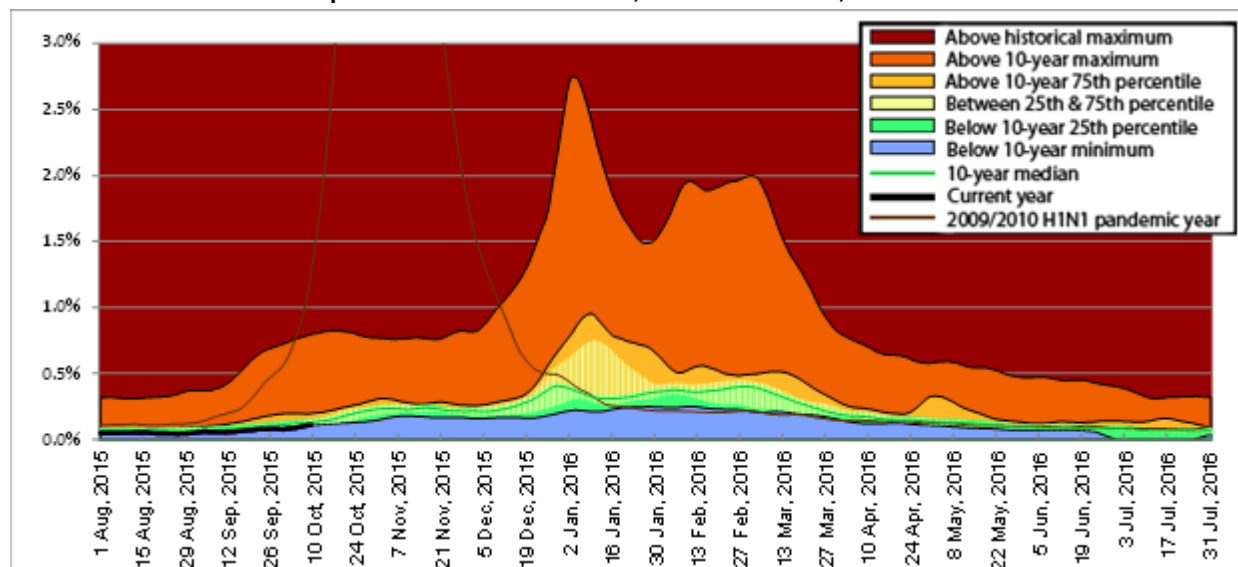


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough".
* Historical average based on 2010-11 to 2014-15 seasons; CI=confidence interval

Medical Services Plan

In weeks 39-40, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remained below 10-year 25th percentiles overall in BC.

Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2015-16

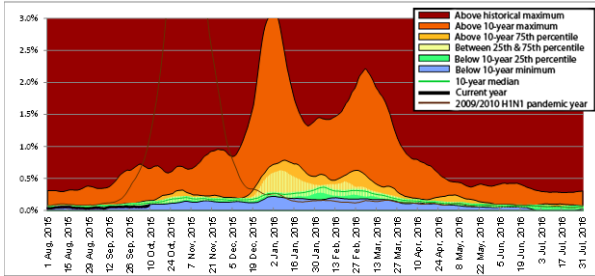


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

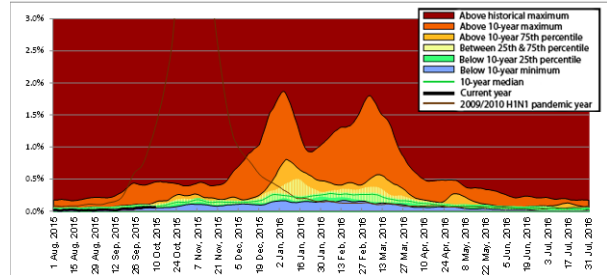
Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP week beginning August 1, 2015 corresponds to sentinel ILI week 30; data are current to October 9, 2015.

Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services

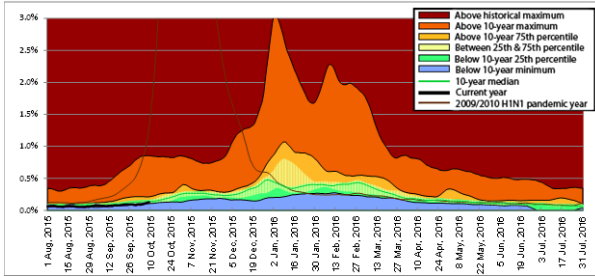
Interior



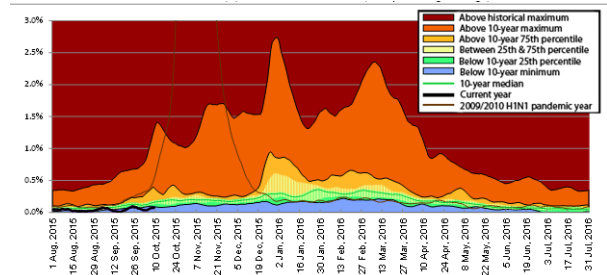
Vancouver Island



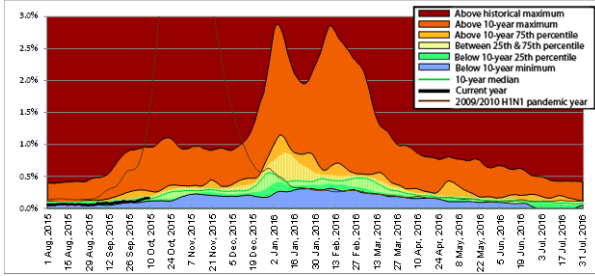
Fraser



Northern



Vancouver Coastal



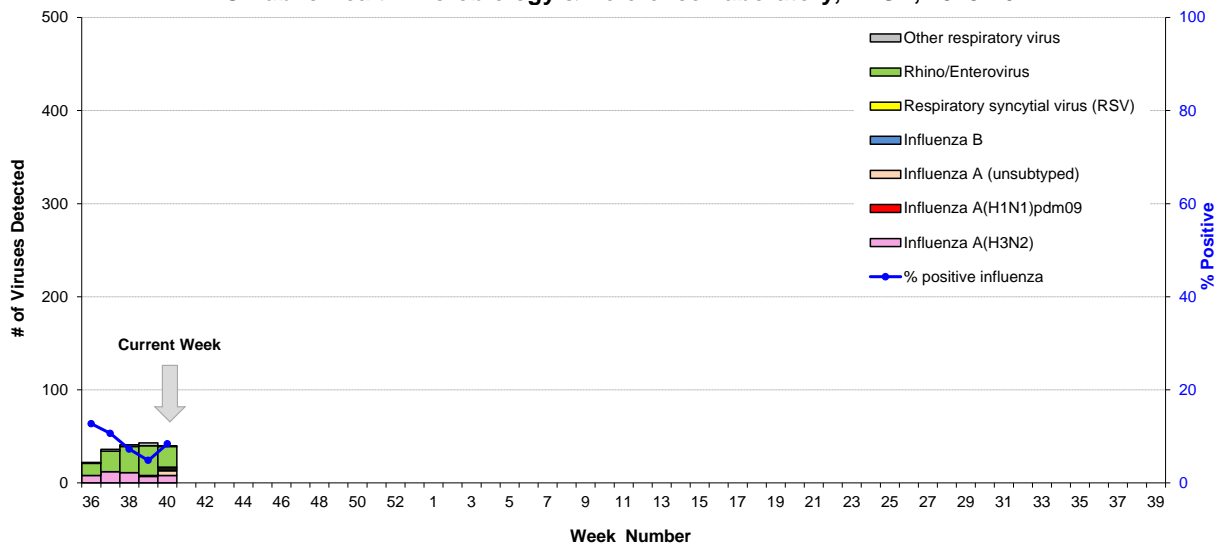
Laboratory Reports

BC Public Health Microbiology & Reference Laboratory (PHMRL)

In weeks 39-40, 345 patients were tested for respiratory viruses at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA. Of these, 23 (7%) tested positive for influenza, including 21 (91%) influenza A [15 A(H3N2) and 6 subtype pending] and 2 (9%) influenza B. Percent positivity was 5% in week 39 and 7% in week 40. The majority of detections continue to be in elderly adults aged ≥65 years, including reports of lab-confirmed outbreaks of influenza A(H3N2) in long-term care facilities.

Enteroviruses continued to be the most commonly detected respiratory viruses during this period. Despite enhanced laboratory surveillance among respiratory specimens submitted to the BC PHMRL from August 1 to September 30, 2015, no cases of enterovirus D68 (EV-D68) were identified in BC.

Influenza and other virus detections among respiratory specimens submitted to BC Public Health Microbiology & Reference Laboratory, PHSA, 2015-16

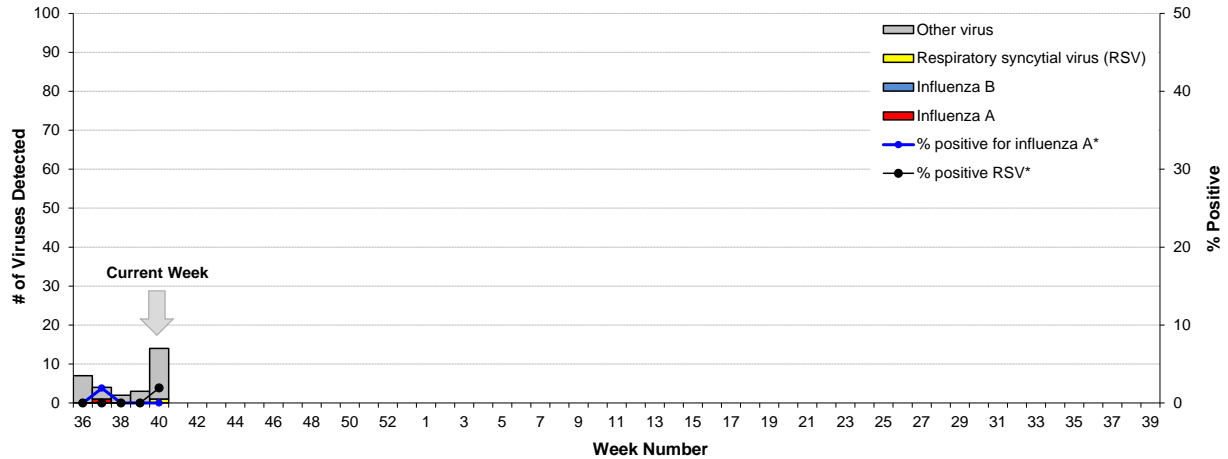


Note: PHMRL data current to October 14, 2015.

BC Children's and Women's Health Centre Laboratory

In weeks 39-40, 100 tests for influenza A/B were conducted at the BC Children's and Women's Health Centre Laboratory; none were positive. Enteroviruses were the most commonly detected respiratory viruses over this period.

Influenza and other virus detections among respiratory specimens submitted to BC Children's and Women's Health Centre Laboratory, 2015-16



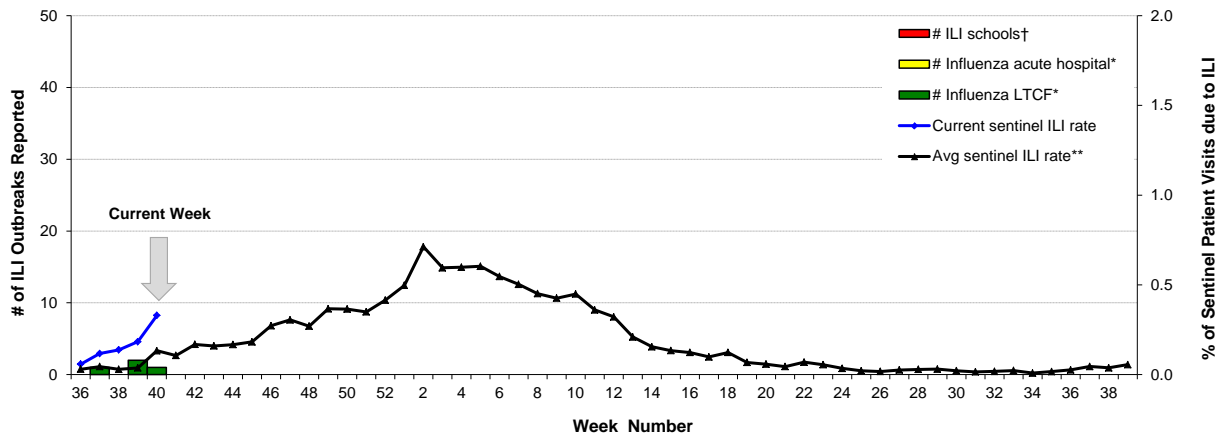
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

Since our last bulletin 2 weeks ago, 3 new lab-confirmed influenza A outbreaks have been reported from long-term care facilities (LTCFs), including 2 with influenza A(H3N2) detected and 1 with subtype pending. Two were reported in FHA with onset in weeks 39 and 40 and one was reported from VCHA with onset in week 39.

Summer and/or early fall reporting of LTCF influenza outbreaks is atypical. In no other season since the 2009 pandemic have influenza outbreaks in LTCFs been reported at this time of year, with the exception of the A(H3N2)-dominant 2014-15 season. In total since mid-August, 5 LTCF influenza A outbreaks have been reported; two previous lab-confirmed A(H3N2) outbreaks were reported in weeks 32 and 37. By comparison, 3 LTCF influenza A outbreaks were reported during this same period of the 2014-15 season, with onset dates ranging from week 33 to 39.

Number of influenza-like illness (ILI) outbreaks reported, compared to current sentinel ILI rate and historical average sentinel ILI rate, British Columbia 2015-16



* Facility-based influenza outbreaks defined as 2 or more ILI cases within 7-day period, with at least one laboratory-confirmed case of influenza.

† School-based ILI outbreak defined as >10% absenteeism on any day, most likely due to ILI.

** Historical values exclude 2008-09 and 2009-10 seasons due to atypical seasonality.

National

FluWatch (weeks 37-38):

In weeks 37-38, there was low influenza activity in Canada overall; however, influenza activity and detections are increasing, especially in BC. Most jurisdictions have reported only sporadic numbers of influenza detections in recent weeks. The majority of detections in Canada have been reported from BC, accounting for 77% of influenza detections in Canada in week 38. To date, 94% of influenza detections have been influenza A and the majority of those subtyped have been A(H3N2). In week 37, two influenza outbreaks were reported. One influenza A(H3N2) outbreak was reported in a LTCF and the other of unknown type was reported in an institutional or community setting. One lab-confirmed influenza-associated A(H3N2) pediatric hospitalization was reported. Details are available at: healthykanadians.gc.ca/diseases-conditions-maladies-affections/disease-maladie/flu-grippe/surveillance/fluwatch-reports-rapports-surveillance-influenza-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1 to October 15, 2015, the NML received 5 influenza A(H3N2) viruses from Canadian laboratories for antigenic characterization. None of the 5 influenza A(H3N2) viruses grew to sufficient titers for haemagglutination inhibition (HI) assays. Genetic characterization of these viruses was performed to infer antigenic properties. Of the 5 A(H3N2) viruses genetically characterized, all 5 belonged to a genetic group in which most viruses were antigenically related to cell-passaged A/Switzerland/9715293/2013, the WHO-recommended A(H3N2) component for the 2015-16 northern hemisphere vaccine.

National Microbiology Laboratory (NML): Antiviral Resistance

From September 1 to October 15, 2015, the NML received 5 influenza A(H3N2) viruses from Canadian laboratories for drug susceptibility testing. Of the 5 influenza A(H3N2) viruses tested, all were resistant to amantadine but sensitive to oseltamivir and zanamivir.

International

USA (week 39 ending October 3, 2015): Influenza activity in the United States remained at low levels, with co-circulation of influenza A, predominantly A(H3N2), and influenza B. Although influenza activity remains low overall, the US CDC has received reports of early institutional outbreaks of influenza across the country. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of October 5, 2015): Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. In the Northern Hemisphere, influenza activity continued at low, inter-seasonal levels with sporadic detections. Increased respiratory syncytial virus (RSV) activity was reported in the United States (US). Few influenza detections were reported by countries in Africa. In Eastern Africa, in countries with reported influenza activity, influenza type A viruses predominated. In Western Africa, influenza activity decreased overall. In tropical countries of the Americas, Central America and the Caribbean, influenza activity remained at low levels, with the exception of Cuba, where high numbers of severe acute respiratory infections (SARI) were still reported, associated with influenza A(H1N1)pdm09 virus and RSV. Colombia experienced slightly elevated acute respiratory activity in recent weeks with elevated RSV activity. In tropical Asia, countries in Southern and South East Asia reported low influenza activity overall except in India and Lao People's Democratic Republic where increased activity mainly due to A(H1N1)pdm09 virus in India and A(H3N2) virus in Lao PDR continued to be reported. Influenza activity declined in southern China. In temperate South America, respiratory virus activity decreased or remained low in general. However, ILI activity remained elevated in Chile with increasing influenza A(H1N1)pdm09 detections. In South Africa, influenza activity remained at low levels with influenza type B viruses predominating in recent weeks. In Australia, influenza activity in general seemed to be past the peak except in South Australia where it continued to rise with predominantly influenza B virus followed by influenza A(H3N2) virus detections. In New Zealand, influenza activity may have peaked in the second week of August with influenza A(H3N2) and B viruses predominating during the season. ILI activity was still above the seasonal threshold but below the alert threshold. During the period September 7-20, 2015, the WHO Global Influenza Surveillance Response System (GISRS) laboratories tested more than 35,084 specimens, of which 2,096 were positive for influenza viruses: 1,722 (82%) were typed as influenza A and 374 (18%) as influenza B. Of the sub-typed influenza A viruses, 305 (21%) were influenza A(H1N1)pdm09 and 1,124 (79%) were influenza A(H3N2). Of the characterized B viruses, 110 (92%) belonged to the B-Yamagata lineage and 9 (8%) to the B-Victoria lineage. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

WHO Recommendations for Influenza Vaccines

WHO Recommendations for 2014-15 Northern Hemisphere Influenza Vaccine

On February 20, 2014, the WHO announced the recommended strain components for the 2014-15 Northern Hemisphere trivalent influenza vaccine (TIV):*

- an A/California/7/2009(H1N1)pdm09-like virus;
- an A/Texas/50/2012(H3N2)-like virus;
- a B/Massachusetts/2/2012-like (Yamagata-lineage) virus.

* These recommended strains are the same as those used for the 2013-14 Northern Hemisphere vaccine.

For further details: www.who.int/influenza/vaccines/virus/recommendations/2014_15_north/en/.

WHO Recommendations for 2015-16 Northern Hemisphere Influenza Vaccine

On February 26, 2015, the WHO announced the recommended strain components for the 2015-16 Northern Hemisphere trivalent influenza vaccine (TIV):*

- an A/California/7/2009(H1N1)pdm09-like virus;†
- an A/Switzerland/9715293/2013(H3N2)-like virus;‡
- a B/Phuket/3073/2013-like (Yamagata-lineage) virus.§

It is recommended that quadrivalent influenza vaccines (QIV) containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like (Victoria-lineage) virus.

* These recommended strains are the same as those used for the 2015 Southern Hemisphere vaccine.

† Recommended strain has been retained as the A(H1N1) component since the 2009 pandemic and has been included in the Northern Hemisphere vaccine since 2010-11.

‡ A/South Australia/55/2014, A/Norway/466/2014, and A/Stockholm/6/2014 are A/Switzerland/9715293/2013-like viruses. Recommended strain is considered antigenically distinct from the A/Texas/50/2012-like virus recommended for the 2014-15 Northern Hemisphere vaccine and clusters within the emerging phylogenetic clade 3C.3a.

§ Recommended strain is the same influenza B-Yamagata lineage as the B/Massachusetts/2/2012-like virus recommended for the 2014-15 Northern Hemisphere vaccine but represents a phylogenetic clade-level change from clade 2 to clade 3.

For further details: www.who.int/influenza/vaccines/virus/recommendations/2015_16_north/en/.

WHO Recommendations for 2016 Southern Hemisphere Influenza Vaccine

On September 24, 2015, the WHO announced recommended strain components for the 2016 Southern Hemisphere trivalent influenza vaccine (TIV):*

- an A/California/7/2009 (H1N1)pdm09-like virus;†
- an A/Hong Kong/4801/2014(H3N2)-like virus;‡
- a B/Brisbane/60/2008-like (Victoria-lineage) virus.§

It is recommended that quadrivalent influenza vaccines (QIV) containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like (Yamagata-lineage) virus.

* Recommended strains represent a change for two of the three components used for the 2015 Southern Hemisphere and 2015-16 Northern Hemisphere vaccines.

† Recommended strain has been retained as the A(H1N1) component since the 2009 pandemic and has been included in the Southern Hemisphere vaccine since 2010 and in the Northern Hemisphere vaccine since 2010-11.

‡ Recommended strain for the A(H3N2) component represents a phylogenetic clade-level change from a clade 3C.3a virus to a clade 3C.2a virus. Most viruses belonging to A/Hong Kong/4801/2014-like (clade 3C.2a) viruses are considered antigenically related to cell-passaged A/Switzerland/9715293/2013-like (clade 3C.3a) viruses recommended for the 2015 Southern Hemisphere and 2015-16 Northern Hemisphere vaccines but are antigenically distinct from egg-passaged A/Switzerland/9715293/2013-like viruses used in vaccine manufacturing.

§ Recommended strain for the influenza B component represents a lineage-level change from a B/Yamagata-lineage virus to a B/Victoria-lineage virus.

For further details: www.who.int/influenza/vaccines/virus/recommendations/2016_south/en/.

Additional Information

Explanatory Note:

The surveillance period for the 2015-16 influenza season is defined starting in week 40. Weeks 36-39 of the 2014-15 season are shown on graphs for comparison purposes.

List of Acronyms:

ACF: Acute Care Facility

AI: Avian influenza

FHA: Fraser Health Authority

HBoV: Human bocavirus

HMPV: Human metapneumovirus

HSDA: Health Service Delivery Area

IHA: Interior Health Authority

ILI: Influenza-Like Illness

LTCF: Long-Term Care Facility

MSP: BC Medical Services Plan

NHA: Northern Health Authority

NML: National Microbiological Laboratory

A(H1N1)pdm09: Pandemic H1N1 influenza (2009)

RSV: Respiratory syncytial virus

VCHA: Vancouver Coastal Health Authority

VIHA: Vancouver Island Health Authority

WHO: World Health Organization

Current AMMI Canada Guidelines on the Use of Antiviral Drugs for Influenza:

www.ammi.ca/guidelines

Web Sites:

BCCDC Emerging Respiratory Pathogen Updates:

www.bccdc.ca/dis-cond/DiseaseStatsReports/EmergingRespiratoryVirusUpdates.htm

Influenza Web Sites

Canada – Flu Watch: www.phac-aspc.gc.ca/fluwatch/

Washington State Flu Updates: www.doh.wa.gov/Portals/1/Documents/5100/fluupdate.pdf

USA Weekly Surveillance Reports: www.cdc.gov/flu/weekly/

European Influenza Surveillance Scheme:

ecdc.europa.eu/EN/HEALTHTOPICS/SEASONAL_INFLUENZA/EPIDEMIOLOGICAL_DATA/Pages/Weekly_Influenza_Surveillance_Overview.aspx

WHO – Weekly Epidemiological Record: www.who.int/wer/en/

WHO Collaborating Centre for Reference and Research on Influenza (Australia):

www.influenzacentre.org/

Australian Influenza Report:

www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm

New Zealand Influenza Surveillance Reports: www.surv.esr.cri.nz/virology/influenza_weekly_update.php

Avian Influenza Web Sites

WHO – Influenza at the Human-Animal Interface: www.who.int/csr/disease/avian_influenza/en/

World Organization for Animal Health: www.oie.int/eng/en_index.htm

Contact Us:

Tel: (604) 707-2510

Fax: (604) 707-2516

Email: InfluenzaFieldEpi@bccdc.ca

Communicable Disease Prevention and Control Services (CDPACS)

BC Centre for Disease Control

655 West 12th Ave, Vancouver BC V5Z 4R4

Online: www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm

Influenza-Like Illness (ILI) Outbreak Summary Report Form

Please complete and email to ilioutbreak@bccdc.ca

Note: This form is for provincial surveillance purposes.

Please notify your local health unit per local guidelines/requirements.

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

Schools and work site outbreak: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions (facilities) outbreak: two or more cases of ILI within a seven-day period.

| | |
|---|---|
| A | <u>Reporting Information</u> Health unit/medical health officer notified? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | Person Reporting: _____ Title: _____ |
| | Contact Phone: _____ Email: _____ |
| | Health Authority: _____ HSDA: _____ |
| | Full Facility Name: _____ |
| | Is this report: <input type="checkbox"/> First Notification (<i>complete section B below; Section D if available</i>) <input type="checkbox"/> Update (<i>complete section C below; Section D if available</i>) <input type="checkbox"/> Outbreak Over (<i>complete section C below; Section D if available</i>) |

| | |
|---|---|
| B | <u>First Notification</u> |
| | Type of facility: <input type="checkbox"/> LTCF <input type="checkbox"/> Acute Care Hospital <input type="checkbox"/> Senior's Residence <i>(if ward or wing, please specify name/number: _____)</i> |
| | <input type="checkbox"/> Workplace <input type="checkbox"/> School (grades: _____) <input type="checkbox"/> Other (_____) |
| | Date of onset of first case of ILI (dd/mm/yyyy): <u>DD / MMM / YYYY</u> |

| Numbers to date | Residents/Students | Staff |
|---------------------|--------------------|-------|
| Total | | |
| With ILI | | |
| Hospitalized | | |
| Died | | |

| | |
|---|--|
| C | <u>Update AND Outbreak Declared Over</u> |
| | Date of onset for most recent case of ILI (dd/mm/yyyy): <u>DD / MMM / YYYY</u> |
| | If over, date outbreak declared over (dd/mm/yyyy): <u>DD / MMM / YYYY</u> |
| | |

| Numbers to date | Residents/Students | Staff |
|---------------------|--------------------|-------|
| Total | | |
| With ILI | | |
| Hospitalized | | |
| Died | | |

| | |
|---|---|
| D | <u>Laboratory Information</u> |
| | Specimen(s) submitted? <input type="checkbox"/> Yes (location: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know If yes, organism identified? <input type="checkbox"/> Yes (specify: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know |