BC Centre for Disease Control An agency of the Provincial Health Services Authority

British Columbia Influenza Surveillance Bulletin

Influenza Season 2015-16, Number 14, Week 9 February 28 to March 5, 2016

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Influenza Activity Still High in BC; A(H1N1)pdm09 Predominating

In week 9 (February 28 to March 5, 2016), most influenza surveillance indicators in BC were stable or decreased compared to previous weeks, but remained at elevated levels. It is not yet clear whether the epidemic peak for this season has been reached.

At the BCCDC Public Health Laboratory, influenza positivity decreased from a peak of 45% in week 6 to 37% in week 9. Influenza A viruses, mostly A(H1N1)pdm09, became the predominate circulating type/subtype, comprising about two-thirds of all influenza detections.

Since our last bulletin one week ago, two new labconfirmed influenza outbreaks were reported from long-term care facilities: one with influenza A(H3N2) detected in VCHA in week 8 and one with influenza A (subtype pending) detected in VIHA in week 9.

Medical Services Plan (MSP) claims for influenza illness remained higher than expected for this time of year, although current activity levels are lower than earlier historical peak levels observed in previous seasons, suggesting a mild and later than usual season in 2015-16. Sentinel ILI rates remained significantly above the 10-year historical average again in week 9.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Report Disseminated: March 10, 2016



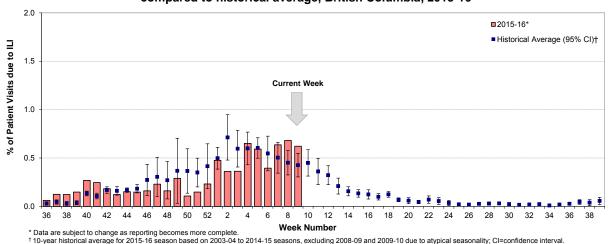




British Columbia

Sentinel Physicians

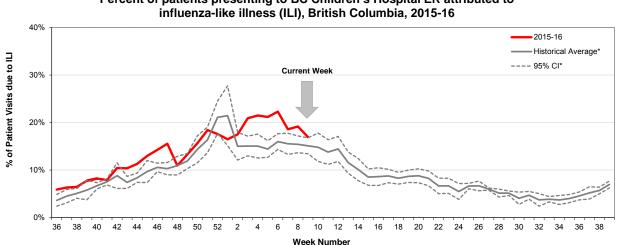
The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel sites was significantly above the 10-year historical average again in week 9 at 0.6%. For the third consecutive week, one site located in a hospital ER has reported ILI rates of ≥4%. This site has been excluded from the graph; when this site is included, sentinel ILI rates are about 1% in weeks 7-9. So far, 51% of sentinel sites have reported for week 9.



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

BC Children's Hospital Emergency Room

The proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI continued a declining trend in week 9 but remained slightly above the 5-year historical average at 17%.



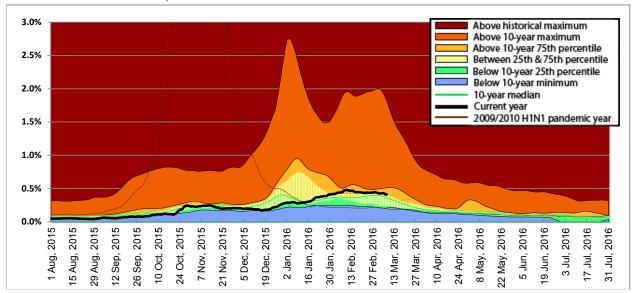
Percent of patients presenting to BC Children's Hospital ER attributed to

Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chieft complaint of "flu" or "influenza" or "fever/cough." 5-year historical average for 2015-16 season based on 2010-11 to 2014-15 seasons; CI=confidence interval



Medical Services Plan

BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remained stable across the province again in week 9. Rates were higher than expected for this time of year but lower than historical peak levels observed in previous seasons, which typically occur earlier in the season. Rates were above 10-year 75th percentiles in FHA, IHA and for the province overall in week 9, but were within 10-year median levels in VCHA, VIHA and NHA.



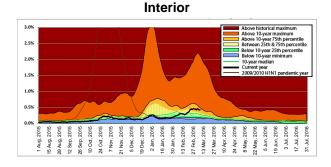
Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2015-16

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

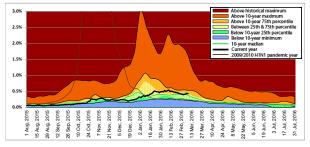
Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP week beginning August 1, 2015 corresponds to sentinel ILI week 30; data are current to March 8, 2016.

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

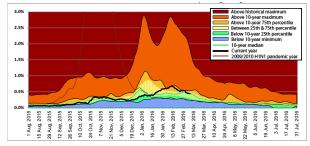
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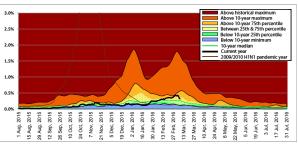




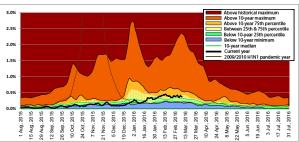
Vancouver Coastal



Vancouver Island



Northern





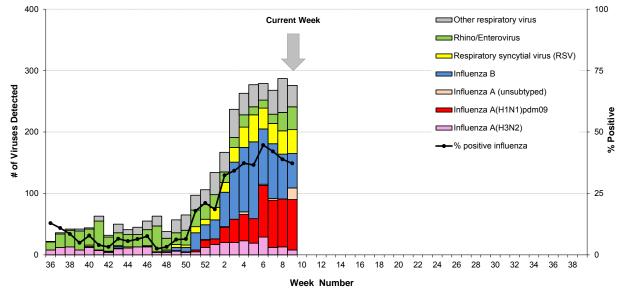
Laboratory Reports

BCCDC Public Health Laboratory

In week 9, 443 patients were tested for respiratory viruses at the BCCDC Public Health Laboratory (PHL). Of these, 165 (37%) tested positive for influenza, including 109 (66%) with influenza A [82 A(H1N1)pdm09, 8 A(H3N2), and 19 subtype pending] and 56 (34%) with influenza B. Influenza positivity continued to decrease from a peak of 45% in week 6 but remained elevated above 35% in week 9. Influenza A viruses, mostly A(H1N1)pdm09 among those with known subtype, became the predominate circulating type/subtype in week 9, comprising about two-thirds of all influenza detections. Previously, influenza A and B viruses had co-circulated in approximately equal proportions since week 6. Respiratory syncytial viruses (RSV) and entero/rhinoviruses were also commonly detected during this period.

Cumulatively since week 40 (starting October 4, 2015), 1,552 (26%) patients have tested positive for influenza at the BCCDC PHL, including 768 (49%) with influenza A [487 A(H1N1)pdm09, 260 A(H3N2), and 21 subtype pending], 780 (50%) with influenza B, and four adult patients with influenza A and B co-infections. The 2015-16 season to date has been characterized by mixed circulation of influenza A and B viruses, with A(H1N1)pdm09 subtype viruses predominating over A(H3N2) subtype viruses since week 2 among influenza A detections and B/Victoria lineage viruses predominating over B/Yamagata lineage viruses among influenza B detections.

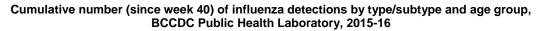
So far this season (cumulatively since week 40), just over one-half (51%) of influenza detections have been in non-elderly, working-aged adults 20-64 years, with a smaller proportion of detections in children <20 years (28%) and elderly adults ≥65 years (21%). However, this age distribution differs by influenza type/subtype: adults 20-64 years, and to a lesser extent children <20 years, comprise a larger proportion of A(H1N1)pdm09 and influenza B cases, while elderly adults ≥65 years comprise a larger proportion of A(H3N2) cases.

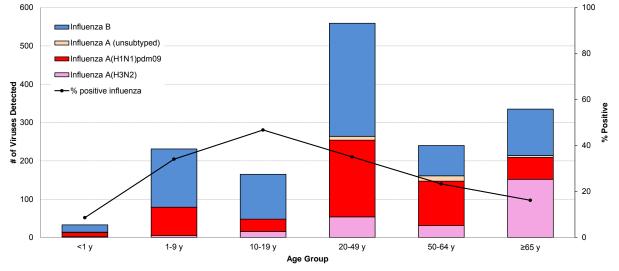




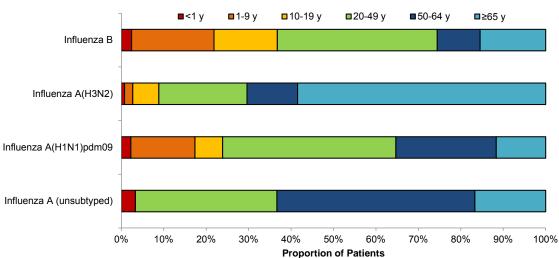
Data are current to March 9, 2016.

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Data are current to March 9, 2016; figure includes cumulative influenza detections for specimens collected from weeks 40-9.



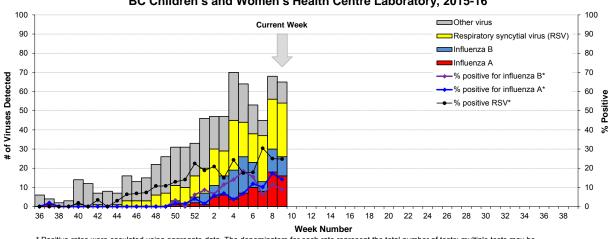
Age distribution of influenza detections (cumulative since week 40) by type/subtype, BCCDC Public Health Laboratory, 2015-16

Data are current to March 9, 2016; figure includes cumulative influenza detections for specimens collected from weeks 40-9.



BC Children's and Women's Health Centre Laboratory

In week 9, the BC Children's and Women's Health Centre Laboratory conducted 113 tests for influenza; 16 (14%) were positive for influenza A, and 10 (9%) were positive for influenza B. Respiratory syncytial virus (RSV) continued to be the predominant respiratory virus detected in week 9 (25% of tests for RSV were positive).



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

* Positive rates were caculated 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.



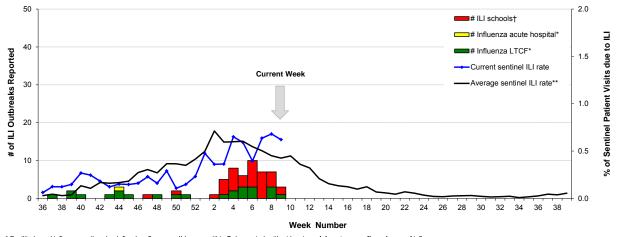
Influenza-like Illness (ILI) Outbreaks

Since our last bulletin one week ago, two new lab-confirmed influenza outbreaks were reported from longterm care facilities (LTCF): one with influenza A(H3N2) detected in VCHA with onset in week 8 and one with influenza A (subtype pending) detected in VIHA with onset in week 9. No new ILI outbreaks in schools were reported since our last bulletin.

In total since mid-August (since week 32, starting August 9, 2015), 27 influenza outbreaks have been reported from facilities, including 25 from LTCFs, one from an acute care facility, and one from a rehabilitation facility:

- 13 with A(H3N2) detected;
- 2 with both A(H3N2) and A(H1N1)pdm09 detected;
- 2 with both influenza A and B detected (for the influenza A detections, one was A(H3N2) and one subtype unknown);
- 3 with influenza A detected (subtype unknown/pending); and
- 7 with influenza B detected.

Thirty-six school ILI outbreaks have been reported so far this season.



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 ILU. * 10-year historical average for 2015-16 season based on 2003-04 to 2014-15 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality.

Updated AMMI Guidelines: LTCF Outbreak Control

In December 2015, the Association of Medical Microbiology and Infectious Disease (AMMI) Canada posted updated recommendations for influenza antiviral drug treatment and prophylaxis for the 2015-16 season, notably in relation to control of influenza outbreaks in long-term care facilities, available from www.ammi.ca/guidelines.



National

FluWatch (week 8, February 21-27, 2016)

Overall in week 8, influenza activity continued to increase; the Eastern provinces of Canada accounted for the majority of influenza laboratory confirmations. The percentage of tests positive for influenza increased from 29% in week 7 to 33% in week 8, above the five-year expected levels for this time of year (range: 13-17%). However, with the late start to the 2015-16 influenza season, these above normal levels are not unexpected and are typical of peak season levels. Influenza A(H1N1)pdm09 remains the most common influenza subtype circulating in Canada. In week 8, adults 65+ years of age accounted for the largest proportion of hospitalizations. Paediatric hospitalizations reported by the IMPACT network continued to substantially increase, reaching 121 hospitalizations in week 8. The number of outbreaks reported in week 8 increased sharply from the previous week with the majority of outbreaks reported in long-term care facilities. Details are available at: healthycanadians.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, 2015 to March 10, 2016, the National Microbiology Laboratory (NML) received 766 influenza viruses [132 A(H3N2), 436 A(H1N1)pdm09 and 198 B] from Canadian laboratories for antigenic characterization.

Influenza A(H3N2): Of the 132 influenza A(H3N2) viruses, only 28 (21%) had sufficient haemagglutination titre for antigenic characterization by haemagglutination inhibition (HI) assay. Of the 28 viruses characterized by HI assay, all were considered antigenically similar to a cell-passaged A/Switzerland/9715293/2013-like virus, the WHO-recommended A(H3N2) component for the 2015-16 northern hemisphere influenza vaccine. Genetic characterization was performed to infer antigenic properties on the remaining 104 viruses that did not grow to sufficient haemagglutination titre for HI assay. Of the 104 A(H3N2) viruses genetically characterized, all were reported to belong to a genetic group in which most viruses were antigenically related to A/Switzerland/9715293/2013.

Influenza A(H1N1)pdm09: The 436 A(H1N1)pdm09 viruses characterized were antigenically similar to an A/California/7/2009-like virus, the WHO-recommended A(H1N1) component for the 2015-16 northern hemisphere influenza vaccine.

Influenza B: Of the 198 influenza B viruses characterized, 66 (33%) were antigenically similar to a B/Phuket/3073/2013-like (Yamagata lineage) virus, the recommended influenza B component for the 2015-16 northern hemisphere influenza vaccine, while 132 (67%) were characterized as a B/Brisbane/60/2008-like (Victoria lineage) virus, the recommended influenza B component for the 2015-16 northern hemisphere quadrivalent influenza vaccine containing two influenza B components.

National Microbiology Laboratory (NML): Antiviral Resistance

From September 1, 2015 to March 10, 2016, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing. Of the 520 influenza A viruses [134 A(H3N2) and 386 A(H1N1)pdm09] tested against amantadine, all were resistant with the exception of one A(H3N2) virus which was sensitive to amantadine. Of the 616 influenza viruses [124 A(H3N2), 337 A(H1N1)pdm09 and 155 B] tested against oseltamivir, all were sensitive except for one A(H1N1)pdm09 virus with a H275Y mutation which was resistant to oseltamivir. Of the 619 influenza viruses [124 A(H3N2), 340 A(H1N1)pdm09 and 155 B] tested against zanamivir, all were sensitive.



International

USA (week 8, February 21-27, 2016)

During week 8, influenza activity remained elevated in the United States. The most frequently identified influenza virus type reported by public health laboratories during week 8 was influenza A, with influenza A (H1N1)pdm09 viruses predominating. The percentage of respiratory specimens testing positive for influenza in clinical laboratories increased. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold in the NCHS Mortality Surveillance System and above the system-specific epidemic threshold in the 122 Cities Mortality Reporting System. Four influenza-associated paediatric deaths were reported. A cumulative rate for the season of 7.8 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported. The proportion of outpatient visits for influenza-like illness (ILI) was 3.2%, which is above the national baseline of 2.1%. The geographic spread of influenza in 33 states was reported as widespread; 14 states reported regional activity; the District of Columbia and one state reported local activity; and two states reported sporadic activity. Details are available at: www.cdc.gov/flu/weekly/.

WHO (March 7, 2016)

In the Northern Hemisphere high levels of influenza activity continued with influenza A(H1N1)pdm09 predominating and an increase in the proportion of influenza B viruses detected. In the Southern Hemisphere and in tropical countries influenza activity was generally low.

- In North America, influenza activity increased further with influenza A(H1N1)pdm09 predominating in Canada and the United States and A(H3N2) in Mexico.
- In Europe, ongoing high levels of influenza activity continued to be reported, although in some countries activity seemed to have peaked already. Influenza A(H1N1)pdm09 accounted for most virus detections with an increase in the proportion of influenza B detections. In Russian Federation and Ukraine, elevated severe acute respiratory illness (SARI) activity continued but at lower levels compared to previous weeks.
- In Northern/Temperate Asia, influenza activity remained high but seemed to have peaked already in some countries.
- In Western Asia, influenza activity continued to decrease. Oman reported ongoing low levels of both influenza A(H1N1)pdm09 and influenza B viruses.
- In Africa, influenza A(H1N1)pdm09 activity was reported in northern Africa.
- In tropical countries of the Americas, Central America and the Caribbean, influenza and other respiratory virus activity were overall at low levels, except Jamaica, and Puerto Rico with high but decreasing influenza activity.
- In South East Asia, ongoing low influenza activity was reported during this period.
- In the temperate countries of the Southern Hemisphere, influenza activity remained low at interseasonal level.
- From February 8 to 21, 2016, the WHO GISRS laboratories tested more than 158,158 specimens. Of these, 42,727 were positive for influenza viruses: 33,745 (79%) were typed as influenza A and 8,982 (21%) as influenza B. Of the sub-typed influenza A viruses, 19,269 (88%) were influenza A(H1N1)pdm09 and 2,709 (12%) were influenza A(H3N2). Of the characterized B viruses, 589 (24%) belonged to the B/Yamagata lineage and 1,821 (76%) to the B/Victoria lineage.

Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

On February 8, 2016, the WHO published a Risk Assessment on Seasonal Influenza A(H1N1)pdm09, available from: www.who.int/influenza/publications/riskassessment_AH1N1pdm09_201602/en/.



WHO Recommendations for Influenza Vaccines

WHO Recommendations for 2016-17 Northern Hemisphere Influenza Vaccine

On February 25, 2016, the WHO announced recommended strain components for the 2016-17 Northern 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.

These recommended components are the same as those recommended for the 2016 Southern Hemisphere vaccine.

* Recommended strains represent a change for two of the three components used for the 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 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.

§ 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: http://www.who.int/influenza/vaccines/virus/recommendations/2016 17 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/.



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/health-professionals/data-reports/emerging-respiratory-virus-updates

Influenza Web Sites

Canada – Flu Watch: <u>www.phac-aspc.gc.ca/fluwatch/</u> Washington State Flu Updates: <u>http://www.doh.wa.gov/portals/1/documents/5100/420-100-fluupdate.pdf</u> USA Weekly Surveillance Reports: <u>www.cdc.gov/flu/weekly/</u> European Influenza Surveillance Scheme: <u>ecdc.europa.eu/EN/HEALTHTOPICS/SEASONAL_INFLUENZA/EPIDEMIOLOGICAL_DATA/Pages/Weekly Influenza Surveillance Overview.aspx</u> WHO – Weekly Epidemiological Record: <u>www.who.int/wer/en/</u> WHO Collaborating Centre for Reference and Research on Influenza (Australia): <u>www.influenzacentre.org/</u> Australian Influenza Report: <u>www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm</u> New Zealand Influenza Surveillance Reports: <u>www.surv.esr.cri.nz/virology/influenza weekly_update.php</u>

Avian Influenza Web Sites

WHO – Influenza at the Human-Animal Interface: <u>www.who.int/csr/disease/avian_influenza/en/</u> World Organization for Animal Health: <u>www.oie.int/eng/en_index.htm</u>

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/health-professionals/data-reports/influenza-surveillance-reports

Influenza-Like Illness (ILI) Outbreak Summary Report Form

Please complete and email to <u>ilioutbreak@bccdc.ca</u>

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 <i>could</i> 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	Reporting Inform Person Reporting: Contact Phone: Health Authority: Full Facility Name: Is this report:	First Notification Update (complete	unit/medical health officer Title: Email: HSDA: (complete section B below e section C below; Section complete section C below;	; Section D if available) D if available)	
В	First Notification Type of facility: LTCF Acute Care Hospital Senior's Residence				
	(if ward or wing, please specify name/number:) ☐ Workplace				
	Date of onset of first case of ILI (dd/mm/yyyy):DD / MMM / YYYY				
		Numbers to date	Residents/Students	Staff	
		Total			
		With ILI			
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C	Update AND Out	break Declared Ov	<u>er</u>		
C			(dd/mm/yyyy):/ MMI		
	If over, date outbreak declared over (dd/mm/yyyy): DD / MMM / YYYY				
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	Laboratory Infor	mation			
D	Laboratory Infor Specimen(s) subm		ation:) [] No 🔲 Don't know	
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