

Influenza (FLU) Update for Week #02 Week Ending 1-12-19

The CDC reported that **Influenza (Flu)** activity, which includes diagnosed flu as well as **ILI (Influenza-Like-Illness)**, remained elevated. The percentage of respiratory specimens testing positive for flu decreased slightly to 12.4% from 12.7% last week, but all 10 Regions were still reporting flu levels above baseline, and the number of hospitalizations from flu continued to increase.

Influenza A viruses were the most common found in the samples tested, with Influenza A(H1N1)pdm09 the most dominant, except in Region 4 (the Southeast), which again had A(H3) viruses dominate. Influenzas A (H1N1), A (H3N2) and Influenza B viruses were considered to be co-circulating. The majority of the flu viruses were genetically similar to the 2018/19 Flu Vaccine.

See this link for more details on Flu and ILI activity, including charts, graphs and maps:
<https://www.cdc.gov/flu/weekly/index.htm>

FirstWatch RIN (Regional Influenza Network) Alerts significantly increased last week over the previous week.

For the most recently reported week, ending January 12, 2019, the CDC reported:

Influenza-like illness (ILI) visits to clinics & other non-hospital facilities were slightly decreased at 3.1% (l. w. 3.5%) & remained above the national baseline of 2.2%. All 10 regions reported ILI at or above their region-specific baselines. Nine (9) states had high ILI activity.

Flu cases, documented by positive flu tests on respiratory specimens, were reported as Widespread in 30 states and Guam. Clinical lab testing for influenza was positive for 12.4% of specimens, compared to 12.7% last week, with a range of 9.2% (Region 3) to 17.3% in Region 1; Region 4 reported 17.0% and was the only region with A (H3) as the dominant strain.

Influenza A remained the dominant flu for 96.7% of the flu tests reported (97.5% last week), with 89.1% (82.6% last week) as A (H1N1)pdm09 viruses and the H3N2 subtype at 10.9% (17.4% last week). The rest of the tests showed 3.3% (2.5% l.w.) tested as Influenza B viruses.

This shows a small decrease in Influenza A viruses and therefore slightly more Influenza B. Typically, Influenza B viruses cause less severe illness and occur more towards the Spring.

None of the flu viruses tested were found to have greatly reduced inhibition to the antivirals oseltamivir, zanamivir, and peramivir (Tamiflu, Relenza, and Rapivab, respectively). There was high resistance to the adamantane group of antivirals, namely Amantadine and rimantadine (Flumadine), which are also not effective for any Influenza B viruses. Baloxavir marboxil, under the brand name Xofluza, is a new influenza antiviral drug approved in October 2018, as a new alternative. It also works on Influenza B viruses and controls the virus in a different way.

The CDC recommends treatment with antivirals, as early as possible, for those with confirmed or suspected flu with severe, complicated, or progressive disease, those who are hospitalized, or at high risk for complications of flu. See this link for a list of those at risk for complications from flu:

https://www.cdc.gov/flu/about/disease/high_risk.htm

The CDC provides an interactive U.S. map that will link to each state's public health authorities. ILI and Flu information and processes, as well as other diseases and public health topics. This site includes a tremendous amount of information at the State and even Local level. Find it at this site:

<https://www.cdc.gov/flu/weekly/usmap.htm>

For Influenza-Like Illness:

High ILI Activity: (9 states): Colorado, Connecticut, Georgia, Kentucky, Louisiana, New Hampshire, New Jersey, New Mexico, and Oklahoma

Moderate ILI Activity: (New York City & 13 states): Alabama, Arizona, Indiana, Kansas, Maryland, Massachusetts, Nevada, Pennsylvania, South Carolina, Texas, Utah, Vermont, and Virginia

Low Activity: (10 states): California, Illinois, Minnesota, Mississippi, Missouri, New York, North Carolina, Rhode Island, Washington, and Wisconsin

Minimal Activity: (Washington D.C., Puerto Rico, & 18 states): Alaska, Arkansas, Delaware, Florida, Hawaii, Idaho, Iowa, Maine, Michigan, Montana, Nebraska, North Dakota, Ohio, Oregon, South Dakota, Tennessee, West Virginia, and Wyoming

For Flu (positive flu tests):

Widespread Activity: (Guam & 30 states): Arizona, California, Colorado, Connecticut, Delaware, Florida, Idaho, Indiana, Kansas, Kentucky, Massachusetts, Minnesota, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Utah, Vermont, Virginia, and Wyoming

Regional Activity (Puerto Rico & 16 states): Alabama, Arkansas, Georgia, Illinois, Iowa, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, North Dakota, Texas, Washington, and Wisconsin

Local Activity (3 states): Alaska, Tennessee, and West Virginia,

Sporadic Activity: (Washington D.C., U.S. Virgin Islands, & 1 state): Hawaii

Other Data:

The Hospitalization rate from Flu was 12.4 per 100,000 (last week 9.1/100,000). Older adults (age \geq 65 years) had the highest hospitalization rate at 31.9 per 100,000 (l.w. 22.9/); children (ages 0-4) had 23.5 per 100,000 (last week 19.1/), and adults (age 50-64 years) at 16.3 per 100,000 (l.w. 11.5/). Most, 92.3% (l.w. 91.7%), were caused by Influenza A viruses; 6.2% (l.w. 6.8%) were from Influenza B viruses; 0.7% (l.w. 0.8%) showed co-infection with both Influenza A and B viruses; and 0.8% (l.w. 0.7%) were not typed for a specific flu virus.

Death rates for pneumonia and influenza in adults, at 6.9%, is just below the epidemic threshold of 7% for week #01. Death reports often aren't reported for data purposes the same week.

There were three (3) pediatric deaths attributed to flu reported this week, for a total of 19 for this flu season.

Flu in Canada, Europe & the World:

Canada:

According to the Public Health Agency of Canada (PHAC), flu activity was higher in the Central and Eastern Regions than in other areas of the country for Week #02, ending 1/12/19. The number of positive flu tests decreased significantly to 20.5% from the previous week of 25.6%, confirming, per the PHAC, that influenza levels peaked the last week in December. Influenza A was the most common strain at 98%, with the majority Influenza A(H1N1)pdm09. The majority of the confirmed flu cases and hospitalizations were for those under age 65.

Widespread Activity in 2 Regions: Que. (2)

Localized Activity in 17 Regions: Ont. (6), Que (2), NL (3), N.S. (2), and N.B. (4)

Sporadic Activity in 32 Regions: B.C. (5), Alta. (5), Sask. (3), Man. (5), Ont. (1), Que (2), N.B. (3), N.S. (2), N.L. (1), P.E.I (1), Nvt. (1), (NWT (2), and YT. (1)

No Activity in 2 Regions: Nvt (2)



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For more specific information see:

On flu activity: <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/fluwatch/2018-2019/week2-january6-january-12-2019.html>

Canadian Flu Information:

<https://www.canada.ca/en/public-health/services/diseases/flu-influenza.html>

General Page for Canadian Flu Watch Surveillance with links to different components:

<https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance.html>

About the Canadian Influenza Activity Surveillance System:

<https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance/about-fluwatch.html>

Europe:

According to the European Center for Disease Prevention & Control (ECDC), for Week # 2 (Jan 7-13, 2019), Influenza activity continued to increase throughout the European Region. The samples taken from those with ILI or ARI (acute respiratory illness), by sentinel primary healthcare sites, showed 42.2% positive for flu viruses. The majority of circulating virus remained Influenza A for patients both in hospital and out. Influenza A viruses were dominant with few influenza B viruses found. Influenza A(H1N1) viruses were slightly more identified than A (H3N2). Mortality from 23 Member States reported that all-cause mortality was at expected levels for this time of year, although a few countries were beginning to see some excess mortality in their elderly.

For more information see: <http://flunewseurope.org/>

World: The World Health Organization (WHO) provides info on Influenza in Member Countries here:

https://www.who.int/influenza/surveillance_monitoring/en/

First Responder Specific Information

There are many websites that may be helpful in planning and managing seasonal flu within First Responder organizations. A few of those websites are included here:

NIOSH on Flu for Employers/Employees:

<https://www.cdc.gov/niosh/topics/flu/>

Protection from Flu:

<https://www.cdc.gov/flu/protect/habits/index.htm>

Weekly Flu Map:

<https://www.cdc.gov/flu/weekly/usmap.htm>

World Map Showing Flu & Other Infectious Diseases:

<http://www.healthmap.org/en/>

Other Actions First Responders Should Consider

First Responders should be vaccinated for Flu each season to prevent getting flu themselves, taking it home to family members, or transmitting it to patients in their care. Family members and patients may be at increased risk of complications from flu.



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Perform proper hand hygiene including frequent handwashing and the use of hand sanitizers in general, and particularly when providing patient care or after touching surfaces.

Masks (N95 or N100) should be used in the presence of patients with cough and/or fever; preferably before being within 6 feet of the patient. This becomes even more important if droplet producing procedures are being performed (i.e. suctioning, nebulizer treatments, BVM, intubation).

Care should be taken to avoid touching your own face and mucous membranes (eyes, mouth, nose) since the flu virus is frequently found on surfaces such as door knobs, writing & recording tools (pens and tablets), cot and equipment handles, phones, light switches, as well as clothing, bed clothes, etc.

Report signs/symptoms of flu to your physician or other appropriate provider for early assessment and care. Alert your employer per policy.

Cough and sneeze into your sleeve, if a tissue is not available, and not onto your hands. Watch this Youtube video for a humorous but educational approach on the subject.

<https://www.youtube.com/watch?v=CtnEwwUWDo0>

Stay away from others if you are sick.

Be aware of your exposure risk and history to prevent exposing others. Take extra precautions or avoid those with immunocompromise, when possible, if you have a known or likely exposure.

Antivirals may be indicated for the treatment of flu, particularly for those in high risk groups, those who are hospitalized or have severe, complicated or progressing flu. Those that present with 48 hours of the onset of symptoms may also be given antivirals, based on PCP judgement but make sure the practitioner is aware of their First Responder Role. See <https://www.cdc.gov/flu/antivirals/whatyoushould.htm>

And, for consideration when looking at yourself, your family and friends, or your patients, consider the following information regarding complications of flu:

Flu is much more worrisome for the very young and the elderly, as well as those who fit into one of the high risk categories see this link for the list: https://www.cdc.gov/flu/about/disease/high_risk.htm. Signs of ILI/Flu in this group requires careful assessment to rule out complications and these groups are much more likely to need medical oversight to assure adequate care. Young children and those over 65 are typically at greater risk for complications, hospitalization, and even death.

Consideration should be given to perhaps monitoring these groups more closely, with inclination for more comprehensive assessment and transport for further evaluation, when presented with possible flu and any signs of complications.

Complications of flu, sometimes requiring hospitalization and even leading to death, tend to occur after the person has begun to get better from the flu and then appears to relapse. EMS personnel may want to look more closely at those patients when the call is not about the initial signs and symptoms of flu, but about increasing or different signs that have appeared, often from five days to two weeks after the initial flu symptoms began.

A study was published by the Institute for Clinical Evaluative Sciences in *NEJM (New England Journal of Medicine)*. See details below:

Flu infection may raise risk of heart attack, particularly in first 7 days



Study confirms importance of flu vaccination for people at risk of heart disease.

Researchers looked at nearly 20,000 Ontario adult cases of lab-confirmed influenza (2009-2014) and then identified 332 patients who were hospitalized for a heart attack within one year of flu diagnosis.



For this population, the risk of heart attack was **6 times higher** within the first week of a flu diagnosis.

Factors that may be associated with more risk:

- being age 65 and older
- infection with influenza B
- no previous heart attack

The researchers say that people at risk of heart disease should take care to prevent flu through measures including handwashing and vaccination, and should not delay medical evaluation for heart symptoms, particularly in the first week of an acute respiratory infection.

Kwong JC et al. NEJM. 2018.

Institute for Clinical Evaluative Sciences

ices.on.ca



Image courtesy of ICES/PHO

“The researchers add that patients should not delay medical evaluation for heart symptoms particularly within the first week of an acute respiratory infection.” (Lisa Schnirring, News Editor: *CIDRAP News* ;Jan 25, 2018)
For more information on Influenza and the Heart Attack Study, please see the link below.

https://www.eurekalert.org/pub_releases/2018-01/pho-rcl011818.php

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