

Influenza (FLU) Update for Week #05 Week Ending 2-2-19

The CDC reported that **Influenza (Flu)** activity, which includes diagnosed flu as well as **ILI (Influenza-Like-Illness)**, continued to increase with almost all of the severity markers increased during week #5. The percentage of respiratory specimens testing positive for flu increased to 21.6% from 19.2% last week; all 10 Regions reported flu levels above baseline, and the number of hospitalizations from flu continued to increase. This indicates that this Flu Season will have a second peak in cases, which surpasses the first. The CDC expects flu and ILI activity to stay at elevated levels for weeks still; however, none of the numbers approach last season's (2017/18) flu severity.

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 and Region 7 which had an about equal amount of A (H1N1)pdm09 and (A) H3 strains circulating. Influenzas A (H1N1), A (H3N2) and Influenza B viruses were co-circulating.

The majority of the flu viruses were genetically similar to the 2018/19 Flu Vaccine.

A Canadian Study, published in *Eurosurveillance*, presented the first vaccine effectiveness (VE) rates for this season which showed an overall VE for all combined flu viruses as 68%; H1N1 alone was 72%.

The published article can be found here:

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.4.1900055>

See this link for more details on Flu and ILI activity, including charts, graphs and maps:

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

The CDC has published its *2018/19 Flu Season Preliminary Burden Estimates* with 9.8 – 11.4 million flu illnesses, 4.6 – 5.4 million medical visits for flu, and 113,000 – 136,000 flu-related hospitalizations.

As part of the CDC's *Epidemic Prediction Initiative (EPI)*, their forecast as of 2/5/19, is that flu activity is most likely to increase for the next few weeks and there is about a 60% chance that this year's flu season has not peaked yet and that February will have the highest level. This link provides information on the *EPI* prediction:

<https://www.cdc.gov/flu/weekly/flusight/index.html>

FirstWatch RIN (Regional Influenza Network): Alerts remained at the same level as the previous week.

For the most recently reported week, ending February 2, 2019, the CDC reported: Influenza-like illness (ILI) visits to clinics & other non-hospital facilities increased to at 4.3% (l. w. 3.8%) & remained above the national baseline of 2.2%, and the highest percentage

yet during this flu season. All 10 regions reported ILI at or above their region-specific baselines, with a range of 2.5% to 7.6%. New York City and 24 states reported high ILI activity.

Flu cases, documented by positive flu tests on respiratory specimens, were reported as Widespread in Puerto Rico and 45 states, another increase. Clinical lab testing for influenza was positive for 21.6% of specimens, compared to 19.2% last week, with a range of 13.7% (Region 9) to 25.5% in Region 6. All regions were in the double digits, with four (4) at $\geq 20\%$.

Influenza A remained the dominant flu for 98.3% of the flu tests reported (98% last week), with 65% (75.2% last week) as A (H1N1)pdm09 viruses and the H3N2 subtype at 35% (24.8% last week). The rest of the tests showed 1.7% (2% l. w.) tested as Influenza B viruses, with 28.6% the Yamagata lineage and 71.4% as the Victoria lineage. This shows similar percentages of Influenza A and B viruses, as in previous weeks. Typically, Influenza B viruses cause less severe illness and occur more towards the Spring.

More than 99% of the flu viruses tested were found to be sensitive to the antivirals oseltamivir, zanamivir (100%), and peramivir (Tamiflu, Relenza, and Rapivab, respectively). High resistance continued 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: (New York City & 24 states): Alabama, Alaska, Arkansas, Colorado, Connecticut, Georgia, Indiana, Kansas, Kentucky, Massachusetts, Mississippi, Nebraska, New Jersey, New Mexico, North Carolina, Oklahoma, Rhode Island, South Carolina, South Dakota, Texas, Utah, Vermont, Virginia, and West Virginia

Moderate ILI Activity: (Puerto Rico & 10 states): Arizona, California, Hawaii, Illinois, Louisiana, Missouri, New York, North Dakota, Pennsylvania, and Tennessee

Low Activity: (Washington D.C., & 13 states): Florida, Idaho, Iowa, Maine, Maryland, Michigan, Minnesota, Montana, Nevada, New Hampshire, Oregon, Washington, and Wisconsin,

Minimal Activity: (3 states): Delaware, Ohio, and Wyoming

For Flu (positive flu tests):

Widespread Activity: (Puerto Rico & 47 states): Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming

Regional Activity (2 states): Alaska and West Virginia

Local Activity (Washington D.C., & 1 state): Hawaii

Sporadic Activity: (the U.S. Virgin Islands)

Guam did not report

Other Data:

The Hospitalization rate from Flu was 20.1 per 100,000 (last week 15.3/100,000). Older adults (age \geq 65 years) had the highest hospitalization rate at 53.0 per 100,000 (l.w. 39.8/); children (ages 0-4) had 33.5 per 100,000 (last week 27.3/), and adults (age 50-64 years) at 27.2 per 100,000 (l.w. 20.5/). Most, 93.8% (l.w. 93%), were caused by Influenza A viruses; 5.2% (l.w. 5.7%) were from Influenza B viruses; 0.5% (l.w. 0.6%) showed co-infection with both Influenza A and B viruses; and 0.5% (l.w. 0.6%) were not typed for a specific flu virus.

Death rates for pneumonia & influenza in adults were at 6.9%, below the epidemic threshold of 7.2% for week #4. Death reports often aren't reported for data purposes the same week and are typically reported by the CDC a week behind.

There were another four (4) pediatric deaths attributed to flu reported this week, for a total of 28 for this flu season.

Flu in Canada, Europe & the World:

Canada:

According to the Public Health Agency of Canada (PHAC), influenza activity was diminishing throughout Canada for Week #05, ending 2/2/19. The Eastern Regions again reported higher levels of flu than the Western Regions of the country. They also reported that it seems that peak activity has passed with most indicators showing decreasing or stable levels, at least when grouped as a nation. Influenza A remained the most common strain, with the majority Influenza A(H1N1)pdm09. Per the Canadian Influenza VE study

mentioned above, this season's flu shot is about 72% effective in all age groups, particularly among young children who have been more affected by influenza this year, compared to other groups.

Widespread Activity in 0 Regions:

Localized Activity in 19 Regions: Alta. (1), Ont. (6), Que. (3), N.L. (1), N.S. (3), and N.B. (3)

Sporadic Activity in 34 Regions: B.C. (5), Alta. (4), Sask. (3), Man. (5), Ont. (1), Que (3), N.B. (4), N.S. (1), N.L. (3), P.E.I (1), Nvt. (3), and Y.T. (1)

No Activity in 2 Regions: N.W.T. (2)

For more specific information see:

On flu activity: <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/fluwatch/2018-2019/week5-january-27-february-2-2019.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 # 5 (Jan 28 – Feb 3, 2019)**, Influenza activity was widespread and continues to increase throughout the European Region. The samples taken from those with ILI or ARI (acute respiratory illness), by sentinel primary healthcare sites, showed 54.7% positive for flu viruses. The majority of circulating viruses remained Influenza A with (H1N1)pdm09 and (H3N2) co-circulating (proportions varied by country), with few influenza B viruses found. Mortality from 22 Member States reported excess mortality in elderly populations overall, but noted that the pertinent data was supplied by just a few countries.

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.

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-rci011818.php

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