Influenza (FLU) Update for Week #09
Week Ending 3-2-19

The CDC reported that **Influenza** (**Flu**) activity, which includes diagnosed flu as well as **ILI** (**Influenza-Like-Illness**), remained widespread during Week #9. The percentage of respiratory specimens testing positive for flu decreased slightly to 26.1% from 26.4% last week, all 10 Regions reported flu levels above baseline, and the number of hospitalizations from flu continued to increase. The CDC expects flu and ILI activity to stay at elevated levels for at least a few more weeks, however none of the numbers approach last season's (2017/18) flu severity.

In the samples tested, Influenza A viruses were the largest percentage of viruses. However, for the second week in a row this flu season, Influenza A(H3) was more prevalent nationally and continued to dominate in Regions 2 (NY, NJ, PI, & US VI), 4 (the Southeast), 6 (South Central), 7 (Central Plains), and 8 (Western Central) Overall, 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.

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*, and from October 1, 2018 through March 9, 2019, there have been an estimated with 22.8 – 26.3 million flu illnesses, 10.6 – 12.4 million medical visits for flu, 289,000 – 347,000 flu-related hospitalizations, and 18,900 – 31,200 flu deaths.

As part of the CDC's *Epidemic Prediction Initiative (EPI)*, their forecast as of 3/5/19, is that flu activity is most likely to begin decreasing, but remain elevated for the next few weeks. Also, there is about a 90% chance that this year's flu season has peaked at a national level, different areas of the U.S. may differ in their timing. This link provides info on the *EPI* prediction: **https://www.cdc.gov/flu/weekly/flusight/index.html**

FirstWatch RIN (**Regional Influenza Network**): **RIN Alerts for Week #9 decreased slightly, following a large drop last week.**

For the most recently reported week, ending March 2, 2019, the CDC reported:
Influenza-like illness (ILI) visits to clinics & other non-hospital facilities decreased some to 4.7% (l. w. 5.0%) but remained well above the national baseline of 2.2%. All 10 regions reported ILI at or above their region-specific baselines, with a range of 3.3% to 9.3%. Thirty-two (32) states reported high ILI activity.

Flu cases, documented by positive flu tests of respiratory specimens, were reported as Widespread in Puerto Rico and 48 states. Clinical lab testing for influenza was positive for 26.1% of specimens, compared to 26.4% last week, with a range of 13.2% (Region 9) to 33.8% (Region 8). All regions were in the double digits, with seven (7) at $\geq$ 20% and one (1) at $\geq$ 30%.

Influenza A remained the dominant flu for 97.2% of the flu tests reported (the exact same as last week), but the H3N2 subtype remained the dominant Influenza A virus at 62% (54.1% last week), as A (H1N1)pdm09 viruses decreased to 38% (45.9% last week). The rest of the tests showed 2.8% (same as last week.) tested as Influenza B viruses, with Yamagata at 15.4% and Victoria at 84.6%. 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). 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. Its effectiveness will be reported later in the Flu Season.

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

<u>For Influenza-Like Illness:</u>

High ILI Activity: (32 states): Alabama, Alaska, Arizona, Arkansas, Colorado, Connecticut, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Virginia, West Virginia, and Wyoming
Moderate ILI Activity: (Puerto Rico & 7 states): California, Hawaii, Maine, Massachusetts, Nebraska, Washington, and Wisconsin
Low Activity: (New York City, Washington D.C., & 8 states): Florida, Idaho, Michigan, Minnesota, New Hampshire, Ohio, South Dakota, and Vermont
Minimal Activity: (3 states): Delaware, Maryland, and Tennessee
Insufficient Data: ` U.S. Virgin Islands

For Flu (positive flu tests)**:**

Widespread Activity: (Puerto Rico & 48 states): Alabama, Alaska, 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, Virginia, Washington, West Virginia, Wisconsin, and Wyoming
Regional Activity: Zero Territories or states
Local Activity (Washington D.C. & 2 states): Hawaii and Vermont
Sporadic Activity: (the U.S. Virgin Islands)
Guam did not report

Other Data:

The Hospitalization rate from Flu was 36.6 per 100,000 (last week 32.1/100,000). Older adults (age $\geq$ 65 years) had the highest hospitalization rate at 107.7 per 100,000 (l.w. 91.5/); children (ages 0-4) had 49.3 per 100,000 (last week 45.5/), and adults (age 50-64 years) were at 48.4 per 100,000 (l.w. 43.2/). Most, 95.4% (l.w. 95%), were caused by Influenza A viruses; 3.8% (l.w. 4.2%) were from Influenza B viruses; 0.3% (same) showed co-infection with both Influenza A and B viruses; and 0.5% (same as the last 3 weeks) were not typed for a specific flu virus.

As of 3/7/19, the death rate for pneumonia & influenza in adults was at 7.5%, above the epidemic threshold of 7.3% for week #8 (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 eight (8) pediatric deaths attributed to flu reported this week, occurring in Weeks 6, 7, & 8, for a total of 64 for this Flu Season. One death was added to the 2015/16 Flu Season's total.

Flu in Canada, Europe & the World:

Canada:
According to the Public Health Agency of Canada (PHAC), for **Week #09, ending 3/2/19**, when grouped as a nation, most indicators showed similar or slightly increased levels of flu activity when compared to the week prior. The flu continued to circulate at greater levels in the Eastern Regions, while influenza appeared to be past its peak in most of the Western Regions of the country. The PHAC also reported that Influenza A(H1N1)pdm09 continued to be the dominant flu virus circulating with very little influenza B identified this season, when compared to other seasons.

Widespread Activity in 0 Regions:
Localized Activity in 16 Regions: Alta. (1), Ont. (6), Que. (2), N.S. (3), N.L. (2), and N.B. (2)
Sporadic Activity in 30 Regions: B.C. (5), Alta. (4), Ont. (1), Que (4), N.B. (5), N.L. (1), P.E.I (1), N.S. (1), Nvt. (3), Y.T. (1), and N.W.T. (2)
No Activity Reported in 2 Regions: N.L. (1) and Sask. (1)

For more specific information see:
On flu activity: https://www.canada.ca/en/public-health/services/publications/diseases-conditions/fluwatch/2018-2019/week9-february-24-march-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 # 9 (Feb 25 – Mar 3, 2019)**, Influenza activity remained widespread throughout the European Region. The samples taken from those with ILI or ARI (acute respiratory illness) by sentinel primary healthcare sites, showed 41.8% positive for flu viruses, compared with 49% last week. The majority of circulating viruses remained Influenza A, with A(H1N1)pdm09 detected a bit more than A(H3N2) and with very few influenza B viruses found. Data from 23 Member States reported a decrease in the excess mortality, compared to previous weeks, but was still seen in elderly populations overall, as well as some in the 15 – 64 age group.

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=CtnEwvUWDo0

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:

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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