

## REPORT TO THE BOARDS OF HEALTH

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Mid-Michigan District Health Department, Wednesday, January 22, 2020  
Central Michigan District Health Department, Wednesday, January 22, 2020  
District Health Department #10, Friday, January 31, 2020

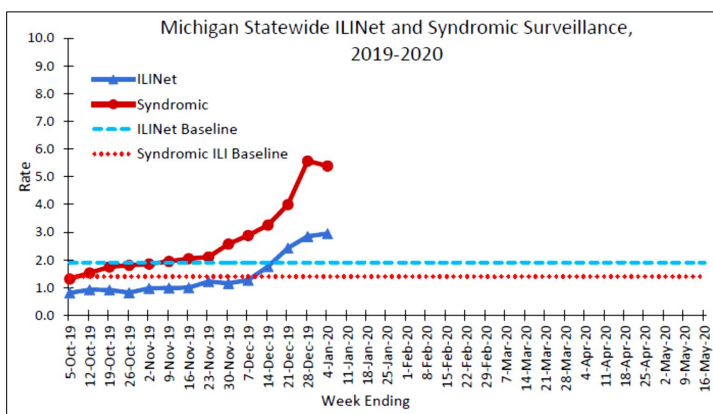


### Influenza 2019-2020 Updates

The current influenza season has been unusual in many ways. Influenza activity started early, with cases reported steadily since early October. The types of virus circulating are also different from usual. The most common strain circulating has been influenza B; specifically, influenza B/Victoria. Influenza B typically doesn't start circulating until the end of the flu season in the spring. Influenza B has not been a major infecting virus during a flu season since the 1992-1993 season, or 27 years ago, and the influenza B/Victoria strain has not circulated widely during the past three flu seasons. Since it has not been a major virus in recent seasons, community immunity is likely low, especially in young children. The circulating influenza B/Victoria virus appears to have changed by 2 amino acid deletions in the hemagglutinin protein compared to the virus used in making the vaccine.

Influenza B most commonly causes illness in children and can cause complications including hospitalizations and death. To date, 32 children have died from influenza, 21 of them from influenza B. Two children have died in Michigan, one from Shiawassee County and one from Wayne County, both from influenza B. Historically, around 70% of children that die from the flu were not vaccinated and at least half had no underlying medical problems.

The second most commonly circulating influenza virus this season is influenza A(H1N1). It is the most common virus effecting people 25 years and older. There has been very little influenza A(H3N2) causing illness, which is different from last the last several flu seasons. Influenza A(H1N1) is more likely to lead to hospitalization and critical illness in children, young adults, pregnant women, and



**Note:** The recent drop in reported visits for ILI in Michigan and US may in part be influenced by changes in healthcare seeking behavior and influenza virus transmission that can occur during the holidays.

### PRELIMINARY FLU BURDEN ESTIMATES

So far this season, CDC estimates there have been at least:

<b>9.7 million</b>	<b>4.5 million</b>	<b>87,000</b>	<b>4,800</b>
Illnesses	Medical visits	Hospitalizations	Deaths

Based on data from Oct. 1, 2019 through Jan. 4, 2020

\* These estimates are preliminary and based on data from CDC's weekly influenza surveillance reports summarizing key influenza activity indicators.

those with underlying ongoing health problems. Since most hospitalizations and deaths typically occur in those that are 65 and older, and there are few illnesses in this age group due to the type of viruses circulating, there has been lower overall hospitalizations and deaths despite high amounts of flu illness.

While it takes time to know how effective the flu vaccine is for this season, the CDC does analyze a portion of influenza samples sent to them to see how similar they are to the virus used to create the vaccine.

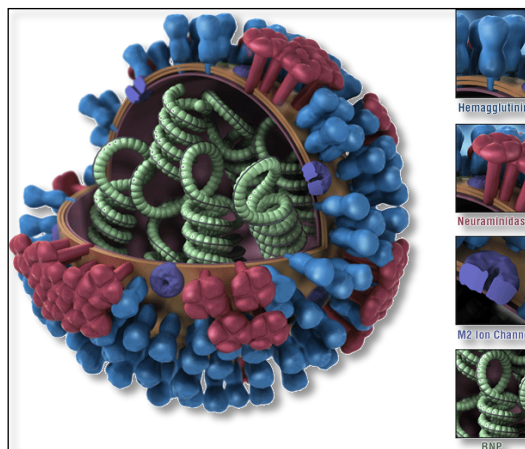
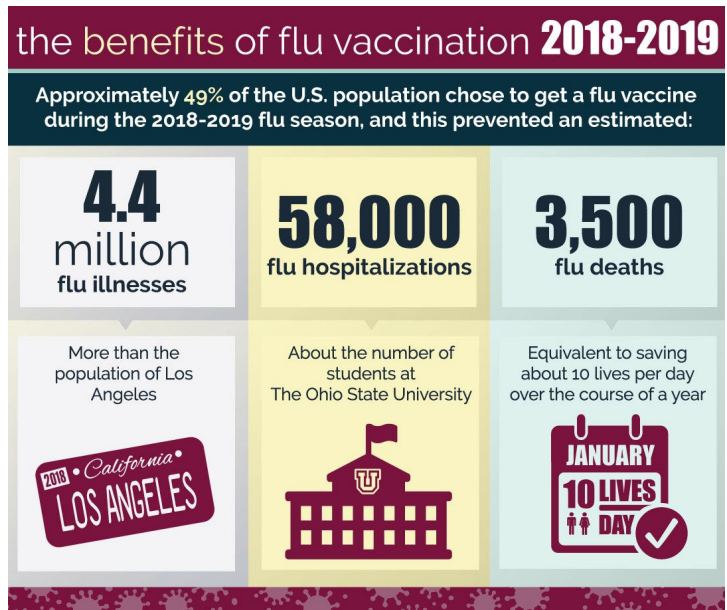
Influenza Type	Number of Samples Tested	Number (%) Similar to Vaccine Virus
Influenza A (H1N1)pdm09	66	66 (100.0%)
Influenza A (H3N2)	41	14 (34.1%)
Influenza B/Victoria	50	29 (58.0%)
Influenza B/Yamagata	10	10 (100.0%)

As of January 4, 2020

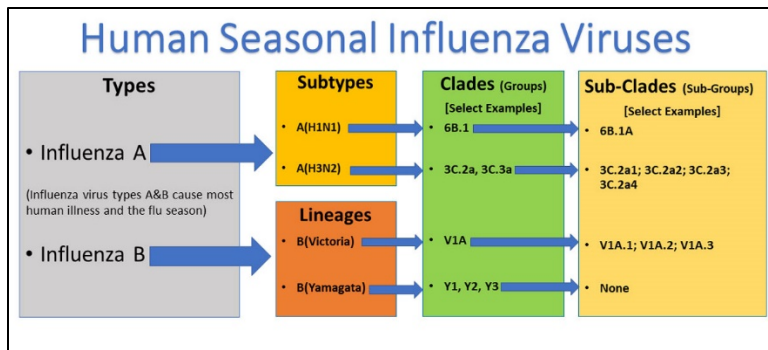
Even though flu vaccine effectiveness varies from year to year, it is still the best way to protect yourself against the flu. Some people who are vaccinated may still get sick, however it has been shown that children and adults that are vaccinated have reduced hospitalizations, decreased need for ICU care, and decreased risk of deaths from the flu.

Researchers are getting closer to developing a universal vaccine. One vaccine, BiondVax Pharmaceuticals' M-001, which incorporates 9 common proteins that are found in influenza A and B viruses, is in phase 2 and 3 trials. Several groups of researchers are working on vaccines that focus on the stem, or stalk, portion of hemagglutinin, which doesn't vary from strain to strain like the head does (see illustration below). One of these groups, based out of Mount Sinai, recently published the findings of their phase 1 study which were promising.

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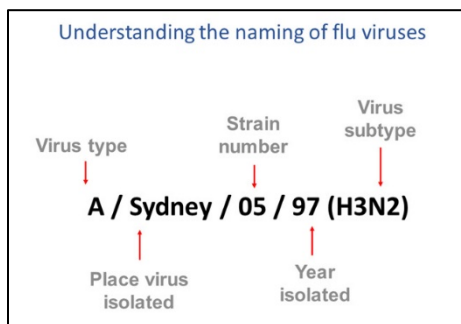


This is a picture of an influenza virus. Influenza A viruses are classified by subtypes based on the properties of their hemagglutinin (H) and neuraminidase (N) surface proteins. There are 18 different HA subtypes and 11 different NA subtypes. Subtypes are named by combining the H and N numbers – e.g., A(H1N1), A(H3N2). <https://www.cdc.gov/flu/about/virus/es/types.htm>



This graphic shows the two types of influenza viruses (A, B) that cause most human illness and that are responsible for the flu season each year. Influenza A viruses are further classified into subtypes, while influenza B viruses are further classified into two lineages: B/Yamagata and B/Victoria. Both influenza A and B viruses can be further classified into specific clades and sub-clades (which are sometimes called groups and sub-groups).

<https://www.cdc.gov/flu/about/viruses/types.htm>



This image shows how influenza viruses are named. The name starts with the virus type, followed by the place the virus was isolated, followed by the virus strain number, the year isolated, and finally, the virus subtype.

<https://www.cdc.gov/flu/about/viruses/types.htm>

## Healthy Living Recommendations

1. It's not too late to get vaccinated. Flu vaccination is always the best way to prevent flu and its potentially serious complications. Other important ways to avoid influenza include: avoid close contact with people who are sick and avoid others if you are sick; stay home from work or school when ill; cover mouth and nose when coughing or sneezing; wash hand often; avoid touching your eyes, nose and mouth; clean and disinfect frequently touched surfaces; do things to keep healthy overall (get enough sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food).
2. Every flu season is different depending on what strains are circulating. Some strains, like this year, cause a lot illness and complications in young and healthy people. Everyone 6 months and older need to be vaccinated.

## References

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