



MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH (MDPH)
WEEKLY INFLUENZA UPDATE
January 3, 2020

Estimated Weekly Severity of Influenza
(12/22/19 – 12/28/19)



Weekly severity is determined by combining three key markers of influenza activity and distribution: influenza-like illness, hospitalizations, and influenza positive test results reported to the Massachusetts Department of Public Health. MDPH analyzes data on these markers weekly and classifies the severity using historical data collected during past influenza seasons. For more information about how the severity indicator is calculated, please visit <https://www.cdc.gov/flu/about/classifies-flu-severity.htm>.

All data in this report are preliminary and subject to change as more information is received. Data collected through December 28, 2019 are included in this report.

Highlights from this week's report:

- Influenza severity for Massachusetts has increased from low to moderate this week.
- The percentage of influenza-like illness visits for Massachusetts is higher than the previous two years in the same week.
- Overall influenza-like illness activity for Massachusetts has increased from moderate to high this week. The West region is reporting moderate ILI activity while all other regions are reporting high ILI activity.
- The percent of influenza-associated hospitalizations in Massachusetts is lower than the previous two years in the same week.
- In the 2019-2020 flu season, more influenza B than influenza A positive specimens have been reported by hospitals and outpatient facilities in Massachusetts.
- Nationally, influenza illness activity is increasing and influenza B is most common.
- Additional statewide and national data including geographic spread, ILI activity, and pneumonia and influenza mortality are available at CDC's FluView Weekly Report at www.cdc.gov/flu/weekly and FluView Interactive <https://www.cdc.gov/flu/weekly/fluviewinteractive.htm>.

Flu activity is increasing. It's not too late to get vaccinated.

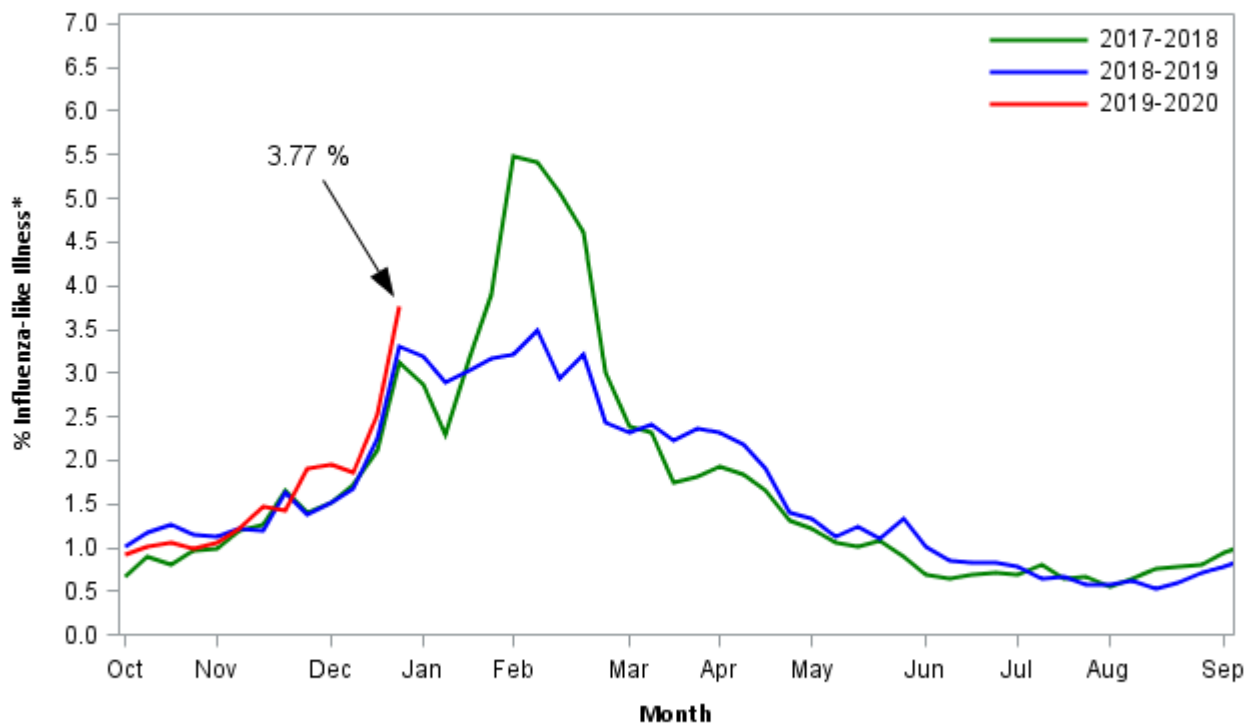
Flu vaccination is always the best way to prevent flu and its potentially serious complications.

Influenza-like illness activity

Influenza-like illness (ILI) is defined as fever above 100F in addition to either cough and/or sore throat. Many more people are infected with influenza than are tested for influenza. ILI is used throughout the regular influenza season as a way to help track influenza activity in individuals who are not tested, as trends in ILI have been shown to mirror influenza trends. Seventy-nine healthcare facilities called 'sentinel sites' report the number of patients they see with ILI each week during regular flu season. Sentinel sites include provider offices, school health services, community health centers, urgent care centers, and emergency departments across Massachusetts.

Figure 1 shows that the percentage of ILI visits at sentinel outpatient facilities is higher than the previous two years in the same week. For more information, see CDC's influenza surveillance website at www.cdc.gov/flu/weekly/fluactivitysurv.htm.

**Figure 1: Percentage of ILI visits reported by sentinel provider sites
September 29, 2019 – December 28, 2019**



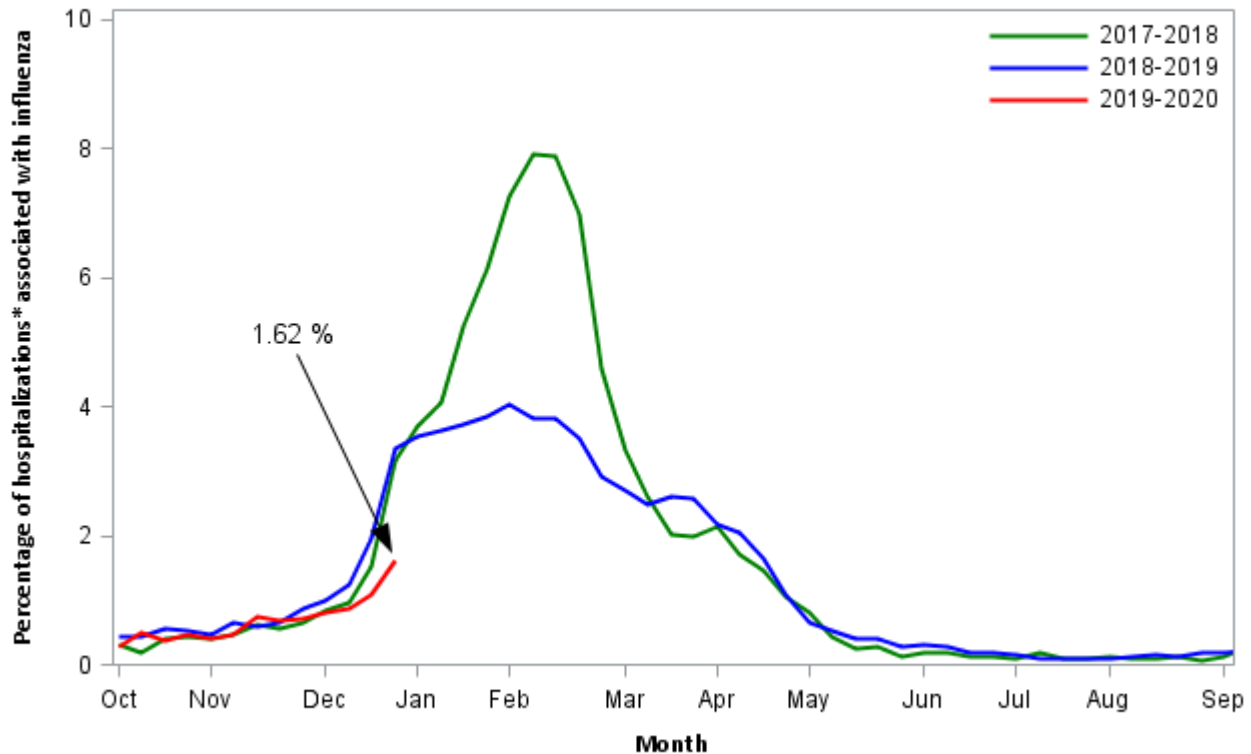
**influenza-like illness (ILI, defined by fever >100F and cough and/or sore throat), as reported by Massachusetts sentinel surveillance sites*

Influenza-associated hospitalizations

As part of the National Syndromic Surveillance Program, MDPH receives data from Emergency Departments (EDs) covering more than 90% of ED visits statewide. These data are used to track patient visits related to influenza by monitoring the reason patients are seeking care (chief complaint) and the diagnoses the patients receive (ICD-10 code). These data are available to MDPH in near real-time.

Figure 2 shows the percent of all ED visits which result in a patient hospitalized because of illness associated with influenza infection. The percentage of influenza-associated hospitalizations is lower than the previous two years in the same week.

**Figure 2: Influenza-associated Hospitalizations, Massachusetts
September 29, 2019 – December 28, 2019**

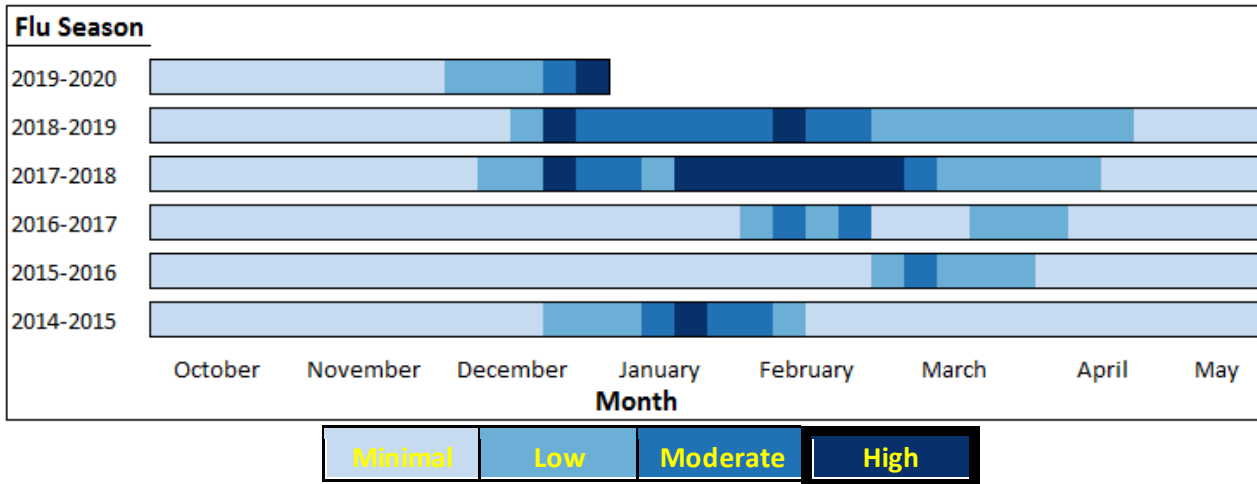


**All patients admitted through hospital emergency departments as captured by syndromic surveillance*

ILI Activity in Massachusetts

Figure 3 shows the current season’s weekly ILI activity compared to the last five flu seasons in Massachusetts. ILI activity for each week is categorized as minimal, low, moderate, or high, with a shade of blue corresponding to the category of ILI activity for that week. Darker shades of blue indicate more intense ILI activity. Figure 3 shows that ILI activity in Massachusetts has increased from moderate to high this week.

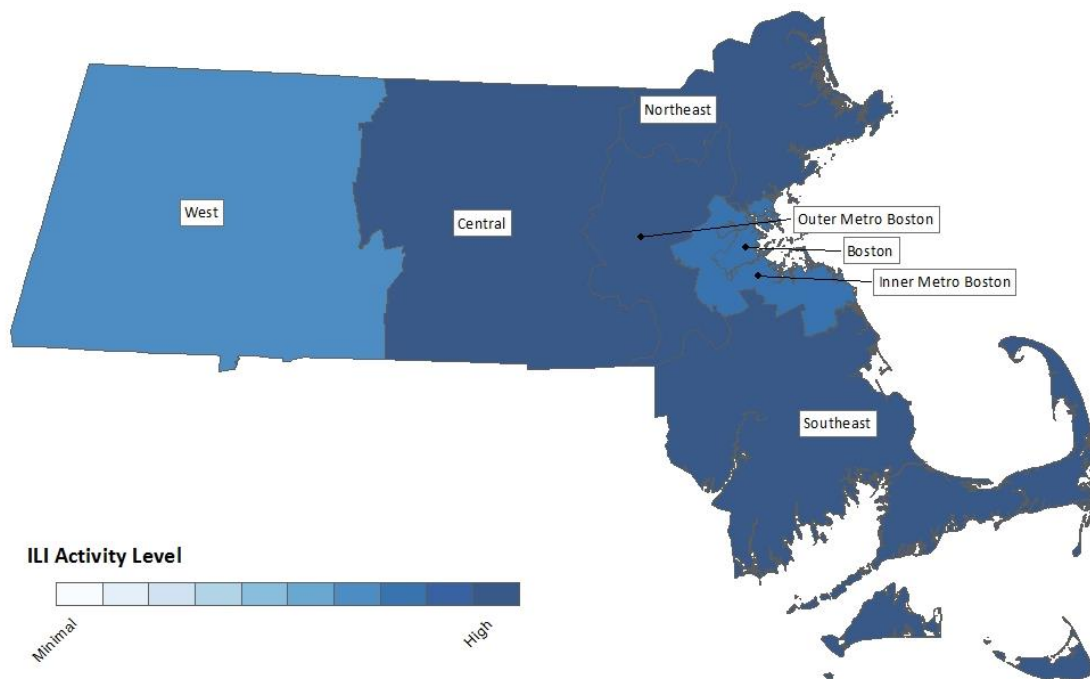
Figure 3: ILI Activity in Massachusetts Reported Weekly by Sentinel Sites



ILI Activity in Massachusetts by Region

Figure 4 shows the relative intensity of reported ILI activity in Massachusetts by region. Although regions may not all experience the same intensity of ILI at similar times, infections due to influenza can be found throughout Massachusetts during flu season. Figure 4 shows that the West region is reporting moderate ILI activity while all other regions are reporting high ILI activity.

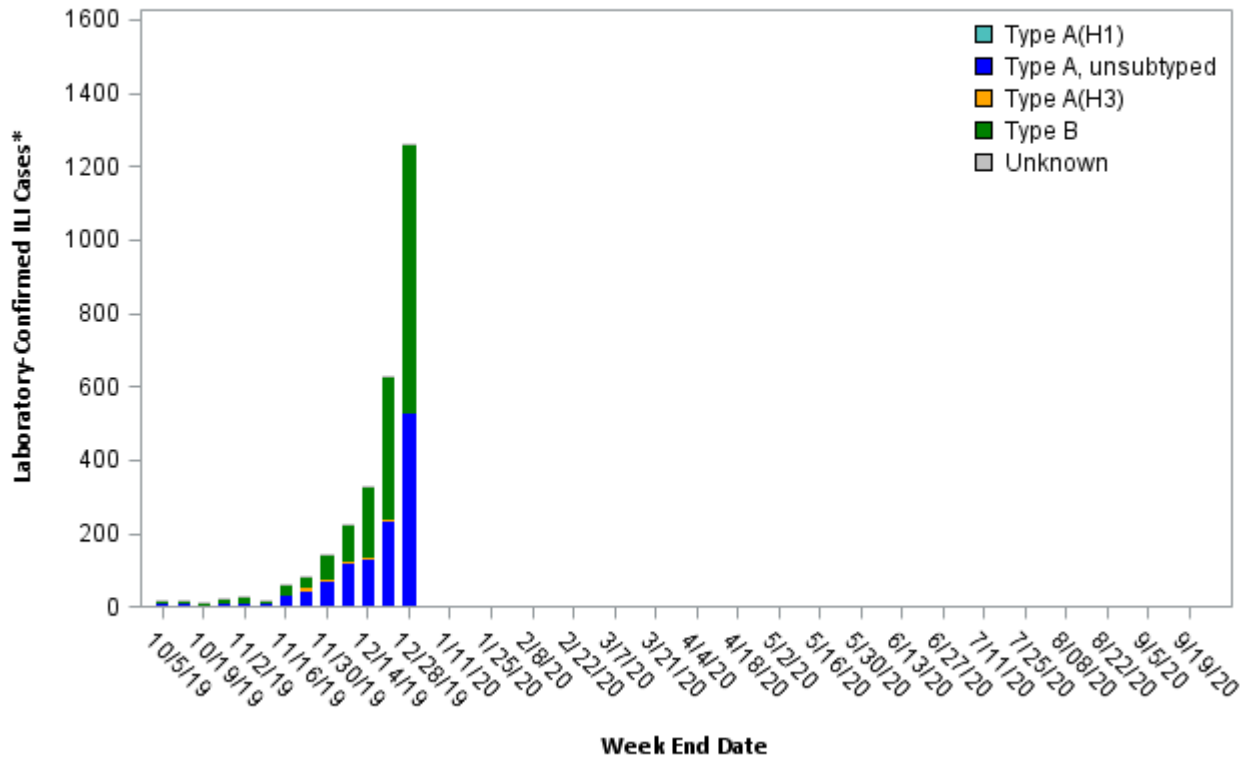
Figure 4: ILI Activity Reported Weekly by Massachusetts Sentinel Sites



Laboratory testing for influenza

Laboratories in Massachusetts report all positive influenza test results to MDPH. The majority of individuals with influenza-like illness are not tested; therefore the number of positive test results does **not** reflect the total number of influenza cases in Massachusetts. However, laboratory data do provide information about the types of influenza virus circulating in Massachusetts and help indicate the presence and define the distribution of influenza in the state. Figure 5 illustrates the number of positive laboratory confirmed influenza cases reported by hospitals and outpatient facilities in Massachusetts by week; more influenza B than influenza A positive specimens have been reported.

Figure 5: Laboratory-confirmed Influenza Cases in Massachusetts, September 29, 2019 – December 28, 2019



*Influenza cases confirmed via viral culture or PCR test by specimen collection date.

Testing at the State Public Health Laboratory

The Massachusetts State Public Health Laboratory (MA SPHL) performs influenza surveillance testing year round to confirm circulating influenza virus types. Samples are submitted by outpatient healthcare providers (ILINet) and hospital diagnostic laboratories in Massachusetts. For the 2019-2020 season, Table 1 summarizes the influenza surveillance testing conducted by MA SPHL beginning September 29, 2019. In the 2019-2020 flu season, 17 cases of H1N1 influenza, 10 cases of A/H3N2 influenza, one case of B/Yamagata influenza, and 53 cases of B/Victoria influenza have been confirmed in 150 samples tested.

Table 1: Weekly Summary of Massachusetts State Public Health Laboratory Influenza Surveillance Test Results

2019-2020 Season: Influenza Surveillance									
MA Department of Public Health's Bureau of Laboratory Sciences (MDPH-BLS)									
MMWR Week: (Specimen Collected)	2009 H1N1	seasonal A/H3N2	H3N2v	B Yam	B Vic	No. Flu Pos (%)	Unsat	Total Tested	Total Rec'd
49 (12/01 – 12/07/19)	3	1	0	0	5	9(50%)	0	18	18
50 (12/08 – 12/14/19)	3	1	0	0	4	8(67%)	5	12	17
51 (12/15 – 12/21/19)	2	0	0	0	19	21(81%)	1	26	27
52 (12/22 – 12/28/19)	2	0	0	0	18	20(95%)	1	21	22
Prior 4 wk Total	10	2	0	0	46	58(75%)	7	77	84
Cumulative Season total	17	10	0	1	53	81(54%)	8	150	158

All data are subject to change as test results become finalized. The 2019 -2020 influenza season began the week of 09/29- 10/05/2019.

All specimens which test negative for influenza at MASPHL are also tested for non-influenza respiratory diseases. Table 2 shows that respiratory syncytial virus (RSV), rhinovirus (RHV)/enterovirus (ENT), parainfluenza virus (PIV), human coronavirus (HCV) and adenovirus (ADENO) have been identified this flu season. This contributes to ILI trends in Massachusetts.

Table 2: Weekly Summary of Massachusetts State Public Health Laboratory non-Influenza Respiratory Surveillance Test Results

2019-2020 Season: Influenza Like Illness Surveillance											
MA Department of Public Health's Bureau of Laboratory Sciences (MDPH-BLS)											
MMWR Week: (Specimen Collected)	RSV	RHV/ENT	PIV	HMPV	HCV	ADENO	Co- Infection	No. Pos (%)	Unsat	Total Tested	Total Rec'd
49 (12/01 – 12/07/19)	0	0	0	0	1	1	0	2(20%)	0	10	10
50 (12/08 – 12/14/19)	0	3	0	0	0	0	0	3(75%)	0	4	4
51 (12/15 – 12/21/19)	3	0	0	0	0	0	0	3(43%)	0	7	7
52 (12/22 – 12/28/19)	0	0	0	0	0	0	0	0(0%)	0	1	1
Prior 4 wk Total	3	3	0	0	1	1	0	8(36%)	0	22	22
Cumulative Season total	6	14	1	0	1	2	1	23(33%)	0	70	70

All data are subject to change as test results become finalized. The 2019 -2020 influenza season began the week of 9/29- 10/05/2019.

MA SPHL submits a subset of influenza samples to CDC for further genetic analysis (antigenic characterization). All strains that have been analyzed from Massachusetts this season are covered by the current influenza vaccine.

Every two weeks MASPHL screens influenza specimens to detect mutations within influenza A/H3N2 and A/2009 H1N1 viruses to look for antiviral resistance. No specimens have been analyzed for antiviral resistance in the 2019-2020 season.

Additional information on national antiviral resistance testing including recommendations for antiviral treatment and chemoprophylaxis of influenza virus infection can be found at <http://www.cdc.gov/flu/weekly/>.