



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

Estimated Weekly Severity of Influenza
(03/22/20 – 03/28/20)



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 March 28, 2020 are included in this report.

Highlights from this week's report:

- Influenza severity for Massachusetts is low this week as influenza-related hospitalizations and influenza positive test results continue to decrease.
- The percentage of influenza-like illness visits for Massachusetts is elevated and remains higher than the previous two years in the same week. COVID-19 related activity, as well as increased healthcare-seeking behavior for respiratory illness, contributes to the increase in overall ILI trends in recent weeks.
- Overall influenza-like illness activity for Massachusetts remains high this week. All regions are reporting high ILI activity.
- The percent of influenza-associated hospitalizations in Massachusetts decreased compared to last 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.
- The number of influenza positive laboratory tests reported to MDPH decreased this week by 84% compared to last week. The number of influenza A and influenza B positive laboratory tests reported to MDPH decreased by 85% and 83%, respectively, compared to last week.
- All influenza strains that have been characterized in Massachusetts this season to date are covered by the current influenza vaccine.
- Nationally, the percent of laboratory specimens testing positive for influenza at clinical laboratories continued to decrease while influenza-like illness activity remained elevated as people are seeking care for respiratory illness due to the ongoing COVID-19 pandemic. Influenza A viruses are now the most commonly reported influenza viruses this season.
- 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>.
- For the most up to date information on COVID-19 please visit <https://www.cdc.gov/coronavirus/2019-ncov/index.html>.

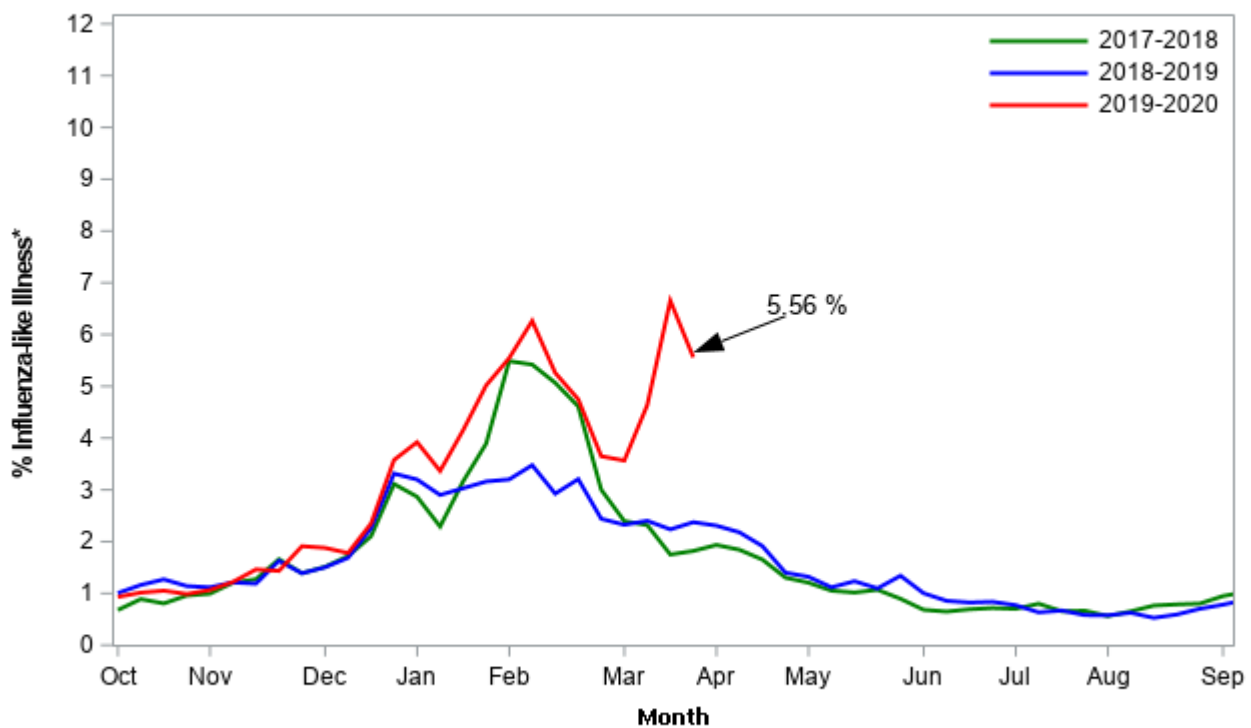
*Flu activity remains elevated. It's not too late to get vaccinated.
Flu vaccination is always the best way to prevent flu and its potentially serious complications.*

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-eight 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 elevated and remains higher than the previous two years in the same week. COVID-19 related activity, as well as increased healthcare-seeking behavior for respiratory illness, contributes to the overall ILI trends in recent weeks. 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 – March 28, 2020**



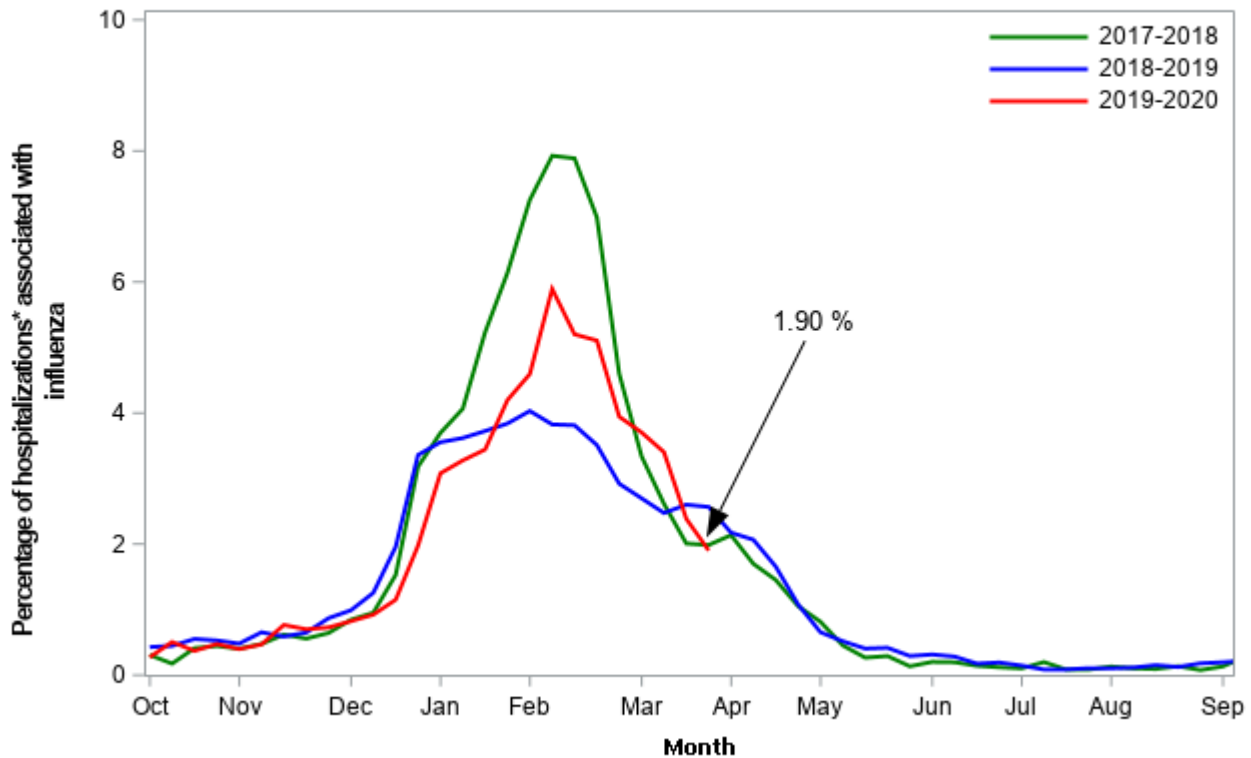
*Influenza-like illness (ILI, defined by fever >100F and cough and/or sore throat), as reported by Massachusetts sentinel surveillance sites

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 decreased compared to last week.

**Figure 2: Influenza-associated Hospitalizations, Massachusetts
September 29, 2019 – March 28, 2020**

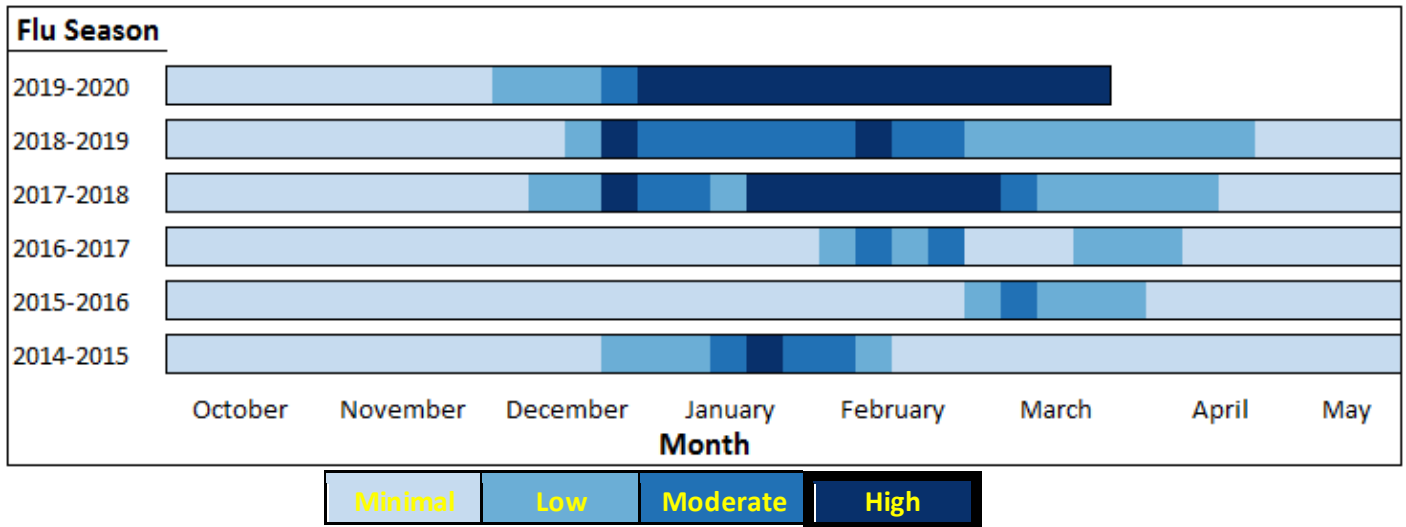


*All patients admitted through hospital emergency departments as captured by syndromic surveillance

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 remains high this week. COVID-19 related activity, as well as increased healthcare-seeking behavior for respiratory illness, contributes to the overall ILI trends in recent weeks.

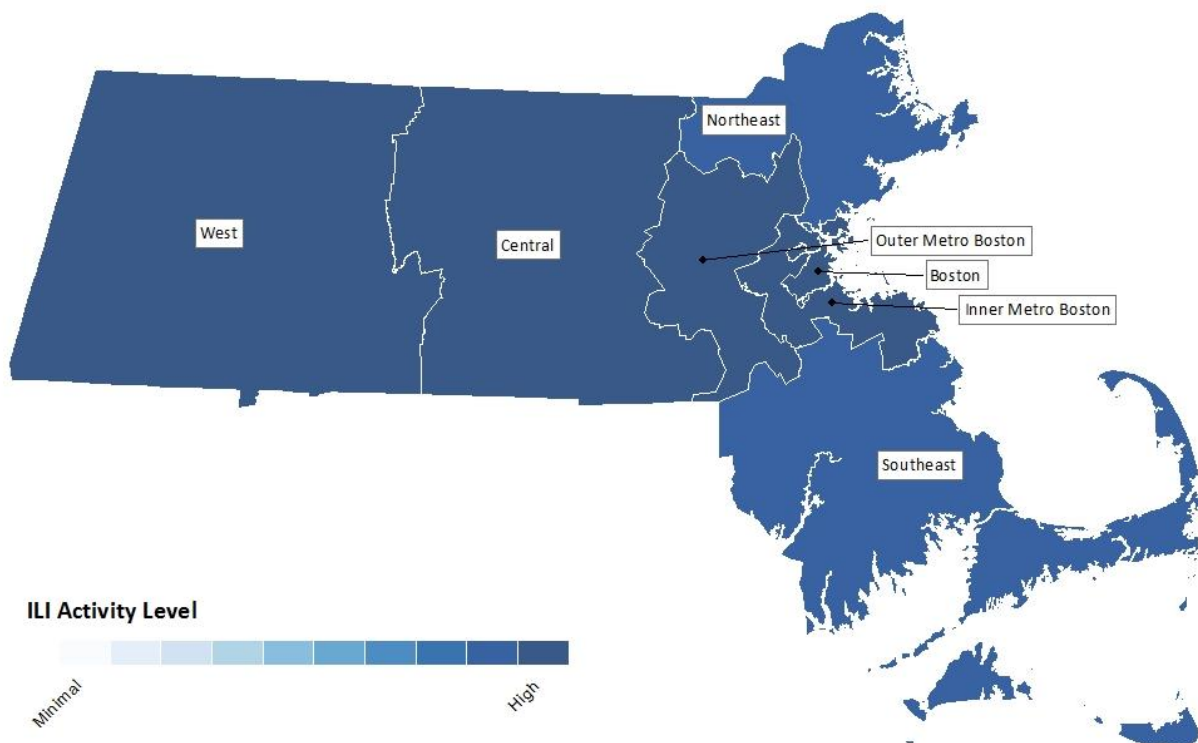
Figure 3: ILI Activity in Massachusetts Reported Weekly by Sentinel Sites



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 all regions are reporting high ILI activity.

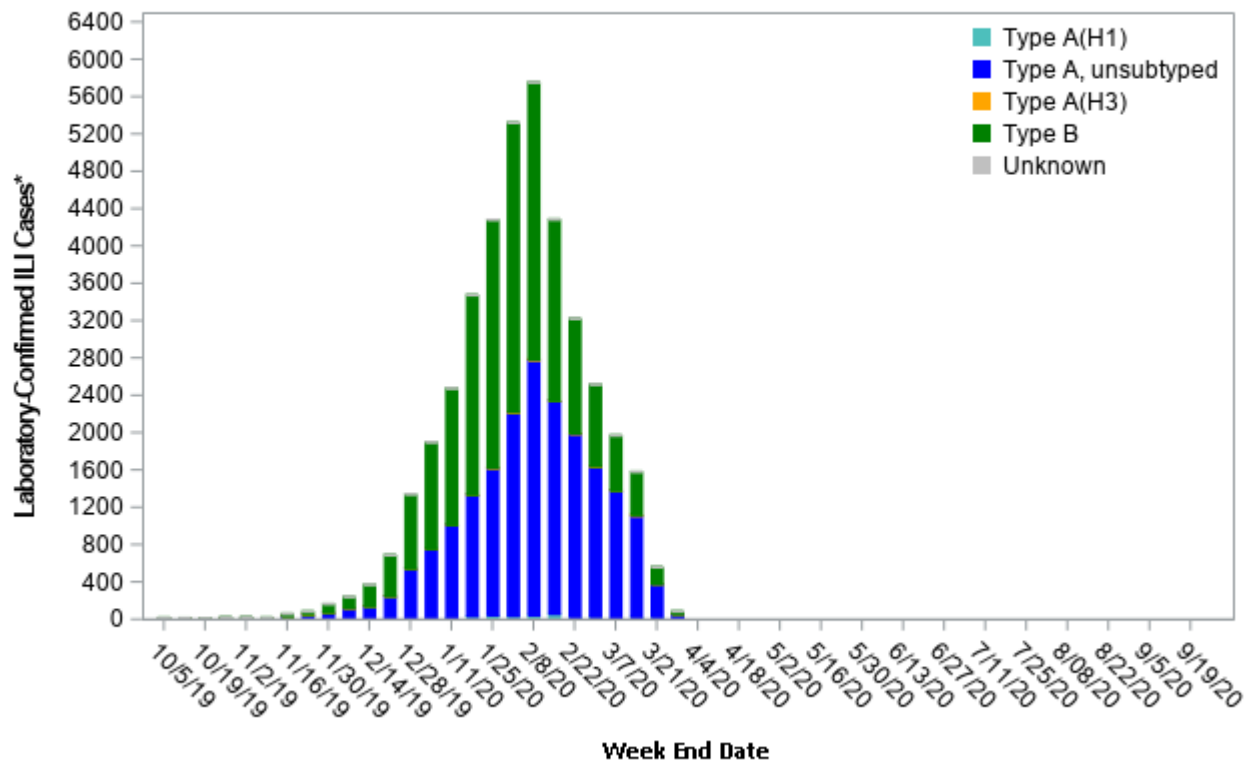
Figure 4: ILI Activity Reported Weekly by Massachusetts Sentinel Sites



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. The number of influenza positive laboratory tests reported to MDPH decreased this week by 84% compared to last week. The number of influenza A and influenza B positive laboratory tests reported to MDPH decreased by 85% and 83%, respectively, compared to last week.

Figure 5: Laboratory-confirmed Influenza Cases in Massachusetts, September 29, 2019 – March 28, 2020



*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, 302 cases of A/H1N1 influenza, 28 cases of A/H3N2 influenza, two cases of B/Yamagata influenza, and 402 cases of B/Victoria influenza have been confirmed in 965 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 |
| 10 (03/01 – 03/07/20) | 8 | 1 | 0 | 0 | 4 | 13(32%) | 4 | 41 | 45 |
| 11 (03/08 – 03/14/20) | 2 | 0 | 0 | 0 | 0 | 2(15%) | 2 | 13 | 15 |
| 12 (03/15 – 03/21/20) | 4 | 0 | 0 | 0 | 0 | 4(29%) | 0 | 14 | 14 |
| 13 (03/22 – 03/28/20) | 0 | 0 | 0 | 0 | 0 | 0(0%) | 0 | 0 | 0 |
| Prior 4 wk Total | 14 | 1 | 0 | 0 | 4 | 19(28%) | 6 | 68 | 74 |
| Cumulative Season total | 302 | 28 | 0 | 2 | 402 | 734(76%) | 16 | 965 | 980 |

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.

At this time, due to the demand for COVID-19 testing, the MA SPHL has stopped testing for all other non-influenza respiratory diseases.

Previously, all specimens which test negative for influenza at MA SPHL are also tested for non-influenza respiratory diseases. Table 2 shows that respiratory syncytial virus (RSV), rhinovirus (RHV)/enterovirus (ENT), parainfluenza virus (PIV), human metapneumovirus (HMPV), seasonal 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 |
| 10 (03/01 – 03/07/20) | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2(20%) | 0 | 10 | 10 |
| 11 (03/08 – 03/14/20) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0(0%) | 0 | 0 | 0 |
| 12 (03/15 – 03/21/20) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0(0%) | 0 | 0 | 0 |
| 13 (03/22 – 03/28/20) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0(0%) | 0 | 0 | 0 |
| Prior 4 wk Total | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2(20%) | 0 | 10 | 10 |
| Cumulative Season total | 9 | 29 | 4 | 9 | 22 | 4 | 4 | 73(37%) | 0 | 195 | 195 |

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 MA SPHL screens influenza specimens to detect mutations within influenza A/H3N2, A/2009 H1N1, B/Victoria and B/Yamagata viruses to look for antiviral resistance. No mutations have been identified 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/>.