



**MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH**  
**WEEKLY INFLUENZA UPDATE**  
*November 5, 2009*

All data in this report are preliminary and subject to change as more information is received.

**Sentinel Provider Surveillance: Influenza-like illness activity**

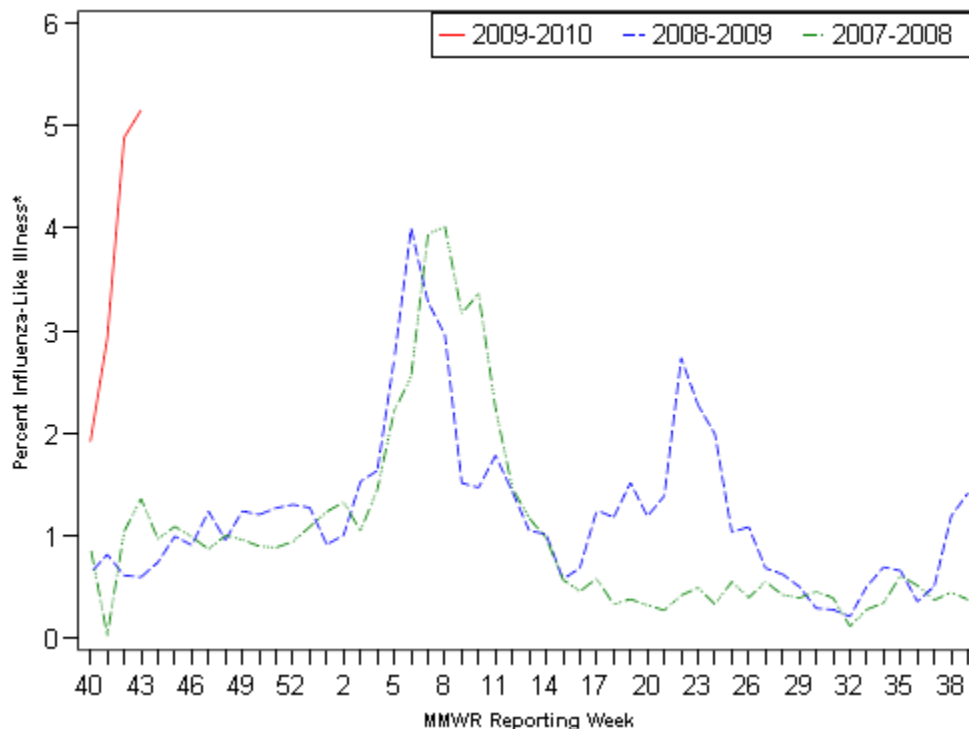
Week 43 activity level: Widespread

Provider offices across the US report the amount of influenza-like illness (ILI) they see in their patients each week during regular flu season. These doctors' offices are called 'sentinel sites'. Here we present Massachusetts sentinel site data. Please note that the data do not represent only confirmed influenza cases, but also those just with ILI. ILI is defined as fever above 100.0<sup>2</sup> in addition to either cough or sore throat. ILI is a marker of influenza and is used throughout the regular flu season to monitor influenza since most people are not tested. Figure 1 shows a continuous, dramatic increase in ILI activity over the past few weeks in excess of what was seen at the same time during the last two years.

<sup>1</sup> <http://www.cdc.gov/h1n1flu/update.htm>

<sup>2</sup> Per CDC definition for influenza-like illness: <http://www.cdc.gov/h1n1flu/casedef.htm>

**Figure 1: Percentage of ILI visits reported by sentinel provider sites**



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

Table 1 below shows a geographical distribution of reported ILI in Massachusetts. Table 1 shows that all regions are now reporting highly elevated ILI activity.

**Table 1: Percent ILI reported weekly by Massachusetts sentinel sites**

	2009-2010			2008-2009		
	%ILI	Report. Sites	Total enroll.	%ILI	Report. Sites	Total enroll.
<b>Boston</b>	3.95	4	7	0.67	4	5
<b>Central</b>	7.00	8	12	0.92	7	8
<b>Inner Metro Boston</b>	3.71	4	9	0.31	3	2
<b>Northeast</b>	4.61	6	12	0.57	8	9
<b>Outer Metro Boston</b>	28.50	2	4	2.47	2	2
<b>Southeast</b>	1.63	4	6	0.12	6	6
<b>West</b>	8.23	8	9	0.33	8	10

## **Automated Epidemiologic Geotemporal Integrated Surveillance System (AEGIS)**

### **Flu Data**

The AEGIS System is the syndromic surveillance system for MDPH, and performs automated, real-time surveillance for infectious disease outbreaks. As an adaptation of the AEGIS surveillance system, AEGIS Flu is designed to provide early warning of influenza epidemics and pandemics. With special focus on demographic and spatial patterns of illness, AEGIS Flu provides automated, real-time surveillance of influenza rates, location, and spread. Emergency department (ED) ILI data are collected from 19 hospitals in Massachusetts. Visits from emergency departments can be affected by several factors, including how worried people are about the flu, whether people can see their own doctor, media announcements, etc. The data are most useful for following trends over several days or weeks. In Figure 2 below, we can see current rates of total visits to emergency departments in MA due to flu-like symptoms compared to historical trends. Similar to Massachusetts Sentinel Site data, AEGIS data suggests a continuous, marked increase in influenza-like illness in recent weeks.

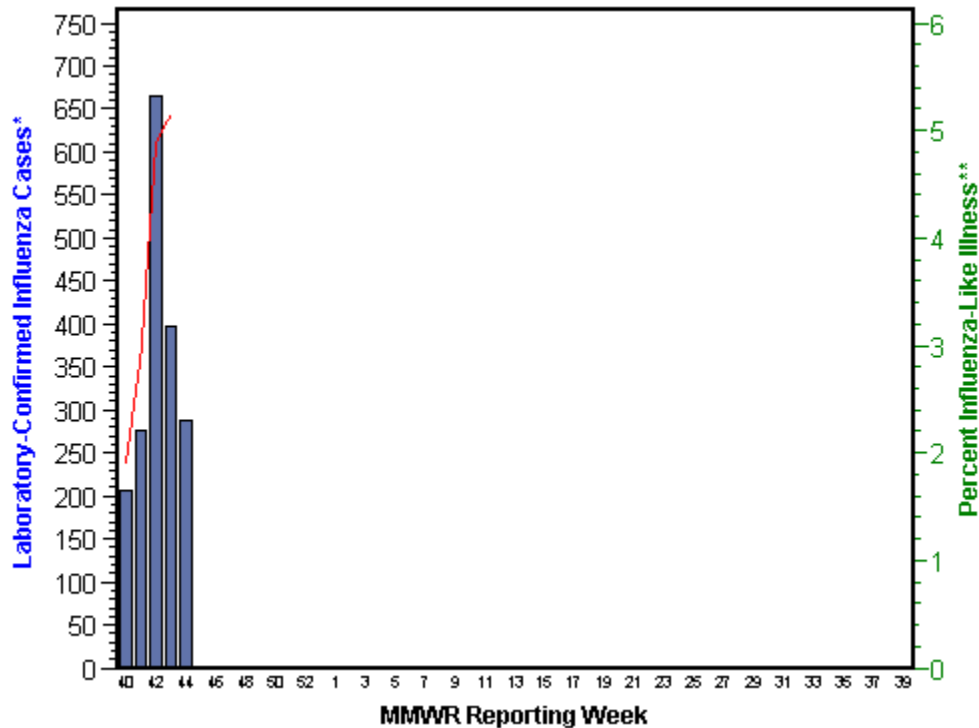


**Figure 2: Percentage of Total Visits to MA Emergency Departments Due to Flu-Like Symptoms**

## Laboratory testing for influenza

The William A. Hinton State Laboratory Institute has been doing confirmatory testing of H1N1 since mid-April, which is typically the late part of the influenza season. The number of 'confirmed' cases does not reflect the overall incidence of H1N1 flu. The majority of cases are not tested. This is true during seasonal flu as well. Below are two tables reflecting current laboratory data.

**Figure 3: Laboratory-confirmed Influenza Cases and Influenza-like Illness  
Massachusetts, October 4, 2009 - November 5, 2009**

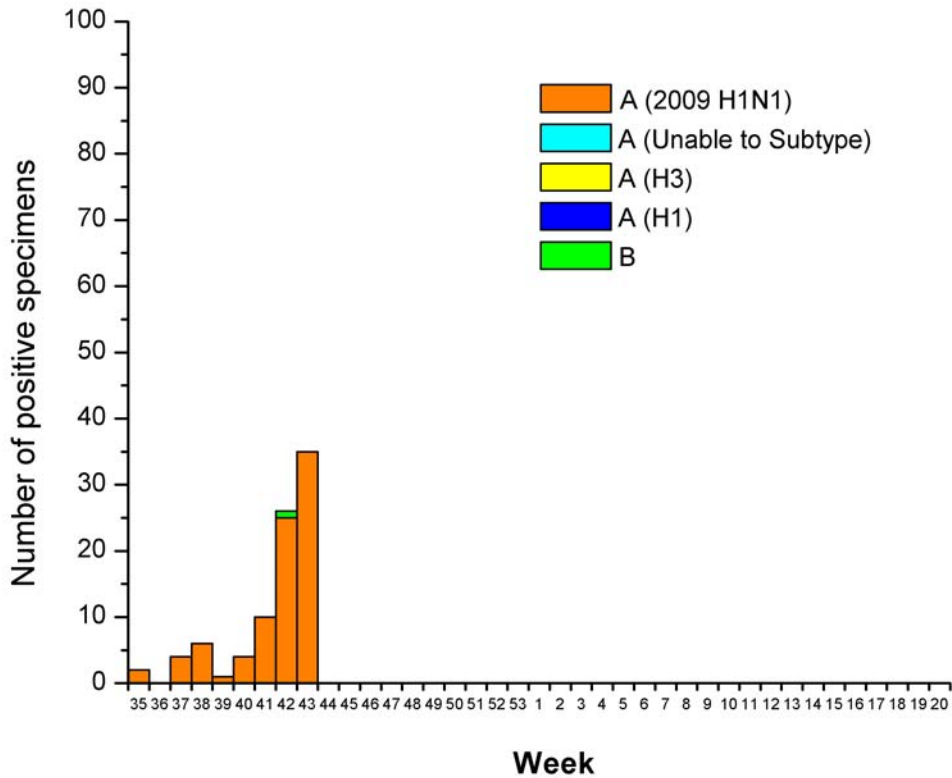


\*Influenza cases confirmed via viral culture, PCR or rapid test by specimen collection date.

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

Figure 4 summarizes the testing conducted at the HSLI since April 19, 2009. HSLI discontinued testing for influenza type B as of May 24, after no positive specimens were seen for two weeks. On October 1, 2009 testing for influenza B was restarted in preparation for regular flu season; the first influenza B result was reported last week. There have been no positive specimens for seasonal influenza A since early June. 38% of all specimens tested at the HSLI since April 19, 2009 have been novel influenza A (H1N1) 2009 virus. Complete strain surveillance testing for influenza A/H1, A/H3, B and influenza A (H1N1) 2009 virus was reinstated beginning the first week of October.

**Figure 4: Influenza positive tests reported to CDC by HSLI, August-October 2009**



**Table 2. Weekly Summary of HSLI Influenza Surveillance Test Results**

2009-2010 Season: Influenza Surveillance William A. Hinton State Laboratory Institute								
MMWR Week: (Specimen Collected)	Seasonal Influenza A H1/N1	Seasonal Influenza A H3/N2	Influenza B	Swine-Origin Influenza A H1N1	Negative for Influenza	% Swine-Origin Influenza A H1N1	% Seasonal Influenza	Total Tested
40 (10/4-10/10/09)	0	0	0	4	17	19	0	21
41 (10/11-10/17/09)	0	0	0	10	23	36	0	28
42 (10/18-10/24/09)	0	0	1	25	34	39	1.6	64
43 (10/25-10/31/09)	0	0	0	35	38	43	0	81
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>74</b>	<b>112</b>	<b>38</b>	<b>&lt;1</b>	<b>194</b>

### **2009 H1N1 influenza**

As of November 5, 2009, 1555 confirmed cases of H1N1 have been reported throughout Massachusetts since April of 2009. The 2009-2010 influenza season officially started on October 4, 2009. Table 3 below represents H1N1 cases that have been confirmed in MA since October 4, 2009; the final column of this table is the number of cases of seasonal and influenza of unknown type, also since October 4. Table 4 shows the cumulative H1N1 cases that have been confirmed in MA since April 26, 2009. Both tables are updated weekly. The Centers for Disease Control and Prevention (CDC) is no longer reporting the national total of confirmed cases of H1N1 and is instead focusing on hospitalized cases and deaths. Nationally, influenza-like illness (ILI) continues to be reported as widespread. Please visit the CDC's website for up-to-date information ([www.cdc.gov/h1n1](http://www.cdc.gov/h1n1)).

***Table 3. Confirmed Influenza cases in Massachusetts, October 4, 2009 - November 5, 2009***

	<b>H1N1: Age group (N)</b>	<b>H1N1: Pregnant (N)</b>	<b>H1N1: Hospitalized (N)</b>	<b>H1N1: Deaths (N)</b>	<b>Seasonal and Untyped Influenza by Age Group (N)</b>
0-4 years	17	0	4	0	177
5-12 years	40	0	10	0	516
13-18 years	26	0	3	0	341
19-25 years	28	1	2	0	164
26-44 years	14	2	5	1	213
45-64 years	12	0	4	0	128
65+ years	3	0	1	0	28
Unknown	0	0	0	0	20
<b>TOTAL</b>	<b>140</b>	<b>3</b>	<b>29</b>	<b>1</b>	<b>1587</b>

***Table 4. Confirmed H1N1 cases in Massachusetts, April 26, 2009 - November 5, 2009***

	<b>Age group (N)</b>	<b>Age group (%)</b>	<b>Female (%)</b>	<b>Pregnant (N)</b>	<b>Hospitalized (N)</b>	<b>Hospitalized (%)</b>	<b>Deaths (N)</b>
0-4 years	218	14	38.99	0	39	17.89	0
5-12 years	435	28	39.31	0	42	9.66	0
13-18 years	317	20.4	47.95	6	22	6.94	1
19-25 years	169	10.9	63.91	19	19	11.24	2
26-44 years	242	15.6	66.94	32	36	14.88	4
45-64 years	153	9.84	62.75	0	38	24.84	5
65+ years	20	1.29	75.00	0	10	50.00	1
Unknown	1	0.06	0	0	0	0	0
<b>TOTAL</b>	<b>1555</b>	<b>~~</b>	<b>50.74</b>	<b>57</b>	<b>206</b>	<b>13.25</b>	<b>13</b>

As shown in Table 4 above, school-aged individuals (5-18 years) have been primarily affected by H1N1, with over 62% of cases age 18 or younger. The median age of cases is 14 and cases range from 0 to 92 years. To date, males and females have been equally impacted by H1N1. Overall, 206 cases have been hospitalized (13%), which is similar to the national hospitalization rate of 11% as of July 10, and 13 cases have died. Of the 13 deaths, 10 had underlying conditions.

