



MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH
WEEKLY INFLUENZA UPDATE
September 24, 2009

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

H1N1 influenza

As of September 24, 2009, 1406 confirmed cases of H1N1 have been reported throughout Massachusetts. 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 increase and some areas of the US are reporting widespread ILI activity. Please visit the CDC's website for up-to-date information (www.cdc.gov/h1n1). Massachusetts ILI activity is described in the next section of this report.

Table 1. Confirmed H1N1 cases in Massachusetts, as of September 24, 2009

	Age group (N)	Age group (%)	Female (%)	Pregnant (N)	Hospitalized (N)	Hospitalized (%)	Deaths (N)	Seasonal Influenza by Age Group (N)
0-4 years	200	14.2	39.00	0	37	18.50	0	3750
5-12 years	391	27.8	41.94	0	31	7.93	0	7300
13-18 years	290	20.6	47.24	6	20	6.90	1	4407
19-25 years	139	9.89	65.47	18	20	14.39	2	2129
26-44 years	227	16.1	68.72	30	27	11.89	3	2841
45-64 years	141	10	63.12	0	34	24.11	4	1416
65+ years	17	1.21	70.59	0	10	58.82	1	348
Unknown	1	0.07	0	0	0	0	0	142
TOTAL	1406	~~	51.71	54	179	12.73	11	22333

As shown in Table 1 above, school-aged individuals (5-18 years) have been primarily affected by H1N1, with approximately 63% of cases age 18 or younger. The median age of cases is 14 and cases ranged from 0 to 84 years. To date, males and females have been equally impacted by H1N1. Overall, 179 cases have been hospitalized (13%), which is similar to the national hospitalization rate of 11% as of July 10, and 11 cases have died. Of the 11 deaths, 8 had underlying conditions.

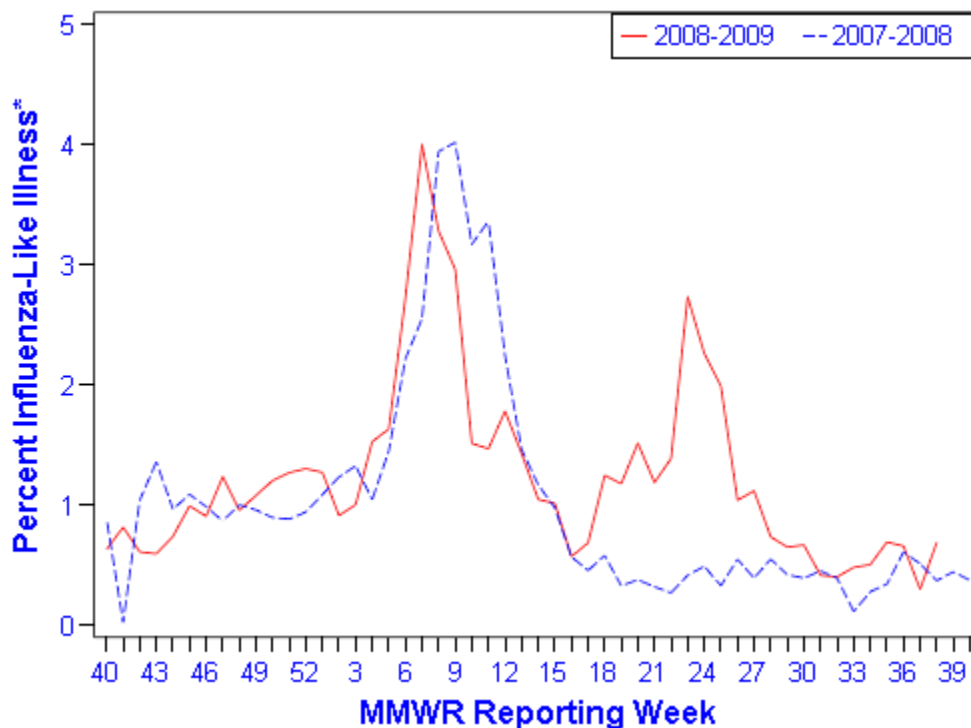
Sentinel provider surveillance: Influenza-like illness activity

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 confirmed influenza cases, only those with ILI. ILI is defined as fever above 100.0² in addition to either cough or sore throat. ILI is a marker of influenza and is used throughout the regular influenza season to monitor influenza since most people are not actually tested for influenza. Although there was an increase in ILI for the week ending September 19 over the previous week, ILI remains within the range of what might be expected at this time of year.

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

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

Figure 1: Percentage of ILI visits reported by MA 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 2 below shows a geographical distribution of reported ILI in Massachusetts. Sites in the western and central regions as well as inner metro Boston are reporting slightly elevated levels of ILI over other sites.

Table 2: Percent ILI reported weekly by Massachusetts sentinel sites

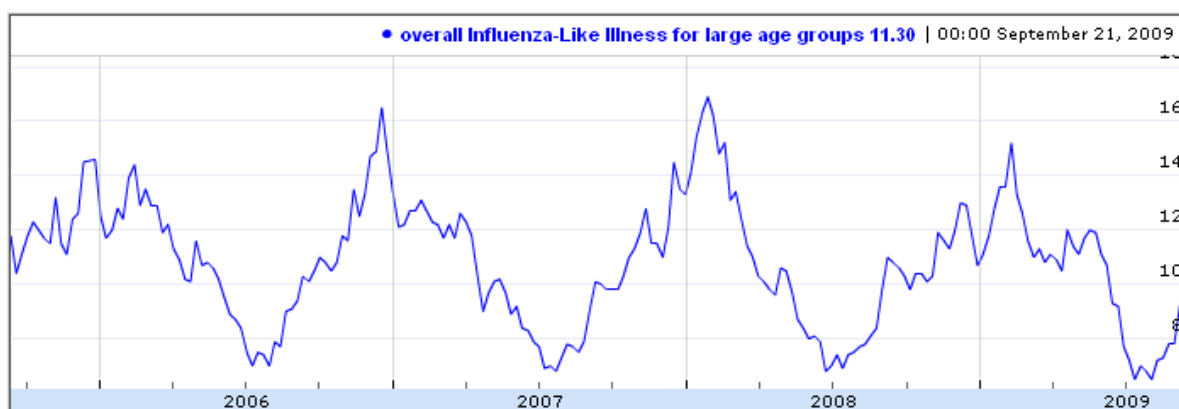
	2008-2009			2007-2008		
	%ILI	Report. Sites	Total enroll.	%ILI	Report. Sites	Total enroll.
Boston	0.00	1	5	0.00	3	5
Central	1.16	3	8	0.00	1	8
Inner Metro Boston	1.09	2	2	0.11	1	4
Northeast	0.35	4	9	1.08	1	6
Outer Metro Boston	~	~	2	~	~	2
Southeast	0.21	1	6	~	~	4
West	1.22	6	10	0.24	5	10

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 dramatic decrease in influenza-like illness in recent weeks.

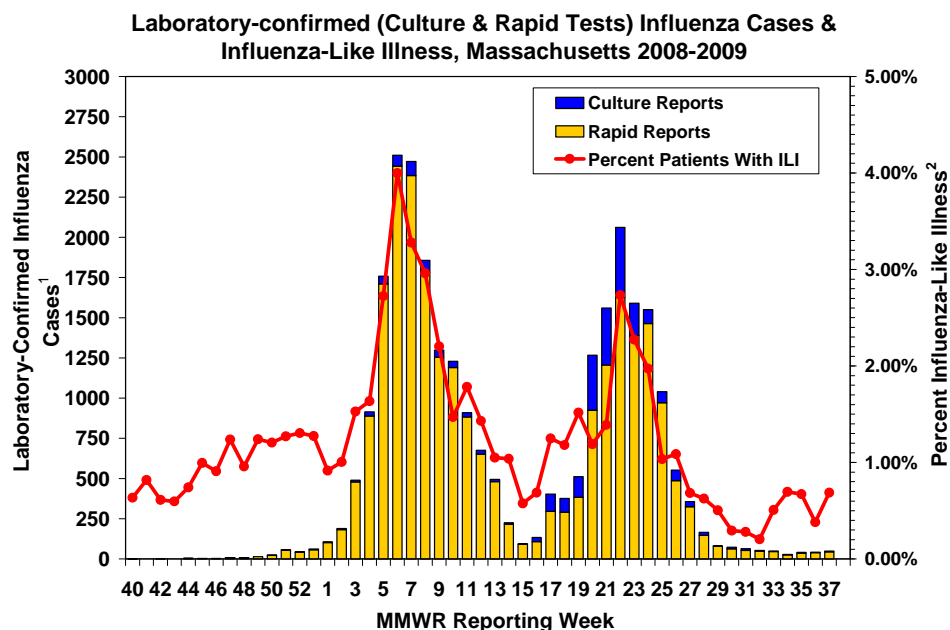
Figure 2: Percentage of Total Visits to MA Emergency Departments Due to Flu-Like Symptoms



Laboratory testing for influenza

The William A. Hinton State Laboratory Institute (HSLI) 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 because the majority of cases are not actually tested. This is true during seasonal flu as well. Below are three charts reflecting laboratory data. Figure 3 includes all laboratory-confirmed cases of influenza, both at SLI and at providers' offices and laboratories around the state. Figure 4 and Table 3 include only specimens submitted to and tested at SLI.

Figure 3: ILI and Laboratory-Confirmed Cases by Week



1. Influenza cases confirmed via viral culture or rapid test by specimen collection date.

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

Figure 4 and Table 3 summarize the testing conducted at the HSLI since April 19, 2009. The HSLI discontinued testing for influenza type B as of May 24, after no positive specimens were seen for two weeks. There have been no positive specimens for seasonal influenza A since early June. 35% of all specimens tested at the HSLI since April 19 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 will be reinstated beginning the first week of October.

Figure 4: Influenza positive tests reported to CDC by HSLI, April-September 2009

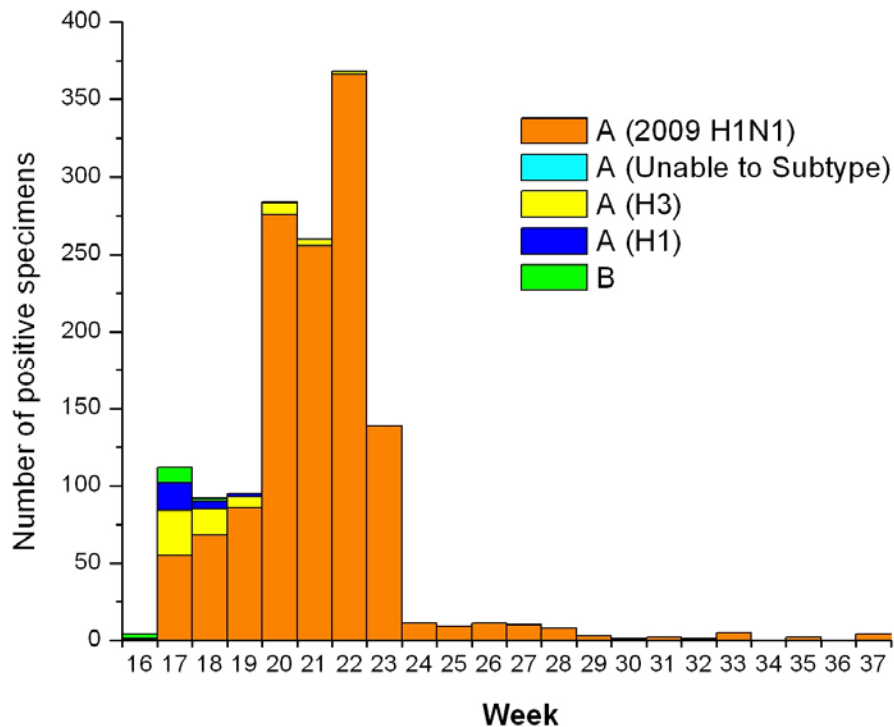


Table 3: Weekly Summary of HSLI Influenza Surveillance Test Results

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
35 (8/30-9/05/09)	0	0	NT	2	8	20	0	10
36 (9/06-9/12/09)	0	0	NT	0	10	0	0	10
37 (9/13-9/19/09)	0	0	NT	4	17	19	0	21
Total	0	0	0	6	35	15	0	41