



MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

WEEKLY INFLUENZA UPDATE

September 17, 2009

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

New information since last update: H1N1 influenza

As of September 17 2009, 1,403 confirmed cases of H1N1 have been reported throughout Massachusetts. CDC is no longer reporting counts of hospitalized H1N1 cases or H1N1 deaths on their website.

Table 1. Confirmed H1N1 cases in MA, as of 9/17/09

	Age Group (N)	Age group (%)	Female (%)	Pregnant (N)	Hospitalized (N)	Hospitalized (%)	Deaths (N)
0-4 years	200	14.3	38.5	0	37	18.5	0
5-11 years	326	23.2	39.9	0	28	8.6	0
12-18 years	354	25.2	48.6	6	22	6.2	1
19-25 years	137	9.8	65.0	18	19	13.9	2
26-44 years	225	16.0	68.4	29	26	11.6	3
45-64 years	141	10.0	63.1	0	34	24.1	4
65+ years	17	1.2	70.6	0	10	58.8	1
Unknown	3	0.2	33.3	0	0	0	0
TOTAL	1403	~	51.6	53	176	12.5	11

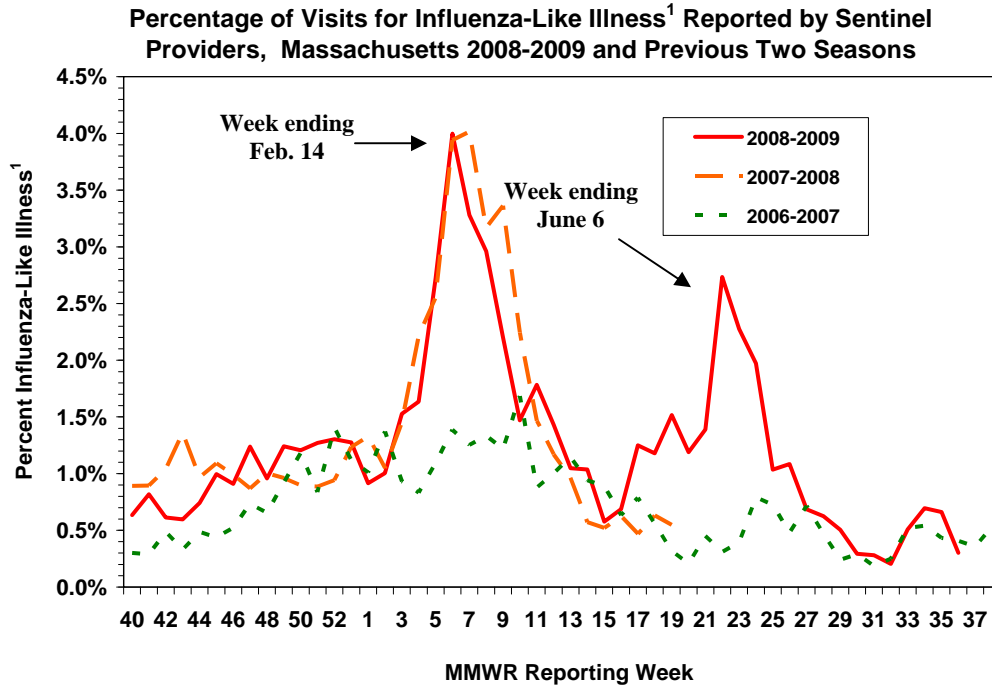
As shown in Table 1 above, school-aged individuals (5-18 years) have been primarily affected by H1N1, with 63% of cases aged 18 or younger. The median age of cases is 14 and cases have ranged in age from 0 to 84 years. To date, males and females have been equally impacted by H1N1. Overall, 176 cases have been hospitalized (12.5%), which is similar to the national hospitalization rate of 11% as of July 10. In Massachusetts, 11 confirmed H1N1 cases have died. Of the 11 deaths, 8 had underlying conditions. Please note that the number of confirmed cases does not reflect the overall incidence of H1N1 flu because the majority of cases are not tested and are therefore not confirmed (this is true for seasonal flu as well).

Sentinel Provider Surveillance: Influenza-like illness activity

Provider offices across MA 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." Given the unusual occurrence of influenza activity at this time of year, providers throughout the country are continuing to report to their state health departments. Please note that the data do not represent confirmed H1N1 cases, only those with ILI.

ILI is defined as fever above 100.0¹ 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 tested for influenza. Figure 1 indicates that although ILI seemed to be on the rise during the week ending September 5, it returned to normal seasonal levels for the week ending September 12.

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



¹Influenza-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.

Table 2 below shows a geographical distribution of reported ILI in Massachusetts. This table shows that two regions are beginning to report higher levels of ILI, although only one of these regions also had documented positive influenza lab activity.

Table 2. Percent ILI reported weekly by Massachusetts sentinel sites.

Region:	2008-2009			2007-2008		
	%ILI:	Report. Sites	Total enroll.	%ILI:	Report. Sites	Total enroll.
West	0.958%	5	11	0.000%	5	11
Central	0.000%	3	10	0.000%	1	10
Northeast	0.000%	4	9	1.339%	1	8
Outer Metro Boston	0.000%	~	3	0.000%	~	3
Inner Metro Boston	0.518%	1	4	0.574%	1	5
Boston	0.843%	2	5	0.000%	2	5
Southeast	0.106%	2	7	0.000%	~	3
Totals:		17	49		10	45

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 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,

¹ Per CDC definition for influenza-like illness: <http://www.cdc.gov/h1n1flu/casedef.htm>

location, and spread. Emergency department (ED) ILI data are collected from 19 hospitals in Massachusetts for this dataset.

It is important to note that 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 contrast to sentinel site data, figure 2 shows current rates of total visits to emergency departments in MA are steadily increasing.

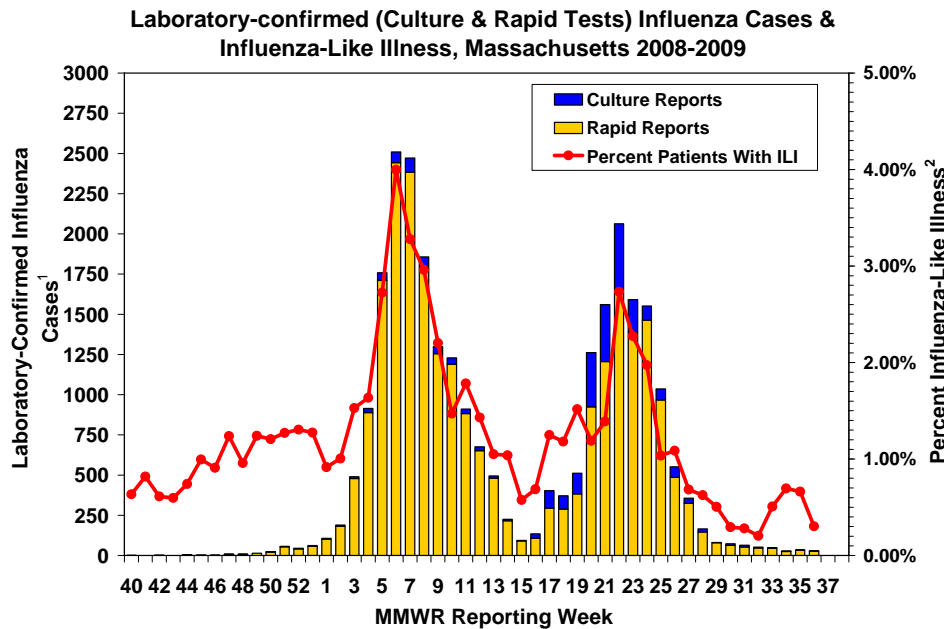
Figure 2: Percentage of Total visits to MA Emergency Departments due to flu-like symptoms (as of July 25, 2009)



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 because the majority of cases are not tested. This is true for seasonal flu as well. The figure and table below reflect current laboratory data.

Figure 3: Laboratory-confirmed (Culture & Rapid Tests) Influenza Cases & Influenza-Like Illness, Massachusetts 2008-2009



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.

Table 3 summarizes the testing conducted at the State Lab since April 19. The lab stopped 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 State Lab since April 19, 2009 has been novel influenza A (H1N1).

Table 3: Laboratory description for influenza specimens.

Influenza Surveillance William A. Hinton State Laboratory Institute								
Specimen Collection Week	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
1 (4/19-4/25/09)	0	0	3	1	2	17	50	6
2 (4/26-5/02/09)	18	29	10	55	401	11	11	517
3 (5/03-5/09/09)	5	17	2	68	351	15	5	445
4 (5/10-5/16/09)	2	7	0	86	191	30	3	290
5 (5/17-5/23/09)	1	7	0	276	295	47	1	593
6 (5/24-5/30/09)	0	4	NT	256	293	45	1	571
7 (5/31-6/06/09)	0	2	NT	366	268	56	0	658
8 (6/07-6/13/09)	0	0	NT	139	111	53	0	264
9 (6/14-6/20/09)	0	0	NT	11	18	34	0	32
10 (6/21-6/27/09)	0	0	NT	9	15	38	0	24
11 (6/28-7/04/09)	0	0	NT	11	12	44	0	25
12 (7/05-7/11/09)	0	0	NT	10	12	45	0	22
13 (7/12-7/18/09)	0	0	NT	8	8	47	0	17
14 (7/19-7/25/09)	0	0	NT	3	1	75	0	4
15 (7/26-8/01/09)	0	0	NT	1	4	20	0	5
16 (8/02-8/08/09)	0	0	NT	2	11	15	0	13
17 (8/09-8/15/09)	0	0	NT	1	9	10	0	10
18 (8/16-8/22/09)	0	0	NT	5	9	38	0	14
19 (8/23-8/29/09)	0	0	NT	0	10	0	0	10
20 (8/30-9/5/09)	0	0	NT	2	8	20	0	10
21 (9/6-9/12/09)	0	0	NT	0	10	0	0	10
Total	24	59	15	1224	1848	35	3	3540