2007-2008 Influenza Mid-Season Report
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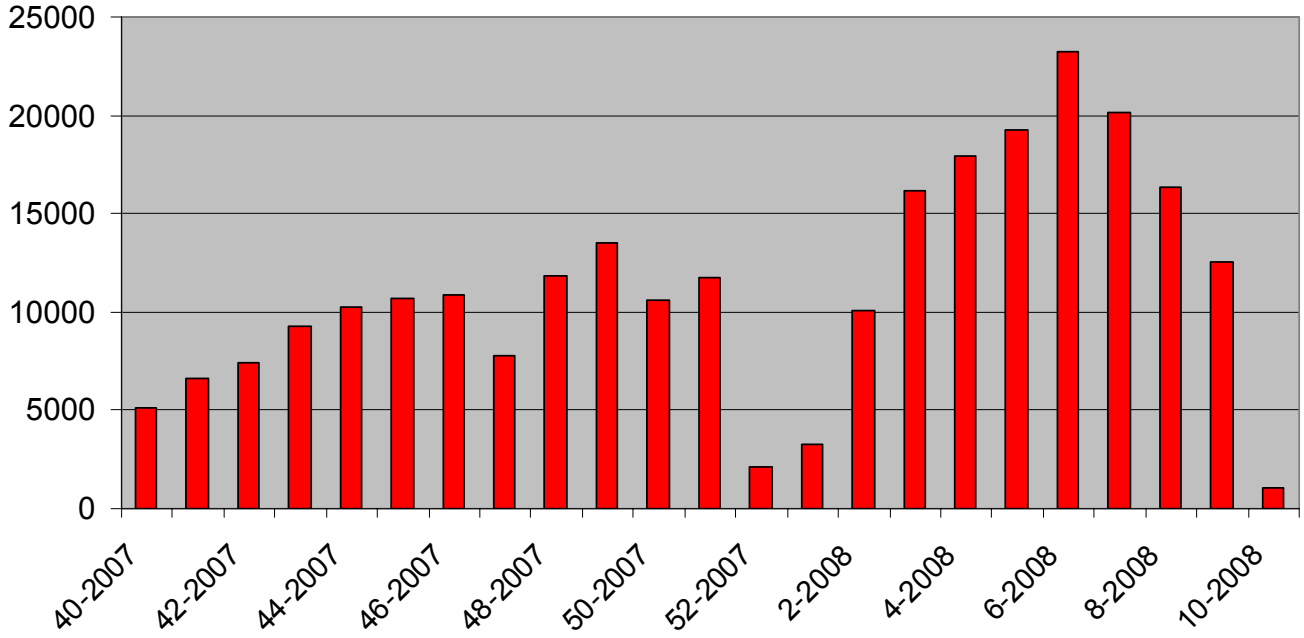
To date, the 2007-2008 influenza season in Michigan has been characterized by a moderate level of activity. Compared to national data, Michigan's season has been of a similar activity level but has been comprised mainly of influenza A/H3N2. The first MDCH laboratory- confirmed case of influenza was identified in Northern Michigan on December 3, 2007. This report summarizes data from the following information sources for the time frame of October 1, 2007 to February 9, 2008:

1) Aggregate "Flu-like Illness" count entered into the Michigan Disease Surveillance System (MDSS)
2) Individual "Influenza" cases in MDSS
3) Emergency Department Syndromic Surveillance System
4) Michigan component of the CDC U.S. Influenza Sentinel Provider Surveillance Network
5) MDCH Bureau of Laboratories
6) National data from the Centers for Disease Control and Prevention (CDC)

1) MDSS Aggregate Flu-like Illness reports:
Aggregate data sources include the IP10 school report form which is based on parental reports of ill children. Cases included in the data below are probable, confirmed, suspect or unknown status, with an investigation status of completed, active or new.

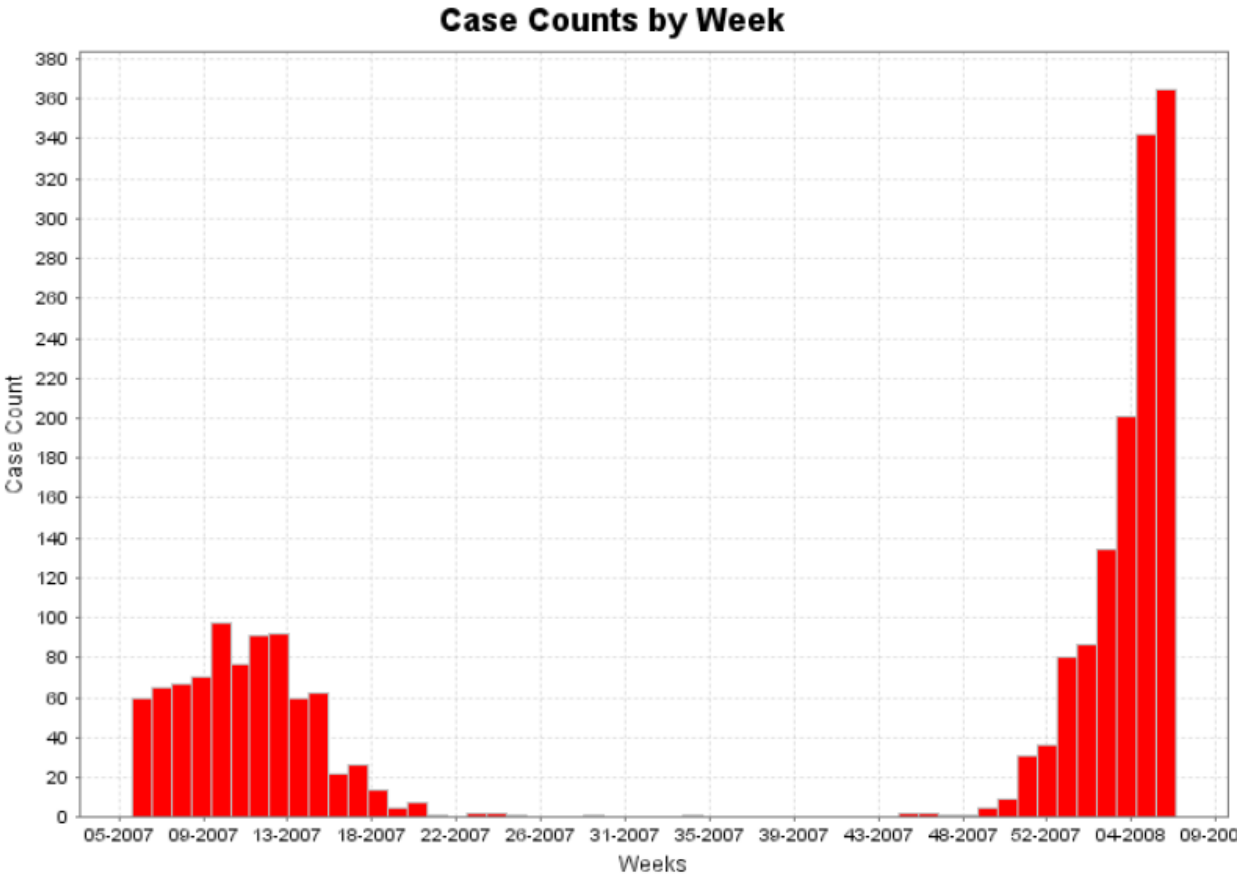
Through the fall, aggregate reports steadily increased. A sharp decline in weeks 52 and 1 was noted, which coincides with the school holiday. At the end of January and beginning of February, aggregate numbers moderately increased compared to those reported immediately before the holiday. Current aggregate numbers are slightly higher but comparable to levels seen at this time last year.

Aggregate Case Counts by Week:



2) MDSS Individual Influenza reports:
These reports may not be representative of the statewide impact of influenza as local health departments are not required to individually report influenza.

During this time frame, a total of 1296 individual cases were reported in MDSS; however, only 1284 of these cases were used for analysis. 12 cases were excluded due to incomplete or inaccurate serologic testing or being incorrectly reported as influenza when another etiologic agent, such as parainfluenza, respiratory syncytial virus, or *H. influenzae*, was identified. By comparison, for the same time frame during the 2006-2007 influenza season, 440 cases were correctly reported to MDSS. The increase in individual cases may be a result of improved reporting, increased influenza testing and/or a potentially earlier peak in the influenza season.



Demographics

- Mean Age: 27.9 years
  - o *Same time frame 2006-2007 season: 19.5 years*
- Median Age: 22 years
  - o *Same time frame 2006-2007 season: 8 years*

- Sex: Female – 661 (51.5%), Male – 620 (48.3%)

Michigan Influenza Surveillance Regions

Distribution

Month	October	November	December	January	February (through Week 6)
Number of Cases '07-'08	0	5	107	701	471
Number of Cases '06-'07	8	40	116	201	75

Region	Southeast	Southwest	Central	North
Number of Cases	1042	24	188	30
% of Cases	81.2%	1.9%	14.6%	2.3%

Typing

- Available for 1089 cases (84.8%)
- Influenza A: 1035 cases (95.0%)
    - Subtyping available for 96 cases
        - A/H3N2: 93 cases (96.8%)
        - A/H1N1: 3 cases (3.2%)
- Influenza B: 54 cases (5.0%)

Testing Method

- Available for 635 cases (49.5%)

Testing Method	Rapid Antigen	Culture	PCR	DFA	IFA
Number of Cases	402	122	82	20	9
% of Cases	63.3%	19.2%	12.9%	3.1%	1.4%

Hospitalizations

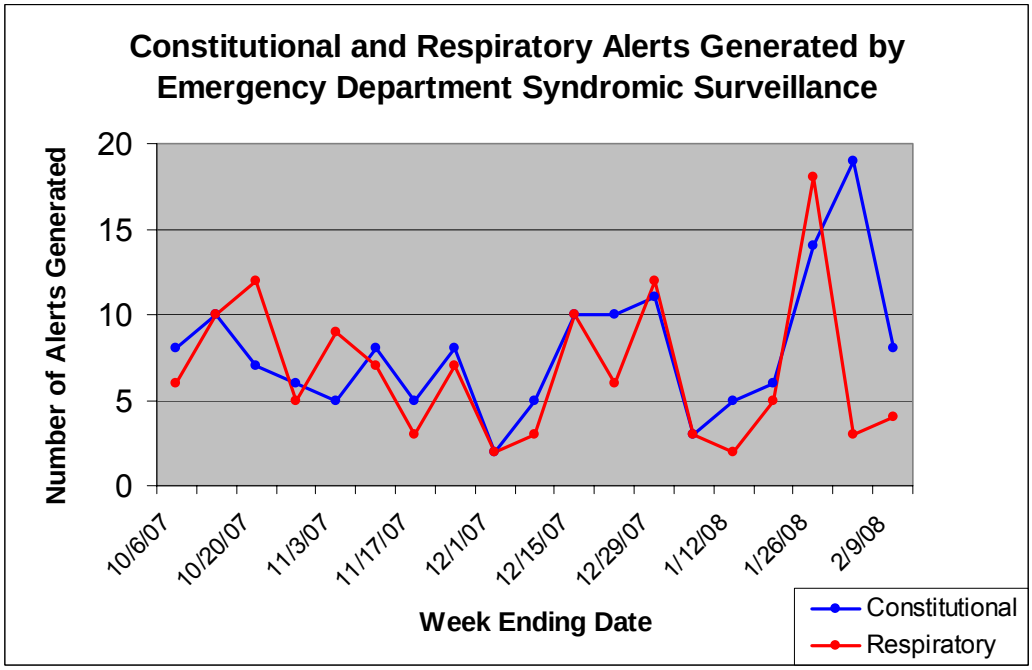
- 153 cases (11.9%) were reported as “Inpatient”
    - *Same time frame 2006-2007 season: 57 cases (13%)*
- Sex: Female – 83 (54.2%), Male – 70 (45.8%)
- Mean Age: 49.4 years
    - *Same time frame 2006-2007 season: 30.3 years*
- Median Age: 54 years
    - *Same time frame 2006-2007 season: 9 years*
- 118 (77.6%) were ≤ 10 years or ≥ 50 years

Age Range (years)	≤ 5	6-10	11-18	19-49	50-70	> 70
Number Hospitalized 07-08*	27	4	7	27	33	54
Number Hospitalized 06-07	21	8	3	6	10	9

*Age was not available on one case

Region	Southeast	Southwest	Central	North
Number of Cases	123	3	27	0
% of Hospitalizations	80.4%	2.0%	17.6%	0%

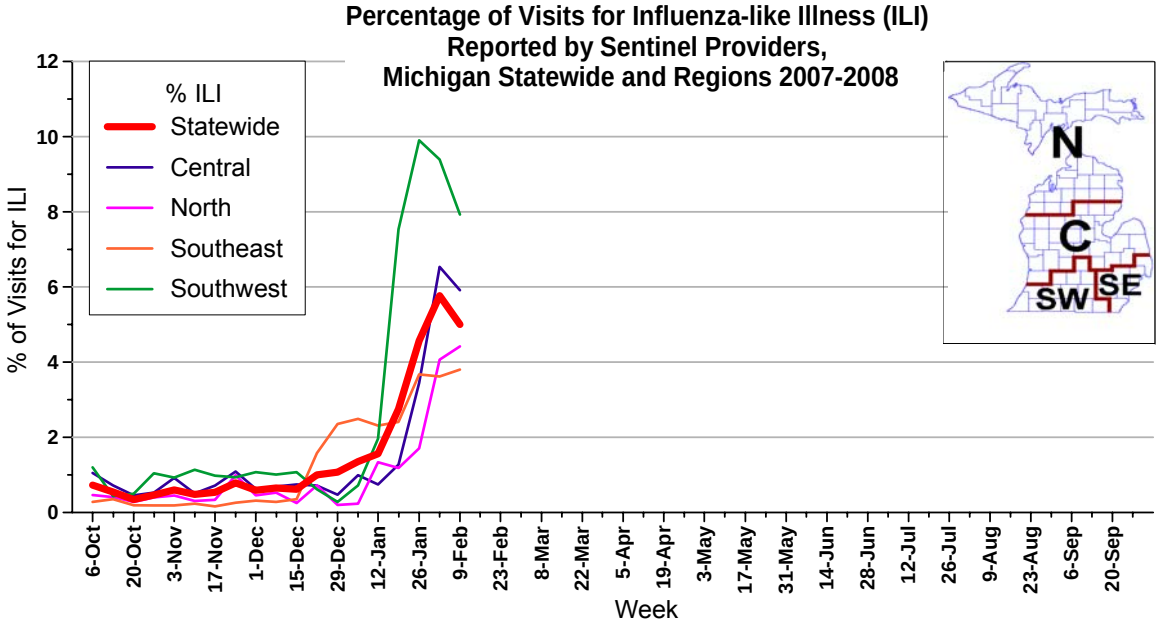
3) Emergency Department Syndromic Surveillance:



Region	SE	SW	C	N	Statewide	Total
Constitutional Alerts	26	33	50	34	7	150
Respiratory Alerts	19	36	44	26	2	127

4) Sentinel Provider Network:

Ninety-four Michigan providers participate in the CDC U.S. Influenza Sentinel Provider Surveillance Network. The statewide percentage of visits due to influenza-like illness (ILI) started to increase during the third week of December, with substantial weekly increases starting during the third week of January. The statewide ILI rate for the week ending February 9, 2008 was 5.0%.



5) MDCH Bureau of Laboratories:
From October 1, 2007 through February 9, 2008, the MDCH Bureau of Laboratories has identified 120 influenza isolates:

- 105 A/H3N2: Southeast (39); Central (30); Southwest (20); North (16)
- 3 A/H1N1: Southeast (2); North (1)
- 12 B: Southeast (9); North (2); Central (1). All have been typed as B/Shanghai/361/2002-like.

Overall MDCH submission activity has been moderate. At this time last influenza season, 63 culture-confirmed cases had been identified.

All sentinel laboratories continue to report high numbers of positive influenza A tests and low influenza B positives, with individual labs in the Southwest and Central regions reporting a noticeable increase in influenza A positives for the past week. The number of RSV positive tests continues to increase statewide; sporadic adenoviruses have also been reported.

6) Centers for Disease Control and Prevention

The following information is taken from the MMWR article "Update: Influenza Activity --- United States, September 30, 2007--February 9, 2008", available online at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm57e215a1.htm.

During September 30, 2007--February 9, 2008, World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories in the United States reported testing 94,502 specimens for influenza viruses, and 10,568 (11%) tested positive. Of these positive specimens, 8,889 (84%) were influenza A viruses, and 1,679 (16%) were influenza B viruses. A total of 2,299 (26%) of the influenza A viruses have been subtyped: 1,033 (45%) were influenza A (H1N1) viruses, and 1,266 (55%) were influenza A (H3N2) viruses. Although influenza A (H1N1) viruses predominated through mid-January, an increasing proportion of subtyped influenza A viruses are influenza A (H3N2) viruses. Influenza A (H3N2) viruses were reported more frequently than influenza A (H1N1) viruses during January 20--February 9. During the week ending February 9, H3N2 became the predominant virus for the season overall.

During October---December 2007, the United States experienced low but increasing levels of influenza activity. During January and early February, influenza activity increased more rapidly. For the week ending February 9, a total of 49 states reported either widespread or regional activity. During the most recent three influenza seasons (2004--05, 2005--06, and 2006--07), the number of states reporting regional or widespread activity peaked at 41--48 states. During this season, influenza virus isolates have been reported in all nine surveillance regions in the United States and, during the week ending February 9, 33% of specimens tested for influenza were positive. The peak percentage of specimens testing positive for influenza during the preceding three seasons ranged from 23% to 28%. During the week ending February 9, 5.7% of outpatient visits to sentinel providers were for influenza-like illness (ILI). The peak percentage of visits for ILI in the three previous seasons ranged from 3.3% to 5.4%.