

# Novel H1N1 (nH1N1) Influenza Situation Report

Marion County Health Department, IN 2009-10-16, 3:00pm

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## General information

The epidemiology and clinical characteristics of nH1N1 are roughly similar to those of usual seasonal influenza, except that most non-elderly people are much more susceptible to nH1N1 infection. To shorten this report, we have saved key information from past reports at [http://www.mchd.com/H1N1/Cumulative\\_H1N1\\_Situation\\_Report.doc](http://www.mchd.com/H1N1/Cumulative_H1N1_Situation_Report.doc). Related material is at [http://www.mchd.com/H1N1/H1N1\\_situational\\_reports.htm](http://www.mchd.com/H1N1/H1N1_situational_reports.htm). The report you are now reading only includes new information, or information that is especially important at the moment.

## Spread

The local incidence of nH1N1 has continued the rapid increase that began around Monday, September 28. From mid-Aug until Sept. 28, the percent of emergency department visits in Marion County that were for flu symptoms rose at about one-third of a percent per week, to 2.7%. From Sept. 28 to Oct. 15, it rose at over seven times that rate (2.8 percent per week, from 2.7% to 9.6%).<sup>1</sup> The number of samples submitted for influenza testing and the percent of those testing positive has had a similar acceleration.<sup>2</sup>

We have between 3 to 8 weeks of absentee data from 6 of 11 public school districts in Marion County. Over the past three weeks there has been a slight upward trend in the amount of absences in these districts, with most school absentee rates ranging between 2% to 14%. Absentee rates in most schools have been sporadic, often increasing and decreasing quickly. This week, 32 (37%) of the 87 schools had a decreased number of absences, and 14 (16%) had an increase. 12 (14%) out of 87 schools have shown absentee rates at or above 10%.<sup>3</sup>

ISDH confirmed the death of a St. Joseph County resident as the fifth nH1N1 flu-related death in Indiana.<sup>4</sup> An October 15 nH1N1 death in Tippecanoe County is unconfirmed.<sup>5</sup> Among 57 IN hospitals surveyed, the burden from ILI-related hospitalizations during Oct. 4-10 was elevated (more than doubled) in 4%, slightly elevated in 24%, and typical in 54%. Four hospitals reported that the burden was difficult to manage. Since September 1, 2009, 95% (120/126) of Indiana specimens that were positive for influenza were nH1N1. Of those 120 for whom age was known, 93% were ages 0 to 24 years. None were older than 50.<sup>6</sup> Nationally, from Sept. 27 to Oct. 3, influenza activity was widespread all but 13 states, 99% of all subtyped influenza A viruses were nH1N1, and 16 influenza-associated pediatric deaths were reported to the CDC.<sup>7</sup>

In the northern temperate zones across the world, influenza activity continues to increase. In the southern hemisphere, influenza rates have returned to normal, and very few cases are reported.<sup>8</sup>

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<sup>1</sup> Analysis of data from the Indiana State Department of Health's Public Health Emergency Surveillance System

<sup>2</sup> Analysis of data from clinical laboratories serving much of central Indiana (Indiana Network for Patient Care, Regenstrief Inst.)

<sup>3</sup> Data from the Speedway, Warren, Wayne, Perry, Franklin and Decatur Township school corporations.

<sup>4</sup> [http://www.in.gov/portal/news\\_events/43080.htm](http://www.in.gov/portal/news_events/43080.htm) 2009-10-08

<sup>5</sup> [http://www.wlfi.com/dpp/news/local/local\\_wlfi\\_tippecanoe\\_county\\_woman\\_with\\_h1n1\\_dies\\_20091015](http://www.wlfi.com/dpp/news/local/local_wlfi_tippecanoe_county_woman_with_h1n1_dies_20091015) 2009-10-15

<sup>6</sup> [http://www.in.gov/flu/files/Weekly\\_Influenza\\_Report\\_-\\_Week\\_40.pdf](http://www.in.gov/flu/files/Weekly_Influenza_Report_-_Week_40.pdf), <http://www.in.gov/flu> 2009-10-12

<sup>7</sup> <http://www.cdc.gov/flu/weekly/> 2009-10-9

<sup>8</sup> [http://www.who.int/csr/don/2009\\_10\\_16/en/index.html](http://www.who.int/csr/don/2009_10_16/en/index.html) 2009-10-16

## **Symptoms, Severity, Groups At Elevated Risk**

See [http://www.mchd.com/swine\\_flu/Cumulative\\_H1N1\\_Situation\\_Report.doc](http://www.mchd.com/swine_flu/Cumulative_H1N1_Situation_Report.doc) for more information. We know of no significant changes in nH1N1 characteristics.

Two *JAMA* studies of H1N1 ICU patients (6 Mexican ICUs & 38 Canadian ICUs) had similar findings: 1) patients tended to be fairly healthy adolescents and young adults, 2) patients had brief prodromal illness followed by progressive respiratory failure, 3) shock and multisystem organ failure were common and 4) averaged 12 days on ventilation, with many cases needed rescue therapies. In a third *JAMA* study, a H1N1 ECMO case series in Australia & New Zealand, found that cases were typically young adults with little comorbidity who developed multi-system organ failure. The fatality rate was 21%.<sup>9</sup>

Another *JAMA* study found similar rates of influenza infection for surgical versus N95 masks in 446 nurses in 8 Canadian hospitals. Adherence was 100% for surgical masks and 87.5% for N95 masks.<sup>10</sup> The CDC updated its mask guidelines on Oct. 16.<sup>11</sup> An association of infection control clinicians, recommended that N95 masks be reserved for aerosol-generating procedures.<sup>12</sup>

A study of 272 patients hospitalized for nH1N1 from May to mid-June 2009 found: 1) 25% admitted to ICU, 2) 7% died, 3) 45% less than 18 years old and 4) 73% had at least one underlying medical condition.<sup>13</sup>

## **Antiviral & Drug Resistance**

No sustained transmission of oseltamivir-resistant nH1N1 has been identified. WHO reports 35 virus isolates of oseltamivir resistant influenza virus worldwide, none resistant to zanamivir. 12 were associated with post-exposure prophylaxis. Over 10,000 isolates of nH1N1 have been tested and found to be sensitive to oseltamivir.<sup>14</sup>

The FDA and GlaxoSmithKline reported the death of a patient with influenza who received Relenza (zanamivir) Inhalation Powder, which was solubilized and administered by mechanical ventilation. Relenza (zanamivir) Inhalation Powder is not intended to be reconstituted in any liquid formulation and is not recommended for use in any nebulizer or mechanical ventilator.<sup>15</sup>

## **Vaccine Distribution**

As of October 16, the Marion County Health Department (MCHD) has received 14500 nasal mist vaccine doses (attenuated nH1N1), 17500 doses in ten-dose vials (inactivated nH1N1), and 100 doses in single dose syringes (thimerosal-free). This week, MCHD distributed injectable vaccine intended for health care workers to the county's six hospitals networks and to some fire departments for the emergency medical services personnel. Other fire departments will receive their shipments early next week. Next week, vaccine will also be distributed to obstetricians, family practitioners, and pediatricians who have already requested vaccine. Marion County physicians may request nH1N1 vaccine by clicking the "[H1N1 Vaccine Request Form for Healthcare Providers](#)" link at <http://www.mchd.com>.

<sup>9</sup> <http://jama.ama-assn.org/cgi/content/full/2009.1539> 2009-10-12

<sup>10</sup> <http://jama.ama-assn.org/cgi/content/abstract/2009.1466v1> 2009-10-12

<sup>11</sup> [http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) 2009-10-14

<sup>12</sup> [http://www.shea-online.org/Assets/files/policy/061209\\_H1N1\\_on\\_Letterhead.pdf](http://www.shea-online.org/Assets/files/policy/061209_H1N1_on_Letterhead.pdf)  
[http://www.shea-online.org/Assets/files/policy/Press\\_Release\\_10-14-09\\_-\\_FINAL.pdf](http://www.shea-online.org/Assets/files/policy/Press_Release_10-14-09_-_FINAL.pdf) 2009-10-14

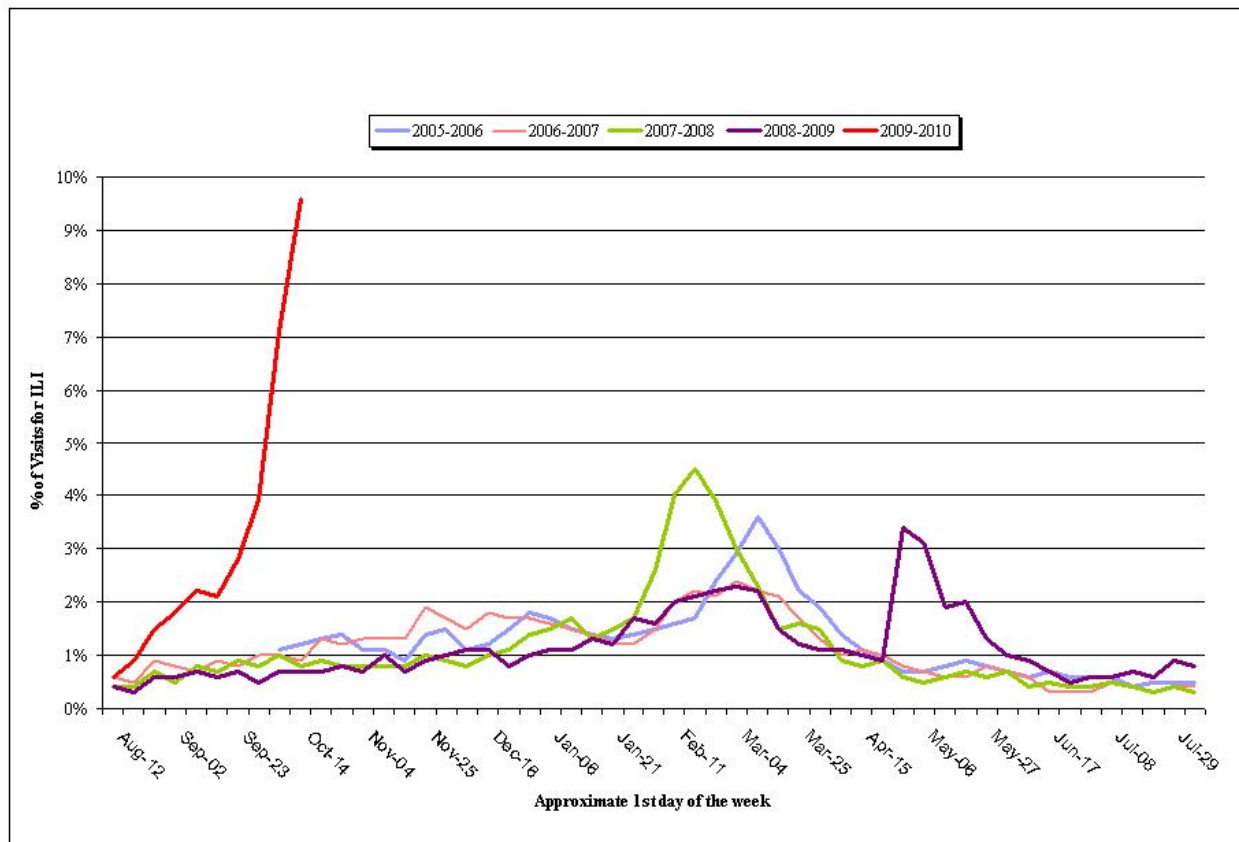
<sup>13</sup> <http://content.nejm.org/cgi/content/full/NEJMoa0906695?resourcectype=HWCIT> 2009-10-08

<sup>14</sup> [http://www.who.int/csr/disease/swineflu/laboratory16\\_10\\_2009/en/index.html](http://www.who.int/csr/disease/swineflu/laboratory16_10_2009/en/index.html) 2009-10-16

<sup>15</sup> <http://www.fda.gov/downloads/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/UCM186224.pdf>

# Appendix: Trends in Influenza Incidence

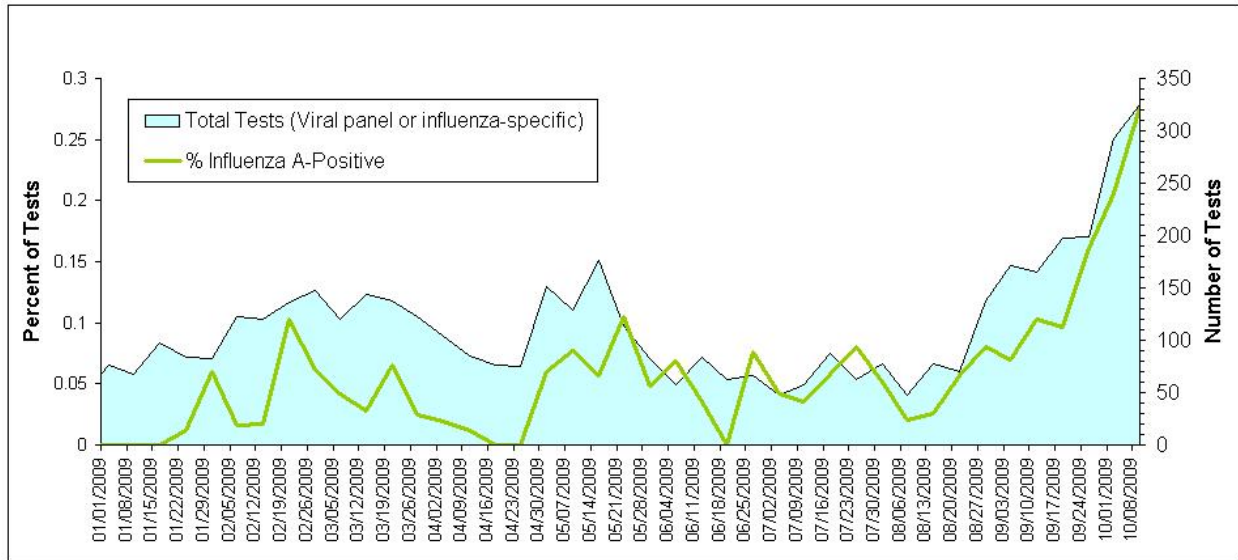
Figure 1: Percentage of Emergency Department Visits for Influenza-Like Illness, Marion County Hospitals, 2008-2009 and the Previous four Seasons



Source: ISDH Public Health Emergency Surveillance System. (DR1144)

This week, the percent of emergency departments visits that were for influenza-like illness continued its rapid increase, and is far above the maximum seen in the past four flu seasons.

**Figure 2: Influenza A Activity by Antigen Detection, Clarian Pathology Laboratory, 2008-2009**

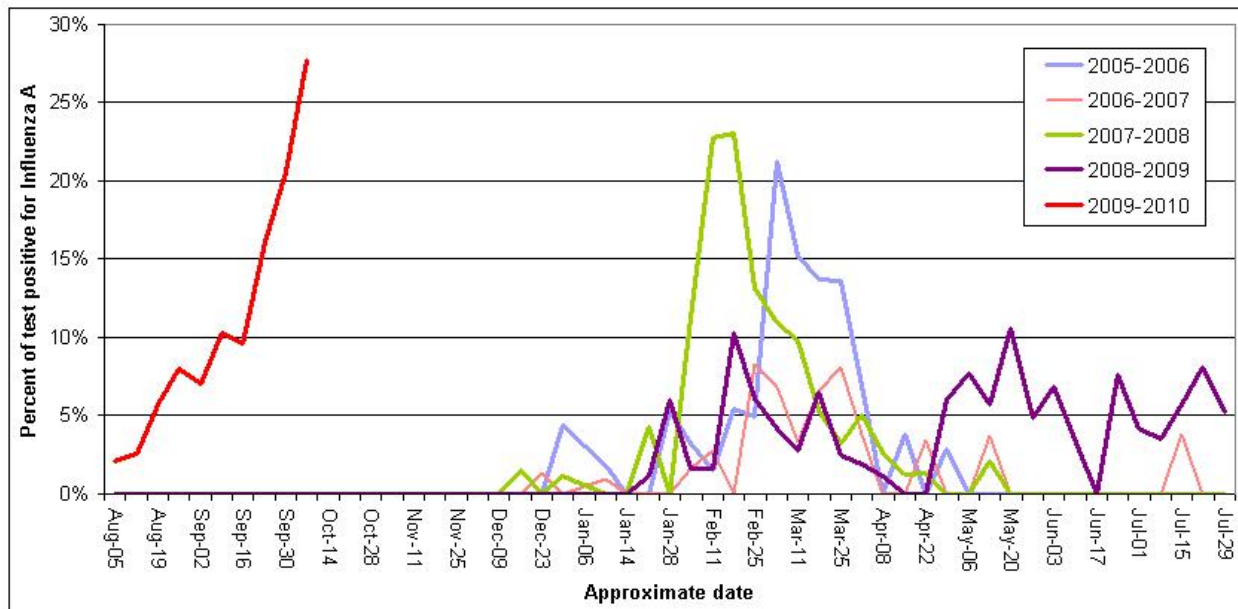


Source: Clinical Virology Laboratory at Clarian Pathology Laboratory. Roughly 55% of the samples were from a children’s hospital, with the remainder being from general hospitals or outpatient settings.

Laboratory tests confirm an increase in influenza A. National surveillance indicates that 99% of influenza cases are nH1N1.

Both the number of ED visits for ILI and % positive Influenza A lab tests have increased, indicating a true increase in influenza cases, rather than an increase due to visits by “worried well.”

**Figure 3: Influenza Activity by Antigen Detection, Clarian Pathology Laboratory, 2008-2009 and the Previous Seasons**



Source: Clinical Virology Laboratory at Clarian Pathology Laboratory.

The percent of laboratory tests that was positive for Influenza A continued its rapid increase. It is far higher than usual for this time of year, and has surpassed the maximum from the last four flu seasons.