THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

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2009 New York City Department of Health and Mental Hygiene Health Alert #22: Novel H1N1 Influenza Update June 12, 2009

Please distribute to staff in the Departments of Critical Care, Emergency Medicine, Family Practice, Geriatrics, Internal Medicine, Infectious Disease, Infection Control, Pediatrics, Pharmacy, Neonatal Units, Obstetrics and Gynecology, Pulmonary Medicine and Laboratory Medicine

Overall, the incidence of mild novel H1N1 influenza appears to be declining in New York City. However, hospitals continue to report hospitalized and critically ill patients. Providers should continue to prioritize early antiviral treatment for patients with influenza-like illness who have underlying conditions placing them at higher risk for complications or severe illness (see Table 2). The most common risk conditions during this outbreak have been asthma, pregnancy and age less than 2 years.

Because novel H1N1 influenza is a newly emerged virus, DOHMH continues to monitor its clinical and epidemiologic features. These recommendations are therefore subject to change as new information becomes available. Other public health agencies are also monitoring the situation and issuing interim guidance documents which are being updated and adapted to local circumstances. Some DOHMH recommendations, and those of other state and local health departments, differ from those issued by the US Centers for Disease Control and Prevention (see www.cdc.gov/h1n1flu/guidance/). Providers should continue to check the DOHMH Novel H1N1 Influenza webpage at www.nyc.gov/html/doh/html/cd/cd-h1n1flu.shtml for updated local information and recommendations.

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On June 11, 2009, the World Health Organization (WHO) raised the worldwide pandemic alert level to Phase 6 in response to the ongoing global spread of the novel influenza A (H1N1) virus. A Phase 6 designation indicates that a global pandemic is underway. This decision reflects the finding of sustained transmission of the virus on multiple continents, and does not indicate any change in the severity of illness caused by novel H1N1. This decision does not change the epidemiologic situation in New York City, nor does it affect DOHMH guidance for medical providers or the public.

Epidemiologic Update

Community transmission of novel H1N1 influenza appears to be declining in New York City (Figures 1 and 2). Emergency Departments across New York City are reporting lower numbers of visits due to influenza-like illness, although visits are still elevated over baseline for this time of year. The vast majority of cases of novel H1N1 influenza in the community are still mild and remain non-laboratory confirmed because they are not being tested, in accordance with our guidance.

Categories of urgency levels for NYC DOHMH Broadcast Notification System:
Health Alert: conveys the highest level of importance; warrants immediate action or attention
Health Advisory: provides important information for a specific incident or situation; may not require immediate action
Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action

Hospitalized cases and deaths continue to occur (Figure 1). 567 hospitalized patients with confirmed or probable novel H1N1 influenza have been reported as of June 11, 2009; 117 (21%) have required ICU care and 59 (10%) have required mechanical ventilation.

Of the hospitalized cases, 259 (46%) are under 18 years of age, with a median age of 26 years. 20% of hospitalized patients have been under age 5 and 79% are under age 50; only 5% have been aged 65 or older. Residents of all five boroughs have been hospitalized in New York City with confirmed novel H1N1 influenza, most frequently Brooklyn (32%), the Bronx (29%), and Queens (23%), followed by Manhattan (14%), and Staten Island (2%).

Preliminary clinical data from the initial provider reports of hospitalized patients with confirmed novel H1N1 influenza show that many cases (80%) had at least one known risk factor for severe influenza or complications due to influenza (see Table 2). The most common risk factor continues to be asthma or other chronic lung disease, noted in 41% of confirmed hospitalized cases. Other important risk factors were pregnancy (noted among 28% of 142 women of childbearing age hospitalized for confirmed H1N1); age less than 2 years (12%); diabetes (11%); immunosuppression, including HIV or medication-related conditions (9%); and cardiovascular disease (9%). More detailed analysis of data from medical chart reviews on the initial 100 cases is still pending and will be provided in a future Health Alert update.

Sixteen deaths in New York City are now attributed to novel H1N1 influenza. Fourteen (88%) of these deaths have occurred in persons under 65 years of age (median age 45 years, range 2 months to 83 years). Among the fatal cases, 75% have had an underlying risk condition (See Table 2). Among the four fatal cases who did not have any known risk factors, all four were reportedly obese. Further evaluation is necessary to understand the clinical implications of this finding.

The great majority of influenza now in New York City is novel H1N1; however seasonal influenza is still circulating at low levels. Among the positive influenza A specimens subtyped at the NYC Public Health Laboratory since the beginning of May 2009, over 90% were novel H1N1 and the remainder were seasonal influenza A; in recent weeks H3N2 is the only seasonal influenza virus that has been identified in New York City. For updated information on the novel influenza H1N1 outbreak in the United States and globally, see the CDC website at **www.cdc.gov/swineflu** and the World Health Organization website at **www.who.int/csr/disease/swineflu/en/index.html**.

Results of Population Survey of Influenza-like Illness

The Health Department this week released preliminary findings from a NYC telephone survey of 1006 households, designed to estimate the prevalence of influenza-like illness (ILI) during the first three weeks of May. Among respondents and their household members, 6.9% had experienced ILI between May 1 and May 20. ILI was defined as having a fever accompanied by either cough or sore throat – a non-specific case definition consistent with multiple potential etiologies. The city-wide survey was conducted by telephone from May 21 through May 27. Because the outbreak of H1N1 in New York City did not begin to spread widely until mid-May, people who reported ILI in the survey may have had novel H1N1, seasonal influenza, strep throat, or other illnesses.

Consistent with data from our other surveillance sources, survey findings showed that the prevalence of reported ILI was higher in Queens (9.4%) and Brooklyn (8.9%), and levels were lower in Staten Island (4.2%), Manhattan (3.7%) and the Bronx (3.6%). Assuming that excess ILI in Queens and Brooklyn may represent true H1N1 illness, we estimate that roughly 250,000 New Yorkers may have been infected with H1N1 influenza during this 3-week time period. Very little ILI was reported among adults aged 65 and older (6% of cases). (See Table 1)

DOHMH plans to repeat the survey in order to better ascertain rates of ILI during the peak in reported visits to emergency departments for ILI, and H1N1 hospitalizations, which occurred during the last week of May.

Surveillance data show that many – approximately 2/3 --of all laboratory-confirmed H1N1 hospitalized cases in NYC during this outbreak thus far had symptom onset after this survey was completed.

Table 1: Estimated Cases of Influenza-like Illness due to Influenza H1N1 in Queens and Brooklyn, May 1-20, 2009

	Excess ILI (% of population)	Number of Persons Sick
Queens	**5.7%**	**123,000**
0-17	*10.5*	*59,000*
18-64	*4.0*	*57,000*
65+	*2.8*	*6,000*
Brooklyn	**5.2**	**129,000**
0-17	*6.9*	*41,000*
18-64	*4.8*	*79,000*
65+	*3.8*	*8,000*
Total		**253,000**

Reporting Requirements for Hospitalized Cases of Acute Febrile Respiratory Illness

ALL hospitalized patients with acute febrile respiratory illness (documented fever>100.4° F or 38.0 C° *and* ILI, ARDS, pneumonia or respiratory distress) should be presumed to have influenza and treated empirically with antiviral therapy until proven otherwise. **Patients meeting the following criteria should be reported immediately to the Provider Access Line at 1-866-NYC-DOH1 (1-866-692-3641):**

- All patients being admitted or currently hospitalized with acute febrile respiratory illness, including fever>100.4° F or 38.0 C° *and* ILI, ARDS, pneumonia or respiratory distress who test positive for influenza A.
- Critically ill hospitalized patients (e.g., on a ventilator) with acute respiratory symptoms in whom there is a strong suspicion of influenza, regardless of influenza A results.
- Inpatients or residents of long-term care facilities with suspected nosocomial influenza (i.e., patients who develop ILI or acute febrile illness [ARDS, pneumonia or respiratory distress]) more than 48 hours after admission to a hospital or long-term care facility.
- DOHMH also asks medical providers to consider the diagnosis of novel H1N1 influenza in any fatal cases of unexplained acute febrile respiratory illness, regardless of age, and to refer such cases immediately to the NYC Office of the Chief Medical Examiner at 1-212-447-2030 (Details below).

If hospitals have more than one hospitalized case to report in a day, reports may be batched, but we ask that you not wait more than one day to report cases meeting the criteria listed above. Clusters of three or more patients with ILI in a medical or long-term care facility, homeless shelter, prison or other congregate living facility should also be reported to the Provider Access Line.

Specific diagnostic testing for novel H1N1 influenza will be performed at the New York City DOHMH Public Health Laboratory (PHL) **ONLY FOR CASES APPROVED BY DOHMH FOR TESTING**. Reports should be made to the Provider Access Line, and our staff will take initial information and advise whether testing is indicated. DOHMH will provide instructions on specimen submission and will arrange for transportation of the specimen to the PHL. Due to the high volume of hospitalized cases being reported, DOHMH can no longer report test results by telephone to the reporting physicians. Test results will be mailed by the PHL to the hospital laboratory on the same day as the reports are available. Providers should treat empirically and manage the patient presuming infection with novel H1N1 influenza until laboratory results are available.

Surveillance for Fatal Cases of Novel H1N1 Influenza, and Criteria for Referral to the New York City Office of the Chief Medical Examiner (OCME)

All fatal cases meeting the criteria listed here should be referred to the OCME for autopsy and pathologic examination. For cases that are not confirmed to be due to novel H1N1 influenza prior to death, diagnostic specimens will be sent to PHL and prioritized for testing. For all cases confirmed to have H1N1 infection, tissues will be collected and sent to CDC for additional analysis by immunohistochemical staining and PCR testing to help further the understanding of the pathophysiology of this new virus. As per routine, the following cases are reportable to the OCME:

- Pediatric death with clinically compatible illness in which there is a positive influenza test
- Sudden pediatric death from unknown cause, but thought to be due to natural cause
- Pediatric death from unknown, febrile respiratory illness

In the current setting of the novel H1N1 influenza virus, the following additional cases should be referred to the OCME:

- All unexplained deaths involving febrile respiratory illness
- All deaths among persons confirmed to have novel H1N1 influenza virus

Providers should immediately notify DOHMH of any fatalities that occur in patients diagnosed with novel H1N1 influenza, even if previously reported as a suspected case. Call the Provider Access Line at 1-866-NYC-DOH1 (1-866-692-3641) to report these deaths.

Previously issued guidance on diagnostic testing for influenza, antiviral therapy and chemoprophylaxis, and prevention of nosocomial transmission, has not changed. See **www.nyc.gov/html/doh/html/cd/cd-h1n1flu-hcp.shtml**.

Recommendations on infection control are also unchanged. See Health Alert #16 at **www.nyc.gov/html/doh/downloads/pdf/cd/2009/09md16.pdf**. This guidance is consistent with recommendations issued by the New York State Department of Health, as well as other state and local health departments.

As always, we greatly appreciate the continued cooperation of the NYC medical community in addressing this outbreak and we will update you with further information as it becomes available.

Sincerely,
The NYC DOHMH Novel H1N1 Influenza Investigation Team

Table 2: Underlying Health Conditions that Increase the Risk for Severe Complications due to Influenza Infection

Age ≥ 65 years
Age < 2 years
Chronic pulmonary disease, such as asthma and COPD
Chronic cardiovascular, renal, and hepatic disease
Hematologic disease, such as sickle cell anemia
Metabolic disorders, such as diabetes
Immunosuppression, including HIV-related or caused by medication
Compromised respiratory function and conditions which increase the risk for aspiration
Neuromuscular disorders, seizure disorders, or cognitive dysfunction that may compromise the handling of respiratory secretions
Pregnancy
Long-term aspirin therapy for diseases such as rheumatoid arthritis or Kawasaki disease in people under 18 years of age (due to risk of Reye's syndrome)

Figure 1 (see note below figure 2)

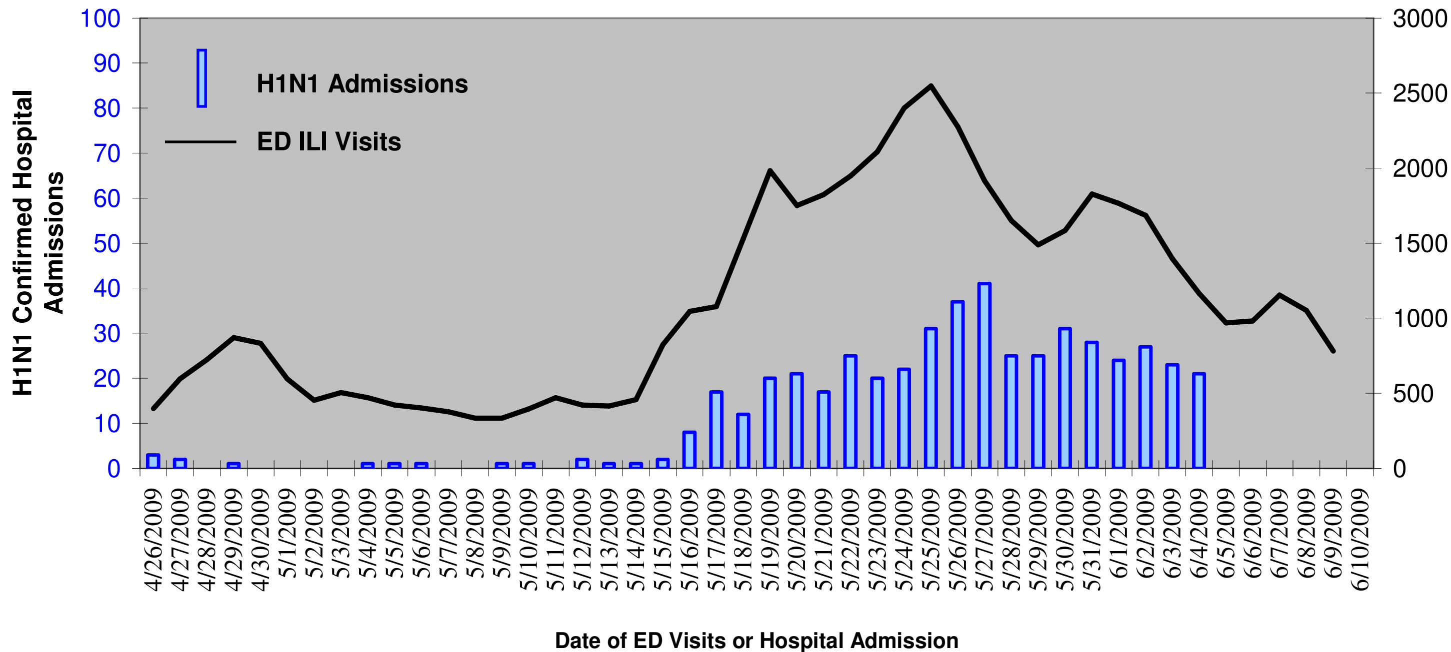
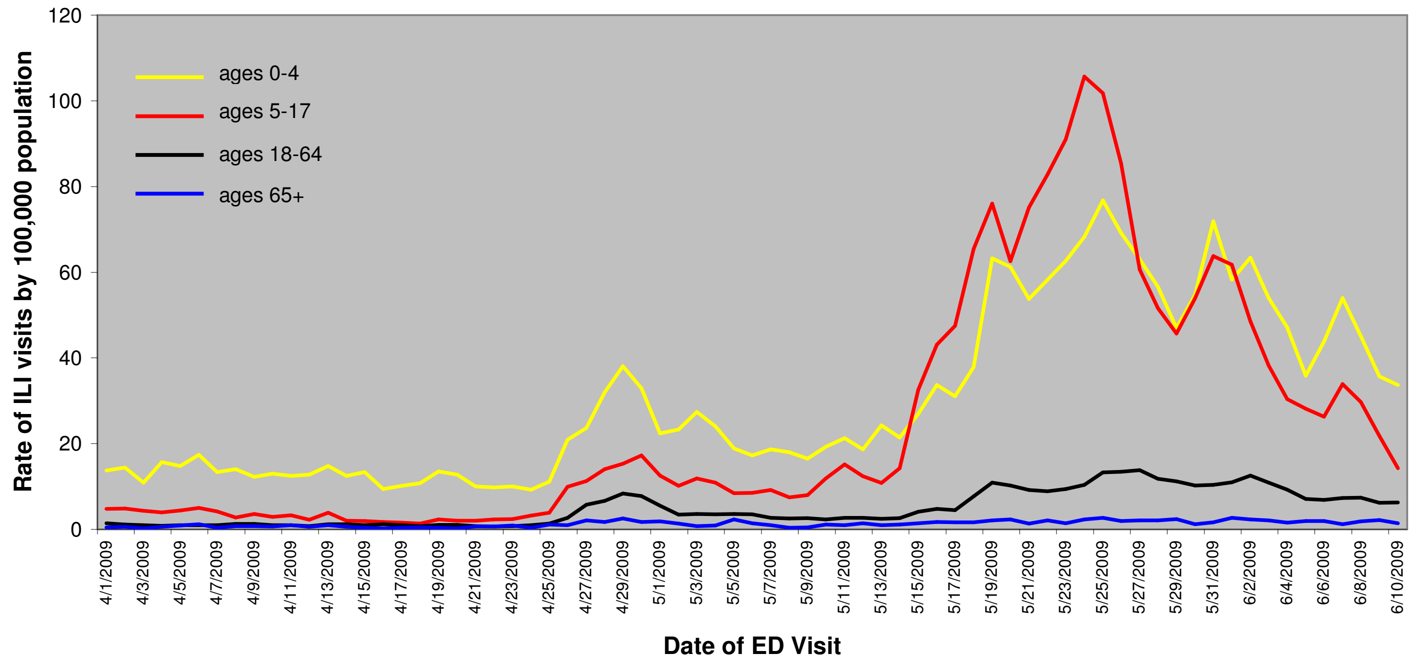


Figure 2

Rate of Influenza-like Illness (ILI) Syndrome Visits (based on chief complaint) to NYC Emergency Departments by Age Group April 01, 2009 - June 01, 2009



An emergency department (ED) visit for influenza-like illness (ILI) is defined as a visit with chief complaint including fever with either cough or sore throat or the mention of the word "flu." ED ILI data are collected from 50 hospitals representing 95% of annual ED visits in NYC. Visits to emergency departments can be affected by many factors, including the level of public concern about flu, access to primary care, and media announcements among others. The data are most useful for following trends over days or weeks, and do not provide exact counts of ED visits due to influenza. Laboratory-confirmed H1N1 hospital admissions likely under represent total hospitalizations as rapid tests for influenza have poor sensitivity, and providers were instructed to report only flu A positive hospitalizations (aside from critically ill patients). Note that data on H1N1 hospitalizations lag behind ED visits due to the reporting and laboratory testing intervals.