



**on infection control when dealing with patients with influenza-like illness (ILI)-defined as persons with temperature  $\geq 100$  °F plus a cough or a sore throat in the absence of a known diagnosis, including the use of personal protective equipment and hand washing.**

- **Be judicious and discriminating in prophylaxis and treatment of influenza. Treatment benefit is questionable if started more than 48 hours after symptom onset. Not all persons require treatment. Prophylaxis should be restricted to persons with high risk conditions who have close and prolonged exposure to persons with flu. Resistance will likely emerge with widespread use of antivirals.**

### **Update on the Epidemiology of Pandemic (H1N1) 2009 in Nebraska**

Since its first arrival in Nebraska in late April 2009, public health officials have carefully monitored the spread of pandemic (H1N1) 2009 influenza. In the early days after its arrival the virus appeared confined to persons who either travelled to or were exposed to persons from areas of known high risk (e.g., Mexico, Southern California). Later, the virus infected persons who could identify contact with others in the state who were laboratory-confirmed or clinically diagnosed with influenza. In the past few weeks the virus has spread widely throughout the state (Fig 1) and has infected persons with no identifiable risk factors or exposure histories. The virus has caused outbreaks in young persons attending summer camps and other group activities. As the overall number of infected persons has increased, patients with more serious sequelae have appeared: to date, we have identified 13 Nebraska hospitalized persons (some with serious, life-threatening conditions) and at least one fatality. While most of those hospitalized and dying from this infection have had underlying medical conditions, the virus has caused serious illness in otherwise healthy individuals.

While in late April and May “seasonal influenza” (H1N1, H3N2, and B) co-circulated along with the pandemic (H1N1) 2009 virus, more recently the pandemic (H1N1) 2009 has come to dominate, with the virtual disappearance of the seasonal strains of influenza (Fig 2).

The pandemic (H1N1) 2009 virus has differed from seasonal flu in the distribution of persons affected (Fig 3). While the very young and the very old have traditionally been most severely affected by seasonal flu, pandemic (H1N1) 2009 flu has disproportionately affected younger age groups: 73 % of all persons have been under 25 years of age, and only 1% has been over

65 years of age. Experts speculate that those over 60 may have residual immunity from an H1N1 strain that circulated from 1918 through 1957.

Public health experts have not identified any enhanced virulence in this new virus. It appears to be no more virulent than traditional seasonal influenza of the past few years. With all influenza strains, as the number of individuals infected increases, a small percentage of infected persons are expected to require hospitalization and may die. The goal of public health is to minimize these severe outcomes by reducing the overall burden of influenza infection in the population through infection control, vaccination, and antiviral therapies.

### **Infection Control**

While CDC continues to recommend N95 respirators for health care workers dealing with patients suspected of influenza infection, when such devices are not available or are not practical, surgical masks should be considered on both patients with ILI and health care workers caring for them. Health care workers performing respiratory procedures should use N95 respirators.

Recommendations for the uses of facemasks are available at:

<http://www.cdc.gov/h1n1flu/masks.htm>

Health care providers should advise patients to stay isolated from others (i.e. stay home from work or school, stay in a separate room from household members, wear a mask if you have to be near others) for 7 days after onset or 24 hours after symptoms end, whichever is longer. Contacts that are not ill do not need to be quarantined; however they should be vigilant and isolate themselves immediately if they become symptomatic. CDC recommends limiting antiviral treatment and prophylaxis to persons at high risk for severe complications or poor outcomes (age < 5, age > 65, or persons of any age who have underlying conditions). This recommendation stems in part from concerns for antiviral resistance with extensive use.

Medical facilities and offices should stockpile infection control supplies such as masks, gloves, gowns, etc. Manufacturers and suppliers are challenged in coping with incoming orders, and have implemented an allocation process limiting how much is available to their customers. Public health entities at the local, regional, state and federal have stockpiles of infection control supplies that can be used during an emergency, but these supplies are limited. Please review the supplies available at your hospital and/or clinic and plan for future high-demand situations.

### **Revised Guidance on Clinical Management of Patients with Suspected or Confirmed Influenza (Isolation/quarantine/treatment/prophylaxis):**

Treatment/prophylaxis/isolation decisions do not require laboratory test results. Oseltamivir (Tamiflu) and zanamivir (Relenza) are recommended in treatment and prophylaxis of pandemic (H1N1) 2009 flu. Patients who are hospitalized and/or have underlying conditions that place them at risk for complications and have laboratory evidence of influenza A should be presumed to have pandemic (H1N1) 2009 flu and treated with antiviral medication as early as possible, ideally within 48 hours of symptom onset. Persons with mild illness do not require antiviral treatment, especially those with no underlying medical conditions.

### **Recommendations on Testing Persons Suspected of Influenza**

- When indicated, collect a high-quality nasopharyngeal specimen for both rapid and PCR influenza testing. A video demonstrating how to do this is available at our website: <http://www.dhhs.ne.gov/H1N1flu/clinicians.htm>
- In the absence of severe disease, clinicians should use their discretion in obtaining testing in patients with ILI: testing is optional. The preferred first-line test is a rapid influenza EIA-type test.
- For persons with moderate/severe ILI, including hospitalized patients, perform a rapid flu test. If (+), the diagnosis is confirmed. If (-), consider obtaining a PCR test through the public health laboratory to confirm the diagnosis. **Because of the high rate of false negatives with the rapid test, do not rely on a (-) rapid flu test to rule out influenza.**
- Once an individual in a household is diagnosed with a specific type of influenza, other household members or close contacts that develop ILI are likely to be infected with the same type. Clinical diagnosis should be sufficient for secondary cases. Rapid flu tests and PCR testing is not necessary.
- To request testing at NPHL, complete a requisition <http://www.dhhs.ne.gov/puh/epi/flu/docs/flunphltestrequisition.pdf>, keep specimen refrigerated following collection; indicate on your specimen submission requisition if the patient is hospitalized; do not delay in shipping to NPHL (contact NPHL client services for advice on expedited courier service 1-866-290-1406).

### **Reporting Requirements for Hospitalized Cases of Acute Febrile Respiratory Illness**

Maintain a high degree of clinical suspicion for influenza especially among hospitalized patients and those with underlying conditions which increase

the risk for severe influenza. Consider early antiviral treatment in such patients. To monitor the burden of pandemic (H1N1) 2009 influenza in Nebraska, and to insure that any changes in influenza activity are detected as soon as possible, Nebraska's LHDs have established relationships with the IP staff at all of the Nebraska acute care hospitals. We have asked IP staff to conduct surveillance for patients with ILI admitted to the hospital. Providers and infection preventionists can report hospitalized cases of influenza A in one of two ways:

- Report on-line via the weekly influenza-like illness (ILI) hospital admissions survey or;
- Report by telephone to your local health department.

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 be reported immediately to your local health department.

### **Surveillance for Fatal Cases of Pandemic H1N1 Influenza**

At the present time, public health officials are requesting that all deaths related to influenza be immediately reported to a local health department or NDHHS-DPH.

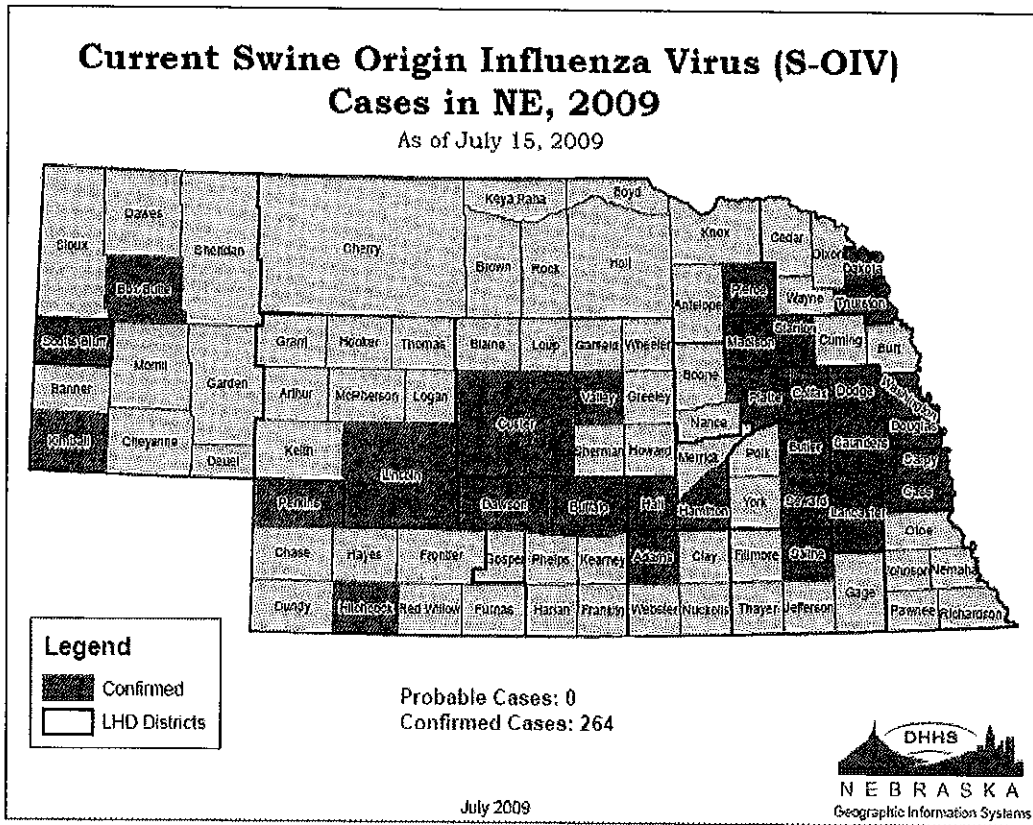
### **Underlying Health Conditions that Increase the Risk for Severe Complications due to Influenza Infection**

These can be found at: <http://www.cdc.gov/h1n1flu/recommendations.htm>, and include: age > 65 years or < 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).

### **Where to Find Current Information: Nebraska and National**

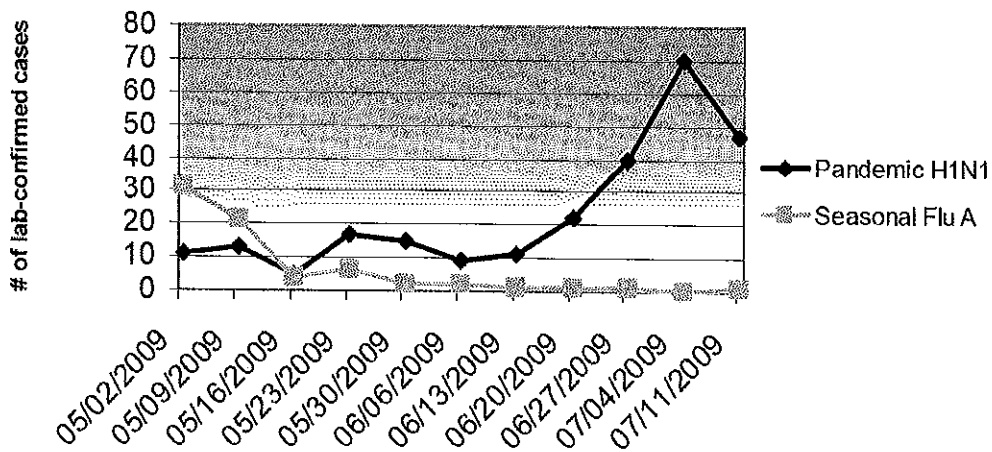
Updated information will be posted on Fridays, on the NDHHS-DPH website at <http://www.dhhs.ne.gov/h1n1flu>. For updated information on the pandemic (H1N1) 2009 outbreak in the United States and globally, see the CDC website at <http://www.cdc.gov/h1n1flu/> and the World Health Organization website at [www.who.int/csr/disease/swineflu/en/index.html](http://www.who.int/csr/disease/swineflu/en/index.html).

**Figure 1**



**Figure 2**

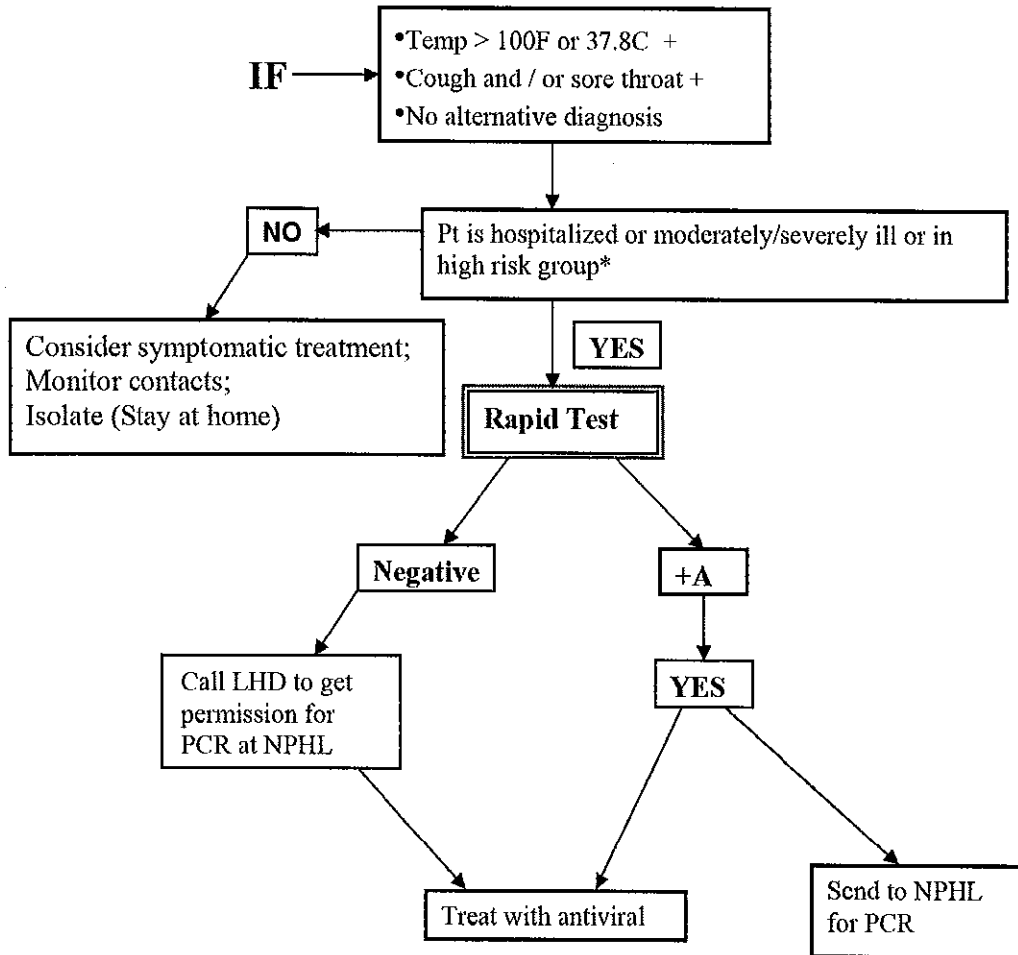
**Lab-Confirmed Influenza, Seasonal vs. Pandemic H1N1 2009, by week, Nebraska, May-July 2009.**



**Figure 3**

April 27th-July 15		
Demographic	Confirmed/ Probable S-OIV	
Age	Age range	0-76 years
	Median	15
	Mean	20
	0-4	27(10%)
	5-24	167(63%)
	25-49	52(20%)
	50-64	16(6%)
	65+	2(1%)
	Total	264
Gender	Female	155(59%)
	Male	109(41%)
Hospitalized		13
Deaths		1
Number of Counties		30

**Revised Nebraska Recommendations for Testing, Treatment and  
Prophylaxis of Pandemic H1N1, July 15<sup>th</sup>, 2009**



**Post Exposure Antiviral Chemoprophylaxis Recommendations:** 1) Close contacts of influenza cases (confirmed, probable, or suspected) who are at high-risk\* for complications, 2) Health care personnel, public health workers, or first responders who are at high-risk\* for complications who have had a recognized, unprotected close contact exposure to a person with influenza (confirmed, probable, or suspected) during that person's infectious period.

**High Risk Groups:** 1) Children younger than 5 years old, 2) Adults 65 years of age and older, 3) Persons with the following conditions: Chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological (including sickle cell disease), neurologic, neuromuscular, or metabolic disorders (including diabetes mellitus); Immunosuppression, including that caused by medications or by HIV; Pregnant women; Persons younger than 19 years of age who are receiving long-term aspirin therapy; Residents of nursing homes and other chronic-care facilities.