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Through: Kansas City, Missouri Health Department
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Subject: **Novel H1N1 Influenza Update**

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Current Situation in Missouri
In the Northern Hemisphere, novel influenza A (H1N1) virus is persisting, and is continuing to cause outbreaks and sporadic cases in numerous locales despite the onset of summer. In Missouri, 80 confirmed cases of novel H1N1 influenza, including one death, have been reported as of July 23, 2009. (See http://www.dhss.mo.gov/BT_Response/_H1N1Flu.html for more details.) Because specific testing for novel H1N1 influenza virus infection has been limited, the actual number of persons in Missouri who have been infected with the virus is undoubtedly much higher. Outbreaks of influenza-like illness (ILI) have occurred in recent weeks in youth camps in the state; individuals involved in six of these outbreaks have tested positive for novel H1N1 influenza virus. It appears likely that infections with this virus are occurring throughout the state, although their exact number cannot be estimated. Currently, the overall level of influenza activity in Missouri is reported as sporadic.

Selected Clinical Issues
Guidance for clinicians in managing patients with novel H1N1 influenza virus infection is available at http://www.cdc.gov/h1n1flu/clinicians/ .
The Centers for Disease Control and Prevention (CDC) is currently recommending antiviral treatment for two groups of persons:

1. All hospitalized patients with confirmed, probable, or suspected novel H1N1 influenza
2. Patients with confirmed, probable or suspected novel H1N1 influenza who are at higher risk for seasonal influenza complications. (For a listing of groups at higher risk, see http://www.cdc.gov/h1n1flu/identifyingpatients.htm#groupsatrisk .)

CDC also recommends that if a patient is not in a high-risk group or is not hospitalized healthcare providers should use clinical judgment to guide treatment decisions. Many patients who have had novel H1N1 influenza virus infection, but who are not in a high-risk group have had a self-limited respiratory illness similar to typical seasonal influenza. For most of these patients, the benefits of using antiviral medication may be modest. Guidance for antiviral use is found at http://www.cdc.gov/h1n1flu/recommendations.htm

The Missouri Department of Health and Senior Services (DHSS) has a Web site for medical professionals which provides links to comprehensive information on novel H1N1 influenza. This site is located at http://www.dhss.mo.gov/BT_Response/_MedProfs.html .

CDC has stated that infection with novel H1N1 influenza virus appears to result in a spectrum of illness similar to that caused by seasonal influenza viruses. While many infections with novel H1N1 influenza virus are relatively mild, some persons have had severe or even fatal infections. Included here are individuals who developed rapidly progressive lower respiratory tract disease resulting in respiratory failure, development of acute respiratory distress syndrome (ARDS) and prolonged intensive care unit (ICU) admission. Thus far, most cases of illness, hospitalization and death associated with novel H1N1 influenza virus infection have occurred among persons less than 65 years of age. Groups at increased risk of influenza-related complications include pregnant women, those with asthma, COPD, diabetes, chronic cardiovascular disease, and immunocompromised persons. These are the same groups as previously recognized to increase the risk of severe illness from seasonal influenza. In addition, morbid obesity may represent an additional risk factor for severe illness (see below). It should also be noted, however, that fatal disease associated with

novel H1N1 influenza has occurred among persons without these conditions who previously were healthy. Widespread susceptibility to this virus among young persons and the potential for large numbers of cases raises the possibility of more hospitalizations and deaths especially among younger age groups than would be expected for a typical routine seasonal influenza virus. Evidence from previous pandemics and from seasonal influenza suggests that pregnant women are likely to be at increased risk of morbidity and mortality related to infection with novel H1N1 influenza virus. The impact of this virus on the newborn is unknown, but based on previous experience; newborns are expected to be at increased risk of severe illness. Guidance for managing specific patient populations (e.g., pregnant women, young children) is available from CDC at http://www.cdc.gov/h1n1flu/clinicians/#specific

Neurologic complications have been described previously in association with respiratory tract infection with seasonal influenza A or B viruses, and a recent CDC report described four children with neurologic complications associated with novel H1N1 influenza virus infection who had been admitted to hospitals in Dallas County, Texas. Patients were aged 7-17 years and were admitted with signs of ILI and seizures or altered mental status. All four patients recovered fully and had no neurologic sequelae at discharge. CDC states that these findings indicate that, as with seasonal influenza, neurologic complications can occur after respiratory tract infection with novel H1N1 influenza virus. CDC recommends that for children who have ILI accompanied by unexplained seizures or mental status changes, clinicians should consider acute seasonal influenza or novel H1N1 influenza virus infection in the differential diagnosis, send respiratory specimens for appropriate diagnostic testing, and promptly initiate empirical antiviral treatment, especially in hospitalized patients. Clinicians should not wait for the results of diagnostic testing before beginning treatment. Additional cases of children with neurologic complications are likely to be reported as the pandemic continues, and clinicians should remain aware of the potential for severe neurologic sequelae associated with seasonal or novel H1N1 influenza virus infection. [MMWR 2009; 58(28);773-8. (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5828a2.htm) This report contains additional information on the clinical course and management of these patients, as well as clinical care recommendations for patients with ILI and neurologic signs/symptoms.]

The possible relationship between obesity and severe disease in persons with novel H1N1 influenza virus infection is currently being evaluated. A CDC report has summarized the clinical characteristics of a small series of 10 patients with novel H1N1 influenza virus infection and ARDS at a tertiary-care ICU in Michigan. Of the 10 patients, nine were obese (body mass index [BMI] =30), including seven who were extremely obese (BMI =40); five had pulmonary emboli; and nine had multi-organ dysfunction syndrome (MODS). Three patients died. It is not presently known whether obesity is an independent risk factor for severe complications of novel H1N1 influenza virus infection. However, CDC recommends that clinicians be aware of the potential for severe complications of infection with this virus, particularly in extremely obese patients. [MMWR 2009; 58(27):749-52. (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5827a4.htm) Contained in this report is further information on the clinical course and management of these patients, as well as recommendations for clinicians caring for patients with novel H1N1 influenza virus infection.]

Higher oseltamivir dosing and longer duration of treatment have been suggested for H5N1 (avian influenza) patients with severe pulmonary disease. CDC has stated that until additional data are available, higher oseltamivir dosage (e.g., 150 mg orally twice a day for adults) or extending the duration of treatment can be considered for severely ill hospitalized patients with novel H1N1 influenza virus infection. [MMWR 2009; 58(27):749-52. (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5827a4.htm)]

Laboratory Testing
The Missouri State Public Health Laboratory (MSPHL) is currently following a testing protocol that is consistent with seasonal influenza practices and is not accepting routine specimens for novel H1N1 influenza virus testing. MSPHL will only be performing testing for this virus under the following circumstances:

1. Specimens submitted by Influenza Sentinel Providers,

OR

2. Specimens submitted for epidemiological investigation purposes (i.e., as part of an outbreak being investigated by DHSS, local public health agencies, and/or CDC).
3.

[Note for Influenza Sentinel Providers: Sentinel Providers have returned to their traditional off-season testing protocol. DHSS requests that a minimum of 3 specimens be sent from each Sentinel Provider during the period from June 1 through September 30. Sentinel Providers should also submit their weekly office data to the Influenza Sentinel Physicians Surveillance Network Database.]

Planning and Response Actions for Medical Offices and Outpatient Facilities
It is anticipated that when the regular influenza season begins later this year, the potential will exist for very large numbers of infections caused by novel H1N1 influenza virus to occur, especially given evidence that population immunity to this virus is low, particularly among the young. There is additional concern that during the summer the virus might undergo mutations that would cause it to become more transmissible or more virulent. Whether this will actually occur is not known, but is being monitored closely by public health officials worldwide. Now is the time for all medical facilities to plan and, as appropriate, begin to implement actions to allow them to continue operation during an influenza pandemic. CDC has recently released a document entitled *10 Steps You Can Take: Actions for Novel H1N1 Influenza Planning and Response for Medical Offices and Outpatient Facilities* to assist these facilities in this process. This document can be found at http://www.cdc.gov/h1n1flu/10steps.htm

As new information becomes available, additional Health Alert Communications will be issued. Questions on novel H1N1 influenza should be directed to the Kansas City Health Department (816-513-6152) or to the Local Public Health Agency in your area.