Mississippi State Department of Health

Mississippi Morbidity Report

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Pandemic or Novel Influenza A H1N1 (Swine Flu) Update

Introduction: On June 11, 2009, the World Health Organization (WHO) raised the pandemic alert level from Phase 5 to Phase 6, declaring a global pandemic caused by a novel influenza A H1N1 virus. The designation indicates ongoing transmission of a new influenza subtype in multiple parts of the world, and reflects geographic spread of the virus, rather than severity of illness. The following report describes the most current U.S. and Mississippi epidemiology, the Mississippi State Department of Health's (MSDH) surveillance activities, and treatment recommendations.

Background: In April 2009, the Centers for Disease Control and Prevention (CDC) reported that a novel influenza A H1N1 virus of swine origin had been identified as the cause of febrile respiratory illness in a number of individuals in both Texas and California. The viruses contained a unique combination of gene segments that had not been reported previously, and were genetically similar to viruses isolated from patients in Mexico, where an outbreak of respiratory illness with a number of fatalities had been reported in March and April 2009. Since the initial report of the outbreak, the virus has spread rapidly, with all 50 U.S. states reporting confirmed cases by June 3, 2009. As of July 6, 2009, almost 95,000 cases had been reported with 429 deaths in more than 100 countries worldwide.

Novel influenza A H1N1 (swine flu) causes an illness similar in severity to seasonal influenza, and symptoms include those of a typical influenza-like illness (fever of 100°F or greater, cough, sore throat, headache, chills, fatigue, and sometimes nausea, vomiting and diarrhea). It is thought that the transmission of novel influenza A H1N1 is similar to seasonal influenza: person to person by direct or indirect contact with virus laden respiratory droplets or secretions, mainly through coughs and sneezes. The exact incubation period is unknown, but likely is one to four days. The period of communicability is also unknown but likely to be similar to that of seasonal flu, from one day prior to up to seven days after the onset of symptoms, and possibly longer in children.

U.S.: As of July 10, 2009, more than 35,000 confirmed and probable cases of novel influenza A H1N1 infections have been reported to the CDC. By the week ending July 4, 2009, seasonal influenza A (H1N1 and H3N2) and B viruses continued to co-circulate in the U.S. at low levels, however over 97% of all subtyped influenza A viruses were novel influenza A H1N1 viruses. To date, there have been 211 reported U.S. deaths due to novel influenza A H1N1. Sixty percent (127/211) of the deaths were in individuals 49 years of age and younger, with only 9 % (19/211) of deaths in individuals 65 years and older. There have been 22 pediatric deaths due to the novel influenza A H1N1.

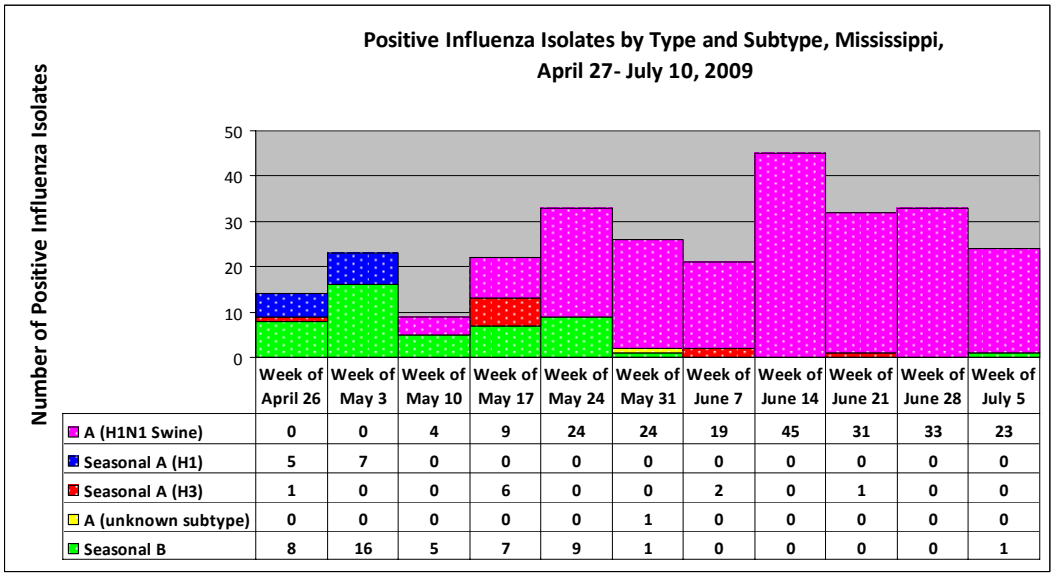
Virus from more than 260 U.S. novel influenza A H1N1 cases has been tested for resistance to neuraminidase inhibitors by CDC as of the week ending July 4, 2009. Of these, 100% were susceptible to both oseltamivir and zanamivir. On July 8, 2009, WHO reported three identified cases of oseltamivir resistance worldwide; one each in Denmark, Japan, and Hong Kong. At this time, these instances of drug resistance are thought to represent isolated cases rather than widespread drug resistance. Weekly U.S. flu updates are available http://www.cdc.gov/flu/weekly/fluactivity.htm

Mississippi: Enhanced laboratory surveillance for novel influenza A H1N1 was instituted on April 27, 2009. The first case in Mississippi was confirmed on May 15, 2009, in the Gulf Coast region. To date, more than 1200 samples have been submitted to the Public Health Laboratory (PHL) for RT-PCR testing. As of July 13, 2009, there have been 212 confirmed cases from all regions of the state.

After initiating enhanced laboratory surveillance, PHL testing indicated that the seasonal influenza A and B viruses that predominated during the 2008-2009 influenza season were still the predominant subtypes identified. However, since the week of May 31, 2009, 97% of all positive influenza samples (176/182) have

been novel influenza A H1N1 (Figure). There has not been a positive result for *seasonal* H1N1, of which almost 100% of isolates were resistant to oseltamivir, since early May. U.S. data have not been analyzed to determine the accuracy of the rapid antigen flu tests in cases of novel influenza A H1N1, however, since this is the predominant subtype in the state, persons with an acute febrile illness consistent with flu who have a positive rapid antigen test are likely to have novel influenza A H1N1.

Figure



	Week of April 26	Week of May 3	Week of May 10	Week of May 17	Week of May 24	Week of May 31	Week of June 7	Week of June 14	Week of June 21	Week of June 28	Week of July 5
A (H1N1 Swine)	0	0	4	9	24	24	19	45	31	33	23
Seasonal A (H1)	5	7	0	0	0	0	0	0	0	0	0
Seasonal A (H3)	1	0	0	6	0	0	2	0	1	0	0
A (unknown subtype)	0	0	0	0	0	1	0	0	0	0	0
Seasonal B	8	16	5	7	9	1	0	0	0	0	1

There have been no reported deaths in Mississippi to date. Cases range in age from one to 75 years. More than 95% of cases are in individuals 49 years of age and younger. Only one case has been confirmed and reported among those 65 years of age and older.

MSDH monitors influenza activity statewide through a sentinel influenza-like illness surveillance program. Forty-six emergency departments and clinics provide the percent of non-trauma patients with influenza-like-illness on a weekly basis. Although cases of novel influenza A H1N1 are still being confirmed as the summer progresses, the overall percent of patients with influenza-like illness seen at sentinel surveillance sites has continued to decline, and remains lower than this time last year. Of note, there have been several reported outbreaks of febrile respiratory illness consistent with influenza among children and adolescents associated with summer camps, with at least one confirmed case of novel influenza A H1N1 in a child associated with church camp outbreak of influenza-like illness.

Treatment Recommendations: Excerpted from CDC's "Interim Guidance on Antiviral Recommendations for Patients with Novel Influenza A (H1N1) Virus Infection and Their Close Contacts," last updated May 6, 2009, available at http://www.cdc.gov/h1n1flu/recommendations.htm

*1. **High-risk groups**:* A person who is at high-risk for complications of novel influenza (H1N1) virus infection is defined the same as for seasonal influenza at this time.

- Children younger than 5 years old. The risk for severe complications from seasonal influenza is highest among children younger than 2 years old.
- Adults 65 years of age and older.
- 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.

***2. Close contact**:* Defined as having cared for or lived with a person who is a confirmed, probable or suspected case of novel influenza A (H1N1).

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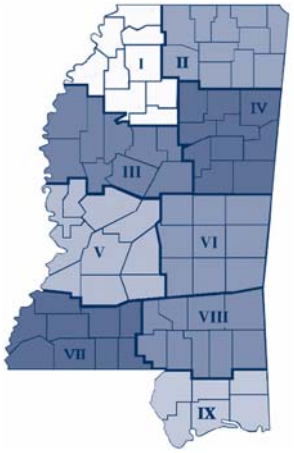

Mississippi
Provisional Reportable Disease Statistics
June 2009

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	June 2009	June 2008	YTD 2009	YTD 2008
Sexually Transmitted Diseases	**Primary & Secondary Syphilis**	1	1	0	2	3	0	0	2	0	9	15	94	70
	Total Early Syphilis	3	1	4	2	12	4	1	2	0	33	38	245	164
	Gonorrhea	46	36	99	43	196	67	41	79	49	656	727	3,684	3,495
	Chlamydia	226	150	263	136	516	168	126	194	190	1,969	2,008	11,941	9,445
	HIV Disease	5	0	7	4	31	1	2	8	11	69	49	324	285
Myco-bacterial Diseases	**Pulmonary Tuberculosis (TB)**	1	1	0	0	8	0	1	0	0	11	11	43	43
	Extrapulmonary TB	1	0	0	1	2	0	0	1	0	5	3	10	10
	Mycobacteria Other Than TB	1	2	0	2	4	1	2	2	2	16	26	157	133
Vaccine Preventable Diseases	**Diphtheria**	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	0	0	0	1	0	1	1	1	4	11	33	58
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0
	Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hepatitis B (acute)	0	0	0	0	0	0	0	0	0	0	3	18	21
	Invasive *H. influenzae* b disease	0	0	0	0	0	0	0	0	0	0	0	0	2
	Invasive Meningococcal disease	0	0	0	0	0	0	0	0	0	0	0	2	9
Enteric Diseases	**Hepatitis A (acute)**	0	0	0	0	0	1	0	0	0	1	0	6	2
	Salmonellosis	4	8	2	5	7	10	7	12	10	65	141	256	344
	Shigellosis	3	0	0	0	0	0	0	1	0	4	22	17	231
	Campylobacteriosis	0	1	6	1	2	1	0	1	0	12	14	55	49
	***E. coli* O157:H7/HUS**	0	0	0	0	0	0	0	0	0	0	0	6	3
Zoonotic Diseases	**Animal Rabies (bats)**	0	0	0	0	0	0	0	0	0	0	1	0	2
	Lyme disease	0	0	0	0	1	0	0	0	0	1	1	3	1
	Rocky Mountain spotted fever	0	0	0	0	0	1	0	0	0	1	1	7	6
	West Nile virus	0	0	0	0	0	0	0	0	0	0	5	0	7

*Totals include reports from Department of Corrections and those not reported from a specific District.

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Treatment Recommendations: Treatment with either oseltamivir or zanamvir is recommended for:

1. All hospitalized patients with confirmed, probable or suspected novel influenza (H1N1).
2. Patients who are at higher risk for seasonal influenza complications (see above).

Treatment should be started as soon as possible after the onset of symptoms. Duration of therapy is 5 days. Persons with uncomplicated febrile illness typically do not require treatment unless they are at higher risk for influenza complications. If a patient is not in a high-risk group or is not hospitalized, healthcare providers should use clinical judgment to guide treatment decisions.

Prophylaxis Recommendations: Post-exposure antiviral chemoprophylaxis with either oseltamivir or zanamivir can be considered for the following:

1. Close contacts of cases (confirmed, probable, or suspected) who are at high-risk for complications of influenza
2. Health care personnel, public health workers, or first responders who have had a recognized, unprotected close contact exposure to a person with novel (H1N1) influenza virus infection (confirmed, probable, or suspected) during that person's infectious period.

Duration of antiviral chemoprophylaxis post-exposure is 10 days after the last known exposure to novel (H1N1) influenza.

Special Considerations: The use of antivirals for chemoprophylaxis in the control of influenza outbreaks in nursing homes and long term care facilities is recommended to reduce morbidity in this high risk setting. Data from prior pandemics and the current pandemic indicate that pregnant women are at higher risk of severe disease, and both oseltamivir and zanamivir are recommended for use in these individuals.

Submitted by Paul Byers, MD, Medical Director, Epidemiology Program, MSDH