Office of Epidemiology
Phone 702.759.1300
Fax 702.383.1312

Influenza Update

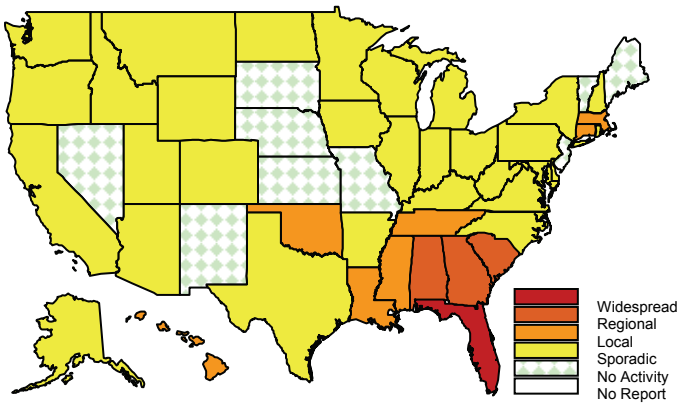
December 21, 2006

Current Situation

Community-wide increases in influenza-like illness (ILI) have been seen in Clark County, as identified through a local surveillance system. Criteria for inclusion as a case of ILI are fever of 100° F and cough or sore throat. At the beginning of the 2006-2007 influenza season (Week 40), the proportion of patient visits to sentinel providers for ILI was 1.9%. The proportion of ILI visits has steadily risen from 1.9% to 5.5% after week 49 (ending December 9th). While positive rapid influenza tests continue to be reported, to date there have not been any culture-confirmed cases to verify these findings. Nationally, the proportion of ILI cases remains low at 1.9%; with the national baseline at 2.1%.

Weekly Influenza Activity Estimates Reported By State & Territorial Epidemiologists

Week ending Dec. 9, 2006-Week 49



Source: Centers for Disease Control and Prevention

Role of Laboratory Diagnosis

Accurate clinical diagnosis of influenza is limited because symptomatology is similar to other respiratory illnesses such as Adenovirus, Respiratory Syncytial Virus, Rhinovirus, parainfluenza viruses, *Mycoplasma pneumoniae*, and *Legionella* spp. Influenza surveillance information and diagnostic testing can be used to support clinical diagnosis and treatment. Laboratory surveillance assists in establishing the presence of influenza in a community and the predominant circulating strain.

At this point in the influenza season, all patients that are suspected of having influenza should be tested using rapid antigen tests. All positive rapids tests should be confirmed by viral culture, as described in the "Viral Cultures" section of this update.

Rapid Antigen Testing

Rapid antigen tests are used to screen for influenza infections and can provide results within 30 minutes. Currently, there are more than 10 Food and Drug Administration approved rapid antigen tests available on the market (Table 1). These rapid antigen tests differ in the results that they can provide and the specimens they utilize. Some rapid antigen tests can only detect influenza A strains, while other rapid antigen tests can detect influenza A and B strains without distinction, and other rapid antigen tests can detect and provide distinction between influenza A and B. Rapid antigen tests do not provide Influenza A subtyping.

To ensure optimal performance of a rapid antigen test, the appropriate specimen should be collected. Inappropriate specimens can produce false negative results. However, if more than one specimen can be utilized for a type of rapid test, using nasopharyngeal and nasal specimens are preferred over other upper respiratory specimens such as throat swabs, as they generally contain higher quantities of viruses.

When using rapid antigen tests it is important to remember that the sensitivity is approximately >70% and the specificity is approximately >90%. Hence, false positive results are more likely to occur than false negatives; especially during peak influenza season.

Viral Cultures

Viral cultures are used to confirm positive rapid antigen results and can detect both Influenza A and B. Specimens should be collected within the first four days of illness, and results are ready in 3-10 days after collection.

In addition, viral cultures provide important information on Influenza A subtypes circulating in the community. This information is critical to compare current strains to the current vaccine, to develop new vaccine, to look for potential pandemic influenza, formulate influenza treatment, and to monitor for antiviral resistance (1).

(1) Department of Health and Human Services. Centers for Disease Control and Prevention. "Role Of Laboratory Diagnosis of Influenza." Accessed on December 15th 2006.

Table 1. Influenza Diagnostic Table

Procedure	Influenza Types Detected	Acceptable Specimen	Time for Results
Viral Culture	A and B	Nasopharyngeal (NP) swab, throat swab, nasal wash, nasal aspirate, sputum	3-10 days
Rapid Antigen Tests			
Directigen Flu A (Becton-Dickinson)	A	NP wash and aspirate	<30 minutes
Directigen Flu A+B[2] (Becton-Dickinson)	A and B	NP swab, aspirate, wash; lower nasal swab; throat swab; bronchioalveolar lavage	<30 minutes
Directigen EZ Flu A+B[2] (Becton-Dickinson)	A and B	NP swab, aspirate, wash; lower nasal swab; throat swab; bronchioalveolar lavage	<30 minutes
FLU OIA[1] (Biostar)	A and B	NP swab, throat swab, nasal aspirate, sputum	<30 minutes
FLU OIA A/B[2] (Biostar)	A and B	NP swab, throat swab, nasal aspirate, sputum	<30 minutes
XPECT flu A&B[2] (Remel)	A and B	Nasal wash, NP swab, throat swab	<30 minutes
NOW Influenza A[2] (Binax)	A	Nasal wash/aspirate, NP swab	<30 minutes
NOW Influenza B[2] (Binax)	B	Nasal wash/aspirate, NP swab	<30 minutes
NOW Influenza A&B[2] (Binax)	A and B	Nasal wash/aspirate, NP swab	<30 minutes
OSOM® Influenza[2] A&B (Genzyme)	A and B	Nasal swab	<30 minutes
QuickVue Influenza[1] Test (Quidel)	A and B	NP swab, nasal wash, nasal aspirate	<30 minutes
QuickVue Influenza A+B Test[2] (Quidel)	A and B	NP swab, nasal wash, nasal aspirate	<30 minutes
SAS Influenza A Test[2]	A	NP wash, NP aspirate	<30 minutes
SAS Influenza B Test[2]	B	NP wash, NP aspirate	<30 minutes
ZstatFlu[1] (ZymeTx)	A and B	Throat swab	<30 minutes

[1] Does not distinguish between influenza A and B
[2] Distinguishes between influenza A and B

Source: Centers for Disease Control and Prevention