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March 26, 2008

To: Local Health Departments
Infection Control Professionals
Wisconsin LTC D.O.N. Association
Wisconsin LTC Medical Directors Association

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Wisconsin Division of Public Health

RE: False Negative Rapid Influenza Tests

The Division of Public Health and the Wisconsin State Laboratory of Hygiene have received reports of increased false-negative rapid influenza tests statewide. Use of rapid influenza tests has increased in recent years as a convenient diagnostic aid that provides test results without the delay of the more definitive detection methods (culture/PCR).

Generally, when influenza-like illness (ILI) activity is moderate to high, the likelihood that a positive rapid influenza test result is a true positive result increases, while the likelihood that a negative rapid influenza test result is a true negative result decreases. False-negative rapid influenza tests can result in antiviral treatment or prophylaxis of high risk patients being delayed or not initiated

Because influenza-like illness (ILI) activity in Wisconsin remains moderate/high, it is important that clinicians consider influenza in the differential diagnosis of high-risk patients with abrupt onset of ILI even when the rapid influenza test is negative. To assist clinicians in their diagnosis the following definitions can be used.

- a) Signs and symptoms of ILI include fever* and at least one of the following:
 - Rhinorrhea (runny nose) or nasal congestion
 - Sore throat
 - Cough (productive or non-productive)
 - Radiographic evidence of new or increased pulmonary infiltrates (pneumonia)

- b) Signs and symptoms that are supportive of the occurrence of ILI in elderly patients include:
 - Change in mental status (increased confusion, aggression or withdrawal)
 - Headache
 - Lethargy that is greater than the patient's norm
 - Myalgia (muscle aches) that are greater than the patient's norm
 - Respiratory distress, shortness of breath
 - Pleuritic chest pain

*Note: Fever may be difficult to determine in the elderly. Therefore, the definition of fever used for ILI may be defined as temperature >100° F or 2 degrees above the established baseline for the patient.

RECOMMENDATIONS FOR THE PREVENTION AND CONTROL OF INFLUENZA IN LONG TERM CARE FACILITIES

Provide influenza vaccine to **ALL** residents and healthcare workers providing direct resident care.

Ensure that employees with influenza-like illness (ILI) are restricted from contact with residents or their environment until acute symptoms have resolved (usually 3-5 days). ILI is defined as fever $\geq 100^{\circ}$ F and either a cough, muscle aches, rhinorrhea or sore throat.

Monitor all residents for symptoms consistent with ILI.

Test residents who present with ILI utilizing the guidelines provided by the Wisconsin State Laboratory of Hygiene.

For single or multiple culture-confirmed or highly suspected cases of influenza, notify the facility medical director and administration.

Within 48 hours of the onset of illness, provide treatment for culture-confirmed and suspect cases of influenza type A or type B with oseltamivir (Tamiflu®) or zanamivir (Relenza®) to reduce the severity and shorten the duration of the illness.

For a **single** culture-confirmed or a highly suspected case of influenza

Enhance surveillance for influenza-like illness among residents and staff.

Consider the use of oseltamivir or zanamivir for chemoprophylaxis for:

- **All** unvaccinated employees
- Vaccinated employees if less than 2 weeks since their vaccination.
- **ALL** residents, regardless of their influenza vaccination status

The decision to use chemoprophylaxis should be made based on the likelihood of further spread of the illness within the facility. **If used, chemoprophylaxis should continue for a minimum of 10 days or 1 week after the onset of symptoms in the last confirmed or suspected case.**

For **multiple** culture-confirmed or highly suspected cases of influenza

Provide oseltamivir or zanamivir for chemoprophylaxis to:

- **All** unvaccinated employees
- Vaccinated employees if less than 2 weeks since their vaccination.
- **ALL** residents, regardless of their influenza vaccination status.

Chemoprophylaxis should continue for a minimum of 10 days, or 1 week after the onset of symptoms in the last confirmed or suspected case.

Consider restricting new admissions to the facility or to the area where the culture-confirmed residents reside until one week after the illness onset of the last confirmed or suspected case of influenza.

As much as possible, **restrict** the movement of residents and employees within the facility.

Laboratory Guidelines for Influenza Testing in Long Term Care Facilities

Accurate diagnosis of influenza requires laboratory testing, especially early during the influenza season. There are a number of commercially available tests for influenza that can be used at the point of care, including the long term care facility (LTCF) setting. These tests provide the potential for immediate diagnosis of influenza illness to guide patient management and outbreak control.

These tests have limitations, including variable sensitivity and specificity, a lack of thorough evaluation in the elderly, and a potential high rate of false positives during periods of low influenza prevalence. Following the guidelines below can improve the reliability of the test result, providing both useful and relevant information to the clinician.

- Any test result must be interpreted in the context of known influenza in the community or the LTCF and the clinical presentation of the patient.
- Attention to surveillance data can provide the user with an indication of increasing influenza prevalence and improved positive predictive value (lower rate of false positives).

Surveillance data is available as follows:

WDPH <http://www.slh.wisc.edu/outreach/images/WDPHres2.pdf>

WSLH <http://www.slh.wisc.edu/labupdates/flu.php>

CDC <http://www.cdc.gov/flu/weekly/>

- During periods of low prevalence (early and late in the influenza season), positive results should be confirmed by culture or molecular methods. Negative results are more reliable at this time.
- During periods of increasing prevalence, the positive result becomes more reliable.
- At the peak of influenza activity (as indicated by surveillance data), the positive result is most reliable. At this time, negative results may need to be confirmed by culture or molecular methods.

The Wisconsin State Laboratory of Hygiene (WSLH) asks that sites using rapid influenza tests report the number of specimens tested and positive by weekly fax reports to the WSLH throughout the year.

Viral culture for confirmation of rapid test results is available at any of the clinical virology laboratories in Wisconsin. The Wisconsin State Laboratory of Hygiene can provide limited fee-exempt transport and molecular testing for confirmations, if the cost of specimen transport or testing is a concern.

Although influenza is of foremost concern, respiratory syncytial virus (RSV), parainfluenza viruses, rhinoviruses and adenoviruses are also capable of causing outbreaks of severe respiratory illness in the LTCF.

Please contact Carol Kirk (608-262-1021, email cjk@mail.slh.wisc.edu) or Mary Wedig (608-890-0353, email wedig@mail.slh.wisc.edu) if you would like forms and instructions for weekly reporting or for submitting specimens to the WSLH for confirmatory testing.

If you have questions or seek approval for fee-exempt testing of specimens for influenza, please call Thomas Haupt (608-266-5326), e-mail hauptte@dhfs.state.wi.us