

To: Healthcare Providers

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RE: 2008-09 Influenza Surveillance

Public health officials in Nebraska have initiated their annual influenza surveillance program. A key surveillance system involves quantifying the influenza laboratory testing on a weekly basis at the laboratories around the state which perform influenza diagnostic testing. This surveillance system assesses the volume of influenza testing being performed and the number of tests that are positive.

Laboratories and health care providers need to understand the limitations of these tests. When the actual amount of influenza in a population is low, the likelihood of false-positive tests increases. This is particularly the case for rapid diagnostic tests (RDT) which have decreased specificity compared to viral culture. Experts believe that poor nasopharyngeal culture technique is a major contributor to false-negative influenza laboratory tests (see references below).

Epidemiology staff will monitor RDT data by region and if indicated, may request specific physicians to provide additional patient material for confirmatory testing. To address the likelihood of false-positive influenza tests, for a limited time during the early part of the influenza season the Nebraska Public Health Laboratory (NPHL) will perform confirmatory testing on specimens submitted from patients with a positive RDT for influenza. **At the beginning of the influenza season, we encourage you to obtain an influenza culture on those patients who test positive by rapid diagnostic testing.** Please collect a nasopharyngeal swab or aspirate on any patient with a positive rapid diagnostic flu test and submit the specimen in viral transport media to the NPHL accompanied by an NPHL lab requisition.

<http://www.hhs.state.ne.us/puh/epi/flu/docs/flunphltestrequisition.pdf>) The cost of this testing will be covered at public health expense.

This year the confirmatory respiratory viral panel will include a newly approved PCR test that can detect/identify multiple respiratory viruses. A number of the culture-confirmed specimens will be sent to the Centers for Disease Control and Prevention (CDC) for further characterization. These results are usually not available until late in the season and are for epidemiological purposes only. In addition to the surveillance performed at the start of the influenza season, testing may again be warranted during the middle and/or end of the influenza season to determine the influenza strain in circulation at that time. Epidemiology staff will notify you if and when additional samples are needed. Specimens need to be shipped refrigerated and received by NPHL within 72 hours of collection.

Specimen transportation instructions are included in this informational letter and are also available by contacting NPHL Client Services at 1-866-290-1406 or 1-402-559-2440. Additional information can be found on the NPHL website at: www.nphl.org. Thank you for your assistance with the 2008-09 influenza surveillance.

Influenza Surveillance Specimen Collection and Transport Requirements

Specimen: Nasopharyngeal washings or nasopharyngeal swab.
Nasopharyngeal washings are collected with normal saline, followed by a swab of the nasopharyngeal mucosa and both samples placed in the same viral transport media container. (See collection procedure below)

Volume: 2-3 ml nasopharyngeal washings and nasopharyngeal swab place in the same viral transport media container. Viral transport media container should be labeled with the patient first and last name, collection date and time, and specimen source.

Transportation: Please place prepared specimen and requisition in the biohazard bag and follow the attached specimen shipment instructions. Note: Transport specimen to NPHL refrigerated. Samples must be received in lab within 72 hours of collection

Specimens from patients with multiple, characteristic Influenza symptoms are preferred. Classic symptoms include the sudden onset of:

- Fever (at least 100° F) Body aches (myalgias)
- Cough Fatigue (can be extreme), malaise
- Sore throat Runny or stuffy nose
- Headache Diarrhea and vomiting (usually in children; far less common in adults)

Collect specimen as soon as possible after symptom onset; preferably within 24 hours, but **no later than 3 days** post onset. **Immediately** refrigerate culture specimens and ship specimens to NPHL as **soon as possible, preferably on the same day collected (within 24 hours)**.

Nasopharyngeal Washings/Swab Collection Procedure

Washing:

Cut off the distal end of the butterfly catheter (needle and butterfly) catheter extension set so that about 2-3 inches of tubing are left attached to the hub.

1. Draw up 2-3 mls of saline into a syringe.
2. Attach syringe to hub of butterfly catheter. Purge tubing with saline.
3. Put on gloves, gown, mask and eye protection.
4. Gently remove excess mucous from patient's nose. (If patient is an adult, ask the patient to gently blow nose. For pediatrics, a bulb syringe may be used to remove excess mucous.)
5. Position patient in supine position with the head of bed up 30°. The head should be turned to one side and tilted slightly backward.
6. Stabilize the patient's head and gently place the catheter into the nare. Placement should be in the nare (nasal wall), not the nasopharynx. Depending on the size of the patient, this should be about 1-2 cm in adults and 0.5 cm to 1.0 cm in children (0.5 cm in neonates). See Figure 1.

Nasopharyngeal Washings/Swab Collection Procedure, Washing (continued)



Figure 1

7. Instill .5 - 2 mls saline (.5 - 1 mls for infants and children, 1 - 2 mls for adults) into the nare and aspirate back mucous, saline and epithelial cells.
8. Repeat this process using the same syringe until the sample is cloudy or appears to hold cellular debris. (If the sample is inadequate, the process may be repeated on the opposite nare, using a second sterile syringe and tubing. Usually one nare is sufficient.)
NOTE: There may be some blood streaks in the mucous. This is normal and patients/parents should be told this is expected and will stop in a few minutes.
9. Transfer contents of tubing and syringe into transport media using the following process: Depress syringe plunger and express fluid from syringe and tubing into transport media. Then withdraw media/fluid back into syringe and tubing. Depress syringe plunger again, expressing fluid from syringe and tubing back into transport media.
NOTE: This is necessary to recover any cells or virus adhering to the tubing or syringe.
10. Transport refrigerated. Specimen must be received at NPHL within 72 hours of collection.

Nasal Swab – (For video on correct collection procedure: <http://copanusa.com/downloads/education/>)

Collect **nasal** or **nasopharyngeal swab specimens** on sterile polyester (Dacron or rayon) tipped (**no calcium alginate**) swabs with plastic or metal shafts. **Wooden shafts are not acceptable**, since they absorb collection media and emit substances that inhibit isolation and test performance. **Cotton can likewise inhibit isolation and should be avoided.**

1. Insert a mini-tip culturette swab into the same nares from which the wash was performed approximately 3 cm and gently rub the mucosa.
2. Place the swab back into transport media containing aspirated material.
NOTE: Combining the aspirate and the swab enhances viral recovery.

Viral transport media provided by NPHL and most commercial vendors is stable until the date listed on the label. Other facilities must submit specimens on a suitable commercially-available viral transport collection system such as:

- COPAN Universal Transport Medium,
 - Eagle Minimum Essential Medium (E-MEM)
 - StarSwab Multitrans Collection and Transport System for viral, chlamydia and mycoplasma
3. Transport refrigerated. Specimen must be received at NPHL within 72 hours of collection.

2008-09 NPHL INFLUENZA SURVEILLANCE SPECIMEN SHIPPING INSTRUCTIONS

1. Place nasal swab or nasopharyngeal sample in viral transport media, place sample in biohazard bag and secure closure.
2. Make a copy of the completed NPHL Special Microbiology Requisition and keep for your records.
<http://www.hhs.state.ne.us/puh/epi/flu/docs/flunphltestrequisition.pdf>
3. Fold the original completed NPHL Special Microbiology Requisition and place in outside plastic sleeve of the biohazard bag.
4. Mark the package for shipment to NPHL and place the package in your laboratory's refrigerated storage area for usual courier pickup.

Shipment:

Samples can be couriered to NPHL through the ***Nebraska Public Health Partner Courier Network*** which includes, Regional West Medical Center, Pathology Services PC, LabLinc, The Pathology Center, P-Lab, Good Samaritan Hospital, St. Francis Hospital G.I., Faith Regional Hospital, Alegent Health System hospitals.

Call NPHL client services for specimen transport instructions at 402.559.2440 or toll free at 866.290.1406 with questions regarding specimen shipment.