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Health Advisory

Influenza Testing & Treatment Recommendations

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Influenza activity in the Philadelphia area continues to increase and many hospitals have reported surges in patients presenting with influenza-like illness (temperature > 100°F (37.8°C) AND cough and/or sore throat without other confirmed etiology). This advisory provides a brief surveillance summary and recommendations for diagnostic testing and treatment of patients with suspected influenza.

Surveillance Summary

To date, over 416 hospitalized cases, four deaths, and nine long-term care facility outbreaks of influenza have been reported. Both laboratory positive results for influenza and ED activity for influenza-like illness have exceeded last year's activity for this same time period. For more detailed information please reference the weekly PDPH Influenza report at https://hip.phila.gov (updated every Friday; see Latest News box).

Among respiratory samples submitted to the Pennsylvania Department of Health Bureau of Laboratories (PABOL), >80% test positive for influenza. Therefore, confirmatory influenza testing is no longer recommended except in special circumstances detailed below. Surveillance data indicates that the current predominant strain is influenza A/H3N2. According to the Centers for Disease Control and Prevention, circulating strains are well-matched to the antigens contained in the 2012-2013 influenza vaccine; the vaccine remains the best method for preventing influenza, influenza-associated complications, and reducing the severity of disease. Influenza vaccination is recommended for all persons aged 6 months and older. Vaccine is available locally at many pharmacies and at PDPH-sponsored flu clinics (schedule posted at: www.phila.gov/health/DiseaseControl/shotschedule.html)

Recommendations for Influenza Diagnostic Testing

- Influenza is now circulating at high levels in Philadelphia. Most patients with influenza-like illness *do not require* diagnostic testing for clinical management. If indicated, antiviral treatment with oseltamivir or zanamivir should not wait for laboratory confirmation of influenza since delayed treatment can affect efficacy and a negative rapid test result does not rule out the infection.
- Influenza diagnostic testing should be reserved for the following groups:
  - *Hospitalized patients* with suspected influenza or unexplained respiratory failure
  - Patients who *died* of suspected influenza or unexplained respiratory failure
  - Patients with *symptoms that may indicate severe disease* such as: respiratory distress, hypoxia, pneumonia, acute respiratory distress syndrome, neurologic symptoms, or atypical symptoms in a severely immunocompromised patient without known etiology
  - Cases of *suspected antiviral resistance* such as individuals on antiviral prophylaxis for 48 hours who develop influenza-like illness or individuals on appropriate antiviral therapy but with repeated positive rapid antigen tests
- Several commercial and hospital laboratories offer influenza diagnostic testing. Recommended diagnostic tests include:
  - Viral culture
  - Direct and indirect immunofluorescence assays (DFA and IFA)
  - rRT-PCR

  Serology is not a recommended test for the purposes of clinical management. Facilities without access to a commercial or clinical laboratory performing influenza diagnostic testing should contact PDPH to determine if the sample can be tested at a public health laboratory. Currently, PABOL is only accepting samples from cases admitted to the intensive care unit, fatal cases, apparent vaccine failures, cases where antiviral resistance is suspected, or cases associated with a suspected outbreak in a long term care facility.

- Specimens should be labeled appropriately and be refrigerated (4°C) or placed on ice or cold packs prior to and during transport. Specimens *should not be frozen* and should ideally be tested within 72 hours of collection and within 24 hours of collection. Preferred respiratory specimens for diagnostic testing should be collected within the first three to four days of illness and include:
    - Nasopharyngeal (NP)/Oropharyngeal (OP) swabs collected with a synthetic tip (e.g., nylon, Dacron, plastic, aluminum) and placed immediately into a sterile vial with viral transport media
    - Nasal aspirate or wash specimens transferred into a sterile container
    - Endotracheal aspirate or bronchoalveolar lavage fluid transferred into a sterile vial
    - Tissue samples from post-mortem proximal and distal trachea, right and left bronchi and right and left central lung

  Instructions for the collection of a NP swab are available online (see additional resources below). For any specimens meeting PABOL criteria for testing, a completed PABOL lab submission slip (available at hip.phila.gov) should accompany the specimen.
- Rapid influenza diagnostic tests (RIDT) can be used to identify influenza but have sub-optimal sensitivity. A negative rapid test cannot rule out influenza. Negative tests may require further testing for influenza by PCR or viral culture. Regardless of RIDT test results, clinical judgment should be used to decide if antiviral treatment is appropriate. Furthermore, in situations where the supply of rapid test kits is in shortage, the use of such kits should be reserved for the groups detailed above.

Influenza Treatment Recommendations

- Clinicians are encouraged to initiate early treatment of influenza with antiviral medications, oseltamivir or zanamivir, in patients who:
    - have severe or complicated illness, including hospitalization, as a result of suspected or confirmed influenza
    - are at higher risk for influenza complications (e.g. persons with chronic or immunosuppressive medical conditions, those <2 or >65 years of age, pregnant and postpartum women, persons with a BMI ≥40, and persons <19 years receiving long-term aspirin therapy)

  Currently, circulating influenza strains remain susceptible to these antiviral medications.
- Antiviral treatment is most effective within *48 hours* of illness onset and *should not be delayed* if influenza is suspected. It is not necessary to test for influenza in order to initiate treatment. The duration of treatment is 5 days. In the event that oseltamivir for oral suspension is not available for pediatric doses, a pharmacist may compound a suspension (6 mg/mL) from oseltamivir capsules 75 mg using simple syrup.
- Use of antiviral agents for the purpose of chemoprophylaxis is generally not recommended except in:
    - the prevention and control of institutional outbreaks of influenza
    - persons with severe immune suppression
    - persons who are at high risk for influenza complications and are unable to receive the flu vaccine or received the flu vaccine <2 weeks from their exposure

Reporting Guidelines

Providers are reminded that all institutional outbreaks of respiratory illness or hospitalized and fatal cases of influenza are to be reported to DDC. Reporting forms are posted on the Health Information Portal and can be faxed to DDC at 215-238-6947 or called to 215-685-6740. Additionally, institutions should be promptly notified when hospitalized residents test positive for influenza, so that they may initiate appropriate interventions.

Additional Resources

- Guidelines, fact sheets, posters, and other educational materials: https://hip.phila.gov/xv/DiseaseInformation/Influenza/tabid/143/Default.aspx
- Antiviral treatment (including dosing and its use for chemoprophylaxis): http://www.cdc.gov/flu/professionals/antivirals/index.htm
- Diagnostic Testing: http://www.cdc.gov/flu/professionals/diagnosis/index.htm
- Instructions for collecting nasopharyngeal specimens:
    - https://hip.phila.gov/xv/Portals/0/HIP/Disease_Info/Influenza/PDPH_NasopharyngealSwabInstructions_020112.pdf
    - http://www.youtube.com/watch?v=gHrErzVxTes&feature=relmfu

Algorithm for Testing and Treating Patients with Suspected Influenza

2012-2013 Seasonal Influenza

Last updated 1/10/2013

Patient presents with **influenza-like illness (ILI)**:
- Temperature ≥ 100° F (37.8° C) **AND**:
- Cough and/or sore throat
- Without other confirmed etiology

NO →
- Testing for influenza is *not recommended*.
- Workup and follow-up as clinically indicated.

YES ↓

Illness Presentation

Patient presents with **MILD** ILI symptoms:
Appropriate infection control measures should be instituted

Patient has **underlying conditions** that increase risk for complications:
- < 2 or ≥ 65 years of age
- Pregnant or 2 weeks postpartum
- Underlying conditions associated with a higher risk of medical complications from influenza:
  - Pulmonary disease (including asthma or COPD)
  - Cardiovascular disease (excluding hypertension)
  - Renal, hepatic, hematological, neurologic, neuromuscular disease
  - Metabolic disorders (including diabetes) or morbid obesity
  - Immunosuppression, including that caused by HIV or medications
- <19 years of age on long-term aspirin therapy

Patient presents with **SEVERE** symptoms including: respiratory distress, hypoxia, pneumonia, acute respiratory distress syndrome, neurologic symptoms or atypical symptoms in severely immunocompromised patient.

Clinical Management

NO ↓

Treatment is generally not indicated, but use clinical judgment. If there is evidence of lower respiratory tract involvement, treat empirically.

YES ↓

Initiate antiviral treatment with oseltamivir or zanamivir as soon as possible and ideally within 48 hours; do not wait for laboratory test results.

- Initiate antiviral treatment (oseltamivir, zanamivir) within 48 hours of symptom onset; do not wait for laboratory test results. Use clinical judgment to decide whether additional therapy is needed.
- If severe, consider referring the case to a local ED or hospital for admission. Notify EMS or hospital of suspected influenza and need for appropriate infection control.

Testing

Not necessary, particularly in periods of high influenza incidence.

Testing is generally not necessary and should not influence treatment decisions.

Obtain any of the following: nasopharyngeal swab, nasal aspirate, nasal swab plus throat swab, or nasal wash
- Place in viral transport media and store in refrigerator while awaiting transport. If testing will not occur within 72 hours, place in -70° C
- Testing using rRT-PCR, DFA, IFA, or viral culture can be performed at a hospital or commercial laboratory.

Additional Comments:

- Rapid influenza diagnostic tests (RIDT) can be used used to identify influenza. However, because of sub-optimal sensitivity for most commercial RIDTs, a negative result does not rule out influenza. Specimens should be sent for viral culture or rt-PCR testing to confirm results of RIDTs.
- Further information regarding infection control, antiviral medication use, clinical guidance for specific groups, and testing can be found at https://hip.phila.gov/xv/DiseaseInformation/Influenza/tabid/143/Default.aspx or www.cdc.gov/flu/professionals.