Clinical Guidance for Novel H1N1 Influenza and Seasonal Influenza

Healthcare Briefings

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Outline

- Clinical assessment
- Diagnostic testing
- Antiviral medications
  - Treatment
  - Prophylaxis
  - Resistance
- Other treatment and patient management issues
Clinical Assessment
Clinical Assessment

Cannot distinguish between seasonal influenza, novel influenza and infections with other respiratory viruses based solely on patient’s clinical presentation.

Initial patient management decisions need to be based on:

- Current levels of seasonal and novel influenza activity in the community
- Results of any influenza diagnostic tests, if performed
- Severity of patient’s illness
- Presence of any underlying conditions (including young/old age and pregnancy) that places the patient at higher risk for complications
Consider Influenza

Consider novel or seasonal influenza in the differential diagnosis of any person presenting with an unexplained acute febrile respiratory illness, including:

- Influenza-like illness (ILI) – fever greater than or equal to 100F with cough or sore throat
- Pneumonia and fever
- Acute respiratory distress syndrome and fever (ARDS)
- Respiratory distress and fever

May be atypical presentations, such as presenting without a fever
Diagnostic Testing
Rapid Influenza Diagnostic Tests (RIDTs)

- Also called rapid antigen testing or EIA testing
- Can provide results within 30 minutes or less
- May provide some information to guide initial clinical decisions
- Cannot distinguish subtypes
- RIDTs can either:
  - Detect and distinguish between influenza A and B viruses,
  - Detect both influenza A and B viruses but not distinguish between them, or
  - Detect only influenza A viruses
Sensitivity of RIDTs

- Low to moderate sensitivity for both seasonal and novel influenza compared to culture or PCR
- False negatives occur
- A negative rapid result does not rule out influenza virus infection
- If clinical suspicion of influenza is high in a patient who tests negative by RIDT (or if RIDT is not offered), *early empiric treatment should be administered*, if treatment is appropriate (e.g., patient has severe symptoms or is at high risk for complications)
Other Influenza Diagnostic Tests

- Immunofluorescence (DFA or IFA)
- PCR
- Culture

- All are more sensitive than rapid tests
- Usually only available through commercial diagnostic laboratories
- Results are usually not immediately available to guide clinical decisions
Novel Influenza A (H1N1) Testing – Private Labs

- Requires PCR testing

- Available at selected commercial and hospital labs approved by the NYSDOH Clinical Evaluation Laboratory Program (CLEP)

- Focus Laboratories (a reference lab for Quest) is currently the only commercial lab approved by CLEP to conduct novel H1N1 testing on NYS residents
Novel Influenza A (H1N1) Testing – Public Health Labs

- Novel H1N1 testing also conducted at public health laboratories (Wadsworth Center and selected county health departments)

- Focus of public health testing for the 2009-2010 influenza season will be on surveillance

- Will not be routinely available to providers and facilities for primary testing
Diagnostic Testing in Patients with Suspected Influenza

- **Patients hospitalized with severe symptoms** – providers may consider commercially available influenza testing (rapid tests, DFA, IFA, PCR)

- **High-risk patients with milder symptoms** – may also consider commercial testing

- **Patients with milder symptoms who are not at high-risk** – influenza testing usually not indicated as results will not influence treatment decisions
Why Test for Influenza?

Test *if* it will **influence clinical management:**

- Clarify an unclear or unusual clinical presentation
- Impact decisions about other diagnostic testing, especially in a patient with severe symptoms
- Reinforce antiviral treatment decisions and infection control practices
- Reinforce antiviral prophylaxis decisions, especially in sensitive situations
- *May* guide selection of antivirals (e.g., + influenza B RIDT)
- Impact antibiotic treatment decisions

Test as needed/requested for **public health surveillance**
Antiviral Medications, Treatment and Prophylaxis
Influenza Antiviral Medications

Two classes

- Adamantanes
  - Rimatadine and amantadine
- Neuraminidase inhibitors
  - Oseltamivir and zanamivir

Used for both prevention and for treatment
Adamantanes

**Amantadine**
- Common dose-related minor CNS effects (e.g., insomnia); less common severe CNS effects (psychosis, seizure); GI effects (anorexia, nausea)
- Adjust dose for decreased renal function

**Rimantadine**
- Approved by the FDA for treatment among adults, although some specialists use in children
- CNS effects less common; GI effects
- Adjust dose for decreased renal function
Oseltamivir (Tamiflu)

- Available as a capsule or suspension administered by mouth
- Approved in the U.S. for treatment or prevention of influenza in persons aged ≥1 year
  - Emergency Use Authorization (EUA) for children <1 year
  - Treatment: twice a day for 5 days
  - Prevention: once a day for 10 days after exposure
- Pediatric dosage depends on weight and age
- Side effects: nausea, vomiting in some persons
- Reports of delirium in pediatric patients (adolescents, most reports from Japan). Warning added to label in 2007
- Adjust dose for decreased renal function
Zanamivir (Relenza)

- Orally inhaled powder – administered by mouth via special device

- Approved in the U.S. for
  - Treatment of influenza (aged ≥7 years)
  - Prevention of influenza (aged ≥5 years)

- Treatment dosage: two puffs in the morning and two at night for 5 days (5 days)

- Prevention dosage: 2 puffs once a day (typically for 10 days after exposure)

- Side effects
  - Wheezing, and breathing problems

- Not recommended for persons with chronic respiratory disease
Antiviral Treatment - Indications

- Recommended for
  - Patients hospitalized with suspected or confirmed influenza (severe illness)
  - Patients with mild or severe influenza who are at high risk for influenza complications

- Treatment should be started empirically and should not await laboratory confirmation
Conditions that Place People at High-Risk for Flu Complications

- Children <5 years
- Persons with underlying medical conditions:
  - Chronic lung disease, including asthma
  - Chronic heart, kidney, or liver disease
  - Neurologic or neuromuscular disorders
  - Metabolic disorders, including diabetes
  - Hematologic disorders
  - Immunosuppression
- Pregnant women
- Persons <19 yo on long-term aspirin therapy
- Adults ≥65 years
Antiviral Treatment - Timing

- Treatment should be started as early as possible
- Treatment after 48 hours may have little benefit
  - Exception: Those severely ill, high-risk conditions, pregnancy
- Steps to reduce delays in treatment
  - Inform high risk persons of signs of influenza and need for early treatment
  - Ensure rapid access to telephone consultation and clinical evaluation
  - Consider empiric treatment based on telephone contact if hospitalization not indicated
  - Consider prescriptions for selected patients that can be filled after telephone consultation
Antiviral Treatment – Duration and Dosage

Duration of treatment is 5 days

- Hospitalized patients with severe illness might require longer treatment courses

Dosage is same for seasonal and novel influenza

- Some experts recommend increased doses for some severely ill patients, but no data on effectiveness
Patients with Milder Illness

- Treatment generally not recommended for persons who are not at high risk or do not have severe illness
- Do **not** advise patients to go to the ED
- Office visits may not be necessary
  - Screen by phone
  - Prescribe antiviral medications (if indicated)
  - Provide symptomatic treatment recommendations
  - Advise to call if symptoms worsen
  - Advise to stay home until 24 hours after fever ends
Choice of Antiviral Medication

Providers need to review regional and state virus surveillance data weekly during the influenza season to determine which types (influenza A or B) and subtypes of influenza A viruses (novel H1N1, seasonal H1N1, seasonal H3N2) are circulating in the area.

Surveillance information posted on Health Commerce System.

Surveillance data, in conjunction with any rapid testing results, will help guide the choice of empiric treatment or prophylaxis.
Expected Antiviral Resistance Patterns
United States
2009-2010 Influenza Season

<table>
<thead>
<tr>
<th>Virus</th>
<th>Oseltamivir</th>
<th>Zanamivir</th>
<th>Adamantanes</th>
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</thead>
<tbody>
<tr>
<td>Novel H1N1</td>
<td>Sensitive*</td>
<td>Sensitive</td>
<td>Resistant</td>
</tr>
<tr>
<td>Seasonal H1N1</td>
<td>Resistant</td>
<td>Sensitive</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Seasonal H3N2</td>
<td>Sensitive</td>
<td>Sensitive</td>
<td>Resistant</td>
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<tr>
<td>Seasonal B</td>
<td>Sensitive</td>
<td>Sensitive</td>
<td>Resistant</td>
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*Sporadic cases of oseltamivir-resistant novel H1N1 have been reported. Reports are rare and CDC continues to recommend oseltamivir for treatment and prophylaxis of novel H1N1.
Choice of Antiviral Medication – Positive RIDT Results

Positive for influenza B: treat with oseltamivir or zanamivir (no preference)

Positive for influenza A: could be novel H1N1, or seasonal H1N1, or seasonal H3N2

- Base treatment on surveillance data
- If novel H1N1 or seasonal H3N2 likely, treat with oseltamivir or zanamivir
- If seasonal H1N1 is also circulating, treat with zanamivir OR combination oseltamivir and rimantidine (or use amantadine instead of rimantadine but more adverse effects)
Choice of Antiviral Medication – RIDT Negative or Not Done

- Cannot rule out influenza

- Use clinical symptoms, severity, and underlying disease to decide if treatment is appropriate

- Base choice of antiviral on surveillance data
  - If novel H1N1, seasonal H3N2 or influenza B likely, treat with oseltamivir or zanamivir
  - If seasonal H1N1 is also circulating, treat with zanamivir OR combination oseltamivir and rimantadine (or use amantadine instead of rimantadine but more adverse effects)
Antiviral Post-Exposure Prophylaxis (PEP)

- Can be considered for high-risk persons who had close contact with a person with influenza
  - Contact during ill person’s infectious period
    (defined as 1 day prior to onset until 24 after fever ends)
- Initiate PEP as soon as possible
  - Generally not recommended if more than 48 hours after last contact with an infectious person
- Duration: 10 days following last exposure
- Alternative to PEP: emphasis on early treatment
Persons who are candidates for post-exposure chemoprophylaxis should be provided with medications most likely to be effective against the influenza strain that is the cause of the close contact’s illness, if known.

Similar considerations as for treatment:

- Providers should be aware of regional and state surveillance data
- Base choice on antiviral susceptibility pattern
PEP and Outbreak Control

- Important infection control measure in long-term care facilities for seasonal influenza

- Can also be considered in other closed settings where persons at higher risk are housed

- Other settings (e.g., schools, camps, workplaces) – not recommended to offer PEP to all persons potentially exposed
  - Can consider PEP for those persons at high risk
  - Educate healthy persons about signs/symptoms of flu and to seek medical care if symptoms are severe
Other Treatment Issues

- **Fevers in pregnant women** – Treat promptly with acetaminophen because maternal hyperthermia has been associated with various adverse fetal and neonatal outcomes.

- **Bacterial community-acquired pneumonia** – Influenza predisposes individuals to secondary bacterial infections. Consider possibility of co-infection and treat accordingly with antibiotics.
All medical facilities and offices should strictly adhere to infection control recommendations for influenza.

Patients, especially those who are at high risk for influenza complications, should be vaccinated with seasonal influenza vaccine as soon as it is available.

Patients should be vaccinated with novel H1N1 vaccine according to the priority groups and recommendations established by the Centers for Disease Control’s (CDC) Advisory Committee on Immunization Practices (ACIP).

Patients who have existing indications for pneumococcal vaccination should be vaccinated according to current ACIP recommendations.
Other Things to Do

- Educate your patients
  - How to reduce their risk of influenza
  - How to care for someone who is ill at home
  - Stay home when sick (until 24 hours after fever resolves)
  - When to call their health care provider

- Make a plan for your office / facility
  - Communications / Staff education
  - Triage
  - Surge capacity and employee absenteeism
  - Occupational health / employee vaccination
  - Supplies

- Stay informed - check websites frequently
Summary of Key Points for Clinical Management

- Review regional and state influenza activity on a regular basis
- Initiate early, empiric treatment for persons with severe illness and/or persons with high risk conditions
- Understand limitations of diagnostic testing
- Advise people with mild illness NOT to go to the ED
- Can consider prophylaxis for exposed high-risk individuals