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**Health Alert**  
**10/28/09**

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**Please distribute to all Primary Care Staff, Internal Medicine, Pediatrics, Family Medicine, Infection Control, Nursing, Infectious Diseases, Emergency Medicine, Critical Care, and Obstetrics and Gynecology, and Laboratory Personnel**

**1. CDC Consultation and Reporting Hotline for Clinicians Caring for Pregnant Women with Influenza Hospitalized in the ICU**

CDC has established a 24/7 clinical consultation and reporting hotline (404-368-2133) for physicians caring for pregnant and post-partum women with severe illness (hospitalized in ICU) who have been diagnosed with influenza.<sup>1</sup> IDPH requests that clinicians call the CDC hotline if they are caring for pregnant or post-partum women with influenza in the ICU.

In addition to providing clinical consultation, CDC will also obtain case-report information from physicians. This information will be provided to IDPH to help ensure prompt inclusion of all hospitalized cases of 2009 H1N1 influenza in our surveillance system (I-NEDSS). On a national level, case-report information will be valuable in improving prevention and treatment strategies for pregnant women. As necessary, additional calls will be made to obtain follow-up information from clinicians to ensure completion of CDC case-report forms.

CDC has extensive guidance available on their website regarding the care and treatment of pregnant women. Please see the following links:

[http://www.cdc.gov/h1n1flu/clinician\\_pregnant.htm](http://www.cdc.gov/h1n1flu/clinician_pregnant.htm)  
<http://www.cdc.gov/h1n1flu/recommendations.htm>.

<sup>1</sup>Consultation will be provided for pregnant and post-partum (up to 6 weeks) women diagnosed with influenza (including seasonal influenza) by positive rapid test, rRT-PCR, DFA/IFA, or viral culture.

## **2. Emergency Use Authorization: Peramivir IV for Use in Seriously Ill Inpatients**

On 10/26/09, the FDA issued an emergency use authorization (EUA) for the use of the investigational antiviral Peramivir intravenous (IV) in certain adult and pediatric inpatients with confirmed or suspected 2009 H1N1 influenza infection. There are no FDA-approved intravenously administered antiviral drugs for the treatment of influenza--Peramivir is the only intravenously administered influenza treatment currently authorized for use under EUA for 2009 H1N1 infections.

Peramivir IV is specifically authorized only for hospitalized adult and pediatric patients for whom therapy with an IV drug is clinically appropriate, due to one or more of the following reasons: a) The patient is not responding to either oral or inhaled antiviral therapy; b) When drug delivery by a route other than an intravenous route -- e.g., enteral (absorbed by the intestines) or inhaled -- is not expected to be dependable or feasible; c) When the clinician judges IV therapy is appropriate due to other circumstances (this last criterion applies to adults only).

Clinicians considering use of Peramivir IV under EUA must read and understand the content of the FDA-issued Emergency Use Authorization of Peramivir IV: Fact Sheet For Health Care Providers ([www.cdc.gov/h1n1flu/eua](http://www.cdc.gov/h1n1flu/eua)) prior to initiating a request and must agree to comply with terms and conditions of authorized use of Peramivir per the FDA-issued EUA. Clinicians who, after reading the Fact Sheet for Health Care Providers, wish to obtain Peramivir IV for a patient can download the request form (or access an electronic request portal) at [http://www.cdc.gov/H1N1flu/EUA/peramivir\\_recommendations.htm](http://www.cdc.gov/H1N1flu/EUA/peramivir_recommendations.htm). Per CDC, IRB Approval is not needed for Use of Peramivir under the EUA.

**Note:** IV Zanamivir (Relenza) is available via the manufacturer (GSK) on a compassionate use basis. (Call 1-888-825-5249 and ask for Medical Information for information on patient eligibility and enrollment. )

## **3. Algorithms for Clinicians (all attached)**

a. 2009-2010 Influenza Season Triage Algorithm for Adults (>18 Years) With Influenza-Like Illness: <http://www.cdc.gov/h1n1flu/clinicians/pdf/adultalgorithm.pdf>

b. 2009-2010 Influenza Season Triage Algorithm for Children (≤18 years) With Influenza-Like Illness : <http://www.cdc.gov/h1n1flu/clinicians/pdf/childalgorithm.pdf>

c. Algorithm to Assist in the Interpretation of Rapid Influenza Diagnostic Test Results During Periods when Influenza Viruses are Circulating in the Community: [http://www.cdc.gov/h1n1flu/guidance/rapid\\_testing.htm](http://www.cdc.gov/h1n1flu/guidance/rapid_testing.htm)

d. Algorithm for Requests for Antiviral Resistance Testing by CDC for Clinical Care (and information sheet; no URL at present)

**4. H1N1 Flu Self-Evaluation Instrument for Individuals > 18 yo:**  
<http://www.flu.gov/evaluation/>

(According to HHS, this site is provided for informational purposes, and should not be used as a substitute for evaluation and treatment by a healthcare professional.)

## 5. Summary Table for Vaccine Administration—H1N1 with Other Vaccines

Vaccine A					
	Seasonal inactivated (injection)	Seasonal LAIV (intranasal)	H1N1 inactivated (injection)	H1N1 LAIV (intranasal)	
<b>Vaccine B</b>	<b>H1N1 inactivated (injection)</b>	OK to give the same day at different sites or anytime after. <sup>1</sup>	OK to give the same day or anytime after.	CDC recommends that when 2 doses of 2009 H1N1 vaccine are required for children, they should be separated by 4 weeks. However, if the second dose is separated from the first dose by at least 21 days, the second dose can be considered valid.	
	<b>H1N1 LAIV (intranasal)</b>	OK to give the same day or anytime after.	Separate 2 vaccines by 28 days. <sup>2</sup>		
	<b>Other Live Vaccine (ie MMR)</b>	OK to give the same day or anytime after.	OK to give the same day or separated by 28 days.	OK to give the same day or anytime after.	OK to give the same day or separated by 28 days.
	<b>Other inactivated vaccine (ie PPSV)</b>	OK to give the same day or anytime after.	OK to give the same day or anytime after.	OK to give the same day or anytime after.	OK to give the same day or anytime after.
	<b>Antiviral medication administration</b>	OK to vaccinate patient on antiviral medication	Do not administer LAIV until 48 hours after stopping antiviral medications. <sup>3,4</sup>	OK to vaccinate patient on antiviral medication	Do not administer LAIV until 48 hours after stopping antiviral medications. <sup>4,5</sup>

1. ACIP: Use of Influenza A (H1N1) 2009 Monovalent Vaccine. MMWR 28Aug09;58(RR-10):1-8

2. Based on previous studies of LAIV replication and immune response, an interval between the two types of LAIV of 2 weeks may be acceptable, but an interval of 28 days is preferred: see [http://www.cdc.gov/H1N1flu/vaccination/top10\\_faq.htm](http://www.cdc.gov/H1N1flu/vaccination/top10_faq.htm), question #6.

3. Prevention and Control of Seasonal Influenza with Vaccines. MMWR 31Jul09;58(RR-8):1-52

4: Use of antiviral medications within 14 days after LAIV can reduce immune response to vaccine. If this happens, consider revaccination for influenza after 48 hours off antivirals

5. CDC Antiviral Q+A, 2009-2010 Flu Season (9/23/09)

# 2009-2010 Influenza Season Triage Algorithm for Adults (>18 Years) With Influenza-Like Illness

## Disclaimer

This algorithm is designed only to assist physicians and those under their supervision in identifying indicators of and responses to symptoms of flu-like illness (i.e., fever with cough or sore throat). It does not provide guidance for other medical conditions nor is it intended to substitute for professional medical advice. Like any printed material it may become out-of-date over time. This guidance is not intended for use by the general public and is not a substitute for sound clinical judgment. Individuals should always seek the advice of their healthcare professional with any questions they have regarding a medical condition. If you are concerned about your health or the health of someone in your care, call your doctor or the doctor of the person you are caring for. If you think you or someone in your care is severely ill or may have a medical emergency, call 911 immediately. The U.S. Government does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of this algorithm.

This algorithm was developed in collaboration with Emory University School of Medicine

**This algorithm is meant for use by healthcare professionals and their surrogates, not by the general public. This algorithm applies regardless of whether or not the patient has been vaccinated for influenza. Patients who do not have all the signs/symptoms (and therefore are not eligible for the algorithm) are encouraged to seek care or talk to a healthcare provider about their illness.**

Are **all** of the following present?

1. Age greater than 18
2. Fever or feverishness\*
3. Cough or sore throat

\* If antipyretics are taken this may inhibit a patient's ability to mount a fever

No

Although influenza cannot be ruled out in this patient, this algorithm should not be used to guide clinical decision making in this case. Advise them to contact their healthcare provider for advice about their current illness. Many people with influenza illness will not have a fever. Other symptoms of influenza can include chills, body aches/muscle pain, headache, fatigue, runny nose, and occasionally diarrhea and vomiting

Yes

Are **any** of the following signs or symptoms present?†

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest
- Dizziness
- Confusion
- Severe or persistent vomiting
- Flu-like symptoms improved but then return or worsen within a few days

† These symptoms are purposely broad to minimize the possibility of misclassifying people who truly have severe disease. The person attempting to triage the patient should take into account the severity and duration of the symptoms and the patient's ability to care for themselves or access a reliable caregiver when deciding whether or not patients should be advised to seek care immediately

Yes

This patient should be advised to seek medical care immediately

No

Is the patient:

- Age 65 years or older

OR

- Pregnant

OR are **any** of the following comorbid conditions present:

- Chronic pulmonary (including asthma), cardiovascular (except isolated hypertension), renal, hepatic, hematological (including sickle cell disease), or metabolic disorders (including diabetes mellitus)
- Disorders that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders)
- Immunosuppression, including that caused by medications or by HIV

Note: obese patients and morbidly obese patients should be carefully evaluated for the presence of underlying medical conditions that are known to increase the risk for influenza complications, and receive empiric treatment when these conditions are present, or if signs of lower respiratory tract infection are present

Yes

This patient is at higher risk for influenza complications. The patient should be advised to contact their healthcare provider to discuss antiviral treatment that day. Providers may advise such patients to take antiviral medications for treatment and/or other therapy. Early use of influenza antiviral medications can reduce the risk of influenza-related complications

No

Based on the information above, this patient is at low risk for influenza complications and may not require testing or treatment for influenza if their symptoms are mild. Should their symptoms worsen or if they are concerned about their health they should be advised to seek medical care.

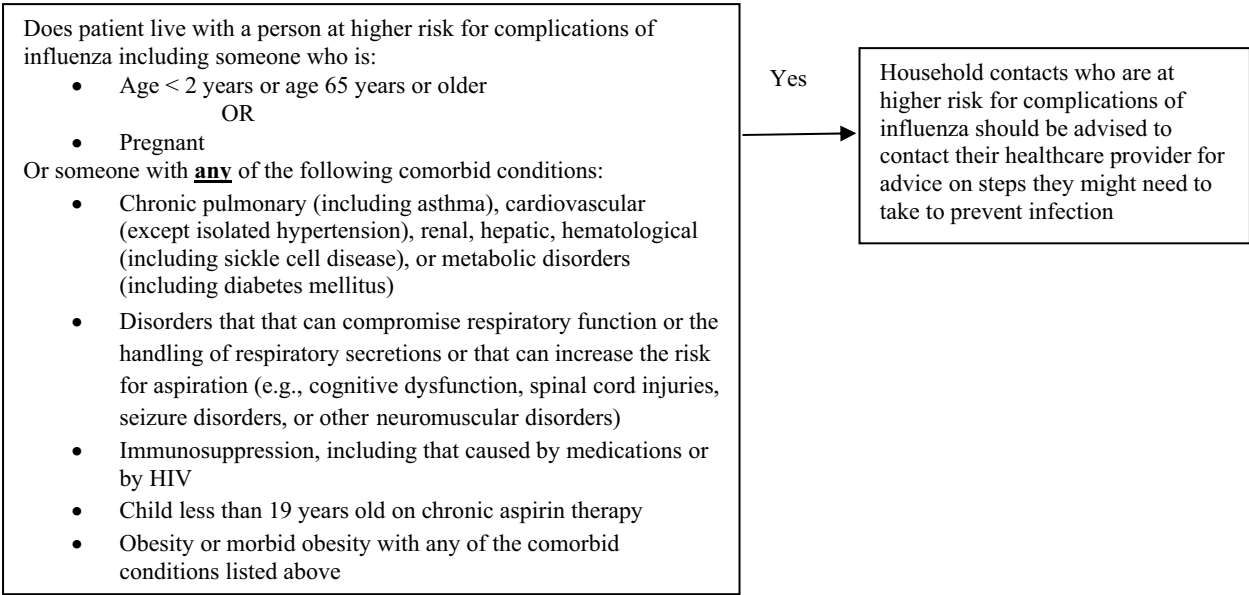
In order to help prevent spread of influenza to others, these patients should be advised:

- To keep away from others to the extent possible, particularly those at higher risk for complications from influenza (see box next page). This may include staying in a separate room with the door closed.
- To cover their coughs and sneezes
- Avoid sharing utensils
- Wash their hands frequently with soap and water or alcohol-based hand rubs
- Stay home until 24 hours after their fever is gone

More information available at: [http://www.cdc.gov/h1n1flu/guidance\\_homecare.htm](http://www.cdc.gov/h1n1flu/guidance_homecare.htm)

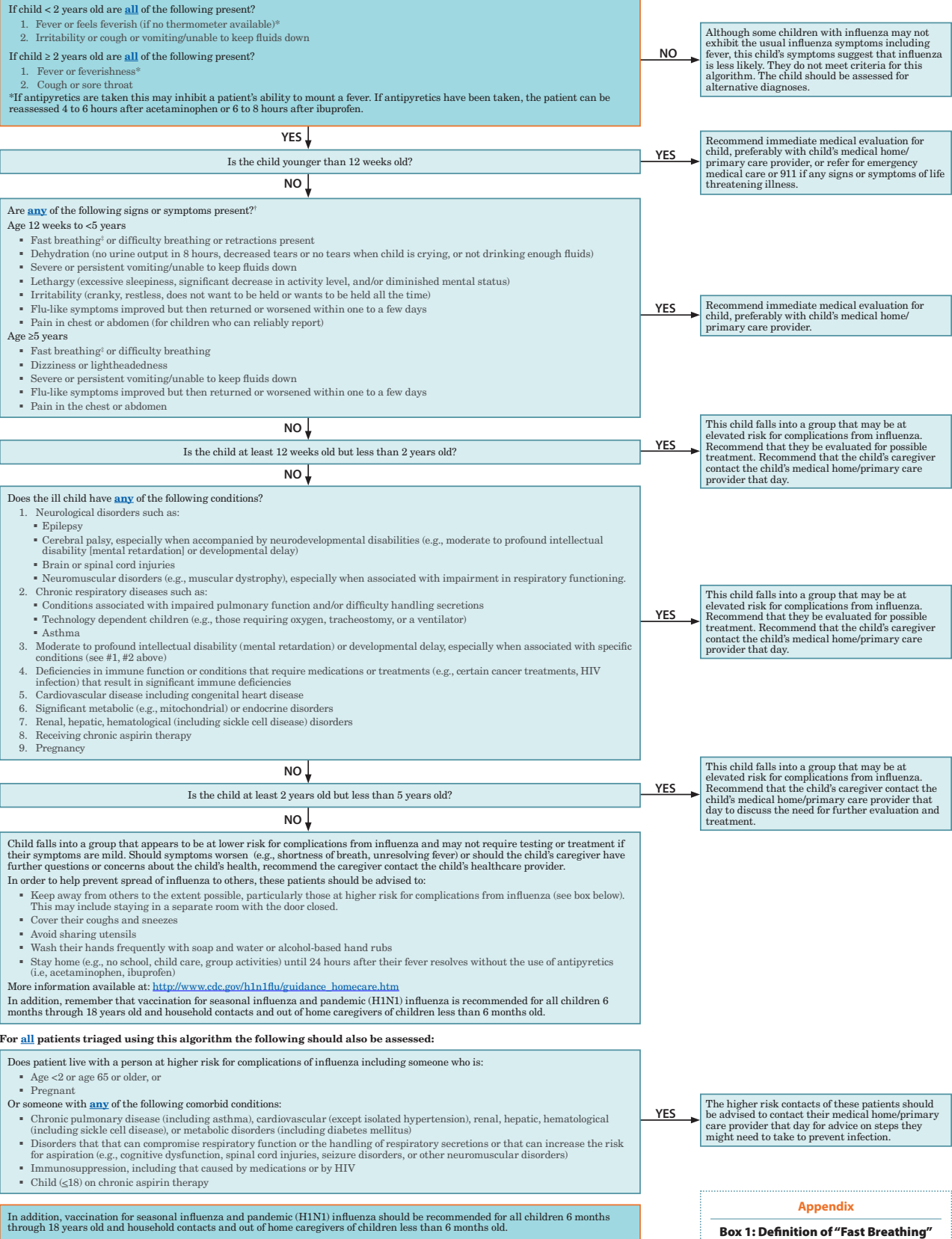
## 2009-2010 Influenza Season Triage Algorithm for Adults (>18 Years) With Influenza-Like Illness

**For all adult (> 18 years) patients triaged using this algorithm the following should also be assessed:**



# 2009-2010 Influenza Season Triage Algorithm for Children (≤18 years) With Influenza-Like Illness

This algorithm was developed for use only by physicians and those under their direct supervision, not for use by general public, to help in discussions and providing advice to parents or other caregivers of ill children regarding seeking medical care for an influenza-like illness. The algorithm can be used regardless of whether or not the child has been vaccinated for influenza. Caregivers of children who may have potentially life-threatening signs and symptoms, such as unresponsiveness, or respiratory distress and/or cyanosis (blue-colored skin), should be instructed to dial 911.



## Appendix

### Box 1: Definition of "Fast Breathing"

Age	Respiratory rate
Birth up to 3 months	> 60/min
3 months up to 1 year	> 50/min
1 to < 3 years	> 40/min
3 to < 6 years	> 35/min
6 to < 12 years	> 30/min
12 to 18 years	> 20/min

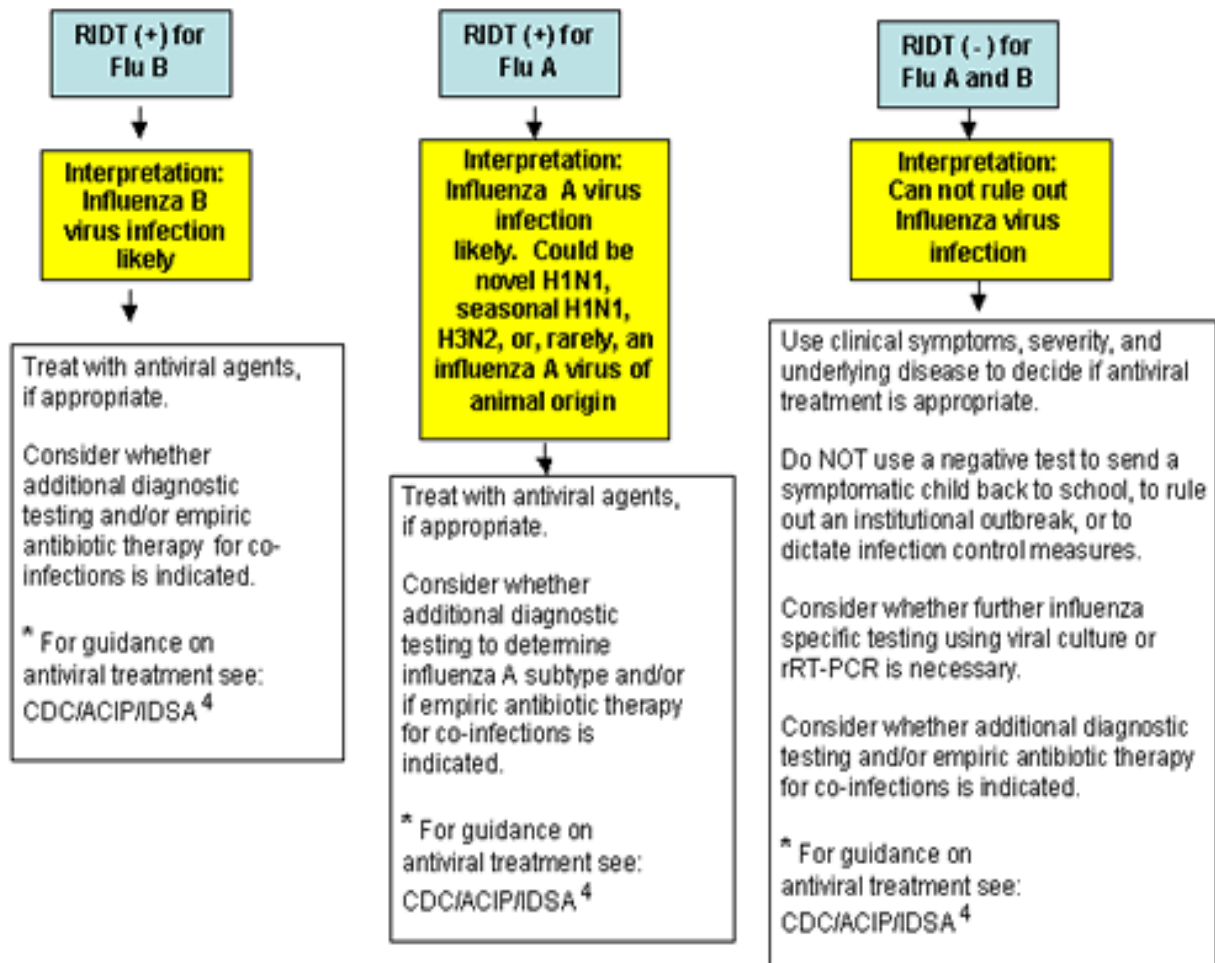
<sup>†</sup>These symptoms are purposely broad to minimize the possibility of misclassifying people who truly have severe symptoms. The person attempting to triage the patient should take into account the severity and duration of the symptoms when deciding whether or not patients should be advised to seek evaluation immediately

<sup>‡</sup>Suggested respiratory rates indicative of "fast breathing" included in Box 1 in Appendix

#### Disclaimer

This tool is designed only to assist physicians and those under their supervision in identifying indicators of and responses to flu-like symptoms in children. It does not provide guidance for other medical conditions nor is it intended to substitute for professional medical advice. Like any printed material it may become out of date over time. This guidance is not intended for use by the general public. Individuals should always seek the advice of their health care professional with any questions they have regarding a medical condition in themselves or a child in their care. If you think you or your child is severely ill or may have a medical emergency, call your doctor or 911 immediately. The U.S. Government does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of this tool

**CDC Algorithm to assist in the interpretation of Rapid Influenza Diagnostic Test Results During Periods When Influenza Viruses are Circulating in the Community**



<sup>4</sup> CDC: <http://www.cdc.gov/h1n1flu/recommendations.htm>

For additional information, see

--Interim Recommendations for Clinical Use of Influenza Diagnostic Tests During the 2009-10 Influenza Season:

[http://www.cdc.gov/h1n1flu/guidance/diagnostic\\_tests.htm](http://www.cdc.gov/h1n1flu/guidance/diagnostic_tests.htm)

--Interim Guidance for the Detection of Novel Influenza A Virus Using Rapid Influenza Diagnostic Tests:

[http://www.cdc.gov/h1n1flu/guidance/rapid\\_testing.htm](http://www.cdc.gov/h1n1flu/guidance/rapid_testing.htm)

October 20, 2009

### **Information on Testing for Influenza Antiviral Resistance**

Antiviral resistance testing will be of limited use for the care of most patients due to the limitations of testing described below. However, certain patients may benefit from antiviral resistance testing.

Background Information on Antiviral Testing: Comprehensive antiviral resistance testing includes the neuraminidase inhibition assay to detect resistance to oseltamivir or zanamivir followed by sequencing or pyrosequencing to detect mutations associated with the resistance. Resistance to adamantanes can be deduced by sequencing or pyrosequencing to detect well established mutations that have been shown to be responsible for resistance.

Currently, comprehensive antiviral resistance testing (neuraminidase inhibition assay, pyrosequencing, and sequencing) is performed by CDC for national surveillance, as well as by a few research laboratories. Neuraminidase inhibition assay requires a virus isolate. Pyrosequencing can be performed on clinical specimens, and thus will provide results within 2-4 days. Pyrosequencing or sequencing of the neuraminidase may be used to detect the H275Y mutation that is associated with oseltamivir resistance of seasonal H1N1 viruses and rare cases of resistance in 2009 H1N1 influenza viruses; *however sequencing or pyrosequencing will not detect oseltamivir resistance due to mutations other than H275Y nor zanamivir resistance.*

A few public health laboratories, in addition to CDC, have pyrosequencing or sequencing capabilities to detect the H275Y mutation for surveillance purposes, or additional antiviral testing capacity. Check with your local or state public health laboratory to determine their antiviral testing capabilities.

Testing Specimens for Patient Care: Due to the delay in receiving results, antiviral resistance testing will be of limited use for the care of most patients. However, certain patients may benefit from antiviral resistance testing, including patients with either a severe immunocompromising condition, or patients in an ICU, plus: no sign of clinical recovery despite a 5 day course of antiviral therapy, and documentation of persistent influenza A positive diagnostic tests. For most patients pyrosequencing will be adequate. However, comprehensive antiviral testing (neuraminidase inhibition assay, pyrosequencing, and sequencing) is suggested for patients with severe immunosuppression. Also, patients who developed influenza while on antiviral chemoprophylaxis may benefit from antiviral resistance testing.

*CDC will consider requests to test specimens from patients for antiviral resistance on a case-by-case basis. Requests for antiviral resistance testing should be directed to the state laboratory or to CDC Emergency Operations Laboratory desk at: [eoclaboratory@cdc.gov](mailto:eoclaboratory@cdc.gov). Failure to get appropriate forms for submission could delay testing.*

*Note: Antiviral resistance testing at CDC only occurs Mon-Fri and specimens can only be shipped to CDC on Mon-Thursday. The sender should notify the state laboratory and CDC before shipping.*

## Interim Algorithm for Requests for Antiviral Resistance Testing by CDC for Clinical Care

Ruling out development of resistance while on treatment:  
1. Is patient either in ICU or severely immunosuppressed?  
2. Does patient have confirmed 2009 H1N1 infection?  
3. Has patient received 5 day course of antiviral therapy?  
4. Are there no signs of clinical recovery?  
5. Is persistent influenza A documented (by PCR, DFA, RIDT, etc)?  
6. Will testing results (presence of H275Y mutation) alter clinical care?

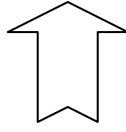


If **ANY** are **NO** and testing by CDC is still requested, Contact CDC EOC laboratory desk at [eoclaboratory@cdc.gov](mailto:eoclaboratory@cdc.gov) and the request will be considered on a one-by-one basis

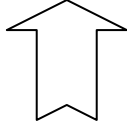


If **ALL** are YES

1. Was the person on oseltamivir for prophylaxis when he/she developed laboratory confirmed influenza (PCR, DFA, RIDT)?  
2. Is patient recommended for antiviral therapy? (hospitalized or at high risk for complications due to influenza)  
*If patient is in the hospital or is at high risk for complications due to influenza, consider treating with zanamivir.*  
(Antiviral Guidance: <http://www.cdc.gov/h1n1flu/recommendations.htm>)

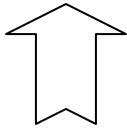


If **ALL** are YES



- 1) Contact CDC EOC laboratory desk at [eoclaboratory@cdc.gov](mailto:eoclaboratory@cdc.gov)
  - 2) CDC EOC laboratory desk will send BOTH submission forms to requestor:
    - 1) **Form 1**
    - 2) **Form 2**
  - 3) Requestor **must** email FedEx tracking number, plus electronic copies of both forms, at time of shipping to [eoclaboratory@cdc.gov](mailto:eoclaboratory@cdc.gov)  
*Either clinical facility or State public health laboratory can ship specimen. However, state public health lab must be informed of testing request by Requestor.*
- Note:** failure to contact CDC and get approval for clinical testing prior to shipping could result in delayed testing.  
*Testing only occurs Mon-Fri and specimens can only be shipped on Mon-Thursday. If this is not sufficient, requestor may contact a commercial lab.*

- 1) CDC is requesting viral isolates from all fatalities due to 2009 H1N1 for **surveillance**. No need to contact CDC EOC laboratory desk.
- 2) Please send ISOLATE and aliquot of clinical specimen to CDC via state public health laboratory using **standard WHO surveillance forms**.  
*Write "2009 H1N1 Death" on form. Include information that makes this case suspicious for drug resistance.*



Is testing requested for a fatality due to confirmed 2009 H1N1?