

Influenza A, Novel Strains

PROTOCOL CHECKLIST

- Immediately (within 1 hour) notify the Bureau of Epidemiology (BOE) following the initial receipt of a report of a possible case
- Initiate case investigation within 1 hour of receipt of the initial report
- Collect and submit specimen within 4 hours to Bureau of Public Health Laboratories (BPHL) for testing
- Enter available information into Merlin upon receipt of initial report (same day)
- Review information on the disease and its epidemiology (see [Section 2](#)), surveillance case definition (see [Section 3](#)), and laboratory testing (see [Section 4](#))
- Prioritize reported cases for follow up, and investigate and interview patients as appropriate (see [Section 5](#))
 - Contact provider, if necessary, to gather more information
 - Interview patient immediately
 - Review disease facts (see [Section 2](#))
 - Modes of transmission
 - Incubation period
 - Symptoms
 - Ask about exposure to relevant risk factors (see [Section 5](#))
 - Identify symptomatic contacts
 - Determine if an infected patient or symptomatic contact is in a sensitive situation (see [Section 7](#))
 - Recommend exclusions for those infected or symptomatic contacts (see [Section 5](#))
 - Provide education on controlling further spread for symptomatic patients (see [Section 6](#))
 - Address patient's questions or concerns
- Follow-up on special situations, including outbreaks or infected persons in relevant sensitive situations (see [Section 7](#))
- Complete EpiCom post, as necessary; at least one EpiCom post is recommended
- Enter additional data obtained from interview into Merlin (see [Section 5](#))

Novel Influenza A

1. DISEASE REPORTING

A. Purpose of reporting and surveillance

1. To identify and immediately investigate cases of novel influenza A
2. To limit sustained human-to-human transmission and possible epidemic or pandemic outcomes
3. To mitigate influenza transmission through early detection
4. To determine influenza outbreak risk factors and inform outbreak prevention measures
5. To mitigate influenza transmission through public health, medical, and behavioral interventions
6. To create evidence-based primary influenza prevention
7. To provide data used to monitor influenza vaccine effectiveness and composition

Robust epidemiologic and laboratory surveillance systems are required for a coordinated public health response to infections with a novel influenza virus subtype. Early detection of a novel influenza virus with pandemic potential will permit identification of viral characteristics (e.g., genetic sequence, antiviral susceptibility, and virulence) that will affect clinical management and public health response measures. It should also facilitate development of a virus-specific vaccine and testing strategies.

B. Legal reporting requirements

Laboratories and physicians are required to report persons infected with novel or pandemic influenza A to the county health department (CHD) immediately (24 hours a day, seven days a week) by phone upon initial clinical suspicion or laboratory test order. Reports should not be delayed for serotyping or final laboratory confirmation.

C. County health department investigation responsibilities (During a documented event, additional guidance will be provided by the BOE)

1. Rapidly initiate investigations to identify and contain illness before sustained human-to-human transmission occurs. Manage as highly pathogenic influenza, unless otherwise indicated. **See [Section 6](#) for recommendations on controlling further spread.**
2. Prioritize reported cases for follow-up (**see [Section 5](#) for more information**). Contact the BOE for assistance. Cases which fall into more than one priority group (see below) should be managed at the highest priority group. For situations where novel influenza A is suspected or known, prioritize follow up as follows:
 - a. Group 1: cases that (at the time of initial report) are suspected to be part of a cluster or outbreak.

- b. Group 2: cases reported while the patient is likely to still be symptomatic and/or infectious.
 - c. Group 3: cases with travel history to an area where previously identified novel influenza cases have been identified; cases with likely animal exposure (swine, avian).
 - d. Group 4: cases that are in a sensitive situation.
 - e. Group 5: cases with unusual or severe presentations, suspected antiviral resistance, or suspected infection post vaccine (if an appropriate vaccine is available).
 - f. Group 6: all other reported cases.
3. Follow-up with prioritized cases and administer appropriate measures to control further spread. **See [Section 6](#) for recommendations on controlling further spread.**
 4. Notify the BOE of the case investigation (within 1 hour of receipt of the initial case report). The BOE will notify one of the public health veterinarians immediately if novel influenza is suspected.
 5. Facilitate specimen collection and submission to the BPHL. Specimen collection and submission should occur within 4 hours of initial suspicion of any highly suspect cases. (This is paramount for any suspect novel influenza infections.)
 - a. Submit any newly collected or stored specimens (if any are identified during the investigation) to the BPHL for testing.
 - b. Confirm with the BPHL appropriate packaging and shipping standards.
 6. Enter all cases in Merlin. Additional event-specific guidance will be provided. All cases of influenza A in which the virus is different from the currently circulating human influenza H1 and H3 viruses that meet clinical criteria but pending laboratory confirmation are classified as a suspect cases until the confirmation process is complete.
 7. Complete at least one EpiCom post per confirmed event.
 8. Review reported cases of infection by street address, reporting source, race, ethnicity, age group, onset or report date, travel history, etc. to detect possible clusters of infected individuals.

[Top](#)

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic agent

There are two main types of influenza, influenza A and influenza B. Although less commonly circulating, influenza C can also cause mild illness in people and animals. Influenza A viruses are divided into subtypes based on the hemagglutinin (H) and neuraminidase (N) proteins on their surfaces. There may be multiple virus strains within a subtype that vary greatly in pathogenicity and alignment to seasonal influenza vaccines.

Small genetic changes in a virus strain result in virus “antigenic drift”, requiring parallel changes in the seasonal influenza vaccine. This type of change can occur in all types of influenza viruses. Less frequently, two or more different influenza virus strains can recombine to form a new influenza virus strain. This is called virus “antigenic shift” and only occurs in influenza A viruses. If the new virus becomes easily transmissible between

humans, many people may be susceptible to infection from the new virus as it is genetically distinct from circulating strains. Pathogenicity of the new virus can vary.

Antigenic shift often involves recombination with one or more influenza viruses circulating in animals. Therefore, history of recent animal contact is important to obtain, particularly contact with swine and birds, although influenza is also known to circulate in other animals including horses, dogs, marine mammals and bats. People with seasonal influenza can infect animals as well, and should avoid contact with animals (and other people) while ill.

Novel influenza virus transmission to humans (outside the reservoir species) requires closer contact than transmission within the reservoir species. Novel influenzas are not typically transmissible between humans. Novel influenza may be more likely to involve the lower respiratory tract.

Since 1977, three influenza virus subtypes have been in circulation: influenza A (H3N2), influenza A (2009 H1N1), and influenza B. Occasionally, humans become infected with zoonotic influenza viruses. Human infections due to zoonotic influenza viruses are considered novel virus infections. Surveillance information on zoonotic influenza is available at <http://www.cdc.gov/flu/index.htm>.

In April 2009, a novel H1N1 virus was identified from several U.S. states and Mexico and caused the first influenza pandemic of the twenty-first century. This virus is no longer considered “novel” and circulates as a seasonal strain. Novel influenza infections are concerning and must be investigated immediately to limit the potential for human-to-human transmission and possible epidemic or pandemic outcomes.

B. Description of illness

Patients with uncomplicated influenza (novel, pandemic, or seasonal) may have symptoms that include fever, chills, cough, headache, sore throat and other upper respiratory tract symptoms (rhinorrhea), myalgias, arthralgias, fatigue, vomiting, and diarrhea. Symptoms can be minimal although severe lower respiratory tract infection may be more likely to occur in human infections of some zoonotic influenza strains. Novel influenza A (H7) strains have been frequently associated with conjunctivitis. Because symptoms of novel and seasonal flu can be similar, it is important to collect a history of recent animal contact and travel.

Complications from influenza can include primary viral pneumonia, secondary bacterial pneumonia, ear infections, sinus infections, dehydration, worsening of chronic medical conditions (such as congestive heart failure, asthma, or diabetes), and death.

Generally, those at higher risk for influenza-related complications include: children aged <5 years, and adults aged ≥65 years, pregnant women, and persons with chronic medical conditions such as asthma, chronic obstructive pulmonary disease (COPD), morbid obesity, immunosuppressive therapy or disease, diabetes, hemoglobinopathy, and neuromuscular disease. American Indians and Alaska Natives may also be at higher risk for influenza complications (http://www.cdc.gov/flu/about/disease/high_risk.htm).

These high-risk groups may not necessarily be the same for novel influenza infections as immunity from previous exposure to similar viruses may be present. For example, during the 2009 H1N1 pandemic, older adults (in general) were found to have some degree of immunity based on previous exposure to another influenza virus resulting in a similar

immunologic response. During the 2009 H1N1 pandemic young adults were more heavily impacted than the traditional older adult high risk group.

C. Reservoirs

Reservoirs for influenza A viruses include humans, swine, and waterfowl, as well as other birds and mammals (horses, dogs, marine mammals and bats). Humans are the primary reservoir for influenza B and C.

D. Modes of transmission

Modes of transmission for currently identified novel strains of influenza A are similar to seasonal influenza.

Seasonal influenza viruses are primarily spread person-to-person through large-particle respiratory **droplet transmission**. Transmission via large-particle droplets requires close proximity between source and recipient because droplets do not remain suspended in the air and generally travel only a short distance (<6 feet). Other possible routes of influenza transmission are mucosal contamination from hands first touching contaminated surfaces and airborne transmission. The relative contribution of each type of transmission has not been fully defined but airborne transmission is thought to be small.

Novel influenza is transmitted from animals to humans directly or through environmental contamination. Only rare cases of person-to-person transmission of novel influenza have been reported and have involved close contact. However, because novel influenza viruses can undergo genetic changes to become more easily transmissible between people, **it is important to rapidly identify and contain any novel influenza introductions into humans**. Humans can also transmit seasonal influenza to animals (i.e., cats [domestic and exotic], ferrets, dogs, swine, and birds).

E. Incubation period

Incubation periods for currently identified novel influenza A viruses fall within the same range as those for seasonal influenza viruses.

The incubation period for seasonal influenza is typically 1–4 days, but may range from 1–10 days for novel influenza.

F. Period of communicability

Information presented here is based on known influenza viruses; a particular novel strain may have different characteristics. For currently identified novel influenza viruses, the period of communicability is similar to those for seasonal influenza viruses. The period of communicability is associated with viral shedding. Viral shedding generally occurs from **1 day prior up to 5–10 days following** illness onset. Communicability decreases rapidly 24 hours after fever resolves (without fever reducing medication.) Possible communicability prior to illness onset and early in illness makes control challenging. This is due to the fact that people may be infectious to others before they feel sick and are likely to continue to move about in the population spreading the virus without recognizing their role in infecting others. Persons who continue to be febrile longer than seven days after illness onset should be considered potentially contagious until symptoms have resolved.

Influenza virus shedding in immunocompromised persons varies and may be substantially longer than in immunocompetent persons. Children, especially younger children, can shed influenza virus for 10 or more days. **Specific guidance for isolation of infected individuals will be distributed in the event of confirmed novel influenza A infection.**

G. Treatment

Regardless of whether novel, pandemic, or seasonal influenza, antiviral medication should be initiated as early as possible (preferably within 24–48 hours of symptom onset) for patients with suspected or confirmed influenza who: 1) have severe or progressive illness or 2) are at higher risk of complications. Antiviral treatment is most effective when started within 48 hours of illness onset. If influenza infection is suspected, antiviral treatment should not be delayed while laboratory results are pending or delayed solely on a -negative rapid antigen test result for influenza.

Centers for Disease Control and Prevention (CDC) provide recommendations for antiviral medications at: <http://www.cdc.gov/flu/professionals/antivirals/index.htm>. In addition, CDC's Flu View provides weekly data on antiviral resistance patterns for circulating strains, which are available at: <http://www.cdc.gov/flu/weekly/>.

Additional therapy such as antibiotics should be used at the discretion of the health care provider (HCP) based on the clinical presentation. Secondary bacterial pneumonia infections can be caused by *Staphylococcus aureus* (both methicillin-sensitive and methicillin-resistant) and *Streptococcus pneumoniae*.

H. Prophylaxis

Vaccines are not routinely available for novel influenza A strains. Seasonal influenza vaccination may provide limited to no protection. However, seasonal vaccination may help prevent influenza virus shift and development of a new pandemic influenza strain. See recommendations for seasonal influenza vaccination at:

<http://www.cdc.gov/flu/protect/vaccine/index.htm>. In the event of an influenza pandemic, vaccine may be developed and released. Additional guidance will be available from the BOE. See [Section 5](#) for further discussion of chemoprophylaxis among contacts.

I. Novel influenza A in Florida

On April 29, 2009 the first Florida case of swine-origin influenza A (2009 H1N1) infection was identified. By May 1, 2009, only a few weeks after identification in the U.S., Florida shifted from an individual case-based containment strategy to a community mitigation strategy. During the subsequent year, influenza A (2009 H1N1) infection was widespread, and on August 3, Florida revised reporting requirements to restrict mandatory case reporting to deaths and hospitalizations with life-threatening influenza A (2009 H1N1) illness. In total, 1,314 hospitalizations and 224 deaths were reported in Florida, but it is likely the actual numbers of hospitalizations and deaths were higher. By May 2010, influenza A (2009 H1N1) was no longer considered novel and was classified as a seasonal strain of influenza.

[Top](#)

3. CASE DEFINITION

A. Clinical description

An illness compatible with influenza virus infection (fever >100 degrees Fahrenheit, with cough and/or sore throat). See also description of illness [Section 2](#).

B. Laboratory criteria for diagnosis

A **human case** of infection with an influenza A virus subtype that is different from currently circulating human influenza H1 and H3 viruses. Novel subtypes include, but are not limited to H2, H5, H7, and H9 subtypes. Influenza H1 and H3 subtypes originating from a non-human species or from genetic reassortment between animal and human viruses are also novel subtypes. Novel subtypes will be detected with methods available for detection of currently circulating human influenza viruses at state public health laboratories (e.g., real-time reverse transcriptase polymerase chain reaction [RT-PCR]). Non-human influenza viruses include avian subtypes (e.g., H5, H7, or H9 viruses), swine, and other mammalian subtypes. Confirmation that an influenza A virus represents a novel virus will be performed by the CDC's influenza laboratory. Once the CDC has identified a novel virus, confirmation may be made by public health laboratories following the CDC-approved protocols for that specific virus, or by laboratories using an authorized Food and Drug Administration test specific for the detection of that novel influenza virus.

C. Epidemiologic linkage

Criteria for epidemiologic linkage:

- The patient has had contact with one or more persons who either have or had the disease, AND
- Transmission of the agent by the usual modes of transmission is plausible.

A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory confirmed. Laboratory testing for the purposes of case classification should use methods mutually agreed upon by the CDC and the Council of State and Territorial Epidemiologists (CSTE). Currently, only viral isolation, RT-PCR, gene sequencing, or a four-fold rise in strain-specific serum antibody titers are considered confirmatory.

D. Case classification

Confirmed: A case of human infection with a novel influenza A virus confirmed by the CDC's influenza laboratory or using methods agreed upon by the CDC and the Council of State and Territorial Epidemiologists (CSTE) as noted in Laboratory Criteria, above.

Probable: A case meeting the clinical criteria and epidemiologically linked to a confirmed case, but for which no confirmatory laboratory testing for influenza virus infection has been performed or test results are inconclusive for a novel influenza A virus infection.

Suspect: A case meeting the clinical criteria, pending laboratory confirmation. Any case of human infection with an influenza A virus that is different from currently circulating human

influenza H1 and H3 viruses is classified as a suspected case until the confirmation process is complete.

E. Comment

This is a generic case definition for novel influenza infection. During an outbreak or pandemic situation such as for 2009 Novel Influenza A H1N1, event-specific outbreak case definitions and reporting criteria will be developed. Please contact the BOE for the latest case definition during an outbreak or pandemic event.

For additional information about influenza or influenza surveillance, refer to the BOE Influenza website <http://www.floridahealth.gov/diseases-and-conditions/influenza/index.html> or the CDC Influenza web site: <http://www.cdc.gov/flu/>.

On December 13, 2006, the U.S. formally accepted the revision of the International Health Regulations, referred to as IHR (2005) see http://www.who.int/ihr/Intro_legislative_implementation.pdf and <http://www.cdc.gov/globalhealth/ihregulations.htm>. The IHR (2005) are an international legal instrument that governs the roles of the World Health Organization (WHO) and its member countries in identifying and responding to and sharing information about public health emergencies of international concern (http://www.who.int/csr/ihr/IHRWHA58_3-en.pdf). The updated rules are designed to prevent and protect against the international spread of diseases, while minimizing interference with world travel and trade. The revised regulations add human infections with new influenza strains to the list of conditions that Member States must immediately report to the WHO. An outbreak of infections with a new influenza A virus that demonstrates human-to-human transmission could signal the beginning of the next pandemic.

Specimens from all suspected cases must be sent to the BPHL for confirmation. Approval to perform testing must be obtained through the BOE, available 24/7 via phone 850-245-4401.

[Top](#)

4. LABORATORY TESTING

Any influenza A virus that is found to be unsubtypable by the BPHL is potentially a novel virus and should be submitted for subtyping at the CDC. The BPHL will coordinate submission to the CDC for any influenza A viruses that cannot be subtyped.

A. Criteria for diagnosis

Diagnostic laboratory tests for influenza include viral culture, serology, rapid antigen testing, polymerase chain reaction (PCR), and immunofluorescence assays. Novel influenza infections must be tested and confirmed by the CDC. Reliability of rapid tests are unknown depending on the type of novel influenza virus.

Information regarding laboratory diagnosis of influenza is available at: <http://www.cdc.gov/flu/professionals/diagnosis/>.

B. Services available at the BPHL

The BPHL has the capacity to test respiratory specimens for influenza viruses with sensitive and specific assays that can detect human and non-human influenza A viruses, and perform antiviral resistance testing. Any influenza A virus that is found to be unsubtypable by the BPHL is potentially a novel virus and should be submitted for subtyping to CDC.

The BPHL also has the capacity to subtype currently circulating human influenza A H1, H3, and avian H5 (Asian lineage) viruses. The detection or confirmation by a state public health laboratory of an influenza A virus that is unsubtypable with standard methods (e.g., real-time RT-PCR assays for human influenza A(H3) or (H1) viruses), or a non-human influenza virus (e.g., H5) from a human specimen, could be the initial identification of a virus with pandemic potential. Prompt notification of the CDC by a state epidemiologist in conjunction with the public health laboratory will permit rapid confirmation of results and reporting to the WHO. In addition, it will aid prompt viral characterization, and the development of virus-specific diagnostic tests.

Specimens or isolates should be collected and forwarded to the BPHL for confirmation typing and strain identification. Specimens may also be forwarded on to the CDC through the BPHL for further testing (such as for further strain characterization). Specimen collection and submission will likely require CHD staff to coordinate with hospital staff (infection preventionists) and/or medical examiners.

C. Testing requests

1. Submitting specimens to the BPHL
 - a. Contact the BOE and BPHL prior to submitting specimens for novel influenza testing. Specimens associated with **suspect novel influenza A** infections should be submitted for testing immediately, including weekends. However, all weekend testing requests need to be coordinated with the BOE and BPHL prior to submitting specimens. (Laboratory staff must be called in to complete any weekend testing).
 - b. All submissions should be accompanied by Clinical Lab Submission Form 1847 (http://dohiws/divisions/laboratories/Forms/interactive_forms.htm).
 - c. CHDs may also perform electronic laboratory ordering (ELO) by entering request into the HMS laboratory ordering system component, placing bar coded label on the vial, and writing the date collected on the vial. A print out of the ELO requisition should accompany the specimen.
 - d. Regardless of order format (paper requisition or ELO) a note or comment should be included on the forms indicating if it is a mortality, vaccination status, travel history, animal contact, part of an outbreak and any relevant clinical information.
2. Specimen collection

A negative rapid antigen test for influenza should not exclude a diagnosis for influenza or collection of specimens.

 - a. **CHD staff may need to drive to collect, pick up, and deliver specimens to ensure rapid specimen collection and testing.**
 - b. Specimens should be collected and submitted within **4 hours** of initial notification of a suspected case. In addition to collecting new specimens, attempts should be made to identify any stored specimens for the patient.
 - c. Appropriate personal protective equipment (PPE) should be used during specimen collection. (<http://www.cdc.gov/HAI/prevent/ppe.html>)

- d. If possible, collect the following specimens:
 - i. nasopharyngeal swab
 - ii. nasal aspirate or wash
 - iii. combined nasopharyngeal swab with oropharyngeal swab
 - iv. a nasal swab or oropharyngeal swabSwab specimens should be collected using swabs with a synthetic tip (e.g., polyester or Dacron®) and an aluminum or plastic shaft. Swabs with cotton tips and wooden shafts are not recommended. Specimens collected with swabs made of calcium alginate are not acceptable.
 - e. For patients with lower respiratory tract illness, a lower respiratory tract specimen (e.g., an endotracheal aspirate or bronchoalveolar lavage fluid [BAL]) is preferred because these specimens have a higher yield for detecting some avian influenza viruses.
 - f. If possible, in order to increase the potential for detection of some novel influenza viruses, multiple respiratory specimens from different sites should be obtained from the same patient on at least 2 consecutive days.
 - g. Specimens should be placed into 1–3 ml of sterile viral transport media (VTM) and immediately placed into a cooler with ice or cold packs or at 4°C (refrigerator) for transport to the laboratory. **Do not freeze.**
 - h. All respiratory specimens should be kept at 4°C for no longer than 4 days.
3. Packaging and shipping
 - a. Notify the BPHL prior to shipping specimens. If Saturday delivery is required, this must be marked on the package and staff notified to ensure they come into the laboratory on the weekend.
 - b. Specimens submitted for novel influenza testing should be sent to the BPHL- Jacksonville or Tampa.
 - c. Place the tube of VTM containing the swab in a Ziploc bag with a paper towel to absorb leaks. Please place the Clinical Lab Submission Form 1847 in a plastic Ziploc bag between the inner and outer container. Package according to International Air Transport Association (IATA) regulations, labeling the outer shipping container: *UN3373, Biological Substance Category B.*
 - d. Specimens should be sent in a small cooler with frozen blue ice or gel cold pack with sufficient stuffing to prevent leaking during transport.
 4. Contact the laboratory with questions prior to shipment of specimens:
<http://dohiws/divisions/laboratories/Locations/Locations.htm>.

[Top](#)

5. CASE INVESTIGATION

All people with a positive novel influenza A result, regardless of laboratory method, should be immediately investigated and managed as follows. A negative rapid antigen test for influenza should not exclude a diagnosis for influenza.

A. Evaluate the diagnosis

Use the full case report form to identify risk factors including animal contact, travel in the 10 days prior to onset and contact with sick people as well as illness severity.

Facilitate the collection and transport of specimens to the BPHL for novel influenza testing.

B. Case management

1. Hospitalized persons with confirmed or suspected influenza (novel or seasonal) should be placed on droplet precautions for seven days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer, while a patient is in a health care facility*. In some situations, facilities may choose to apply droplet precautions for longer periods based on clinical judgment, such as in the case of young children or severely immunocompromised patients who may shed influenza virus for longer periods of time (see: <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>).

More stringent infection control practices are recommended for patients suspected of having a novel influenza virus. Such patients should be placed in an airborne isolation room with 6–12 air changes per hour*. Health care personnel should use contact precautions, wear a fit-tested respirator (N-95 or higher) when entering the room, and don eye protection when within three feet of the patient. Within a health care setting, these infection control measures should be continued for 14 days after onset of symptoms or until either an alternative diagnosis is established or the diagnostic test results indicate that the patient is not infected with a novel influenza virus (see <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>).

**Additional situation-specific guidance will likely be developed during a pandemic response event.*

2. A patient with novel or pandemic influenza A infection should be treated with a higher level of infection control measures than standard influenza infection procedures. For patients with confirmed or probable novel influenza A infection, or a case under investigation, infection control measures include a higher level of personal protective equipment for health care personnel, including eye protection (i.e., required) and the expanded use of respirators (i.e., for all patient-care activities). Current guidance for infection control for avian influenza A(H7N9) can be found at <http://www.cdc.gov/flu/avianflu/h7n9-infection-control.htm>.

During an influenza pandemic, guidance for infection control and patient isolation are likely to change as more patients become ill. The most recent information is available at <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>.

3. Persons with novel influenza who are well enough to be cared for at home should be advised to self-isolate until 24 hours after fever resolves (without the use of fever-reducing medications) and until cleared by the CHD Director or Administrator. If it is necessary to leave home to obtain health care, call ahead to HCP and wear a facemask, if available and tolerated. While ill, follow strict infection control measures such as covering coughs and frequently cleaning hands. Hand washing is preferred although hand sanitizer is effective against influenza viruses. Persons taking antiviral medications should adhere to the same infection control practices. Those providing care to persons sick with influenza should protect themselves and others in the household from being exposed by taking steps to prevent transmission (see <http://www.cdc.gov/flu/homecare/index.htm>).
4. For asymptomatic HCPs who have had an **unprotected exposure** (i.e., not wearing respiratory protection at the time of contact) to a patient who meets the case definition

for confirmed, probable or suspect case under investigation, in consultation with the BOE, consider excluding from work for 10 days to monitor for signs and symptoms of influenza-like illness. Current guidance for infection control for novel influenza can be found at <http://www.cdc.gov/flu/avianflu/h7n9-infection-control.htm>.

Symptomatic HCPs should seek immediate medical evaluation and notify their supervisor of their illness. Health care workers with suspected novel influenza should be excluded from work until at least 24 hours after they no longer have a fever (without use of fever-reducing medicines) and until cleared by the CHD Director or Administrator. (See <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>).

5. Antiviral treatment is recommended for persons with severe or progressive influenza (novel, pandemic, or seasonal) illness and for ill persons at increased risk of severe disease (see [Section 2](#)). Antiviral treatment is most effective when started within 48 hours of illness onset. If influenza infection is suspected, antiviral treatment should not be delayed while laboratory results are pending or delayed solely on a negative rapid antigen test result for influenza.

C. Investigate and interview immediately (within 1 hour of reporting)

1. The purposes of investigation, interview, and/or counseling are to:
 - a. Rapidly identify cases (the likely source of their exposure), ensure they are appropriately isolated and identify contacts to limit further spread and development of sustained human-to-human transmission.
 - b. Determine whether the person with the reported infection may have put or be putting others in a sensitive situation at risk.
 - c. Determine whether the person with the reported infection may be part of an outbreak.
 - d. Convey a highly focused intervention message to a symptomatic person (or their parent or guardian) about how to avoid infecting others.
2. Contact the patient to complete an interview after being reported.
 - a. If contact information for the patient is not received in the initial case report, immediately contact the reporting physician, hospital or laboratory to obtain contact information.
 - b. Make at least three phone call attempts to reach the case; utilizing appropriate infection control protocols, conduct hospital or site visit. Because of possible zoonotic influenza transmission, consult with the state public health veterinarian prior to conducting site visits.
3. Complete the Human Infection with Novel Influenza A Virus Case Report Form available at (may be modified during an event): http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/crf-influenza-a-novel.pdf. This form can be used to guide the interview.
4. Attach the paper case report form to the case in Merlin.
5. Items to cover during interview include:

- a. Provide brief background on disease, including possible modes of transmission, incubation period, symptoms, practices to prevent further transmission, etc.
- b. Activities during exposure period (up to 10 days before onset):
 - i. Travel outside Florida or the United States; especially locations considered high risk (areas where recent novel influenza infection may have been identified). Determine dates of travel.
 - ii. Close contact with a person who meets the suspected, probable or confirmed novel human influenza A case definition.
 - iii. Contact with animals (including poultry, wild birds, or swine), their remains, bodily fluids or their environment particularly in an area where zoonotic influenza is circulating.
 - iv. Consumption of raw or undercooked animal products (including poultry, wild birds, or swine products) particularly in an area where zoonotic influenza is circulating.
 - v. Handling samples (animal or human) suspected of containing influenza virus in a laboratory or other setting.
 - vi. Employment in a health care facility or setting.
 - vii. A visit or stay in the same household with anyone with pneumonia or severe influenza-like illness. Collect name and contact information.
 - viii. A visit or stay in the same household with anyone who died due to pneumonia or influenza-like illness during or following the visit. Collect the name and contact information for next of kin.
 - ix. Direct contact with animals at an agricultural event, farm, petting zoo or place where animals live or were exhibited (state or county fair).
- c. Determine if others (i.e., family, friends, coworkers, customers, patients,) are known or thought to be ill with similar symptoms. If so, inquire about possible common source exposures. Obtain the name, phone number or address and clinical information of the other ill people. Anyone meeting the probable case definition should be reported and investigated in the same manner as someone meeting the confirmed case definition.
- d. Determine if the patient or any of their symptomatic household or other close contacts are associated with **sensitive situations** (i.e., an attendee or employee of a day care or childcare setting, or an employee in a health care setting with direct patient contact). Determine the dates and times he/she worked to determine the risk of transmission to others (see period of communicability, [Section 2F](#)). **See [Section 7](#) for recommended exclusions for symptomatic persons or contacts in sensitive situations.**
- e. Provide basic instruction to patients and potentially exposed contacts about proper infection control measures. **See [Section 6](#) for recommendations on controlling further spread.**

D. Identify potential sources of infection

Inquire about recent travel or exposure to ill persons who have recently traveled and about exposure to animals such as wild birds, poultry and swine in the 10 days prior to onset.

E. Identify contacts

A prompt investigation (same day) should be performed, including exposure identification and contact tracing. Identify all contacts with exposure to the suspected case from 1 day prior to 10 days after symptom onset.

F. Manage contacts

All novel influenza case contacts should be rapidly identified and monitored.

1. Symptomatic contacts

Novel influenza contacts who become symptomatic should contact their HCP immediately to discuss the need for treatment (see [Section 2](#)). HCP should be called in advance to ensure proper infection control is implemented at the time the patient is initially seen for care and the patient should wear a mask when presenting for care (doctor's office, hospital, urgent care, etc.) to limit the possibility of infecting others. All novel influenza contacts with influenza-like illness should self-isolate by avoiding work, school, child care, and other public settings until 24 hours after fever has resolved (without use of fever reducing medications).

Novel influenza contacts should immediately notify local public health officials if they become symptomatic,

2. Asymptomatic contacts

Asymptomatic **novel influenza contacts** at high-risk for influenza complications should contact their HCP immediately to discuss the need for chemoprophylaxis. In some situations, **novel influenza contacts** may be prescribed chemoprophylaxis at the time they are identified as a contact.

Inform asymptomatic **novel influenza contacts** to monitor their symptoms daily for 10 days following their last exposure to the suspected source case and contact the CHD immediately if they develop any symptoms of influenza-like illness. The CHD will contact **novel influenza contacts** daily to assess their health status and the CHD should be contacted immediately if any symptoms of influenza-like illness develop.

G. Environmental evaluation

Standard cleaning and disinfection should be done for any potentially contaminated surfaces where persons with influenza may have been present. In addition, surfaces touched often, such as doorknobs, refrigerator door handles, telephones, keyboards, and bathroom handles, should be cleaned and disinfected frequently in public areas during influenza season and in a household with a potentially communicable influenza case.

For additional information regarding environmental cleaning and disinfecting, see: <http://www.cdc.gov/flu/school/cleaning.htm>.

H. Merlin data entry

Create a case in Merlin under disease code **INFLUENZA A, NOVEL OR PANDEMIC STRAINS—48790**. Enter the data collected into Merlin, being sure to include all required fields on the basic data screen, complete the case symptoms screen, and attach all relevant labs. Please attach **ALL** laboratory results (positive and negative) received to the case and include specimen information as available. Attach paper CRF under the case documents section.

[Top](#)

6. ROUTINE PREVENTION AND CONTROLLING FURTHER SPREAD

A. Vaccine recommendations:

There are no commercially available vaccinations for **novel** influenza A. In the event of an influenza pandemic, vaccines may be developed and released; this guidance will be available at <http://www.floridahealth.gov/diseases-and-conditions/influenza/index.html>.

Routine annual influenza vaccination is recommended for all persons six months and older. Seasonal influenza vaccination may prevent influenza virus recombination events that can increase the risk of pandemic influenza. Annual seasonal influenza vaccination may offer some protection against other circulating influenza viruses and is particularly important for persons at increased risk of complications and for persons in contact with those at high risk for complications including (<http://www.cdc.gov/flu/protect/vaccine/index.htm>):

1. Children aged <5 years, but particularly those aged <2 years
2. Pregnant women
3. People aged ≥50 years
4. People of any age with certain chronic health conditions such as asthma and other pulmonary disease, diabetes, hepatic disease, hematologic abnormalities, neurologic or neuromuscular abnormality, immunosuppressive disease or therapy, cancer in the past year, or cardiovascular disease
5. Persons who live in institutional settings
6. Children receiving long-term aspirin therapy
7. American Indians/Alaska Natives
8. People who are morbidly obese
9. Household contacts of a person at high risk for complications from influenza
10. Household contacts and out-of-home caregivers of children aged <5 years and adults >50 years, but particularly contacts of children aged <6 months
11. Health care workers

B. Routine prevention:

General respiratory hygiene measures are recommended at all times, and particularly during periods when respiratory viruses are circulating.

1. **Stay home if you are sick.** Avoid contact with other people and animals. This is the single most important message. This is particularly important with influenza as people are most infectious early during the course of infection.
2. Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it and then clean your hands.
3. Wash your hands with soap and water frequently, especially after you cough or sneeze. Alcohol-based hand cleaners are also effective.
4. Try to avoid close contact with people ill with respiratory symptoms and sick animals.
5. Avoid touching your eyes, nose or mouth.
6. Wear a mask when entering a health care facility if you are coughing or sneezing to prevent infecting others.

C. Isolation of cases

People with novel influenza should stay home from day care, school, or work until they are fever-free for at least 24 hours (without the use of fever-reducing medication) and until cleared by the CHD Director or Administrator. **See [Section 7](#) for recommended exclusions for symptomatic patients in sensitive situations.**

D. Management of contacts

1. Symptomatic contacts

Symptomatic contacts should be investigated and managed in the same manner as a confirmed case. Symptomatic contacts of people, who meet the confirmed or the probable case definition should be reported in Merlin. **See [Section 7](#) for recommended exclusions for symptomatic contacts in sensitive situations.**

2. Asymptomatic contacts

Contacts that are currently symptom-free and have been symptom-free for 10 days may be permitted to continue in their sensitive situation at the discretion of the CHD Director or Administrator.

[Top](#)

7. MANAGING SENSITIVE SITUATIONS

A. Determining a sensitive situation

Sensitive situation is not defined in Chapter 64D-3 in relation to any particular disease. We should not assume that all sensitive situations are equal for all diseases, especially given the markedly different age distributions.

Section 64-D3-3.037(3) specifically gives CHD directors the authority to decide what is a sensitive situation, and provides broad authority to take necessary action to control disease.

For example, a CHD director may use his/her discretion to designate an elementary school, or the lower grades of an elementary school, as a sensitive situation, but he/she is not required to do so. This decision should be based on evidence of transmission within a particular setting.

B. CDC Guidance

CDC guidance is available for managing seasonal influenza in special situations in addition to those listed below. Additional guidance during an event will likely be developed (see <http://www.cdc.gov/flu/professionals/infectioncontrol/index.htm>).

1. Schools and child care settings

CDC guidance is available for preventing the spread of influenza in schools and childcare settings: <http://www.cdc.gov/flu/school/index.htm>.

2. Health care facilities

CDC guidance is available for managing influenza cases in health care settings: <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>.

3. Homeless and emergency shelters

CDC guidance is available for managing 2009 H1N1 cases in emergency shelters:
<http://www.cdc.gov/h1n1flu/guidance/emergencyselters.htm>.

[Top](#)

8. IMPORTANT LINKS

- A. Florida Department of Health Pandemic Influenza Response Plan and Zoonotic Influenza Response Standard Operating Guidelines:
http://www.dms.myflorida.com/content/download/81328/468169/file/Pandemic%20Emergency%20Response%20Manual%20Rev%2006_04_13.docx
- B. Novel Influenza A Case Report Form: http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/crf-influenza-a-novel.pdf
- C. APHA Media Advocacy Manual:
http://www.apha.org/NR/rdonlyres/A5A9C4ED-1C0C-4D0C-A56C-C33DEC7F5A49/0/Media_Advocacy_Manual.pdf

[Top](#)

9. REFERENCES

- A. Heymann, D.L. (Ed.). (2008). *Control of Communicable Diseases manual* (19th ed.). Washington: American Public Health Association.
- B. American Academy of Pediatrics. (2009). *Red Book: 2009 Report of the Committee on Infectious Diseases* (28th ed.). Grove Village, IL: American Academy of Pediatrics.
- C. Aronson, S.S. and Shope, T.R. (Eds.). (2009). *Managing Infectious Diseases in Child Care and Schools: A Quick Reference Guide* (2nd ed.). Grove Village, IL: American Academy of Pediatrics.

[Top](#)