Surveillance Criteria and Testing Guidance for Variant Influenza A in Humans

Protocol for Healthcare Providers and Local Health Departments

July 2023

Key steps in case screening for Variant influenza

1. **Identify if the person meets CRITERIA**
2. **Ensure appropriate REPORTING**
3. **Refer to INFECTION CONTROL recommendations**
4. **Follow SPECIMEN COLLECTION AND TRANSPORT guidelines**

EPIDEMIOLOGIC CRITERIA

A patient with an illness compatible with influenza[1] **AND** at least one potential exposure listed below:

- Recent close contact[2] (within 7 days of illness onset) with confirmed cases of influenza A (H3N2)v virus infection **OR**
- Recent contact (within 7 days of illness onset) with swine or recent attendance at an event (such as an agricultural fair) where swine were present. Contact with swine may be direct contact (i.e., touching or handling a pig) or indirect contact (coming within about 6 feet (2 meters) of a pig without known direct contact).

CASE DEFINITIONS

Confirmed: Influenza A (H3N2)v virus infection in a patient with laboratory confirmation by:

- Reverse-transcription polymerase chain reaction (RT-PCR) testing or genetic sequencing results positive for influenza A (H3N2)v virus at the CDC Influenza Division Laboratory **OR**
- RT-PCR testing results at a public health laboratory consistent with influenza A (H3N2)v virus using a CDC-approved assay (for example, InfA, H3, and pdmInfA positive results, and H1 and pdmH1 negative results using the CDC Flu rRT-PCR Dx Panel)[3]. Please see Interim Guidance on Specimen Collection, Processing, and Testing for Patients with Suspect Influenza A (H3N2)v Virus Infection for additional guidance on testing for H3N2v viruses https://www.cdc.gov/flu/swineflu/variant/h3n2v-testing.htm.

Case Under Investigation: Illness compatible with influenza[2] in a patient meeting at least one of the epidemiologic criteria for whom laboratory confirmation is not known or pending, or for whom test results do not provide a sufficient level of detail to confirm influenza A (H3N2)v virus (e.g., a positive rapid influenza diagnostic test).

[1] Illness compatible with influenza may present as influenza-like illness (ILI) [fever ≥100°F plus cough or sore throat]. Note that influenza may not cause fever in all patients (especially in patients under 5 years of age, over 65 years of age, or patients with immune-suppression), and the absence of fever should not supersede clinical judgment when evaluating a patient for illness compatible with influenza.

[2] Close contact may be regarded as coming within about 6 feet (2 meters) of a confirmed case while the case was ill (beginning 1 day prior to symptom onset and continuing until resolution of illness). This includes healthcare personnel providing care for a confirmed case, family members of a confirmed case, persons who lived with or stayed overnight with a confirmed case, and others who have had similar close physical contact.

[3] This laboratory result is reportable as "presumptive positive" for influenza A (H3N2v) as specified in the CDC Flu rRT-PCR Dx Panel in vitro diagnostic (IVD) package insert. Although State public health laboratories are able to report and act upon this result, all specimens with "presumptive positive" results should be sent to CDC for additional testing. Please see Data Interpretation Update to the CDC Flu rRT-PCR Dx Panel for additional guidance

REPORTING AND NOVEL INFLUENZA SCREENING FORM

Healthcare Providers

Cases meeting the above surveillance criteria should be reported **IMMEDIATELY** to the local health department (LHD) where the patient resides. If patient residence is unknown, report to your own local health department. Contact information for local health departments is available at: www.localhealth.nj.gov**.** If LHD personnel are unavailable, healthcare providers should report the suspected case to the New Jersey Department of Health (NJDOH), Communicable Disease Service (CDS) at 609-826-5964, Monday through Friday 8:00 AM - 5:00 PM. On weekends, evenings, and holidays, CDS can be reached at 609-392-2020.

Local Health Departments

When a local health department receives a report of a suspect case, information should be communicated **IMMEDIATELY** to CDS at 609-826-5964, Monday through Friday 8:00 AM - 5:00 PM. On weekends, evenings, and holidays, CDS can be reached at 609-392-2020.

The healthcare provider or local health department should complete the Novel Influenza Case Report Form attached at the end of this document. Completed forms should be sent to CDS via fax (609-292-5972) or email (cdsfluteam@doh.nj.gov). This form will be reviewed by CDS who will make the final determination if the case meets criteria and if a specimen is required for testing.

INFECTION CONTROL

Limited, non-sustained human-to-human transmission of some variant influenza viruses has been reported. While limited data are available, the risk of human-to-human transmission is thought to be low. However, it is assumed that variant influenza viruses may be transmitted from person-to-person. Therefore, in health care settings, infection control recommendations are the same as for seasonal influenza, including standard and droplet (i.e., health care provider wears a facemask) precautions. For aerosol-generating procedures, a fit-tested N95 respirator or equivalent should be used. Recommended infection control guidance is available for persons collecting clinical specimens in clinics and other clinical settings at Prevention Strategies for Seasonal Influenza in Healthcare Settings and Infection Control in Health Care Facilities.

Health care personnel who collect respiratory specimens from ill persons for influenza testing should follow standard and droplet precautions, as recommended for patient care.

Ill people with suspected or confirmed variant influenza virus infections who do not require hospitalization should be isolated at home away from other family members as much as possible. Household members who are at increased risk for serious influenza complications should avoid coming within 2 meters (or approximately 6 feet) of ill people. When caring for someone who is sick, both the caretaker and the person who is sick should wear a facemask when in close contact. If possible, it is best for the caretaker to spend the least amount of time in close contact with the sick person.

COLLECTION AND TRANSPORT OF CLINICAL SPECIMENS

The NJDOH's Division of Public Health and Environmental Laboratories (PHEL) can test human specimens for novel influenza, including H3N2v by RT-PCR. The timeframe in which testing is conducted by PHEL will be determined on a case-by-case basis. Specimens must be approved by public health officials prior to submission of specimens for testing.

No specimen will be tested by PHEL until the case has been reviewed and approved by CDS staff.
NOTE: If PHEL receives a specimen without CDS review and approval number, PHEL will hold the specimen and contact CDS.

The preferred specimen type is a nasopharyngeal swab collected as soon as possible after illness onset. Other acceptable specimens types are: nasal swab, nasal wash/aspirate, oropharyngeal swab, bronchoalveolar lavage (BAL), tracheal aspirate, pleural fluid and lung biopsy specimens. Specimens should be placed in a transport tube containing 1-3ml transport media. Diagnostic specimens can be stored at 2-8°C for up to 72 hours after collection. Specimens not received refrigerated within the 72-hour window will be rejected. If testing is expected to occur after 72 hours of collection, store specimens frozen at -70°C or below and ship on dry ice. Specimens frozen at -20°C or below will be accepted, but this could result in sample degradation and may result in a false negative test result. Specimens may be shipped to the laboratory for receipt Monday – Friday from 8am – 5pm. NJ PHEL is closed on weekends and state holidays. For detailed instructions on how to ship specimens to PHEL, please refer to guidelines available here.

Diagnostic Testing

The performance of current Food and Drug Administration (FDA) cleared diagnostic tests for influenza has been demonstrated for seasonal human influenza viruses as described by the manufacturer package insert. Performance has not been demonstrated with novel influenza A viruses; these viruses only infect humans sporadically. However, some diagnostic assays may detect the presence of novel influenza A viruses.

Molecular assays may detect novel influenza A viruses but will not differentiate novel influenza A viruses from seasonal influenza A viruses. For these assays a novel influenza A virus:

- May give an influenza A "unsubtypeable" result. Clinicians and laboratorians using molecular assays that are capable of detecting all currently circulating influenza A subtypes who identify an "unsubtypeable" result should contact their state or local public health laboratory for additional testing.
- May give a false positive result for human influenza A(H3) viruses.

Rapid influenza diagnostic tests (RIDTs) and immunofluorescence tests also have unknown sensitivity and specificity to detect human infection with influenza A (H3N2)v virus in clinical specimens. These tests may give a positive influenza A result for a specimen containing influenza A (H3N2)v virus. However, negative results from either type of test do not exclude influenza virus infection in patients with signs and symptoms suggestive of influenza. Therefore, a negative test result could be a false negative and should not be assumed a final diagnostic test for influenza A (H3N2)v virus infection.

TREATMENT AND CHEMOPROPHYLAXIS

Variant influenza viruses tested to date are susceptible to the neuraminidase inhibitor drugs oseltamivir, peramivir and zanamivir, and the cap-dependent endonuclease inhibitor baloxavir. These drugs can be prescribed to treat variant influenza virus infections. However, most variant influenza viruses are resistant to the antiviral drugs amantadine and rimantadine; therefore, amantadine and rimantadine should not be prescribed.

- Oral oseltamivir, inhaled zanamivir, intravenous peramivir, or oral baloxavir are recommended for treatment of variant influenza virus infections.
- While early initiation of antiviral treatment (within 48 hours of illness onset) provides the greatest clinical benefit, antiviral treatment may still be effective when administered later in patients with moderate and severe illness.
- Antiviral treatment with oral oseltamivir, inhaled zanamivir, intravenous peramivir, or oral baloxavir is recommended for outpatients with suspected influenza or confirmed influenza, including variant influenza virus infection, if they are in a group considered to be at higher risk for serious complications from influenza.

- Antiviral treatment also can be considered for any previously healthy, symptomatic outpatient not at higher risk for serious complications who has suspected or confirmed variant influenza virus infection on the basis of clinical judgment, if treatment can be initiated within 48 hours of illness onset.
- For people suspected of having variant influenza virus infection and who are hospitalized, have severe or progressive illness, or are in a higher-risk group, empiric antiviral treatment should be started as soon as possible, without waiting for the results of influenza testing.
- For hospitalized patients and patients with severe or complicated illness, treatment with oral or enterically administered oseltamivir is recommended. Inhaled zanamivir and oral baloxavir are not recommended because of the lack of data for use in patients with severe influenza disease to date. There also are insufficient data regarding efficacy of intravenous peramivir for hospitalized influenza patients.

Antiviral chemoprophylaxis (before or after swine exposure) is not routinely recommended, but can be considered in limited instances (see IDSA Influenza Clinical Practice Guidelines) for people who are at higher risk for influenza complications. If such higher-risk people become ill, they should seek medical care as soon as possible and early antiviral treatment should be started if influenza, including variant influenza virus infection, is suspected.

RESOURCES

Novel Influenza Disease Page (NJDOH)
https://www.nj.gov/health/cd/topics/novel_flu.shtml
Surveillance Criteria and Testing for Influenza A (H3N2v) in Humans (NJDOH)
https://www.nj.gov/health/cd/documents/flu/nj_h3n2v.pdf
Public Health and Environmental Laboratories (NJDOH)
https://nj.gov/health/phel/
Compendium of Measures to Prevent Disease Associated with Animals in Public Settings (NASPHV)
http://www.nasphv.org/documentsCompendiumAnimals.html
New Jersey Agricultural Fair Dates
https://www.nj.gov/agriculture/divisions/md/pdf/County%20Fair%20List%202023.pdf
CDC Information on Swine/Variant Influenza (CDC)
https://www.cdc.gov/flu/swineflu/index.htm
Guidance for Clinicians on Human Infections with Variant Influenza Viruses (CDC)
https://www.cdc.gov/flu/swineflu/interim-guidance-variant-flu.htm
Issues for Fair Organizers to Consider When Planning Fairs (CDC)
https://www.cdc.gov/flu/swineflu/fairs-planning.htm
Key Facts for People Exhibiting Pigs at Fairs (CDC)
https://www.cdc.gov/flu/swineflu/exhibit-pigs-at-fairs.htm
What People Who Raise Pigs Need to Know (CDC)
https://www.cdc.gov/flu/swineflu/people-raise-pigs-flu.htm
Guidance for Workers Employed at Commercial Swine Farms (CDC)
https://www.cdc.gov/flu/swineflu/guidance-commercial-pigs.htm
CDC: Information for Specific Groups
https://www.cdc.gov/flu/swineflu/groups.htm
People at Higher Risk of Flu Complications (CDC)
https://www.cdc.gov/flu/highrisk/index.htm

CDRSS #: _____

E-#: _____

Novel Influenza Case Report Form

Fax completed form to 609-292-5811 or email cdsfluteam@doh.nj.gov

Reporting Information

Reported By:

Name: _____ Contact Number: _____

Agency: _____ Report Date: _____/_____/_____

Patient Information

Name (Last, First, M.I.)	**Date of Birth (MM/DD/ YYYY)**	**Age**	**Sex**
	/ /		❑ Male ❑ Female

Race

❑ White ❑ Black/African American ❑ Asian ❑ American Indian/Alaska
❑ Native Hawaiian/Pacific Islander ❑ Unknown ❑ Other _____

Ethnicity

❑ Hispanic or Latino
❑ Not Hispanic or Latino
❑ Unknown

Address (Number, Street, Apt #, County, City, State, Zip Code)

Telephone

Home #: _____

Occupation

Cell #: _____

Clinical Information, Testing and Outcome

Onset Date of First Symptom: _____/_____/_____ **Onset Date of Fever, if Present:** _____/_____/_____

During this illness, did the patient experience any of the following symptoms?

Yes	No	Unk		Yes	No	Unk	
❑	❑	❑	Documented temperature of > 38° C (≥ 100.4°F) Highest temp _____	❑	❑	❑	Eye Infection/Redness
❑	❑	❑	Were fever reducing drugs taken prior to temperature reading?	❑	❑	❑	Headache
❑	❑	❑	Feverish (temperature not documented)	❑	❑	❑	Muscle Aches
❑	❑	❑	Sore Throat	❑	❑	❑	Vomiting
❑	❑	❑	Rhinorrhea	❑	❑	❑	Diarrhea
❑	❑	❑	Nasal Congestion	❑	❑	❑	Rash
❑	❑	❑	Cough	❑	❑	❑	Fatigue
❑	❑	❑	Shortness of breath	❑	❑	❑	Seizures
❑	❑	❑	Other: _____				

Was the patient evaluated by a healthcare provider? ❑ Yes ❑ No ❑ Unknown If yes, provide the following information:

Provider Name: _____ Date of Visit: _____/_____/_____

Address: _____ City: _____ State: _____ Zip Code: _____

Primary Phone #: _____ Secondary Phone #: _____

During the course of illness, was the patient hospitalized? ❑ Yes ❑ No ❑ Unknown If yes, provide the following information:

Hospital Name: _____

Date of Admission: _____/_____/_____ Date of Discharge: _____/_____/_____

Was the patient in ICU? ❑ Yes ❑ No ❑ Unknown If yes, Date of Admission: _____/_____/_____ Discharge: _____/_____/_____

Fatality? ❑ Yes ❑ No ❑ Unknown If yes, Date of Death: _____/_____/_____

Yes	No	Unk	
❑	❑	❑	In the 7 days before or after becoming ill, did the patient attend or work at a childcare facility? If yes, specify role: _____
❑	❑	❑	Did the patient work in or volunteer at a healthcare facility or setting? If yes, specify role: _____
❑	❑	❑	Does the patient live in an institutional or group setting? If yes, specify: _____
❑	❑	❑	Does the patient know anyone who had respiratory symptoms in the 7 days BEFORE the case patient's illness onset?

Was testing performed for Influenza? ❑ Yes ❑ No ❑ Unknown If yes, provide the following information:

Yes	No	Unk			
❑	❑	❑	PCR?	Collection date: _____/_____/_____	Result/Typing: _____
❑	❑	❑	Rapid Antigen?	Collection date: _____/_____/_____	Result/Typing: _____
❑	❑	❑	Culture?	Collection date: _____/_____/_____	Result/Typing: _____

Were any of the following clinical findings present?

Yes	No	Unk	
❑	❑	❑	Radiographically confirmed pneumonia If yes, date: _____/_____/_____
❑	❑	❑	Acute respiratory distress syndrome (ARDS)
❑	❑	❑	Other severe respiratory illness for which an alternative diagnosis has not been established
❑	❑	❑	Other (please describe): _____ _____

Did the patient receive influenza antiviral medications? (Check all that apply)

Yes	No	Unk		
❑	❑	❑	Oseltamivir (Tamiflu)	If yes, start/end dates/dosage: _____
❑	❑	❑	Zanamivir (Relenza)	If yes, start/end dates/dosage: _____
❑	❑	❑	Other, please specify: _____	If yes, start/end dates/dosage: _____

Exposure History

Did the patient have any of the following potential exposures listed below <u>within 10 days</u> of symptoms onset? (check all that apply)

Yes	No	Unk	
❑	❑	❑	Close contact (within 3 feet) of a confirmed or suspected case of human infection with a novel influenza virus
❑	❑	❑	Direct contact with surfaces contaminated with poultry feces
❑	❑	❑	Unprotected exposure to live novel influenza virus in a laboratory
❑	❑	❑	Contact with animals from any of the following categories: ❑ Domestic poultry (e.g., chicken, turkey, ducks), ❑ Wild aquatic birds, (e.g., ducks, geese, swans), ❑ Captive birds of prey (e.g., falcons) that have contact with wild aquatic birds ❑ Sheep/Goats/Pigs

If yes to any of the above, where did the exposure occur? ❑ Home ❑ Work ❑ Agricultural Fair ❑ Live Animal Market ❑ Petting Zoo ❑ Other (Specify) _____

Yes	No	Unk	
❑	❑	❑	Did the patient travel outside of New Jersey? If yes, please specify:

Dates of Travel: _____ Country: _____ State: _____

Additional Notes

Additional Information available at: https://www.nj.gov/health/cd/topics/novel_flu.shtml