New Jersey Department of Health
Surveillance Criteria and Testing for Influenza A (H3N2v) in Humans

Protocol for Healthcare Providers and Local Health Departments
January 6, 2016

Key steps in case screening for H3N2v influenza

1. **Confirm that the case meets current SURVEILLANCE CRITERIA**
2. **Ensure implementation of CONTROL MEASURES**
3. **Ensure COLLECTION OF SPECIMENS for diagnostic testing**
4. **Ensure NOTIFICATION procedures are followed**
5. **Ensure completion of the NOVEL INFLUENZA INVESTIGATION FORM**

SURVEILLANCE CRITERIA for swine influenza (H3N2v) infection:

An ill person must meet the following clinical and epidemiologic criteria to be considered for testing.

- A patient with an illness compatible with influenza[1] **AND** at least one potential exposure within 7 days of symptom onset, as 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).

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. Local health departments are available 24/7. Contact information for local health departments during business hours can be found at: www.localhealth.nj.gov**.** Contact information for local health departments after business hours or on weekends can be found at: http://nj.gov/health/lh/documents/lhd_after_hours_emerg_contact_numbers.pdf.
If LHD personnel are unavailable, healthcare providers should report the 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.

[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.

Local Health Departments

When a local health department receives a report of a suspect case of novel influenza A (H3N2v) in a human, the protocols contained within this document for screening, treatment, and collection of lab specimens should be followed. Information should be communicated **IMMEDIATELY** to the NJDOH 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 A CASE SCREENING FORM** (please see last page of this document). Completed forms should be faxed to CDS at 609-826-5972. This form will be reviewed by CDS staff who will make the final determination if the case meets surveillance criteria and if a specimen is required for testing.

Infection Control

There are no data to indicate that the transmission characteristics of the H3N2v virus will be different than those of seasonal influenza viruses. As a result, CDC advises that the infections control principles and actions relevant for seasonal influenza are appropriate for the control of H3N2v as well. Guidance regarding infection control in health care facilities can be found on the CDC web (http://www.cdc.gov/flu/professionals/infectioncontrol/index.htm).

COLLECTION AND TRANSPORT OF CLINICAL SPECIMENS for Patients Who Meet H3N2v Surveillance Criteria:

The NJDOH's Division of Public Health and Environmental Laboratories (PHEL) has the ability to 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 the CDS staff.** The last three pages of this document provide detailed instructions on specimen collection and shipping.

General Considerations

- Detection of H3N2v is more likely from specimens collected within the first 3 days of illness onset.
- Appropriate infection control procedures should be followed when collecting samples. This information can be found at: http://www.cdc.gov/flu/professionals/infectioncontrol/index.htm.
- Antigen detection tests, such as commercially available rapid influenza diagnostic tests (RIDTs) and immunofluorescence assays [e.g. direct fluorescent antibody staining (DFA)] **are likely to detect H3N2v virus in respiratory specimens, although some RIDTs may *NOT* detect this virus** (e.g. false negative results). False negative result can also occur with other influenza viruses. While some H3N2v cases have tested positive by RIDTs, other confirmed H3N2v cases have tested negative by RIDTs. In addition, DFA and RIDTs ***CANNOT*** specifically identify H3N2v virus infection, and a positive test result does not differentiate between seasonal influenza A virus infection or H3N2v virus infection. Additional information regarding interpretation of laboratory results in H3N2v case can be found in the CDC' website at: http://www.cdc.gov/flu/swineflu/h3n2v-clinician.htm

REFERENCES

NJDOH Information
http://nj.gov/health/flu/surveillance.shtml

CDC Information
http://www.cdc.gov/flu/index.htm
http://www.cdc.gov/flu/swineflu/index.htm

Surveillance Criteria for Novel Influenza

CDRSS #_____

Reporter Information

Report Date	Name of Reporter	Name of Reporter Facility

Patient Information

Name (Last, First, M.I.)	Date of Birth (Mo., Day, Yr.)	Age	Sex
	/ /		❑ Male ❑ Female

Race (check all that apply)

❑ 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 #, City, Zip Code)

Occupation/Name of Employer

Telephone

Home_____

Cell_____

Clinical Information

Was the patient evaluated by a healthcare provider? ❑ Yes ❑ No ❑ Unknown If yes, date of visit: _____

Provider Name: _____ Address: _____

City: _____ Zip Code: _____ Phone: _____

During the course of illness, was the patient hospitalized? ❑ Yes ❑ No ❑ Unknown If yes, date of admission: _____

Hospital Name: _____ Provider Name: _____

Was the patient in ICU? ❑ Yes ❑ No ❑ Unknown

Was the patient intubated? ❑ Yes ❑ No ❑ Unknown

Fatal outcome? ❑ Yes ❑ No ❑ Unknown If yes, date of death: _____

Was the patient isolated? ❑ Yes ❑ No ❑ Unknown If yes, starting date and time of isolation: _____

If yes, specify type of isolation (e.g., droplet, contact, or airborne precautions): _____

Was personal protective equipment (PPE) used by healthcare personnel? ❑ Yes ❑ No ❑ Unknown

Laboratory Information

(please attach a copy of all lab results)

Result Date (MM/DD/YY)	Type of Test	Specimen Type/Source	Specimen Date (MM/DD/YY)	Qualitative/Quantitative Results	Reference Range	Laboratory Name

Signs and Symptoms

Yes	No	Unk	
❑	❑	❑	Documented temperature of ≥ 38° C (≥ 100.4° F)
❑	❑	❑	Feverish (temperature not documented)
❑	❑	❑	Sore throat
❑	❑	❑	Rhinorrhea
❑	❑	❑	Nasal congestion
❑	❑	❑	Conjunctivitis

Onset Date of First Symptom: _____

Clinical Findings

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 specify: _____

CDRSS #_____

Treatment

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

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

Exposure History

Had any contact with animals from any of the following categories <u>within 10 days</u> of symptom onset? (check all that apply)

Yes	No	Unk		
❑	❑	❑	Domestic poultry (e.g., chicken, turkey, ducks)	If yes, duration: _____
❑	❑	❑	Wild aquatic birds (e.g., ducks, geese, swans)	If yes, duration: _____
❑	❑	❑	Captive birds of prey (e.g., falcons) that have contact with wild aquatic birds	If yes, duration: _____
❑	❑	❑	Contact with swine	If yes, duration: _____

Exposure History Continued

Had 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 with a confirmed or suspected case of human infection with a novel influenza virus
❑	❑	❑	Unprotected exposure to live novel influenza virus in a laboratory

Travel History

Yes	No	Unk	
❑	❑	❑	Travel to areas where human cases have become infected with a novel virus or where the novel virus has been known to circulate in animals (poultry)

If yes, where: _____ Mode of Transportation: _____

Dates of Travel: _____ Flight Numbers: _____

Departure and Arrival Airports:_____

Additional Notes

Collection And Transport Of Clinical Specimens
For Influenza Testing at New Jersey Public Health and Environmental Laboratories

The New Jersey Public Health and Environmental Laboratories (PHEL) has the ability to conduct PCR testing for seasonal and novel influenza viruses.

General Considerations

- Influenza specimens which are part of seasonal surveillance can be submitted using the below protocol. No pre-approvals are necessary for these specimens.
- Specimens generated from patients meeting the novel influenza case criteria (http://nj.gov/health/flu/surveillance.shtml) must be pre-approved by the New Jersey Department of Health, Communicable Disease Service (CDS). The timeframe in which testing is conducted will be determined on a case-by-case basis. **No specimen will be tested by PHEL until the case has been reviewed by the CDS**. NOTE: If PHEL receives a specimen without CDS review, PHEL will hold the specimen and contact CDS before testing begins.

Collection

- Appropriate infection control procedures should be followed when collecting samples. (http://www.cdc.gov/flu/avianflu/novel-flu-infection-control.htm)
- Detection of influenza is more likely from specimens collected within the first 3 days of illness onset.
- Several specimen types (i.e., nasopharyngeal swab, nasopharyngeal aspirate/wash, nasal swab, combined nasopharyngeal and oropharyngeal swab, oropharyngeal swab, bronchoalveolar lavage, tracheal aspirate) are acceptable for testing at PHEL.
    - A single sample is sufficient if intended submission is to identify a circulating seasonal influenza.
    - If novel influenza is suspected, samples should be collected and submitted from multiple sites to improve diagnostic sensitivity. Lower respiratory tract specimens (e.g., bronchoalveolar lavage or tracheal aspirates) are preferred for novel influenza because they appear to contain the highest quantity of virus for influenza detection. Nasal or nasopharyngeal swab specimens are acceptable, but may contain fewer viruses and therefore may not be optimal specimens for virus detection.
- Collection guidance can be found in attachments A and B of this document or at the following websites:
    - http://www.cdc.gov/flu/pdf/freeresources/healthcare/flu-specimen-collection-guide.pdf
    - http://www.cdc.gov/flu/pdf/freeresources/healthcare/flu-specimen-collection-poster.pdf
- For fatal cases associated with possible influenza infection, autopsy and collection of appropriate postmortem specimens should be performed. Information on fatal cases should be communicated IMMEDIATELY to the 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.

Shipping

- The SRD-1 form (available at http://www.state.nj.us/health/forms/srd-1.dot) should be completely filled out for **each** specimen that is sent. Label the ***vial containing the specimen*** with patient's first and last name, date of birth, medical record number, date of collection, and specimen type. Incorrectly labeled samples may be denied for testing.
- Samples may be shipped to PHEL via commercial carrier, private courier or hand carried. When shipping via commercial carrier you must abide by IATA shipping regulations which can be found at www.iata.org or http://www.fmcsa.dot.gov/regulations/hazardous-materials. Directions to PHEL can be found at: http://www.nj.gov/health/phel/faq.shtml.
- Specimens should be placed into sterile viral transport media and kept ***refrigerated*** (2-8° C) prior to shipping. Facilities should ensure that samples will be received at PHEL during normal business hours Monday through Friday and are sent on refrigerant gel-packs at 4°C (refrigerator temperature) for transport to PHEL. Samples collected on Friday or Saturday should be held in refrigeration (2-8°C) and shipped on Sunday or Monday. If delivery will be delayed more than 3-4 days, specimen should be frozen at -70°C.
- Samples should be shipped to the following address:

New Jersey Department of Health, Public Health and Environmental Laboratories
3 Schwarzkopf Drive, Ewing, NJ 08628, Attn: Specimen Receiving

Influenza Specimen Collection

	Nasopharyngeal Swab	Nasopharyngeal/Nasal Aspirate	Nasopharyngeal/Nasal Wash	Deep Nasal Swab	Combined Nasal & Throat Swab
Materials	• Sterile Dacron/nylon swab • Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*	• Sterile suction catheter/suction apparatus • Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*	• Sterile suction catheter/suction apparatus • Sterile normal saline	• Sterile polyester swab *(aluminum or plastic shaft preferred)* • Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*	• 2 dry sterile polyester swabs *(aluminum or plastic shafts preferred)* • Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*
Procedure	**1** Tilt patient's head back 70 degrees. **2** Insert swab into nostril. (Swab should reach depth equal to distance from nostrils to outer opening of the ear.) Leave swab in place for several seconds to absorb secretions. **3** Slowly remove swab while rotating it. (Swab both nostrils with same swab.) **4** Place tip of swab into sterile viral transport media tube and snap/cut off the applicator stick.	**1** Attach catheter to suction apparatus. **2** Tilt patient's head back 70 degrees. **3** Insert catheter into nostril. (Catheter should reach depth equal to distance from nostrils to outer opening of ear.) **4** Begin gentle suction. Remove catheter while rotating it gently. **5** Place specimen in sterile viral transport media tube. *Note: NP aspirate may not be possible to conduct in infants*	**1** Attach catheter to suction apparatus. **2** Tilt patient's head back 70 degrees. **3** Insert several drops of sterile normal saline into each nostril. **4** Insert catheter into nostril. (Catheter should reach depth equal to distance from nostrils to outer opening of ear.) **5** Begin gentle suction. Remove catheter while rotating it gently. **6** Place specimen in sterile viral transport media tube. *Note: NP aspirate may not be possible to conduct in infants*	**1** Tilt patient's head back 70 degrees. **2** While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at turbinates). **3** Rotate the swab several times against nasal wall and repeat in other nostril using the same swab. **4** Place tip of the swab into sterile sterile viral transport media tube and cut off the applicator stick.	**1** Tilt patient's head back 70 degrees. **2** While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at turbinates). **3** Rotate the swab several times against nasal wall and repeat in other nostril using the same swab. **4** Place tip of the swab into sterile viral transport media tube and cut off the applicator stick. **5** For throat swab, take a second dry polyester swab, insert into mouth, and swab the posterior pharynx and tonsillar areas. (Avoid the tongue.) **6** Place tip of swab into the same tube and cut off the applicator tip.

Packing:

- Label the specimen on viral transport media tube and ensure cap on tube is tightly sealed. (Do not use a pencil or pen for labeling, as they can rub off or smear. Instead, use a bar code or permanent marker).
- Fill out paperwork in accordance with state health department guidelines.
- Include a frozen cold pack with the specimen(s).
- Pack specimens in accordance with U.S. Department of Transportation regulations regarding shipment of biological substances, see **www.cdc.gov/flu/professionals/diagnosis/index.htm.**

Storing:

- Specimens should be placed into sterile viral transport media and immediately placed on refrigerant gel packs or at 4 degrees Celsius (refrigerator) for transport to the state public health laboratory.
- Keep specimens refrigerated (2-8 degrees Celsius, 26-46 degrees Fahrenheit) prior to shipping.

Shipping:

- Ship specimens for testing as soon as possible.
- If delivery will be delayed for more than 3-4 days, specimen should be frozen at -70 degrees Celsius (-94 degrees Fahrenheit).
- Ensure specimen will be received by the public health laboratory during normal business hours.

Considerations:

- A nasopharyngeal (NP) swab is the optimal upper respiratory tract specimen collection method for influenza testing. However, such specimens cannot be collected from infants and many older patients may not allow an NP specimen to be collected. Alternatively, a combined nasal and throat swab specimen or aspirate specimens can provide good influenza virus yield.
- Some influenza tests are approved only for use with certain kinds of respiratory tract specimens, so follow guidelines provided by test. Also, some tests (e.g., rapid influenza diagnostic tests) are only approved for certain kinds of respiratory tract specimens.
- For best results (i.e., highest influenza virus yield), collect respiratory tract specimens within four days of illness onset.
- Most sensitive and accurate tests for influenza virus detection are molecular or nucleic acid amplification tests (RT-PCR).
- Negative test results obtained from rapid influenza diagnostic tests (RIDTs) **that detect influenza viral antigens** do not exclude influenza virus infection in patients with signs and symptoms of influenza. A negative test result could be a false negative and should not preclude further diagnostic testing (such as RT-PCR) and starting empiric antiviral treatment.
- A surgical mask and gloves are recommended at a minimum for all procedures. For some patients and procedures, additional precautions may be indicated, see Standard Precautions at **www.cdc.gov/hicpac/2007IP/2007ip_part4.html#a4**.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

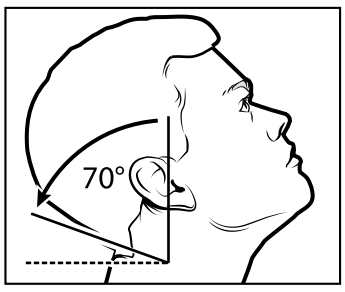
CS246972

Influenza Specimen Collection

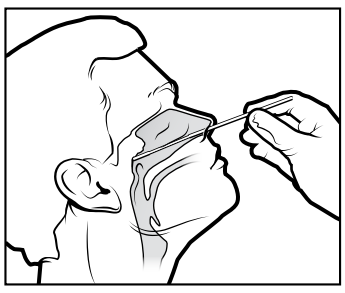
Nasopharyngeal Swab

Materials
- Sterile Dacron/nylon swab
- Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*

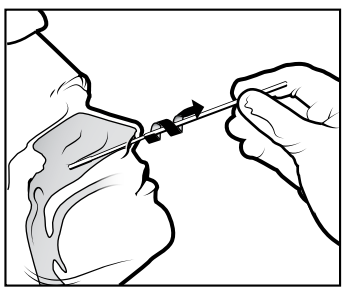
Procedure



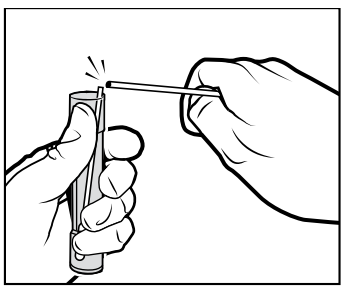
1 Tilt patient's head back 70 degrees.



2 Insert swab into nostril. (Swab should reach depth equal to distance from nostrils to outer opening of the ear.) Leave swab in place for several seconds to absorb secretions.



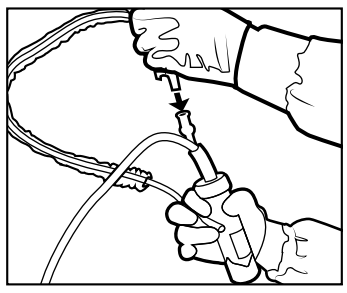
3 Slowly remove swab while rotating it. (Swab both nostrils with same swab.)



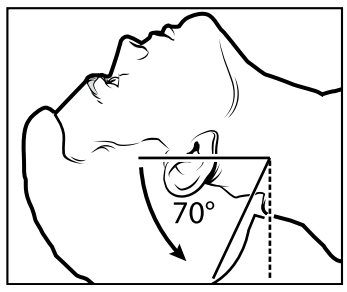
4 Place tip of swab into sterile viral transport media tube and snap/cut off the applicator stick.

Nasopharyngeal/Nasal Aspirate

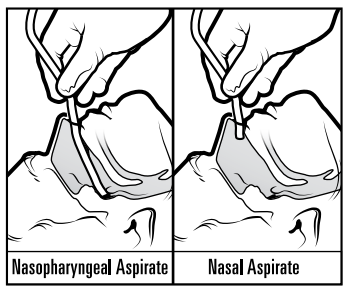
- Sterile suction catheter/suction apparatus
- Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*



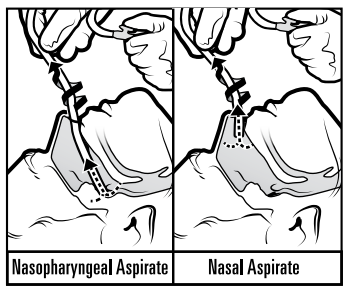
1 Attach catheter to suction apparatus.



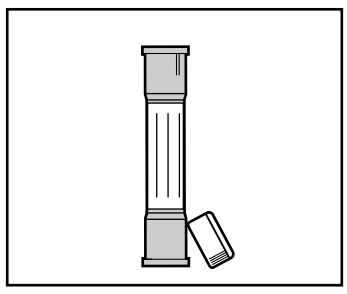
2 Tilt patient's head back 70 degrees.



3 Insert catheter into nostril. (Catheter should reach depth equal to distance from nostrils to outer opening of ear.)



4 Begin gentle suction. Remove catheter while rotating it gently.

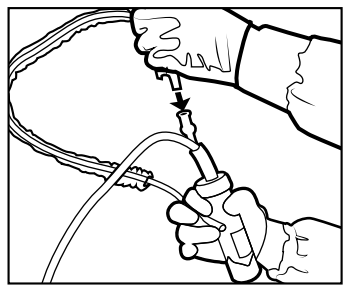


5 Place specimen in sterile viral transport media tube.

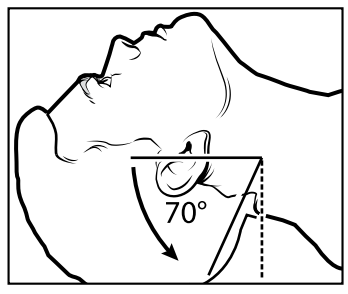
Note: NP aspirate may not be possible to conduct in infants

Nasopharyngeal/Nasal Wash

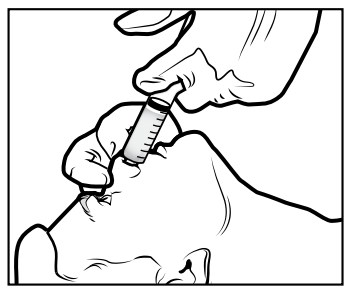
- Sterile suction catheter/suction apparatus
- Sterile normal saline



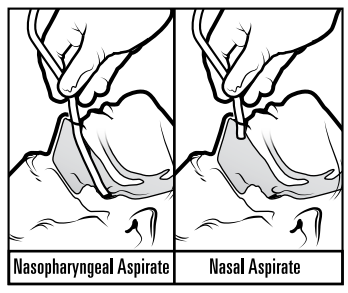
1 Attach catheter to suction apparatus.



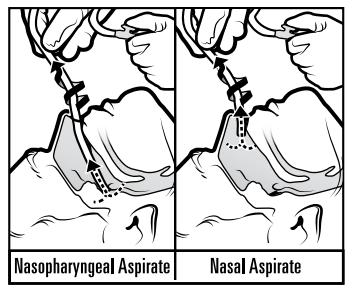
2 Tilt patient's head back 70 degrees.



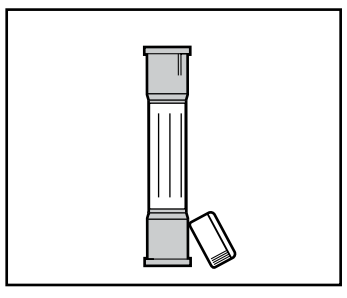
3 Insert several drops of sterile normal saline into each nostril.



4 Insert catheter into nostril. (Catheter should reach depth equal to distance from nostrils to outer opening of ear.)



5 Begin gentle suction. Remove catheter while rotating it gently.

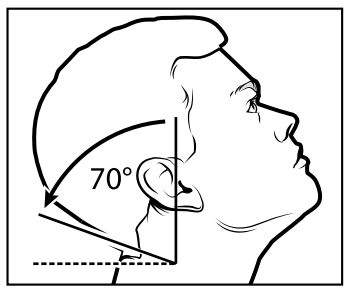


6 Place specimen in sterile viral transport media tube.

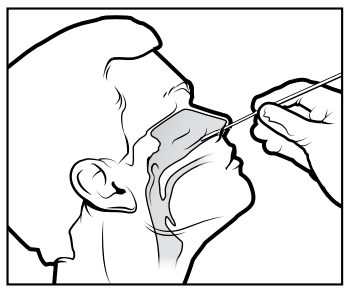
Note: NP aspirate may not be possible to conduct in infants

Deep Nasal Swab

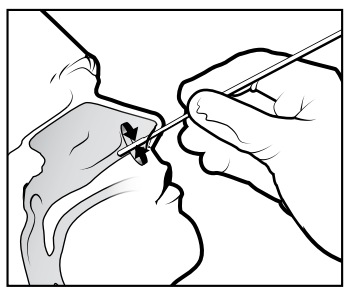
- Sterile polyester swab *(aluminum or plastic shaft preferred)*
- Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*



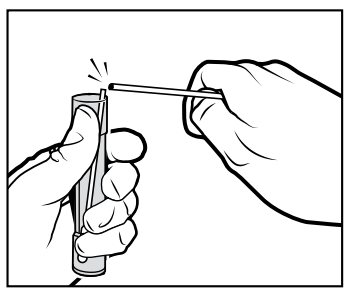
1 Tilt patient's head back 70 degrees.



2 While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at turbinates).



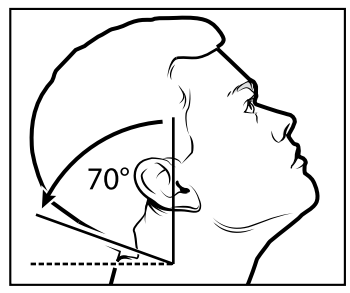
3 Rotate the swab several times against nasal wall and repeat in other nostril using the same swab.



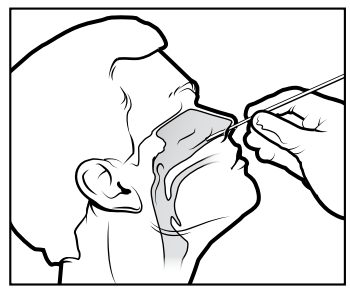
4 Place tip of the swab into sterile sterile viral transport media tube and cut off the applicator stick.

Combined Nasal & Throat Swab

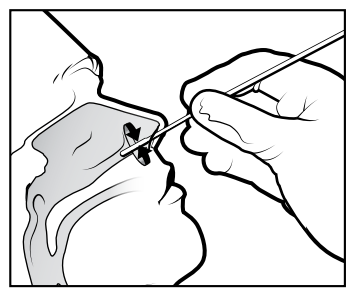
- 2 dry sterile polyester swabs *(aluminum or plastic shafts preferred)*
- Viral transport media tube *(should contain 1-3 ML of sterile viral transport medium)*



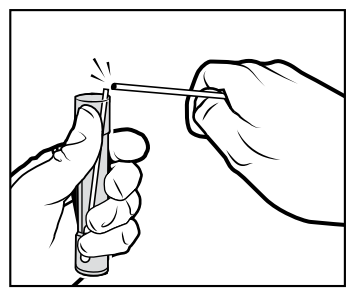
1 Tilt patient's head back 70 degrees.



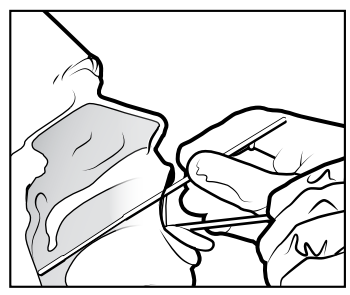
2 While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at turbinates).



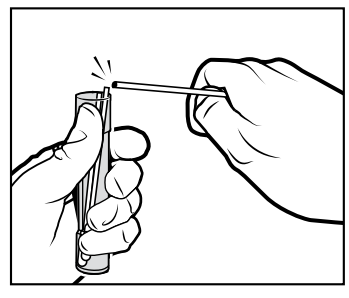
3 Rotate the swab several times against nasal wall and repeat in other nostril using the same swab.



4 Place tip of the swab into sterile viral transport media tube and cut off the applicator stick.



5 For throat swab, take a second dry polyester swab, insert into mouth, and swab the posterior pharynx and tonsillar areas. (Avoid the tongue.)



6 Place tip of swab into the same tube and cut off the applicator tip.

Packing:

- Label the specimen on viral transport media tube and ensure cap on tube is tightly sealed. (Do not use a pencil or pen for labeling, as they can rub off or smear. Instead, use a bar code or permanent marker).
- Fill out paperwork in accordance with state health department guidelines.
- Include a frozen cold pack with the specimen(s).
- Pack specimens in accordance with U.S. Department of Transportation regulations regarding shipment of biological substances, see **www.cdc.gov/flu/professionals/diagnosis/index.htm.**

Storing:

- Specimens should be placed into sterile viral transport media and immediately placed on refrigerant gel packs or at 4 degrees Celsius (refrigerator) for transport to the state public health laboratory.
- Keep specimens refrigerated (2-8 degrees Celsius, 26-46 degrees Fahrenheit) prior to shipping.

Shipping:

- Ship specimens for testing as soon as possible.
- If delivery will be delayed for more than 3-4 days, specimen should be frozen at -70 degrees Celsius (-94 degrees Fahrenheit).
- Ensure specimen will be received by the public health laboratory during normal business hours.

Considerations:

- A nasopharyngeal (NP) swab is the optimal upper respiratory tract specimen collection method for influenza testing. However, such specimens cannot be collected from infants and many older patients may not allow an NP specimen to be collected. Alternatively, a combined nasal and throat swab specimen or aspirate specimens can provide good influenza virus yield.
- Some influenza tests are approved only for use with certain kinds of respiratory tract specimens, so follow guidelines provided by test. Also, some tests (e.g., rapid influenza diagnostic tests) are only approved for certain kinds of respiratory tract specimens.
- For best results (i.e., highest influenza virus yield), collect respiratory tract specimens within four days of illness onset.
- Most sensitive and accurate tests for influenza virus detection are molecular or nucleic acid amplification tests (RT-PCR).
- Negative test results obtained from rapid influenza diagnostic tests (RIDTs) **that detect influenza viral antigens** do not exclude influenza virus infection in patients with signs and symptoms of influenza. A negative test result could be a false negative and should not preclude further diagnostic testing (such as RT-PCR) and starting empiric antiviral treatment.
- A surgical mask and gloves are recommended at a minimum for all procedures. For some patients and procedures, additional precautions may be indicated, see Standard Precautions at **www.cdc.gov/hicpac/2007IP/2007ip_part4.html#a4**.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS246972