

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 <ul style="list-style-type: none">• Sterile Dacron/nylon swab• Viral transport media tube (should contain 1-3 ML of sterile viral transport medium)	<ul style="list-style-type: none">• Sterile suction catheter/suction apparatus• Viral transport media tube (should contain 1-3 ML of sterile viral transport medium)	<ul style="list-style-type: none">• Sterile suction catheter/suction apparatus• Sterile normal saline	<ul style="list-style-type: none">• Sterile polyester swab (aluminum or plastic shaft preferred)• Viral transport media tube (should contain 1-3 ML of sterile viral transport medium)	<ul style="list-style-type: none">• 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 <ol style="list-style-type: none">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.	<ol style="list-style-type: none">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. <p><i>Note: NP aspirate may not be possible to conduct in infants</i></p>	<ol style="list-style-type: none">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. <p><i>Note: NP aspirate may not be possible to conduct in infants</i></p>	<ol style="list-style-type: none">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.	<ol style="list-style-type: none">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.



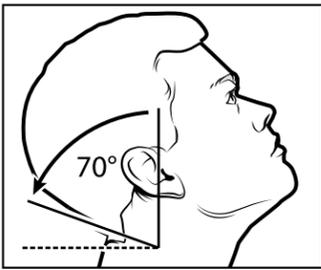
U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Influenza Specimen Collection

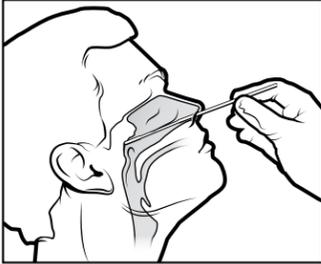
Nasopharyngeal Swab

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

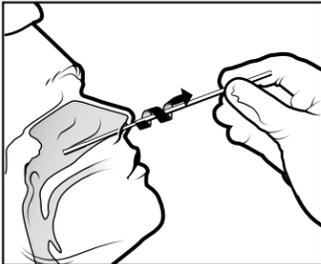
Procedure



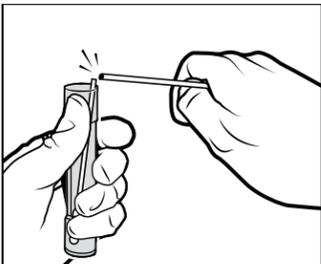
1 Tilt patient's head back 70 degrees.



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.



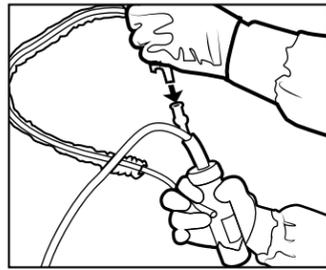
3 Slowly remove swab while rotating it. (Swab both nostrils with same swab.)



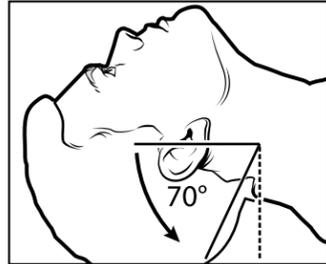
4 Place tip of swab into sterile viral transport media tube and snap/cut off the applicator stick.

Nasopharyngeal/Nasal Aspirate

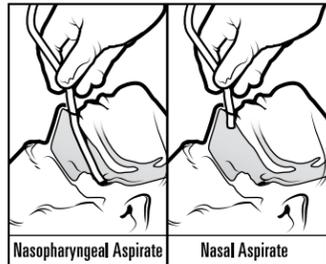
- Materials**
- Sterile suction catheter/suction apparatus
 - Viral transport media tube (should contain 1-3 ML of sterile viral transport medium)



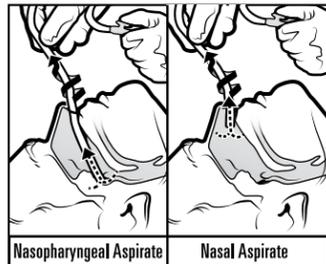
1 Attach catheter to suction apparatus.



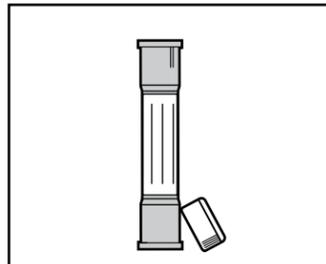
2 Tilt patient's head back 70 degrees.



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.

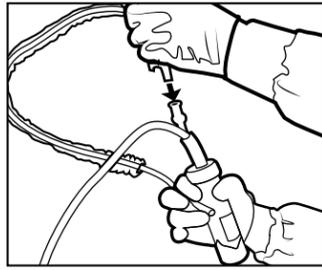


5 Place specimen in sterile viral transport media tube.

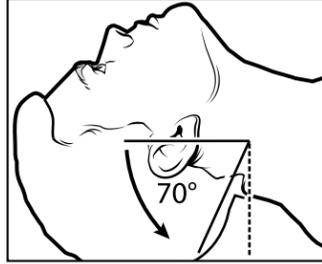
Note: NP aspirate may not be possible to conduct in infants

Nasopharyngeal/Nasal Wash

- Materials**
- Sterile suction catheter/suction apparatus
 - Sterile normal saline



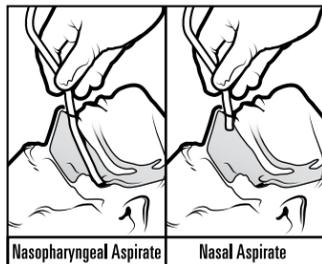
1 Attach catheter to suction apparatus.



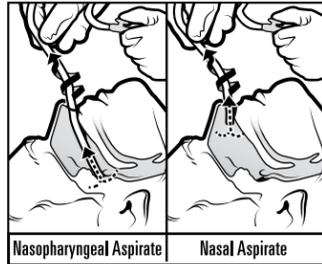
2 Tilt patient's head back 70 degrees.



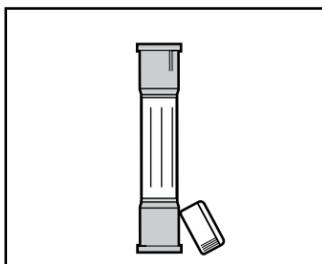
3 Insert several drops of sterile normal saline into each nostril.



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.

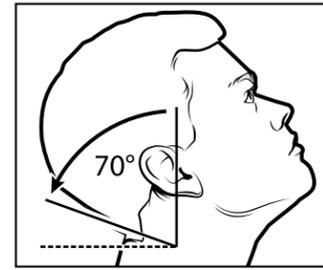


6 Place specimen in sterile viral transport media tube.

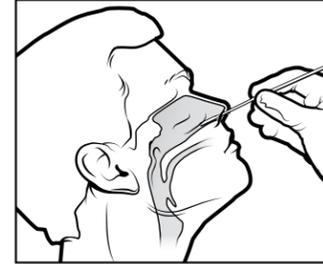
Note: NP aspirate may not be possible to conduct in infants

Deep Nasal Swab

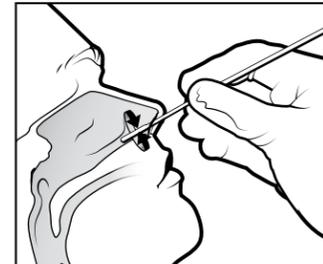
- Materials**
- Sterile polyester swab (aluminum or plastic shaft preferred)
 - Viral transport media tube (should contain 1-3 ML of sterile viral transport medium)



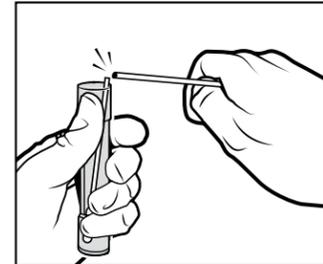
1 Tilt patient's head back 70 degrees.



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



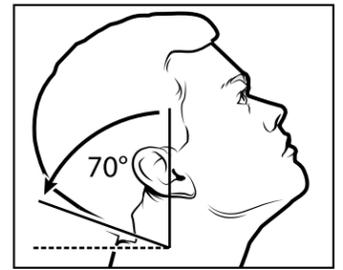
3 Rotate the swab several times against nasal wall and repeat in other nostril using the same swab.



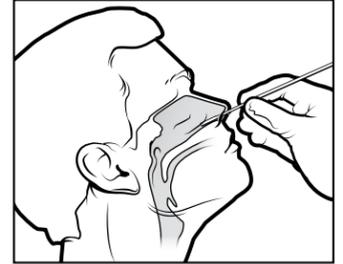
4 Place tip of the swab into sterile viral transport media tube and cut off the applicator stick.

Combined Nasal & Throat Swab

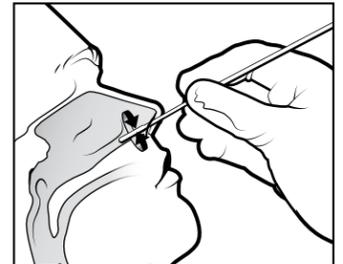
- Materials**
- 2 dry sterile polyester swabs (aluminum or plastic shafts preferred)
 - Viral transport media tube (should contain 1-3 ML of sterile viral transport medium)



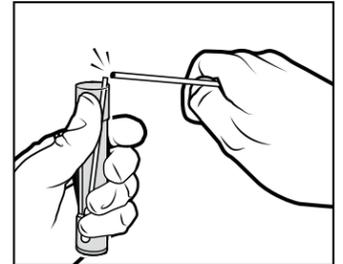
1 Tilt patient's head back 70 degrees.



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



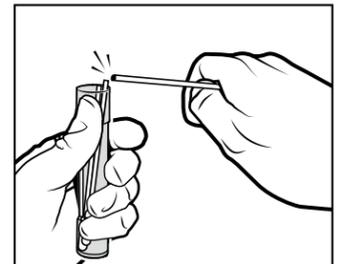
3 Rotate the swab several times against nasal wall and repeat in other nostril using the same swab.



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