

# Influenza, Seasonal

- Organism:** Influenza virus, types A and B. Influenza A is sub-typed by hemagglutinin (H) and neuraminidase (N) glycoproteins.
- Incubation period:** 1-3 days.
- Infectious period:** Most healthy adults may be able to infect others beginning 1 day **before** symptoms develop and up to 5-7 days **after** becoming sick. Children may pass the virus for longer than 7 days.
- Transmission route:** Traditionally, influenza viruses have been thought to spread from person to person primarily through large-particle respiratory droplet transmission (e.g., when an infected person coughs or sneezes near a susceptible person). Transmission via large-particle droplets requires close contact between source and recipient persons, because droplets generally travel only short distances (approximately 6 feet or less) through the air. Indirect contact transmission via hand transfer of influenza virus from virus-contaminated surfaces or objects to mucosal surfaces of the face (e.g., nose, mouth) may also occur. Airborne transmission via small particle aerosols in the vicinity of the infectious individual may also occur; however, the relative contribution of the different modes of influenza transmission is unclear.
- Treatment:** Influenza antiviral drugs can be used to treat and prevent influenza. <http://www.cdc.gov/flu/antivirals/index.htm>

## **Information Needed for the Investigation**

- Consider investigating clusters of influenza-like illness (ILI), especially in nursing homes or other congregational settings.
- Do not investigate sporadic or single cases of seasonal influenza.

## **Verify the Diagnosis**

- Specimens for influenza testing should be encouraged at the start, middle and end of the season in all regions of the state. Influenza testing should be considered in hospitalized individuals.
- Rapid influenza diagnostic tests have limited sensitivities and predictive values depending on the community prevalence of influenza. <http://www.cdc.gov/flu/professionals/diagnosis/index.htm>
- If investigating an outbreak in a congregate setting, obtain at least 3-5 specimens.

## **Determine the Extent of Illness**

- Routine respiratory surveillance is encouraged year-round in all regions of Alaska.

- Influenza-like surveillance (ILI) occurs at sentinel sites from October through May each year.

### Laboratory Specimens

- Alaska State Viral Laboratory (ASVL) performs a multiplex PCR for respiratory viral pathogens, including influenza (Table 1). Preferred specimens for testing include a nasopharyngeal swab, nasal swab, nasal aspirate or wash. Ship on cool packs for receipt at ASVL within 7 days of collection. Specimen collection kits and testing are free of charge to all Alaska health care providers. Further details on specimen submission, laboratory request form and testing are available here: <http://dhss.alaska.gov/dph/Labs/Documents/LaboratoryTests.pdf>

**Table 1. Respiratory Viral Panel Available at ASVL**

Test	Respiratory Viral Panel (RVP)		
Testing Lab	Alaska State Virology Laboratory - Fairbanks		
Test Method	GenMark e-Sensor Multiplex PCR		
<b>Viral Targets</b>	<b>Associated Disease</b>		
1. Influenza A/H1	Influenza <i>Note: Testing for Novel strains of influenza (Flu A/H5N1, Flu A/H7N9 etc.) must be approved by the Section of Epidemiology.            Business Hours: 907-269-8000; After Hours: 1-800-478-0084</i>		
2. Influenza A/'09 H1N1			
3. Influenza A/H3			
4. Influenza B			
5. RSV A (Can be more serious)	Bronchiolitis & Pulmonary Inflammation		
6. RSV B (Often less severe)			
7. Human Metapneumovirus (hMPV)	Lower Respiratory Disease		
8. Rhinovirus (>100 subtypes)	The Common Cold		
9. Adenovirus group B/E (B subtypes: 3, 7, 11, 14, 16, 21, 34, 35, 50, 55) (E subtype: 4)	Severe Respiratory Disease (Adenovirus groups B & E are indistinguishable by this test)		
10. Adenovirus group C (C subtypes 1, 2, 5, 6, 57)	Respiratory Disease (Usually less severe than Adenovirus groups B/E)		
11-14. Parainfluenza types: 1, 2, 3, 4	Upper & Lower Respiratory Disease		
15-19. Human Coronavirus's (HCoV) HKU1, 229E, NL63, OC43	Mild – Moderate Respiratory Disease		
Specimen	Preferred specimen: Nasopharyngeal (NP) <u>Acceptable specimens:</u> Nasopharyngeal Swab(NP)      Tracheal Aspirate (TA)      Dual (NP/TS ) Nasal Swab (NS)              Nasal Aspirate (NA)      Nasal Wash (NW) Bronchoalveolar Lavage (BL)      Lung Tissue (LT)      Bronchial Wash (BW)		
Collection	Collection materials are available upon request; instructions below: <ul style="list-style-type: none"> <li>• Swab: place swab into UTM and break swab below lid line</li> <li>• Wash or lavage: aseptically transfer no more than 3 ml to UTM</li> <li>• Lung tissue: transfer a pea sized piece (about 1 gram) into UTM</li> <li>• Be sure the cap is twisted down completely.</li> <li>• Place UTM inside the biohazard bag; put Lab Request in outer pocket</li> </ul>		
Storage & Transport	<ul style="list-style-type: none"> <li>• Store the specimens in your refrigerator until ready to ship</li> <li>• Pack samples on cool packs to preserve viral integrity</li> <li>• Ship as a Biological Substance Category B UN3373</li> <li>• If you are in an outlying area:               <ul style="list-style-type: none"> <li>✓ Use the pre-addressed Priority Mail Labels provided</li> <li>✓ Mail Monday or Tuesday to avoid weekends at the Post Office</li> </ul> </li> </ul>		
Turnaround Time (TAT)	1-3 days after receipt at ASVL		

## Contact and Control Measures

- Annual seasonal influenza vaccination is recommended for most people over 6 months of age.
- Individuals with ILI are encouraged to stay home for 24 hours after their fever has resolved.
- Implement respiratory hygiene and cough etiquette.
- Influenza antivirals can be used to treat or prevent influenza. Current recommendations are available at: <http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>

## Hospital Considerations

- Droplet Precautions should be implemented for patients with suspected or confirmed influenza for 7 days after illness onset or until 24 hours after resolution of fever and respiratory symptoms, whichever is longer.
- Place patient with suspected or confirmed influenza in private or single room. If single room is not available consult with infection prevention personnel.
- Health Care Providers (HCP) should don a facemask when entering the patient with suspected or confirmed influenza. Remove the facemask when leaving the patient's room, dispose of the facemask in the waste container, and perform hand hygiene.
- Some facilities may choose to provide alternative personal protective equipment such as respirators or powered air purifying respirators.
- If patient in Droplet Precautions requires movement or transport outside of the room:
  - Have patient wear a facemask if possible, follow respiratory hygiene and cough etiquette.
  - Communicate information about patients with suspected or confirmed influenza before transporting them to other departments or facilities.
- Use caution when performing aerosol based procedures and consider conducting these higher risk procedures in an airborne infection isolation room or use of a portable HEPA filtration unit. Some procedures on patients with suspected or confirmed influenza may be more likely to generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking or breathing. Some examples may include: bronchoscopy, sputum induction, elective intubation and extubation, and autopsy.
- Please review the prevention strategies for seasonal influenza in healthcare settings: <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>

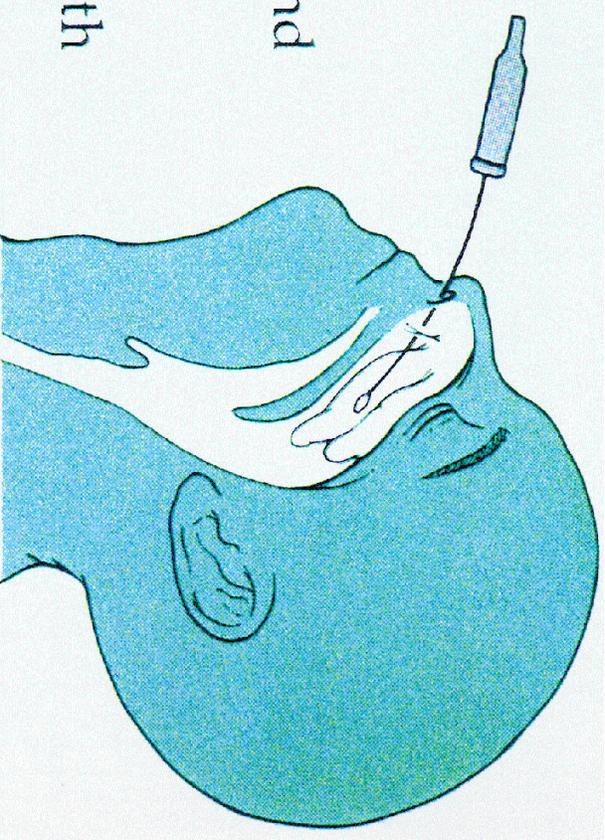
## Reporting Requirements

- FTR: Congregational or other large outbreaks.
- Positive influenza results are reportable to the Section of Epidemiology (SOE) and entered into AK-STARS
- All influenza-associated deaths are reportable to the SOE. Request medical records. Pediatric-associated mortality is reported through a secure CDC website by the SOE influenza surveillance coordinator.
- Other surveillance systems: ILI-Net.

# Nasopharyngeal Swab Method

Materials: Mini-Tip Culturette® Brand Collection and Transport System *or*

Nasopharyngeal swab with synthetic fiber tip  
1-2 ml Viral Transport Medium (VTM)  
Specimen container



1. Insert swab into one nostril.
2. Press swab tip on the mucosal surface of the mid-inferior portion of the inferior turbinate (see sketch), and rub the swab tip several times across the mucosal surface to loosen and collect cellular material.
3. Withdraw swab; insert into **Culturette®** or container with VTM.