

Influenza Virus, Surveillance

Use

To determine variants of influenza A-positive specimens for public health surveillance purposes only. Not for clinical diagnosis.

Significance

Influenza virus–positive specimens are further subtyped to support ongoing surveillance efforts and to detect the emergence, circulation, and geographic spread of specific influenza virus strains. Following subtype determination by the OSDH Public Health Laboratory (PHL), selected specimens may be forwarded to the Centers for Disease Control and Prevention (CDC) for more comprehensive characterization. At CDC, specimens undergo detailed genetic and antigenic analysis to assess how closely circulating viruses match seasonal vaccine strains and to identify significant genetic changes that may impact public health. In addition, CDC evaluates each specimen for antiviral susceptibility, including testing against neuraminidase inhibitors (oseltamivir, zanamivir, and peramivir) and the endonuclease inhibitor baloxavir. These data contribute to national surveillance systems that track antiviral resistance and guide clinical and public health decision-making.

Methodology

Specimens are subtyped using the CDC Human Influenza Virus Real Time RT-PCR panel that characterizes influenza A subtypes A/H1pdm09, A/H3, A/H5, A/H7 and influenza B.

Specimen Type

Specimens submitted must be previously determined as positive for influenza A virus. Acceptable specimen types include:

- Nasopharyngeal (NP) swab in appropriate transport medium (preferred specimen)
- Alternative acceptable specimens include:
 - Nasal aspirate in appropriate transport medium
 - Deep nasal swab in appropriate transport medium
 - Nasal swab combined with oropharyngeal swab in appropriate transport media (2 separate swabs placed in one transport vial)
 - If person has conjunctivitis, NP swab combined with conjunctival swab in appropriate transport media (2 separate swabs placed in separate transport vials)

Suitable transport media include: Remel M4RT, M4, or M5, BD Universal Viral Transport (UVT®) Medium, Copan Universal Transport Medium (UTM®), and other commercial media.

Minimum Volume/Size

Prepare and submit:

- 2 mL of original sample placed into an appropriately labeled sterile container
- Remaining volume of the original specimen; ONLY if unaltered (no added reagents)

Alternatively, collect two separate samples from the patient, one to be tested at the collection facility and the other for submission to the OSDH PHL.

Collection Instructions

Respiratory virus detection depends on the collection of high-quality specimens, their rapid transport to the testing laboratory and appropriate storage before testing. Training in specimen collection is highly

recommended due to the importance of specimen quality. Specimens should be collected using standard procedures of the submitting site. Additional guidance is contained in the links below.

- See [Guidance for Collection of Nasopharyngeal Swab](#)
- See [Guidance for Collection of Oropharyngeal Swab](#)
- See [Guidance for Collection of Nasal Swab](#)
- See [Guidance for Collection of Conjunctival Swab](#)

Common Causes for Rejection

Not applicable

Shipping

- **Refrigerated** (2–8°C), use frozen cold packs: for fresh specimen(s) that will arrive at OSDH PHL within 72 hours of collection.
- **Frozen**, use dry ice: for specimen(s) that will **not** arrive at the OSDH PHL within 72 hours of collection. Samples may be kept frozen (at least -20°C but -70°C or colder is preferred) at the collection site and submitted to the OSDH PHL once per week. If site is unable to provide dry ice for shipment, please call the OSDH PHL at 405-564-7750 at least 24 hours ahead of scheduled submission to request dry ice transport.

Document specimens submitted using the [Influenza Surveillance Shipping Manifest](#).

Turn-around Time

Not applicable

Reference Range

Not applicable

Reportable Results

The OSDH PHL does not issue surveillance results to the submitter or patient; testing is intended for public health surveillance purposes only.

Interpretation

Not applicable

Limitations/Interferences

Not applicable

CPT Code

Not applicable

Notes

This test is intended to support epidemiologic surveillance.