Dear Colleagues,

Welcome to the 2016-2017 influenza season. We need your help in order to generate a comprehensive picture of the antigenic, genetic and antiviral properties of influenza viruses that are emerging and/or actively circulating in the U.S. and worldwide. The virus surveillance specimens that you are submitting to are subsequently characterized (e.g., antigenic, genetic, and/or antiviral resistance) and collective analysis of the data is used to identify optimal vaccine candidates in the upcoming influenza season. By participating, you play a very important role in the global surveillance of influenza viruses and we greatly appreciate your contributions to this important public health effort.

For the 2016-2017 season, please use the following virus surveillance specimen submission guidelines:

1. For shipments on or after October 1st, 2016, please send influenza virus positive specimens, every two weeks, to your designated National Influenza Surveillance Reference Center (NIRC), see Table 1). Please do not ship surveillance specimens directly to CDC.

2. Selection criteria:
   a. influenza virus positive original clinical specimens that have been identified during the prior two weeks, according to the guidelines below:
      ▪ 2 of influenza A(H3N2) positive specimens
      ▪ 2 influenza A(H1N1)pdm09 positive specimens
      ▪ 2 influenza B positive specimens
      If your laboratory performs influenza B lineage testing and you have recent positives from both influenza B/Victoria and B/Yamagata lineages, please submit one of each. If lineage testing isn’t done or if all your recent B viruses are from a single lineage, please submit 2 influenza B positive specimens.

      Please do not send virus isolates.

      b. specimens should have CT values less than 30 based on InfA or InfB tests using the CDC Flu rRT-PCR Dx Panel

      c. ideally send 1.0mL of original clinical specimen; if 1.0mL is not available, submit no less than 0.6mL.

Specimens with inconclusive results, but have InfA CT <35, should be sent directly to the Diagnostic Development Team at the CDC (see Addendum 1). These should not be submitted to the NIRC. Furthermore, please do not attempt to culture viruses that produce inconclusive results using the CDC Flu rRT-PCR Dx Panel.
3. Please fill in the electronic Influenza Specimen Submission Form (updated for 2016-2017 season).
   a. Please follow instructions included in the electronic Influenza Specimen Submission Form to provide important metadata.
   b. Email the electronic version of the Influenza Specimen Submission Form to the address for your designated NIRC.
   c. Print a shipping manifest from the Influenza Specimen Submission Form (preset in excel template) and include it in the shipping container.

Timely submission of original clinical specimens is critical. Do not wait to ship specimens if you only have a few specimens available that meet the requirements detailed above.

Please note how the volume of specimens submitted to NIRCs/CDC is typically used:
   0.6 ml for virus isolation and antigenic testing
   0.2 ml for genome sequencing
   0.2 ml is stored for repeat tests and/or isolation of vaccine virus progenitors

Finally, in order to meet specific needs (e.g., obtain egg isolates) or to achieve our virus surveillance goals we may send a special request that deviates from this guidance. If there are any questions, please contact the CDC Influenza Division staff (see below or addendums for contact information).

Xiyan Xu, MD.
Team Lead, Virus Reference Team, VSDB/ID
Phone: 404-639-1657
Emails: xxx1@cdc.gov; InfluenzaVirusSurveillance@cdc.gov

Dave Wentworth, PhD
Chief, Virology Surveillance and Diagnosis Branch
Influenza Division/NCIRD/CDC
Phone: 404-639-3887
Email: DWentworth@cdc.gov

Sincerely,

Jacqueline Katz, PhD
Deputy Director, Influenza Division,
Director, WHO Collaborating Center for Surveillance, Epidemiology and Control of Influenza National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention
<table>
<thead>
<tr>
<th>Reference Centers*</th>
<th>Specimen Submission Laboratories</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Department of Health Viral and Rickettsial Disease Laboratory</td>
<td>All public health laboratories (state, county, or city) in the following states/territories: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, Wyoming</td>
</tr>
<tr>
<td>New York State Department of Health (Wadsworth Center)</td>
<td>All public health laboratories (state, county, or city) in the following states/territories: Connecticut, Delaware, District of Columbia, Florida, Georgia, Kentucky, Massachusetts, Maryland, Maine, North Carolina, New Hampshire, New Jersey, New York, Pennsylvania, Ohio, Rhode Island, South Carolina, Tennessee, Virginia, Vermont, West Virginia, Puerto Rico</td>
</tr>
<tr>
<td>Wisconsin State Laboratory of Hygiene</td>
<td>All public health laboratories (state, county, or city) in the following states/territories: Alabama, Arkansas, Iowa, Illinois, Indiana, Louisiana, Kansas, Michigan, Minnesota, Missouri, Mississippi, North Dakota, Nebraska, Oklahoma, South Dakota, Texas, Wisconsin</td>
</tr>
</tbody>
</table>

* See Appendix 1 for shipping addresses.
Appendix 1. Shipping Addresses

1. **Influenza Division, CDC**

   Dr. Xiyan Xu  
   Centers for Disease Control and Prevention  
   Influenza Division, MS G-16  
   c/o STAT  
   1600 Clifton Road, NE  
   Atlanta, GA 30329  
   Phone: (404) 639-1657  
   Fax: (404) 639-0080

   Email: InfluenzaVirusSurveillance@cdc.gov

2. **California Department of Public Health, Viral and Rickettsial Disease Laboratory**

   CDPH/VRDL  
   Attn: Estela Saguar/Mimi Reyes-Martin/Hugo Guevara  
   850 Marina Bay Parkway, B262  
   Richmond, CA 94804  
   Phone: (510) 307-8497

   Email: CDPHVirusIsolationProject@cdph.ca.gov

3. **New York State Department of Health Wadsworth Center**

   David Axelrod Institute  
   Attn: Deborah Rusinko/Jennifer Laplante  
   Laboratory of Viral Disease  
   120 New Scotland Ave  
   Albany, NY 12208  
   Tel: (518) 474.4177

   Email: fluNYS@health.ny.gov

4. **Wisconsin State Laboratory of Hygiene**

   Wisconsin State Laboratory of Hygiene  
   Attn: Communicable Disease Division  
   Virology Laboratory  
   2601 Agriculture Drive PO Box 7904  
   Madison, WI 53718  
   Phone: (800) 862.1013

   Email: virus@slh.wisc.edu
**Addendum 1.**

Table 1: Diagnostic Specimen Referral Chart – Seasonal Influenza

<table>
<thead>
<tr>
<th>Category and Purpose</th>
<th>What and when to send</th>
<th>Where to send</th>
<th>CDC Contact</th>
</tr>
</thead>
</table>
| **Respiratory Specimens with Inconclusive results using the CDC Flu rRT-PCR Dx Panel** | If, upon repeat testing using the CDC protocol as specified in the package insert, specimen test results are:  
- Influenza A unsubtypable with InfA Ct value <35, notify CDC IMMEDIATELY ([flusupport@cdc.gov](mailto:flusupport@cdc.gov)) and send the clinical specimen to CDC IMMEDIATELY for further characterization  
- Presumptive positive A/H3v similar to those circulating in swine, notify CDC IMMEDIATELY ([flusupport@cdc.gov](mailto:flusupport@cdc.gov)) and send the clinical specimen to CDC IMMEDIATELY for further characterization.  
- Inconclusive indicating possible variant influenza A virus similar to those circulating in swine, notify CDC IMMEDIATELY ([flusupport@cdc.gov](mailto:flusupport@cdc.gov)) and send the clinical specimen to CDC IMMEDIATELY for further characterization.  
- Inconclusive indicating possible co-infection, send the clinical specimen to CDC for further characterization.  
- Inconclusive influenza B viruses that are unable to be genotyped, send the clinical specimen to CDC for further characterization. | | Stephen Lindstrom, Ph.D.  
Team Lead, Diagnostic Development Team  
VSDB/ID  
Phone: 404-639-1587  
Fax: 404-639-2350  
Email: sql5@cdc.gov  
Email: [flusupport@cdc.gov](mailto:flusupport@cdc.gov) |
| **Note:** Unsubtypable results may represent changes in the circulating viruses, introduction of a new virus, a problem with the performance of the primers and probes, or a problem in your individual laboratory. | **Ship to:**  
Dr. Stephen Lindstrom  
Centers for Disease Control and Prevention  
Influenza Division, MS G-16  
c/o STAT  
1600 Clifton Rd, NE  
Atlanta, GA 30329 | | |
| **Note:** Influenza A unsubtypable with InfA Ct value >35, the sample may be reported as inconclusive.  
- Report may indicate that the subtype could not be determined due to low viral titer.  
- These specimens may be sent to CDC for verification following consultation with CDC. | | | |
| **All H3N2v presumptive positive clinical samples should be sent to CDC.** | | | |
| **Note:** Influenza A unsubtypable with InfA Ct value >35, the sample may be reported as inconclusive.  
- Report may indicate that the subtype could not be determined due to low viral titer.  
- These specimens may be sent to CDC for verification following consultation with CDC. | | | |
<table>
<thead>
<tr>
<th>Category and Purpose</th>
<th>What and when to send</th>
<th>Where to send</th>
<th>CDC Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A/H5N1: Specimens with presumptive positive or inconclusive results</strong>&lt;br&gt;A specimen is only presumptively positive for influenza A/H5 if all three targets (InfA, H5a and H5b) are positive.&lt;br&gt;&lt;br&gt;A result is inconclusive for A/H5 if the test is positive for InfA and has only one of the two H5 markers testing positive.</td>
<td>If specimen test results are presumptive positive for A/H5 or A/H7, notify CDC IMMEDIATELY (<a href="mailto:flusupport@cdc.gov">flusupport@cdc.gov</a>) and send the clinical specimen to CDC IMMEDIATELY for further characterization.&lt;br&gt;&lt;br&gt;Repeat testing should be done on all samples that are inconclusive for influenza A/H5 or A/H7 (Eurasian Lineage) using the CDC protocol as specified in the package insert. If, upon repeat testing, specimens are either 1) positive for InfA and either or both H5a and H5b targets or 2) positive for InfA and EuH7, these should be sent to CDC IMMEDIATELY for verification.</td>
<td><strong>Ship to:</strong>&lt;br&gt;Dr. Stephen Lindstrom&lt;br&gt;Centers for Disease Control and Prevention&lt;br&gt;Influenza Division, MS G-16&lt;br&gt;c/o STAT&lt;br&gt;1600 Clifton Rd, NE&lt;br&gt;Atlanta, GA 30329</td>
<td>Stephen Lindstrom, Ph.D.&lt;br&gt;Team Lead, Diagnostic Development Team&lt;br&gt;VSD/BID&lt;br&gt;Phone: 404-639-1587&lt;br&gt;Fax: 404-639-2350&lt;br&gt;Email: <a href="mailto:sql5@cdc.gov">sql5@cdc.gov</a>&lt;br&gt;Email: <a href="mailto:flusupport@cdc.gov">flusupport@cdc.gov</a></td>
</tr>
</tbody>
</table>

| **A/H7 (Eurasian Lineage): Specimens with presumptive positive or inconclusive results**<br>A specimen is only “Influenza A Detected; Subtype Eurasian H7 detected” if both targets (InfA and EuH7) are positive. | What to send?<br>Original clinical specimens<br><br>When to send? IMMEDIATELY | Complete the Influenza Specimen Submission Form. | **Note:** Testing with the CDC Human Influenza Virus Real-Time RT-PCR Diagnostic Panel-Influenza A/H5 or A/H7 (Eurasian Lineage) Assay should only be performed when the patient meets clinical and epidemiologic criteria for testing suspect specimens. | **When to notify?**<br>Notify CDC influenza Division IMMEDIATELY (flusupport@cdc.gov) upon verification of presumptive positive or inconclusive results for influenza A/H5 or detection of influenza A/H7 (Eurasian Lineage). | **Note:** Send completed form and tracking information electronically to the appropriate email address for the receiving laboratory. Include hard copy of the influenza specimen submission form in the shipment. |

**Note:** Please indicate on the Influenza Specimen Submission Form the following specific information:

- **Reason for Submission:** Diagnosis
- **Type/Subtype:** Presumptive A(H5), Influenza A(H7), or Inconclusive
- **If Clinical Specimen:** Indicate specimen type
- **Comments:** Provide any relevant rRT-PCR data
Table 1: Influenza A Antiviral Resistance Surveillance Specimen Referral Chart

<table>
<thead>
<tr>
<th>Category and Purpose</th>
<th>What and when to send</th>
<th>Where to send</th>
<th>CDC Contact</th>
</tr>
</thead>
</table>
| **Antiviral Resistance Surveillance** (Pyrosequencing Only) | What to send?  
- Original clinical specimens only  
- Positive for influenza A (H1N1)pdm09 or (H3N2) using the CDC Flu rRT-PCR Dx Panel.  
- Ct values less than 30.  

How many and when to send?  
- Up to 5 specimens every other week  

Do NOT submit aliquots from the same specimen for both pyrosequencing and National Influenza Virus Surveillance. Please submit DIFFERENT specimens. | Designated laboratory for pyrosequencing:  
Jennifer Laplante  
Wadsworth -NYSDOH  
David Axelrod Institute  
120 New Scotland Ave  
Albany, NY 12208  
Tel: (518) 408-2007  
Email: jennifer.laplante@health.ny.gov  

Complete the Influenza Specimen Submission Form and indicate the following specific information:  
- **Reason for Submission:** Antiviral Surveillance  
- Specimen type  

Notes: Send completed Influenza Specimen Submission Form and tracking information electronically to jennifer.laplante@health.ny.gov. Include hard copy of the Form in the shipment.  

The reference center at New York State Department of Health receives clinical specimens submitted 1) for National Influenza Virus Surveillance and 2) to perform pyrosequencing on additional (and different) clinical specimens. Note: please indicate clearly on the Influenza Specimen Submission Form whether **Reason for Submission** is Surveillance or Antiviral Surveillance (pyrosequencing). | Larisa Gubareva, MD, PhD  
Team Lead, Molecular Epidemiology Team  
VSDB/ID  
Phone: 404-639-3204  
Fax: 404-639-0080  
Email: fluantiviral@cdc.gov  
Email: LGubareva@cdc.gov |

**Note:**  
ALWAYS SUBMIT TO NATIONAL INFLUENZA VIRUS SURVEILLANCE FIRST PRIOR TO SUBMITTING ADDITIONAL VIRUSES FOR PYROSEQUENCING.
<table>
<thead>
<tr>
<th>Category and Purpose</th>
<th>What and when to send</th>
<th>Where to send</th>
<th>CDC Contact</th>
</tr>
</thead>
</table>
| **Antiviral resistance testing for clinical care** | • Influenza A(H1N1)pdm09, A(H3N2) and influenza B viruses  
• Original clinical specimens with Ct values less than 30  
• At least 200 µl per original clinical specimen  
• Monday-Thursday  
• Results may be available within 48-72 hours  
• Testing report is submitted by a password-protected email to a contact provided in the Influenza Specimen Submission Form | Please email and call CDC (POC: Dr. Larisa Gubareva) to request testing  
**Ship to:**  
Dr. Xiyan Xu  
(attention: L. Gubareva)  
Centers for Disease Control and Prevention  
Influenza Division, MS G-16  
c/o STAT  
1600 Clifton Road NE  
Atlanta, GA 30329  
Phone: 404-639-1657  
Fax: 404-639-0080  
Complete the Influenza Specimen Submission Form and indicate the following specific information:  
• **Reason for Submission:** Antiviral Diagnosis  
In addition, please complete the CDC Specimen Submission Form, **CDC 50.34**  
**Notes:** Send 1) completed Influenza Specimen Submission Form, 2) CDC Specimen Submission Form, 3) tracking information to Email: fluantiviral@cdc.gov and 4) include hard copy of the Influenza Submission Form in the shipment. | Larisa Gubareva, MD, PhD  
Team Lead, Molecular Epidemiology Team  
VSDB/ID  
Phone: 404-639-3204  
Fax: 404-639-0080  
Email: fluantiviral@cdc.gov  
Email: LGubareva@cdc.gov |