I. Summary:

- **Influenza activity is high in Florida and nationally.** Visits to emergency departments for influenza and influenza-like illness (ILI) continue to increase. Viral strain surveillance indicates most influenza circulating is influenza A (H3) but influenza A 2009 (H1N1) and influenza B have also been identified in the state. Influenza A (H3) strains are associated with more severe presentations of influenza, such as hospitalization and death, particularly in at-risk subpopulations such as pregnant women, children under the age of 5, immunocompromised individuals.

- Based on the current situation, the Florida Department of Health is requesting hospitals report patients **meeting all three of the following criteria:**
  1. admitted to the intensive care unit (ICU) with
  2. laboratory-confirmed influenza (including rapid antigen tests) and
  3. between 0-64 years of age.

- Surveillance goals: assess viral strains associated with severe influenza presentations; assess vaccination administration in populations at high risk for severe complications due to infection; assess antiviral administration and timing according to current guidance.

  This information will be used to inform state response strategies and assess policies and gaps with implementing current guidelines.

II. Actions:

- **Investigate and report in Merlin all persons admitted to the ICU with laboratory-confirmed influenza (including rapid antigen tests) and 0-64 years of age.** Add a case record in Merlin within 48 business hours of CHD notification – see Section V.
  - Report cases in Merlin under the disease code: **Influenza, ICU (Special Project) – 48710**

- Coordinate specimen submission for pre-screened positive specimens to the Bureau of Public Health Laboratories (BPHL) for confirmation and additional testing - see Section IV.
  - Rapid influenza diagnostic tests (RIDT) can be used to identify influenza but have sub-optimal sensitivity. **A negative rapid test cannot rule out influenza.** Negative tests may require further testing for influenza by PCR or viral culture.

- The attached data collection tools are available to support this activity:
  - 2018 Enhanced Influenza Surveillance Form for Hospitals
  - 2018 Enhanced Influenza Surveillance Form for CHDs
  - Both forms can be found in the ICU reporting resource page: [www.floridahealth.gov/icuflu](http://www.floridahealth.gov/icuflu)
III. Public Health Investigation

- Collect medical and laboratory records from the hospital.
- Complete Merlin case data entry. Merlin data entry is required and will be considered the record of file. Completion of the paper 2018 Enhanced Influenza Surveillance Form for CHDs is optional and provided only as a tool to aid in Merlin data entry. See Section V.
- Patient or proxy interviews are not recommended.
- For missing data elements, coordinate with hospital health care providers to obtain the information.

IV. Collection and Submission of Specimens for Further Testing at BPHL

Coordinate specimen submission to BPHL for testing.

- Ideally, hospitals will conduct influenza PCR testing prior to submitting specimens for testing at BPHL. Rapid testing results performed by hospitals for influenza are also accepted if PCR testing is not able to be performed.
- This should be handled like all other reportable diseases where the Department of Health requests or requires that specimens be forwarded to BPHL for testing.

Specimen Collection

- If original specimen is available, that is preferable.
- When influenza is detected in a clinical laboratory by RAPID TESTING methods, please send an aliquot (1-2 ml) of the original swab eluate in viral transport medium (VTM). Place the swab eluate in VTM before sending to BPHL. BPHL is required by the U.S. Food and Drug Administration (FDA) approved PCR protocol to only test original specimens that are in VTM. Rapid test fluid can interfere with PCR. **Do NOT send the rapid test reagent.**
- If collecting a new specimen, collect nasopharyngeal (NP) or oropharyngeal (OP/throat) specimens with a viral swab and place in VTM from those patients with laboratory confirmed influenza (including rapid antigen tests).
- **Preferred specimens are nasopharyngeal swab** (NOT nose swabs). There must be an adequate volume of the sample or the test will not be valid.
- These other respiratory specimens are also acceptable, but not recommended:
  - nasopharyngeal aspirates
  - bronchial wash
  - sputum (NOT saliva)
  - oropharyngeal (throat)
- Swabs MUST be placed in 2-3 ml of VTM immediately after collection.
- Refrigerate immediately, do NOT freeze.
- Collect specimens from patients within three days of onset of illness.

Specimen shipping

- Hospitals should contact the CHD prior to submitting specimen to BPHL for testing.
  **Keep specimens refrigerated at 4°C (NOT frozen) and ship on gel ice no later than 48 hours post collection.**
- On the specimen submission form DH 1847, select test “9100 Influenza AB RT PCR” and add in the notes section Flu A or B positive for confirmation. Indicate swab eluate in VTM, if appropriate.
- WEEKEND specimen submission should not occur. No weekend testing will be performed.
If you have any questions, please reach out to BPHL directly:

**Shipping Specimens to BPHL-Tampa**
Hours: Mon-Fri 8 AM to 5 PM  
Phone number: (813) 233-2203  
Shipping address: Attn: Virology  
Bureau of Laboratories - Tampa  
3602 Spectrum Blvd.  
Tampa, FL 33612  
After-hours number: (866) 352-5227

**Shipping Specimens to BPHL-Jacksonville**
Hours: Mon-Fri 8 AM to 5 PM  
Phone number: (904) 791-1540  
Shipping address: Attn: Virology  
Bureau of Laboratories  
1217 N. Pearl St.  
Jacksonville, FL 32202  
After-hours number: (866) 352-5227

V. **Reporting Influenza-Associated ICU Cases in Merlin**
- Cases should be entered within 48 hours/business hours of CHD notification.  
- DX status should be listed as CONFIRMED as long as there is ANY laboratory evidence (including positive rapid antigen tests) of influenza infection.  
- Please attach ALL laboratory results to the Merlin case.  
- Enter the case as you would any other reportable disease. For disease code, select influenza, ICU (Special Project) – 48710
Fill out the basic case data as you would for any other reportable disease.

- If the case is part of an outbreak, select “outbreak associated” on the basic data screen and enter the outbreak ID. (If you do not have an outbreak ID, you’ll need to create an outbreak via the Merlin Outbreak Module and make sure that the individual is listed on the people roster associated with that outbreak.)

Enter any symptom information on the Case Symptoms section:
- Once the extended data screen is available, the information you enter here, will pre-populated on extended data.

Enter any associated healthcare visits in the Case Healthcare Facility Visits section:
- Once the extended data screen is available, the information you enter here, will pre-populated on extended data.

Laboratory results:
- Enter laboratory results received from the hospital.
- Following receipt of BPHL testing attach laboratory results to the case.

Complete extended data questions. Of particular interest are: vaccination history, antiviral treatment administration, antiviral chemoprophylaxis administration, and underlying health conditions. Extended data will be available in Merlin on Monday February 5, 2018.
• Attach documents to the **Additional Info section**, under the “**documents**” tab. Please also attach any of the following information that you may have collected as part of this investigation:
  o Medical records
  o 2018 Enhanced Influenza Surveillance Form for Hospitals, if provided
  o Optional, 2018 Enhanced Influenza Surveillance Form for County Health Departments (completion of the paper form is optional and provided only as a tool to assist with required Merlin data entry)
  o Paper laboratory results from the hospital

• Navigate to the **extended data screen** and complete the following:

  o **Patient information:**
    ▪ Document if the case attends or works in a school/daycare
    ▪ Document if the case lives or works in a congregate setting
    ▪ When possible, specify the name of the school, daycare, and/or congregate setting.

<table>
<thead>
<tr>
<th>Patient Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attends school/daycare:</td>
</tr>
<tr>
<td>2. Works in a school/daycare:</td>
</tr>
<tr>
<td>3. Lives in a congregate setting:</td>
</tr>
<tr>
<td>4. Works in a congregate setting:</td>
</tr>
</tbody>
</table>

  o **Hospitalization and Laboratory Information:**
Record the name of the diagnosing physician, along with the physician’s phone number.

Document the medical record number that corresponds with the patient’s ICU admission.

Record if the patient died. Where applicable, record if they died as a result of this illness, and the date of death.

8. Died? 
   - Did the patient die from this illness?
   - Date of death:

- **Lab Results**
  - Lab Results
    - There are no Lab Results found.

- **Clinical Information**
  - Symptoms documented in the "symptoms tab" will display here. Alternatively, you can check off applicable symptoms in this window and record onset date and time.
    - If the patient had a fever, document the highest temperature here.
- If the patient is pregnant, document that here.

10. Pregnant? [ ]

- If the patient has any medical conditions that existed before the onset of acute illness, select yes and check off all of the medical conditions that existed before the onset of acute illness. If 'immunosuppression,' 'neurological,' or 'other' are selected, please provide a more specific condition in the 'specify' text boxes provided.

11. Underlying conditions:

Did the patient have any medical conditions that existed before the onset of acute illness? [ ]

If yes, check all medical conditions that existed before onset of acute illness:

- Asthma
- Cancer
- Cardiovascular disease
- Chronic Obstructive Pulmonary Disease (COPD)
- Developmental delay
- Diabetes
- Immunosuppression Specify:
- Kidney disease
- Obesity (BMI>30-39)
- Morbidly Obesity (BMI>40)
- Neurological Specify:
- Postpartum
- Premature at birth
- Smokes tobacco
- Other Specify:
- Unknown
- None

- If complications occurred during the patient's acute illness, select yes and check off all the complications that occurred. If 'other' is selected, please specify in the text box provided.

12. Medical complications:

Did complications occur during the acute illness? [ ]

If yes, check all complications that occurred during the acute illness:

- Acute Respiratory Distress Syndrome (ARDS)
- Bacteremia
- Bronchiolitis
- Pneumonia (X-Ray confirmed)
- Seizures
- None
- Other Specify:

- If the patient was prescribed antivirals as treatment or prophylaxis, select yes.
  - If yes, provide both the date the patient started taking the medication and the end date.
  - Check off or provide the specific medication. When selecting 'other,' please specify the name of the medication.
  - Indicate if the antivirals were prescribed before or after the illness onset.

We've seen an increased number of pregnant women visiting EDs due to flu infection this year. This information will help document severe influenza in pregnant women to inform public policy.

This information helps us determine if these cases are occurring in people with underlying health conditions.

This information helps us determine if the patient's specimen should be tested for antiviral resistance.
13. Was antiviral treatment prescribed?  
   If yes, check all that apply:
   - Oseltamivir (Tamiflu)
   - Zanamivir (Relenza)
   - Other
   Specify:
   Prior to the illness onset:
   After illness onset:

14. Was antibiotic treatment prescribed?

15. Was Extracorporeal Membrane Oxygenation (ECMO) used?
   If yes, data started:

16. Was mechanical ventilation used?
   If yes, data started:

17. Received current seasonal flu vaccine?
   Date dose received:

Risk Factors

- If the patient had contact with any animal, attended an agricultural event, or traveled to a country where novel influenza is circulating in the 10 days prior to symptom onset, notify the Bureau of Epidemiology immediately and see the Guide to Surveillance and Investigation chapter on novel influenza: http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/ documents/gsi-novel-influenza.pdf

- If the patient had contact with an animal in the 10 days prior to symptom onset, select yes.

18. Did the patient have any animal contact in the 10 days prior to symptom onset:
• If the patient had contact with other birds (not chickens or waterfowl), select ‘yes’ for ‘other’ and specify the type of animal and the type of contact.
• If the patient had contact with any animal not listed, select ‘yes’ for ‘other’ and specify the type of animal and the type of contact.

<table>
<thead>
<tr>
<th>18. Did the patient have any animal contact in the 10 days prior to symptom onset:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select all animals the person had contact with in the 10 days prior to symptom onset:</td>
<td></td>
</tr>
<tr>
<td>Birds (chickens/waterfowl):</td>
<td>No</td>
</tr>
<tr>
<td>Pigs:</td>
<td>No</td>
</tr>
<tr>
<td>Other: If yes, specify:</td>
<td></td>
</tr>
<tr>
<td>Other: If yes, specify:</td>
<td></td>
</tr>
<tr>
<td>Other: If yes, specify:</td>
<td></td>
</tr>
</tbody>
</table>

This information helps us determine if the patient could be infected with a novel influenza virus.

• Travel history (as entered in the travel history tab) will display here:

<table>
<thead>
<tr>
<th>Type</th>
<th>Name of Location</th>
<th>Most Likely</th>
<th>Travel Date Begin</th>
<th>Travel Date End</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is no Case Travel History.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• If the patient attended an agricultural event in the 10 days prior to symptom onset, select yes. Provide details about the event in the ‘specify’ box along with the dates the patient attended the event. If the patient had contact with animals at the event, be sure to record those under question 18.

<table>
<thead>
<tr>
<th>19. Did the patient attend an agricultural event in the 10 days preceding illness offset?</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, specify:</td>
<td></td>
</tr>
<tr>
<td>From:</td>
<td></td>
</tr>
</tbody>
</table>

• If the patient was in a country where novel influenza is currently circulating in the 10 days prior to symptom onset, select yes, specify where the patient traveled, and provide dates.

<table>
<thead>
<tr>
<th>20. Was the person in a country where novel influenza is currently circulating in the 10 days prior to symptom onset?</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, specify:</td>
<td></td>
</tr>
<tr>
<td>From:</td>
<td></td>
</tr>
<tr>
<td>(Countries where novel influenza is currently circulating include: China)</td>
<td></td>
</tr>
</tbody>
</table>