U.S. Influenza Activity Update – 2018-2019 Season*

2019 National Adult and Influenza Immunization Summit
May 16, 2019

* As of April 27, 2019

U.S. Influenza Surveillance System
Virologic Surveillance

- U.S. World Health Organization (WHO) Collaborating Laboratories
  - Primarily public health laboratories (~100)

- National Respiratory and Enteric Virus Surveillance System (NREVSS)
  - Clinical laboratories (~300)
  - Run by DVD; they share influenza data

- Novel Influenza A Virus Reporting
Influenza Virus Co-circulation, 1997-1998 through 2018-2019

2018-2019
H1 – 56%
H3 – 41%
Increasing H3 virus circulation, 2018-2019

*Data for most recent 3 weeks.
Increasing H3 Virus Circulation, Early February 2019

* Data for most recent 3 weeks.

Increasing H3 Virus Circulation, Mid-February 2019

* Data for most recent 3 weeks.
Increasing H3 Virus Circulation, Late February 2019

* Data for most recent 3 weeks.

Increasing H3 Virus Circulation, Early/Mid-March 2019

* Data for most recent 3 weeks.
Increasing H3 Virus Circulation, Mid/Late March 2019

* Data for most recent 3 weeks.

Changing Proportion of H3 Genetic Clades/Sub-clades
Viral Strain Surveillance

- Public health labs send subset of influenza positives to CDC
  - Full genome sequencing
  - Detailed antigenic characterization
  - Antiviral resistance testing
  - Development of vaccine candidate strains as needed

Novel Influenza A Reporting

2018-2019: none reported (yet)
Outpatient Influenza-Like Illness (ILI) Surveillance: ILINet

- > 2,500 outpatient providers report weekly
  - ~1.2 million visits/week
- Monitor ILI
  - Fever ≥100F AND cough and/or sore throat

State Level ILI Activity, 2018-2019

* Peak number of jurisdictions experiencing high ILI (33 states, NYC)
Hospitalization Surveillance: FluSurv-Net

- Population-based surveillance for laboratory-confirmed influenza-related hospitalizations
  - 13 states (70 counties)
  - ~9% US population under surveillance

**Hospitalization Surveillance: FluSurv-Net Weekly Rate by Age Group**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Cumulative Rate</th>
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<tbody>
<tr>
<td>65 + years</td>
<td>216.6/100,000</td>
</tr>
<tr>
<td>0-4 years</td>
<td>74.0/100,000</td>
</tr>
<tr>
<td>5-17 years</td>
<td>26.0/100,000</td>
</tr>
<tr>
<td>50-64 years</td>
<td>80.0/100,000</td>
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Morality Surveillance: National Center for Health Statistics Mortality Reporting System

Percent of Deaths Due to Pneumonia or Influenza

Counts of Deaths Due to Influenza

Mortality Surveillance: Influenza Associated Pediatric Deaths

- Deaths in children with laboratory confirmed influenza and clinically compatible illness
- Frequency of underlying conditions and vaccination status are similar to previous seasons
  - 40-60% previously healthy
  - ~20% vaccinated
Summary...aka How was this flu season unusual?

- Two distinct waves of influenza A activity – H1 first then H3
- Almost equal proportions of H1 and H3 by season end, but H1 wins out
- Very little B virus circulation and no later B wave
- Record breaking long season as measured by ILLI activity
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- What does this all mean?

When you’ve seen one flu season, you’ve see one flu season!
U.S. Influenza Surveillance Reports

https://www.cdc.gov/flu/weekly/fluactivitysurv.htm