2014-2015 Influenza Season and EV-D68 Update

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2014-2015 Influenza Season
Influenza Reporting

- Individual cases are **not** reportable in the state of Texas
- Situations where influenza **is** reportable
  - Influenza-associated death in a person <18 years of age
  - Novel (new) influenza virus has been identified
- Associated with an outbreak
## Burden of Influenza

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Texas</th>
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<tbody>
<tr>
<td><strong>Influenza illnesses</strong></td>
<td>15.8 to 63.2 million</td>
<td>1.3 to 5.3 million</td>
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<td>(5%-20% ill annually)</td>
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<td><strong>Influenza hospitalizations</strong></td>
<td>226,054 (range: 54,523 to 430,960)</td>
<td>18,989</td>
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<td>(primary discharge diagnosis)</td>
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<td><strong>Influenza-associated deaths</strong></td>
<td>23,607 (range: 3,349 to 48,614)</td>
<td>1,983</td>
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<td>all ages</td>
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Goals of Influenza Surveillance

- Find out when and where influenza activity is occurring
- Determine what type of influenza viruses are circulating
- Detect changes in the influenza viruses
- Track influenza-related illness and
- Measure the impact influenza is having on deaths in the United States.
Influenza Surveillance Activities in Texas

- Viral Surveillance
- Morbidity
  - ILI
  - ILINet
- Flu
  - Novel Influenza Reporting
- Other
  - Outbreaks
- Mortality
  - Influenza-associated Pediatric
Viral Surveillance

- DSHS and TX LRN Lab Testing, week 40-43
- 185 specimens tested for influenza*
- 14 positive for influenza*

Influenza Type and Subtype Identified from Positive Influenza Specimens

- Flu A H3: 64%
- Flu B: 36%

* As of 10/31/2014
Number and Percentage of Test (Antigen, Culture, PCR) Positive for Influenza by Type and Subtype Reported by Texas Laboratories, 2014-2015 Season

- Flu B
- Flu A (not subtyped)
- Flu A (H3N2)
- Flu A (H1N1)
- Percent flu positive
Morbidity Surveillance

- ILINet
  - An average of 100 (Range: 97-103) have reported ILI on a weekly basis from Week 40-43*
  - Average reported %ILI for Week 40-43: 3.91%*
    - Minimum %ILI reported: 3.69% in Week 41
    - Maximum %ILI reported: 4.22% in Week 43

* As of 10/31/2014
Percentage of Visits Due to Influenza-like Illness (ILI) Reported by Texas Providers in the U.S. Outpatient Influenza-like Illness Surveillance Network, Week 40-43 of 2014–2015 Season

Percentage of visits due to ILI:

- Reporting Week
- % ILI
- Texas baseline

Weeks: 40 41 42 43 44 45 46 47 48 49 50 51 52 53 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Months:
- Oct 2014
- Nov 2014
- Dec 2014
- Jan 2015
- Feb 2015
- Mar 2015
- Apr 2015
- May 2015

Seasons:
- 2014
- 2015

Baseline:
- 6%
Morbidity Surveillance

- ILI/Flu Activity

**Week 40**

**Week 41**

**Week 42**

**Week 43**

Please note: The majority of influenza cases are not reportable by law in Texas. This map contains data from sentinel sites and only displays influenza and ILI cases that were reported to public health. Positive laboratory results are reported according to specimen collection date, or date received in the laboratory if the former is unknown.
Morbidity Surveillance

- Outbreaks
  - 1 ILI-associated outbreak has been reported for this season so far*
    - School located in HSR 9/10
  - 16 were reported for 2013-2014 influenza season
    - 2 ILI-associated
    - 14 were influenza-associated
      - 11 were Flu A
      - 2 were Flu B
      - 1 was unknown

* As of 10/31/2014
Mortality Surveillance

- Influenza-associated Pediatric Deaths
  - None has been reported for this season*

- Twenty were reported for 2013-2014 influenza season
  - Type of influenza
    - 16 positive for influenza A
    - 3 positive for influenza B
    - 1 positive for influenza A and B

- Vaccination Status
  - 14 (~78%) of the children were not fully vaccinated with a 2013-2014 influenza vaccine
  - 4 were too young to vaccinate

* As of 10/31/2014
Enterovirus D68 (EV-D68)
Non-Polio Enteroviruses

- More than 100 serotypes of non-polio enteroviruses
  - Coxsackie viruses A and B
  - Echoviruses
  - “Numbered” enteroviruses (e.g., EV-D68)
- Virus circulation highest in summer and fall
- Enterovirus circulation patterns are complex:
  - Circulating enteroviruses change frequently
  - Multiple strains of the same enterovirus type can co-circulate each year
Non-Polio Enterovirus Illnesses

- Enteroviruses cause a variety of illnesses:
  - Respiratory
  - Febrile rash
  - Conjunctivitis
  - Neurologic (e.g., aseptic meningitis, encephalitis)

- Most illnesses occur in infants, children, and teenagers

- Estimated 10–15 million infections annually in US
EV-D68 Viruses

- First recognized in 1962 in California
  - Small numbers of infections reported annually since 1987
- Clusters since 2008:
  - Most clusters reported < 30 cases
  - Largest: Japan, 120 cases
  - Most cases not fatal
- Currently circulating strains are not new
  - At least 3 EV-D68 strains circulating now
  - Most prominent current strain was also detected in 2012 and 2013
- Similar to rhinoviruses
EV-D68 Illnesses

- EV-D68 causes respiratory illnesses
  - Infections can result in asymptomatic to severe illness
    - Full illness spectrum unknown
    - Mild: fever, runny nose, sneezing, cough, body/muscle aches
    - Severe: wheezing and difficulty breathing

- Risk groups
  - Infection: Infants, children, and teenagers
  - Severe illness: Children with asthma

- EV-D68 virus is found in respiratory secretions
  - Transmission occurs through
    - Direct contact via respiratory droplets
    - Indirect contact with contaminated surfaces
Current US EV-D68 Outbreak

- US: 1,105 patients in 47 states with respiratory illness caused by EV-D68*
  - 9 persons who died were positive for EV-D68
  - 2 deaths were caused by EV-D68

*As of 10/31/2014
EV-D68 in Texas

- EV-D68 detected in specimens from 19 Texas residents with respiratory illnesses*
  - Median age: 7 years (range: < 1-14 years)
  - Onsets range from 7/29/14 – 10/03/2014
  - No deaths
  - Counties: Anderson, Bexar, Dallas, Denton, Harris, Johnson, Lubbock and Midland

- Other currently circulating respiratory viruses may cause similar illnesses

*As of 10/31/2014
Enhanced EV-D68 Surveillance

- CDC has asked states to report:
  - A weekly EV-D68-like activity level
    - Low and similar to the previous week
    - Increased compared to the previous week
    - Elevated but similar to the previous week
    - Decreased compared to the previous week
EV-D68 Prevention

- Healthcare professionals should recommend the following:
  - Wash hands often with soap and water for 20 seconds
  - Avoid touching your eyes, nose, and mouth with unwashed hands
  - Avoid kissing, hugging, and sharing cups or eating utensils with people who are sick
  - Disinfect frequently touched surfaces especially if someone is sick
  - Cover your coughs and sneezes with a tissue or your elbow/sleeve
  - Stay home when feeling sick and consult with your doctor
EV-D68 Prevention & Treatment

- Patients with history of asthma should:
  - Have an asthma action plan
  - Take medications as prescribed
  - Get a flu shot
  - Seek care early if needed
- No vaccine available
- No specific treatment

[Image: CDC guidelines for EV-D68 prevention and treatment]
Questions?