## Influenza Surveillance Update

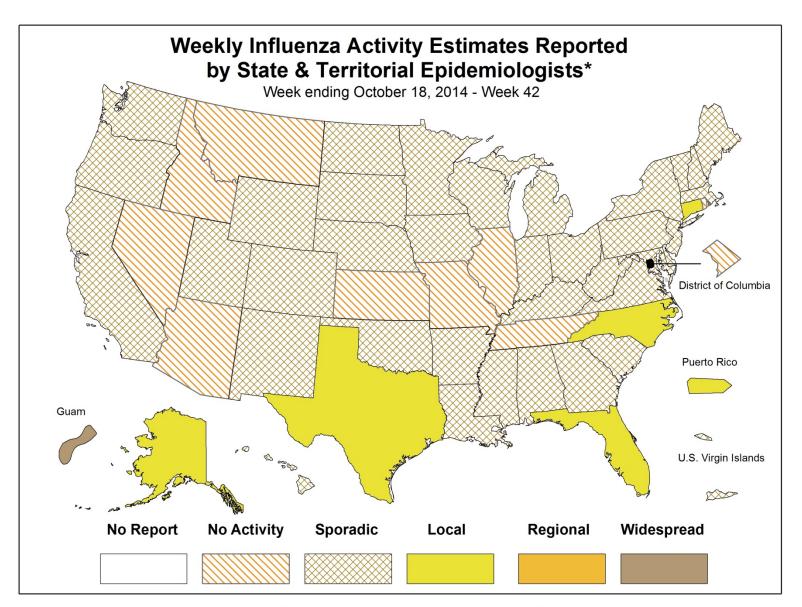
Lisa A. Grohskopf, MD, MPH Influenza Division, NCIRD, CDC

Advisory Committee on Immunization Practices October 29, 2014



National Center for Immunization and Respiratory Diseases

Influenza Division

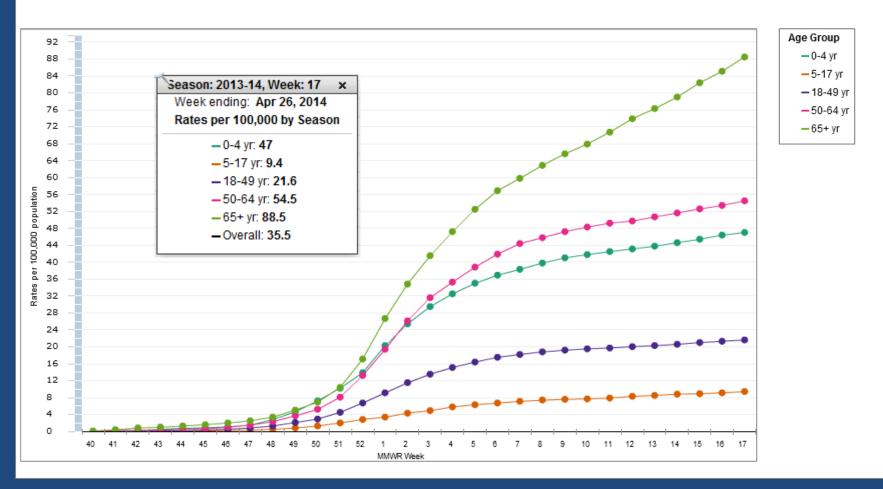


\* This map indicates geographic spread & does not measure the severity of influenza activity

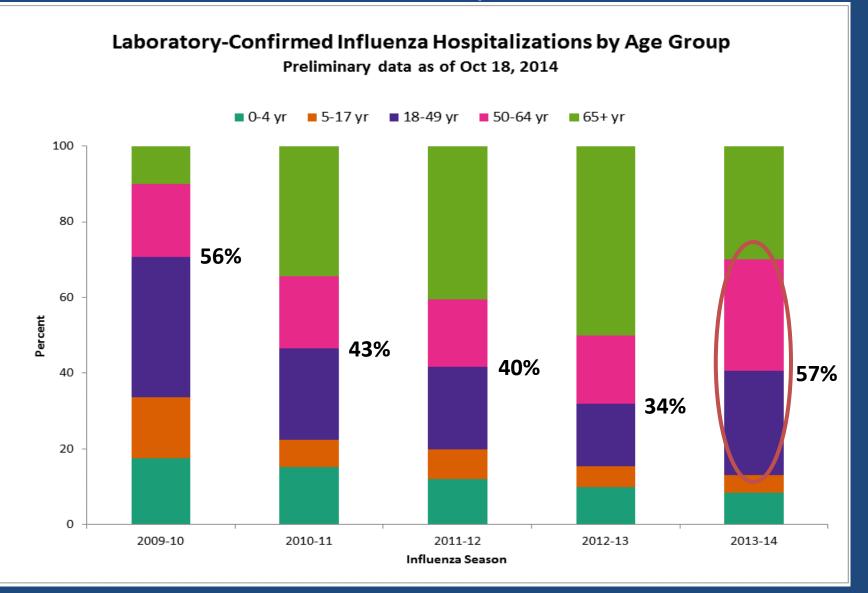
#### Laboratory-Confirmed Influenza Hospitalizations (FluSurv-NET) October 1, 2013 – April 30, 2014

#### Laboratory-Confirmed Influenza Hospitalizations

Preliminary rates as of Oct 18, 2014

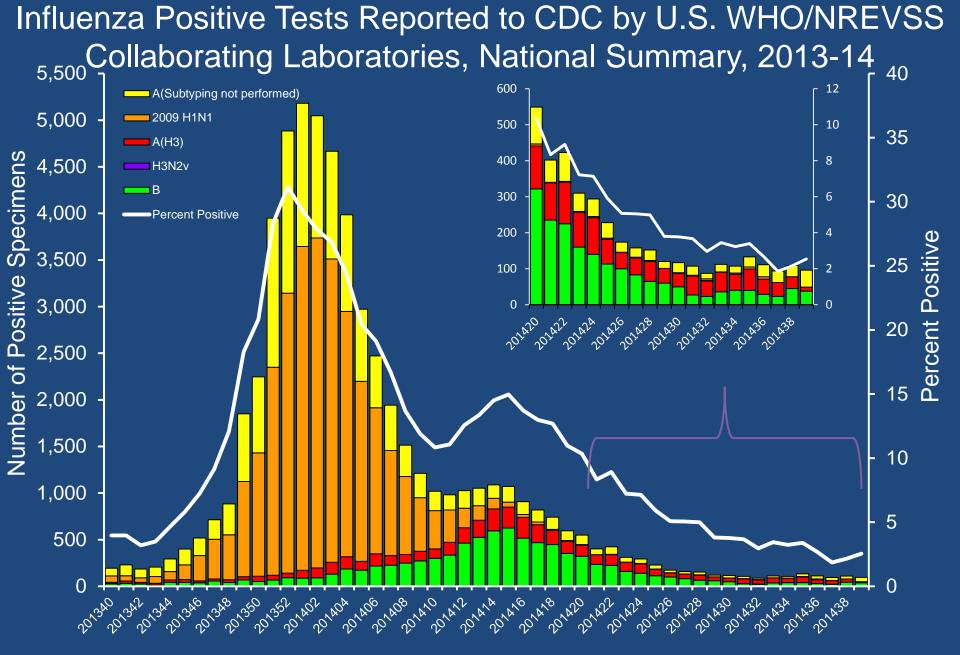


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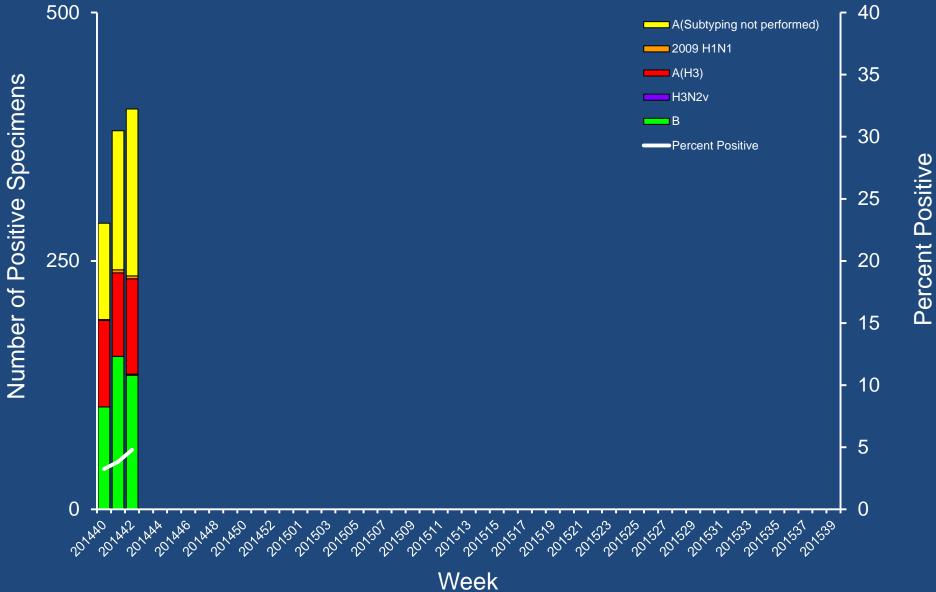
#### **Influenza-Associated Pediatric Deaths** by Week of Death: 2011-12 season to present

|         |                                   |  |         |         |   |                         |                    |                                    |         |         |  |                 |                    |                                    |         | _       |                                      |         |               |                        |             |                                  |                | _              |  |  |
|---------|-----------------------------------|--|---------|---------|---|-------------------------|--------------------|------------------------------------|---------|---------|--|-----------------|--------------------|------------------------------------|---------|---------|--------------------------------------|---------|---------------|------------------------|-------------|----------------------------------|----------------|----------------|--|--|
|         |                                   |  |         |         | (2  | ienza A<br>2009<br>1N1) |                    | Influenza A<br>(H3N2)              |         |         | Influenza A<br>(Subtype not<br>Determined) |                 |                    | Influenza B                        |         |         | Influenza<br>A and B<br>Co-infection |         |               | Type not<br>Determined |             |                                  | Total          |                |  |  |
|         |                                   | # Deaths Reported<br>Current Week – 42                     |         |         |   | 0                       |                    | 1                                  |         |         | 0  |                 |                    | 0                                  |         | 0       |                                      |         | 0             |                        |             | 1                                |                |                |  |  |
|         |                                   | # Deaths Since<br>September 28, 2014                       |         |         |   | 0                       |                    | 1                                  |         |         | 0  |                 |                    | 0                                  |         | 0       |                                      |         | 0             |                        |             |                                  | 1              |                |  |  |
| 30 ר    |                                   | # Deaths 2013-14   |         |         |   | 44                      |                    | 6                                  |         |         | 38   |                 |                    | 17                                 |         |         | 2                                    |         |               | 2                      |             |                                  | 109            |                |  |  |
|         |                                   |  |         |         |   |                         |                    |                                    |         |         |  |                 |                    |                                    |         |         |                                      |         |               |                        |             |                                  |                |                |  |  |
| 25 -    |                                   |  | 20      | 011-12  |   | 2012-13                 |                    |                                    |         |         |  |                 |                    | 2013-14                            |         |         |                                      |         |               |                        |             |                                  | 2014-15        |                |  |  |
| 20 -    | Number of Deaths<br>Reported = 37 |  |         |         |   |                         |                    | Number of Deaths<br>Reported = 171 |         |         |  |                 |                    | Number of Deaths<br>Reported = 109 |         |         |                                      |         |               |                        |             | lumber of Deaths<br>Reported = 1 |                |                |  |  |
| 15 -    |                                   |  |         |         |   |                         |                    |                                    |         |         |  |                 |                    |                                    |         |         |                                      |         |               |                        |             |                                  |                |                |  |  |
| 10 -    |                                   |  |         |         |   |                         |                    |                                    |         |         |  |                 |                    |                                    |         |         |                                      |         |               |                        |             |                                  |                |                |  |  |
| 5 -     |                                   |  |         |         |   |                         |                    |                                    |         |         |  |                 |                    | п                                  |         |         |                                      |         |               |                        |             |                                  |                |                |  |  |
| 0 +     | ╷┛                                |  |         |         | <mark>₽<u></u>₽,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</mark> |                         | ┍╶┍╹╷╿             |                                    | ЩЩ      |         |  | <mark>⊢∏</mark> | , , <mark> </mark> | , _ <b>_ </b>                      | ╷╹┥╴┞   | ┓_┓     | ЦЩ                                   |         | <u>      </u> | μļ                     | <u>ÌЩ</u> Ì | <del></del>                      | <mark>.</mark> | <mark>-</mark> |  |  |
| 40      |                                   | 46<br>52   | 00      | 12      | 2012-18<br>2012-24  | 30                      | 36<br>42           | 48                                 | 02      | 08      | 14   | 20              | 26                 | 32                                 | 2013-38 | 44      | 2013-50                              | 04      | 2014-10       | 2014-16                | 22          | 28                               | 34             | 40             |  |  |
| 2011-40 | 7                                 | 2011-46<br>2011-52   | 2012-06 | 2012-12 | 12-   | 2012-30                 | 2012-36<br>2012-42 | 2012-48                            | 2013-02 | 2013-08 | 2013-14                                    | 2013-20         | 2013-26            | 2013-32                            | 13-     | 2013-44 | 13-                                  | 14-     | 14-           | 14-                    | 14-         | 14-                              | 14-            | 2014-40        |  |  |
| 20      |                                   | 20   | 20      | 20      | 2012-18<br>2012-24  | 20                      | 20                 | 20                                 | 20      | 20      | 20   | 20              | 20                 | 20                                 | 20      | 20      | 20                                   | 2014-04 | 20            | 20                     | 2014-22     | 2014-28                          | 2014-34        | 20             |  |  |
|         |                                   |  |         |         |   |                         |                    | We                                 | ek      | of I    | Dea  | th              |                    |                                    |         |         |                                      |         |               |                        |             |                                  |                |                |  |  |
|         |                                   |  |         |         |   |                         |                    |                                    |         |         | Jea  |                 |                    |                                    |         |         |                                      |         |               |                        |             |                                  | $\pi$          |                |  |  |
|         |                                   | Deaths Reported Previous Week Deaths Reported Current Week |         |         |   |                         |                    |                                    |         |         |  |                 |                    |                                    |         |         |                                      |         |               |                        |             |                                  |                |                |  |  |
|         |                                   |  |         |         |   |                         |                    |                                    |         |         |  |                 |                    |                                    |         |         |                                      |         |               |                        |             |                                  | $\Pi I I$      | 11/            |  |  |



Week

#### Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2014-15



## WHO Recommendations for Composition of 2015 Southern Hemisphere Vaccines

- Recommended that trivalent vaccines contain

   An A/California/7/2009 (H1N1) pdm2009-like virus;
   An A/Switzerland/9715293/2013 (H3N2)-like virus
   A B/Phuket/3073/2013-like virus (Yamagata lineage)
- Quadrivalent vaccines recommended to contain these three viruses and

– A B/Brisbane/60/2008-like virus (Victoria lineage)



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# Summary of A(H3N2) Surveillance, February through August 2014

- Antigenic characteristics of H3N2 viruses assessed using panels of post-infection antisera (hemagglutinin inhibition and virus neutralization assays).
- Many isolates well-inhibited by antisera raised against cellpropagated reference viruses A/Texas/50/2012 and A/Victoria/361/2011.
  - (i.e., were similar to the viruses included in the 2013-14 and 2014-15 Northern Hemisphere seasonal vaccines).
- However, an increasing proportion were poorly inhibited by these antisera, and antisera raised against egg-propagated A/Texas/50/2012
  - 2015 Southern Hemisphere H3N2 is A/Switzerland/9715293/2013 (H3N2)like virus.
  - Antigenic drift is anticipated among H3N2 viruses in the Northern Hemisphere for the 2014-15 season



### Acknowledgements

Lyn Finelli Joseph Bresee Scott Epperson Lenee Blanton Krista Kniss **Rosaline Dhara Desiree Mustaquim** Alejandro Perez Michelle Leon Andrea Giorgi Craig Steffens Ashley Fowlkes Julie Villanueva Sophie Smith

Michael Jhung Carrie Reed Alicia Fry Seema Jain Anna Bramley Victoria Jiang Sandra Dos Santos Chaves Daniel Jernigan Joe Gregg Larissa Gubareva Terri Wallace Xiyan Xu Nancy Cox Tiffany D'Mello

# Thank you

www.cdc.gov/flu

http://www.cdc.gov/flu/weekly/fluviewint eractive.htm



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