



**WISCONSIN DEPARTMENT OF HEALTH SERVICES**  
**Division of Public Health**  
**Bureau of Communicable Diseases and Emergency Response**



**Respiratory virus surveillance report for the week ending March 22, 2014 week 15-11**

**AT-A-GLANCE**

- Respiratory viruses identified this week :  
 Influenza A 2009/H1N1, RSV, and human metapneumovirus were predominant

- Influenza-like illness (ILI) activity for this week

|                       |          |
|-----------------------|----------|
| Wisconsin             | Moderate |
| Wisconsin (CDC level) | Low      |
| Northwestern Region   | Low      |
| Northeastern Region   | Low      |
| Southeastern Region   | Moderate |
| Southern Region       | Low      |

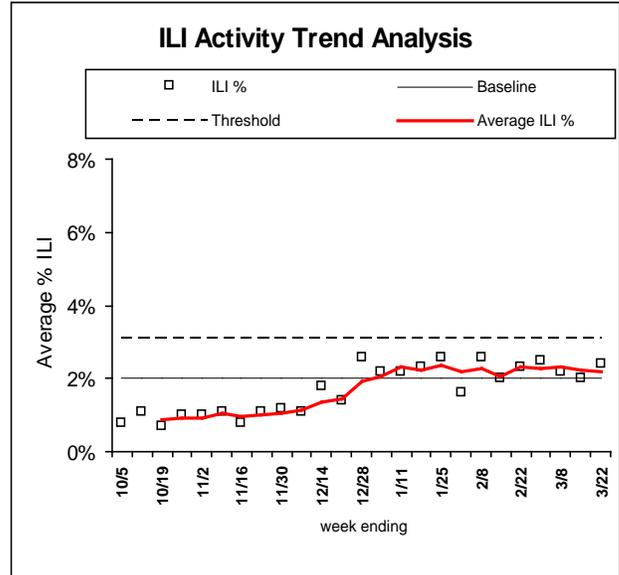
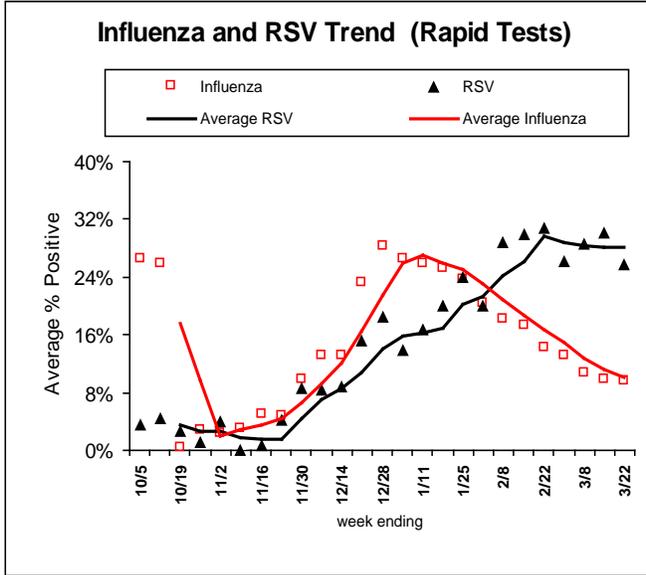
- ILI activity in Region V of the U.S. (WI, MN, IL, MI, OH, IN) is below baseline levels
- ILI activity in the U.S. is below baseline levels
- The Predictive Value Positive (PVP) for rapid influenza and RSV tests is: High (PVP is the probability of disease in a patient with a positive test result)
- The Predictive Value Negative (PVN) for rapid influenza and RSV tests is: Low (PVN is the probability of not having disease when the test result is negative)
- Influenza-associated pediatric deaths reported (October 5, 2013-present)

|               | <u>Week 14-12</u> | <u>Total to Date</u> |
|---------------|-------------------|----------------------|
| Wisconsin     | 0                 | 2                    |
| United States | 4                 | 79                   |

**WISCONSIN and REGIONAL SUMMARIES**  
(Trend analysis based on 3-week moving averages)

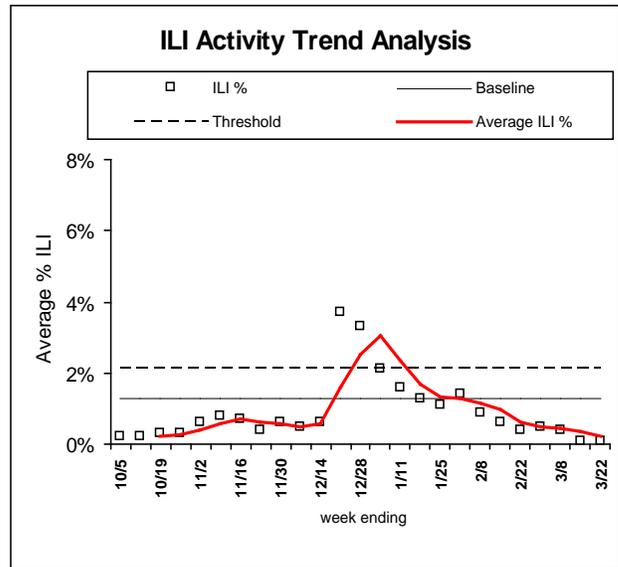
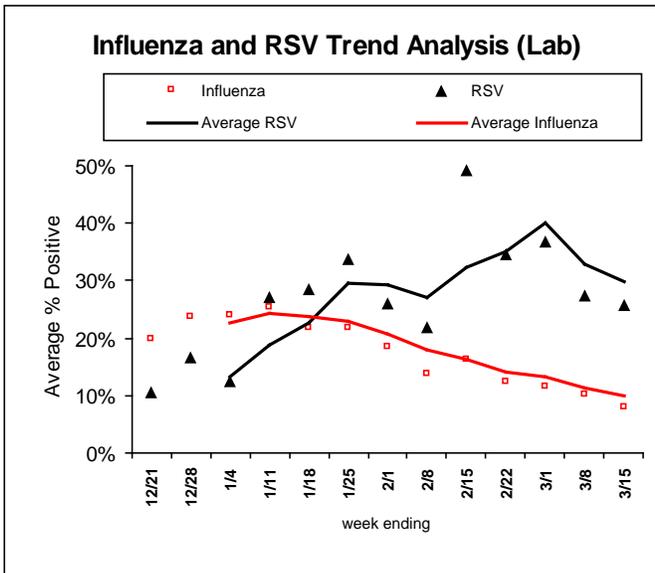
**Wisconsin (ILI activity is Moderate)**

| INFLUENZA RAPID ANTIGEN TESTS |          |       |       | RSV RAPID ANTIGEN TESTS |        |          | INFLUENZA-LIKE ILLNESS |       |          |           |
|-------------------------------|----------|-------|-------|-------------------------|--------|----------|------------------------|-------|----------|-----------|
| Tested                        | Positive |       |       | % Positive              | Tested | Positive | % Positive             | ILI % | Baseline | Threshold |
|                               | Flu A    | Flu B | Total |                         |        |          |                        |       |          |           |
| 683                           | 47       | 18    | 65    | 9.6%                    | 404    | 104      | 25.8%                  | 2.4%  | 2.0%     | 3.1%      |



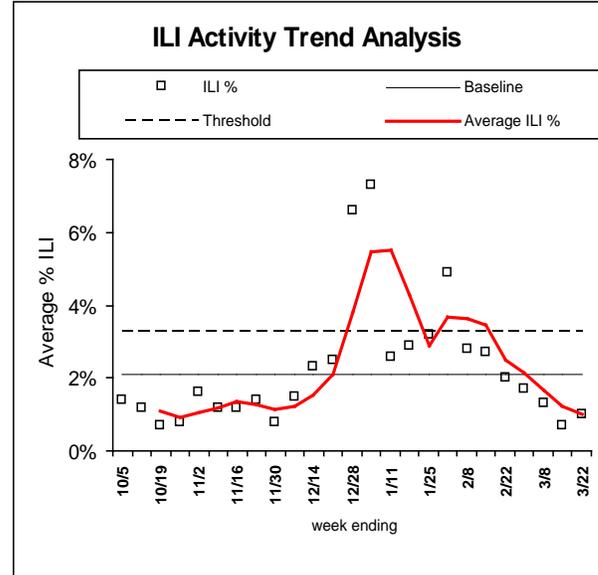
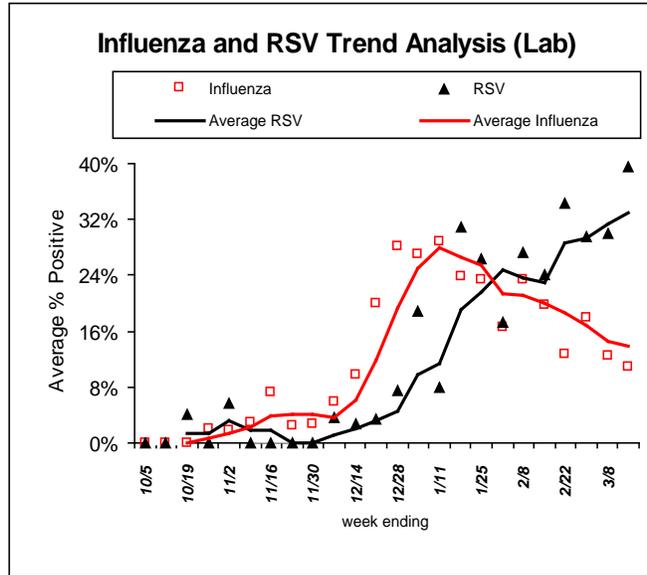
**Northwestern Region (ILI activity is Low)**

| INFLUENZA RAPID ANTIGEN TESTS |          |       |       | RSV RAPID ANTIGEN TESTS |        |          | INFLUENZA-LIKE ILLNESS |       |          |           |
|-------------------------------|----------|-------|-------|-------------------------|--------|----------|------------------------|-------|----------|-----------|
| Tested                        | Positive |       |       | % Positive              | Tested | Positive | % Positive             | ILI % | Baseline | Threshold |
|                               | Flu A    | Flu B | Total |                         |        |          |                        |       |          |           |
|                               |          |       |       |                         |        |          |                        | 0.1%  | 1.3%     | 2.1%      |



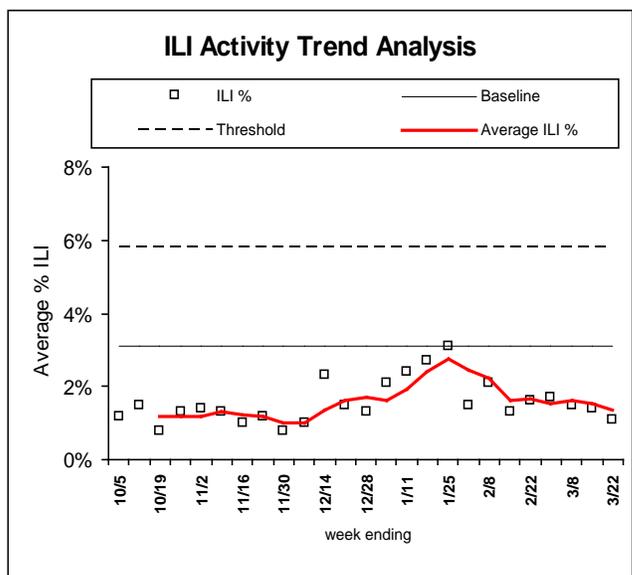
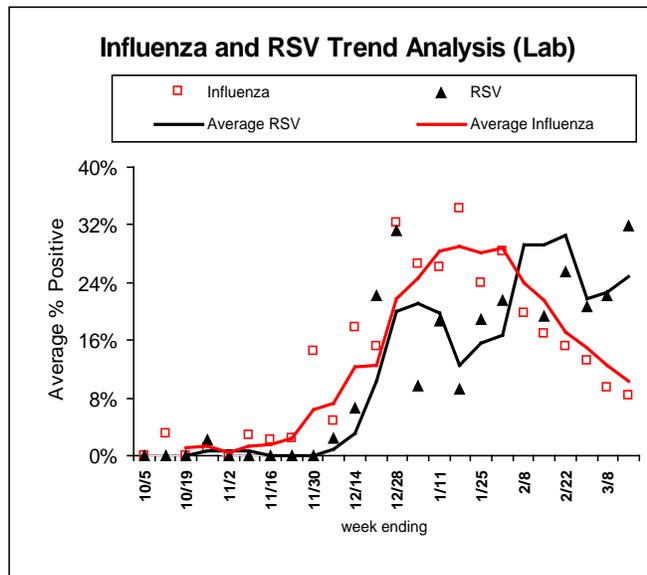
**Northeastern Region (ILI activity is Low)**

| INFLUENZA RAPID ANTIGEN TESTS |          |       |       | RSV RAPID ANTIGEN TESTS |        |          | INFLUENZA-LIKE ILLNESS |       |          |           |
|-------------------------------|----------|-------|-------|-------------------------|--------|----------|------------------------|-------|----------|-----------|
| Tested                        | Positive |       |       | % Positive              | Tested | Positive | % Positive             | ILI % | Baseline | Threshold |
|                               | Flu A    | Flu B | Total |                         |        |          |                        |       |          |           |
|                               |          |       |       |                         |        |          |                        | 1.0%  | 2.1%     | 3.3%      |



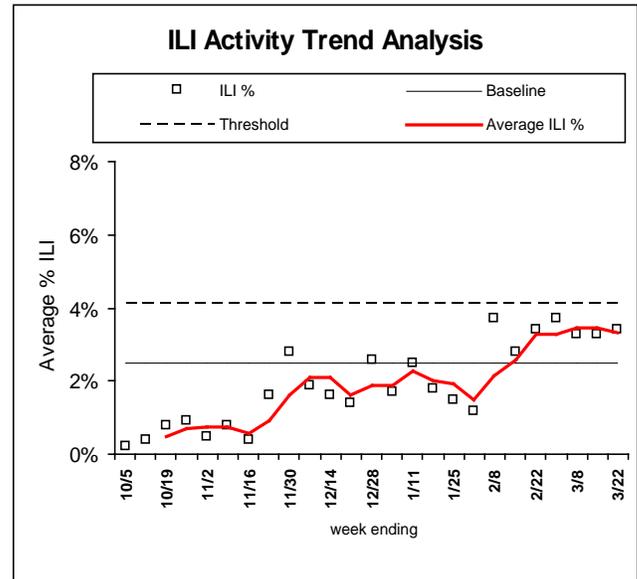
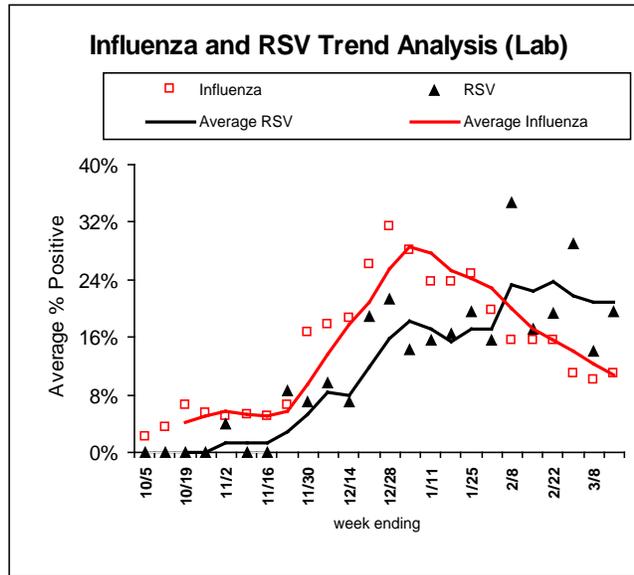
**Southern Region (ILI activity is Low)**

| INFLUENZA RAPID ANTIGEN TESTS |          |       |       | RSV RAPID ANTIGEN TESTS |        |          | INFLUENZA-LIKE ILLNESS |       |          |           |
|-------------------------------|----------|-------|-------|-------------------------|--------|----------|------------------------|-------|----------|-----------|
| Tested                        | Positive |       |       | % Positive              | Tested | Positive | % Positive             | ILI % | Baseline | Threshold |
|                               | Flu A    | Flu B | Total |                         |        |          |                        |       |          |           |
|                               |          |       |       |                         |        |          |                        | 1.1%  | 3.1%     | 5.8%      |



**Southeastern Region (ILI activity is Moderate)**

| INFLUENZA RAPID ANTIGEN TESTS |          |       |       | RSV RAPID ANTIGEN TESTS |        |          | INFLUENZA-LIKE ILLNESS |       |          |           |
|-------------------------------|----------|-------|-------|-------------------------|--------|----------|------------------------|-------|----------|-----------|
| Tested                        | Positive |       |       | % Positive              | Tested | Positive | % Positive             | ILI % | Baseline | Threshold |
|                               | Flu A    | Flu B | Total |                         |        |          |                        |       |          |           |
|                               |          |       |       |                         |        |          |                        | 3.4%  | 2.5%     | 4.1%      |



**For the 2013-14 influenza season, data from the Western Region and the Northern Region will be combined and referred to as the Northwestern Region. This change was made in response to the small number of providers who participate in our weekly surveillance in the Northern Region.**

**LABORATORY SURVEILLANCE FOR RESPIRATORY VIRUSES (PCR)**

| Respiratory Agent | Tested | Positive | % Positive | Flu A 2009/H1N1 | Flu A Seasonal H3 | Flu A (Unk) | Flu B |
|-------------------|--------|----------|------------|-----------------|-------------------|-------------|-------|
| Influenza         | 751    | 55       | 7.3%       | 19              | 0                 | 27          | 9     |

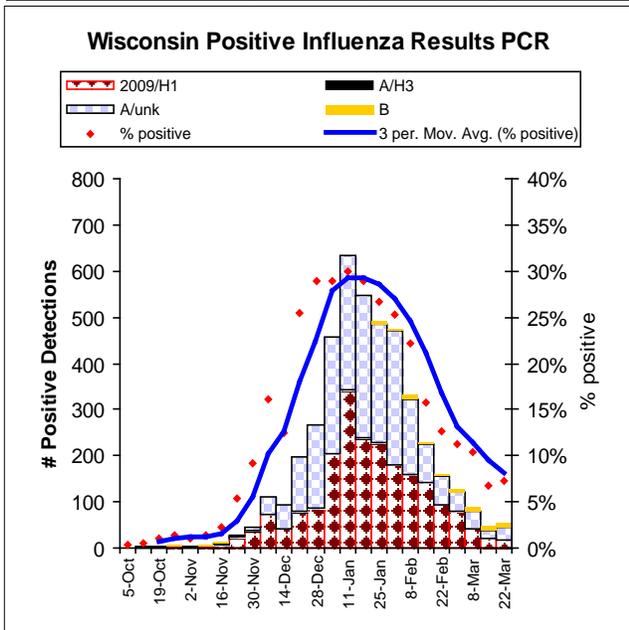
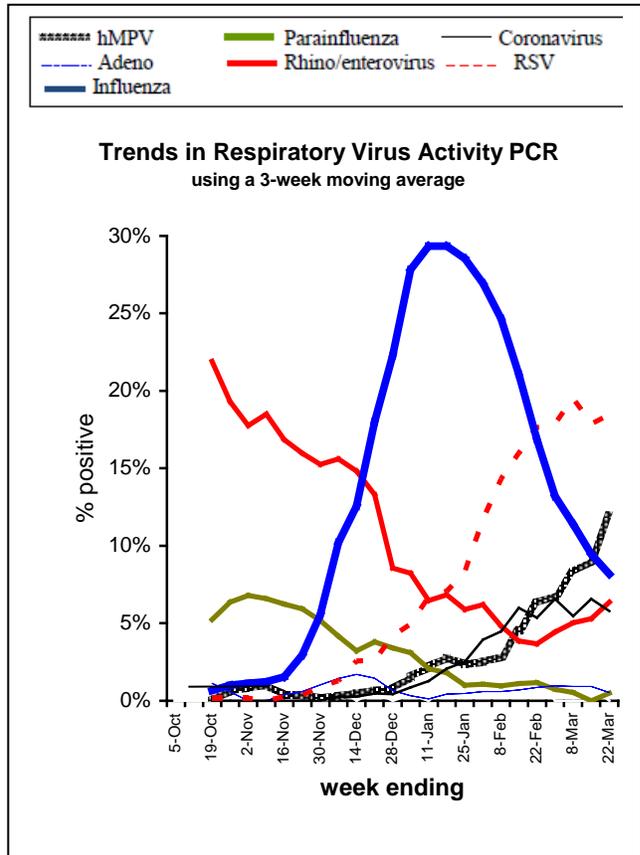
  

| Respiratory Agent | Tested | Positive | % Positive | P1 | P2 | P3 | P4 |
|-------------------|--------|----------|------------|----|----|----|----|
| Parainfluenza     | 268    | 4        | 1.5%       | 0  | 0  | 4  | 0  |

| Respiratory Agent | Tested | Positive | % Positive | CoV-229E | CoV-OC43 | CoV-NL63 | CoV-HKU1 |
|-------------------|--------|----------|------------|----------|----------|----------|----------|
| Coronavirus       | 183    | 11       | 6.0%       | 7        | 0        | 3        | 1        |

| Respiratory Agent     | Tested | Positive | % Positive |
|-----------------------|--------|----------|------------|
| RSV                   | 369    | 66       | 17.9%      |
| Human Metapneumovirus | 271    | 37       | 13.7%      |
| Rhino-entero          | 242    | 17       | 7.0%       |
| Adenovirus            | 215    | 0        | 0%         |



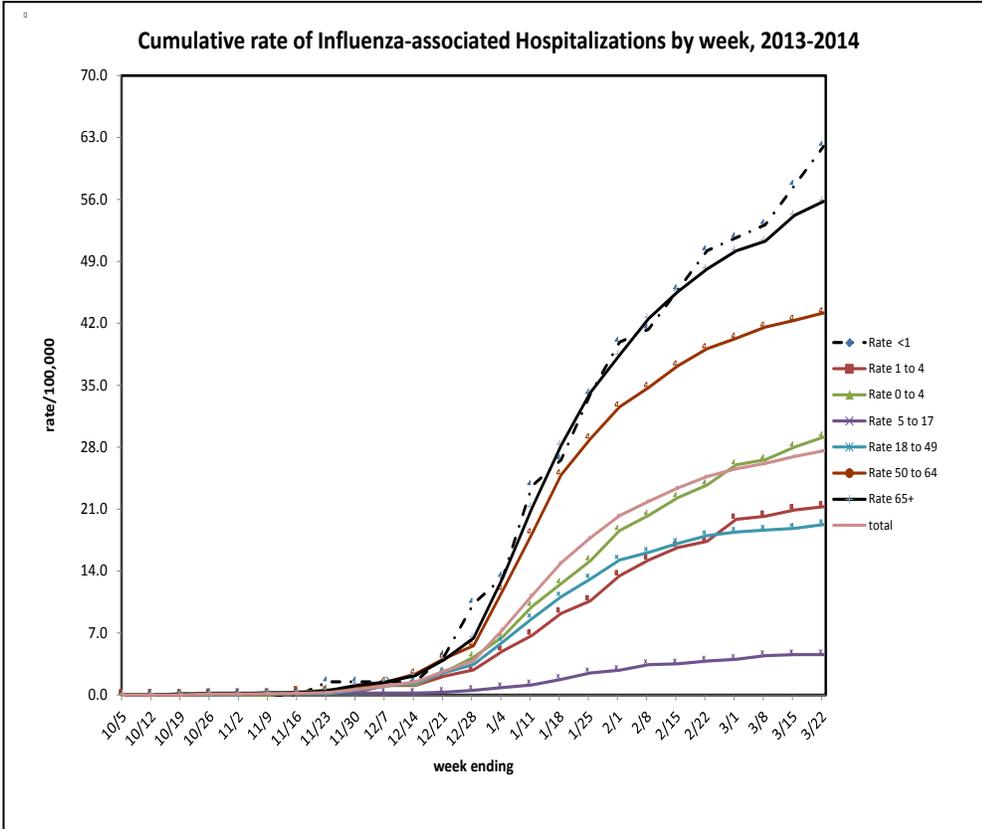
**Cumulative number of positive influenza tests**  
By subtype, October 5, 2013 to present

|                                   | 2009 A/H1                  | Seasonal A/H3 | A/Unknown | B                          | Total |
|-----------------------------------|----------------------------|---------------|-----------|----------------------------|-------|
| <b>Total Number positive</b>      | 2080                       | 38            | 2234      | 74                         | 4426  |
| <b>% of Total number positive</b> | 47%                        | <1%           | 50%       | 2%                         | 100%  |
|                                   | <b>Total Influenza A %</b> |               |           | <b>Total Influenza B %</b> |       |
|                                   | 98%                        |               |           | 2%                         |       |

## Influenza-associated Hospitalizations, October 5, 2013 to March 27, 2014

New hospitalizations since last report of 3/21/14: 32

| Age Group    | Total Number Reported (2013-14) | Influenza Subtypes |          |                           |           | Not reported | Admitted to ICU    | Required Mechanical Ventilation |
|--------------|---------------------------------|--------------------|----------|---------------------------|-----------|--------------|--------------------|---------------------------------|
|              |                                 | 2009 H1N1          | H3N2     | A/Unknown or undetermined | B         |              |                    |                                 |
| < 1 year     | 47                              | 5                  |          | 35                        | 5         | 2            | 4                  | 2                               |
| 1 to 4       | 55                              | 11                 |          | 37                        | 5         | 2            | 7                  | 3                               |
| 5 to 17      | 42                              | 10                 | 1        | 27                        | 3         | 1            | 12                 | 2                               |
| 18 to 49     | 461                             | 134                |          | 310                       | 13        | 4            | 104<br>23%         | 46<br>10%                       |
| 50 to 64     | 529                             | 150                |          | 359                       | 15        | 5            | 134<br>25%         | 60<br>11%                       |
| 65 and over  | 487                             | 123                | 5        | 324                       | 34        | 1            | 69                 | 22                              |
| <b>Total</b> | <b>1621</b>                     | <b>433</b>         | <b>6</b> | <b>1092</b>               | <b>75</b> | <b>15</b>    | <b>330<br/>20%</b> | <b>135<br/>8%</b>               |



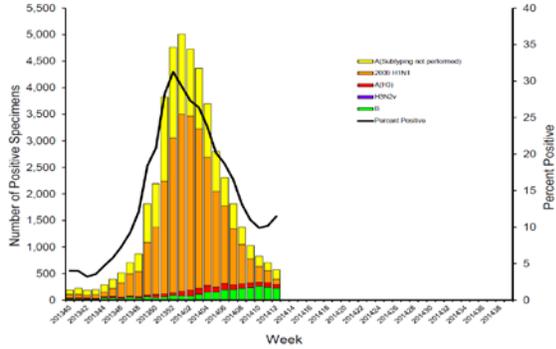
| Age group | Incidence/100,000* |          |
|-----------|--------------------|----------|
|           | Wisconsin          | National |
| 65 +      | 55.8               | 70.3     |
| 50-64     | 43.2               | 48.8     |
| 18-49     | 19.3               | 20.1     |
| 5-17      | 4.5                | 8.1      |
| 1-4       | 21.3               | No data  |
| 0-4       | 29.2               | 42.7     |
| <1        | 62.0               | No data  |
| All ages  | 27.6               | 31.1     |

# NATIONAL INFLUENZA SURVEILLANCE

Region specific data is available at <http://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>.

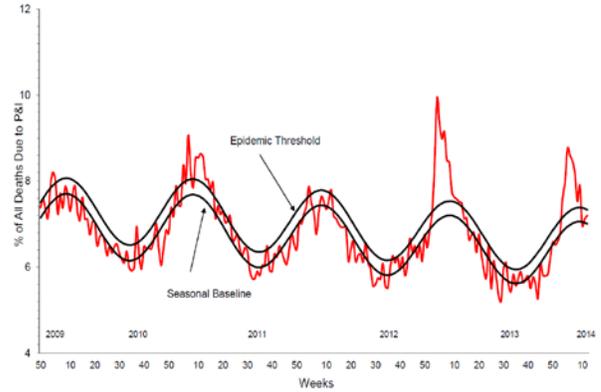
|   | Week 12     |
|---|-------------|
| No. of specimens tested                   | 4,977       |
| No. of positive specimens (%)             | 571 (11.5%) |
| <b>Positive specimens by type/subtype</b> |             |
| Influenza A                               | 348 (60.9%) |
| 2009 H1N1                                 | 101 (29.0%) |
| H3  | 68 (19.5%)  |
| Subtyping not performed                   | 179 (51.4%) |
| Influenza B                               | 223 (39.1%) |

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVS Collaborating Laboratories, National Summary, 2013-14 Season



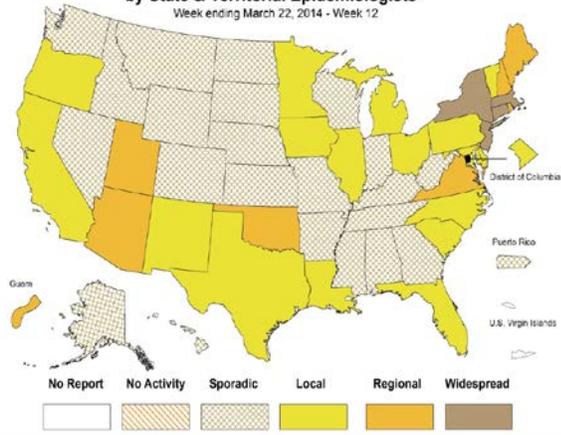
**Pneumonia and Influenza (P&I) Mortality Surveillance:** During week 12, 7.2% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 7.3% for week 12.

Pneumonia and Influenza Mortality for 122 U.S. Cities  
Week ending March 22, 2014



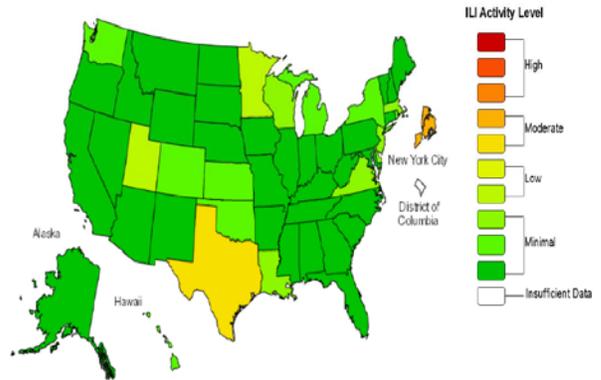
Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists\*

Week ending March 22, 2014 - Week 12



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

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet  
2013-14 Influenza Season Week 12 ending Mar 22, 2014



\*This map uses the proportion of outpatient visits to health care providers for influenza-like illness to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels.

**Antigenic Characterization\*:** CDC has antigenically characterized 1,914 influenza viruses [1,562 2009 H1N1 viruses, 229 influenza A (H3N2) viruses, and 123 influenza B viruses] collected by U.S. laboratories since October 1, 2013 by hemagglutination inhibition (HI).

- **2009 H1N1 [1,562]:** 1,561 (99.9%) of 1,562 2009 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2013-2014 Northern Hemisphere influenza vaccine. One (0.1%) virus showed reduced titers with antiserum produced against A/California/7/2009.
- **Influenza A (H3N2) [229]:** 224 (97.8%) of the 229 influenza A (H3N2) viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2013-2014 Northern Hemisphere influenza vaccine. Five (2.2%) viruses showed reduced titers with antiserum produced against A/Texas/50/2012.
- **Influenza B [123]:** 84 (68%) of the 123 influenza B viruses tested belong to B/Yamagata/16/88-lineage and the remaining 39 (32%) influenza B viruses tested belong to B/Victoria/02/87 lineage.
- **Yamagata Lineage [84]:** 84 influenza B/Yamagata-lineage viruses were characterized as B/Massachusetts/2/2012-like, which is included as an influenza B component of the 2013-2014 Northern Hemisphere trivalent and quadrivalent influenza vaccines.
- **Victoria Lineage [39]:** 39 influenza B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2013-2014 Northern Hemisphere quadrivalent influenza vaccine.

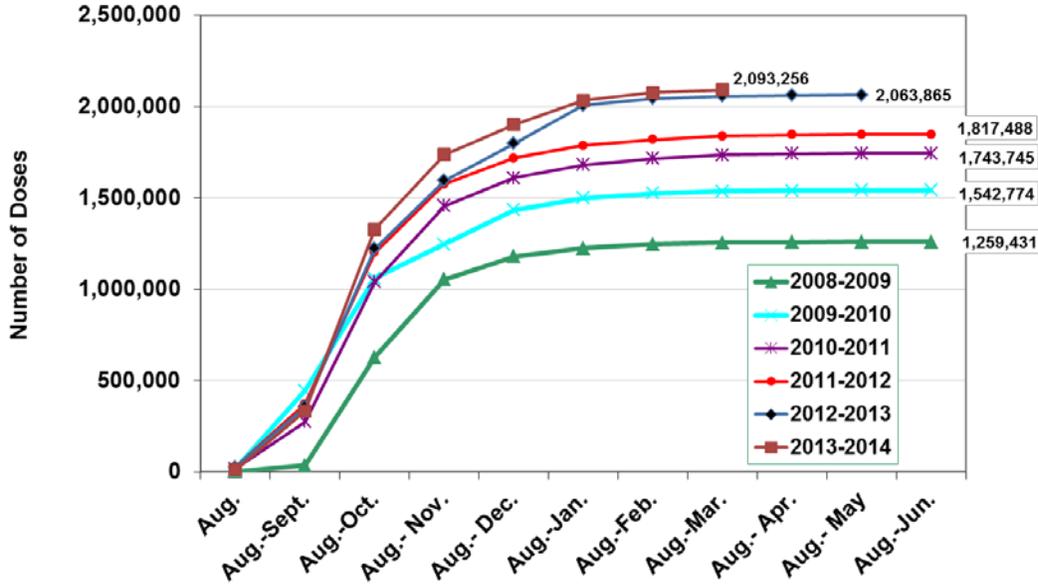
Neuraminidase Inhibitor Resistance Testing Results  
on Samples Collected Since October 1, 2013

|                    | Oseltamivir              |                               | Zanamivir                |                               |
|--------------------|--------------------------|-------------------------------|--------------------------|-------------------------------|
|                    | Virus Samples tested (n) | Resistant Viruses, Number (%) | Virus Samples tested (n) | Resistant Viruses, Number (%) |
| Influenza A (H3N2) | 334                      | 0 (0.0)                       | 334                      | 0 (0.0)                       |
| Influenza B        | 200                      | 0 (0.0)                       | 200                      | 0 (0.0)                       |
| 2009 H1N1          | 4,624*                   | 54 (1.2)                      | 1,574                    | 0 (0.0)                       |

## Seasonal Influenza Vaccination in Wisconsin Based on Doses Reported to the Wisconsin Immunization Registry (WIR) March 28, 2014

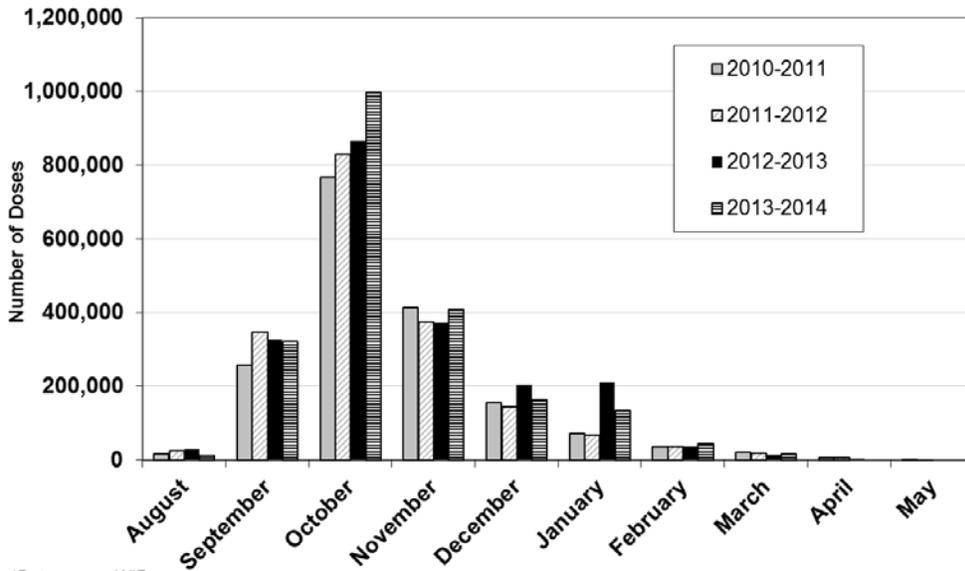
### Data for 2013-2014 Season Reported for 8.1.13-3.27.14

Cumulative Doses of Seasonal Influenza Administered and Reported to the WIR,  
2008-2014 Influenza Seasons



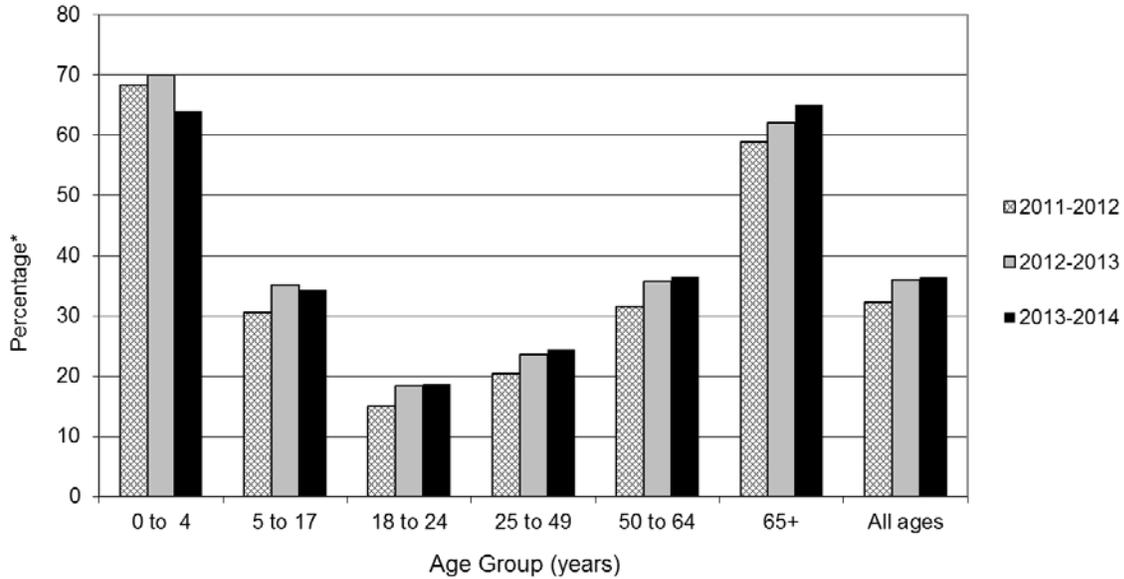
Data source: WIR  
2012-2013 data 8.1.12 through 3.27.14

Number of Doses of Seasonal Influenza Vaccine Administered and Reported to  
the WIR, by Month for Influenza Seasons 2010-2014



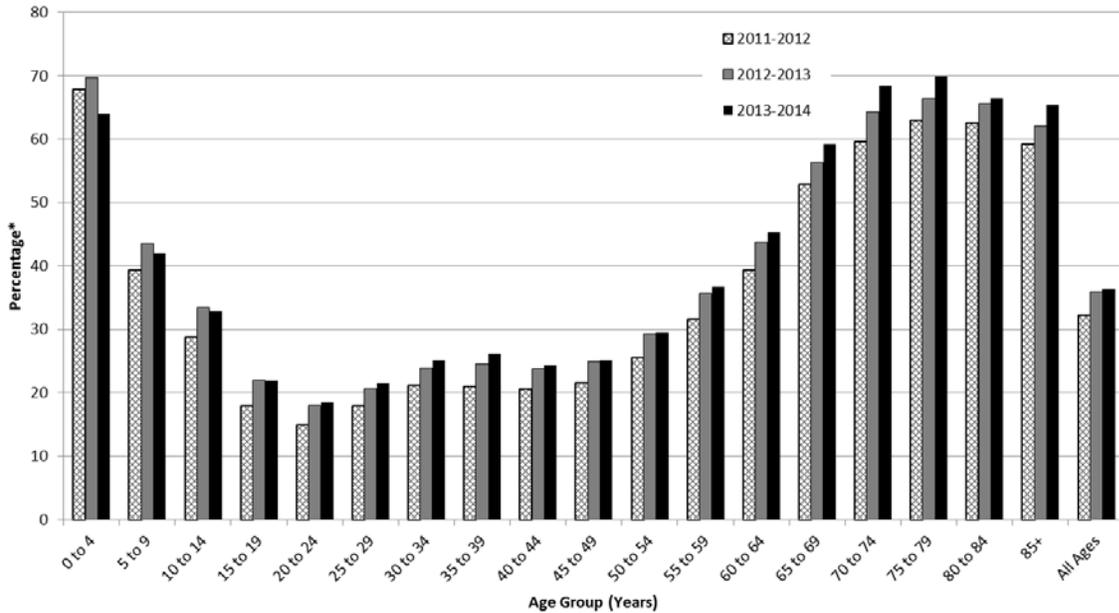
\*Data source: WIR,  
2013-2014 data through 03.27.2014

**Rates of Influenza Vaccination in Wisconsin by Age Group, 2011-2014 Influenza Seasons, Based on Doses Reported to the Wisconsin Immunization Registry (WIR)**



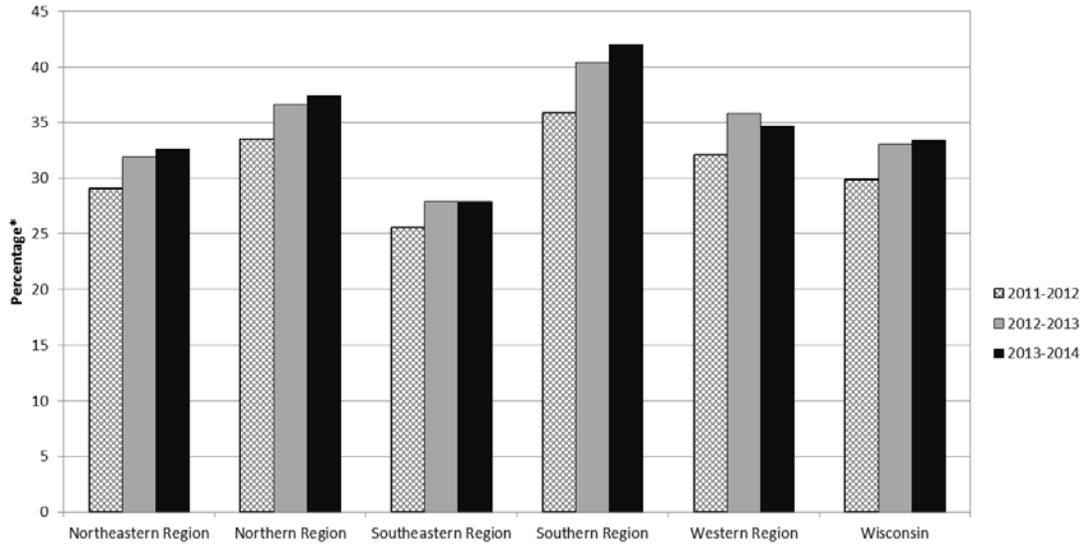
\* Numerator: Number of persons recorded in the WIR as having received at least one dose of seasonal influenza vaccine by age group. For 2011-2012 season, receipt of vaccine between 8/1/11 and 7/31/12, assessed 12/2/2013. For 2012-2013 season, doses administered between 8/1/12 to 7/31/13, assessed 12/2/2013. For 2013-2014, doses administered between 8/1/13 to 3/27/2014, assessed 3/28/14. Denominator source: 2011 and 2012 Wisconsin Interactive Statistics on Health (WISH) population estimates, by age group.

**Rates of Influenza Vaccination in Wisconsin by Age Group, 2011-2014 Influenza Seasons, Based on Doses Reported to the Wisconsin Immunization Registry (WIR)**



\* Numerator: Number of persons recorded in the WIR as having received at least one dose of seasonal influenza vaccine by age group. For 2011-2012 season, receipt of vaccine between 8/1/11 and 7/31/12, assessed 12/2/2013. For 2012-2013 season, doses administered between 8/1/12 to 7/31/13, assessed 12/2/2013. For 2013-2014, doses administered between 8/1/13 to 3/27/2014, assessed 3/28/2014. Denominator source: 2011 and 2012 Wisconsin Interactive Statistics on Health (WISH) population estimates, by age group.

**Rates of Influenza Vaccination in Wisconsin by Region, 2011-2014 Influenza Seasons, Based on Doses Reported to the Wisconsin Immunization Registry (WIR)**



\* Numerator: Number of persons recorded in the WIR as having received at least one dose of seasonal influenza vaccine by region. For 2011-2012 season, receipt of vaccine between 8/1/11 and 7/31/12, assessed 11/27/2013. For 2012-2013 season, doses administered between 8/1/12 to 7/31/13, assessed 11/27/2013. For 2013-2014, doses administered between 8/1/13 to 3/27/2014, assessed 3/28/2014. Denominator source: 2011 and 2012 Wisconsin Interactive Statistics on Health (WISH) population estimates, by region.

- These graphs include only doses of seasonal influenza vaccine administered and reported to the Wisconsin Immunization Registry (WIR).
- Data for 2013-2014 season is incomplete because of the expected lag between the vaccine administration date and the date reported to the WIR, which may be as short as one day or as long as several months, depending on the submitter. Therefore, the current season's data will be adjusted as additional data is received.
- While use of the WIR is not mandatory, the WIR receives data from a variety of sources, including health care providers, health maintenance organizations, local health departments and tribal health centers/clinics, schools and pharmacies.
- For additional information regarding the immunization data, please contact Ashley Petit, epidemiologist, with the Wisconsin Immunization Program at (608) 266-7797.