



WISCONSIN DEPARTMENT OF HEALTH SERVICES
 Division of Public Health
 Bureau of Communicable Diseases



Respiratory virus surveillance report for the week ending March 26, 2016 week 12-16

AT-A-GLANCE

- Respiratory viruses identified this week :
Influenza A, RSV and human Metapneumovirus are the predominant viruses this week.
- Influenza-like illness (ILI) activity for this week

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

- ILI activity in Region V of the U.S. (WI, MN, IL, MI, OH, IN) is above baseline levels
- ILI activity in the U.S. is above baseline levels
- The Predictive Value Positive (PVP) for rapid influenza and RSV tests is: Moderate (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: High (PVN is the probability of not having disease when the test result is negative)
- Influenza-associated pediatric deaths reported (October 10, 2015-present)

	<u>Week 12-16</u>	<u>Total to Date</u>
Wisconsin	0	0
Nationwide	3	33

Influenza Vaccine Composition 2015-2016

The trivalent vaccines for use in the 2015-2016 influenza season) contain the following:

- A/California/7/2009 (H1N1)pdm09-like virus;
- A/Switzerland/9715293/2013 (H3N2)-like virus;
- B/Phuket/3073/2013-like virus (Yamagata lineage).

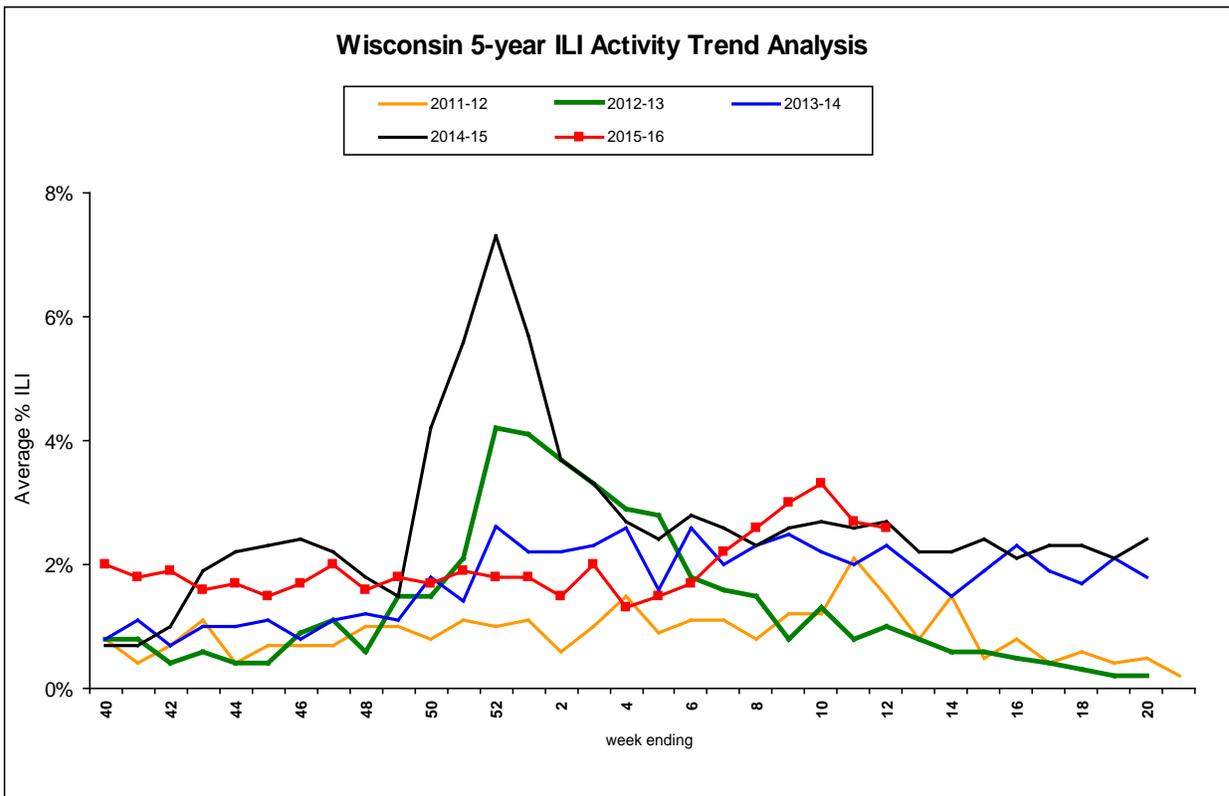
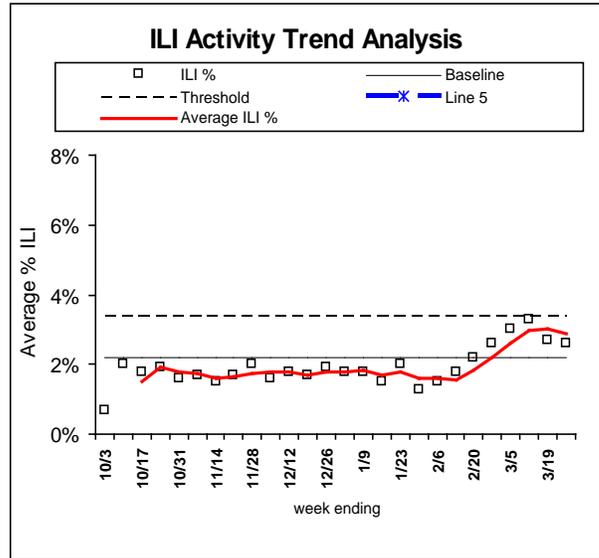
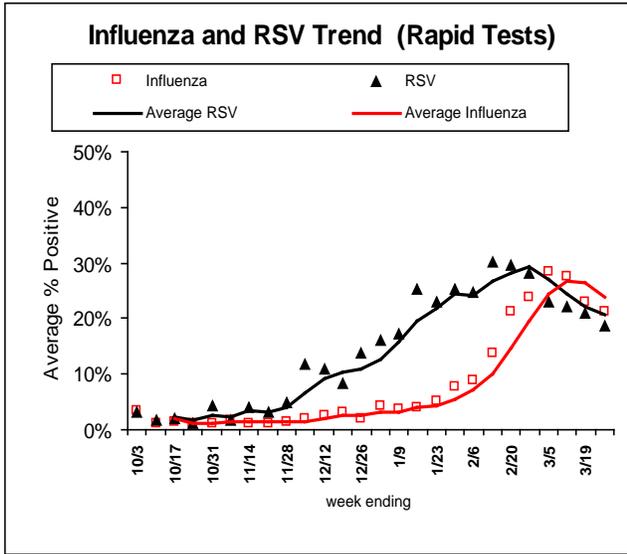
It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and;

- B/Brisbane/60/2008-like virus (Victoria Lineage)

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

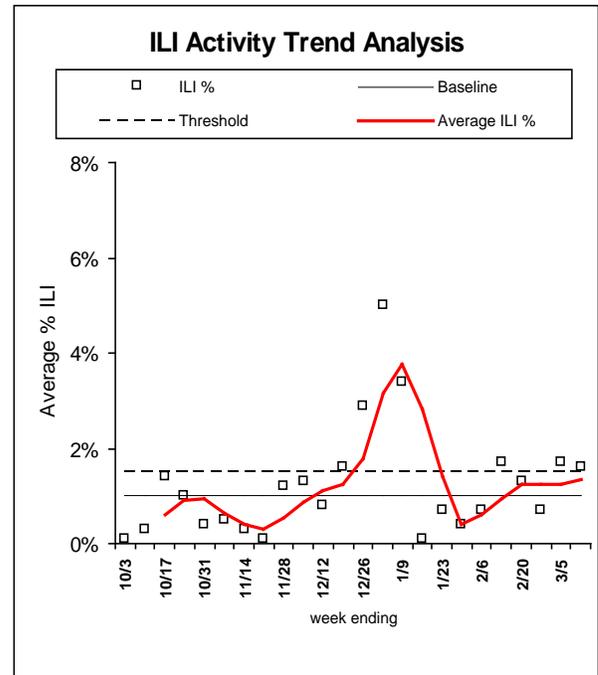
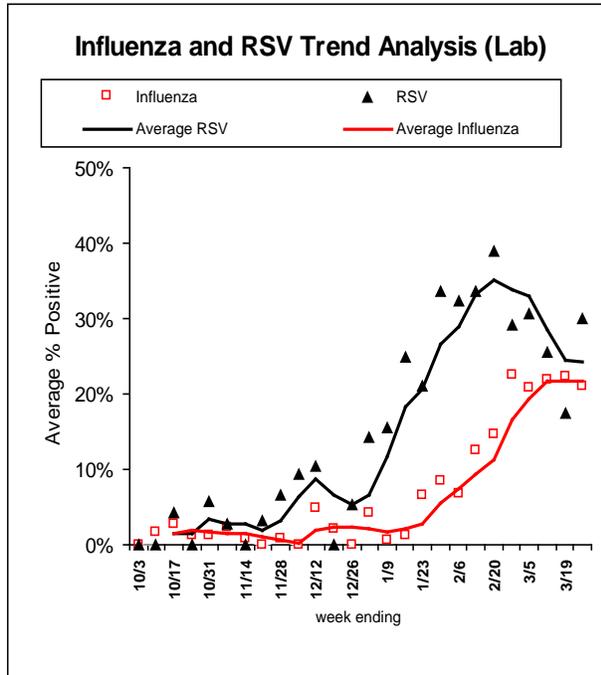
Wisconsin (ILI activity is Moderate)

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							
2204	388	79	467	21.1%	327	61	18.7%	2.6%	2.2%	3.4%



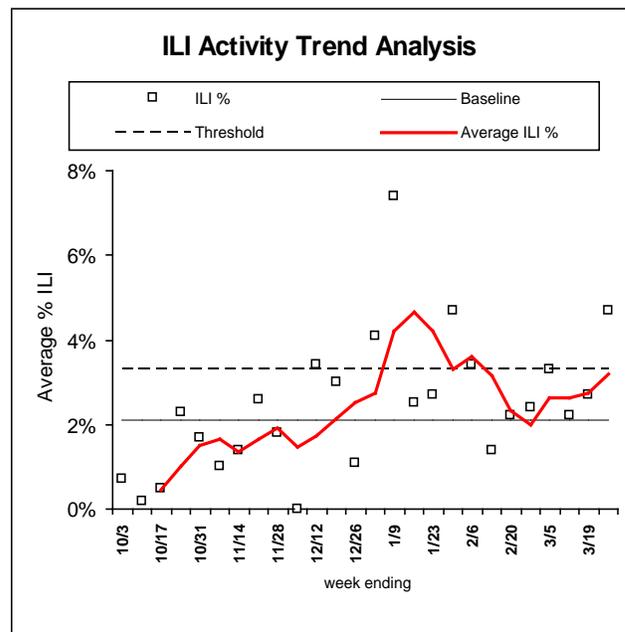
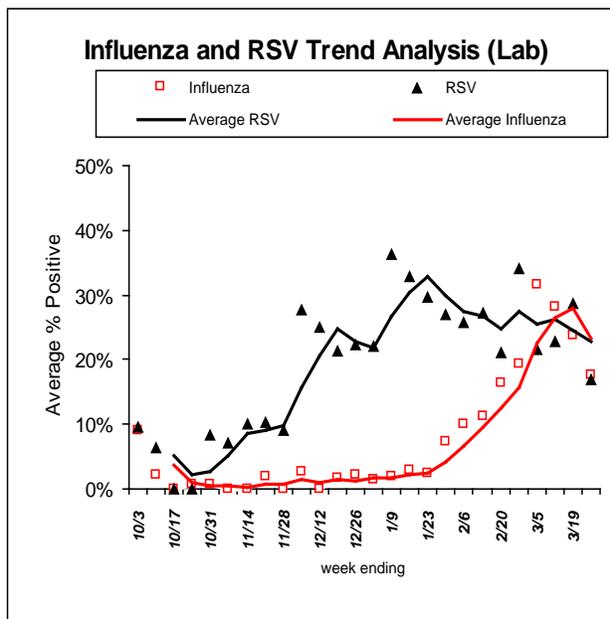
Northwestern Region (ILI activity is High)

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							
532	50	12	62	21.1%	113	34	30.1%	3.6%	1.0%	1.5%



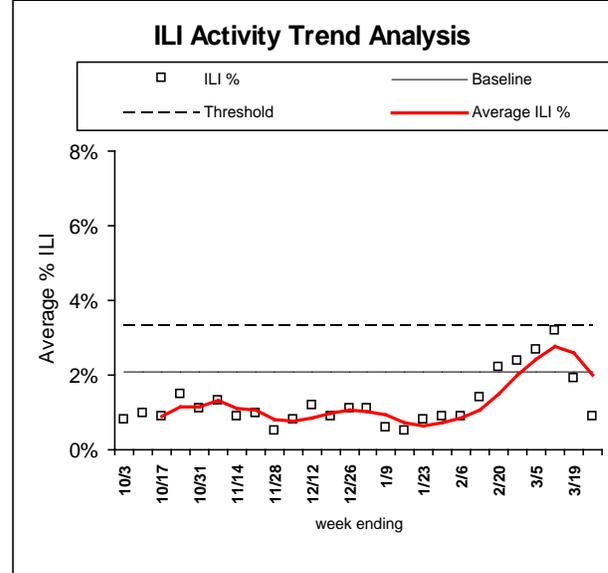
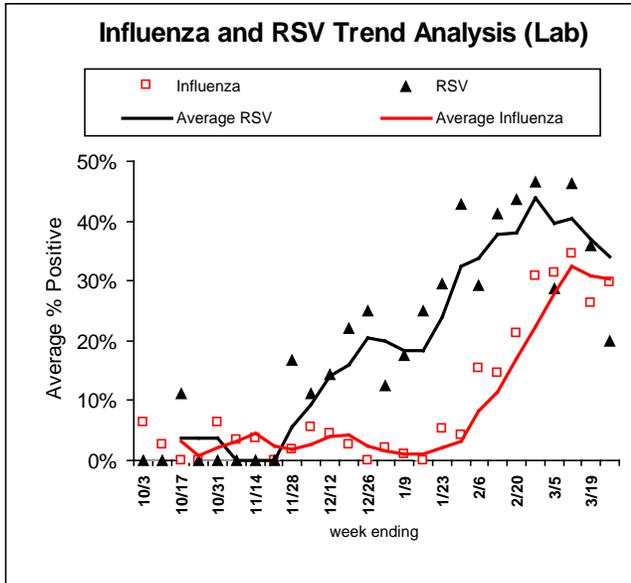
Northeastern Region (ILI activity is High)

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							
451	63	17	80	17.7%	83	14	16.9%	4.7%	2.1%	3.3%



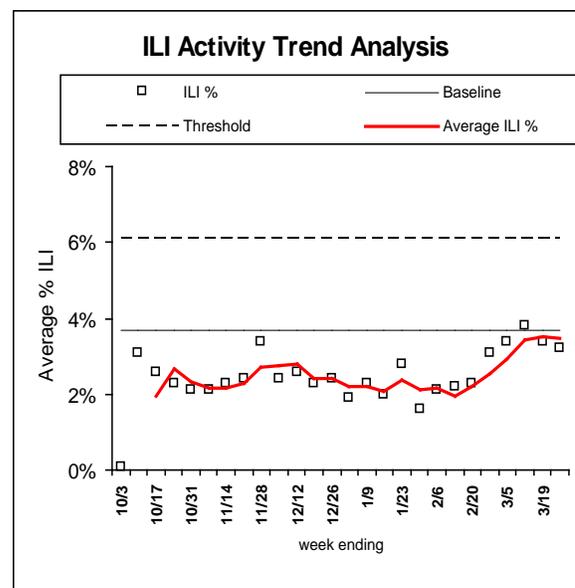
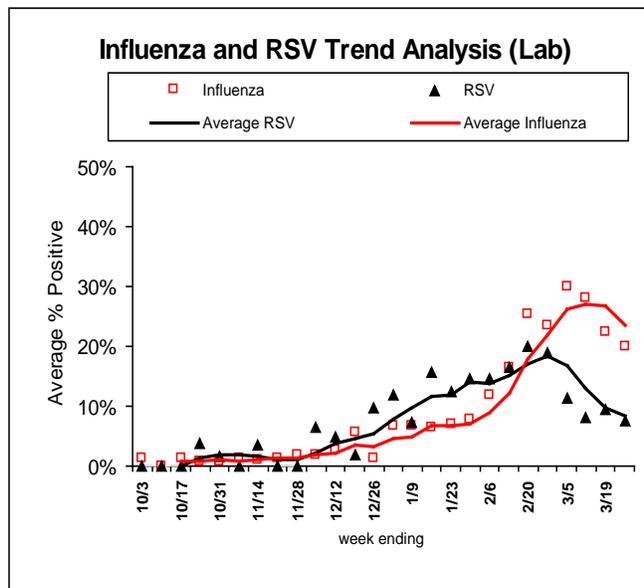
Southern Region (ILI activity is Low)

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							
301	65	25	90	29.9%	25	5	20.0%	0.9%	2.1%	3.5%



Southeastern 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							
920	161	24	185	20.1%	106	8	7.5%	3.2%	3.7%	6.1%



For the 2015-16 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.

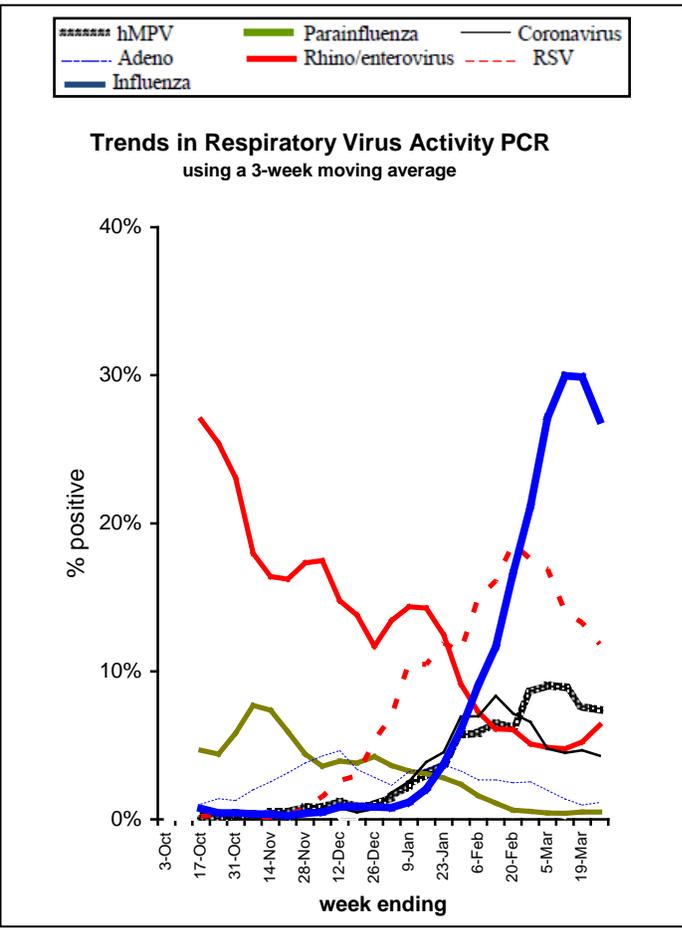
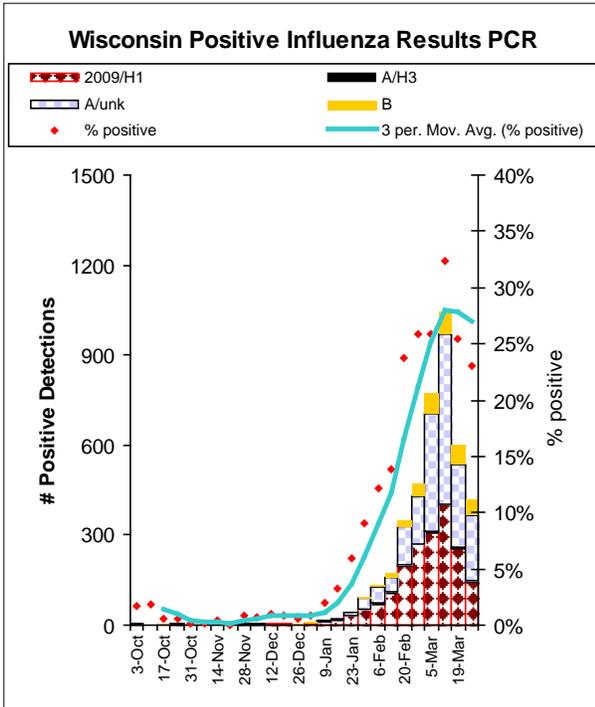
LABORATORY SURVEILLANCE FOR RESPIRATORY VIRUSES (PCR)

Respiratory Virus	Tested	Positive	% Positive	Flu A			Flu B		
				H3	pd2009 H1	Unk	Yamagata	Victoria	Unk
Influenza	1822	421	23.1%	3	144	218	8	9	39

Respiratory Virus	Tested	Positive	% Positive	PI-1	PI-2	PI-3	PI-4
Parainfluenza	513	2	0.4%	1	0	1	0

Respiratory Virus	Tested	Positive	% Positive	CoV-229E	CoV-OC43	CoV-NL63	CoV-HKU1
Coronavirus	273	8	2.9%	1	5	2	0

Respiratory Virus	Tested	Positive	% Positive
RSV	678	70	10.3%
Human Metapneumovirus	517	40	7.7%
Rhino-entero	489	41	8.4%
Adenovirus	273	5	1.8%



**Cumulative number of positive influenza tests
By subtype, September 1, 2015 to present**

	Influenza A (92%)			Influenza B (8%)			Total
	pd2009 H1	H3	Unknown	Yamagata	Victoria	Unknown	
Total Number positive	1871	49	1911	52	44	285	4212
% of Total number positive	44%	1%	45%	1%	1%	7%	100%

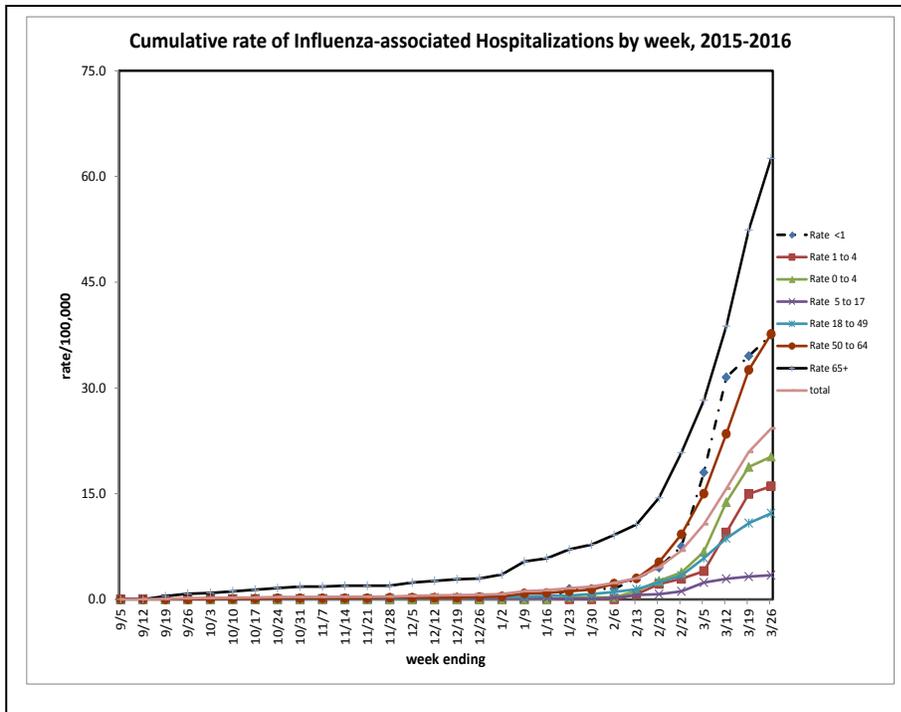
Influenza-associated Hospitalizations, September 1, 2015 to present

Age group	Total Number Reported (2015-16)	Influenza Subtypes				Not reported	Admitted to ICU	Required Mechanical Ventilation	Pregnant
		2009 H1N1	H3N2	A/Unknown	B				
< 1 year	26	5	0	17	1	3	2	0	
1 to 4	47	7	0	31	5	4	9	3	
5 to 17	36	11	0	21	2	2	2	0	
18 to 49	312	68	2	209	16	17	68	25	15
50 to 64	510	99	1	357	26	27	112	42	
65 and over	635	123	8	407	66	30	125	29	
Total	1566	313	11	1042	116	83	318	99	15

*number may not be accurate

Influenza-associated Hospitalizations by Public Health Region, September 1, 2015 to present

Region	Last 7 days	Season Total
Southeastern		696
Southern		383
Northeastern		216
Western		190
Northern		81
Wisconsin		1566



Incidence/100,000

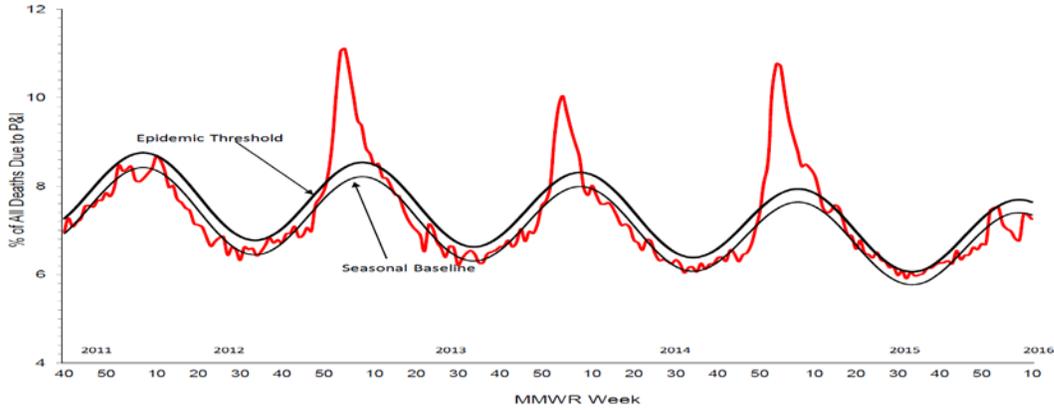
Age group	Wisconsin	National
<1	39.0	NA
1 to 4	17.1	NA
5 to 17	3.6	7.0
18 to 49	13.1	11.9
50 to 64	41.9	31.4
65+	71.0	54.6
total	26.9	21.4

NATIONAL INFLUENZA SURVEILLANCE

NCHS Mortality Surveillance Data:

Based on NCHS mortality surveillance data available on March 31, 2016, 7.3% of the deaths occurring during the week ending March 12, 2016 (week 10) were due to P&I. This percentage is below the epidemic threshold of 7.6% for week 10.

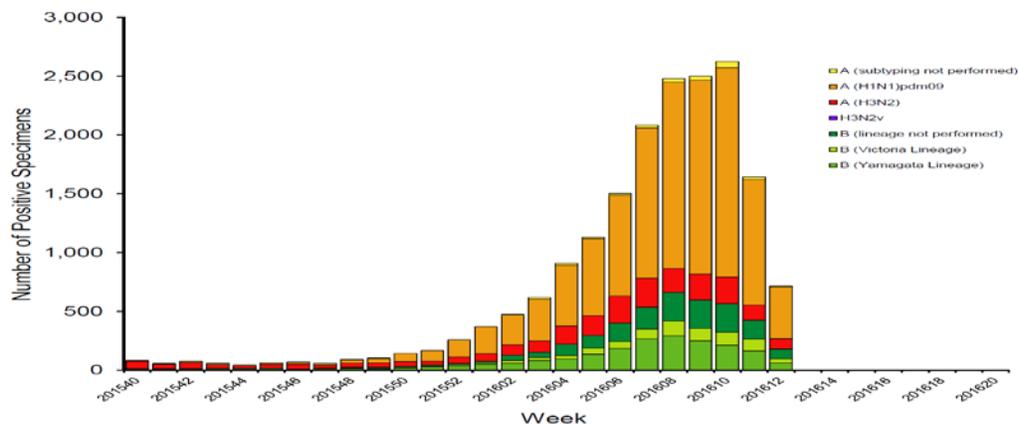
Pneumonia and Influenza Mortality from the National Center for Health Statistics Mortality Surveillance System Data through the week ending March 12, 2016, as of March 31, 2016



	Week 12	Data Cumulative since October 4, 2015 (week 40)
No. of specimens tested	1,456	51,779
No. of positive specimens*	715	18,309
Positive specimens by type/subtype		
Influenza A	536 (75.0%)	13,797 (75.4%)
A(H1N1)pdm09	439 (81.9%)	11,111 (80.5%)
H3	88 (16.4%)	2,425 (17.6%)
Subtyping not performed	9 (1.7%)	261 (1.9%)
Influenza B	179 (25.0%)	4,512 (24.6%)
Yamagata lineage	62 (34.6%)	1,985 (44.0%)
Victoria lineage	36 (20.1%)	798 (17.7%)
Lineage not performed	81 (45.3%)	1,729 (38.3%)

*The percent of specimens testing positive for influenza is not reported because public health laboratories often receive samples that have already tested positive for influenza at a clinical laboratory and therefore percent positive would not be a valid indicator of influenza activity. Additional information is available at <http://www.cdc.gov/flu/weekly/overview.htm>

Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, 2015-2016 Season



INFLUENZA VIRUS CHARACTERIZATION

Influenza A Virus [886]

- **A (H1N1)pdm09 [560]:** All 550 (100%) influenza A (H1N1)pdm09 viruses were antigenically characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2015-2016 Northern Hemisphere vaccine.
- **A (H3N2) [336]:** All 336 influenza A (H3N2) viruses were genetically sequenced and all viruses belonged to genetic groups for which a majority of viruses antigenically characterized were similar to the cell-propagated A/Switzerland/9715293/2013, the influenza A (H3N2) reference virus representing the 2015-2016 Northern Hemisphere vaccine component.
 - A subset of 151 influenza A (H3N2) viruses also were antigenically characterized; 143 of 151 (94.7%) H3N2 viruses were A/Switzerland/9715293/2013-like by HI testing or neutralization testing.

Influenza B Virus [455]

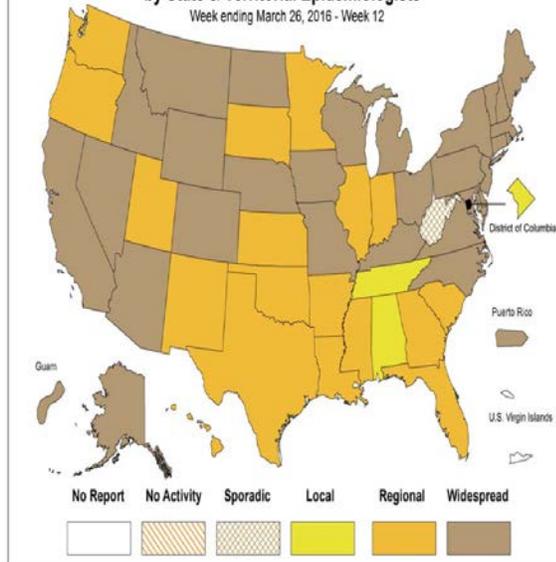
- **Yamagata Lineage [296]:** All 296 (100%) influenza B/Yamagata-lineage viruses were antigenically characterized as B/Phuket/3073/2013-like, which is included as an influenza B component of the 2015-2016 Northern Hemisphere trivalent and quadrivalent influenza vaccines.
- **Victoria Lineage [159]:** 155 of 159 (97.5%) influenza B/Victoria-lineage viruses were antigenically characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2015-2016 Northern Hemisphere quadrivalent influenza vaccines.

Neuraminidase Inhibitor Resistance Testing Results on Samples Collected Since October 1, 2015

	Oseltamivir		Zanamivir		Peramivir	
	Virus Samples tested (n)	Resistant Viruses, Number (%)	Virus Samples tested (n)	Resistant Viruses, Number (%)	Virus Samples tested (n)	Resistant Viruses, Number (%)
Influenza A (H1N1)pdm09	1,149	11 (1.0)	566	0 (0.0)	1,149	11 (1.0)
Influenza A (H3N2)	440	0 (0.0)	440	0 (0.0)	411	0 (0.0)
Influenza B	644	0 (0.0)	644	0 (0.0)	644	0 (0.0)

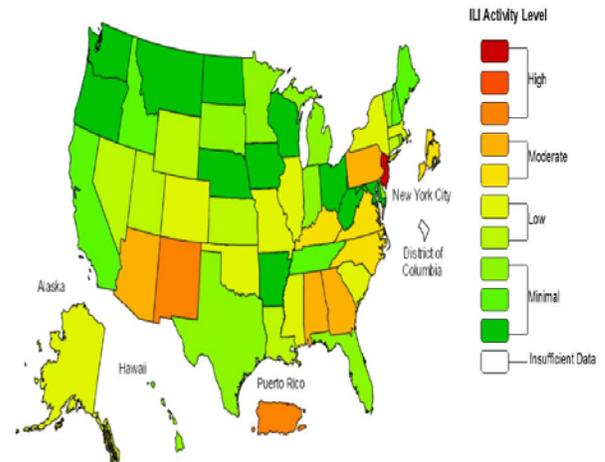
Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists*

Week ending March 26, 2016 - 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 2015-16 Influenza Season Week 12 ending Mar 26, 2016



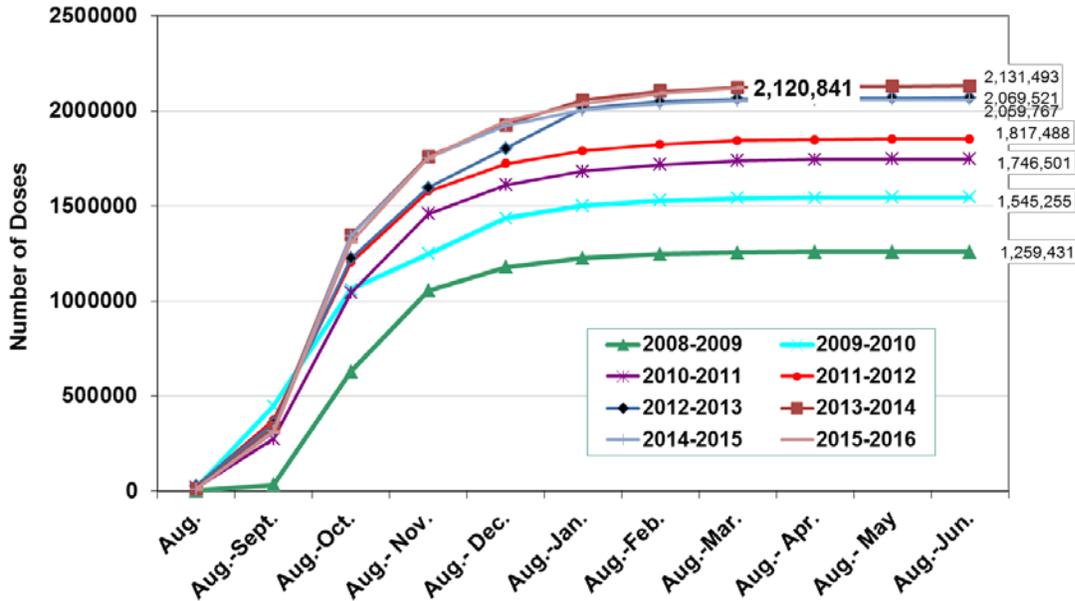
*This map uses the proportion of outpatient visits to health care providers for influenza-like illness to measure the ILI activity level within state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state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



Seasonal Influenza Vaccination in Wisconsin Based on Doses Reported to the Wisconsin Immunization Registry (WIR) March 31, 2016

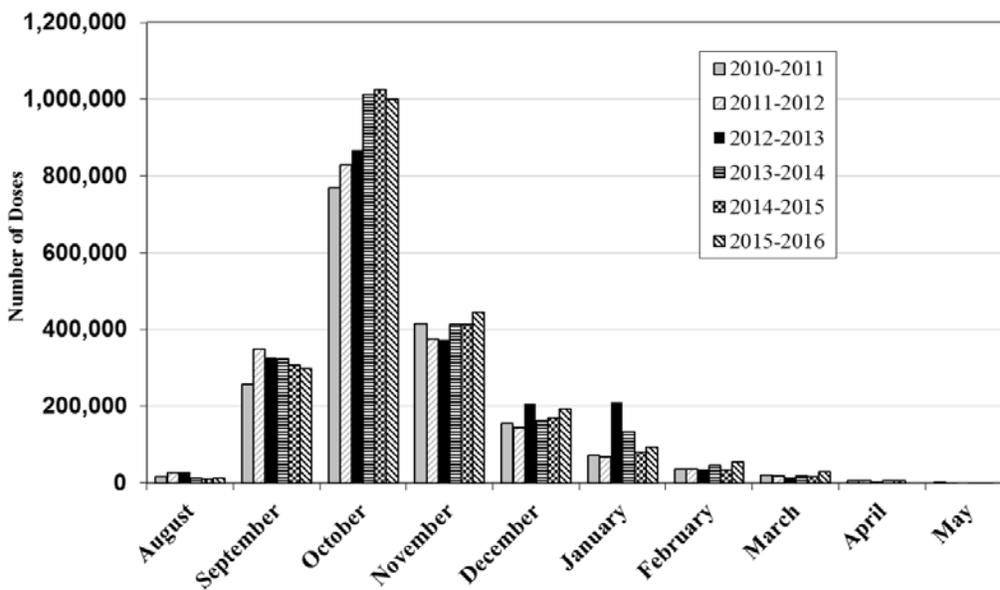
Data for 2015-2016 Season Reported for 8.1.15-3.30.2016

**Cumulative Doses of Seasonal Influenza Administered and Reported to the WIR,
2008-2016 Influenza Seasons**



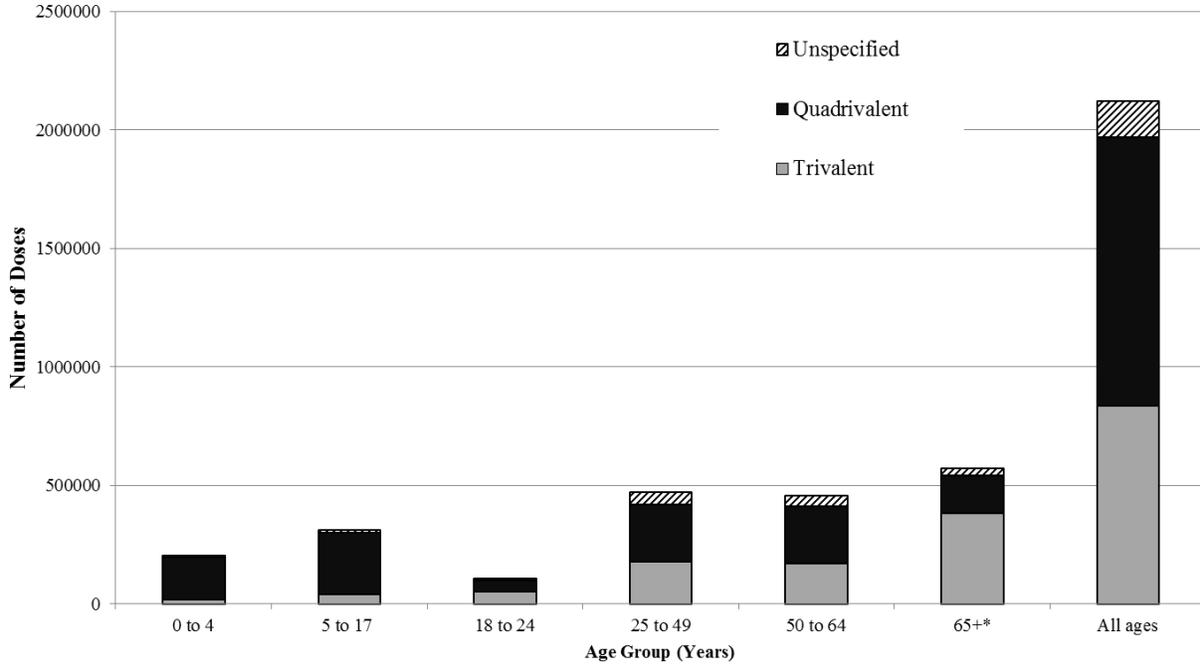
Data source: WIR
2014-2015 data 8.1.14 through 3.30.16

**Number of Doses of Seasonal Influenza Vaccine Administered and Reported
to the WIR, by Month for Influenza Seasons 2010-2016**



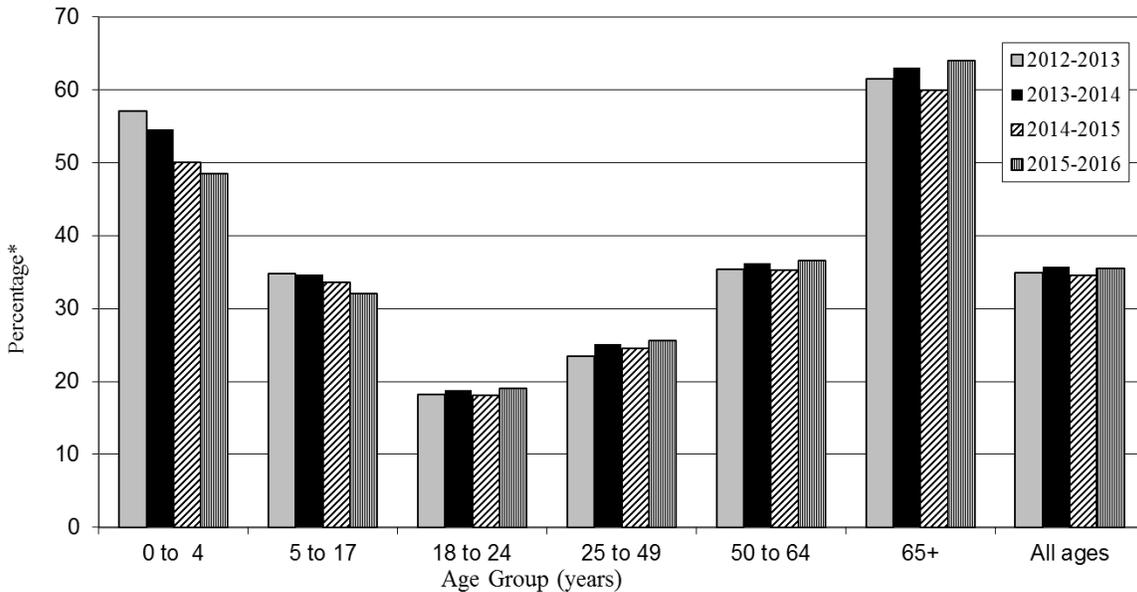
*Data source: WIR,
2015-2016 data through 3.30.2016

Doses of Seasonal Influenza Vaccine Administered and Reported to WIR by Age Group and Vaccine Type, 2015-2016 Influenza Season



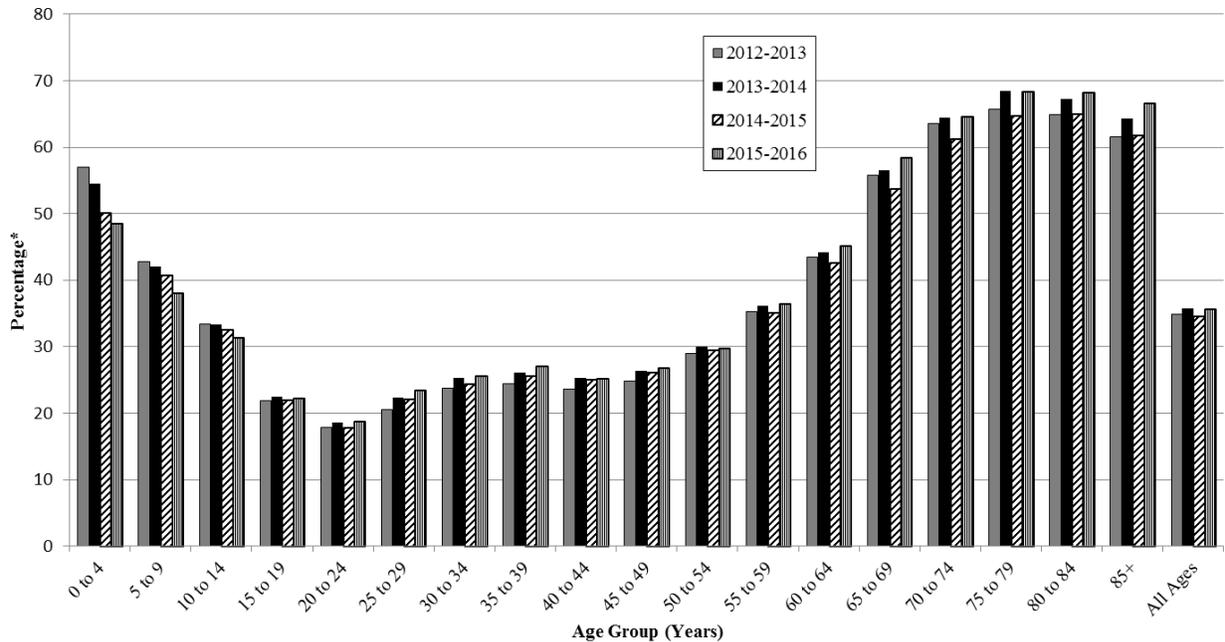
*Of trivalent influenza doses administered between 8/1/15 and 3/30/2016 and received by adult clients aged 65 years and older, 67.0% of the doses were high dose influenza vaccine.

Rates of Influenza Vaccination in Wisconsin by Age Group, 2011-2016 Influenza Seasons, Based on Doses Reported to the Wisconsin Immunization Registry (WIR)



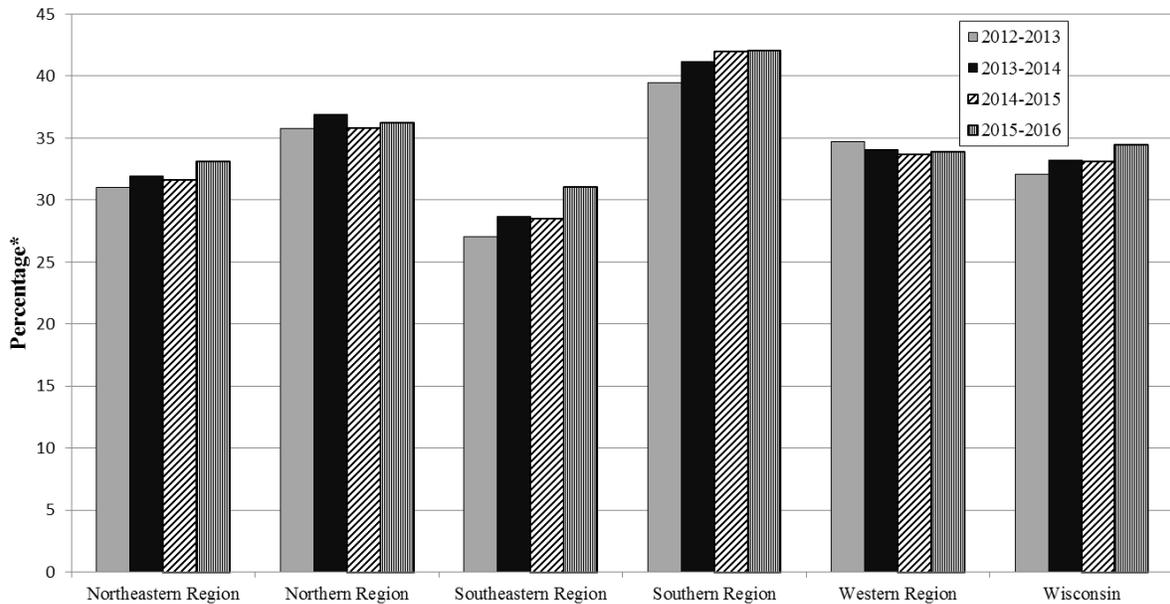
* Numerator: Number of persons recorded in the WIR as having received at least one dose of seasonal influenza vaccine by age group. For 2012-2013 season, doses administered between 8/1/12 to 7/31/13, assessed 12/2/13. For 2013-2014, doses administered between 8/1/13 to 7/31/14, assessed 8/15/14. For 2014-2015, doses administered between 8/1/14 to 6/11/15, assessed 6/12/2015. For 2015-2016, doses administered between 8/1/15 to 3/30/2016, assessed 3/31/2016. Denominator source: 2012, 2013 and 2014 Wisconsin Interactive Statistics on Health (WISH) population estimates, by age group.

Rates of Influenza Vaccination in Wisconsin by Age Group, 2011-2016 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 2012-2013 season, doses administered between 8/1/12 to 7/31/13, assessed 12/2/13. For 2013-2014, doses administered between 8/1/13 to 7/31/14, assessed 8/15/14. For 2014-2015, doses administered between 8/1/14 to 6/11/15, assessed 6/12/15. For 2015-2016 season, doses administered between 8/1/15 to 3/30/16, assessed 3/31/16. Denominator source: 2012, 2013 and 2014 Wisconsin Interactive Statistics on Health (WISH) population estimates, by age group.

Rates of Influenza Vaccination in Wisconsin by Region, 2011-2016 Influenza Seasons, Based on Doses Reported to the Wisconsin Immunization Registry (WIR)

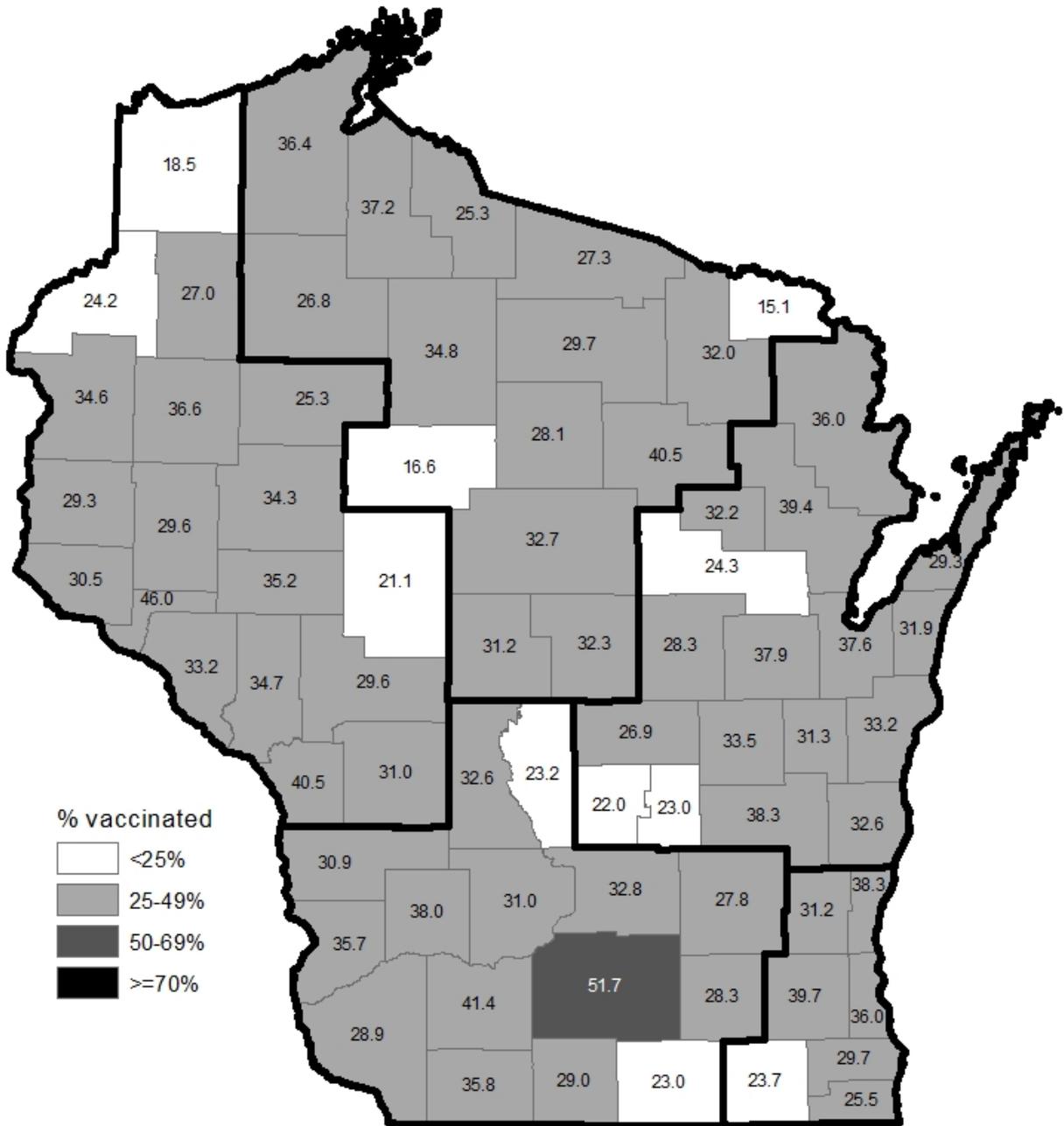


* Numerator: Number of persons recorded in the WIR as having received at least one dose of seasonal influenza vaccine by region. For 2012-2013 season, doses administered between 8/1/12 to 7/31/13, assessed 11/27/13. For 2013-2014, doses administered between 8/1/13 to 7/31/14, assessed 8/15/14. For 2014-2015, doses administered between 8/1/14 to 6/11/15, assessed on 6/12/15. For 2015-2016, doses administered between 8/1/15 to 3/30/2016, assessed on 3/31/2016. Denominator source: 2012, 2013 and 2014 Wisconsin Interactive Statistics on Health (WISH) population estimates, by region.

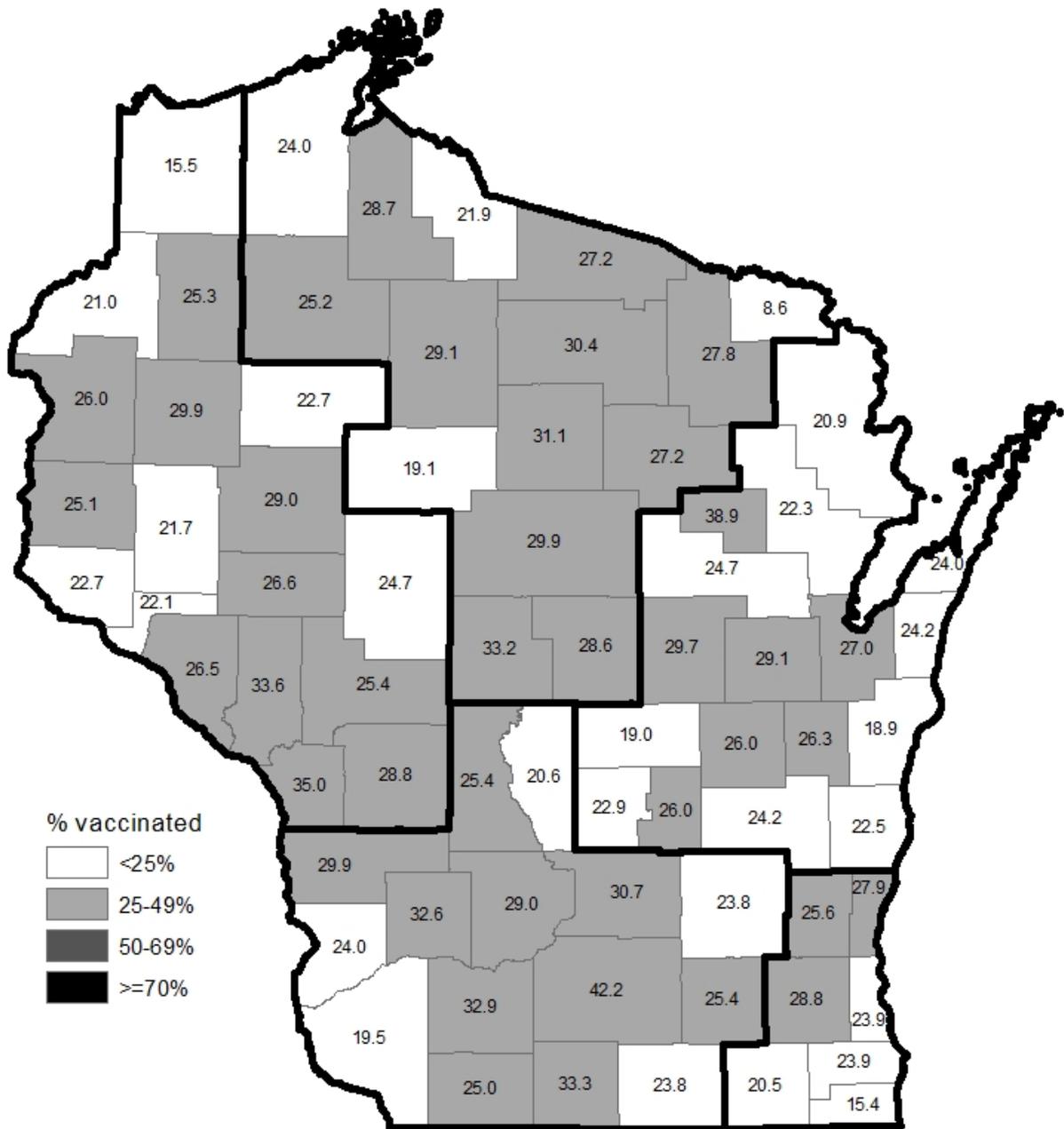
Percentage of Wisconsin residents who have received one or more doses of influenza vaccine during August 1, 2015–March 30, 2016, by age and county of residence

[Healthy People 2020 Goal: 70%](#)

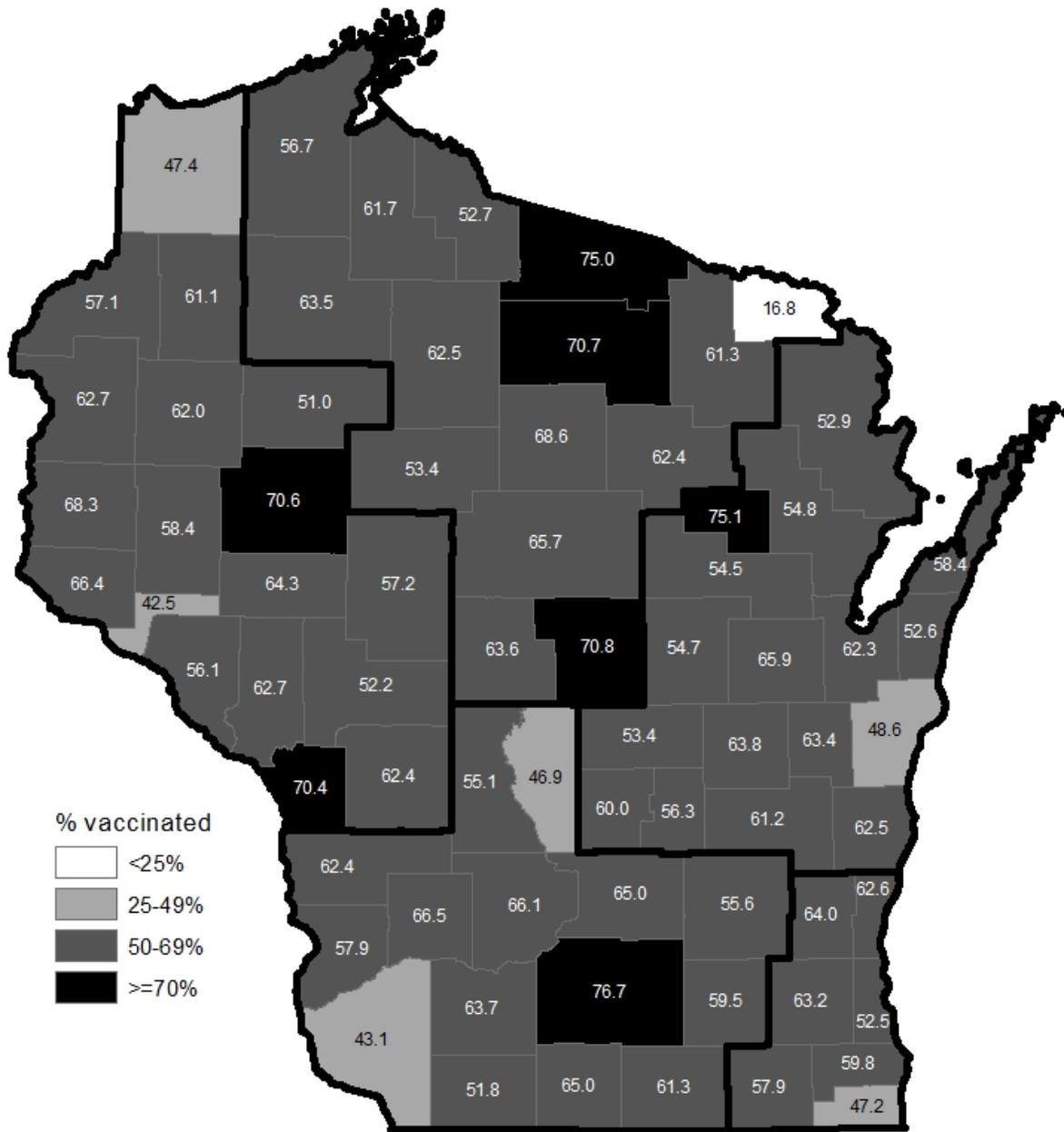
Age <19 Years



Age 19-64 Years



Age ≥65 Years



- These graphs include only doses of seasonal influenza vaccine administered and reported to the Wisconsin Immunization Registry (WIR).
- Data for 2015-16 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.