



WISCONSIN DEPARTMENT
of **HEALTH SERVICES**

Review of the 2017-2018 Influenza What just happened?

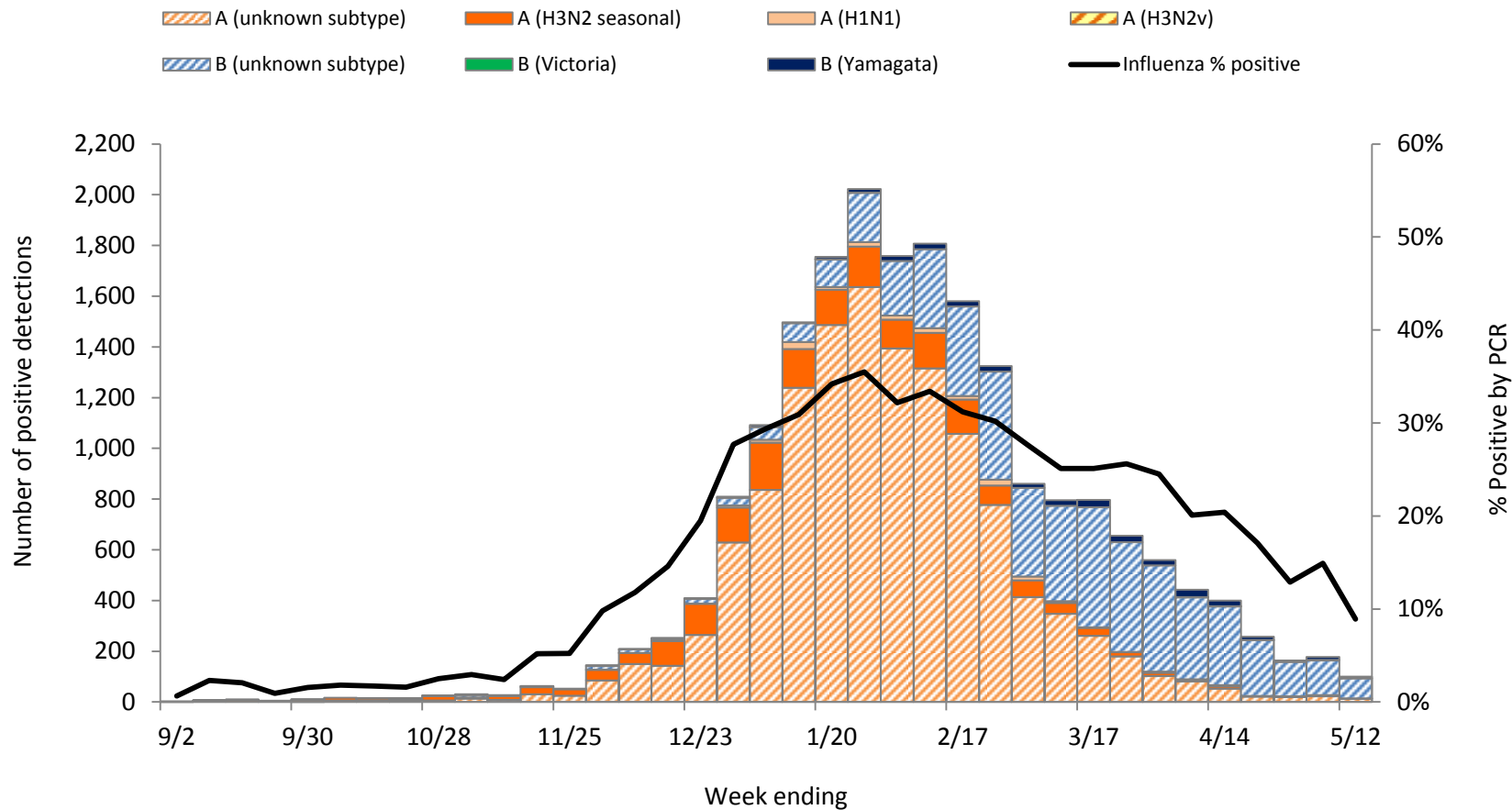
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Wisconsin Influenza Surveillance Coordinator
June 19, 2018

Outline

- 1. Viruses**
- 2. Vaccine Effectiveness**
- 3. Disease Activity/Severity**
- 4. Timing**
- 5. Influenza Vaccine 2018-19**
- 6. Conclusions**

Viruses

Influenza Positive Tests Reported by Wisconsin Clinical Laboratories, 2017-18 Season Summary

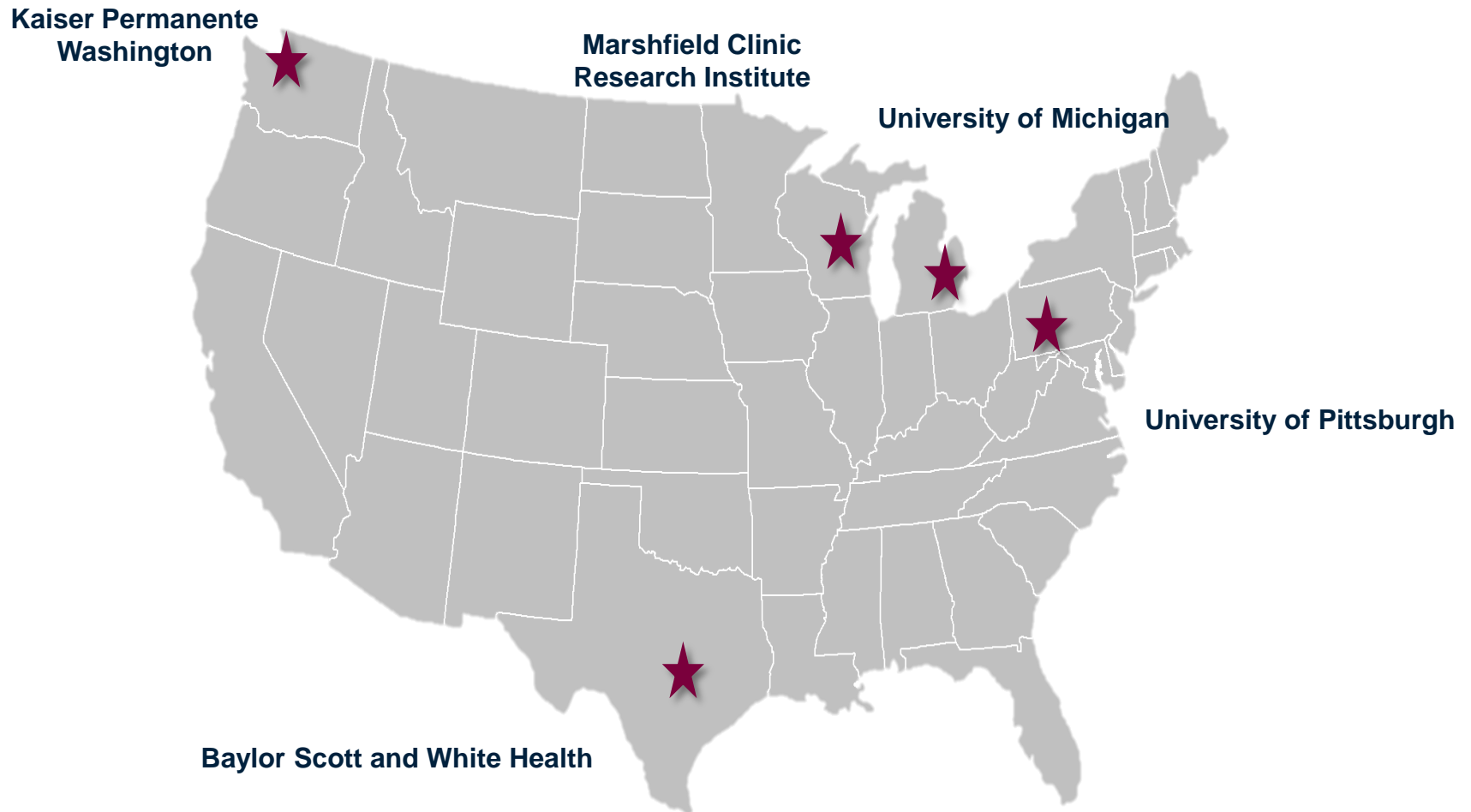


Cumulative Positive Tests Reported by Wisconsin Clinical Laboratories, 2017-18 Season Summary

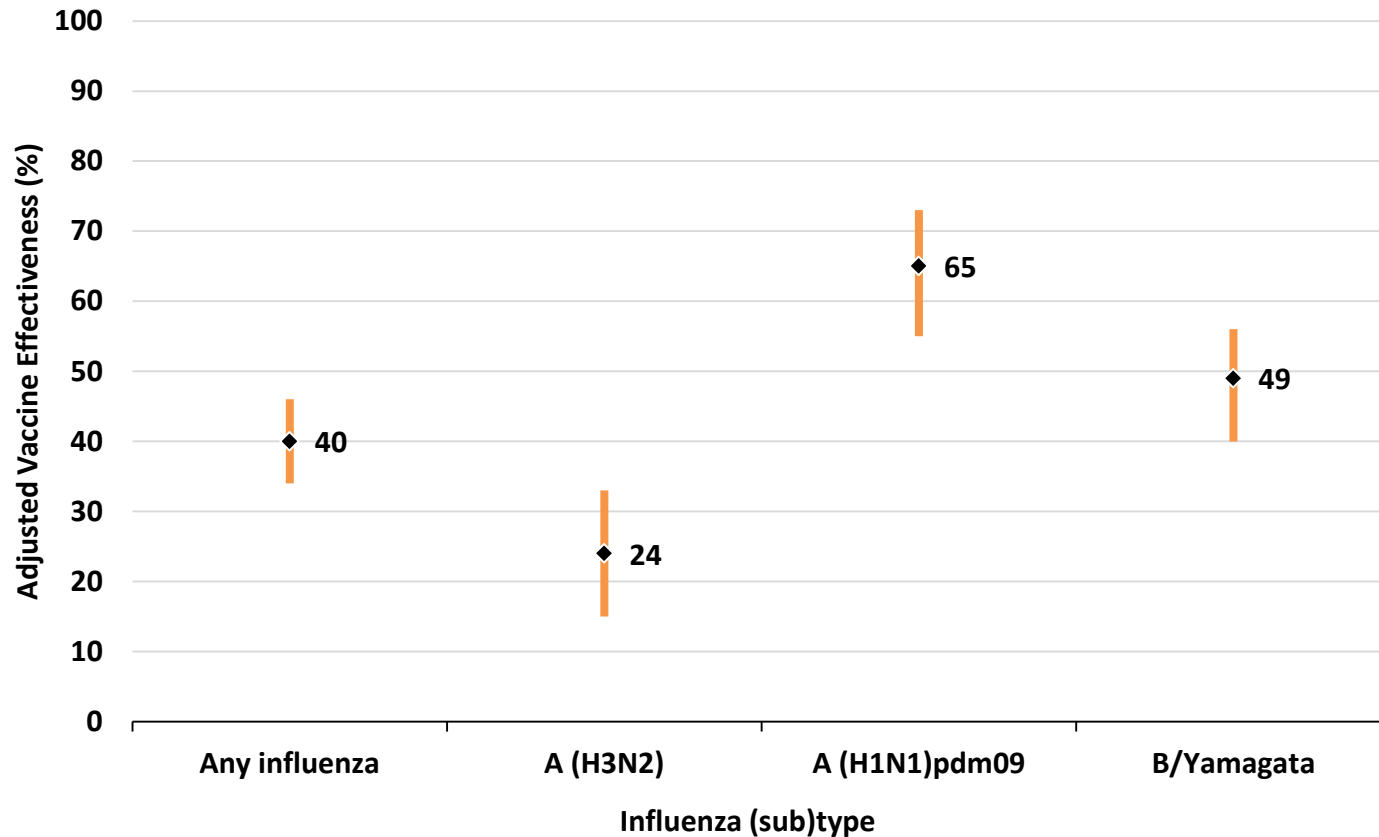
	Influenza A: 73%			Influenza B: 27%			
	A (H1N1)	A (H3N2)	A (Unknown)	B (Victoria)	B (Yamagata)	B (Unknown)	Total
Total positive (n)	198	1876	12636	12	351	5135	20208
% of total positive	1%	9%	63%	0%	2%	25%	100%

Vaccine effectiveness

US Flu VE Network sites and principal investigators

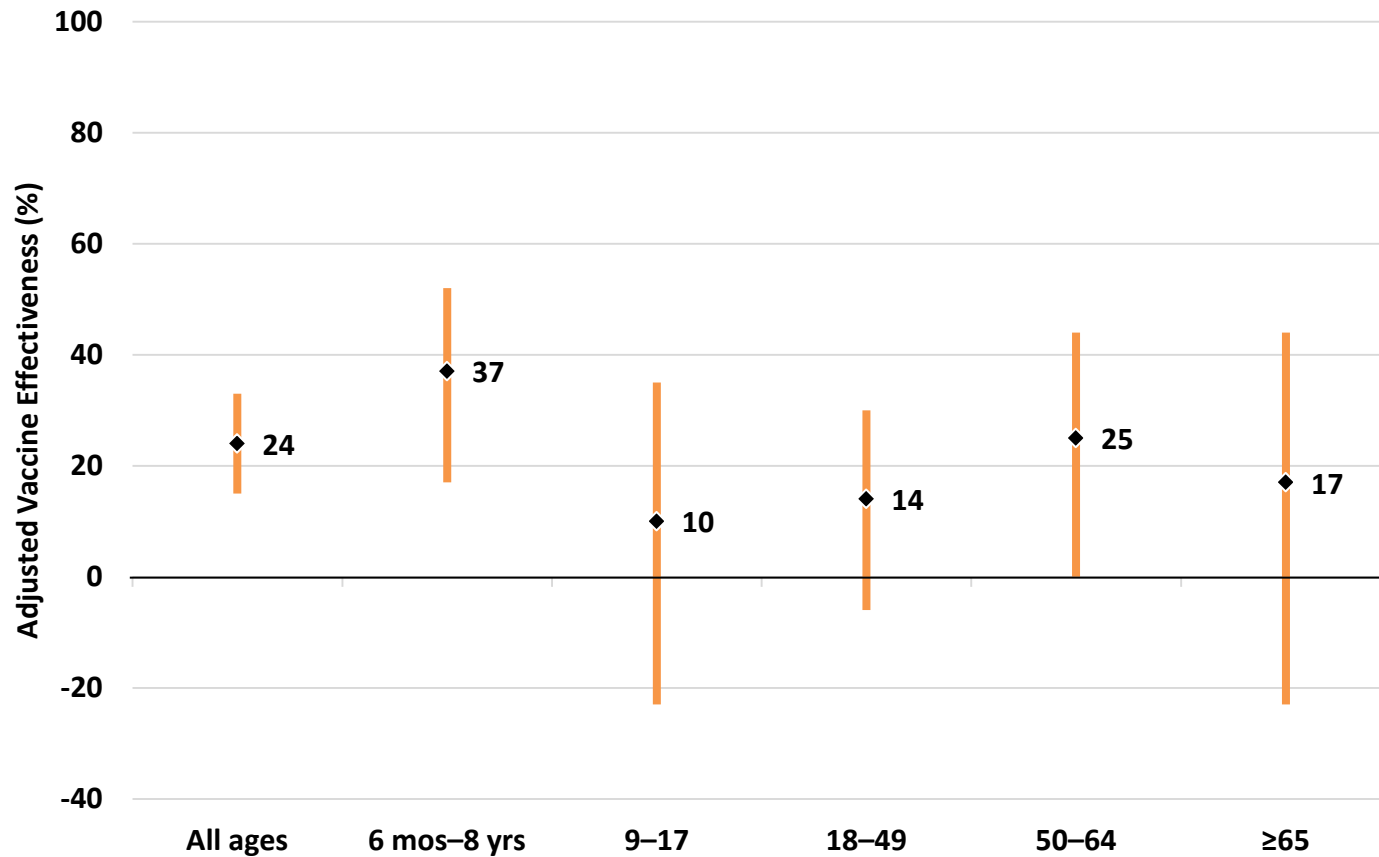


Preliminary estimate of vaccine effectiveness against medically attended influenza by influenza type, 2017–18



* Multivariate logistic regression models adjusted for site, age, sex, race/ethnicity, self-rated general health status, interval from onset to enrollment, and calendar time.

Interim adjusted vaccine effectiveness against medically attended influenza A(H3N2) by age group, 2017–18



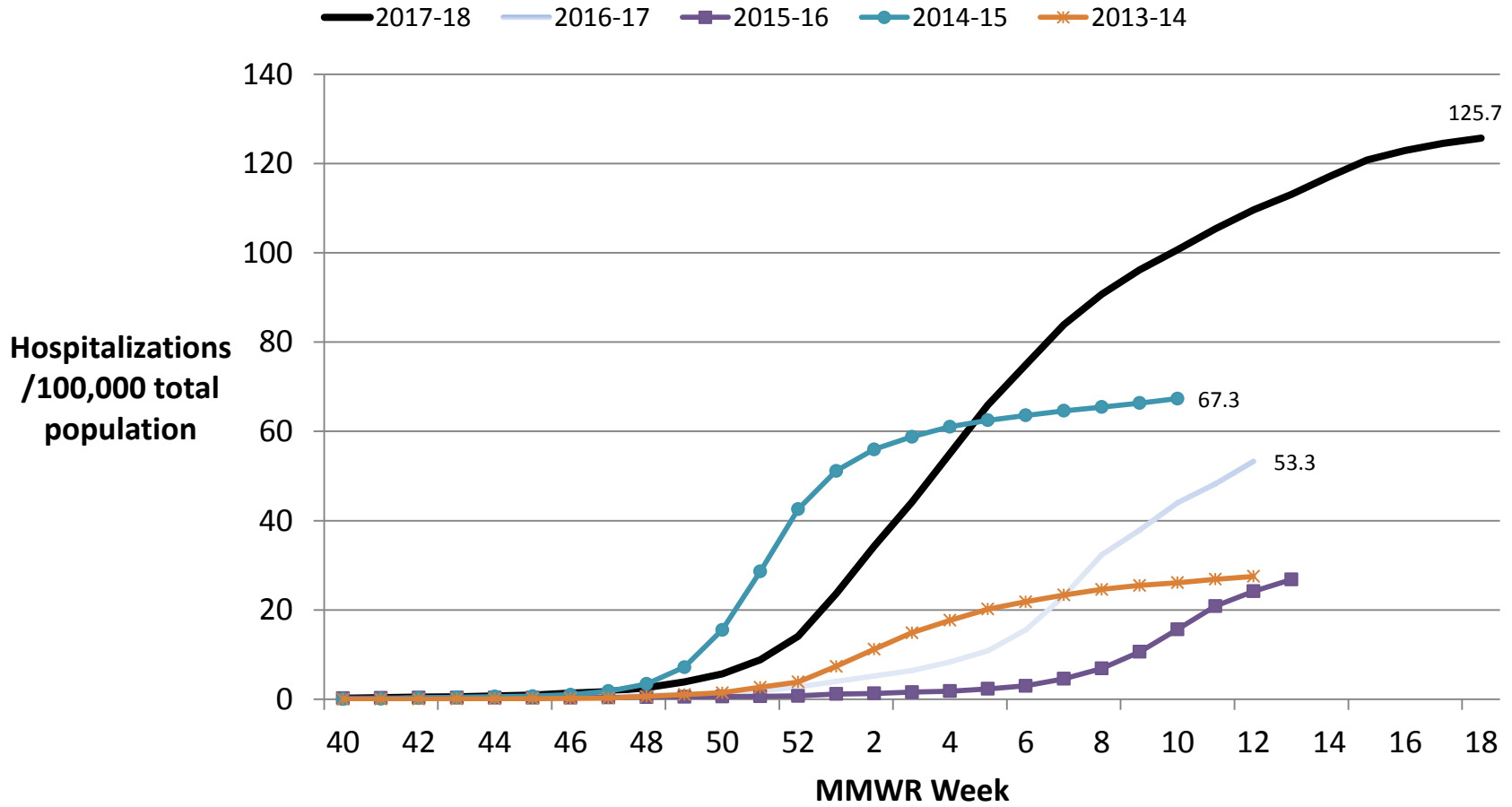
* Multivariate logistic regression models adjusted for site, age, sex, race/ethnicity, self-rated general health status, interval from onset to enrollment, and calendar time.

Disease Activity / Severity

Influenza-associated hospitalizations by season, Wisconsin, 2013-2018

Virus	Flu Season	<1	01-04	05-17	18-49	50-64	65+	Total	ICU	Weeks of Widespread activity
H1	2013-14	48	57	47	499	565	563	1779	368	4
H3	2014-15	48	63	100	453	740	3308	4712	547	10
H1	2015-16	28	50	45	360	612	768	1863	384	9
H3	2016-17	32	80	136	370	663	2656	3937	461	13
H3	2017-18	84	141	172	773	1429	4921	7520	975	17

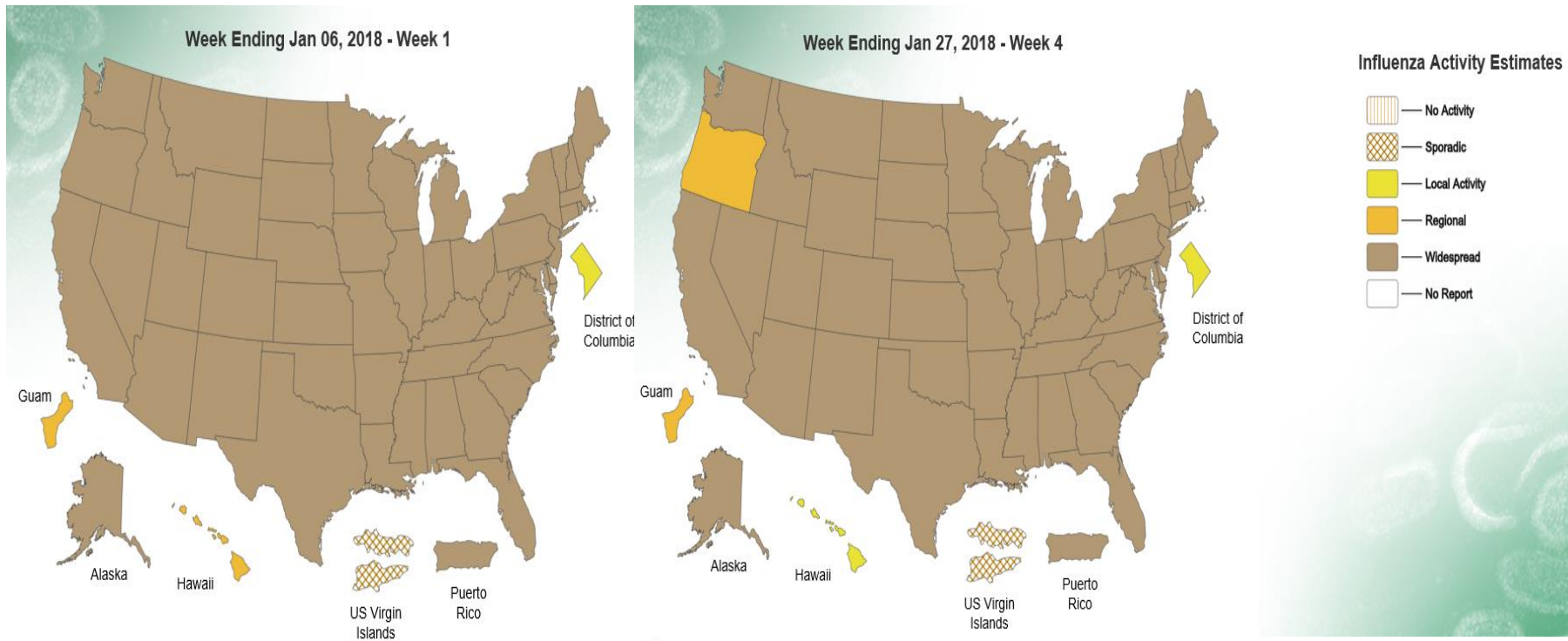
Influenza associated hospitalizations, cumulative rate, 2013-2018



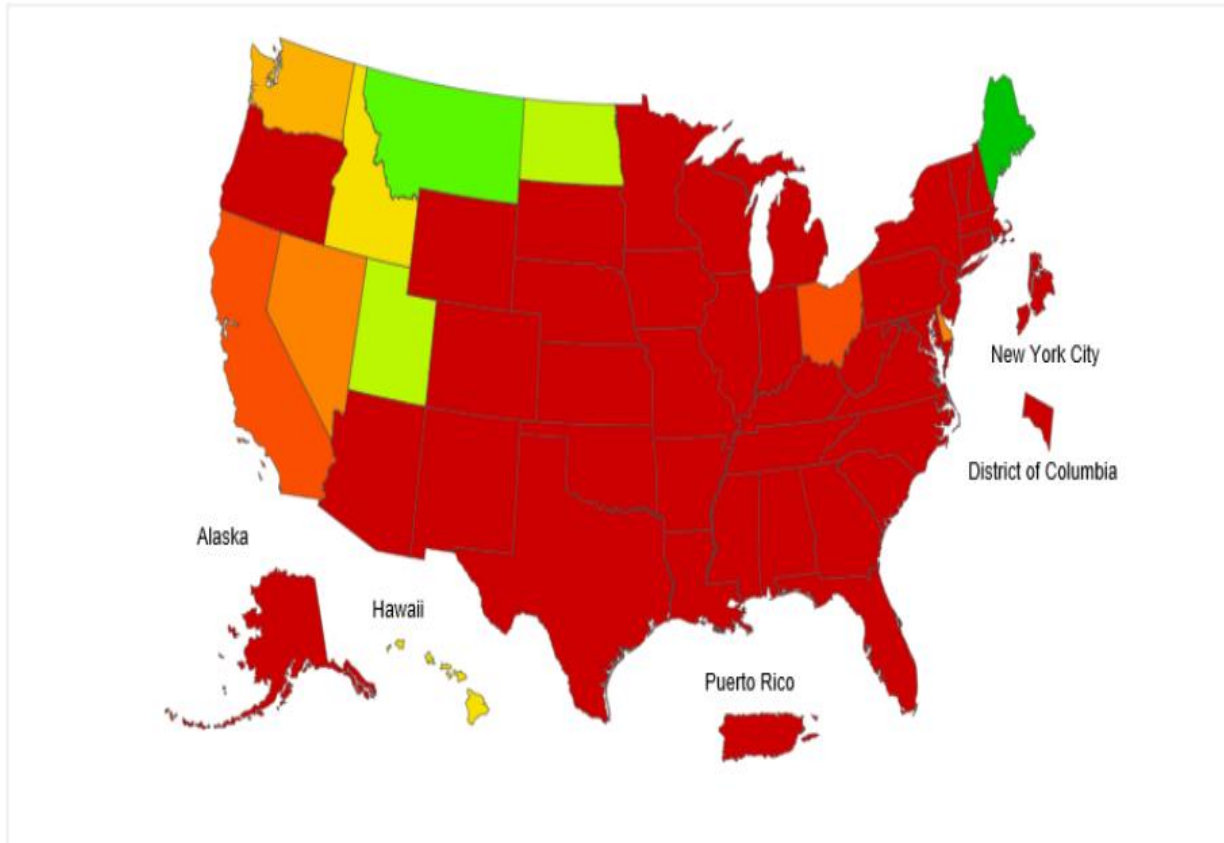
Respiratory outbreaks in Wisconsin, 2016-2018

MONTH/YEAR	2016 RESPIRATORY	2017 RESPIRATORY	2018 Respiratory
January	18	58	197
February	18	105	105
March	52	80	57
April	22	26	42
May	7	13	12
June	6	6	
July	4	6	
August	7	7	
September	12	14	
October	14	14	
November	8	18	
December	21	41	
Total	189	388	413
Predominant virus	H1	H3	H3

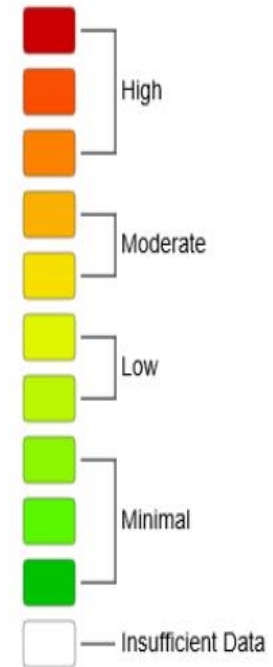
State and Territorial Epidemiologist Reports Geographic Spread



2017-18 Influenza Season Week 5 ending Feb 03, 2018



ILI Activity Level



“FLUMPS”

Non-mumps Parotitis, 2017-18

Very similar to the 2014-15 cluster

	2014-15 Nationwide N=124	2017-18 Wisconsin N=36
Males	65%	70%
Median age	14.5	13
Age range	0-90	1-93

Sample type	Samples	Positive for A/H3	Positive for other viruses	Percent Positive
Buccal	32	17	0	53%
NP/OP/ Nasal	59	19	4	39%
Total	91	36	4	44%

Timing: When was the peak of activity?

Peak (Activity) Week

Surveillance	MMWR Week									
	51	52	1	2 1/13	3 1/20	4 1/27	5 2/3	6	7	8
ILINet (%)						x	X 4.9%	x		
Virologic (% positive)					x	X 35.5%	x	x		
Hospitalizations (Number)					x	X 670	x			
Outbreaks (Number)			x	X 54						

X = peak

x = close to peak

Vaccine 2018-19

2018-19 Influenza Vaccine

- Return of Live-attenuated influenza vaccine (LAIV)
- Switch of influenza B Victoria lineage
 - B/Brisbane to B/Colorado
 - Victoria lineage in trivalent only
- Switch A/H3N2
 - A/Hong Kong to A/Singapore
 - Not a 180 degree change
- Trivalent versus quadrivalent? Stay tuned!

Conclusions

2017-18 Influenza Season Conclusions

- Severe and long season
- Late season nursing home outbreaks due to B/Yamagata viruses in addition to A/H3N2 outbreaks
- **Most viruses were similar to vaccine viruses but activity resembled a mismatched season**
- Vaccine effectiveness was low (40% overall) but not as low as we saw in 2014-15 (19% overall)