Ohio Department of Health Seasonal Influenza Activity Summary
MMWR Week 50
December 8th – December 14th, 2019

Current Influenza Activity:

Current Ohio Activity Level (Geographic Spread) – *Widespread*

Definition: Increased ILI in at least half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the state.

During MMWR Week 50, public health surveillance data sources indicate minimal intensity for influenza-like illness (ILI) in outpatient settings reported by Ohio's sentinel providers. The percentage of emergency department visits with patients exhibiting constitutional symptoms are above baseline levels statewide; fever and ILI specified ED visits are also above baseline levels. Reported cases of influenza-associated hospitalizations are above the seasonal threshold*. There were 142 influenza-associated hospitalizations reported during MMWR Week 50.

Ohio Weekly Influenza-associated Hospitalizations by Ohio Public Health Region	
Central	16
East Central	10
Northeast	26
Northwest	19
Southeast	6
Southwest	21
West Central	44
Total	**142**

Ohio Influenza Activity Summary Dashboard:

Data Source	Current week value	Percent Change from last week[1]	# of weeks[2]	Trend Chart[3]
Influenza-like Illness (ILI) Outpatient Data (ILINet Sentinel Provider Visits)	1.20%	6.19%	↑ 2	
Thermometer Sales (National Retail Data Monitor)	1078	-0.09%	↓ 1	
Fever and ILI Specified ED Visits (EpiCenter)	2.76%	11.74%	↑ 1	
Constitutional ED Visits (EpiCenter)	11.16%	7.62%	↑ 9	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	142	57.78%	↑ 5	
Outpatient Medical Claims Data[4]	0.78%	-12.36%	↓ 2	

[1]Interpret percent changes with caution. Large variability may be exhibited in data sources with low weekly values.
[2]Number of weeks that the % change is increasing or decreasing.
[3]Black lines represent current week's data; red lines represent baseline averages
[4]Medical Claims Data provided by athenahealth®

*The seasonal threshold is 25 cases of influenza-associated hospitalizations; historical data demonstrate that once the weekly count exceeds 25 cases, the number of weekly cases thereafter will likely not decrease until after the peak of influenza activity for the season

State, Regional, and National Data:

Ohio Surveillance Data:

- **ODH lab** has reported **67 positive** influenza tests from specimens sent from sentinel ILINet providers and hospital clinical labs. 2019-2020 influenza season results: **(21) A/pdmH1N1; (9) A/H3N2; (37) Influenza B;** (through 12/14/2019).

- The **National Respiratory and Enteric Virus Surveillance System (NREVSS)** has **18,805** influenza specimens tested by RT-PCR at participating facilities. 2019-2020 influenza season positive results: **(21) A/pdmH1N1; (2) A/H3N2; (155) Flu A Not Subtyped; and (376) Flu B;** (through 12/14/2019)

- 0 **pediatric influenza-associated mortalities** have been reported during the 2019-2020 season (through 12/14/2019).

- No **novel influenza A virus infections** have been reported during the 2019-2020 season (through 12/14/2019).

- Incidence of confirmed **influenza-associated hospitalizations** in 2019-2020 season = **404** (through 12/14/2019).

HHS Regional Surveillance Data*: During week 49 (December 1st – December 7th, 2019), the proportion of outpatient visits for ILI in Region 5 (Ohio is in Region 5) was 1.88%, which is **below** the regional baseline of 1.9%. West Virginia reported Local Activity; Michigan and Ohio Regional Activity (Ohio is Widespread for week 50); Pennsylvania, Kentucky, and Indiana reported Widespread Activity.

National Surveillance Data*: During week 49 (December 1st – December 7th, 2019), the majority of the U.S. reported Minimal or Low influenza activity. The proportion of outpatient visits for ILI was 3.2%, which is **above** the national baseline of 2.4%. All 10 HHS regions reported ILI levels at or above their region-specific baseline level. Nationally influenza B/Victoria viruses have been reported more frequently than other influenza viruses this season; followed by A(H1N1)pdm09 and A(H3N2) viruses. The predominant virus varies by region and the proportions of influenza B/Victoria and influenza A(H1N1)pmd09 viruses are increasing in some regions. The predominant virus also varies by age group. Nationally, influenza B/Victoria viruses are the most commonly reported influenza viruses among children age 0-4 years (46% of reported viruses) and 5-24 years (59% of reported viruses), while A(H3N2) viruses are the most commonly reported influenza viruses among persons 65 years of age and older (47% of reported viruses). Among adults aged 25-64 years, approximately equal proportions of influenza A(H1N1)pdm09 and B/Victoria viruses (38% and 34%, respectively) have been reported.

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending Dec 07, 2019 - Week 49
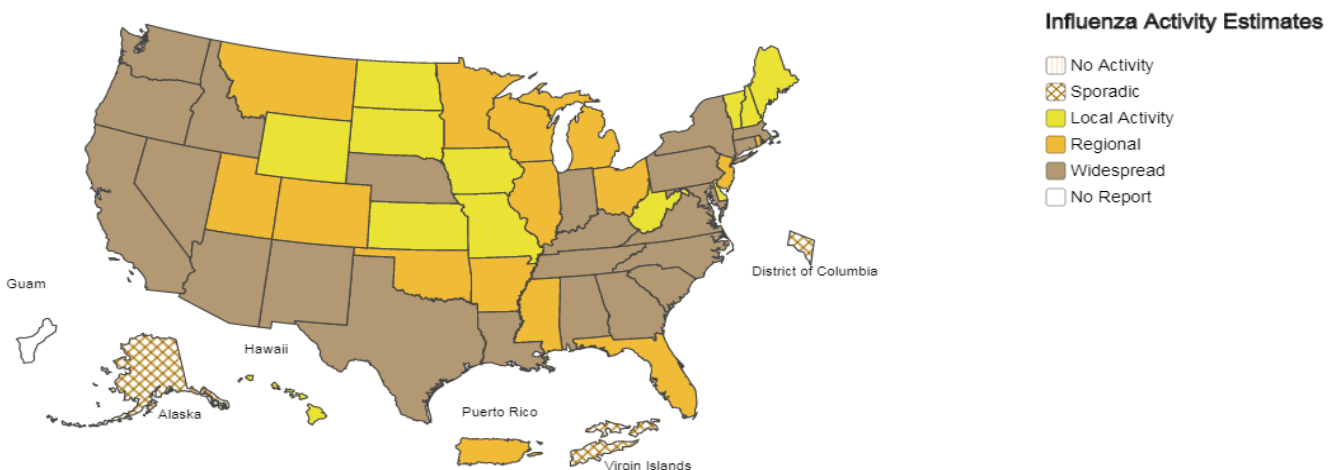
*This map indicates geographic spread and does not measure the severity of influenza activity.

2019-2020 Influenza Vaccine Components:

A/B	Virus	Trivalent (High-dose only)	Quadrivalent
A	A/Brisbane/02/2018 (H1N1)pdm09-like	X	X
A	A/Kansas/14/2017 (H3N2)-like virus	X	X
B	B/Colorado/06/2017–like virus (Victoria lineage)	X	X
B	Phuket/3073/2013-like (B/Yamagata lineage)		X

Antigenic Characterization:

CDC **antigenically characterizes** a subset of influenza viruses by [hemagglutination inhibition (HI)](#) or neutralization based Focus Reduction assays (FRA). Antigenic drift is evaluated by comparing antigenic properties of cell-propagated reference viruses representing currently recommended vaccine components with those of cell-propagated circulating viruses. CDC antigenically characterized 61 influenza viruses collected in the U.S. from September 29, 2019 to December 7, 2019.

Influenza A Viruses

- **A (H1N1)pdm09:** Eighteen A(H1N1)pdm09 viruses were antigenically characterized by HI with ferret antisera, and all were antigenically similar (reacting at titers that were within 4-fold of the homologous virus titer) to cell-propagated A/Brisbane/02/2018-like reference viruses representing the A(H1N1)pdm09 component for the 2019-20 Northern Hemisphere influenza vaccines.
- **A (H3N2):** Seventeen A(H3N2) viruses were antigenically characterized by FRA with ferret antisera, and 12 (70.6%) were antigenically similar to cell-propagated A/Kansas/14/2017-like reference viruses representing the A(H3N2) component for the 2019-20 Northern Hemisphere influenza vaccines.

Influenza B Viruses

- **B/Victoria:** Sixteen B/Victoria lineage viruses, including viruses from both co-circulating sub-clades, were antigenically characterized by HI with ferret antisera, and 10 (62.5%) were antigenically similar to cell-propagated B/Colorado/06/2017-like reference viruses representing the B/Victoria component for the 2019-20 Northern Hemisphere influenza vaccines.
- **B/Yamagata:** Ten B/Yamagata lineage viruses were antigenically characterized by HI with ferret antisera, and all 10 (100%) were antigenically similar to cell-propagated B/Phuket/3073/2013-like reference viruses representing the B/Yamagata component for the 2019-20 Northern Hemisphere influenza vaccines.

National activity levels and more information can be found at the following CDC pages:

- http://www.cdc.gov/flu/weekly/usmap.htm
- http://www.cdc.gov/flu/

Positive Influenza Tests (PCR), National Respiratory and Enteric Virus Surveillance System (NREVSS), 2019-2020 Influenza Season, Ohio
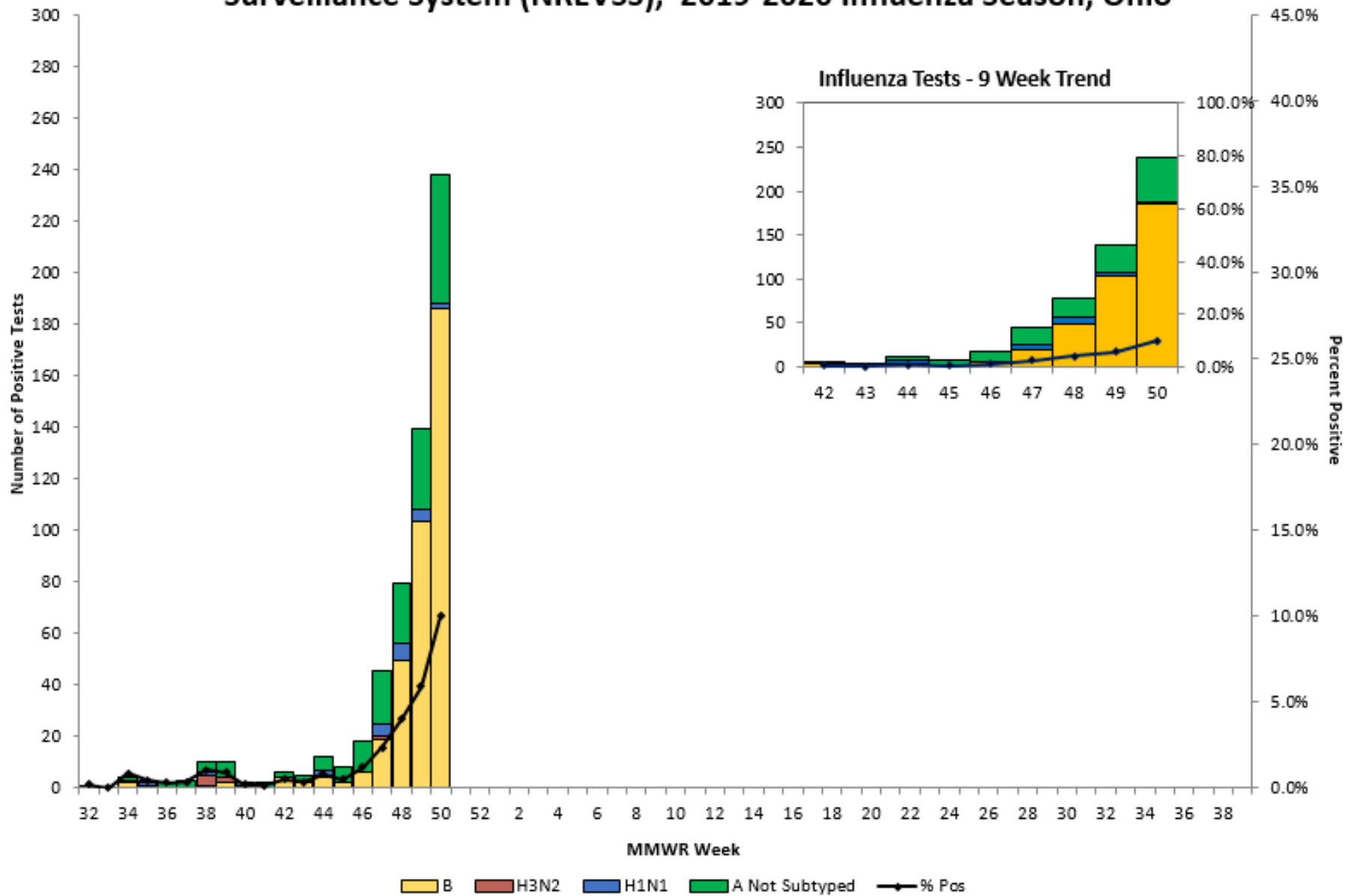
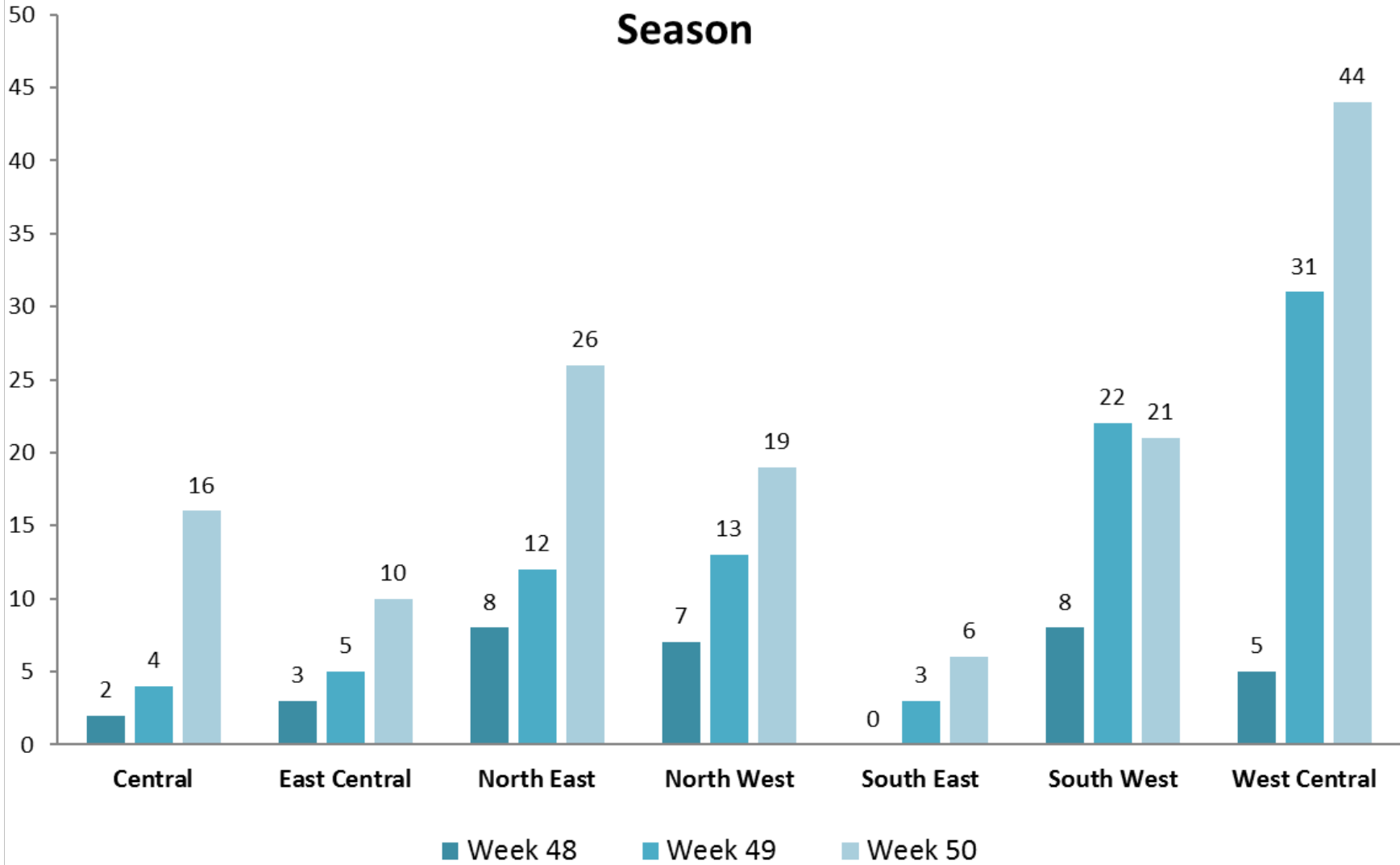## Influenza-Associated Hospitalizations, Ohio
2019-2020 Season*

County	Influenza-Associated Hospitalizations	Percent of All Influenza-Associated Hospitalizations	Rate per 100,000 Population†	County	Influenza-Associated Hospitalizations	Percent of All Influenza-Associated Hospitalizations	Rate per 100,000 Population†
ADAMS	0	0.0%	0.00	LOGAN	0	0.0%	0.00
ALLEN	17	4.2%	15.99	LORAIN	10	2.5%	3.32
ASHLAND	1	0.2%	1.88	LUCAS	22	5.4%	4.98
ASHTABULA	1	0.2%	0.99	MADISON	1	0.2%	2.30
ATHENS	0	0.0%	0.00	MAHONING	2	0.5%	0.84
AUGLAIZE	5	1.2%	10.88	MARION	0	0.0%	0.00
BELMONT	2	0.5%	2.84	MEDINA	4	1.0%	2.32
BROWN	1	0.2%	2.23	MEIGS	0	0.0%	0.00
BUTLER	14	3.5%	3.80	MERCER	0	0.0%	0.00
CARROLL	0	0.0%	0.00	MIAMI	2	0.5%	1.95
CHAMPAIGN	1	0.2%	2.49	MONROE	0	0.0%	0.00
CLARK	10	2.5%	7.23	MONTGOMERY	64	15.8%	11.96
CLERMONT	3	0.7%	1.52	MORGAN	0	0.0%	0.00
CLINTON	3	0.7%	7.14	MORROW	0	0.0%	0.00
COLUMBIANA	3	0.7%	2.78	MUSKINGUM	3	0.7%	3.49
COSHOCTON	1	0.2%	2.71	NOBLE	0	0.0%	0.00
CRAWFORD	0	0.0%	0.00	OTTAWA	0	0.0%	0.00
CUYAHOGA	49	12.1%	3.83	PAULDING	1	0.2%	5.10
DARKE	4	1.0%	7.55	PERRY	2	0.5%	5.55
DEFIANCE	2	0.5%	5.12	PICKAWAY	1	0.2%	1.80
DELAWARE	2	0.5%	1.15	PIKE	0	0.0%	0.00
ERIE	4	1.0%	5.19	PORTAGE	2	0.5%	1.24
FAIRFIELD	7	1.7%	4.79	PREBLE	2	0.5%	4.73
FAYETTE	0	0.0%	0.00	PUTNAM	2	0.5%	5.80
FRANKLIN	19	4.7%	1.63	RICHLAND	2	0.5%	1.61
FULTON	0	0.0%	0.00	ROSS	0	0.0%	0.00
GALLIA	0	0.0%	0.00	SANDUSKY	3	0.7%	4.92
GEAUGA	0	0.0%	0.00	SCIOTO	4	1.0%	5.03
GREENE	11	2.7%	6.81	SENECA	1	0.2%	1.76
GUERNSEY	1	0.2%	2.49	SHELBY	4	1.0%	8.09
HAMILTON	39	9.7%	4.86	STARK	4	1.0%	1.07
HANCOCK	0	0.0%	0.00	SUMMIT	7	1.7%	1.29
HARDIN	0	0.0%	0.00	TRUMBULL	7	1.7%	3.33
HARRISON	0	0.0%	0.00	TUSCARAWAS	0	0.0%	0.00
HENRY	1	0.2%	3.54	UNION	0	0.0%	0.00
HIGHLAND	1	0.2%	2.29	VAN WERT	1	0.2%	3.48
HOCKING	1	0.2%	3.40	VINTON	0	0.0%	0.00
HOLMES	3	0.7%	7.08	WARREN	21	5.2%	9.87
HURON	1	0.2%	1.68	WASHINGTON	1	0.2%	1.62
JACKSON	1	0.2%	3.01	WAYNE	2	0.5%	1.75
JEFFERSON	0	0.0%	0.00	WILLIAMS	3	0.7%	7.97
KNOX	2	0.5%	3.28	WOOD	3	0.7%	2.39
LAKE	1	0.2%	0.43	WYANDOT	1	0.2%	4.42
LAWRENCE	2	0.5%	3.20	UNKNOWN	0	0.0%	*
LICKING	9	2.2%	5.41	**TOTAL**	**404**	**100%**	**3.50**

*2019-2020 Season 09/29/2019 thru 09/26/2020; data through 12/15/2019
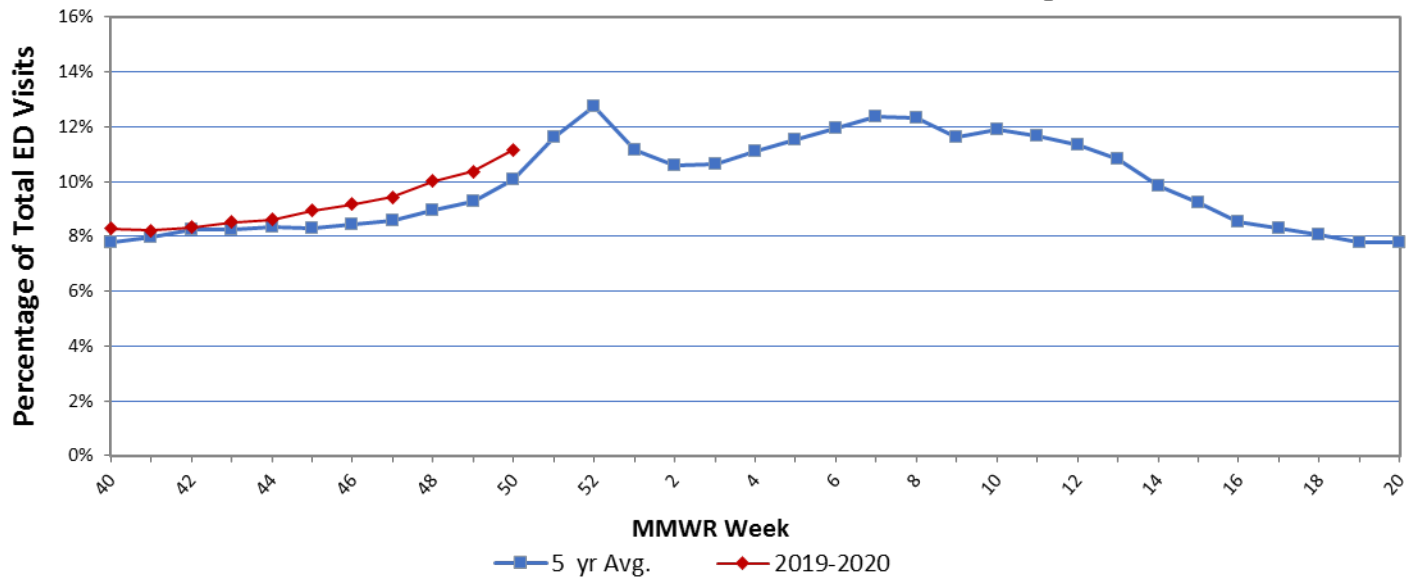
† Disease rates were calculated by number of cases per 100,000 residents using 2010 census data.
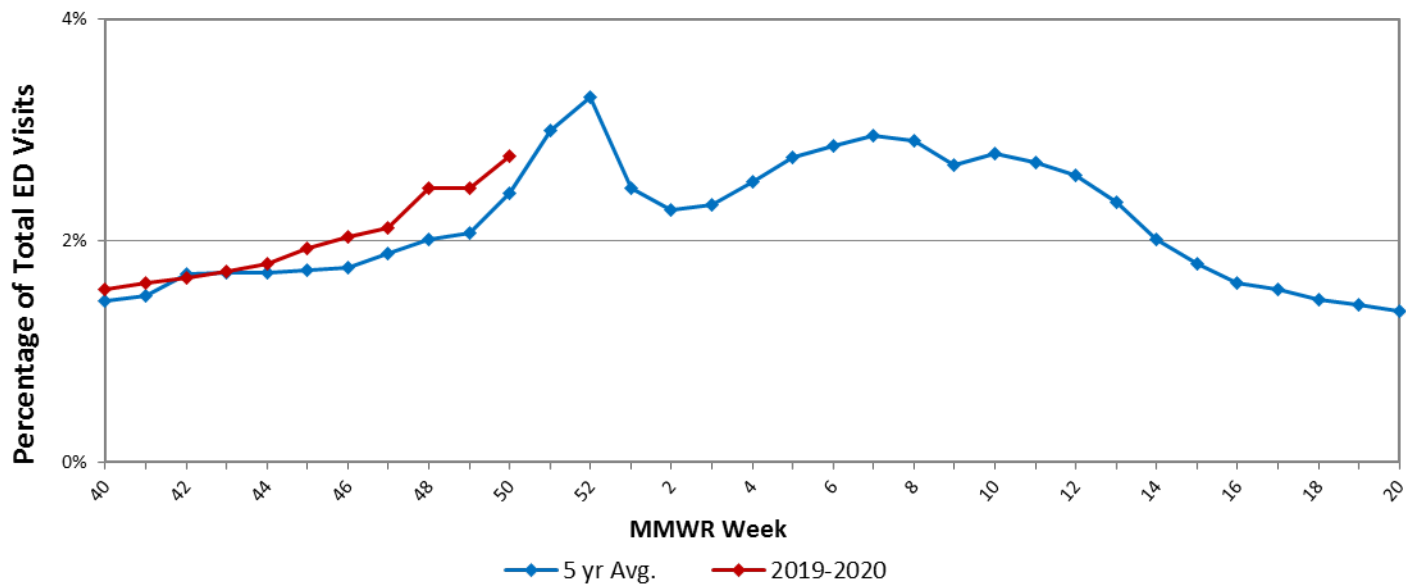
Source: Ohio Disease Reporting System

Influenza-associated Hospitalizations by Public Health Region and MMWR Week, Ohio, 2019-2020 Influenza Season
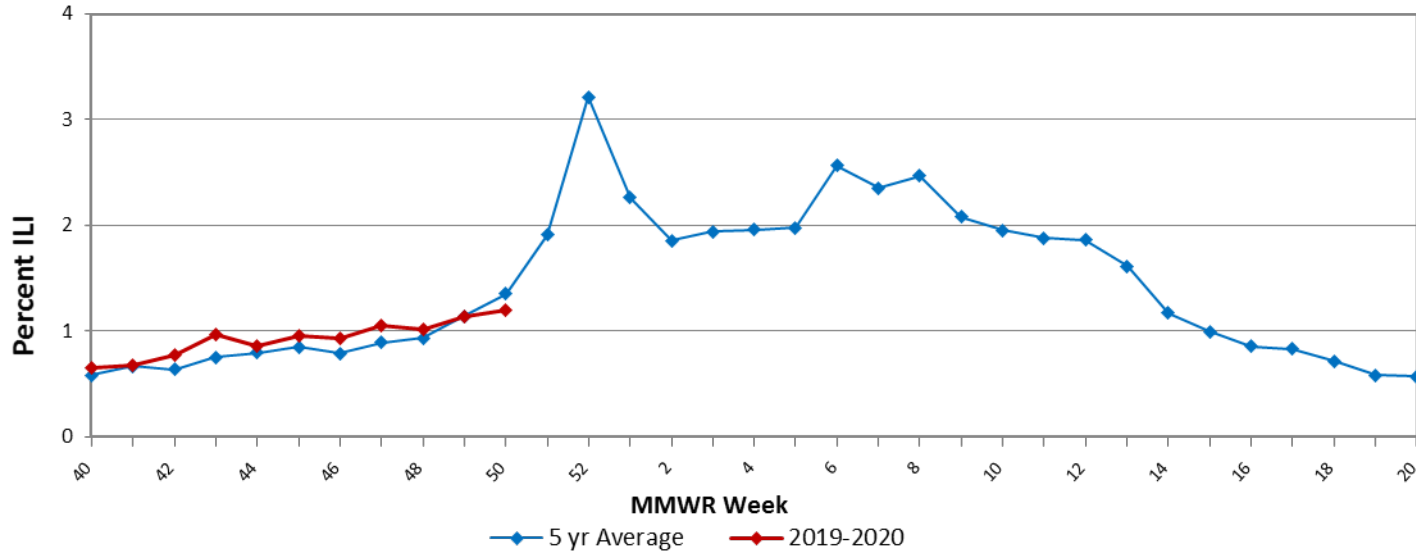
Ohio Constitutional ED Visits with 5 Year Baseline Average; 2019-2020
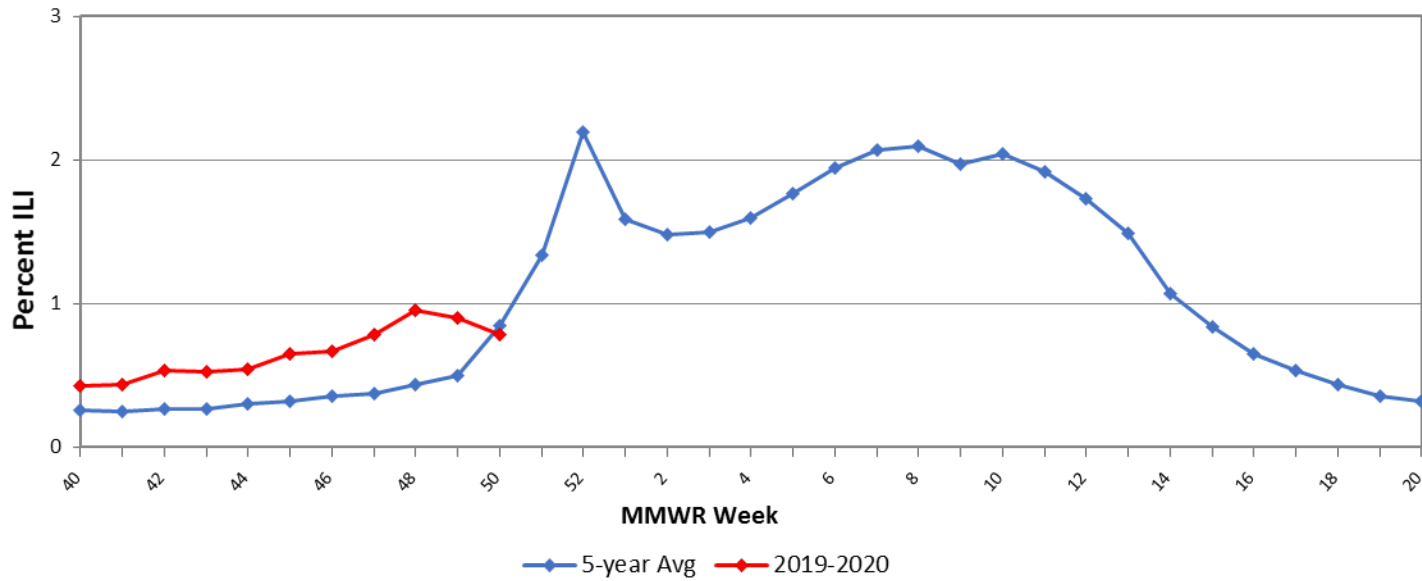

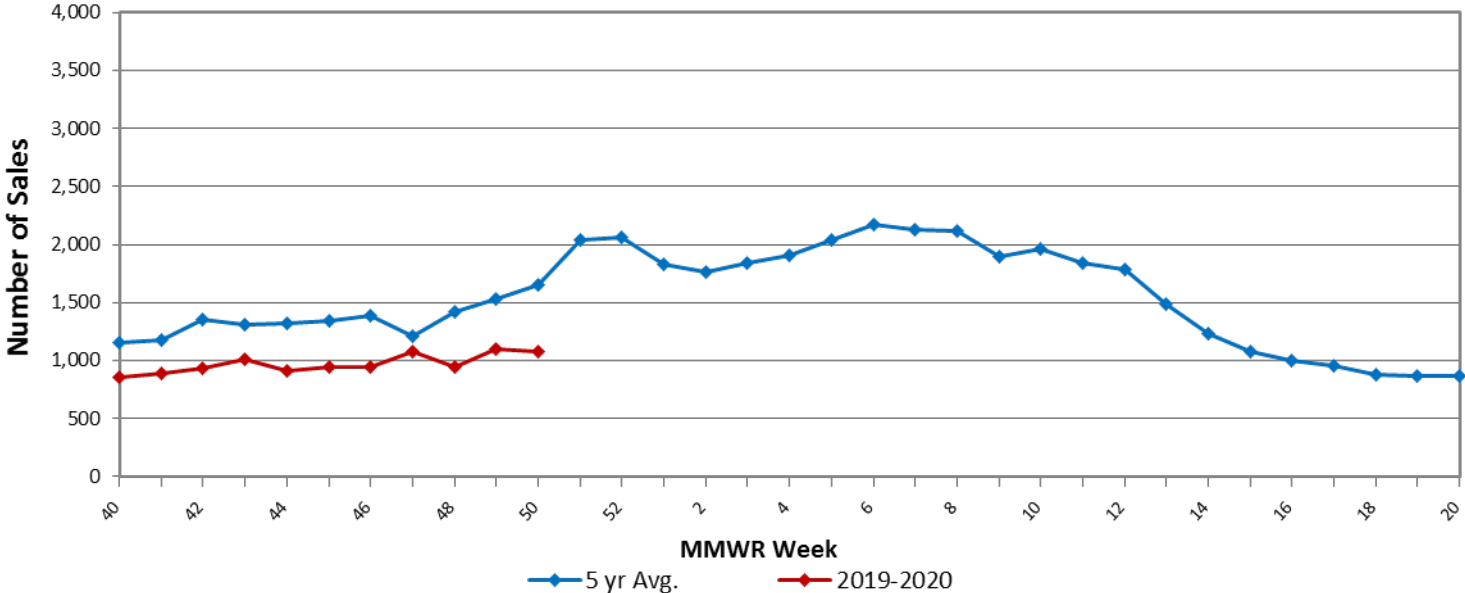## Ohio Fever & ILI Specified ED Visits with 5 Year Baseline Average; 2019-2020

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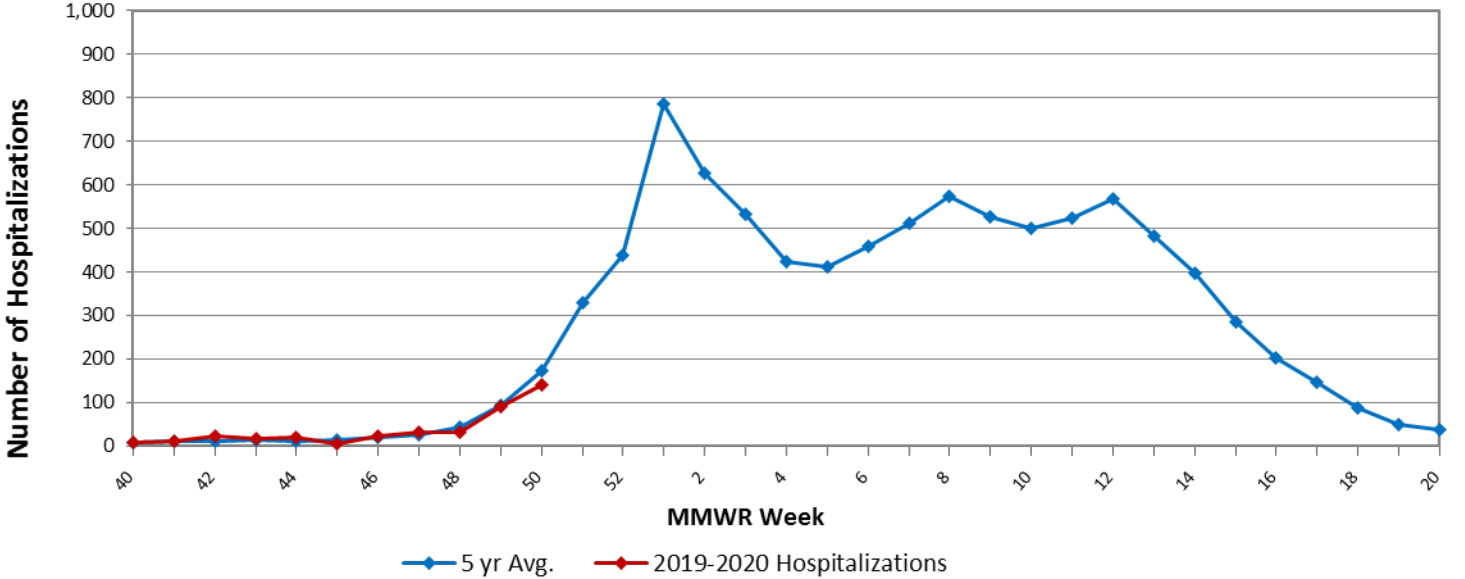Ohio Outpatient Influenza-like Illness Network (ILINet) with 5 Year Baseline Average; 2019-2020

AthenaHealth: Ohio Influenza Related Outpatient Medical Claims with 5 Year Baseline Average; 2019-2020

Ohio Thermometer Sales with 5 Year Baseline Average; 2019-2020

Ohio Confirmed Influenza-associated Hospitalizations by MMWR Week; 2019-2020 Season (n=404)

Sources of Influenza Surveillance Data

- **National Retail Data Monitor (NRDM)-OTC Drug Purchases:** The NRDM collects over-the-counter (OTC) drug sales information from approximately 1,420 Ohio chain drug stores and grocery stores. For influenza surveillance, thermometer and adult cold relief sales are monitored on a weekly basis.

- **Emergency Department Visits (EpiCenter):** EpiCenter collects emergency department chief complaint data from 180 hospitals and urgent care facilities across Ohio in real time and classifies them into symptom and syndrome categories. Chief complaints from the constitutional syndrome category and the fever + ILI symptoms classifier are analyzed for influenza surveillance.

- **Sentinel Providers (ILINet):** Sentinel providers, through the US Influenza-like Illness Surveillance Network (ILINet), collect outpatient influenza-like illness (ILI) data. ILI is defined as a fever ($\geq$ 100 F), **and** cough and/or sore throat without another known cause. Providers report the total number of patients seen and the number of patients with ILI by age group on a weekly basis. Sentinel providers also submit specimens for influenza testing to the ODH laboratory throughout the influenza season. There are 70 sentinel providers enrolled in Ohio for the 2019-2020 season.

- **ODH Laboratory Surveillance:** The Ohio Department of Health Laboratory reports the number of specimens that test positive for influenza each week. Generally, specimens are submitted by sentinel provider participants. A subset of the positive specimens is sent to CDC for further testing during the season.

- **Influenza-associated Hospitalizations (ODRS):** Influenza-associated hospitalizations are reported to ODH from local health departments and hospitals by direct entry into the Ohio Disease Reporting System (ODRS). Hospitalizations can be used as an indicator of the severity of illness during a particular influenza season. This condition became reportable in 2009.

- **Influenza-associated Pediatric Mortality (ODRS):** Influenza-associated pediatric mortalities are reported into ODRS by local health department and hospital staff. Pediatric deaths can be an indicator of the severity of illness during the influenza season. This condition became reportable in 2005.

- **National Respiratory and Enteric Virus Surveillance System (NREVSS):** The National Respiratory and Enteric Virus Surveillance System (NREVSS) is a laboratory-based system that monitors temporal and geographic patterns associated with the detection of respiratory syncytial virus (RSV), human parainfluenza viruses (HPIV), respiratory and enteric adenoviruses and rotavirus. There are 19 facilities in Ohio that submit data to this system.

- **athenahealth®**: athenahealth is a technology and services company for medical billing and electronic health records. Diagnosis and procedure data from primary care visits are automatically queried to produce influenza related statistics.

Ohio Public Health Regions: These counties comprise the Ohio Public Health Regions described in the figures shown on pages 1 and 5.

Central		East Central		Noth East	North West		South East		South West	West Central
CRAWFORD	LOGAN	ASHLAND	RICHLAND	ASHTABULA	ALLEN	MERCER	ATHENS	MONROE	ADAMS	CHAMPAIGN
DELAWARE	MADISON	CARROLL	STARK	CUYAHOGA	AUGLAIZE	OTTAWA	BELMONT	MORGAN	BROWN	CLARK
FAIRFIELD	MARION	COLUMBIANA	SUMMIT	GEAUGA	DEFIANCE	PAULDING	COSHOCTON	MUSKINGUM	BUTLER	DARKE
FAYETTE	MORROW	HOLMES	TRUMBULL	LAKE	ERIE	PUTNAM	GALLIA	NOBLE	CLERMONT	GREENE
FRANKLIN	PICKAWAY	MAHONING	TUSCARAWAS	LORAIN	FULTON	SANDUSKY	GUERNSEY	PERRY	CLINTON	MIAMI
HARDIN	UNION	MEDINA	WAYNE		HANCOCK	SENECA	HARRISON	PIKE	HAMILTON	MONTGOMERY
KNOX	WYANDOT	PORTAGE			HENRY	VAN WERT	HOCKING	ROSS	HIGHLAND	PREBLE
LICKING					HURON	WILLIAMS	JACKSON	SCIOTO	WARREN	SHELBY
					LUCAS	WOOD	JEFFERSON	VINTON		
							LAWRENCE	WASHINGTON		
							MEIGS			

If you have any further questions or comments about surveillance for seasonal influenza for the State of Ohio, please contact the Infectious Disease Informatics and Vaccine Preventable Disease Epidemiology Unit at SMED@odh.ohio.gov or call (614) 995-5599.