



Ohio Department of Health Seasonal Influenza Activity Summary

MMWR Week 43

October 22nd – October 28th, 2017

Current Influenza Activity:

Current Ohio Activity Level (Geographic Spread) – Local

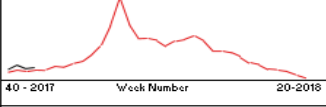





Definition: Definition: Increased ILI in 1 region; ILI activity in other regions is not increased AND recent (within the past 3 weeks) lab evidence of influenza in region with increased ILI, OR 2 or more institutional outbreaks (ILI or lab confirmed) in 1 region; ILI activity in other regions is not increased AND recent (within the past 3 weeks) lab evidence of influenza in region with the outbreaks; virus activity is no greater than sporadic in other regions.

During MMWR Week 43, 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 below baseline levels. Reported cases of influenza-associated hospitalizations are below the seasonal threshold*. There were 18 influenza-associated hospitalizations reported.

Ohio Weekly Influenza-associated Hospitalizations by Ohio Public Health Region

Central	2
East Central	1
Northeast	2
Northwest	3
Southeast	3
Southwest	4
West Central	3
Total	18

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)	0.74%	5.71%	↑ 1	
Thermometer Sales (National Retail Data Monitor)	1231	15.05%	↑ 1	
Fever and ILI Specified ED Visits (EpiCenter)	1.66%	7.79%	↑ 3	
Constitutional ED Visits (EpiCenter)	8.23%	2.75%	↑ 3	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	18	12.50%	↑ 3	
Outpatient Medical Claims Data⁴	0.21%	-4.55%	↓ 1	

¹Interpret percent changes with caution. Large variability may be exhibited in data sources with low weekly values.

²Number of weeks that the % change is increasing or decreasing.

³Black lines represent current week's data; red lines represent baseline averages (Week 40 data is a single data point, no line is visible until week 41).

⁴Medical 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 **4** influenza tests from specimens sent from various submitters.
2017-2018 influenza season results: **(1) A/pdmH1N1; (3) A/H3N2; (0) Influenza B; (0) Negative** (through 10/28/2017).
- The **National Respiratory and Enteric Virus Surveillance System (NREVSS)** has reported **4590** influenza tests performed at participating facilities.
2017-2018 influenza season positive results: **(0) H1N1, (2) A/H3N2, (26) Flu A Not Subtyped, and (15) Flu B** (through 10/28/2017).
- **0 pediatric influenza-associated mortalities** have been reported during the 2017-2018 season (through 10/28/2017).
- No **novel influenza A virus infections** have been reported during the 2017-2018 season (through 10/28/2017).
- Incidence of confirmed **influenza-associated hospitalizations** in 2017-2018 season = **57** (through 10/28/2017).

HHS Regional Surveillance Data*: During week 42 (October 15- October 21, 2017), the proportion of outpatient visits for ILI in Region 5 (Ohio is in Region 5) was 1.18%, which is below the regional baseline of 1.8%. West Virginia reported No Activity; Ohio, Pennsylvania, Indiana, and Michigan reported Sporadic Activity; Kentucky reported Local Activity.

National Surveillance Data*: During week 42 (October 15- October 21, 2017), Most U.S. states reported Minimal influenza activity. The proportion of outpatient visits for ILI was 1.3%, which is **below** the national baseline of 2.2%. All 10 HHS regions reported ILI levels below their region-specific baseline levels. The most frequently identified influenza virus type reported by public health laboratories was **influenza A (H3N2)**.

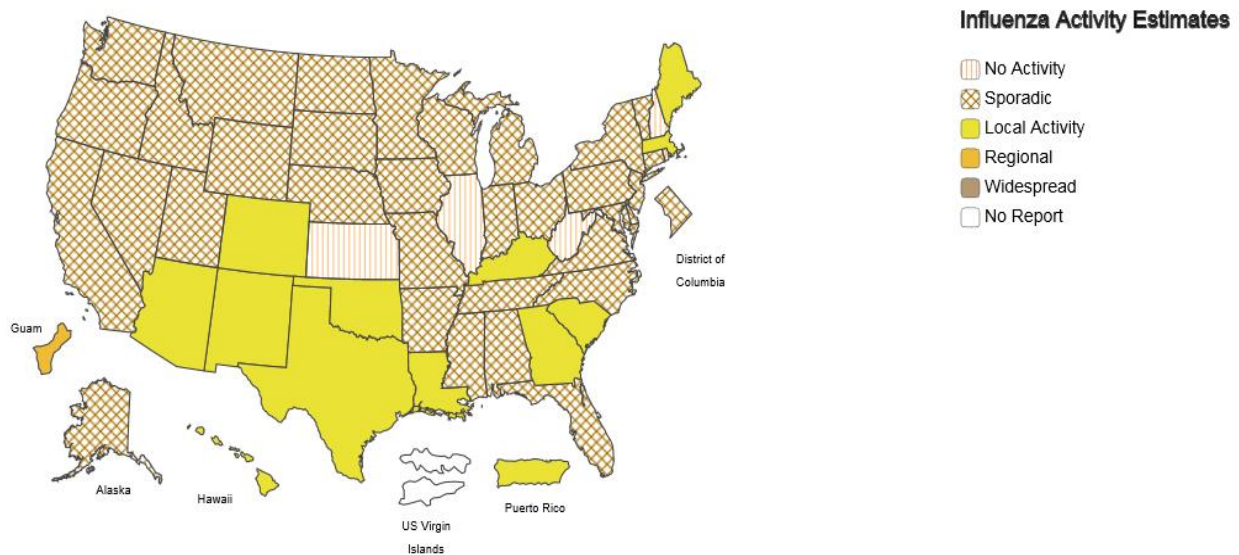
*National-level and regional-level data are reported one week later than Ohio state-level data



A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending Oct 21, 2017 - Week 42



*This map indicates geographic spread and does not measure the severity of influenza activity.

2017-2018 Influenza Vaccine Components:

A/B	Virus	Trivalent	Quadrivalent
A	Michigan/45/2015 (H1N1)pdm09-like	X	X
A	Hong Kong/4801/2014 (H3N2)-like	X	X
B	B/Brisbane/60/2008-like (B/Victoria lineage)	X	X
B	Phuket/3073/2013-like (B/Yamagata lineage)		X

Antigenic Characterization:

During May 21 – October 21, 2017, CDC antigenically characterized 256 influenza viruses [43 influenza A(H1N1)pdm09, 126 influenza A(H3N2), and 87 influenza B viruses] collected by U.S. laboratories. Antigenic similarity is evaluated by comparing cell-propagated circulating viruses with cell-propagated reference viruses representing the recommended vaccine components of the Northern Hemisphere 2017-18 vaccine.

Influenza A Virus [169]

- **A (H1N1)pdm09 [43]:** All 43 influenza A(H1N1)pdm09 viruses were antigenically characterized using ferret post-infection antisera as A/Michigan/45/2015 (H1N1)pdm09-like.
- **A (H3N2) [126]:** 122 of 126 (96.8%) influenza A(H3N2) viruses were antigenically characterized as A/Hong Kong/4801/2014-like by HI testing or neutralization testing. Among the viruses that reacted poorly with ferret antisera raised against A/Hong Kong/4801/2014-like viruses, all belong to genetic group 3C.3a.

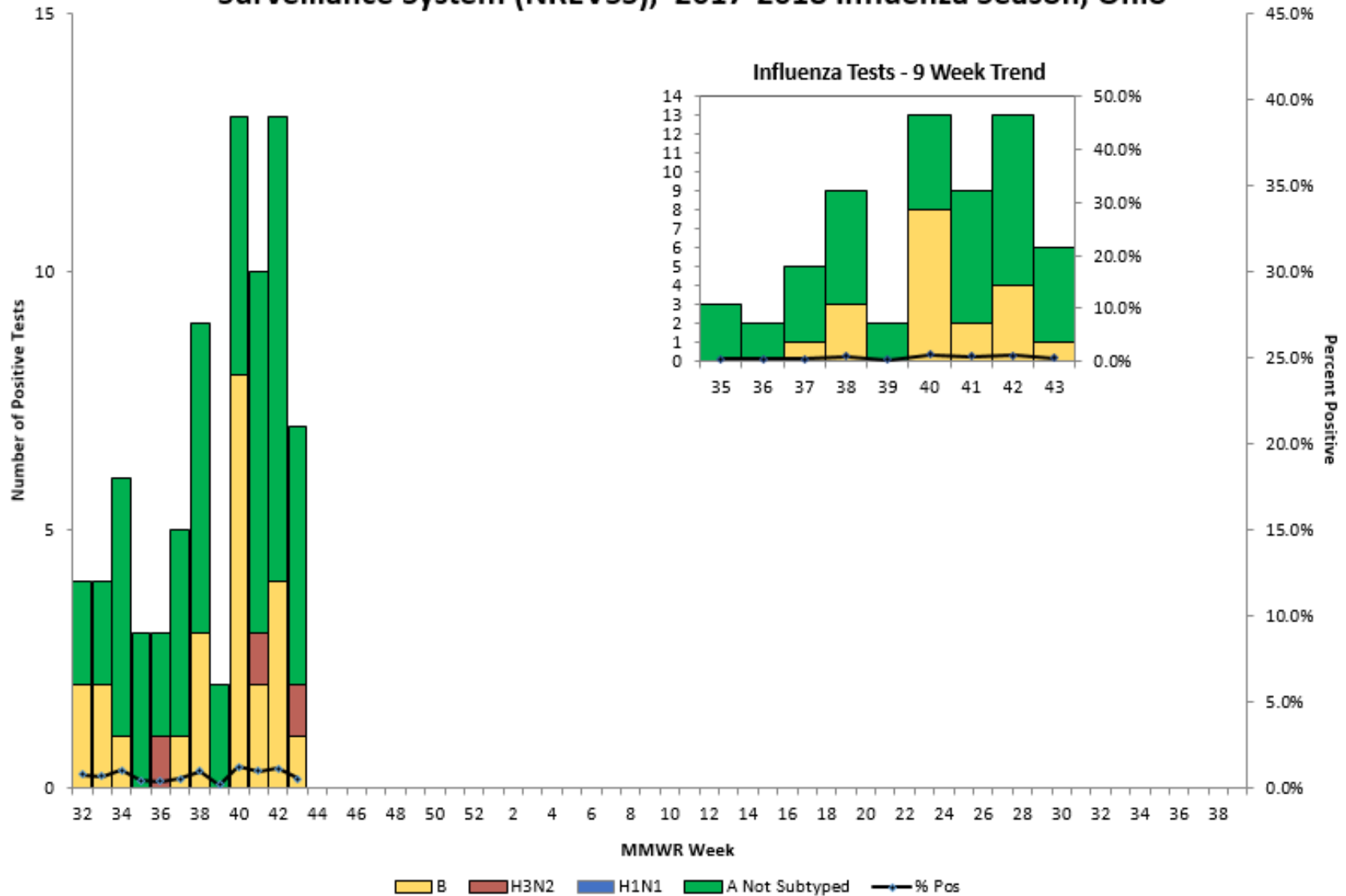
Influenza B Virus [87]

- **Victoria Lineage [28]:** 18 of 28 (64.3%) B/Victoria-lineage viruses were antigenically characterized using ferret post-infection antisera as B/Brisbane/60/2008-like. Among the viruses that reacted poorly with ferret antisera raised against B/Brisbane/60/2008-like viruses, all were double deletion viruses.
- **Yamagata Lineage [59]:** All 59 (100%) B/Yamagata-lineage viruses were antigenically characterized using ferret post-infection antisera as B/Phuket/3073/2013-like.

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), 2017-2018 Influenza Season, Ohio



**Influenza-Associated Hospitalizations, Ohio
2017-2018 Season***

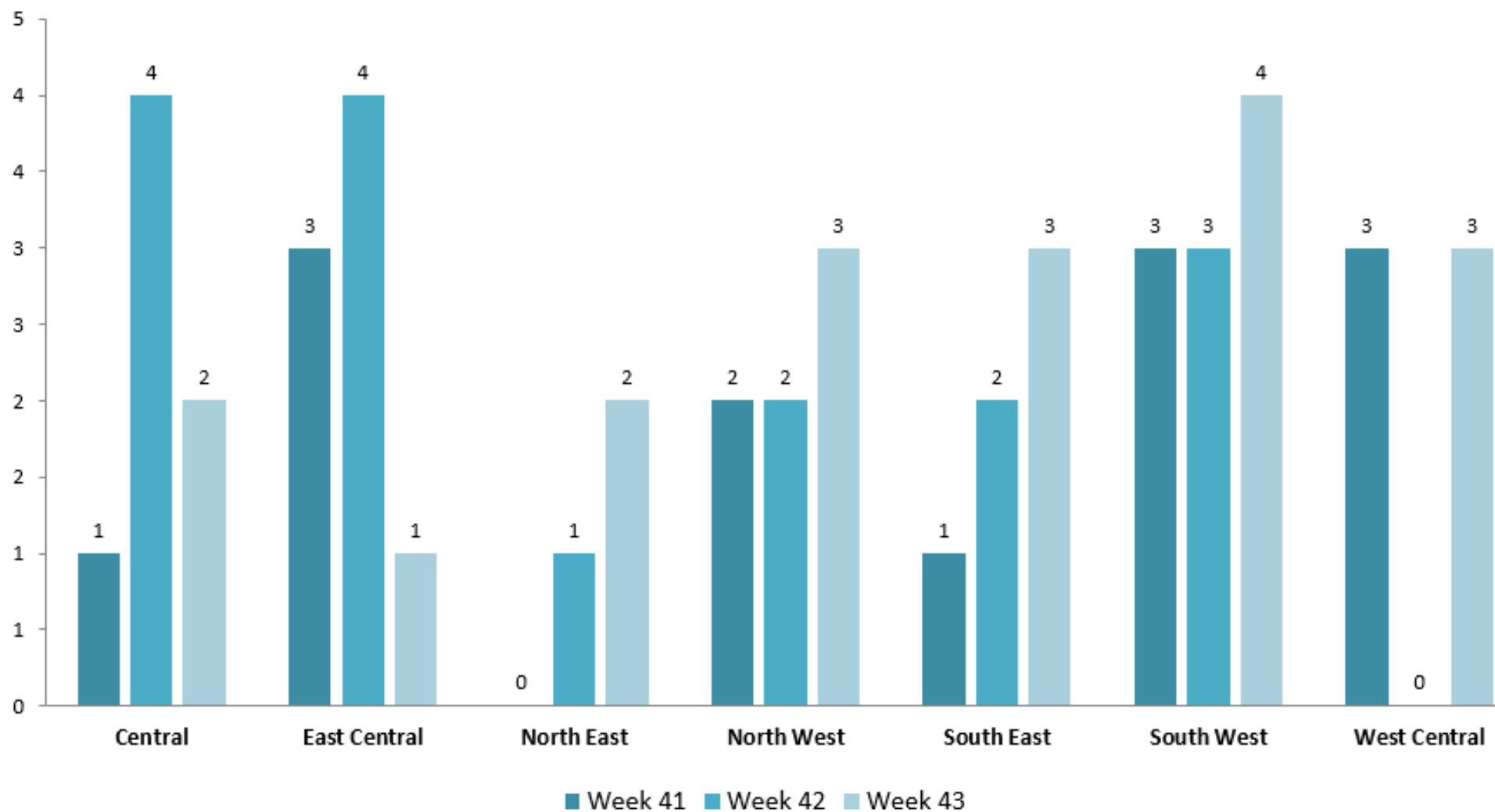
County	Influenza-Associated Hospitalizations	Percent of All Influenza-Associated Hospitalizations	Rate per 100,000 Population†	County	Influenza-Associated Hospitalizations	Percent of All Influenza-Associated Hospitalizations	Rate per 100,000 Population†
ADAMS	0	0.0%	0.00	LOGAN	1	1.8%	2.18
ALLEN	1	1.8%	0.94	LORAIN	2	3.5%	0.66
ASHLAND	0	0.0%	0.00	LUCAS	0	0.0%	0.00
ASHTABULA	0	0.0%	0.00	MADISON	0	0.0%	0.00
ATHENS	0	0.0%	0.00	MAHONING	1	1.8%	0.42
AUGLAIZE	0	0.0%	0.00	MARION	1	1.8%	1.50
BELMONT	0	0.0%	0.00	MEDINA	0	0.0%	0.00
BROWN	0	0.0%	0.00	MEIGS	0	0.0%	0.00
BUTLER	5	8.8%	1.36	MERCER	0	0.0%	0.00
CARROLL	0	0.0%	0.00	MIAMI	0	0.0%	0.00
CHAMPAIGN	0	0.0%	0.00	MONROE	0	0.0%	0.00
CLARK	1	1.8%	0.72	MONTGOMERY	4	7.0%	0.75
CLERMONT	1	1.8%	0.51	MORGAN	0	0.0%	0.00
CLINTON	0	0.0%	0.00	MORROW	0	0.0%	0.00
COLUMBIANA	0	0.0%	0.00	MUSKINGUM	3	5.3%	3.49
COSHOCTON	0	0.0%	0.00	NOBLE	0	0.0%	0.00
CRAWFORD	0	0.0%	0.00	OTTAWA	0	0.0%	0.00
CUYAHOGA	2	3.5%	0.16	PAULDING	0	0.0%	0.00
DARKE	0	0.0%	0.00	PERRY	1	1.8%	2.77
DEFIANCE	0	0.0%	0.00	PICKAWAY	1	1.8%	1.80
DELAWARE	1	1.8%	0.57	PIKE	0	0.0%	0.00
ERIE	0	0.0%	0.00	PORTAGE	1	1.8%	0.62
FAIRFIELD	0	0.0%	0.00	PREBLE	0	0.0%	0.00
FAYETTE	0	0.0%	0.00	PUTNAM	1	1.8%	2.90
FRANKLIN	3	5.3%	0.26	RICHLAND	0	0.0%	0.00
FULTON	2	3.5%	4.68	ROSS	0	0.0%	0.00
GALLIA	0	0.0%	0.00	SANDUSKY	2	3.5%	3.28
GEAUGA	0	0.0%	0.00	SCIOTO	0	0.0%	0.00
GREENE	1	1.8%	0.62	SENECA	2	3.5%	3.52
GUERNSEY	0	0.0%	0.00	SHELBY	0	0.0%	0.00
HAMILTON	4	7.0%	0.50	STARK	2	3.5%	0.53
HANCOCK	0	0.0%	0.00	SUMMIT	3	5.3%	0.55
HARDIN	0	0.0%	0.00	TRUMBULL	1	1.8%	0.48
HARRISON	0	0.0%	0.00	TUSCARAWAS	1	1.8%	1.08
HENRY	0	0.0%	0.00	UNION	1	1.8%	1.91
HIGHLAND	0	0.0%	0.00	VAN WERT	0	0.0%	0.00
HOCKING	1	1.8%	3.40	VINTON	0	0.0%	0.00
HOLMES	0	0.0%	0.00	WARREN	1	1.8%	0.47
HURON	0	0.0%	0.00	WASHINGTON	0	0.0%	0.00
JACKSON	1	1.8%	3.01	WAYNE	1	1.8%	0.87
JEFFERSON	1	1.8%	1.43	WILLIAMS	0	0.0%	0.00
KNOX	0	0.0%	0.00	WOOD	2	3.5%	1.59
LAKE	0	0.0%	0.00	WYANDOT	0	0.0%	0.00
LAWRENCE	0	0.0%	0.00	UNKNOWN	0	0.0%	*
LICKING	1	1.8%	0.60	TOTAL	57	100%	0.49

*2017-2018 Season 10/1/2017 thru 9/30/2018

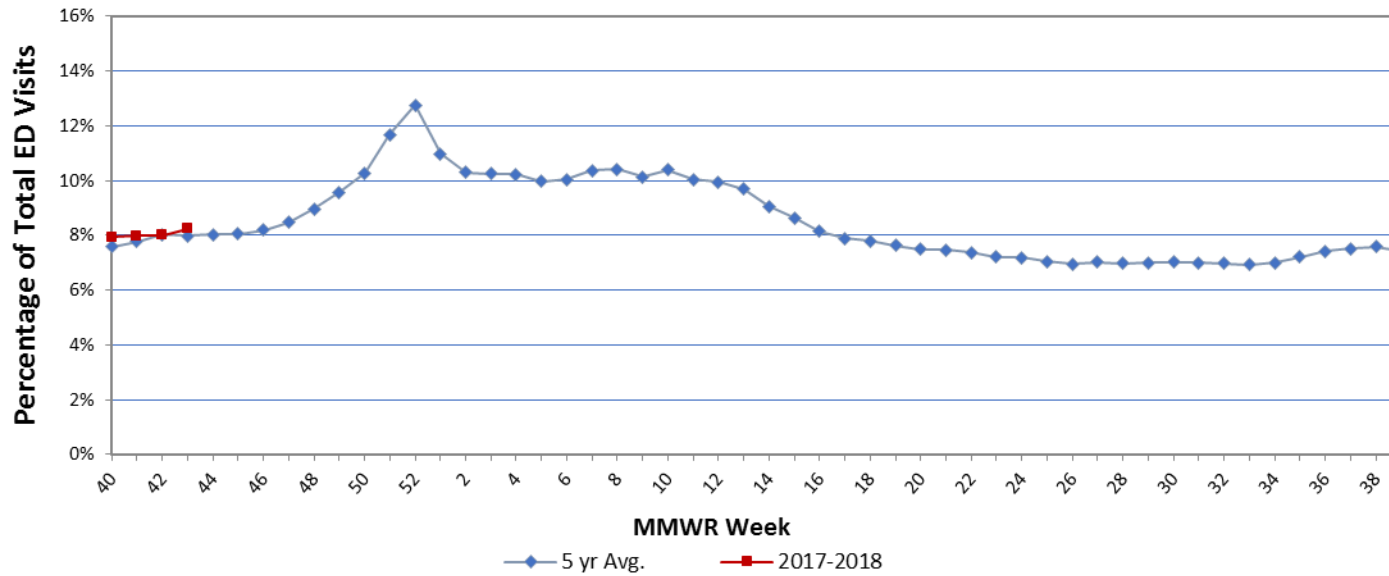
† Disease rates were calculated by number of cases per 100,000 residents using 2010 census data.

Source: Ohio Disease Reporting System

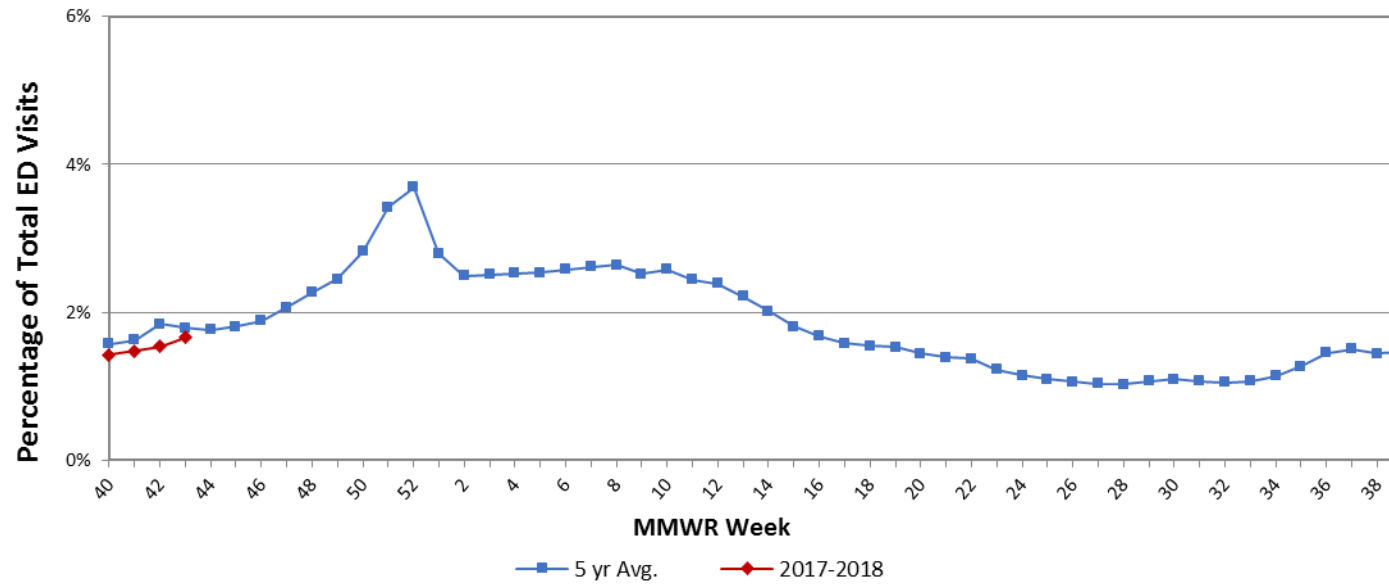
Influenza-associated Hospitalizations by Public Health Region and MMWR Week, Ohio, 2017-2018 Influenza Season



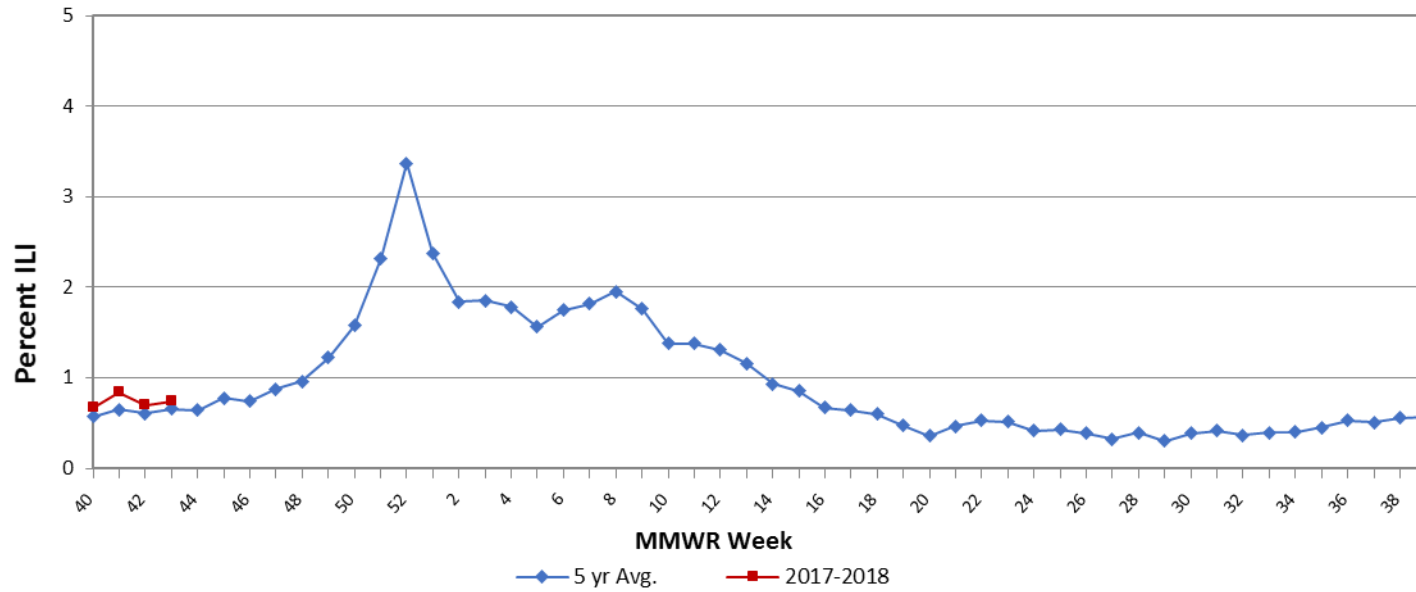
Ohio Constitutional ED Visits with 5 Year Baseline Average; 2017-2018



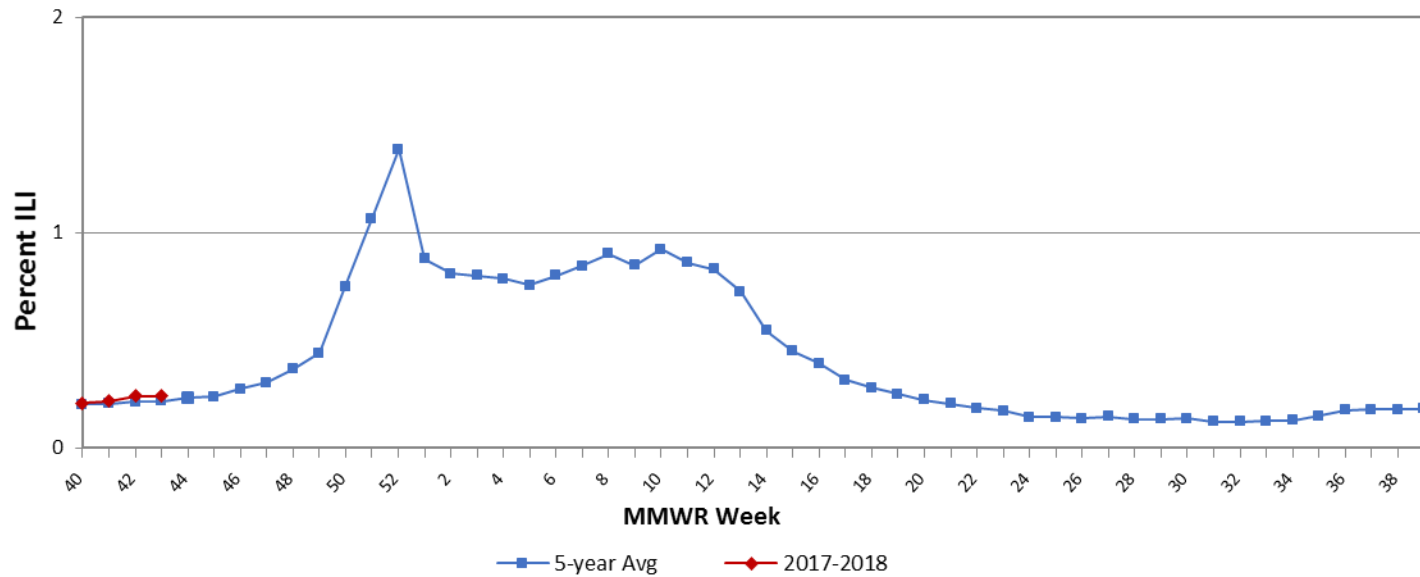
Ohio Fever & ILI Specified ED Visits with 5 Year Baseline Average; 2017-2018



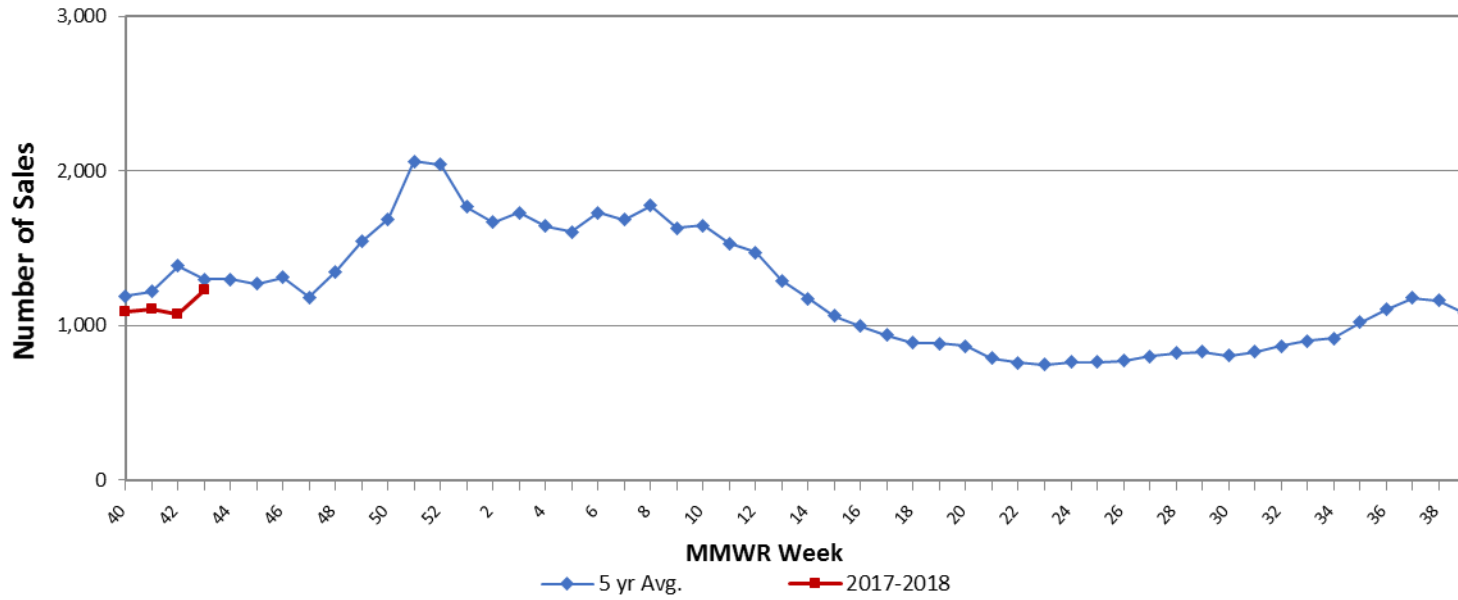
Ohio Outpatient Influenza-like Illness Network (ILINet) with 5 Year Baseline Average; 2017-2018



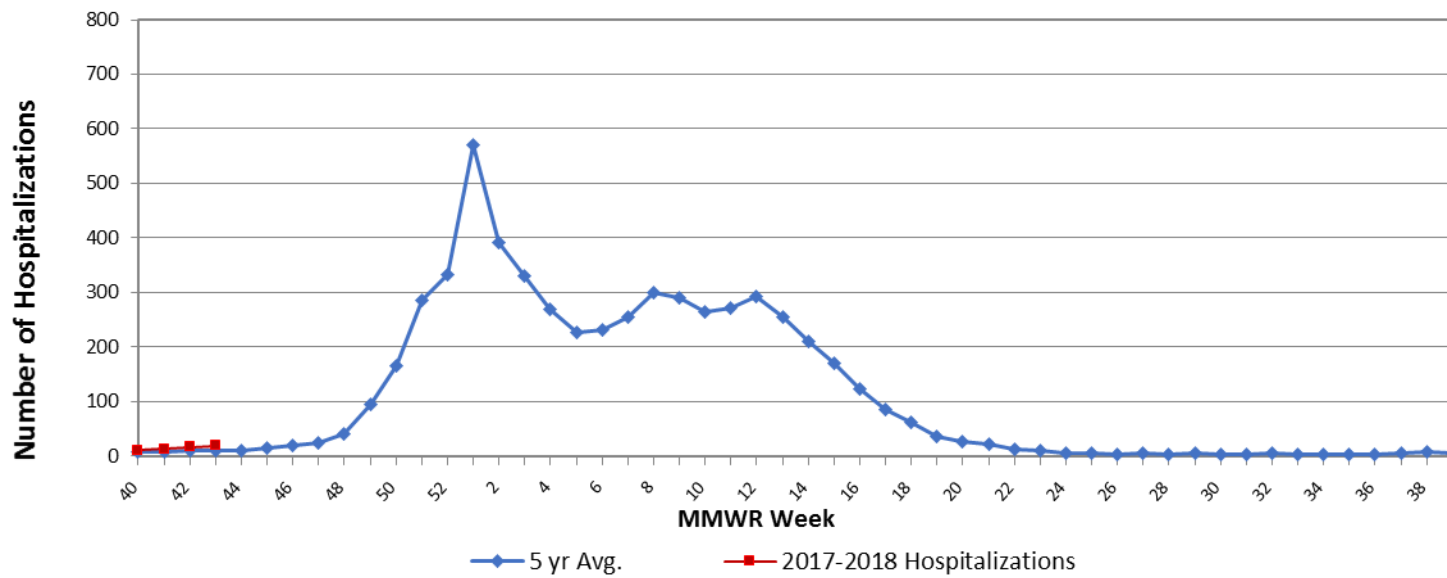
AthenaHealth: Ohio Influenza Related Outpatient Medical Claims 5 Year Baseline Average; 2017-2018



Ohio Thermometer Sales with 5 Year Baseline Average; 2017-2018



Ohio Confirmed Influenza-associated Hospitalizations by MMWR Week; 2017-2018 Season (n=39)



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 (≥ 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 83 sentinel providers enrolled in Ohio for the 2016-2017 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.