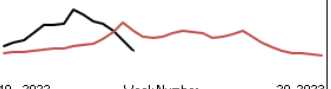
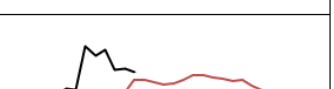
Ohio Department of Health Seasonal Influenza Activity Summary
MMWR Week 1
January 1st – January 7th, 2023

Current Influenza Activity:

During MMWR Week 1, public health surveillance data sources indicate low intensity for influenza-like illness (ILI) in outpatient settings reported by Ohio's sentinel ILINet providers. The percentage of emergency department visits with patients exhibiting constitutional symptoms and Fever/ILI specified ED visits decreased and are below baseline levels statewide. Reported cases of influenza-associated hospitalizations increased. There were 818 influenza-associated hospitalizations reported during MMWR Week 1.

Ohio Week 1 Influenza-associated Hospitalizations by Ohio Public Health Region	
Central	75
East Central	203
Northeast1	211
Northwest	159
Southeast	50
Southwest	56
West Central	64
Total	818

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)	4.20%	-38.78%	↓ 6	
Thermometer Sales (National Retail Data Monitor)[4]	0.66%	0.00%	–	
Fever and ILI Specified ED Visits (EpiCenter)	1.77%	-27.16%	↓ 6	
Constitutional ED Visits (EpiCenter)	11.03%	-16.38%	↓ 6	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	818	-7.15%	↓ 1	

[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 The 2020-2021 influenza season has been omitted from the five-year baseline averages due to abnormal counts reported during the COVID-19 pandemic. A five-year average, which includes data from the 2016-2017 season through the 2021-2022 season, is displayed.
[4]Due to abnormally high thermometer sales during the COVID-19 pandemic, the 2019-2020 and 2020-2021 season data has been omitted. A 5-year average, which includes data from the 2015-2016 season through the 2021-2022 season, is shown.

State, Regional, and National Data:

Ohio Surveillance Data:

- The **U.S. World Health Organization (WHO) Collaborating Laboratories System and the National Respiratory and Enteric Virus Surveillance System (NREVSS)** has reported **102,400** tests for influenza performed at participating facilities; of these, **935 tested positive for influenza A(H1N1pdm09)**, **1,117 for influenza A(H3N2)**, **20,261 for influenza A (subtyping not performed)**, and **98 for influenza B** (through 01/07/2023).

- Three **influenza-associated pediatric mortalities** have been reported so far during the 2022-2023 influenza season (through 01/07/2023).

- No **novel influenza A virus infections** have been reported so far during the 2022-2023 influenza season (through 01/07/2023).

- Incidence of confirmed **influenza-associated hospitalizations** in 2022-2023 season = 7,967 (through 01/07/2023).

HHS Regional Surveillance Data*: During week 52 (December 25th – December 31st, 2022), the percentage of outpatient visits for influenza-like illness (ILI) in Region 5 (Ohio is in Region 5) was 4.0%, which is **above** the regional baseline of 2.5%.

National Surveillance Data*: During week 52 (December 25th – December 31st, 2022), the majority of U.S. states reported Minimal, Low, or Moderate activity, though some states are reporting High or Very High activity. The percentage of outpatient visits for ILI was 5.4%, which is **above** the national baseline of 2.5%. All 10 HHS regions reported ILI levels above their region-specific baseline level.

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/

Antigenic Characterization:

Influenza A Viruses

- **A (H1N1)pdm09:** Eighty-nine A(H1N1)pdm09 viruses were antigenically characterized by HI, and 87 (98%) were well recognized (reacting at titers that were within 4-fold of the homologous virus titer) by ferret antisera to cell-grown A/Wisconsin/588/2019-like reference viruses representing the A(H1N1)pdm09 component for the cell- and recombinant-based influenza vaccines and 87 (98%) were well recognized by ferret antisera to egg-grown A/Victoria/2570/2019-like reference viruses representing the A(H1N1)pdm09 component for the egg-based influenza vaccines.
- **A (H3N2):** Sixty A(H3N2) viruses were antigenically characterized by HINT; all were well-recognized (reacting at titers that were within 8-fold of the homologous virus titer) by ferret antisera to cell-grown A/Darwin/6/2021-like reference viruses representing the A(H3N2) component for the cell- and recombinant-based influenza vaccines and 58 (97%) were well-recognized by ferret antisera to egg-grown A/Darwin/9/2021-like reference viruses representing the A(H3N2) component for egg-based influenza vaccines.

Influenza B Viruses

- **B/Victoria**: Eight influenza B/Victoria-lineage virus were antigenically characterized by HI; all were well-recognized (reacting at titers that were within 4-fold of the homologous virus titer) by ferret antisera to cell-grown B/Austria/1359417/2021-like reference viruses representing the B/Victoria component for the cell- and recombinant-based influenza vaccines and by ferret antisera to egg-grown B/Austria/1359417/2021-like reference viruses representing the B/Victoria component for the egg-based influenza vaccines**.**
- **B/Yamagata:** No influenza B/Yamagata-lineage viruses were available for antigenic characterization.

2022-2023 Influenza Vaccine Components:

Egg-Based Vaccines		
A/B	**Virus**	**Quadrivalent**
A	A/Victoria/2570/2019 (H1N1)pdm09-like virus	X
A	A/Darwin/9/2021 (H3N2)-like virus (updated)	X
B	B/Austria/1359417/2021-like virus (B/Victoria lineage) (updated)	X
B	Phuket/3073/2013-like (B/Yamagata lineage)	X
Cell- and Recombinant-Based Vaccines*		
A	A/Wisconsin/588/2019 (H1N1)pdm09-like virus	X
A	A/Darwin/6/2021 (H3N2)-like virus (updated)	X
B	B/Austria/1359417/2021-like virus (B/Victoria lineage) (updated)	X
B	Phuket/3073/2013-like (B/Yamagata lineage)	X

***No trivalent preparations are available for cell and recombinant-based vaccines or for egg-based vaccine for the 2022–23 season.**

Influenza-Associated Hospitalizations, Ohio
2022-2023 Season*

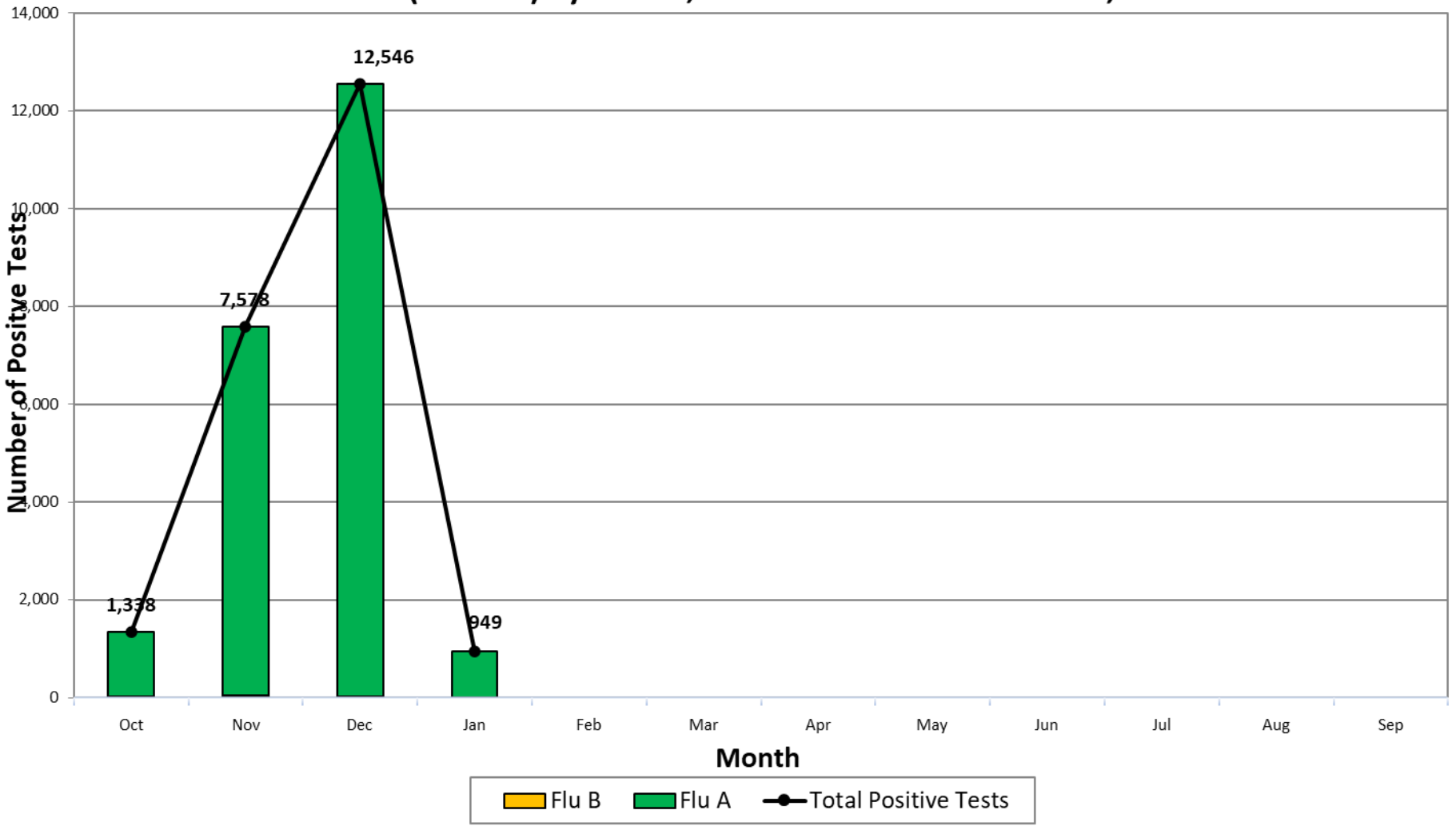
County	Influenza-Associated Hospitalizations	Percent of All Influenza-Associated Hospitalizations	Rate per 100,000 Population†
ADAMS	5	0.1%	18.20
ALLEN	123	1.5%	120.35
ASHLAND	38	0.5%	72.45
ASHTABULA	61	0.8%	62.52
ATHENS	45	0.6%	72.08
AUGLAIZE	53	0.7%	114.17
BELMONT	18	0.2%	27.07
BROWN	36	0.5%	82.43
BUTLER	253	3.2%	64.81
CARROLL	25	0.3%	93.56
CHAMPAIGN	29	0.4%	74.91
CLARK	205	2.6%	150.73
CLERMONT	134	1.7%	64.24
CLINTON	12	0.2%	28.56
COLUMBIANA	74	0.9%	72.64
COSHOCTON	19	0.2%	51.90
CRAWFORD	15	0.2%	35.69
CUYAHOGA	1044	13.1%	82.54
DARKE	35	0.4%	67.46
DEFIANCE	25	0.3%	65.30
DELAWARE	62	0.8%	28.96
ERIE	80	1.0%	105.79
FAIRFIELD	60	0.8%	37.75
FAYETTE	20	0.3%	69.08
FRANKLIN	494	6.2%	37.32
FULTON	22	0.3%	51.51
GALLIA	41	0.5%	140.31
GEAUGA	33	0.4%	34.59
GREENE	147	1.8%	87.52
GUERNSEY	49	0.6%	127.48
HAMILTON	488	6.1%	58.75
HANCOCK	55	0.7%	73.41
HARDIN	17	0.2%	55.38
HARRISON	6	0.1%	41.43
HENRY	10	0.1%	36.15
HIGHLAND	55	0.7%	126.97
HOCKING	8	0.1%	28.52
HOLMES	26	0.3%	58.79
HURON	43	0.5%	73.42
JACKSON	41	0.5%	125.56
JEFFERSON	5	0.1%	7.66
KNOX	61	0.8%	97.26
LAKE	139	1.7%	59.76
LAWRENCE	73	0.9%	125.34
LICKING	54	0.7%	30.25
LOGAN	24	0.3%	52.00
LORAIN	83	1.0%	26.52
LUCAS	375	4.7%	86.95
MADISON	21	0.3%	47.92
MAHONING	182	2.3%	79.61
MARION	65	0.8%	99.45
MEDINA	99	1.2%	54.26
MEIGS	13	0.2%	58.53
MERCER	41	0.5%	96.41
MIAMI	102	1.3%	93.77
MONROE	3	0.0%	22.41
MONTGOMERY	759	9.5%	141.26
MORGAN	21	0.3%	152.15
MORROW	12	0.2%	34.33
MUSKINGUM	118	1.5%	136.56
NOBLE	19	0.2%	134.61
OTTAWA	23	0.3%	56.98
PAULDING	7	0.1%	37.22
PERRY	31	0.4%	87.55
PICKAWAY	60	0.8%	102.50
PIKE	17	0.2%	62.76
PORTAGE	62	0.8%	38.32
PREBLE	22	0.3%	53.66
PUTNAM	33	0.4%	95.79
RICHLAND	97	1.2%	77.64
ROSS	60	0.8%	77.83
SANDUSKY	41	0.5%	69.61
SCIOTO	122	1.5%	164.85
SENECA	28	0.4%	50.85
SHELBY	23	0.3%	47.69
STARK	270	3.4%	72.03
SUMMIT	233	2.9%	43.11
TRUMBULL	99	1.2%	49.02
TUSCARAWAS	87	1.1%	93.28
UNION	15	0.2%	23.89
VAN WERT	9	0.1%	31.11
VINTON	11	0.1%	85.94
WARREN	102	1.3%	42.09
WASHINGTON	56	0.7%	93.69
WAYNE	64	0.8%	54.75
WILLIAMS	8	0.1%	21.56
WOOD	95	1.2%	71.83
WYANDOT	17	0.2%	77.63
UNKNOWN	0	0.0%	*
TOTAL	**7967**	**100%**	**67.52**

*2022-2023 Season began on 10/2/2022; data as of 01/08/2023

† Disease rates were calculated by number of cases per 100,000 residents using 2020 census data.

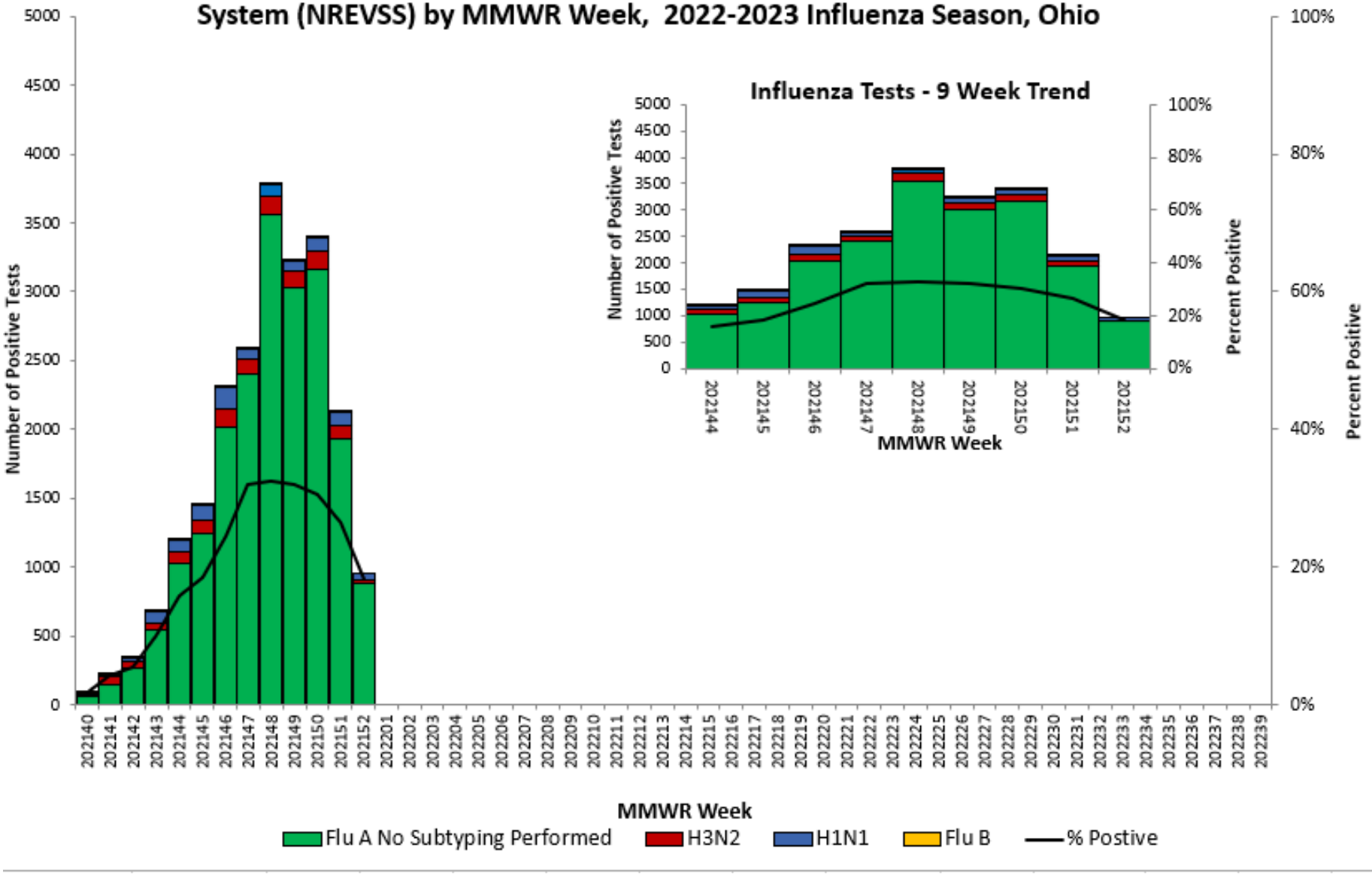
Source: Ohio Disease Reporting System

Positive Influenza Testing from Public Health Laboratories and Selected Clinical Laboratories Participating in the National Respiratory and Enteric Virus Surveillance System (NREVSS) by Month, 2022-2023 Influenza Season, Ohio



Note: NREVSS/Public Health Laboratory data are reported one week later than Ohio state-level data to ensure data completeness.

Positive Influenza Testing from Public Health Laboratories and Selected Clinical Laboratories Participating in the National Respiratory and Enteric Virus Surveillance System (NREVSS) by MMWR Week, 2022-2023 Influenza Season, Ohio



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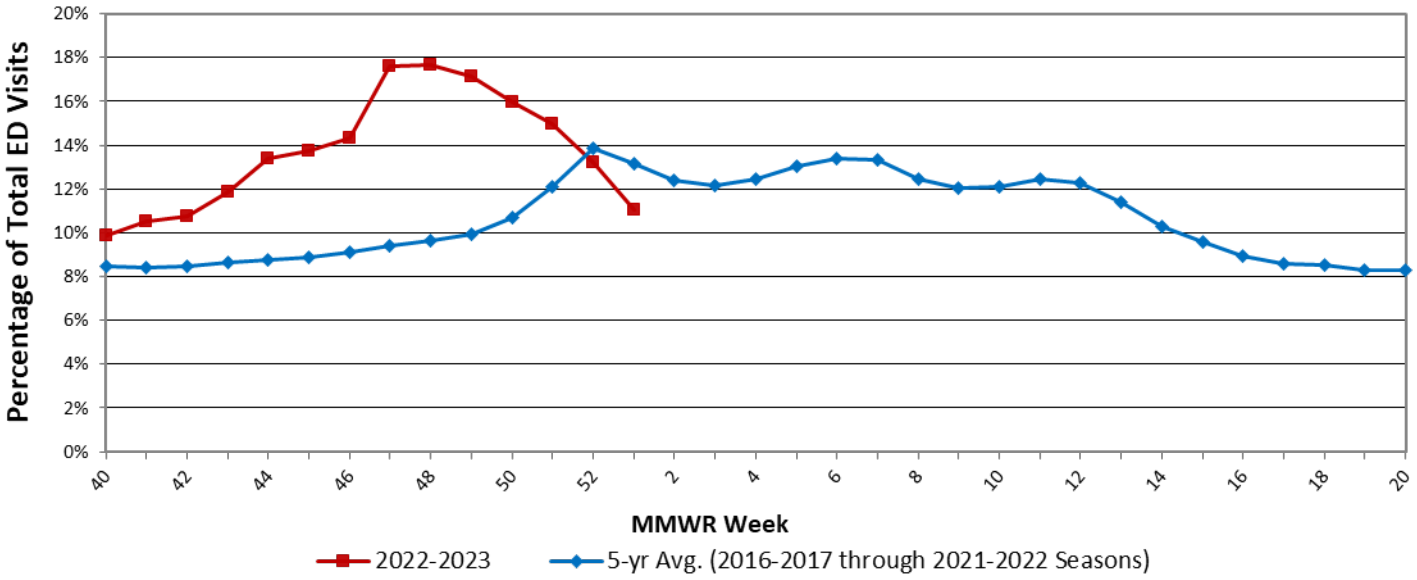
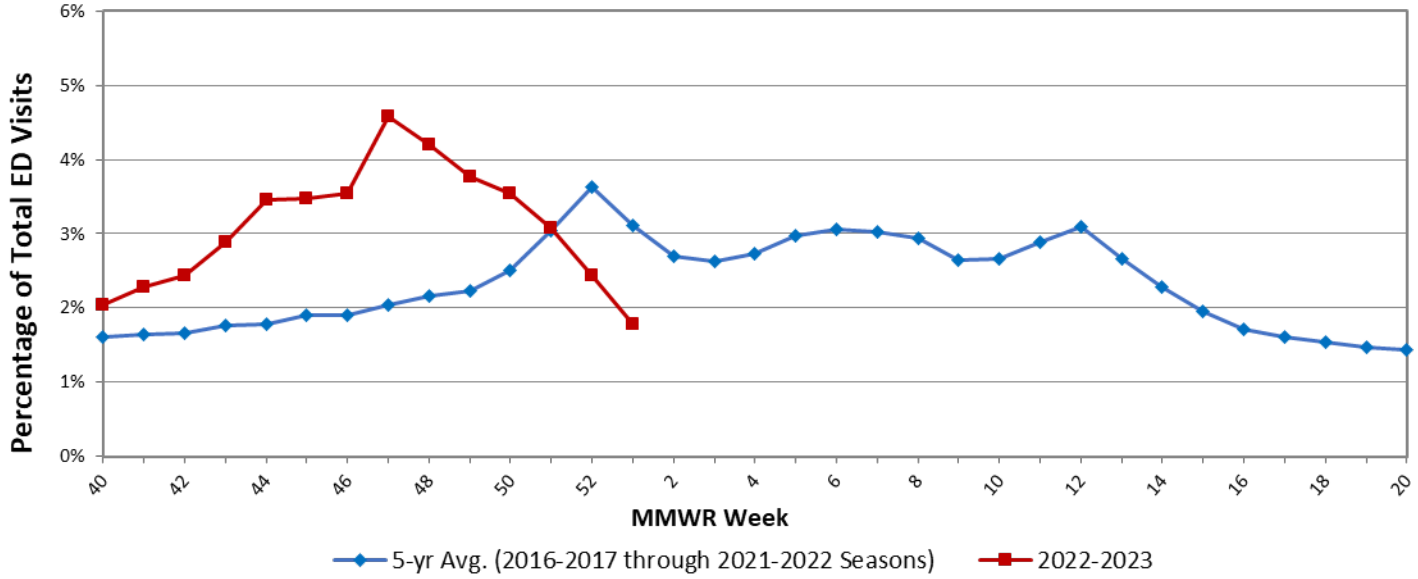
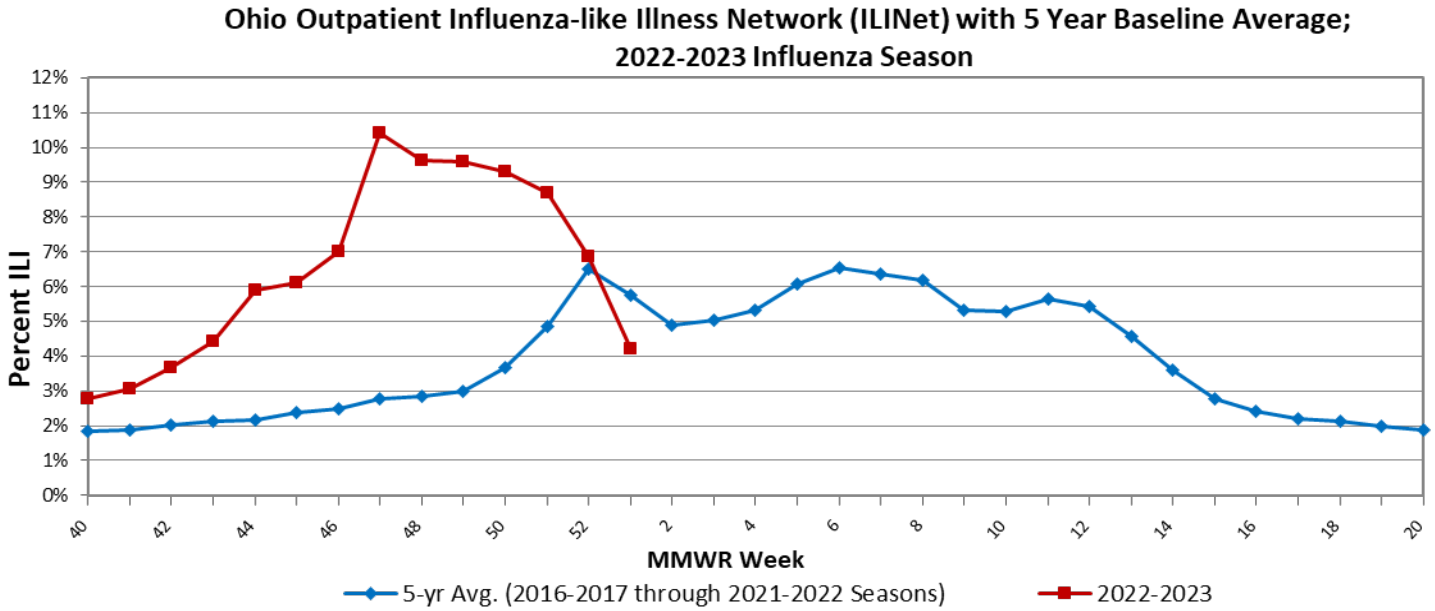
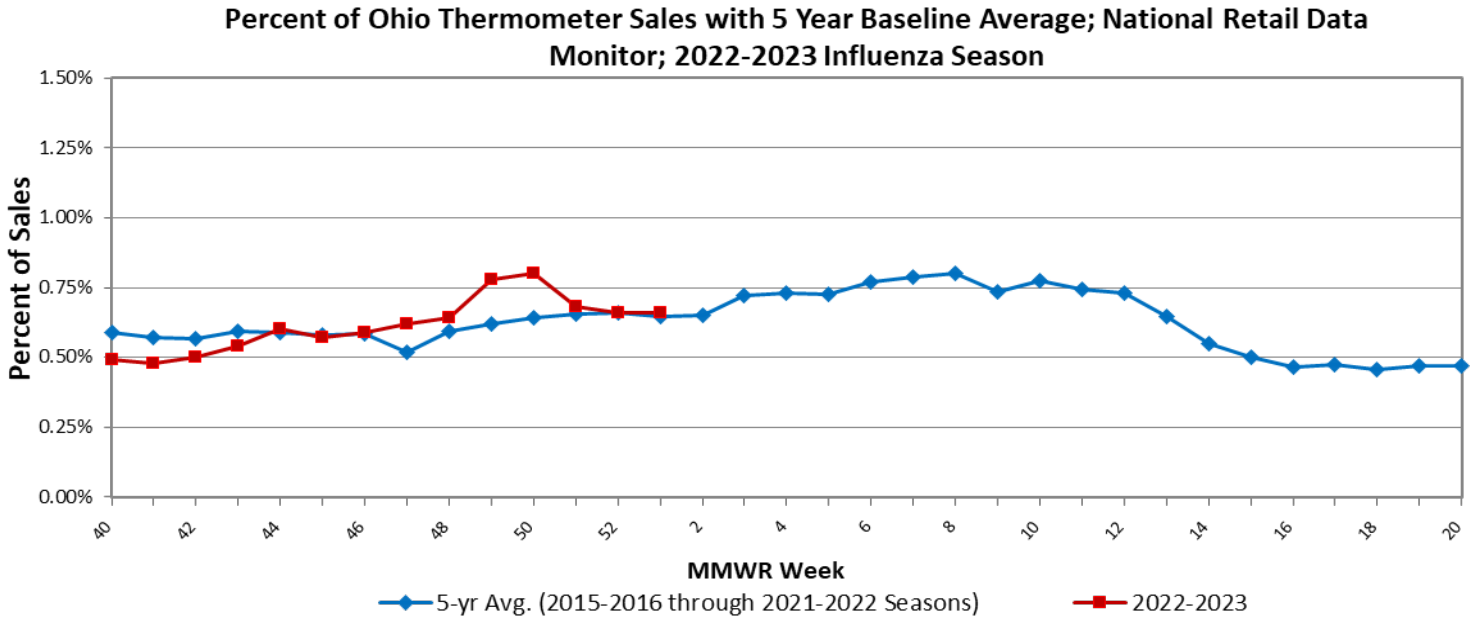
Ohio Constitutional ED Visits with 5 Year Baseline Average; 2022-2023 Influenza Season

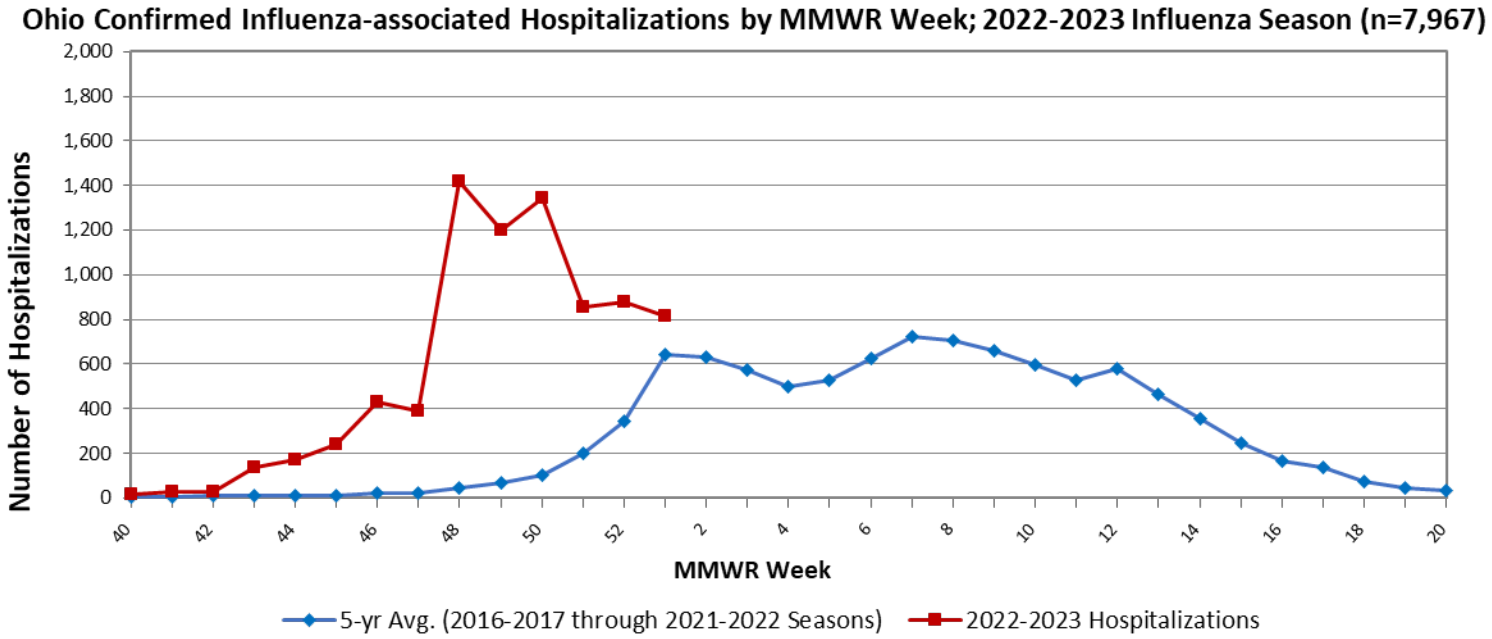


Ohio Fever & ILI Specified ED Visits with 5 Year Baseline Average; 2022-2023 Influenza Season




Ohio Outpatient Influenza-like Illness Network (ILINet) with 5 Year Baseline Average; 2022-2023 Influenza Season
Percent ILI
12%
11%
10%
9%
8%
7%
6%
5%
4%
3%
2%
1%
0%
40
42
44
46
48
50
52
2
4
6
8
10
12
14
16
18
20
MMWR Week
5-yr Avg. (2016-2017 through 2021-2022 Seasons)
2022-2023


Percent of Ohio Thermometer Sales with 5 Year Baseline Average; National Retail Data Monitor; 2022-2023 Influenza Season
Percent of Sales
1.50%
1.25%
1.00%
0.75%
0.50%
0.25%
0.00%
40
42
44
46
48
50
52
2
4
6
8
10
12
14
16
18
20
MMWR Week
5-yr Avg. (2015-2016 through 2021-2022 Seasons)
2022-2023


Ohio Confirmed Influenza-associated Hospitalizations by MMWR Week; 2022-2023 Influenza Season (n=7,967)
Number of Hospitalizations
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
40
42
44
46
48
50
52
2
4
6
8
10
12
14
16
18
20
MMWR Week
5-yr Avg. (2016-2017 through 2021-2022 Seasons)
2022-2023 Hospitalizations

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. Due to abnormally high thermometer sales during the COVID-19 pandemic, the data from the 2019-2020 and 2020-2021 influenza seasons has been omitted from the baseline average in the figure above. A five-year average, which includes data from the 2015-2016 season through the 2018-2019 season, and the 2021-2022 season is displayed.

- **Emergency Department Visits (EpiCenter):** EpiCenter collects emergency department chief complaint data from 206 hospitals and 15 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. A five-year average, which includes data from the 2016-2017 season through the 2021-2022 season, is displayed in the figure above. EpiCenter data from the 2020-2021 influenza season has been omitted from the five-year baseline average due to data instability and effects of the COVID-19 pandemic.

- **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. 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 107 sentinel providers enrolled in Ohio for the 2022-2023 influenza season. A five-year average, which includes data from the 2016-2017 season through the 2021-2022 season, is displayed in the figure above. ILINet data from the 2020-2021 influenza season has been omitted from the five-year baseline average due to abnormally low percent ILI counts reported during the COVID-19 pandemic.

- **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. A five-year average, which includes data from the 2016-2017 season through the 2021-2022 season, is displayed in the figure above. Influenza-associated hospitalization data from the 2020-2021 influenza season has been omitted from the five-year baseline average due to abnormally low counts reported during the COVID-19 pandemic.

- **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.

- **U.S. World Health Organization (WHO) Collaborating Laboratories System** and the **National Respiratory and Enteric Virus Surveillance System (NREVSS):** The Ohio Department of Health Laboratory, Wright Patterson Airforce Base (both WHO Collaborating Laboratories), and 19 clinical laboratories located throughout Ohio participate in virologic surveillance for influenza through either the U.S. WHO Collaborating Laboratories System or NREVSS. Influenza testing data from these systems are compiled by the Centers for Disease Control and Prevention's (CDC) National Center for Immunization and Respiratory Diseases (NCIRD) and made available to the influenza surveillance coordinators in each state for analysis.

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 vpdepi@odh.ohio.gov or call (614) 995-5599.