

Ohio Department of Health Seasonal Influenza Activity Summary

MMWR Week 14

March 22nd – March 28th, 2020

Current Influenza Activity:

Current Ohio Activity Level (Geographic Spread) – Regional

Definition: Increased ILI in ≥ 2 but less than half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the affected regions, OR institutional outbreaks (ILI or lab confirmed) in ≥ 2 but less than half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the affected regions.

During MMWR Week 14, public health surveillance data sources indicate Low 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 decreased but are still above baseline levels statewide; fever and ILI specified ED visits decreased and are also still above baseline levels. Reported cases of influenza-associated hospitalizations are above the seasonal threshold*. There were 121 influenza-associated hospitalizations reported during MMWR Week 14.

Ohio Weekly Influenza-associated Hospitalizations by Ohio Public Health Region

| | |
|--------------|------------|
| Central | 22 |
| East Central | 28 |
| Northeast | 28 |
| Northwest | 5 |
| Southeast | 20 |
| Southwest | 4 |
| West Central | 14 |
| Total | 121 |

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) | 2.17% | -12.85% | ↓ 2 | |
| Thermometer Sales (National Retail Data Monitor) | 2143 | -35.08% | ↓ 3 | |
| Fever and ILI Specified ED Visits (EpiCenter) | 3.57% | -20.31% | ↓ 2 | |
| Constitutional ED Visits (EpiCenter) | 11.57% | -13.91% | ↓ 2 | |
| Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System) | 121 | -46.93% | ↓ 6 | |

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

*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 **1,033 positive** influenza tests from specimens sent from sentinel ILINet providers and hospital clinical labs. 2019-2020 influenza season results: **(626) A/H1N1pdm09; (17) A/H3N2; (390) Influenza B;** (through 04/4/2020).
- The **National Respiratory and Enteric Virus Surveillance System (NREVSS)** has reported **98,675** influenza specimens tested by RT-PCR at participating facilities. 2019-2020 influenza season positive results: **(730) A/pdmH1N1; (7) A/H3N2; (10,956) Flu A Not Subtyped; and (10,034) Flu B;** (through 04/4/2020)
- **5 influenza-associated pediatric mortalities** have been reported during the 2019-2020 season (through 04/4/2020).
- No **novel influenza A virus infections** have been reported during the 2019-2020 season (through 04/4/2020).
- Incidence of confirmed **influenza-associated hospitalizations** in 2019-2020 season = **10,885** (through 04/4/2020).

HHS Regional Surveillance Data*: During week 13 (**March 22nd – March 28th, 2020**), the proportion of outpatient visits for ILI in Region 5 (Ohio is in Region 5) decreased to 3.7%, which is **above** the regional baseline of 1.9%. Pennsylvania reported Local Activity; Michigan, West Virginia, and Kentucky reported Regional Activity; Indiana and Ohio reported Widespread Activity (Ohio reports Local Activity for Week 14).

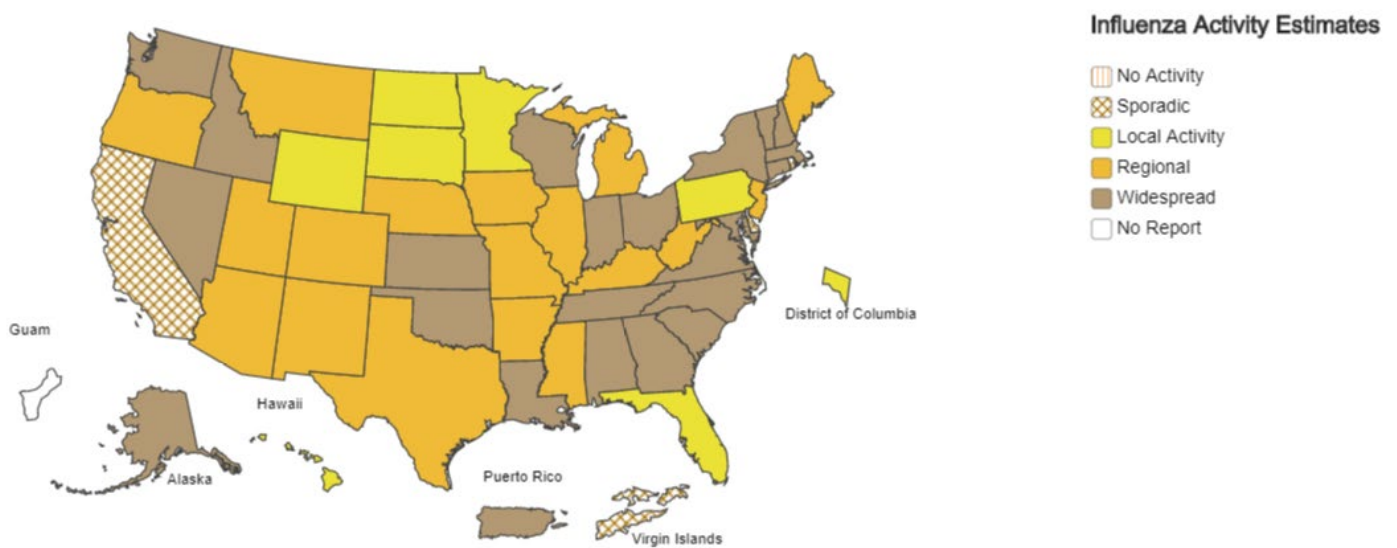
National Surveillance Data*: During week 13 (**March 22nd – March 28th, 2020**), the majority of the U.S. reported High or Moderate influenza activity, though some states are reporting Low or Minimal activity. The proportion of outpatient visits for ILI decreased to 5.4%, which is **above** the national baseline of 2.4%. All 10 HHS regions reported ILI levels at or above their region-specific baseline level. While influenza B/Victoria viruses predominated earlier in the season, during recent weeks, influenza A(H1N1)pdm09 viruses have been reported more frequently than B/Victoria viruses nationally and in all surveillance regions. For the season, A(H1N1)pdm09 viruses are the predominant virus nationally.



A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending Mar 28, 2020 - Week 13



*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 521 influenza viruses collected in the United States from September 29, 2019, to March 28, 2020. These data are not used to make calculations about [vaccine effectiveness \(VE\)](#). CDC conducts [VE studies](#) each year to measure the benefits of flu vaccines in people.

Influenza A Viruses

- **A (H1N1)pdm09:** 207 A(H1N1)pdm09 viruses were antigenically characterized by HI with ferret antisera, and 171 (82.6%) 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. The decrease in the percent of A(H1N1)pdm09 viruses similar to A/Brisbane/02/2018 is due to some of the recent viruses selected for testing having a single amino acid change that is antigenically distinguishable in antigenic assays using ferret sera. Similar viruses were observed last season as well and these represented a small proportion of virus circulating. We have observed an increase in the proportion of H1N1pdm09 viruses with this change late in the US season.
- **A (H3N2):** 86 A(H3N2) viruses were antigenically characterized by FRA with ferret antisera, and 40 (46.5%) 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.

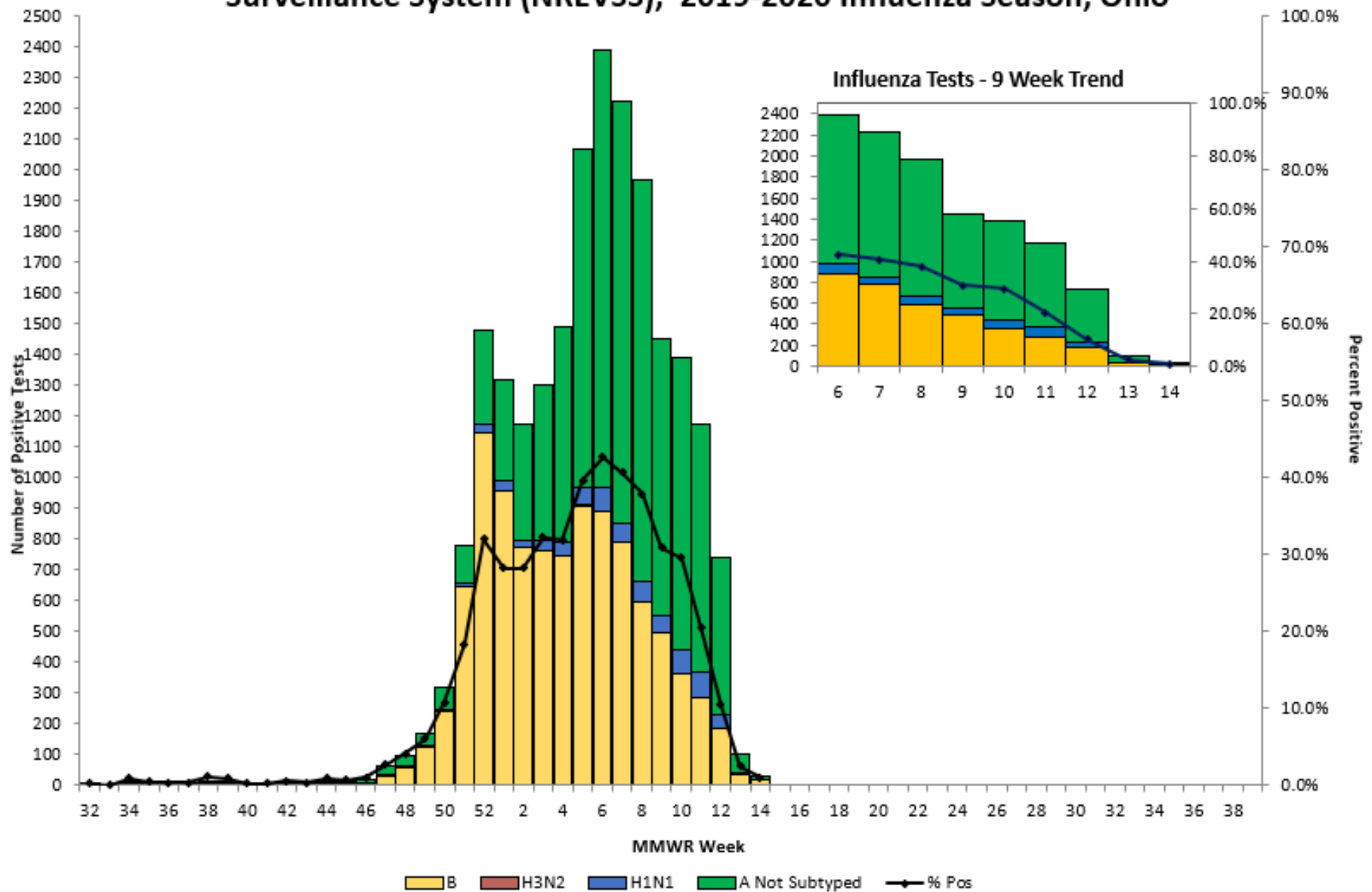
Influenza B Viruses

- **B/Victoria:** 180 B/Victoria lineage viruses, including viruses from both co-circulating sub-clades, were antigenically characterized by HI with ferret antisera, and 112 (62.2%) 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:** 48 B/Yamagata lineage viruses were antigenically characterized by HI with ferret antisera, and all 48 (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***

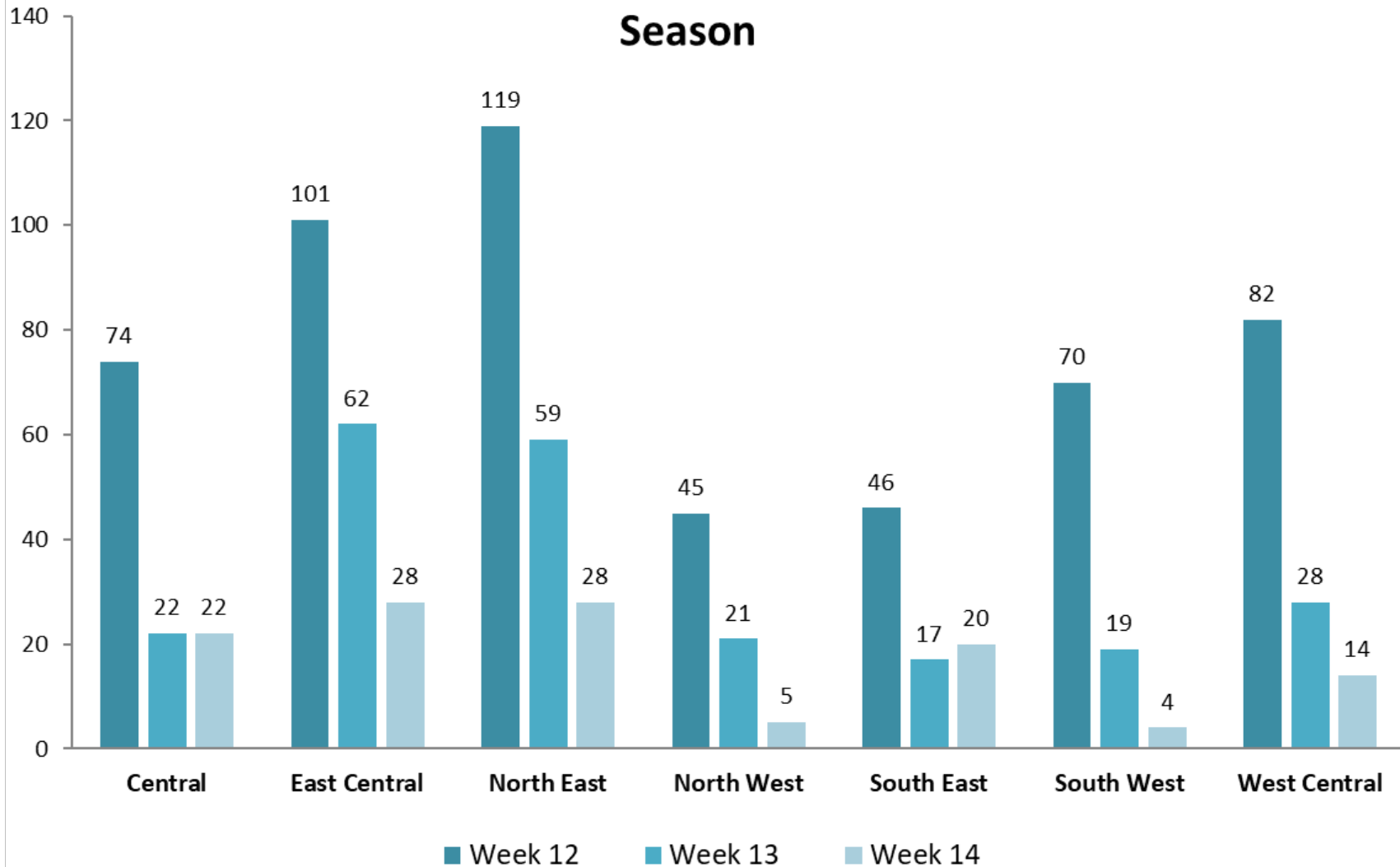
| County | Influenza-Associated Hospitalizations | Percent of All Influenza-Associated Hospitalizations | Rate per 100,000 Population† | County | Influenza-Associated Hospitalizations | Percent of All Influenza-Associated Hospitalizations | Rate per 100,000 Population† |
|------------|---------------------------------------|------------------------------------------------------|------------------------------|--------------|---------------------------------------|------------------------------------------------------|------------------------------|
| ADAMS | 15 | 0.1% | 52.54 | LOGAN | 17 | 0.2% | 37.07 |
| ALLEN | 129 | 1.2% | 121.32 | LORAIN | 228 | 2.1% | 75.66 |
| ASHLAND | 38 | 0.3% | 71.51 | LUCAS | 365 | 3.4% | 82.61 |
| ASHTABULA | 139 | 1.3% | 136.95 | MADISON | 28 | 0.3% | 64.46 |
| ATHENS | 38 | 0.3% | 58.68 | MAHONING | 248 | 2.3% | 103.84 |
| AUGLAIZE | 33 | 0.3% | 71.82 | MARION | 65 | 0.6% | 97.74 |
| BELMONT | 39 | 0.4% | 55.40 | MEDINA | 107 | 1.0% | 62.09 |
| BROWN | 12 | 0.1% | 26.76 | MEIGS | 16 | 0.1% | 67.31 |
| BUTLER | 305 | 2.8% | 82.85 | MERCER | 45 | 0.4% | 110.26 |
| CARROLL | 13 | 0.1% | 45.08 | MIAMI | 91 | 0.8% | 88.78 |
| CHAMPAIGN | 41 | 0.4% | 102.25 | MONROE | 6 | 0.1% | 40.98 |
| CLARK | 202 | 1.9% | 146.02 | MONTGOMERY | 817 | 7.5% | 152.67 |
| CLERMONT | 122 | 1.1% | 61.82 | MORGAN | 13 | 0.1% | 86.36 |
| CLINTON | 26 | 0.2% | 61.85 | MORROW | 15 | 0.1% | 43.07 |
| COLUMBIANA | 97 | 0.9% | 89.95 | MUSKINGUM | 96 | 0.9% | 111.53 |
| COSHOCTON | 38 | 0.3% | 102.98 | NOBLE | 4 | 0.0% | 27.31 |
| CRAWFORD | 37 | 0.3% | 84.51 | OTTAWA | 27 | 0.2% | 65.17 |
| CUYA HOGA | 2044 | 18.8% | 159.67 | PAULDING | 8 | 0.1% | 40.79 |
| DARKE | 39 | 0.4% | 73.64 | PERRY | 38 | 0.3% | 105.39 |
| DEFIANCE | 18 | 0.2% | 46.11 | PICKAWAY | 51 | 0.5% | 91.57 |
| DELAWARE | 53 | 0.5% | 30.42 | PIKE | 28 | 0.3% | 97.53 |
| ERIE | 74 | 0.7% | 96.01 | PORTAGE | 130 | 1.2% | 80.54 |
| FAIRFIELD | 92 | 0.8% | 62.95 | PREBLE | 36 | 0.3% | 85.17 |
| FAYETTE | 17 | 0.2% | 58.56 | PUTNAM | 13 | 0.1% | 37.68 |
| FRANKLIN | 834 | 7.7% | 71.69 | RICHLAND | 105 | 1.0% | 84.35 |
| FULTON | 37 | 0.3% | 86.66 | ROSS | 98 | 0.9% | 125.54 |
| GALLIA | 22 | 0.2% | 71.12 | SANDUSKY | 49 | 0.5% | 80.40 |
| GEAUGA | 68 | 0.6% | 72.81 | SCIOTO | 107 | 1.0% | 134.59 |
| GREENE | 154 | 1.4% | 95.31 | SENECA | 22 | 0.2% | 38.77 |
| GUERNSEY | 28 | 0.3% | 69.85 | SHELBY | 55 | 0.5% | 111.28 |
| HAMILTON | 806 | 7.4% | 100.45 | STARK | 366 | 3.4% | 97.45 |
| HANCOCK | 31 | 0.3% | 41.45 | SUMMIT | 601 | 5.5% | 110.93 |
| HARDIN | 5 | 0.0% | 15.60 | TRUMBULL | 225 | 2.1% | 106.98 |
| HARRISON | 13 | 0.1% | 81.95 | TUSCARAWAS | 66 | 0.6% | 71.29 |
| HENRY | 19 | 0.2% | 67.34 | UNION | 20 | 0.2% | 38.24 |
| HIGHLAND | 37 | 0.3% | 84.88 | VAN WERT | 3 | 0.0% | 10.44 |
| HOCKING | 10 | 0.1% | 34.04 | VINTON | 13 | 0.1% | 96.76 |
| HOLMES | 24 | 0.2% | 56.65 | WARREN | 162 | 1.5% | 76.17 |
| HURON | 60 | 0.6% | 100.63 | WASHINGTON | 67 | 0.6% | 108.45 |
| JACKSON | 36 | 0.3% | 108.35 | WAYNE | 64 | 0.6% | 55.89 |
| JEFFERSON | 14 | 0.1% | 20.08 | WILLIAMS | 13 | 0.1% | 34.54 |
| KNOX | 28 | 0.3% | 45.96 | WOOD | 85 | 0.8% | 67.74 |
| LAKE | 197 | 1.8% | 85.64 | WYANDOT | 13 | 0.1% | 57.48 |
| LAWRENCE | 80 | 0.7% | 128.10 | UNKNOWN | 0 | 0.0% | * |
| LICKING | 95 | 0.9% | 57.06 | TOTAL | 10885 | 100% | 94.35 |

*2019-2020 Season 09/29/2019 thru 09/26/2020; data as of 4/5/2020

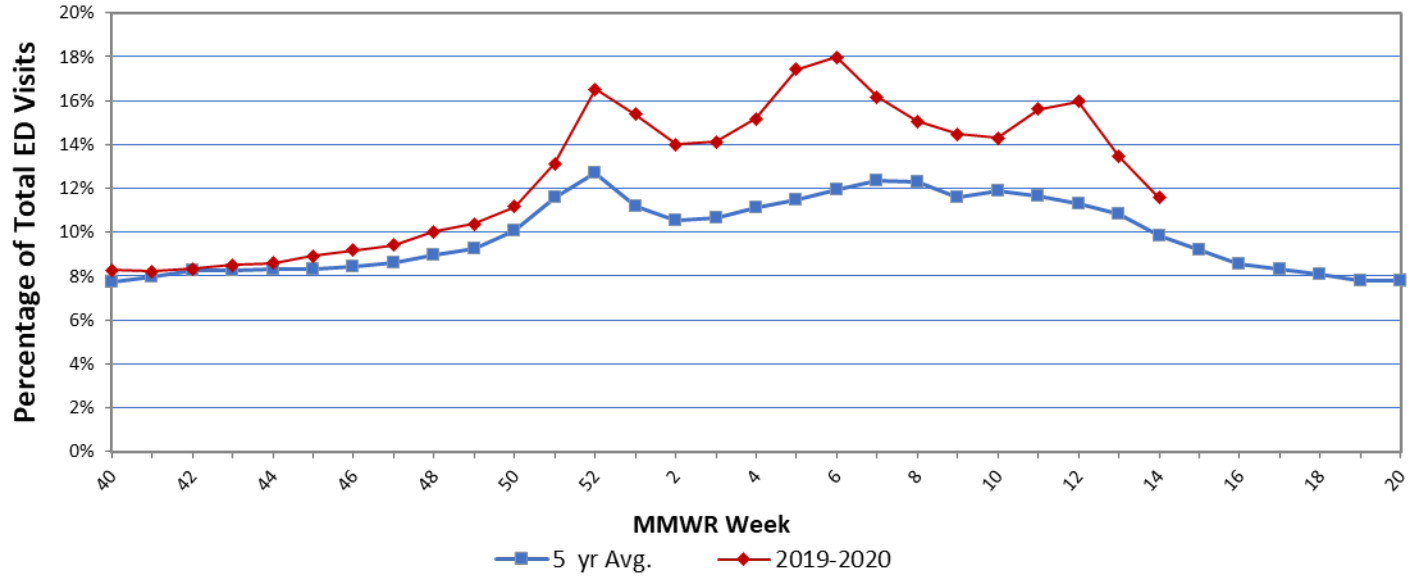
† Disease rates were calculated by number of cases per 100,000 residents using 2010 census data.

Source: Ohio Disease Reporting System

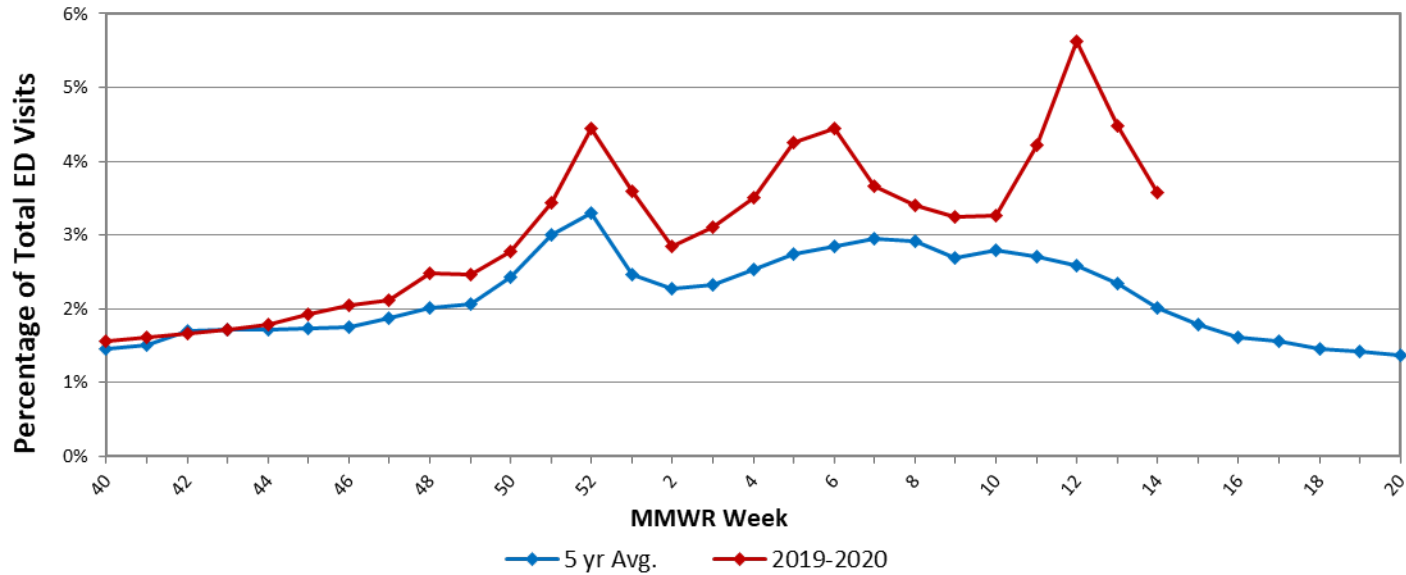
Influenza-associated Hospitalizations by Public Health Region and MMWR Week, Ohio, 2019-2020 Influenza Season



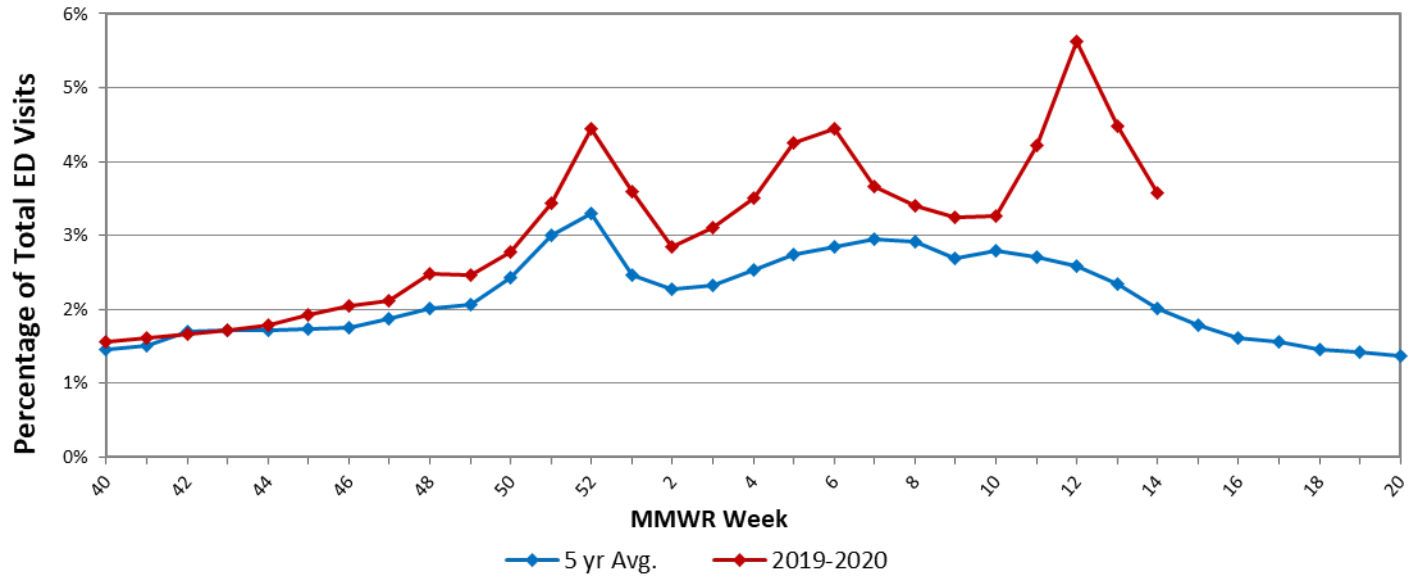
Ohio Constitutional ED Visits with 5 Year Baseline Average; 2019-2020



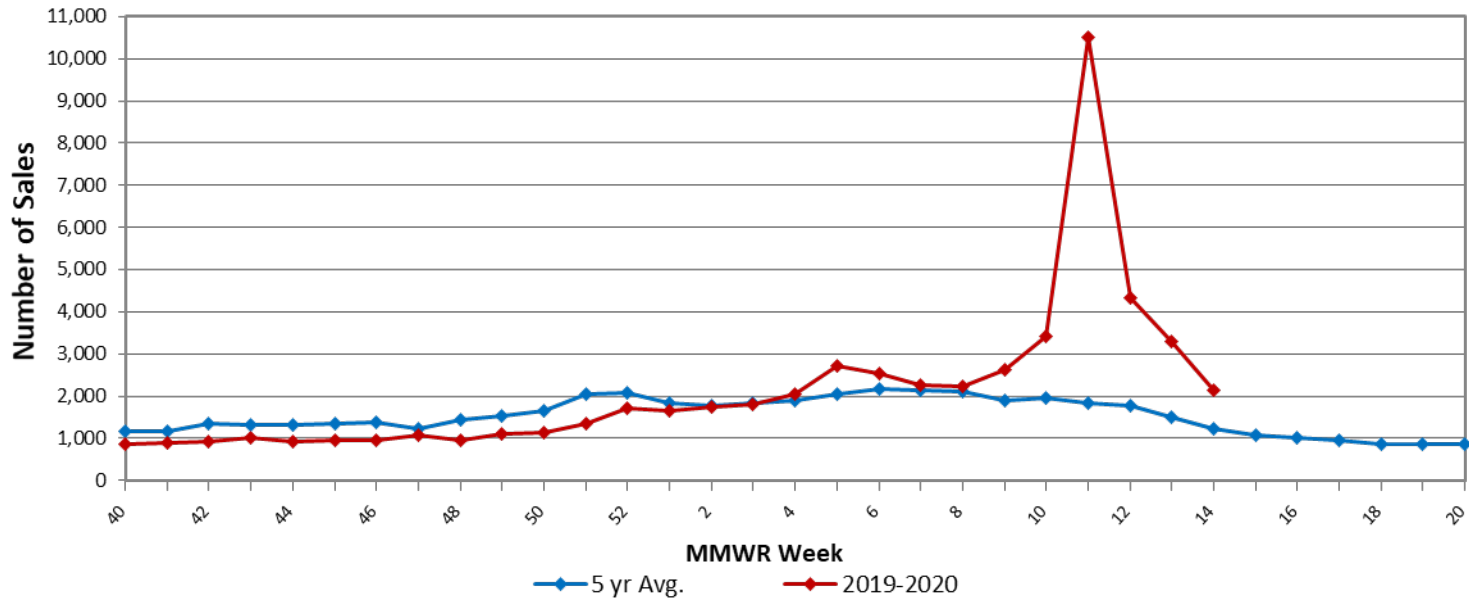
Ohio Fever & ILI Specified ED Visits with 5 Year Baseline Average; 2019-2020



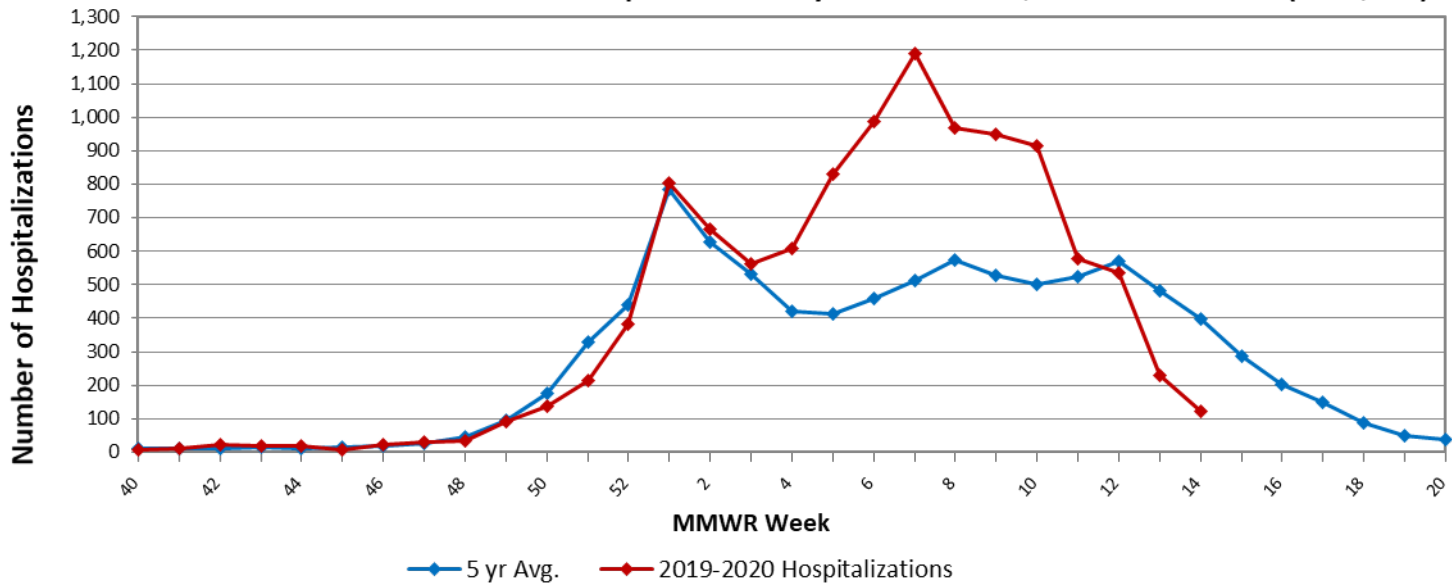
Ohio Fever & ILI Specified ED Visits with 5 Year Baseline Average; 2019-2020



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



Ohio Confirmed Influenza-associated Hospitalizations by MMWR Week; 2019-2020 Season (n=10,885)



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 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.