Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 17: April 21, 2019 – April 27, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 17, a total of 256 laboratory-positive[3] influenza cases (206 influenza A, 48 influenza B and 2 untyped) were reported. A season-to-date total of 76,461 laboratory-positive influenza cases have been reported in Missouri as of Week 17. The influenza type for reported season-to-date cases includes 92.8% influenza A, 6.4% influenza B and 0.8% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 17. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 17 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.11% (Figure 5) and 1.31% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 88 influenza-associated deaths have been reported in Missouri as of Week 17.[5] During Week 16, 21 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,612 P&I associated deaths in Missouri.[6]

- A season-to-date total of 24 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 17.

- Influenza activity continued to decrease in the United States during Week 16. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 17**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 17**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive[†] Influenza Cases by Influenza Type, Missouri, CDC Week 17 (April 21, 2019 – April 27, 2019)[*]

Influenza Type	Week 15	Week 16	Week 17	2018-2019[*] Season-to-Date
Influenza A	1,051	428	206	70,927
Influenza B	119	62	48	4,951
Influenza Unknown Or Untyped	4	0	2	583
Total	1,174	490	256	76,461

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40)   Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 17 (April 21, 2019 – April 27, 2019)[*‡]

Age Group	Week 17 Cases	Week 17 Rate[‡]	2018-2019[*] Season-to-Date	2018-2019[*] Season-to-Date Rate[‡]
00-04	43	11.49	14,553	3,887.43
05-24	101	6.29	32,844	2,046.97
25-49	45	2.35	14,733	769.95
50-64	28	2.26	7,719	624.33
65+	39	4.08	6,612	692.41
Total	256	4.21	76,461	1,256.82

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 17 (April 21, 2019 – April 27, 2019)[*‡]
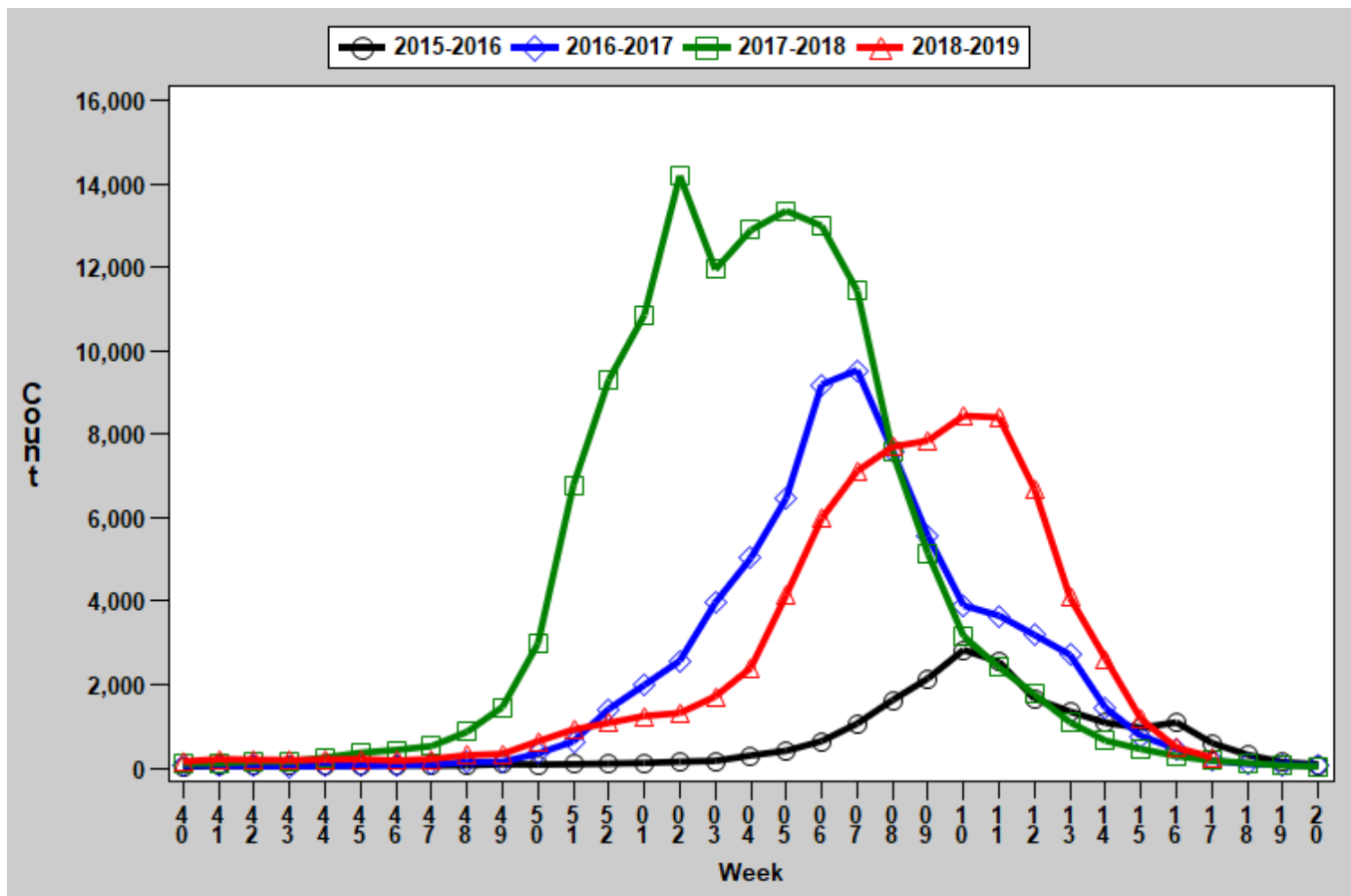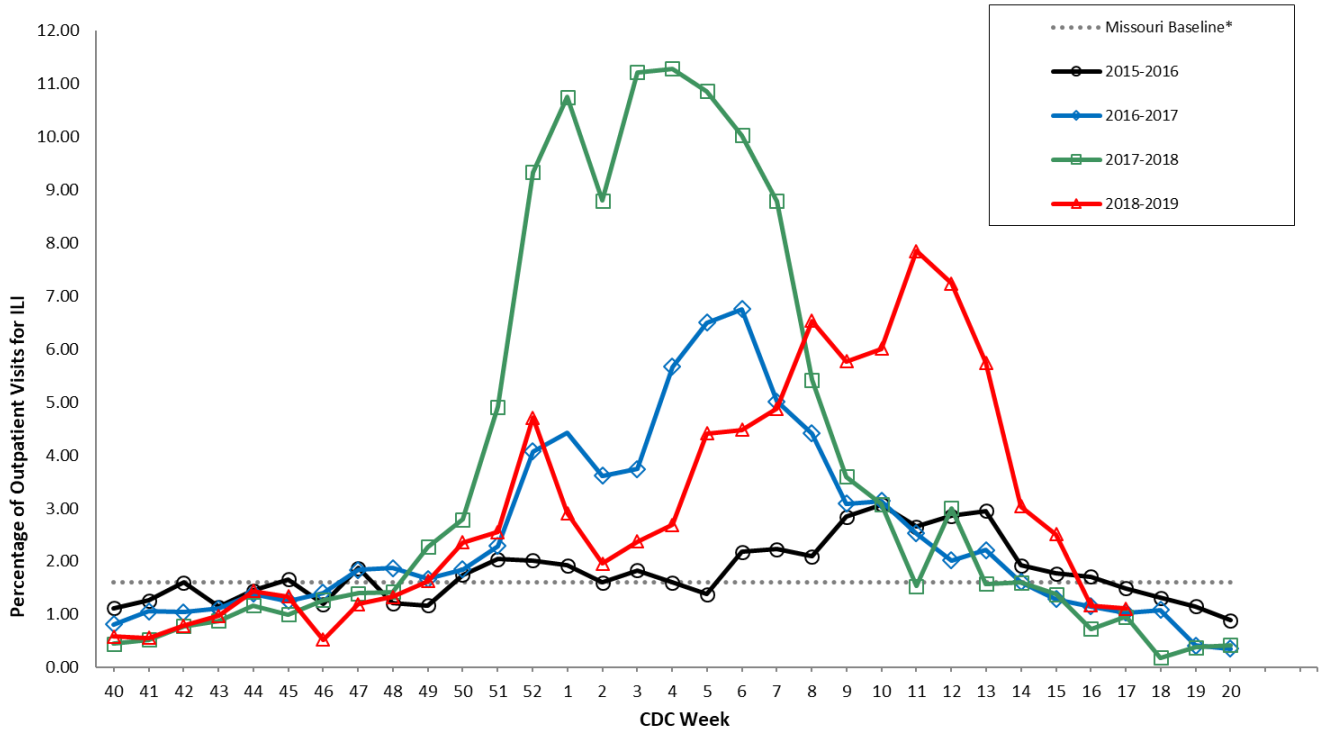
Region	Week 17 Cases	Week 17 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	46	6.79	8,777	1,296.46
Eastern	79	3.49	23,158	1,021.91
Northwest	65	4.07	16,257	1,017.64
Southeast	32	6.78	11,213	2,377.15
Southwest	34	3.17	17,056	1,592.08
Total	256	4.21	76,461	1,256.82

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)

[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).
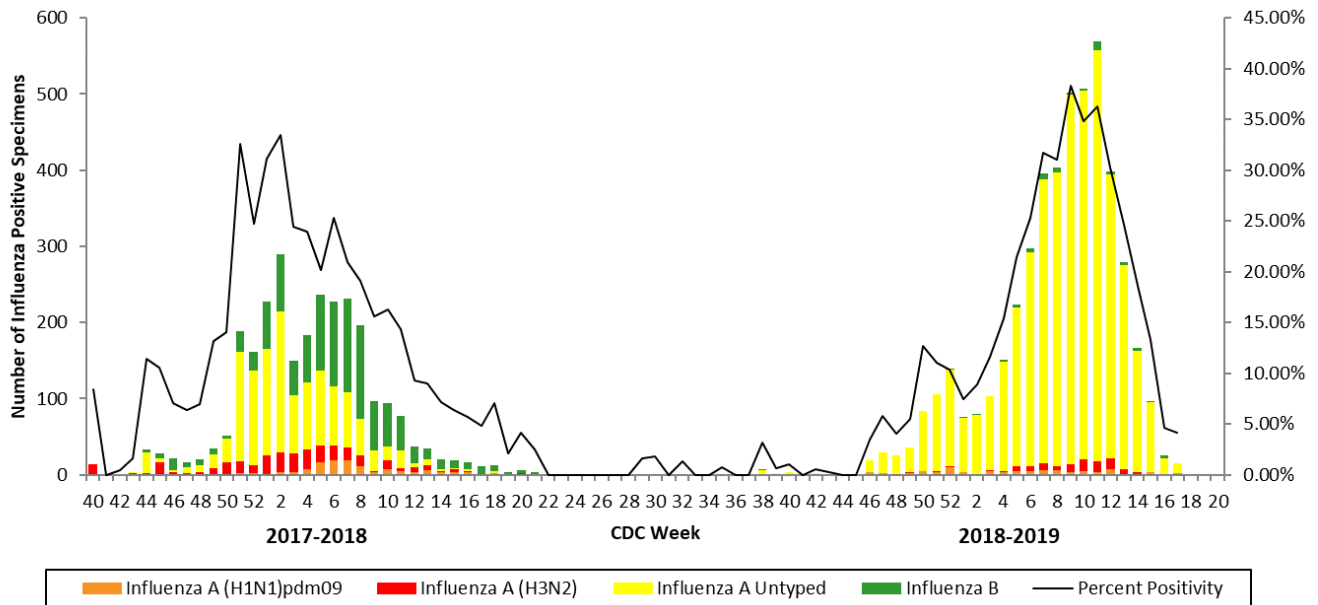
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019[*†]

[*]The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).
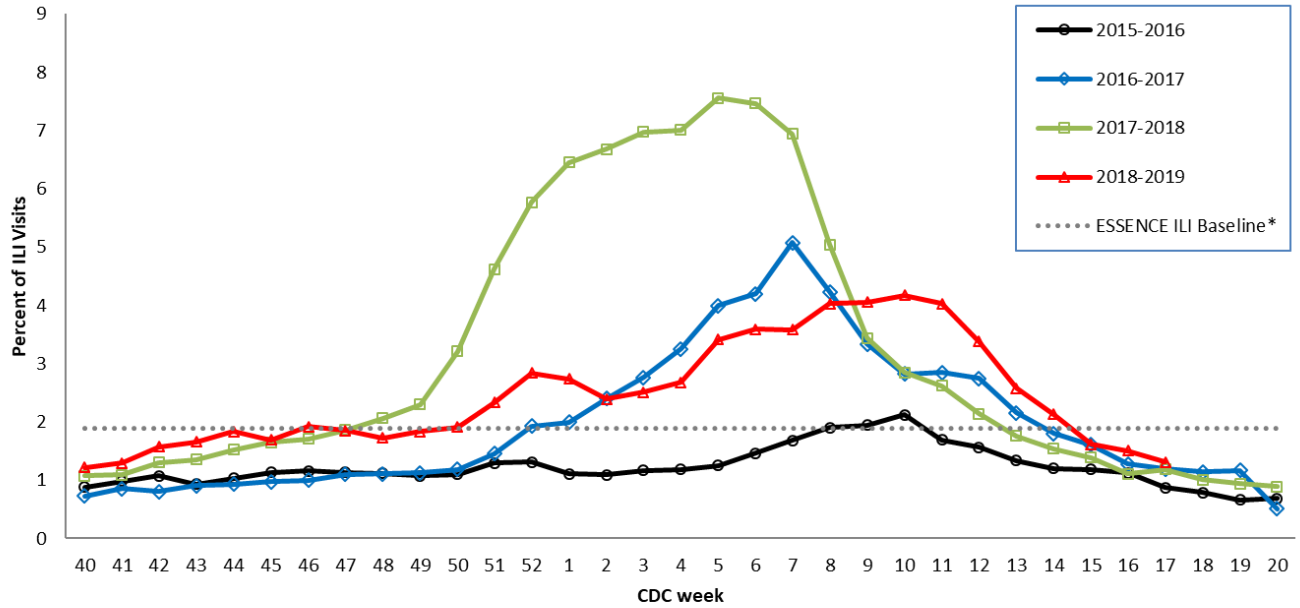
[†]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri

Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
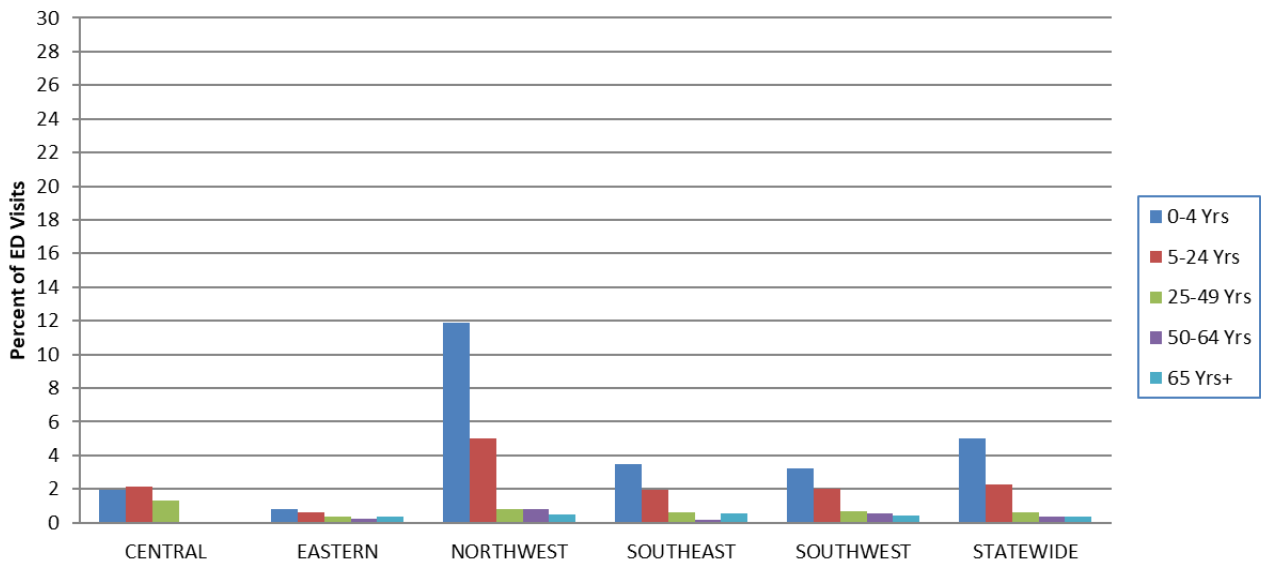2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons[*‡]

[*]The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

[‡]The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
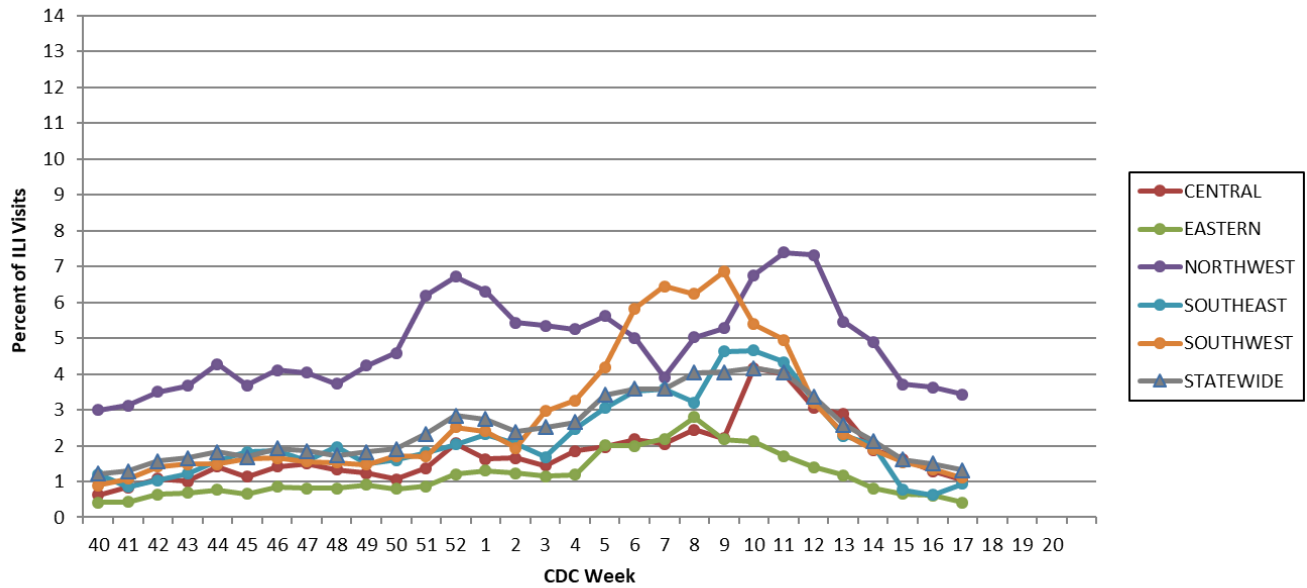
Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 17, 2019[*]

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
[*]The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
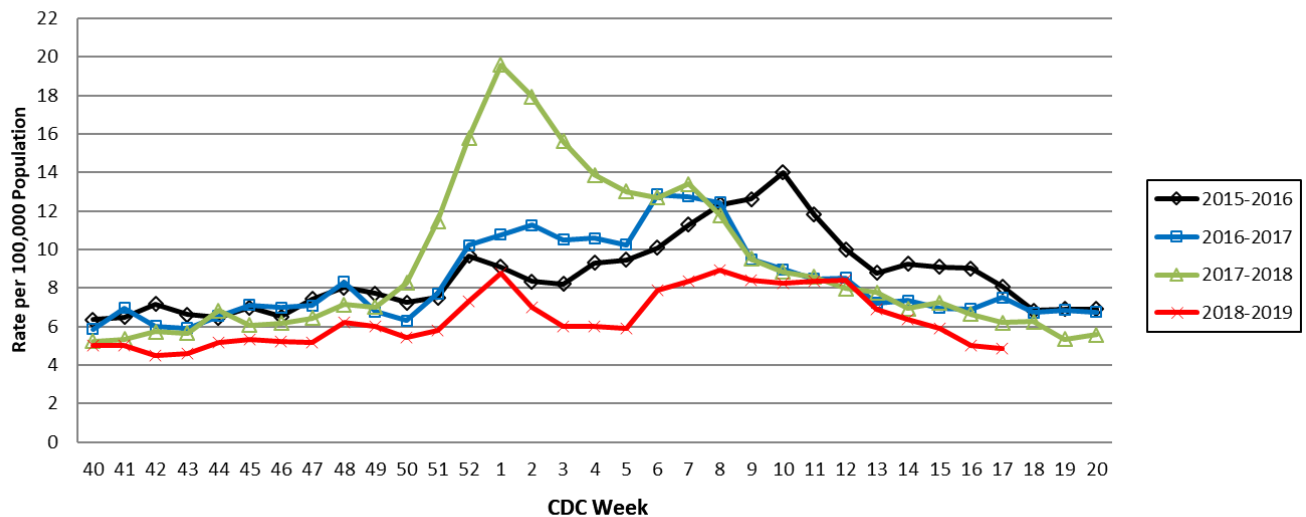
Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season[*]

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
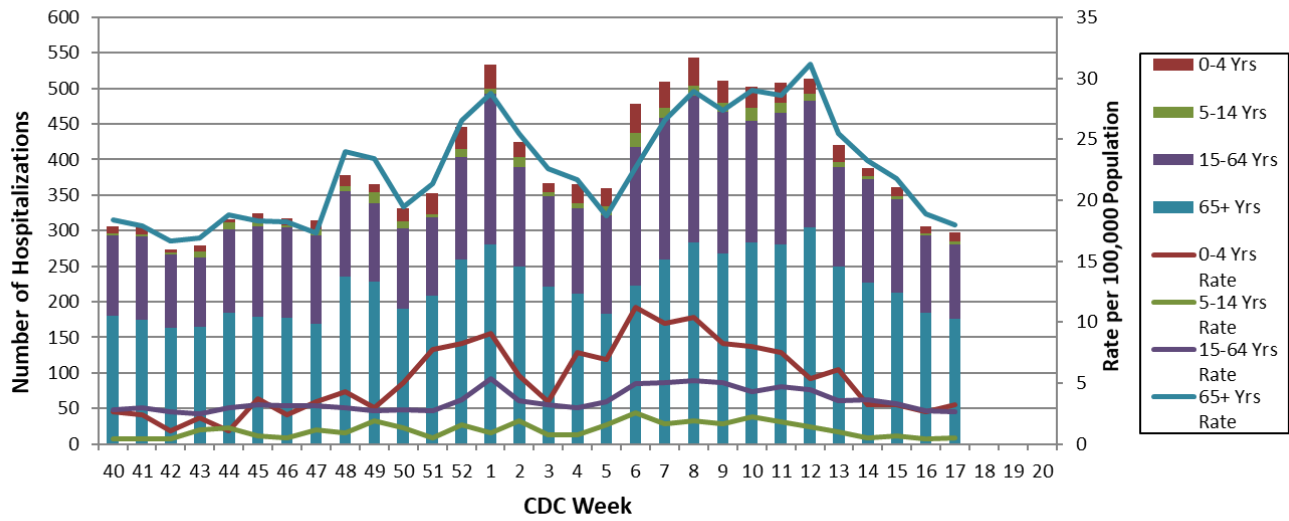[*]The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 17, 2018-2019 Influenza Season

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/