Missouri Weekly Influenza Surveillance Report
2017-2018 Influenza Season[1]

Week 49: December 3 – 9, 2017

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

Summary:

- The estimated influenza activity in Missouri increased to Widespread[2].

- During Week 49, a total of 771 laboratory-positive[3] influenza cases (614 influenza A, 154 influenza B, and three untyped) were reported. A season-to-date total of 3,558 laboratory-positive influenza cases (2,540 influenza A, 977 influenza B, and 41 untyped) have been reported in Missouri as of Week 49. The influenza type for reported season-to date cases includes 71% influenza A, 28% influenza B, and 1% untyped. Twelve laboratory-positive cases of influenza (eight influenza A (H3) and four influenza B (Yamagata)) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 49.

- Influenza-like illness (ILI) activity was above baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.52% (Figure 5) and 2.30% (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 temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 49 (Figure 6).

- One influenza-associated death has been reported in Missouri as of Week 49.[5] During Week 48, 48 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 370 P&I associated deaths in Missouri.[6]

- Six outbreaks of influenza have been reported in long-term care facilities and no influenza or ILI-associated school closures have been reported in Missouri as of Week 49.

- Influenza activity increased in the U.S. during Week 48. 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 2017-2018 influenza season begins CDC Week 40 (week ending October 7, 2017) and ends CDC Week 39 (week ending September 29, 2018).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[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 100°F [37.8°C] 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://arcg.is/0jrLm4. *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 49**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 49**
- **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 49 (December 3 – 9, 2017)[*]

Influenza Type	Week 47	Week 48	Week 49	2017-2018* Season-to-Date
Influenza A	316	563	614	2,540
Influenza B	184	197	154	977
Influenza Unknown Or Untyped	1	7	3	41
Total	501	767	771	3,558

[†]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 7, 2017 (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 49 (December 3 – 9, 2017)[*‡]

Age Group	Week 49 Cases	Week 49 Rate[‡]	2017-2018* Season-to-Date	2017-2018* Season-to-Date Rate[‡]
00-04	106	28.31	586	156.53
05-24	258	16.08	1,189	74.10
25-49	158	8.26	731	38.20
50-64	126	10.19	482	38.98
65+	123	12.88	570	59.69
Total	771	12.67	3,558	58.48

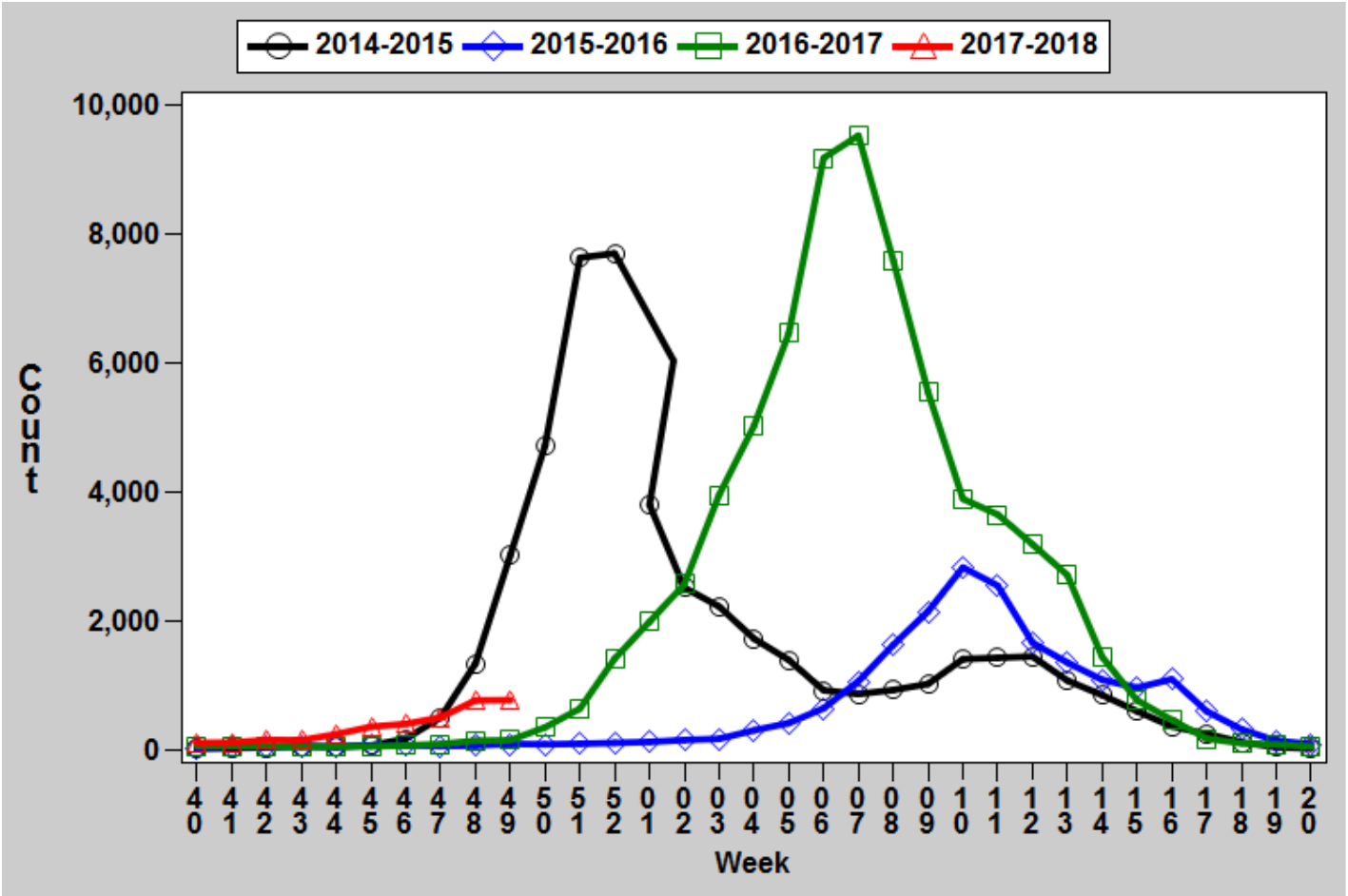
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 7, 2017 (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 49 (December 3 – 9, 2017)[*‡]

Region	Week 49 Cases	Week 49 Rate[‡]	2017-2018* Season-to-Date	2017-2018* Season-to-Date Rate[‡]
Central	126	18.61	409	60.41
Eastern	255	11.25	847	37.38
Northwest	156	9.77	807	50.52
Southeast	109	23.11	748	158.58
Southwest	125	11.67	747	69.73
Total	771	12.67	3,558	58.48

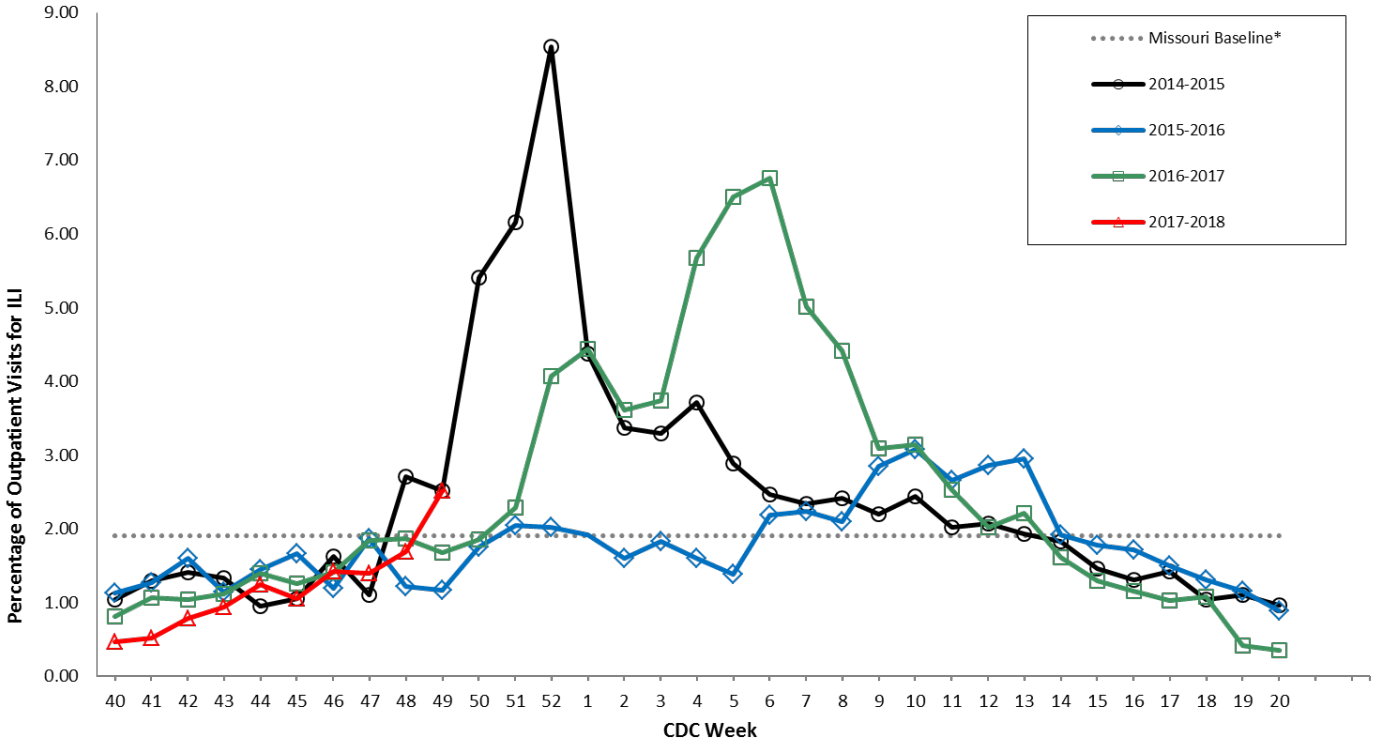
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 7, 2017 (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, 2014-2018[*]



[†]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.
[*]2017-2018 season-to-date through the week ending May 19, 2018 (Week 20). The 2014-2015 season had 53 weeks rather than the usual 52. Week 53, 2014-2015 flu season has 3,082 reported confirmed cases. Data Source: Missouri Health Information Surveillance System (WebSurv).

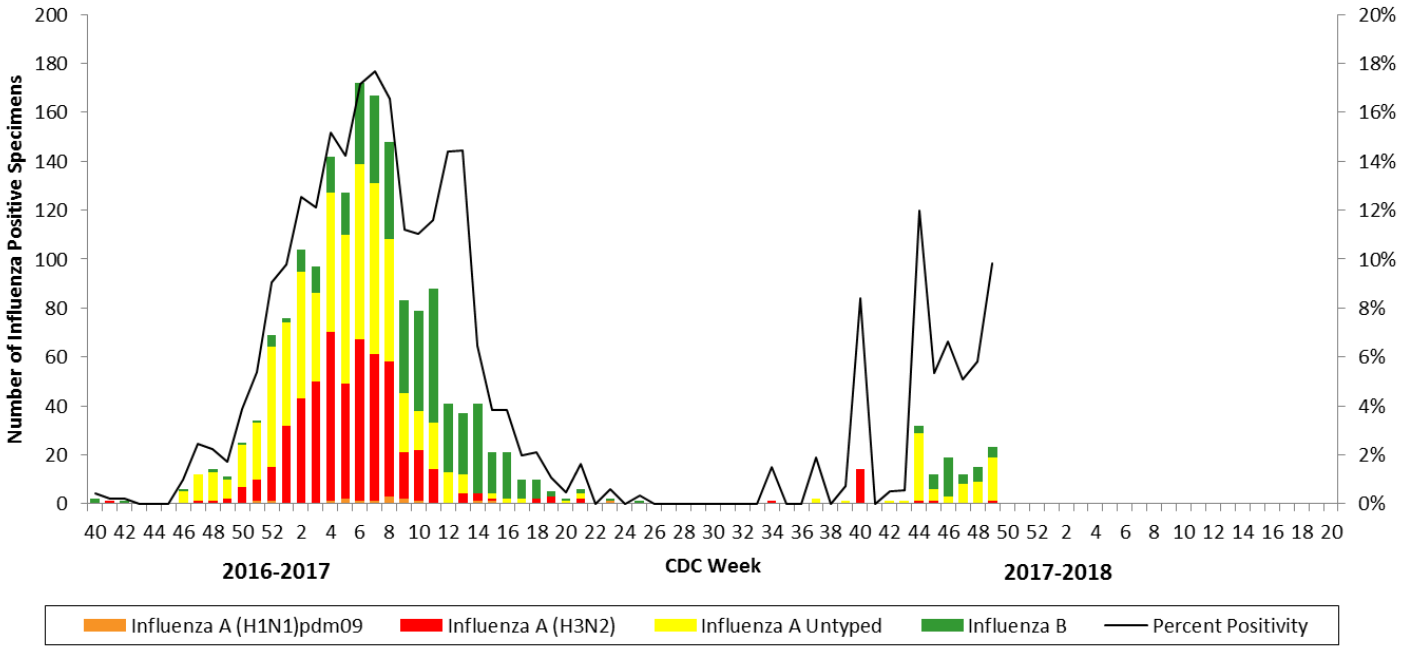
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2014-2018*†



*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).

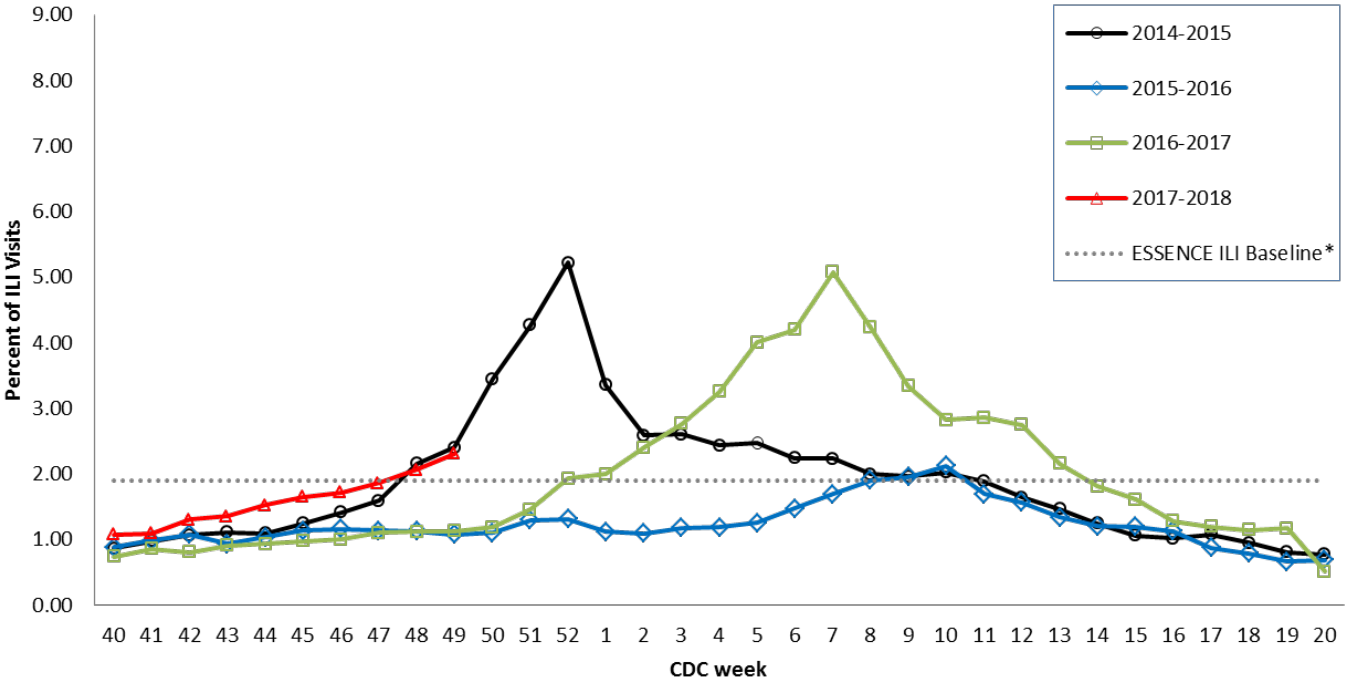
†2017-2018 season-to-date through the week ending May 19, 2018 (Week 20). The 2014-2015 season had 53 weeks rather than the usual 52. The percentage of outpatient visits for ILI during Week 53 was 7.63.

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



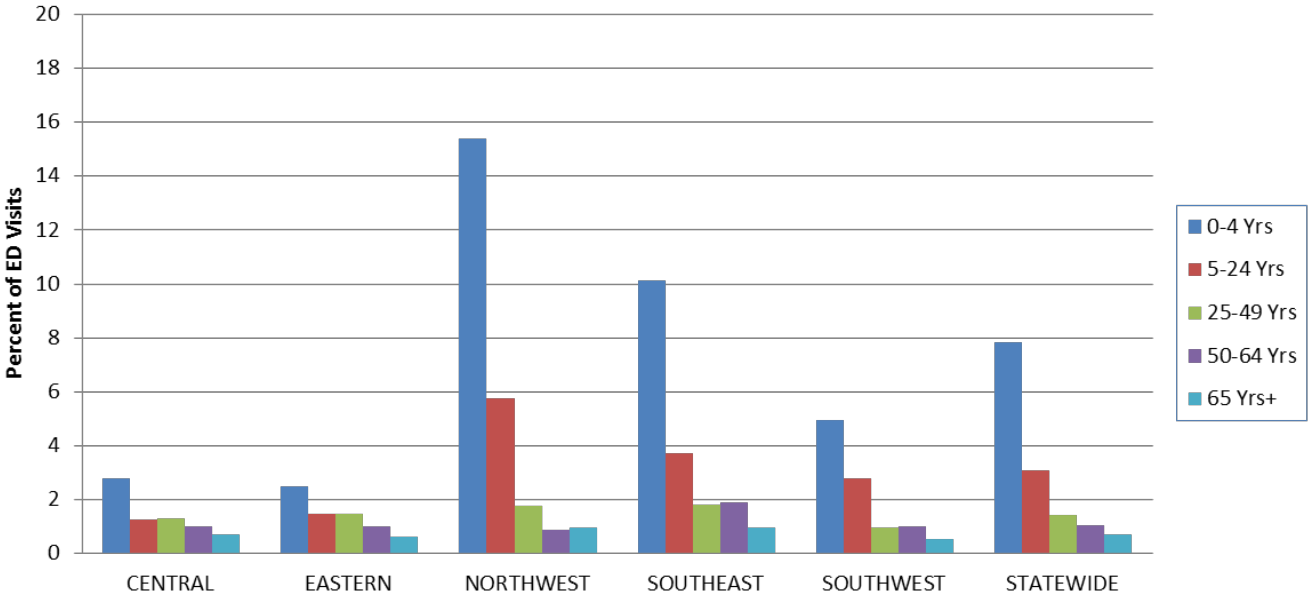
Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2016-2017 season-to-date through the week ending May 19, 2018 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2014-2018 Influenza Seasons*†‡



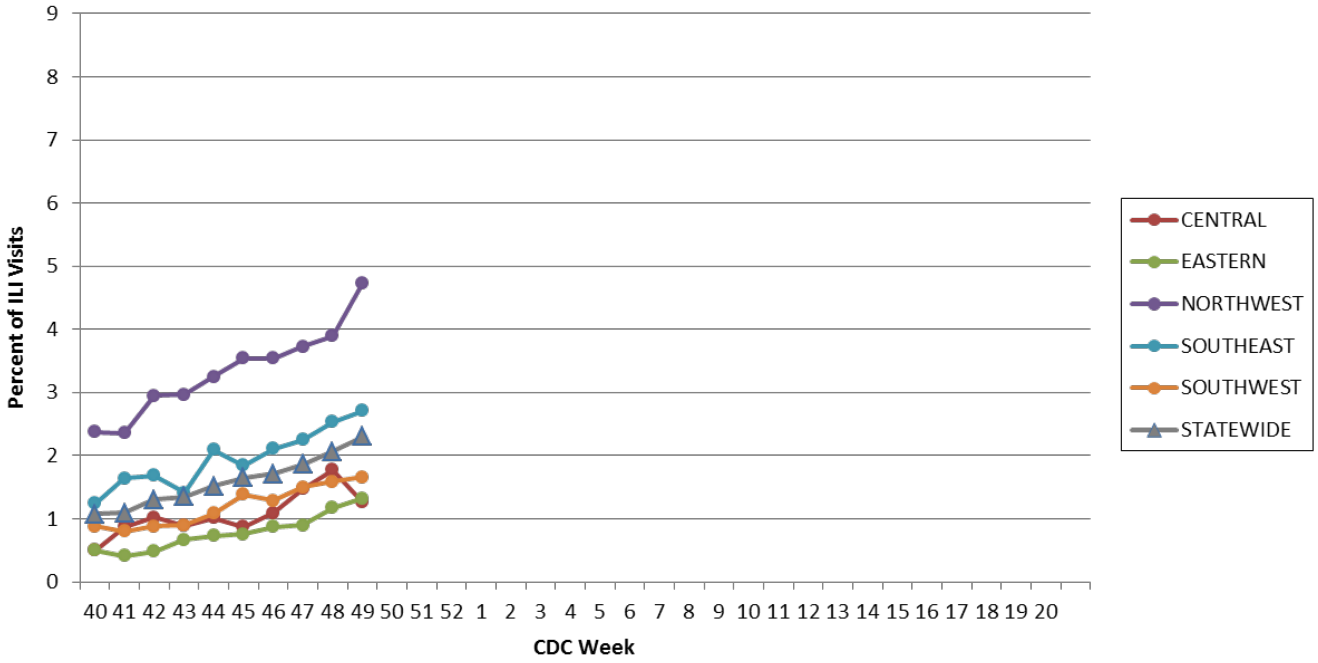
*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2014-16) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations.
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
†The 2014-2015 season had 53 weeks rather than the usual 52. The percentage of visits for ILI in ESSENCE participating hospitals during Week 53 was 4.38%.
‡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 49, 2017*



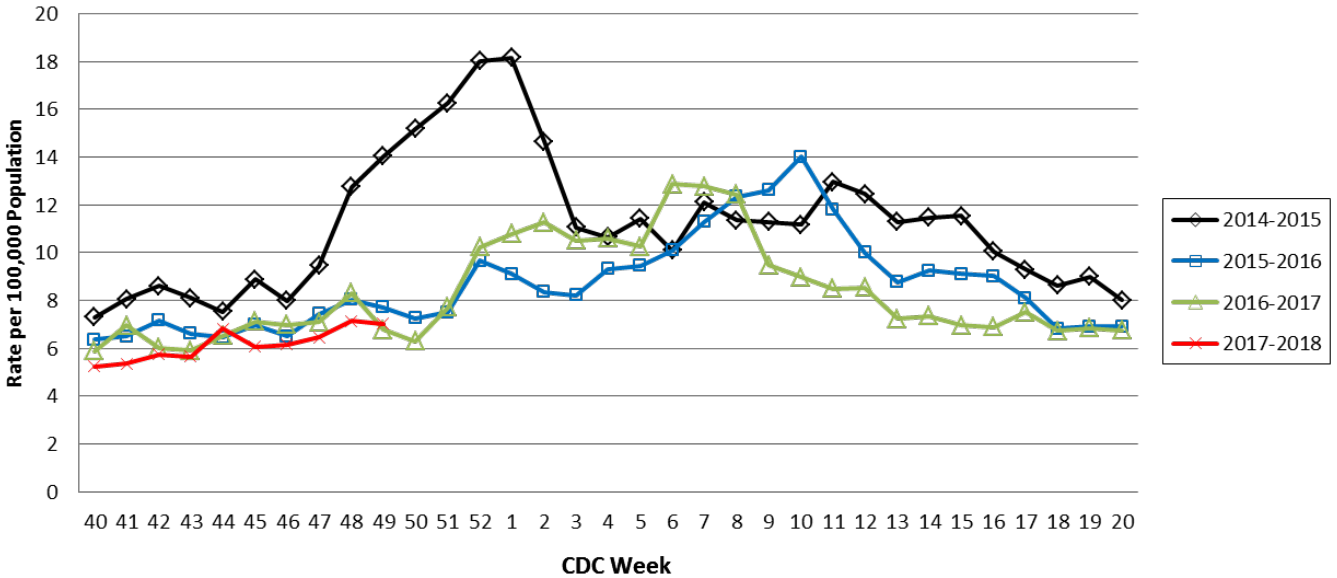
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest 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, 2017-2018 Influenza Season*



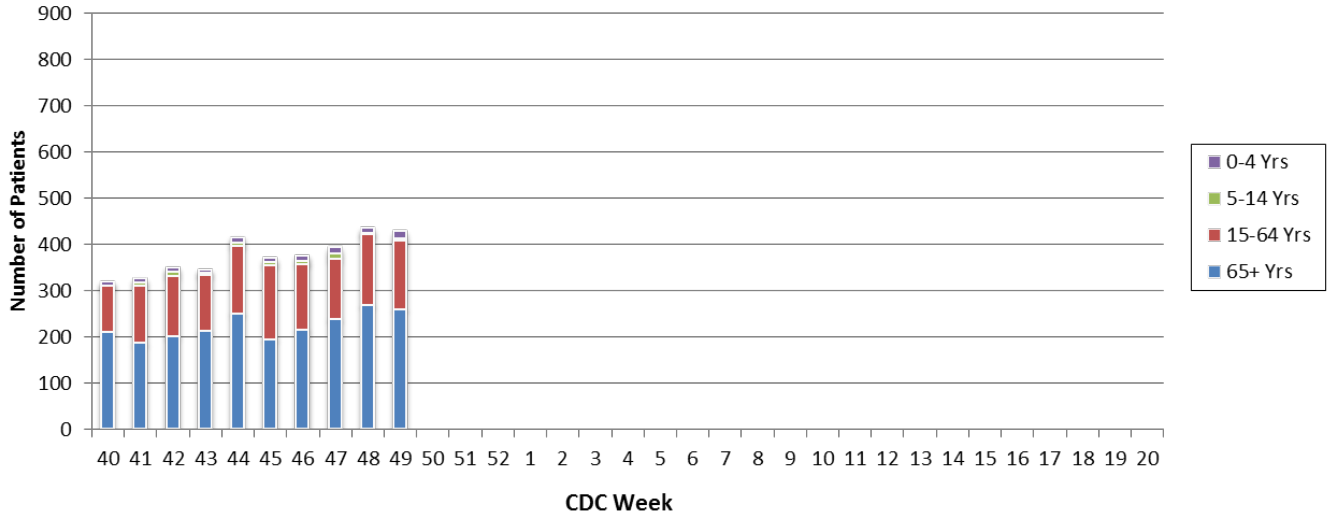
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest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

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2014-2018 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 2015 (http://health.mo.gov/data/mica/mica/population.php).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 49, 2017-2018 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/