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

Week 12: March 18 – 24, 2018

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

Summary:

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

- During Week 12, a total of 1,198 laboratory-positive[3] influenza cases (412 influenza A, 767 influenza B, and 19 untyped) were reported. A season-to-date total of 129,854 laboratory-positive influenza cases (83,962 influenza A, 44,050 influenza B, and 1,842 untyped) have been reported in Missouri as of Week 12. The influenza type for reported season-to date cases includes 65% influenza A, 34% influenza B, and 1% untyped. Eleven laboratory-positive cases of influenza (three influenza A (H3), two influenza A (H1N1), and six influenza B (Yamagata)) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 12.

- 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 3.19% (Figure 5) and 1.90% (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) decreased during Week 12 (Figure 6).

- Two hundred and forty-two influenza-associated deaths have been reported in Missouri as of Week 12.[5] During Week 11, 61 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,618 P&I associated deaths in Missouri.[6]

- Sixty-seven outbreaks of influenza or ILI have been reported and 15 influenza or ILI-associated school closures have been reported in Missouri as of Week 12.

- Influenza activity decreased in the U.S. during Week 11. 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]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[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 $100^{o}F$ [$37.8^{o}C$] 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/1qOnnu. *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 12**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 12**
- **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 12 (March 18 – 24, 2018)[*]

Influenza Type	Week 10	Week 11	Week 12	2017-2018[*] Season-to-Date
Influenza A	1,205	830	412	83,962
Influenza B	1,814	1,286	767	44,050
Influenza Unknown Or Untyped	44	39	19	1,842
Total	3,063	2,155	1,198	129,854

[†]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 12 (March 18 – 24, 2018)[*‡]

Age Group	Week 12 Cases	Week 12 Rate[‡]	2017-2018[*] Season-to-Date	2017-2018[*] Season-to-Date Rate[‡]
00-04	177	47.28	20,050	5,355.81
05-24	320	19.94	46,197	2,879.19
25-49	304	15.89	25,941	1,355.68
50-64	193	15.61	18,531	1,498.82
65+	204	21.36	19,135	2,003.83
Total	1,198	19.69	129,854	2,134.47

[†]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 12 (March 18 – 24, 2018)[*‡]

Region	Week 12 Cases	Week 12 Rate[‡]	2017-2018* Season-to-Date	2017-2018* Season-to-Date Rate[‡]
Central	170	25.11	17,548	2,592.03
Eastern	361	15.93	40,123	1,770.53
Northwest	422	26.42	36,897	2,309.64
Southeast	114	24.17	14,486	3,071.03
Southwest	131	12.23	20,800	1,941.57
Total	1,198	19.69	129,854	2,134.47

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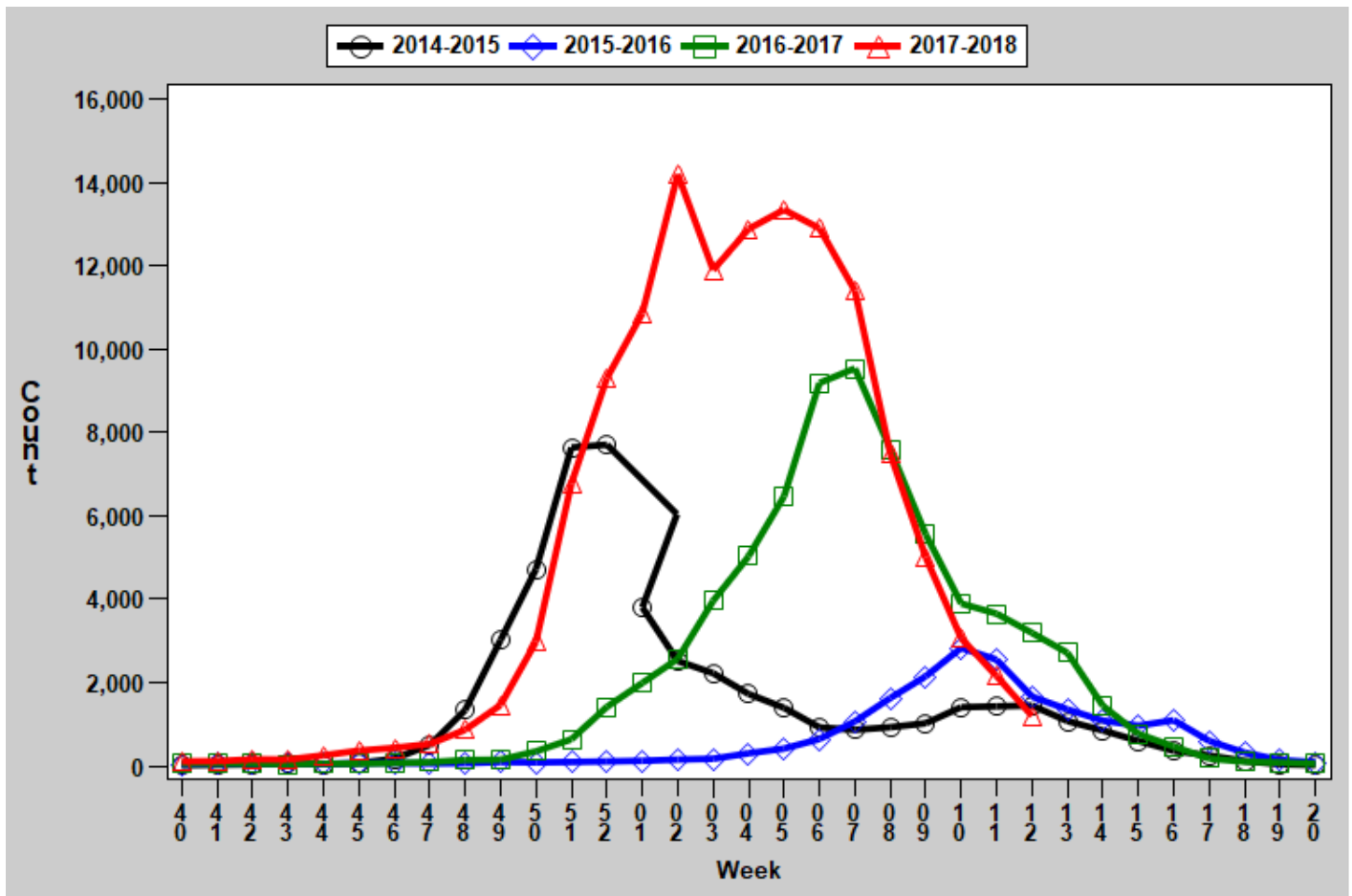
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2017-2018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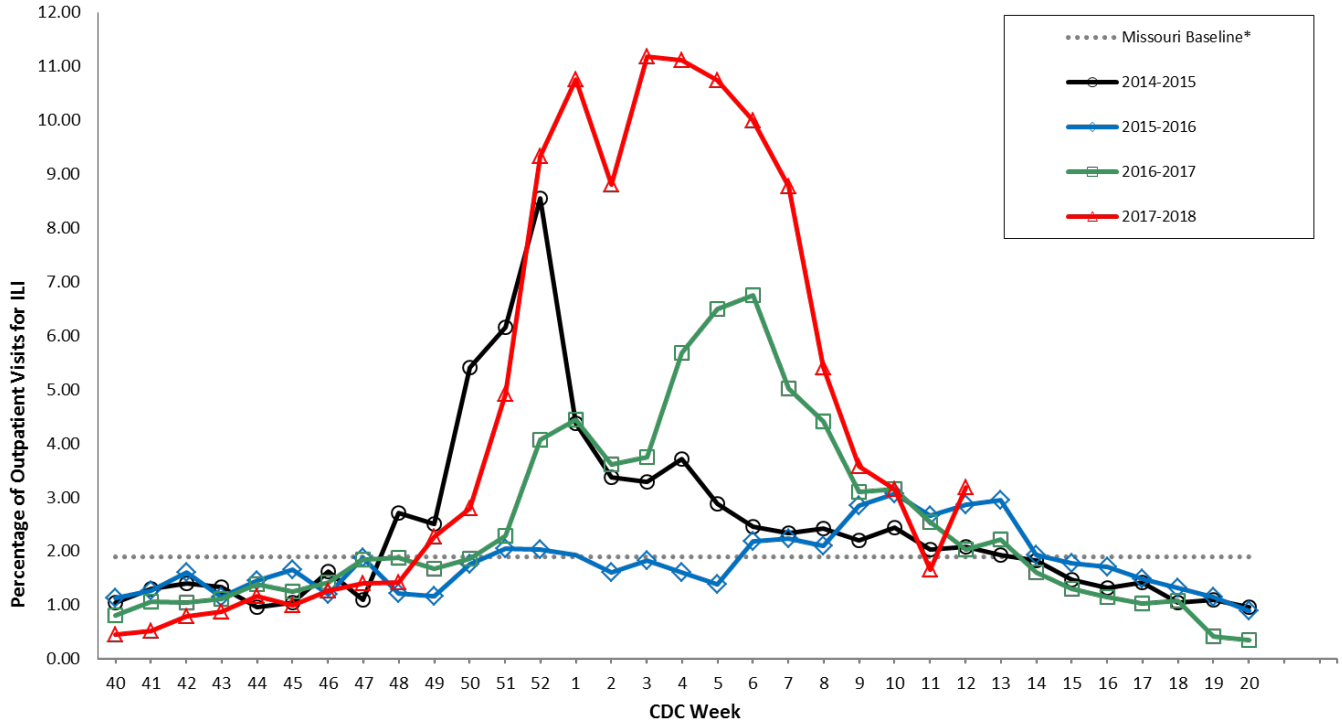

[*]The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less 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
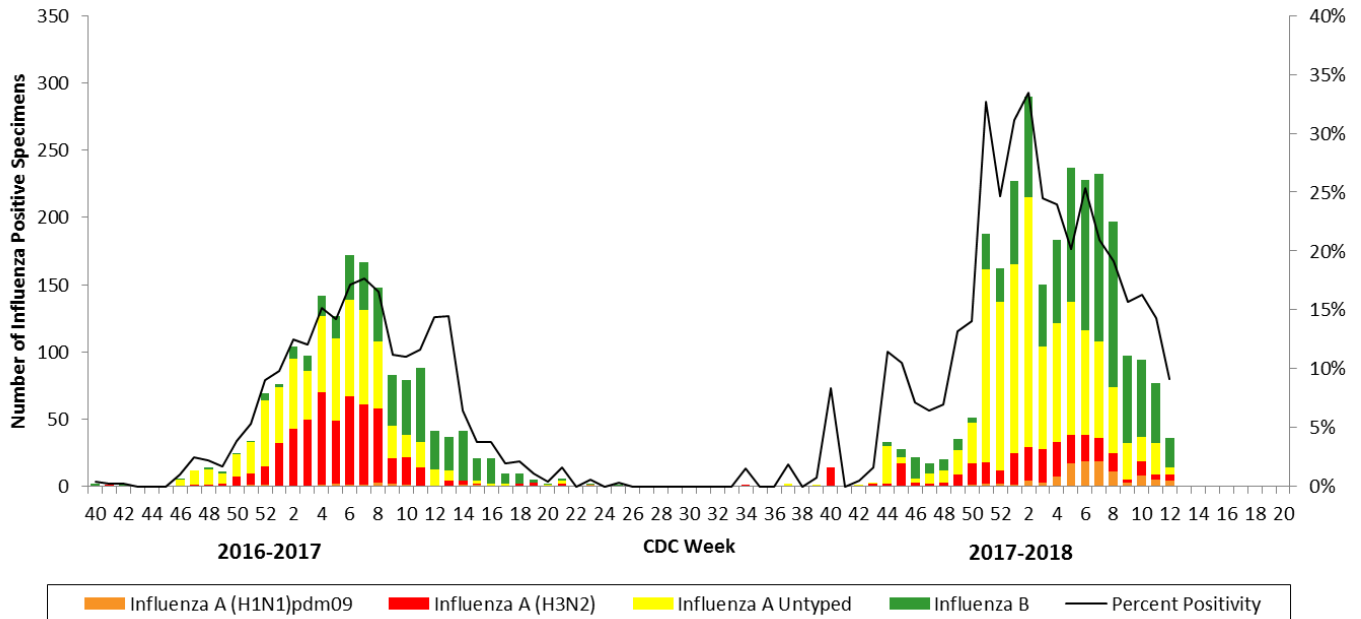
Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2016-2017 season-to-date through the week ending May 19, 2018 (Week 20).

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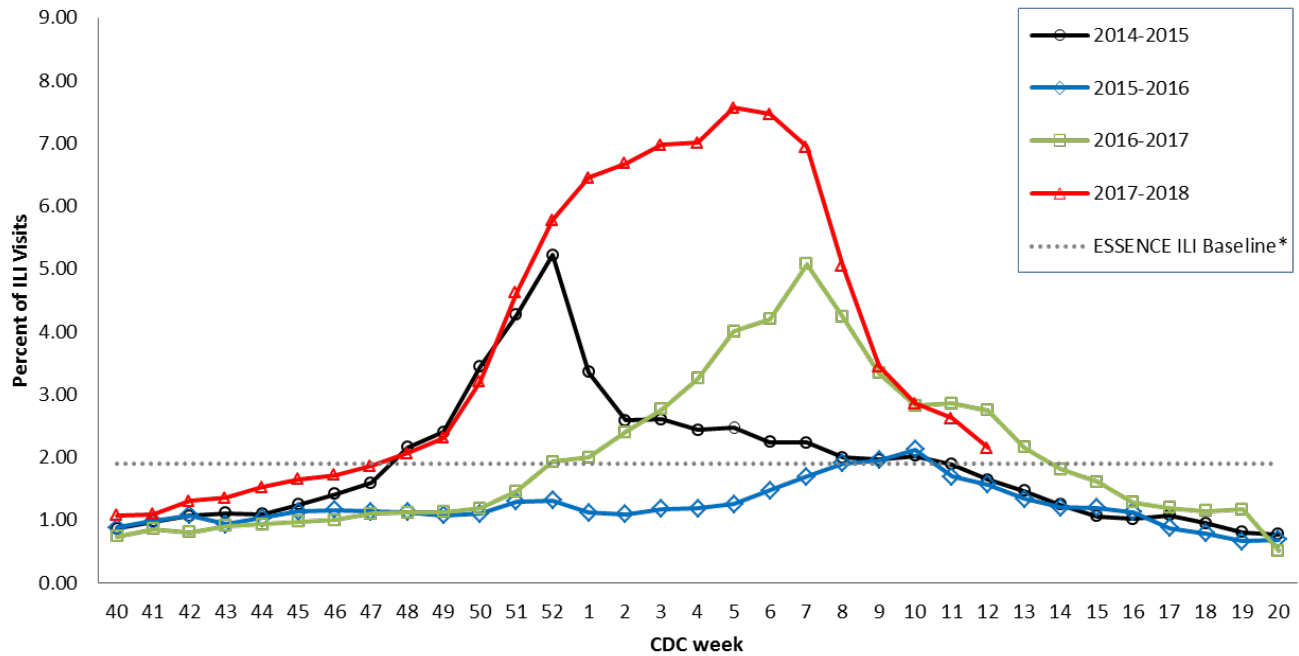

[*] The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2014-16) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations.
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable 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 12, 2018[*]
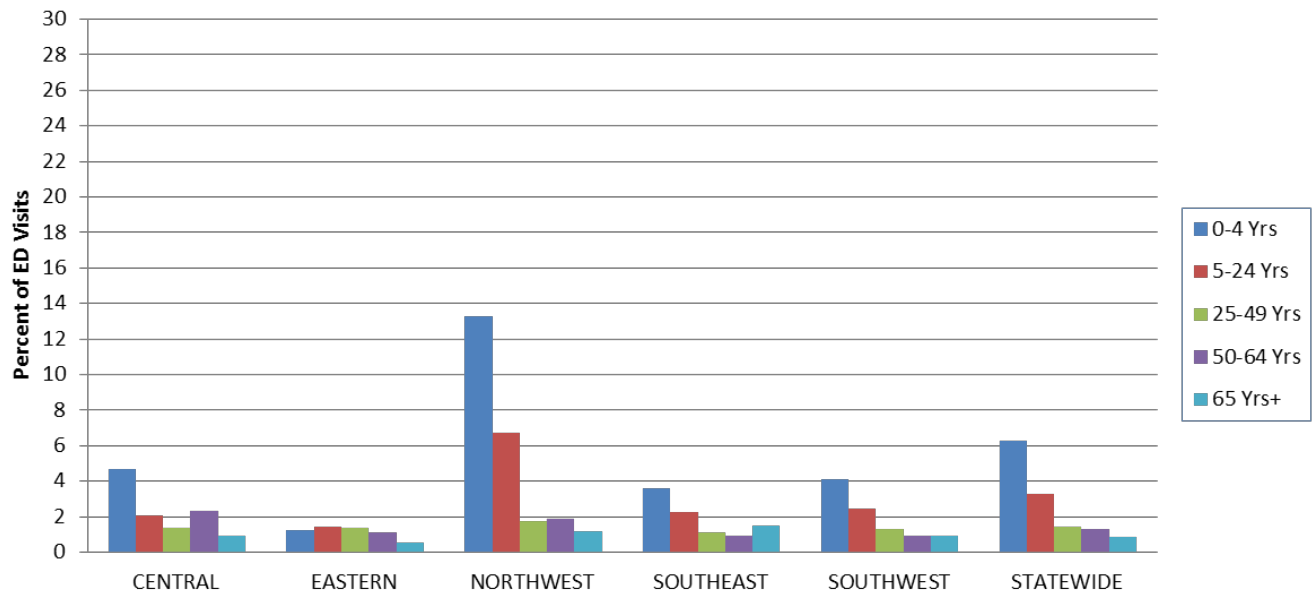
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
[*] The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest 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[*]
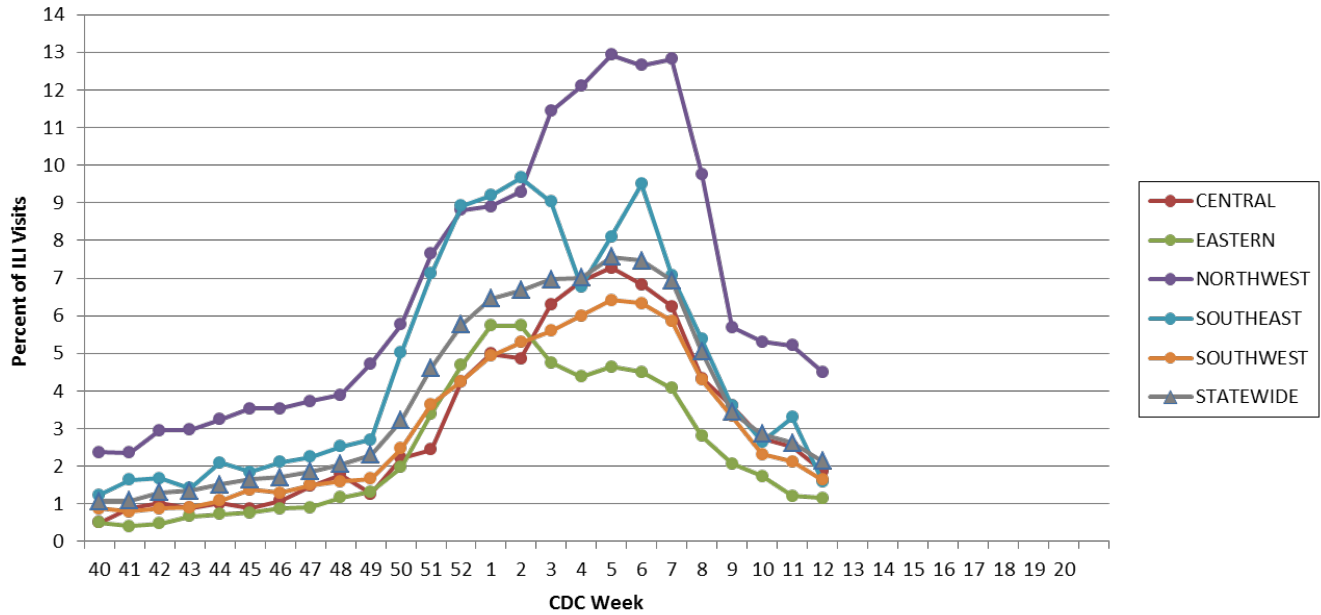
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
[*]The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest 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
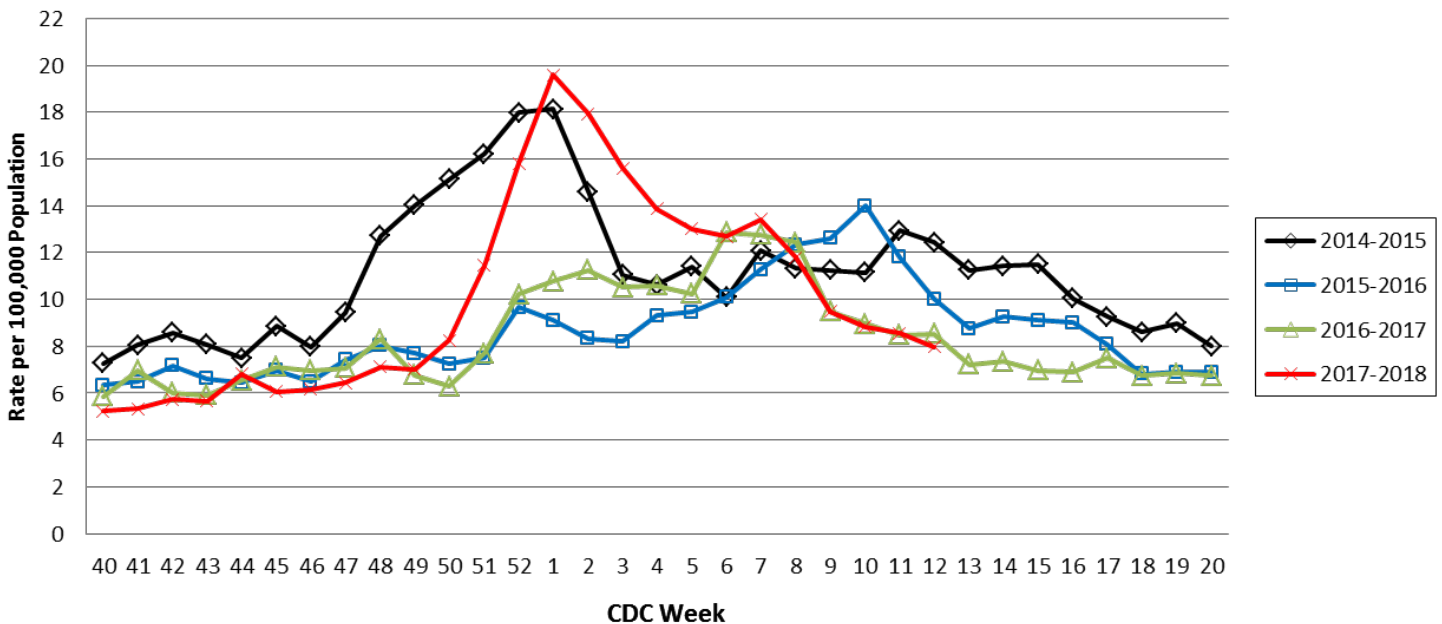
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2015 (http://health.mo.gov/data/mica/mica/population.php).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 12, 2017-2018 Influenza Season
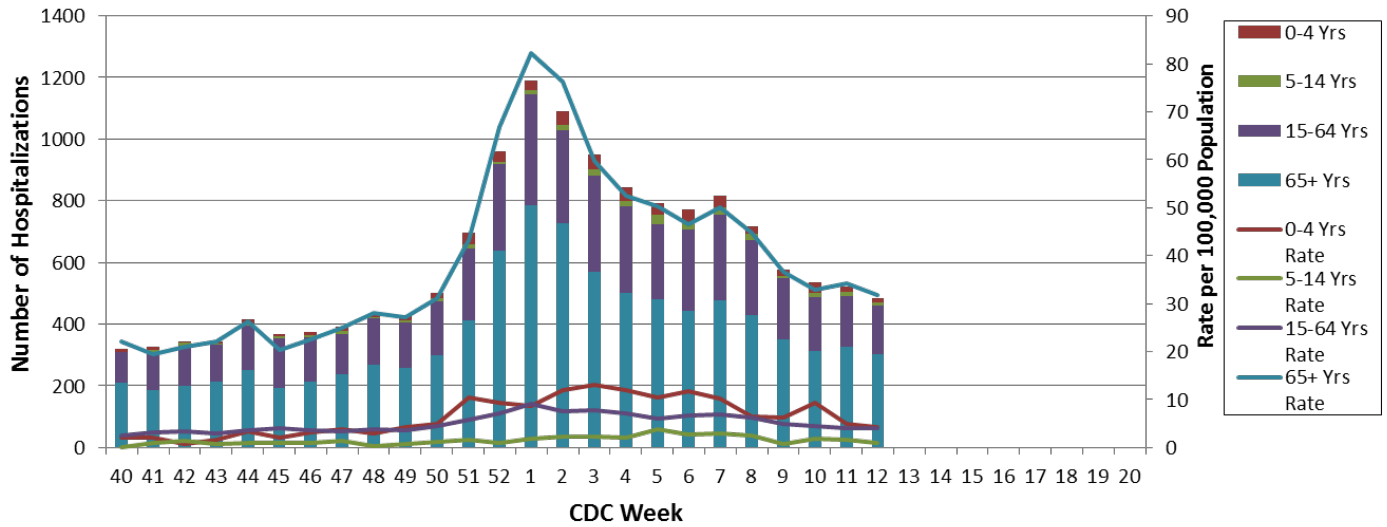
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

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/