Missouri Weekly Influenza Surveillance Report
2014-2015 Influenza Season[1]

Week 51: December 14 – December 20, 2014

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

Summary:

- The estimated influenza activity in Missouri remained at Widespread[2].
- A season-to-date total of 14,446 laboratory-positive[3] influenza cases have been reported in Missouri. Influenza A continued to be the predominant influenza type accounting for 95.6% of reported cases during Week 51. All 20 of the laboratory-confirmed influenza cases reported by the Missouri State Public Health Laboratory (MSPHL) during Week 51 were influenza A (H3).
- CDC has antigenically characterized five influenza isolates so far this influenza season from Missouri: three were influenza A (H3N2) A/TEXAS/50/2012-like, one was influenza B/MASSACHUSETTS/02/2012-LIKE and, one was influenza A H3N2 virus antigenically similar to the A/Switzerland/9715293/2013. Influenza A/TEXAS/50/2012 and B/MASSACHUSETTS/02/2012-LIKE are included in the 2014-2015 influenza vaccine for the Northern Hemisphere. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus. The CDC reports 69.4% of viruses collected from U.S. laboratories from October 1, 2014 – December 13, 2014, were antigenically different (drifted) from the influenza A H3N2 component of the 2014-2015 influenza vaccine. http://www.cdc.gov/flu/weekly/
- Influenza-like illness activity is above baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.22% and 4.1% through ILINet and ESSENCE respectively[4].
- The highest rates of laboratory-positive influenza cases among children aged 0-4 years (240 cases per 100,000 population) and children aged 5-14 years (230 cases per 100,000 population). No influenza-associated pediatric deaths have been reported in Missouri to date, this influenza season. Deaths involving Pneumonia and Influenza (P&I) reported to the Bureau of Vital Records decreased to 81 deaths during Week 50, resulting in a season-to-date total of 814 P&I associated deaths in Missouri[5].
- Two outbreaks of influenza or ILI were reported during Week 51 in Missouri. One ILI-associated school closure was reported during Week 51.
- National influenza activity and surveillance information is prepared by the Centers for Disease Control and Prevention (CDC). The information including a weekly report (FLUVIEW) is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2014-2015 influenza season in Missouri began CDC Week 40 (Week ending October 4, 2014) through CDC Week 20 (week ending May 23, 2015).

[2]Widespread is defined as: Increased ILI and/or institutional outbreaks (ILI or lab confirmed) in at least half of the regions AND recent (within the past 3 weeks) lab confirmed 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 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.

[5]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 county specific influenza data are provided though interactive maps available at https://mosema.maps.arcgis.com/home/item.html?id=74478e70beb649848c64aee08ce93531. *Click on the county to view the influenza data specific to that county.*

- **Reported Laboratory -positive Influenza Cases by Influenza Type by County, CDC Week 51**
- **Reported Laboratory -positive Influenza Cases by Influenza Type by County, Season-to-Date**
- **Percentage of Laboratory-positive Influenza Cases Reported to be Influenza Type A**

Data Tables and Graphs

Table 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 49-51 (November 30 – December 20, 2014)

Influenza Type	Week 49	Week 50	Week 51	2014-2015* Season-to-Date
Influenza A	2,753	4,196	4,604	13,528
Influenza B	128	173	128	640
Influenza Unknown Or Untyped	55	122	83	278
Total	2,936	4,491	4,815	14,446

†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 4, 2014 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Table 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 51 (December 14 – December 20, 2014)

Age Group	Week 51 Cases	Week 51 Rate‡	2014-2015* Season-to-Date	2014-2015* Season-to-Date Rate‡
00-04	910	240	2,709	714
05-14	1,808	230	5,269	671
15-64	1,601	40	5,054	127
65+	496	56	1,143	160
Total	4,815	80	14,446	240

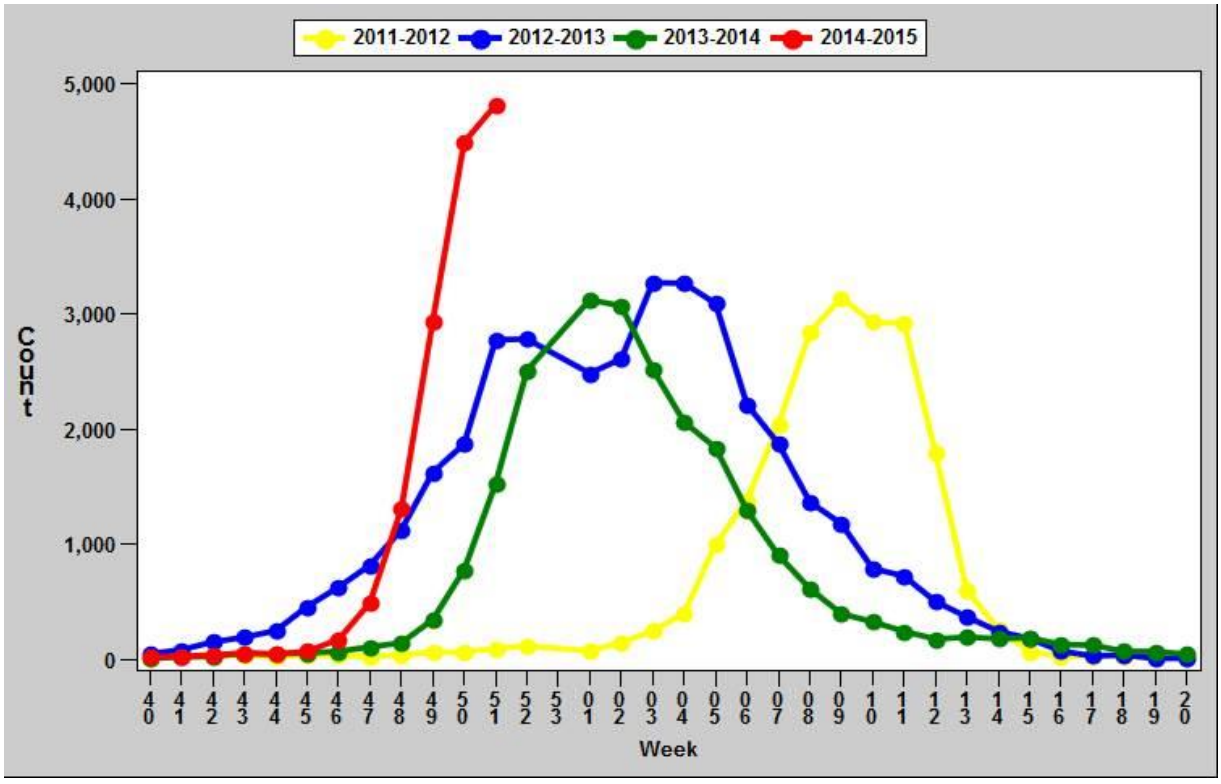
† Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza Season begins Week Ending October 4, 2014 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Table 3. Number of Laboratory-positive† Influenza Cases and Case Rates by Region, Missouri, CDC Week 51 (December 14 – December 20, 2014)

District	Week 51 Cases	Week 51 Rate‡	2014-2015* Season-to-Date	2014-2015* Season-to-Date Rate‡
CE	589	88	2,327	347
EA	1,695	76	5,769	257
NW	1,217	77	3,665	232
SE	595	125	1,424	300
SW	719	68	1,261	119
Total	4,815	80	14,446	240

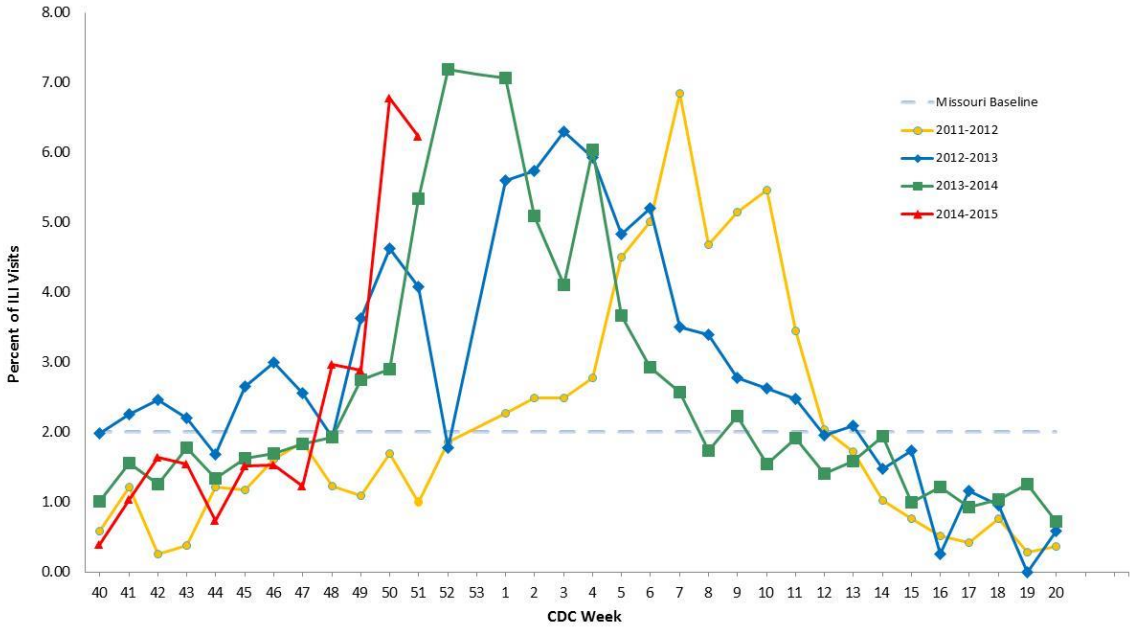
† Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza Season begins Week Ending October 4, 2014 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡ Incidence Rate per 100,000 population

Graph 1. Number of Laboratory-positive† Influenza Cases by CDC Week, Missouri, 2011-2015*



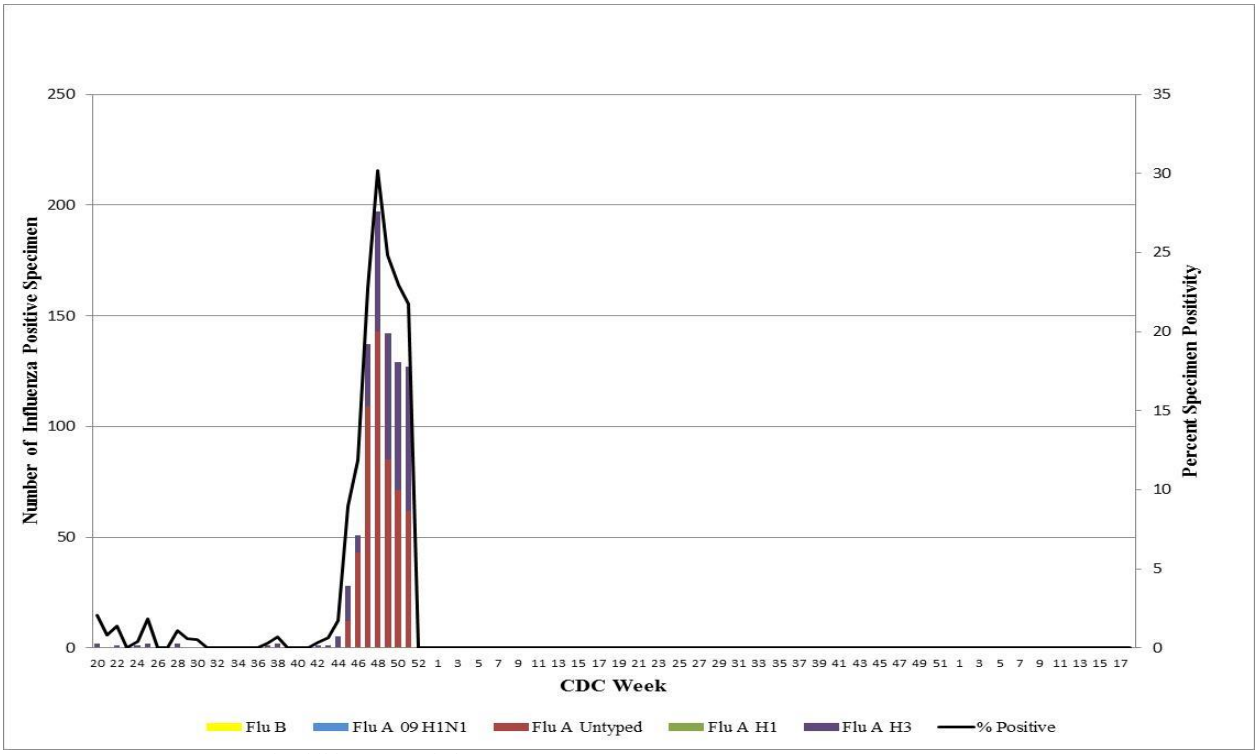
† Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*2014-2015 Season-to-Date through the week ending December 20, 2014 (Week 51). Data Source: Missouri Health Information Surveillance System (WebSurv).

Graph 2. Percentage of Visits for Influenza-like-Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2011-2015*



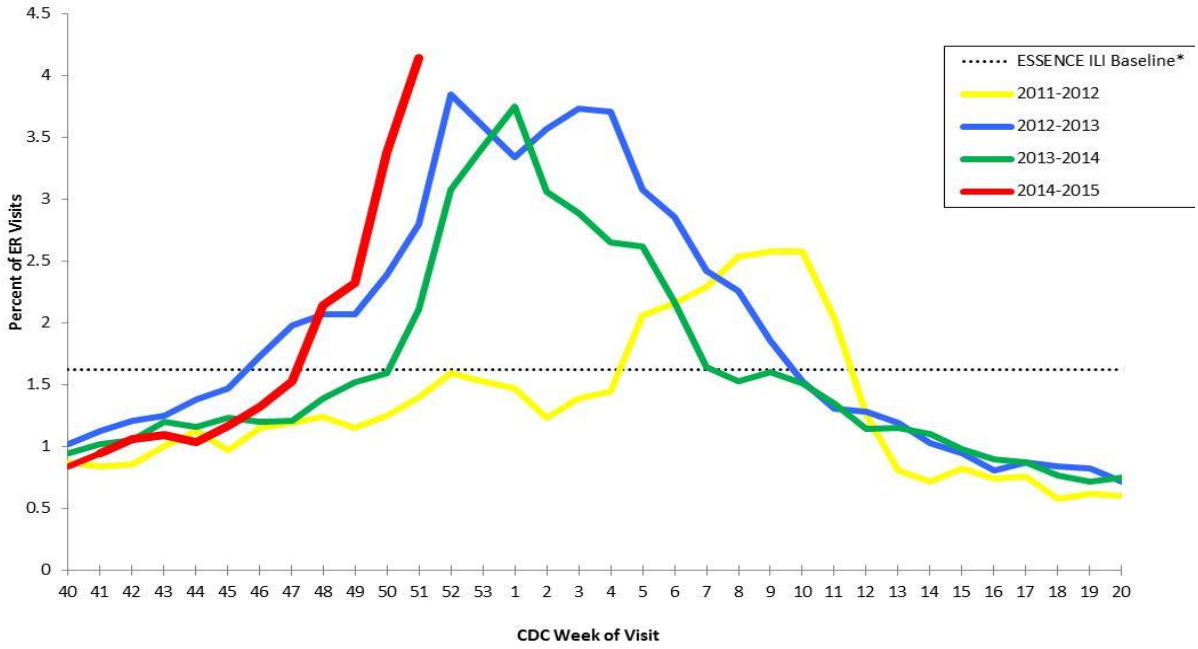
*2014-2015 Season-to-Date through the week ending December 20, 2014 (Week 51)

Graph 3. St. Louis Children's Hospital Season-to-Date PCR (+) Influenza Test by CDC Week



*Data Source: St. Louis Children's Hospitals
*This data is based on testing in all age groups in St Louis metro and SE Missouri
*Influenza Season begins Week Ending October 4, 2014 (CDC Week 40)

Graph 4. Percentage of Emergency Room Visits with Chief Complaint of Influenza-like Illness (ILI), ESSENCE Participating Hospitals in Missouri, 2011-2015†



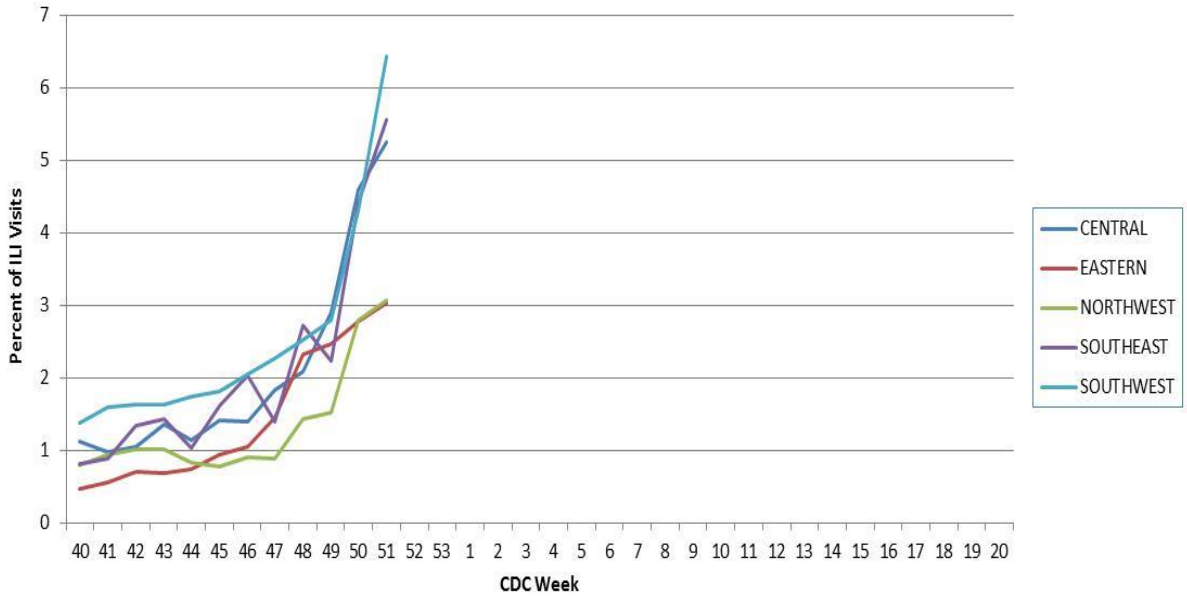
†Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE. Includes data from 96 reporting facilities in Missouri (http://health.mo.gov/data/essence/pdf/moilmap.pdf).
*ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2011-13) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations.

Table 4. Percentage of Emergency Room Visits with Chief Complaint of Influenza-like Illness (ILI) from ESSENCE Participating Hospitals by Age Group, Missouri, CDC Week 51 (December 14 – December 20, 2014)

District	Age 0-4	Age 5-17	Age 18-44	Age 45-64	Age 65+	Total Percentage
Northwest	3.1%	7.0%	2.6%	2.5%	1.6%	3.1%
Central	11.0%	11.2%	4.8%	2.6%	2.7%	5.3%
Eastern	3.6%	5.8%	3.3%	1.8%	1.9%	3.0%
Southeast	12.2%	15.6%	4.0%	2.7%	1.9%	5.6%
Southwest	14.7%	17.4%	3.7%	2.7%	2.2%	6.4%
Statewide	**6.6%**	**10.2%**	**3.4%**	**2.3%**	**2.0%**	**4.1%**

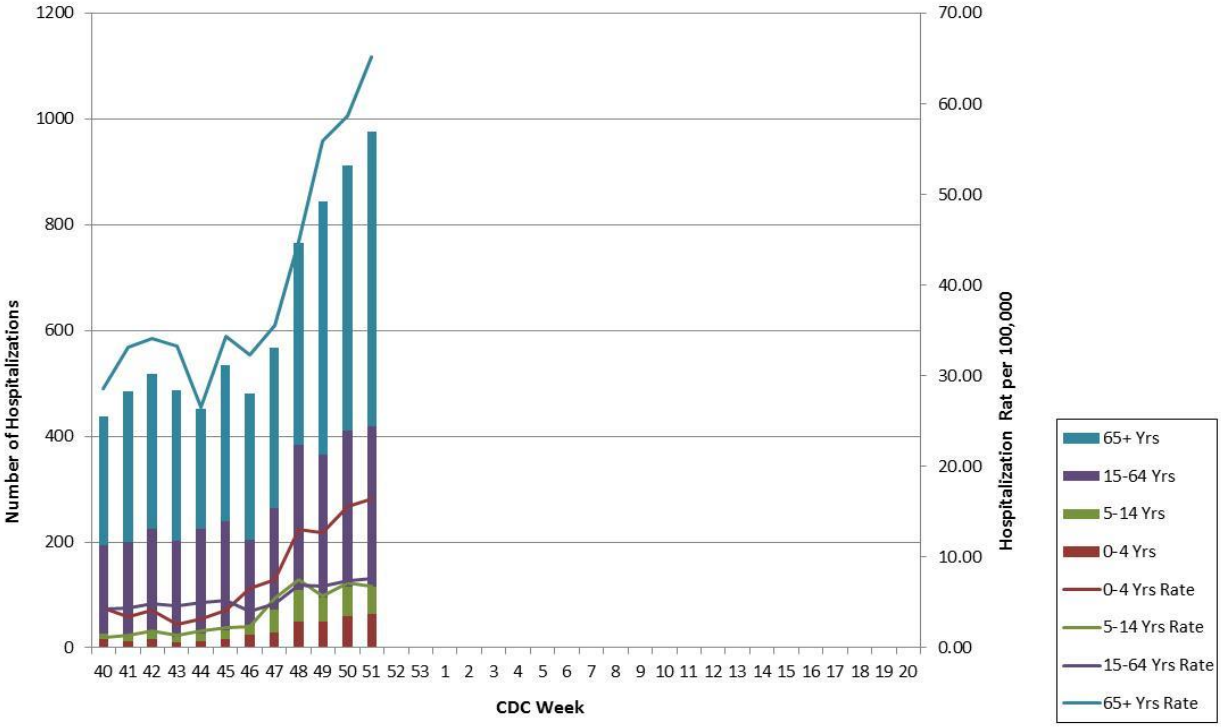
†Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE. ESSENCE includes data from 96 reporting facilities in Missouri (http://health.mo.gov/data/essence/pdf/moilmap.pdf).

Graph 5. Percentage of Emergency Room Visits with the Chief Complaint of Influenza-like Illness (ILI) for each District by CDC Week, ESSENCE Participating Hospitals in Missouri, 2014-2015*



†Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE. ESSENCE includes data from 95 reporting facilities in Missouri (http://health.mo.gov/data/essence/pdf/moilmap.pdf).
*2014-2015 Season-to-Date through the week ending December 20, 2014 (Week 51)

Graph 6. Number and Rate of Patients by Age Group Hospitalized with Influenza and/or Pneumonia Syndromes at Participating Missouri Hospitals, by CDC Week, 2014-2015*



†Data Source: Hospitalization data from Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE HL7 messaging portal. Includes data from 96 reporting facilities in Missouri (http://health.mo.gov/data/essence/pdf/moilmap.pdf). Population data from DHSS Population MICA 2012 (http://health.mo.gov/data/mica/mica/population.php).
*2014-2015 Season-to-Date through the week ending December 20, 2014 (Week 51)

Additional Influenza Data Sources:

St Louis Children's Hospital Laboratory: http://slchlabtestguide.bjc.org/Default.aspx?url=228e5af5-6e12-4f73-a451-f12f6ab1215e

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

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