



Summary

Week 20: May 15-21, 2016

State influenza and influenza-like illness (ILI) activity:

- Week 20 marks the end of the production of the influenza season weekly report. The Florida Department of Health will continue to distribute influenza reports in abbreviated form during the summer months. Surveillance for influenza will continue during the summer with the focus on identification of outbreaks and unusually severe presentations of influenza or ILI.
- Florida reported “sporadic” activity to the Centers for Disease Control and Prevention (CDC) in week 20.
- Influenza activity this season peaked between weeks 7-11. This peak in activity occurred later than in the past six seasons.
- Emergency department (ED) and urgent care center (UCC) visits for ILI remained low, which is typical for this time in the influenza season.
- In recent weeks, the preliminary estimated number of deaths due to pneumonia and influenza (P&I) decreased and is below levels seen in previous seasons at this time.
- In week 20, the majority of counties reported “mild” or no influenza activity.
- No influenza-associated pediatric deaths were reported in week 20.
 - Seven influenza-associated pediatric deaths have been reported so far this season. While rare, Florida receives reports of influenza-associated pediatric deaths each season. **Annual vaccination remains the best way to protect children against influenza infection.**
- In week 20, no outbreaks of influenza or ILI were reported.
- In recent weeks, the most common influenza subtype detected at the Bureau of Public Health Laboratories (BPHL) has been influenza B, although influenza A 2009 (H1N1) has been the predominately circulating strain for the majority of the season. As Florida transitions into the summer months, we often see a late season change to influenza B as the most commonly circulating strain. This change has also been observed nationally.

National influenza activity:

- Influenza activity continues to decrease. Data suggests that influenza activity peaked nationally around week 10, which also coincided with the peak in Florida.
- CDC recommends that persons at high risk for developing complications from influenza infection (such as children and pregnant women) or very ill patients suspected of having influenza receive prompt treatment with antiviral drugs, even prior to laboratory confirmation.
- Influenza A 2009 (H1N1) is the predominately circulating strain for the season, however, influenza B has been the most commonly identified virus type in recent weeks. This late season circulation of influenza B is expected.
- The vast majority of circulating influenza viruses analyzed this season remain similar to the vaccine virus components for this season's flu vaccines.
 - CDC reported that the 2015-16 influenza vaccine formulations are a good match for the currently circulating strains of influenza.
- Recent studies have shown that women who received the influenza vaccine while pregnant were significantly less likely to experience stillbirth compared to unvaccinated pregnant women. Additionally, infants born to vaccinated women were shown have a 60% lower risk for influenza or ILI infection in the first six months of life compared to infants born to unvaccinated women. Additional research is needed to make strong conclusions on the subject. To learn more, please visit: <http://cid.oxfordjournals.org/content/early/2016/03/10/cid.ciw082.abstract> and <http://www.jwatch.org/na41211/2016/05/03/influenza-vaccination-during-pregnancy-protects-infant>.
- Highly pathogenic avian influenza (HPAI) H5 viruses identifications in birds are expected during the spring and summer of 2016. Influenza (HPAI) H5 has not been identified in Florida birds yet, but identifications are anticipated. No human HPAI infections have been identified in Florida or the rest of the nation. To learn more, please visit: www.floridahealth.gov/novelflu.

Weekly State Influenza Activity

Sporadic

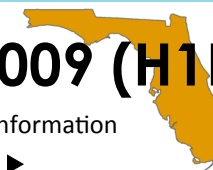
For more information
see page 2 ►



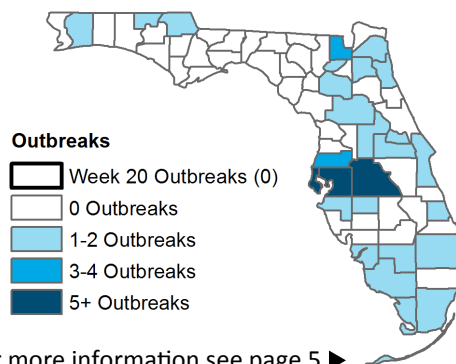
Predominately Circulating Strain

A 2009 (H1N1)

For more information
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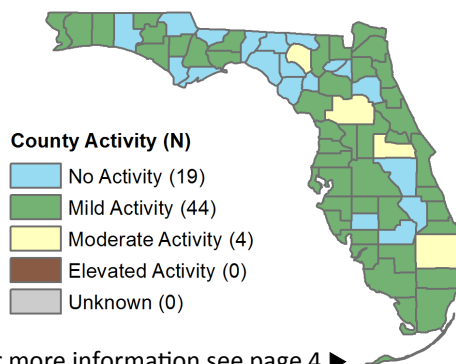


Influenza and ILI Outbreaks Reported as of 5/21/2016



For more information see page 5 ►

County Influenza Activity



For more information see page 4 ►

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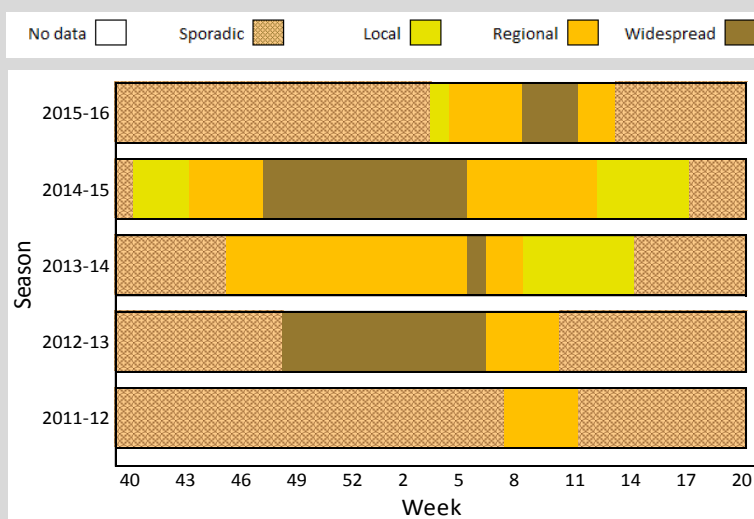
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Weekly State Influenza Activity Reporting

Below is the state influenza activity level reported to CDC each week since the 2011-12 influenza season. **Florida reported sporadic influenza activity for week 20.**



The graphic above shows how influenza activity in Florida can vary widely from season to season. This unpredictability underscores the importance of influenza surveillance in Florida.

Influenza surveillance goals:

- Influenza surveillance is conducted to detect changes in the influenza virus. These data are used to help determine the annual national vaccine composition and to prepare for potential epidemics or pandemics.
- Surveillance is also conducted to identify unusually severe presentations of influenza infection, detect outbreaks, and determine seasonal influenza trends in order to guide influenza prevention, particularly in high-risk populations like children, adults ≥65 years old, and pregnant women.
- See the back page of this report for more information on influenza surveillance systems used in Florida: Page 11 ►

Statewide ILI Visits

Influenza-like illness (ILI) is defined as a fever ≥100°F AND sore throat and/or cough *in the absence* of another known cause.

ED and UCC Visits for ILI by Flu Season

ED = emergency department, UCC = urgent care center, ILI = influenza-like illness

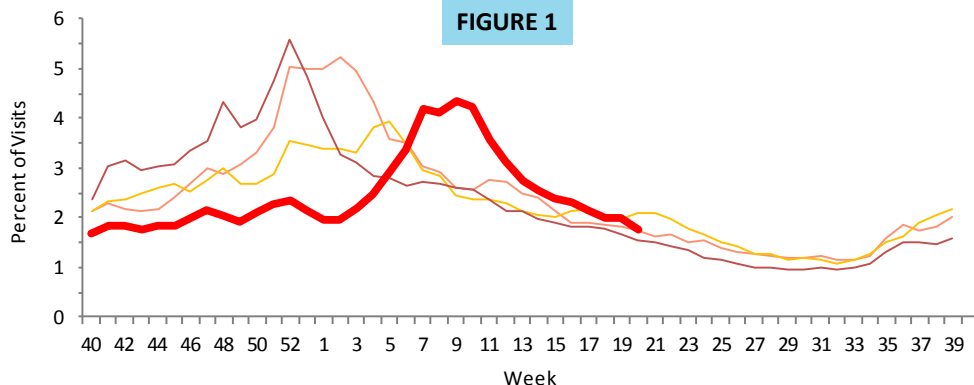


Figure 1 shows the percent of visits for ILI from ED and UCC chief complaint data for ESSENCE-FL participating facilities (n=265), week 40, 2012 to week 20, 2016.

In week 20, the percent of visits to EDs and UCCs for ILI decreased and is similar to levels seen in previous seasons at this time. Peak activity this season occurred in week 9.

2015-16 2014-15 2013-14 2012-13

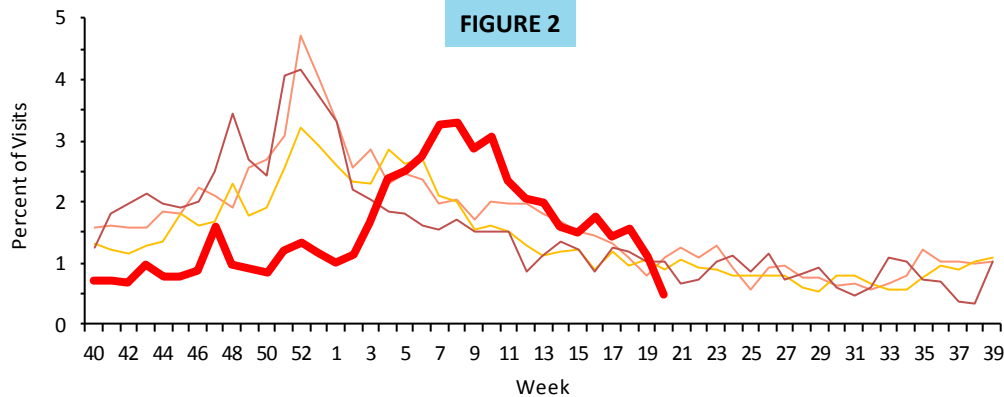
2015-16 2014-15 2013-14 2012-13

Visits for ILI to Outpatient Providers by Flu Season

ILI = influenza-like illness

Figure 2 shows the percent of visits for ILI reported by ILINet outpatient providers statewide (n=16), week 40, 2012 to week 20, 2016.

In week 20, the percent of visits for ILI reported by ILINet outpatient providers decreased and is below levels seen in previous seasons at this time.



P&I Deaths* from Vital Statistics by Flu Season

P&I = pneumonia and influenza

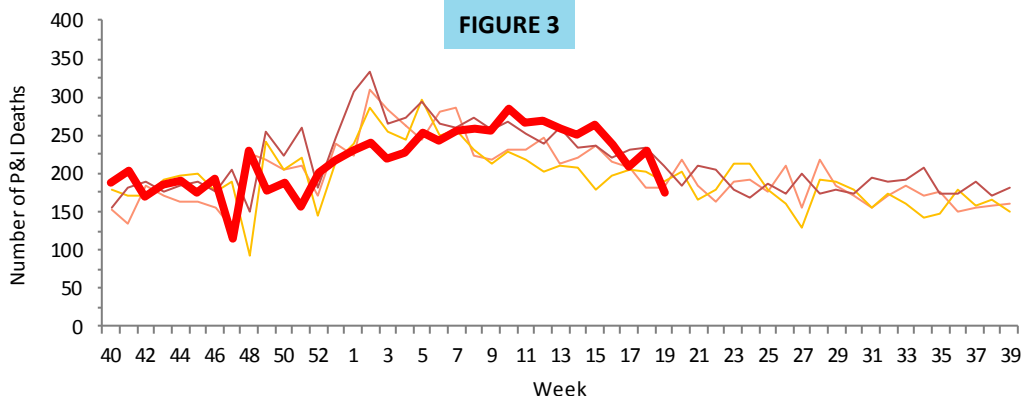


Figure 3 shows P&I deaths* for all Florida counties from the Bureau of Vital Statistics, as reported into ESSENCE-FL, week 40, 2012 to week 19, 2016.

As of week 19 (ending May 14, 2016), 7,219 P&I deaths have been reported in the 2015-16 influenza season.

The number of P&I deaths decreased and is below levels seen in previous seasons at this time. P&I deaths tend to occur later in the season as at-risk populations develop complications from influenza infection.

Peak numbers of P&I deaths occurred between weeks 10 and 15 in the five weeks following peak influenza activity statewide.

P&I Deaths*, Multi-Year Regression Model

P&I = pneumonia and influenza

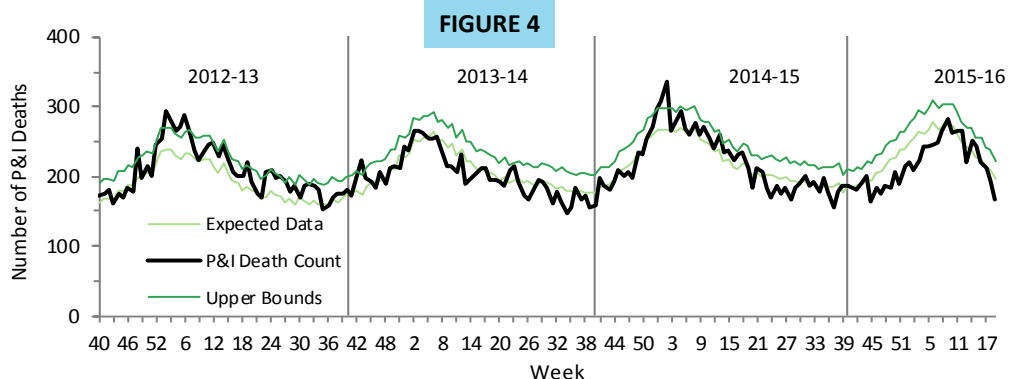
Figure 4 shows the number of preliminary estimated P&I deaths* for all Florida counties, the number of deaths predicted using a multi-year regression model, and the upper bound of the 95% confidence interval for this prediction.

For week 19 (ending May 14, 2016):

167 preliminary estimated P&I deaths were reported.

The upper bound of the 95% confidence interval for prediction is 222 deaths, with no excess deaths.

The number of P&I deaths is below levels seen in previous seasons at this time. P&I deaths tend to occur later in the season as at-risk populations develop complications from influenza infection.



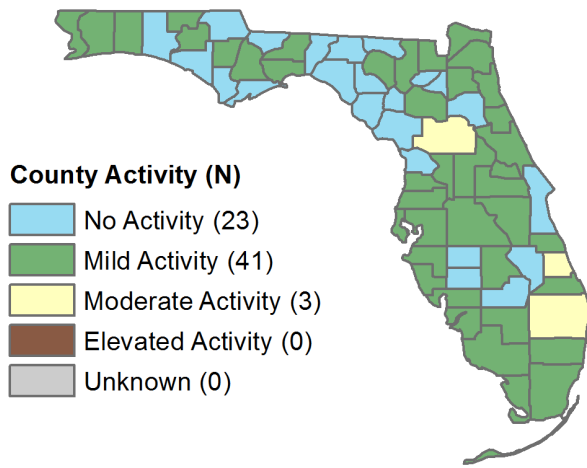
* Current season P&I death counts are preliminary estimates, and may change as more data are received. The most recent data available are displayed here. Vital statistics death records received in ESSENCE-FL are considered to be complete through week 19, 2016.

County influenza activity data are reported by county health departments through EpiGateway on a weekly basis. Information is used to determine county activity and includes laboratory results, outbreak reports, and ILI activity. **The figures below reflect a county health department's assessment of influenza activity within their county. For week 20, two counties reported "increasing" activity, 26 counties reported activity at a "plateau," 38 counties reported "decreasing" activity, and one county reported "unknown" activity.**

County Influenza Activity

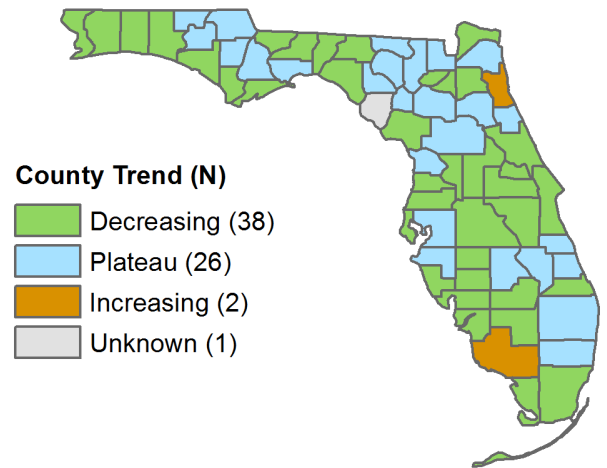
Map 1

County Influenza Activity Level for Week 20
Reported by 9:30 a.m. May 25, 2016



Map 2

County Influenza Activity Trend for Week 20
Reported by 9:30 a.m. May 25, 2016



As of 9:30 a.m. May 25, 2016, a total of 67 (100%) counties reported their weekly level of influenza activity. Please note that data reported after the deadline Tuesday at 5 p.m. are recorded but may not be included in the activity maps for this week.

Influenza-Associated Pediatric Deaths

Influenza-Associated Pediatric Deaths

FIGURES 5 - 7

Figures 5-7 show the number of pediatric deaths associated with influenza infection, week 40, 2011 to week 20, 2016.

No influenza-associated pediatric deaths were reported in week 20.

Seven influenza-associated pediatric deaths have been reported so far this season. While rare, Florida receives reports of influenza-associated pediatric deaths each season. **Most deaths occurred in unvaccinated children with underlying health conditions.**

Children, especially those with underlying health conditions, are at higher risk of severe outcomes from influenza infection. **Annual vaccination remains the best way to protect against the flu. CDC recommends vaccination as long as influenza viruses are circulating.** To learn more, please visit: www.cdc.gov/flu/protect/whoshouldvax.htm#annual-vaccination.

Figure 5: Influenza-Associated Pediatric Deaths by Vaccination Status



Figure 6: Influenza-Associated Pediatric Deaths by Medical History

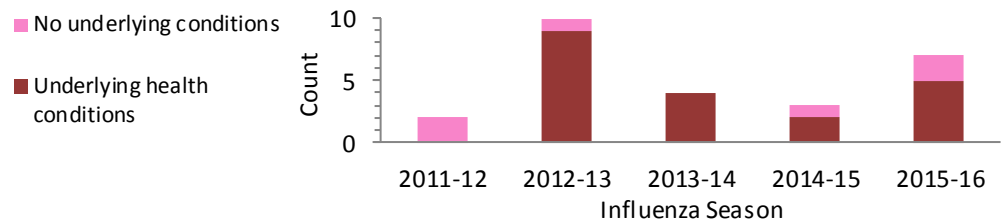
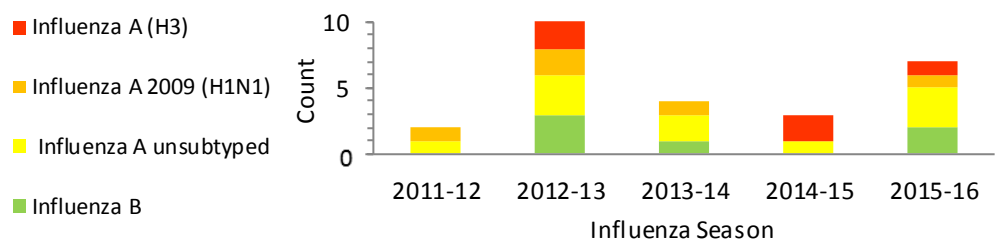


Figure 7: Influenza-Associated Pediatric Deaths by Strain Type



Reported Influenza and ILI Outbreaks

ILI = influenza-like illness

No outbreaks of ILI were reported in week 20; 58 outbreaks of influenza and ILI have been reported into EpiCom so far in the 2015-16 season.

Map 3 Influenza and ILI Outbreaks by County Week 40 through Week 20, 2016

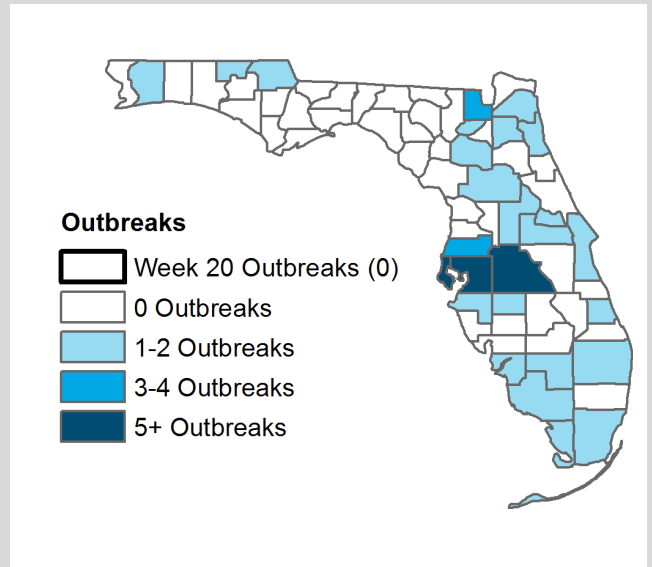


TABLE 1: Summary of Florida Influenza and ILI Outbreaks by Setting, Week 40 through Week 20, 2016

Setting	Total	A (H3)	A 2009 (H1N1)	A Unspecified	A & B Unspecified	B Yamagata	B Victoria	B Unspecified	Influenza Unspecified	Other respiratory viruses	Currently unknown pathogen
Schools	19	-	-	7	4	2	-	-	-	1 - respiratory syncytial virus (RSV)	5
Daycares	7	-	-	2	-	-	-	-	2	2 - RSV	1
Jails & prisons	9	-	5	3	-	-	-	-	-	-	1
Mental health facilities	-	-	-	-	-	-	-	-	-	-	-
Nursing homes & long term care facilities	20	1	2	4	-	-	1	5	-	1 - rhinovirus, 1 - human metapneumovirus	5
Health care facilities	1	-	-	1	-	-	-	-	-	-	-
Other	2	-	1	1	-	-	-	-	-	-	-
Total	58	1	8	18	4	2	1	5	2	5	12

Reported Influenza and ILI Outbreaks by Facility Type

ILI = influenza-like illness

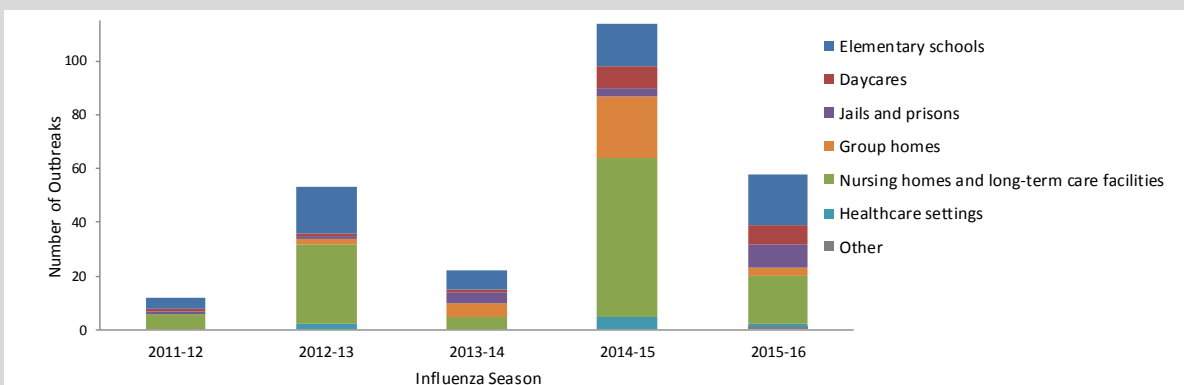


Figure 8 shows the distribution of outbreaks by facility type and season.

In previous seasons, summer outbreaks were most commonly reported in nursing homes and long term care facilities. ILI activity in facilities serving older age groups is expected at this time in the influenza season.

BPHL Viral Influenza Specimen Testing

BPHL = Bureau of Public Health Laboratories

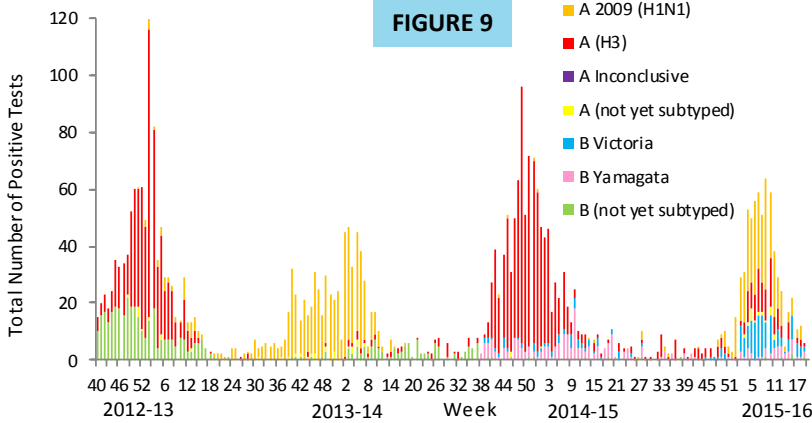


FIGURE 9

Figures 9 and 10 use BPHL viral surveillance data.

Figure 9 shows the number of influenza-positive specimens, tested by subtype and lab event date*.

Influenza A 2009 (H1N1) has been the most commonly identified influenza subtype by BPHL since December 2015.

In recent weeks, the percent of specimens subtyped as influenza B Victoria lineage and influenza B Yamagata lineage increased. This change has also been observed nationally. This late season circulation of influenza B is expected.

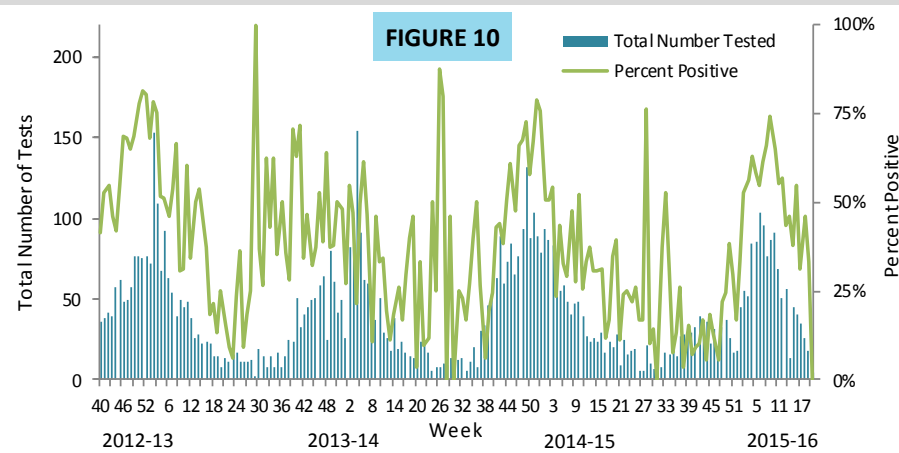


FIGURE 10

Figure 10 shows the number of specimens tested by BPHL and the percent that were positive for influenza by lab event date*.

In recent weeks, the number of specimens tested for influenza and the percent of laboratory results testing positive for influenza has decreased. Both indicators are similar to levels seen in previous seasons at this time.

**TABLE 2: Bureau of Public Health Laboratories (BPHL) Viral Surveillance by Lab Event Date*
Reported by 10:00 a.m. May 25, 2016**

Influenza Type	Current Week 20	Previous Week 19	Current 2015-16 Season
Total Specimens Tested	4	18	1501
Influenza positive specimens (% of total specimen tested)	0 (100%)	6 (33%)	693 (46%)
Influenza A 2009 (H1N1) (% of influenza positives)	-	-	325 (47%)
Influenza A (H3) (% of influenza positives)	-	1 (17%)	145 (21%)
Influenza A not yet subtyped (% of influenza positives)	-	-	15 (2%)
Influenza A inconclusive** (% of influenza positives)	-	-	5 (1%)
Influenza B Yamagata (% of influenza positives)	-	2 (33%)	50 (7%)
Influenza B Victoria (% of influenza positives)	-	2 (33%)	148 (21%)
Influenza B not yet subtyped (% of influenza positives)	-	1 (17%)	5 (1%)

*"Lab event date" is defined as the earliest of the following dates associated with influenza testing at the laboratory: date specimen collected, date received by the laboratory, date reported or date inserted.

**Influenza A inconclusive test results are due to technical difficulties including an insufficient sample for testing or internal sample control failure and occur occasionally in routine laboratory testing.

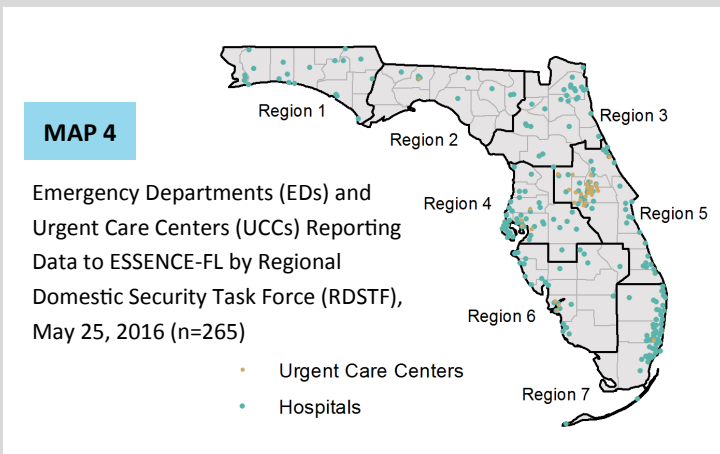
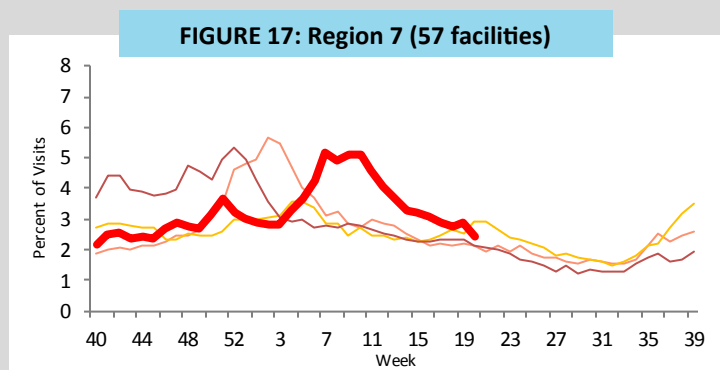
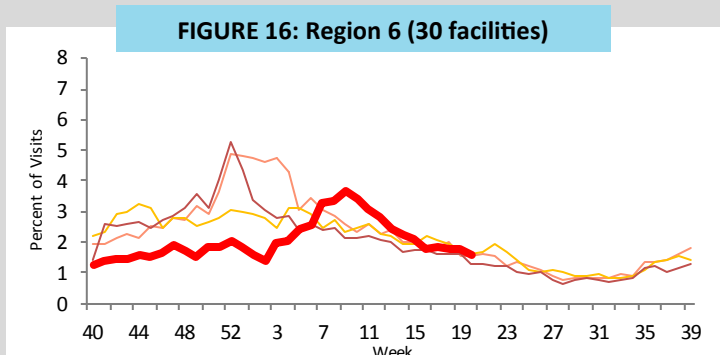
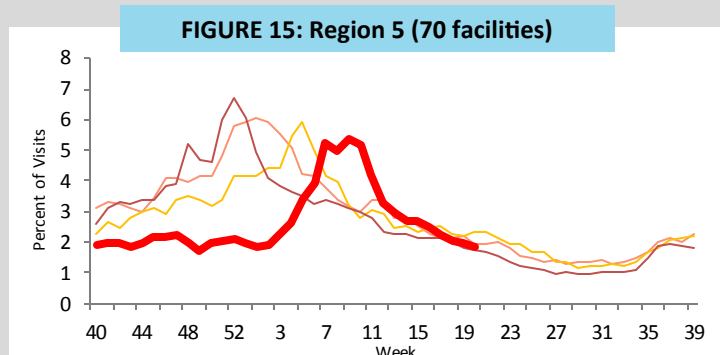
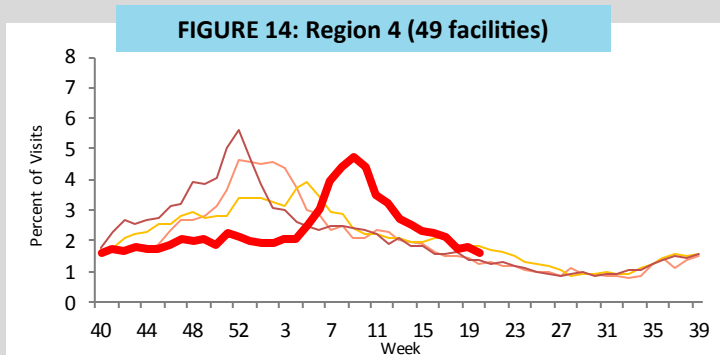
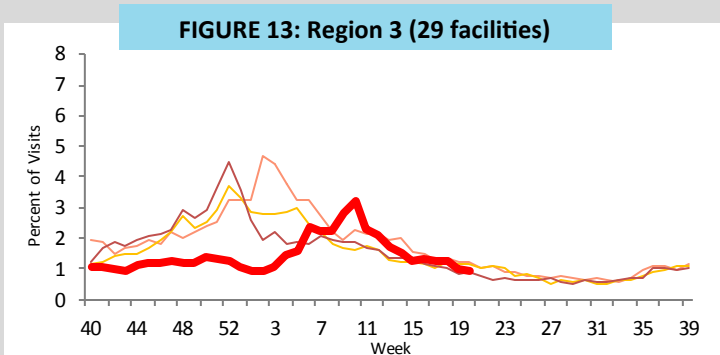
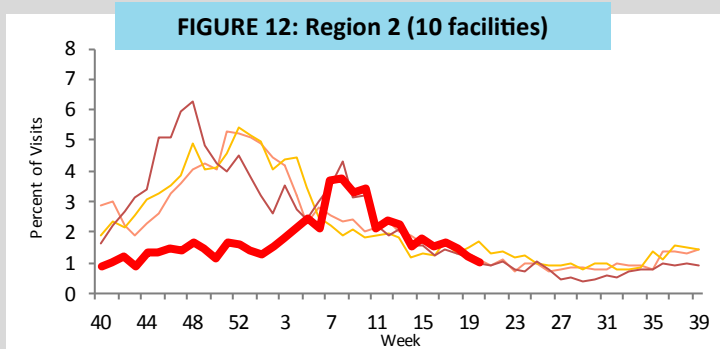
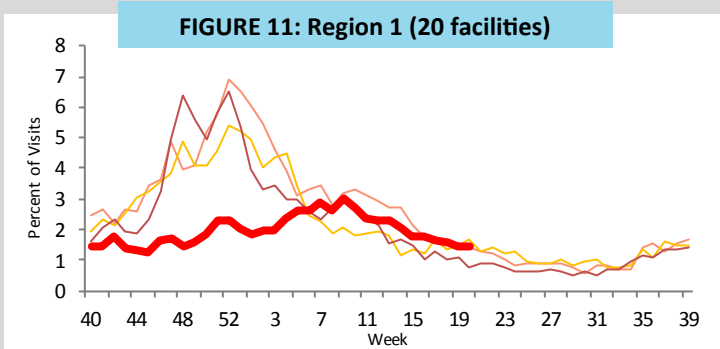
For county-specific laboratory data, please refer to the Flu Lab Report in Merlin. For instructions on how to use the Flu Lab Report, please see the Guide to Flu Lab Report on the Bureau of Epidemiology website: www.floridahealth.gov/diseases-and-conditions/influenza/_documents/flulabreportguide.pdf

ED and UCC Visits for ILI by Region

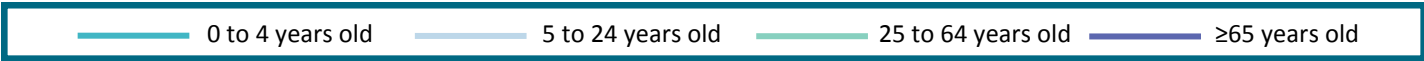
ED = emergency department, UCC = urgent care center, ILI = influenza-like illness

Figures 11-17 show the percent of visits for ILI from ED and UCC chief complaints for ESSENCE-FL participating facilities (n=265), by ESSENCE-FL Regional Domestic Security Task Force (RDSTF) regions (see map 4) from week 40, 2012 to week 20, 2016*. In

week 20, the percent of ED and UCC visits for ILI decreased in all regions. The percent of ED and UCC visits for ILI is similar to levels seen in previous seasons in all regions at this time.



*There is no week 53 for the 2012-13, 2013-14, and 2015-16 seasons; the week 53 data point for those seasons is an average of weeks 52 and 1.

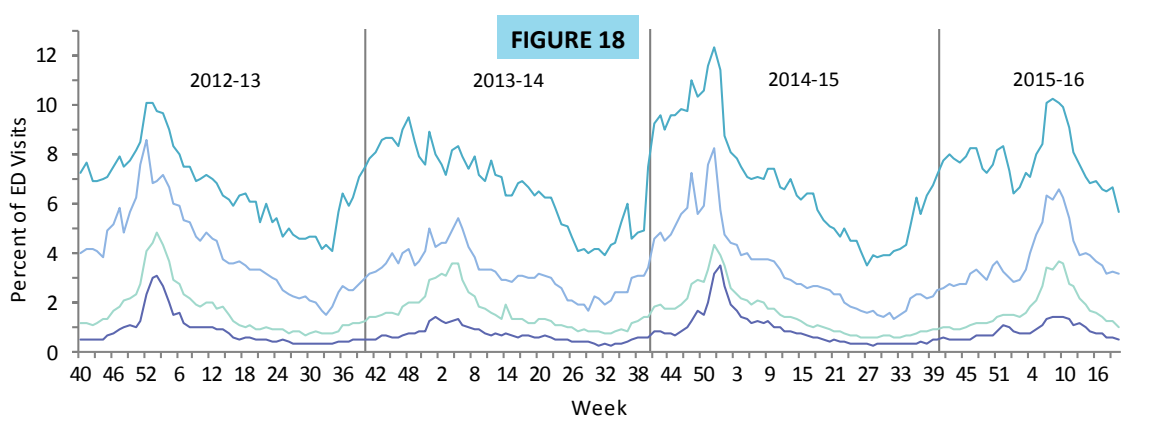


ED and UCC Visits for ILI by Age Group

ED = emergency department, UCC = urgent care center, ILI = influenza-like illness

Figure 18 shows the percent of visits for ILI from ED and UCC chief complaints by age group for ESSENCE-FL participating facilities (N=265), week 40, 2012 to week 20, 2016.

In week 20, ED and UCC visits for ILI decreased in all age groups. Levels are similar to those seen in previous seasons in all age groups at this time.



Visits to Outpatient Providers for ILI by Age Group*

ILI = influenza-like illness

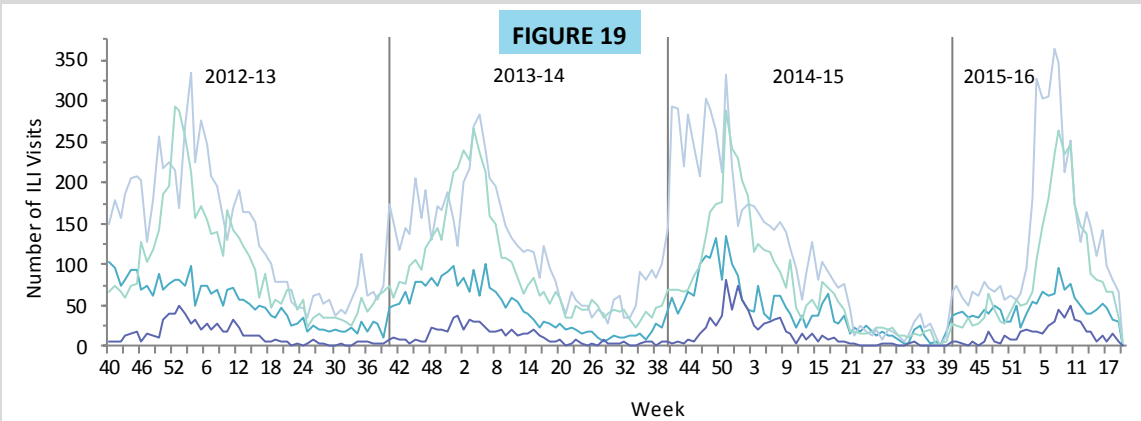


Figure 19 shows the number of visits for ILI reported by ILINet outpatient providers statewide (n=16) by age group, week 40, 2012 to week 20, 2016.

In week 20, the number of visits for ILI decreased in all age groups. Levels are similar to those seen in previous seasons in all age groups at this time. Increased influenza activity in the 5-24 age group typically comes ahead of other age groups.

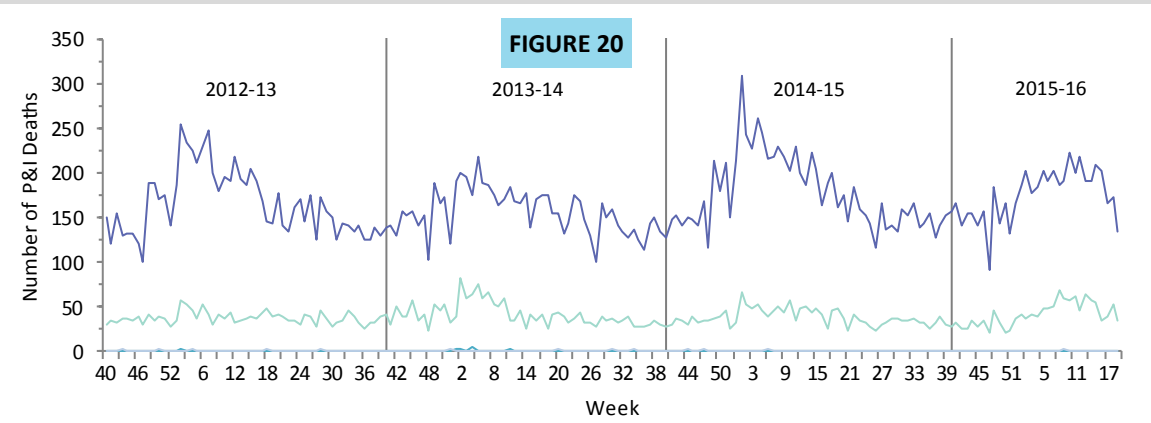
*Data presented here are counts, not proportions. This is because age group denominator data is not available through ILINet.

P&I Deaths* from Vital Statistics by Age Group

P&I = pneumonia and influenza

Figure 20 shows P&I deaths* for all Florida counties by age group, as reported into ESSENCE-FL, week 40, 2012 to week 19, 2016.

As of week 19 (ending May 14, 2016), the number of P&I deaths decreased or remained the same in all age groups. Levels are similar to those seen in previous seasons for all age groups at this time.



*Current season P&I death numbers are preliminary estimates, and may change as more data are received. The most recent data available are displayed here. Vital statistics death records received in ESSENCE-FL are currently considered to be complete through week 19, 2016.

ESSENCE-FL collects data daily from 265 EDs and UCCs. Data are processed into 11 different syndrome categories based on the patient's chief complaint. One of the categories is ILI, which is composed of chief complaints that include the words "influenza" or "flu," or complaints that contain "fever," "cough," and/or "sore throat." The Florida Department of Health uses ED and UCC chief complaint data to monitor influenza and ILI activity in a timely manner in groups at higher risk of severe health outcomes (such as hospitalization and death) from influenza infection. These at-risk groups include pregnant women, children ≤ 18 years old, and adults ≥ 65 years old.

2015-16 2014-15 2013-14 2012-13

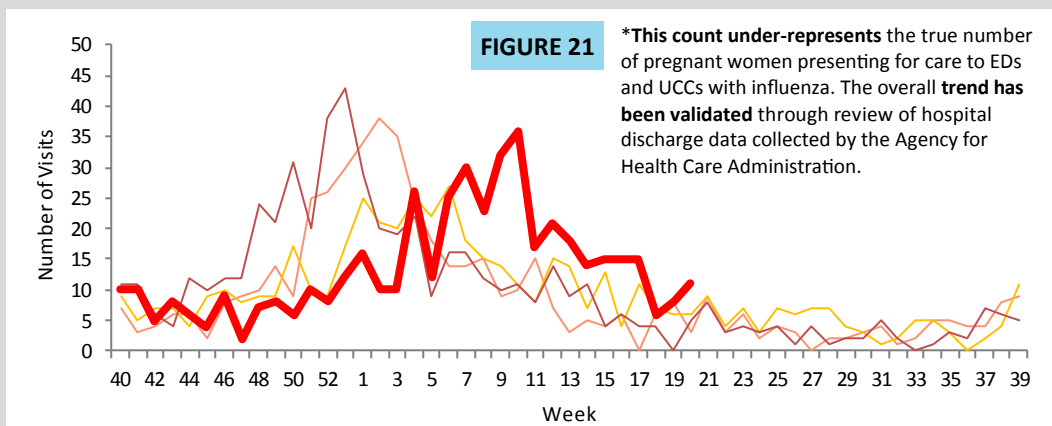
ED and UCC Visits for ILI by Pregnant Women

ED = emergency department, UCC = urgent care center, ILI = influenza-like illness

Pregnant women are at high risk for severe complications due to influenza infection.

Figure 21 shows the number of visits* to EDs and UCCs with chief complaints of influenza infection and pregnancy, as reported into ESSENCE-FL, week 40, 2012 to week 20, 2016.

In week 20, the number of visits to EDs and UCCs by pregnant women with mention of influenza increased and is above levels seen in previous



ED and UCC Visits for ILI by Children ≤ 18 Years Old

ED = emergency department, UCC = urgent care center, ILI = influenza-like illness

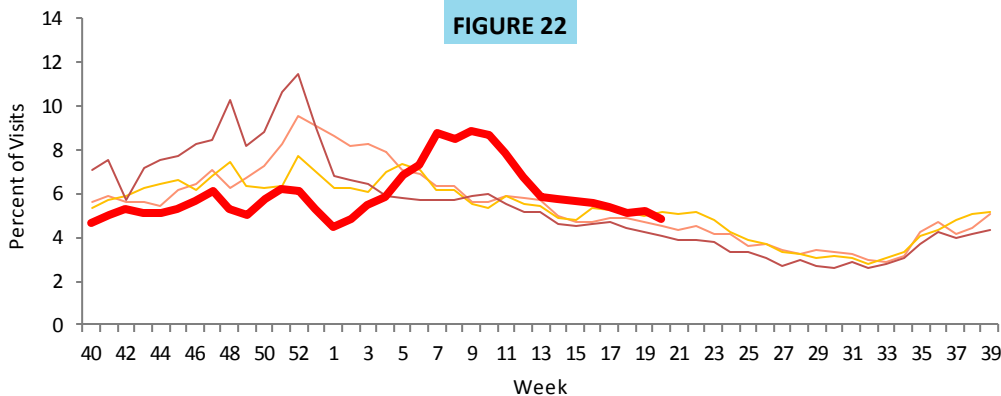


Figure 22 shows the percent of ILI visits among all ED and UCC visits for children ≤ 18 years old, as reported into ESSENCE-FL, week 40, 2012 to week 20, 2016.

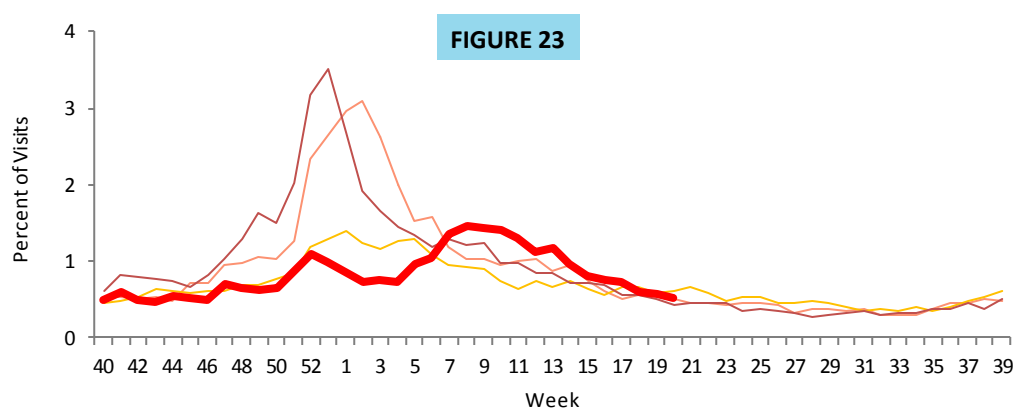
In week 20, the percent of ILI visits among all ED and UCC visits for children ≤ 18 years old decreased and is similar to levels seen in previous seasons at this time.

ED and UCC Visits for ILI by Adults ≥ 65 Years Old

ED = emergency department, UCC = urgent care center, ILI = influenza-like illness

Figure 23 shows the percent of ILI visits among all ED and UCC visits for adults ≥ 65 years old, as reported into ESSENCE-FL, week 40, 2012 to week 20, 2016.

In week 20, the percent of ILI visits among all ED and UCC visits for adults ≥ 65 years old decreased slightly and is similar to levels seen in previous seasons at this time.



ILI Activity by Setting Type

ILI = influenza-like illness

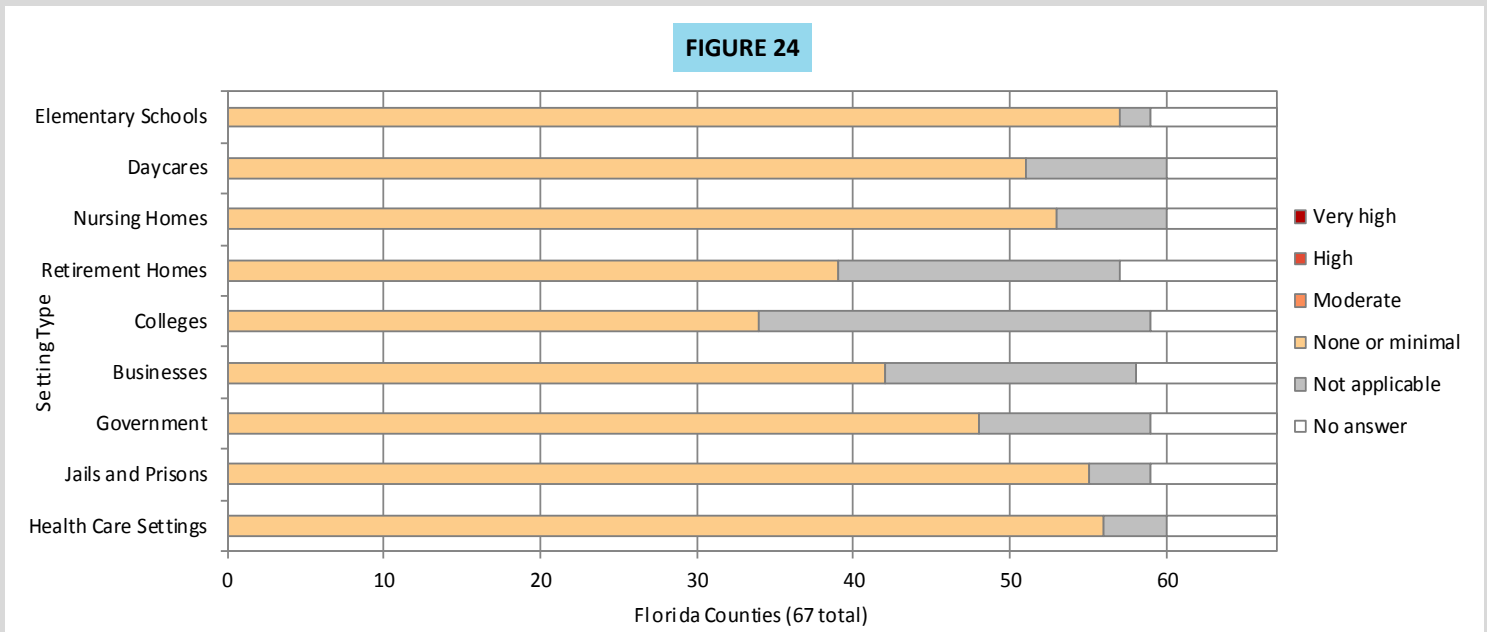
County health departments are asked to evaluate influenza activity in certain settings within their county. The assessment scale for activity ranges from no or minimal activity to very high activity.

Figure 24 shows the results of the influenza activity assessment for week 20, 2016.

Counties that reported “not applicable” for the listed settings are excluded from the denominator in the calculations below.

ILI Activity Levels:

- No or very minimal activity
- Moderate activity
- High activity
- Very high activity



Settings for Children under 18

In elementary schools, 57 counties (88%) reported no or minimal influenza or ILI activity.

In daycare settings, 51 counties (88%) reported no or minimal influenza or ILI activity.

Settings for Adults over 65

In nursing homes, 53 counties (88%) reported no or minimal influenza or ILI activity.

In retirement homes, 39 counties (80%) reported no or minimal influenza or ILI activity.

Settings for Adults ages 18 to 65

In colleges, 34 of 42 counties (81%) reported no or minimal influenza or ILI activity.

In businesses, 42 counties (82%) reported no or minimal influenza or ILI activity.

In government offices, 48 counties (86%) reported no or minimal influenza or ILI activity.

Other Unique settings

In jails and prisons, 55 counties (87%) reported no or minimal influenza or ILI activity.

In health care settings, including rehabilitation facilities and mental health facilities, 56 counties (89%) reported no or minimal influenza or ILI activity.

Laboratory Viral Respiratory Surveillance

FIGURE 25

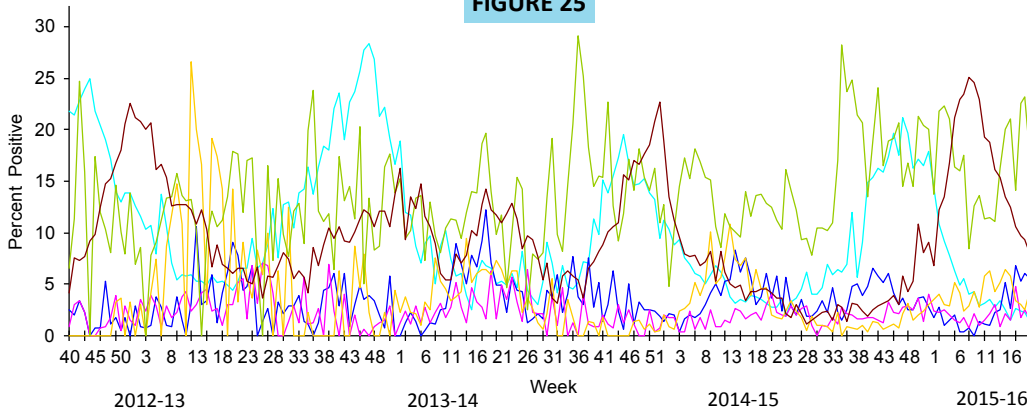
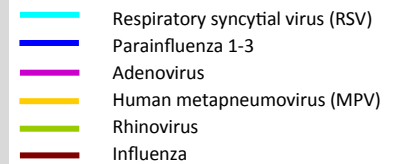


Figure 25 shows the percent of laboratory results testing positive for eight common respiratory viruses, as reported by hospital laboratories (n=11), week 40, 2012 to week 20, 2016.

In week 20, the percent of specimens testing positive for influenza remains similar to levels seen in previous seasons at this time. The percent of specimens testing positive for rhinovirus remained elevated in recent weeks.



Florida ILI Surveillance System Summary

Florida ILINet • Data source for figures: 2 and 19

- ILINet is a nationwide surveillance system composed of sentinel providers, predominately outpatient health care providers. Florida has 88 sentinel providers enrolled in ILINet who submit weekly ILI and total visit counts, as well as submit ILI specimens to the Bureau of Public Health Labs (BPHL) for confirmatory testing.

ESSENCE-FL Syndromic Surveillance and Vital Statistics Portal • Data source for figures 1, 3-7, 11-18, 20-23; map 4

- ESSENCE-FL measures trends in ILI visits from emergency departments (ED) and urgent care clinics (UCC) and influenza mortality by using death certificates from the Bureau of Vital Statistics. EDs and UCCs electronically transmit visit data into ESSENCE-FL daily or hourly.
- For statewide and regional data on influenza-like illness, visits are counted as ED or UCC visits to participating facilities that include influenza-like illness in patient chief complaints.

- For pneumonia and influenza (P&I) surveillance, death record literals are queried using a free-text query that searches for references to P&I on death certificates. Any mention of P&I in the death certificate literals, with certain exceptions, is counted as a P&I death.

County Influenza Activity in EpiGateway • Data source for figures 19, 24, and maps 1 and 2

- County health department (CHD) epidemiologists report their county's influenza and ILI surveillance data weekly into the EpiGateway website. Influenza activity is classified as: No Activity, Mild, Moderate or Elevated. Setting-specific influenza activity and influenza trend information is also reported. EpiGateway data provided by CHDs creates a county-by-county breakdown of influenza and ILI activity around the state.

Outbreak Reporting in EpiCom • Data source for figure 8, map 3, and table 1

- EpiCom tracks influenza and ILI outbreak investigations by county health departments. Reports by county health departments include the type of respiratory disease causing the outbreak and settings where outbreaks are occurring. CHD epidemiologists report outbreaks of influenza or ILI into EpiCom, Florida's online disease communication system.
- Outbreaks are defined as two or more cases of influenza or ILI in a specific setting.

Bureau of Public Health Laboratories (BPHL) • Data source for figures 9, 10 and table 2

- BPHL performs confirmatory testing and subtyping on surveillance specimens from ILINet sentinel providers, outbreak investigations, patients with severe or unusual influenza presentations and medical examiners.
- For county-specific laboratory data, please refer to the Flu Lab Report in Merlin. For instructions on how to use the Flu Lab Report, please see the Guide to Flu Lab Report on the Bureau of Epidemiology website at www.floridahealth.gov/diseases-and-conditions/influenza/_documents/flulabreportguide.pdf.

Laboratory Viral Respiratory Surveillance- Data sources for figure 25

- The National Respiratory and Enteric Virus Surveillance System (NREVSS) and Electronic Laboratory Reporting (ELR) collect data from laboratories in Florida on a weekly basis and monitor temporal and geographic patterns of six commonly circulating respiratory viruses. NREVSS data is collected by the Centers for Disease Control and Prevention (CDC) and ELR data is collected by the Florida Department of Health (DOH).

Case-Based Influenza Surveillance**Influenza-Associated Pediatric Deaths (Merlin)** • Data source for figure 5-7**Influenza due to Novel or Pandemic Strains (Merlin)**