



Summary

Week 16: April 17-23, 2016

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

- Florida reported “sporadic” activity to the Centers for Disease Control and Prevention (CDC) in week 16.
- **Influenza activity this season peaked between weeks 7-11. This peak in activity has occurred later than in the past six seasons.**
- **Emergency department (ED) and urgent care center (UCC) visits for ILI peaked in week 9 and continues to decline in nearly all regions in Florida. These levels are similar those seen in previous seasons at this time.**
- **In recent weeks, the preliminary estimated number of deaths due to pneumonia and influenza remained elevated. The most notable increase in deaths due to pneumonia and influenza were observed in the 55-74 age group.** Deaths due to pneumonia and influenza tend to occur later in the season as at-risk populations develop complications from influenza infection.
 - Due to a late season peak, we anticipate that we will continue to see an increase in pneumonia and influenza-associated deaths in the next few weeks.
- In week 16, the majority of counties reported “mild” or no influenza activity.
- **No influenza-associated pediatric deaths were reported in week 16.**
 - 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 the flu.**
- In week 16, two outbreaks of influenza and one outbreak of ILI were reported in a St. Johns County school, a Clay County school, and a Pinellas County nursing home, respectively.
- **Influenza A 2009 (H1N1) has been the most common influenza subtype identified by the Bureau of Public Health Laboratories (BPHL) this season.** As we transition into the summer months, it is not uncommon for the predominately circulating strain of influenza to change.

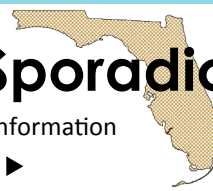
National influenza activity:

- Influenza activity continues to decrease. Data suggests that influenza activity peaked nationally around week 10, which also coincided with the peak in Florida.
- **The CDC recommends that persons at high risk for developing complications from influenza infections (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.
- The vast majority of circulating flu viruses analyzed this season remain similar to the vaccine virus components for this season’s flu vaccines.
 - The CDC reported preliminary influenza vaccine effectiveness estimates for the 2015-16 seasonal influenza vaccine. **The 2015-16 flu vaccine is a good match for the currently circulating strains of influenza.**
- A recently published Australian study suggested that pregnant Australian women who received the influenza vaccine while pregnant were significantly less likely to experience stillbirth compared to unvaccinated pregnant Australian women. Additional research is needed to make strong conclusions on the subject. To learn more, <http://cid.oxfordjournals.org/content/early/2016/03/10/cid.ciw082.abstract>.
- 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, www.floridahealth.gov/novelflu.

Weekly State Influenza Activity

Sporadic

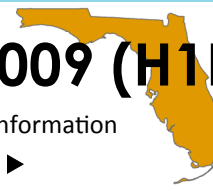
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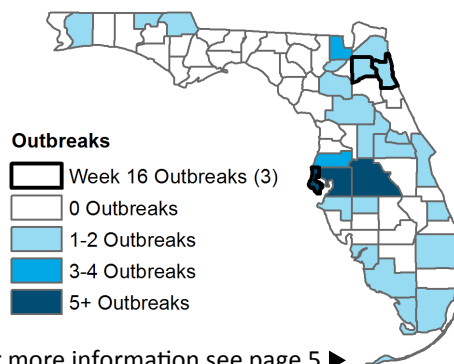
Predominately Circulating Strain

A 2009 (H1N1)

For more information
see page 6 ►

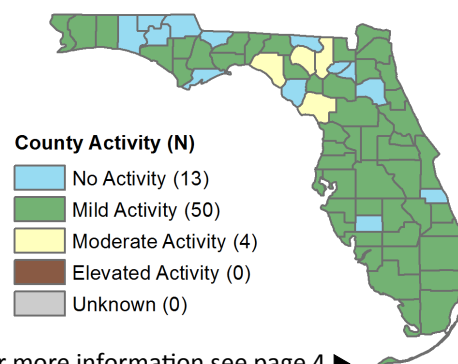


Influenza and ILI Outbreaks Reported as of 4/23/2016



For more information see page 5 ►

County Influenza Activity



For more information see page 4 ►

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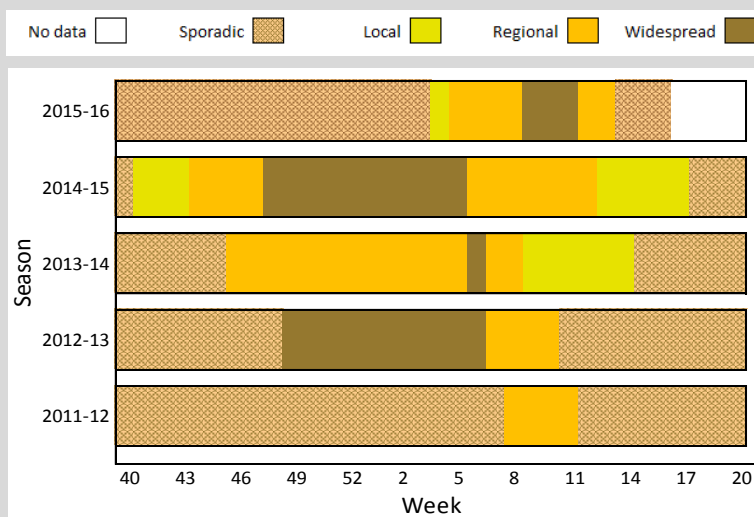
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Weekly State Influenza Activity Reporting

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 16.**



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

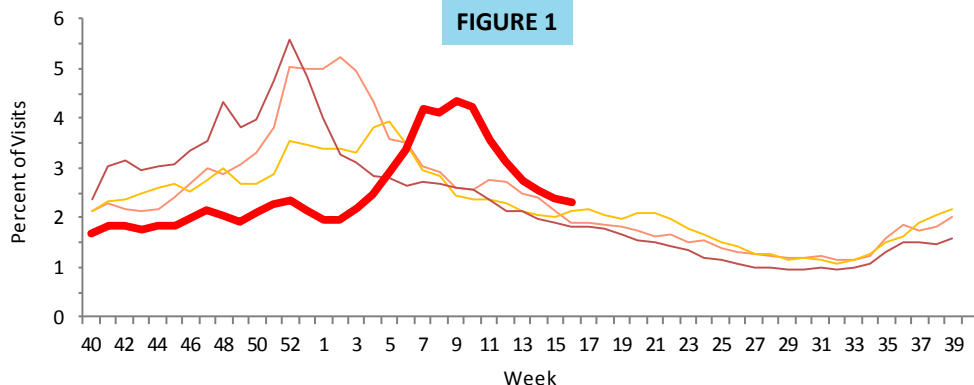


Figure 1 shows the percent of visits for ILI from ED and UCC chief complaint data for ESSENCE-FL participating facilities (n=265), week 40, 2012 to week 16, 2016.

In week 16, the percent of visits to EDs and UCCs for ILI decreased but remains slightly above levels seen in previous seasons at this time. Peak activity this season occurred in week 9.

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

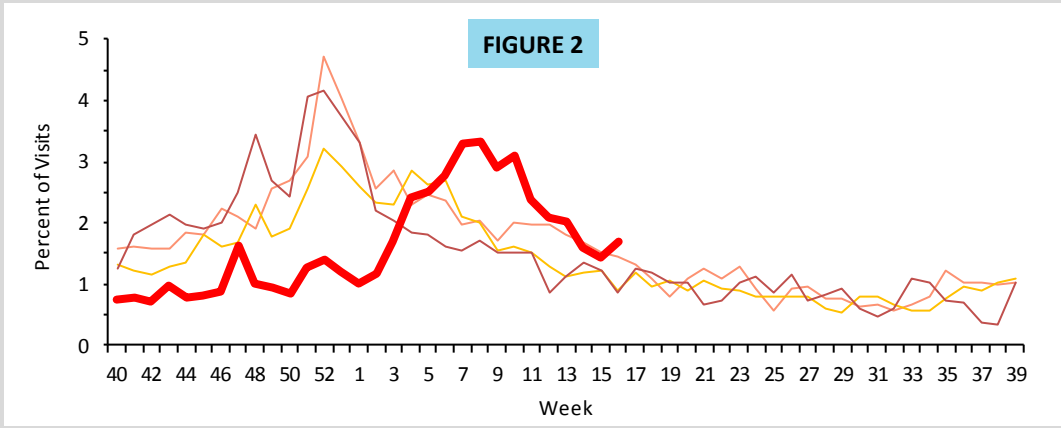


Visits for ILI to Outpatient Providers by Flu Season

ILI = influenza-like illness

Figure 2 shows the percent of visits for ILI reported by ILINet outpatient providers statewide (n=42), week 40, 2012 to week 16, 2016.

In week 16, the percent of visits for ILI reported by ILINet outpatient providers increased and is slightly above levels seen in previous seasons at this time.



P&I Deaths* from Vital Statistics by Flu Season

P&I = pneumonia and influenza

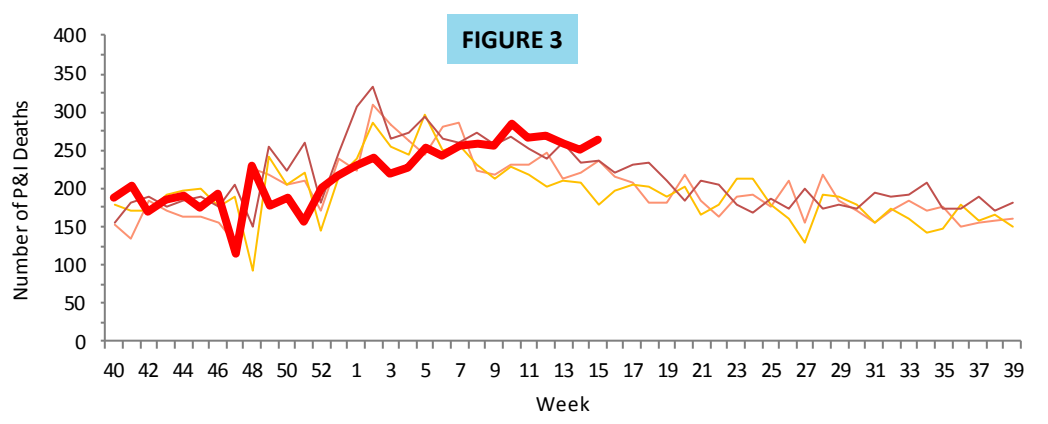


Figure 3 shows P&I deaths* for all Florida counties from the Bureau of Vital Statistics, as reported into ESSENCE-FL, week 40, 2012 to week 15, 2016.

As of week 15 (ending April 16, 2016), 6,369 P&I deaths have been reported in the 2015-16 influenza season.

The number of P&I deaths increased and remains above 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. Due to a late season peak, we anticipate that we will continue to see an increase in pneumonia and influenza-associated deaths in the next few weeks.

P&I Deaths*, Multi-Year Regression Model

P&I = pneumonia and influenza

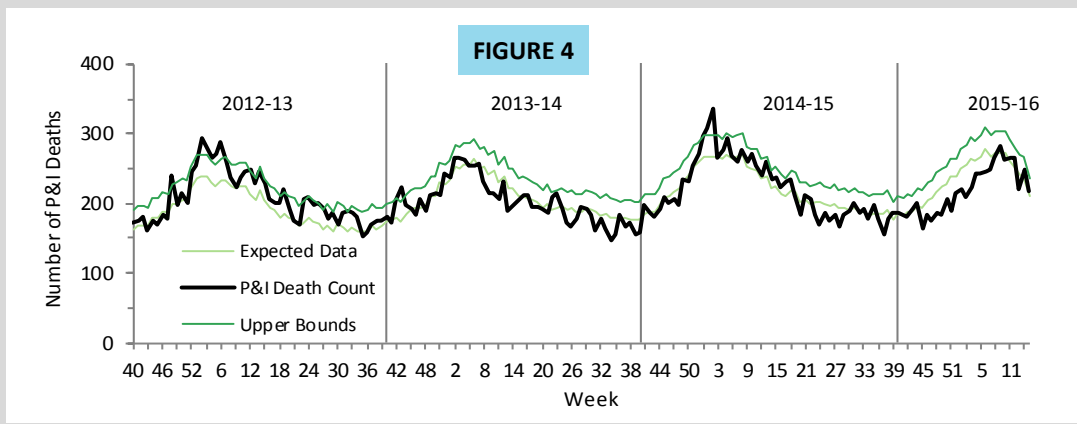
Figure 4 shows the number of preliminary estimated P&I deaths* for all Florida counties, the number of deaths predicted using a multi-year regression model, and the upper bound of the 95% confidence interval for this prediction.

For week 15 (ending April 16, 2016):

217 preliminary estimated P&I deaths were reported.

The upper bound of the 95% confidence interval for prediction is 237 deaths, with no excess deaths.

The number of P&I deaths is slightly above 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.



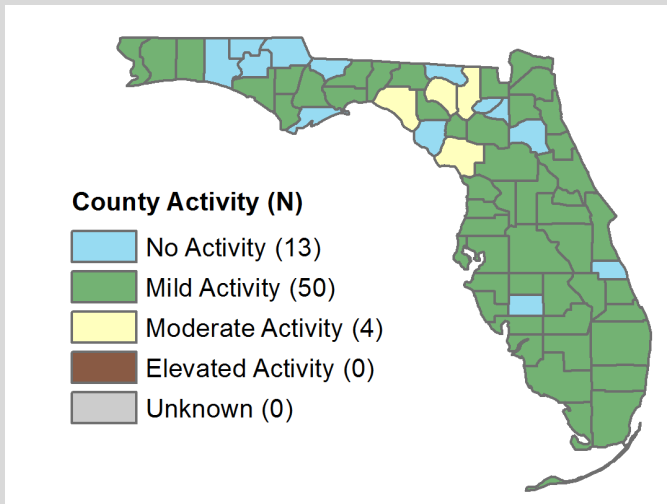
* Current season P&I death counts are preliminary estimates, and may change as more data are received. The most recent data available are displayed here. Vital statistics death records received in ESSENCE-FL are considered to be complete through week 15, 2016.

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 16, two counties reported "increasing" activity, 30 counties reported activity at a "plateau," and 35 counties reported "decreasing" activity.**

County Influenza Activity

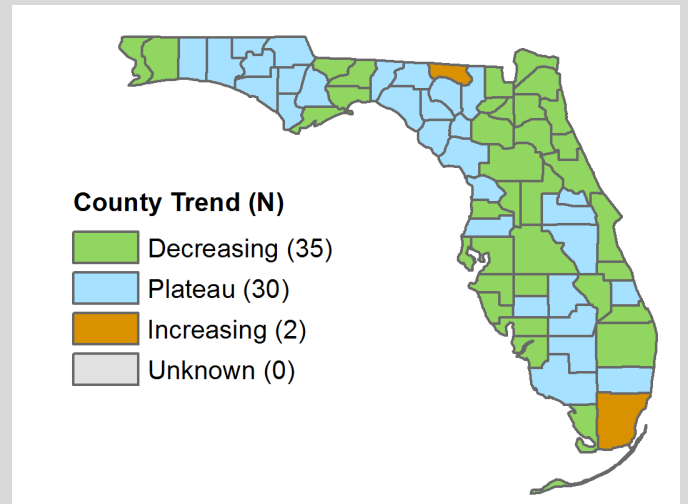
Map 1

County Influenza Activity Level for Week 16
Reported by 9:30 a.m. April 27, 2016



Map 2

County Influenza Activity Trend for Week 16
Reported by 9:30 a.m. April 27, 2016



As of 9:30 a.m. April 27, 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 16, 2016.

No influenza-associated pediatric deaths were reported in week 16.

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. It is not too late to vaccinate children for the 2015-16 season.** 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

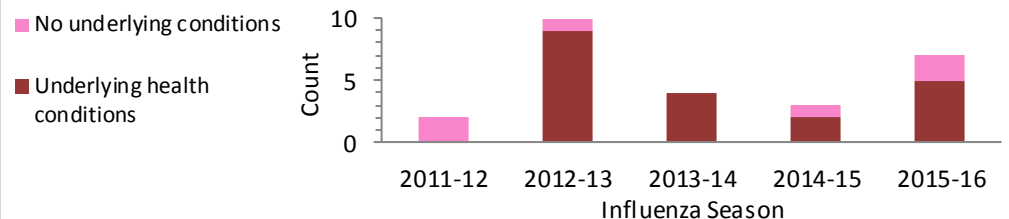
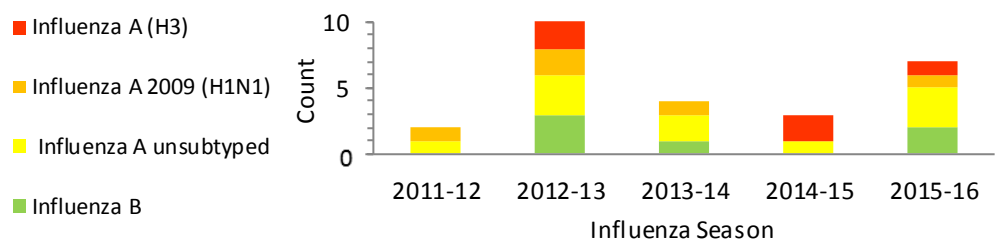


Figure 7: Influenza-Associated Pediatric Deaths by Strain Type



Reported Influenza and ILI Outbreaks

ILI = influenza-like illness

Three outbreaks of influenza and ILI were reported in week 16; 54 outbreaks of influenza and ILI have been reported into EpiCom so far in the 2015-16 season.

Pinellas County:

A nursing home reported five residents and two staff members with ILI. Specimens have been requested at Bureau of Public Health Laboratories (BPHL) for testing. The facility reported that half of residents and 20% of staff had received the 2015-16 influenza vaccine. Infection control measures were reviewed with facility leadership. This investigation is ongoing.

St. Johns County:

An elementary school reported 15 students and two household contacts with ILI. Seven specimens were collected from ill individuals. Of the seven specimens, five tested positive for influenza B and two tested positive for influenza A by rapid antigen testing at local health care providers. No specimens were available for testing at BPHL. Two ill individuals reported having received an influenza vaccine in the last year. Infection control measures were reviewed with facility leadership. This investigation is ongoing.

Clay County:

A school reported 33 students with ILI. Of the ill students, 10 tested positive for influenza B by rapid antigen testing. Three specimens were forwarded to BPHL and all three tested positive for influenza B by PCR. Influenza vaccination status for ill individuals is unknown. Infection control measures were reviewed with facility leadership. This investigation is ongoing.

Map 3 Influenza and ILI Outbreaks by County Week 40 through Week 16, 2016

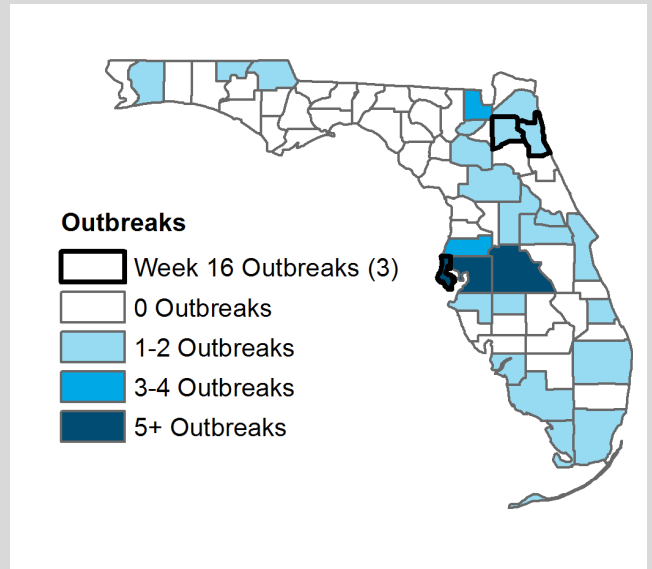


TABLE 1: Summary of Florida Influenza and ILI Outbreaks by Setting, Week 40 through Week 16, 2016

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	1		1	-	1 - respiratory syncytial virus (RSV)	5
Daycares	7	-	-	2	-	-		-	2	2 - RSV	1
Jails & prisons	7	-	3	3	-	-		-	-	-	1
Mental health facilities	-	-	-	-	-	-		-	-	-	-
Nursing homes & long term care facilities	18	1	2	3	-	-		5	-	1 - rhinovirus, 1 - human metapneumovirus	5
Health care facilities	1	-	-	1	-	-		-	-	-	-
Other	2	-	1	1	-	-		-	-	-	-
Total	54	1	6	17	4	1		6	2	5	12

Reported Influenza and ILI Outbreaks by Facility Type

ILI = influenza-like illness

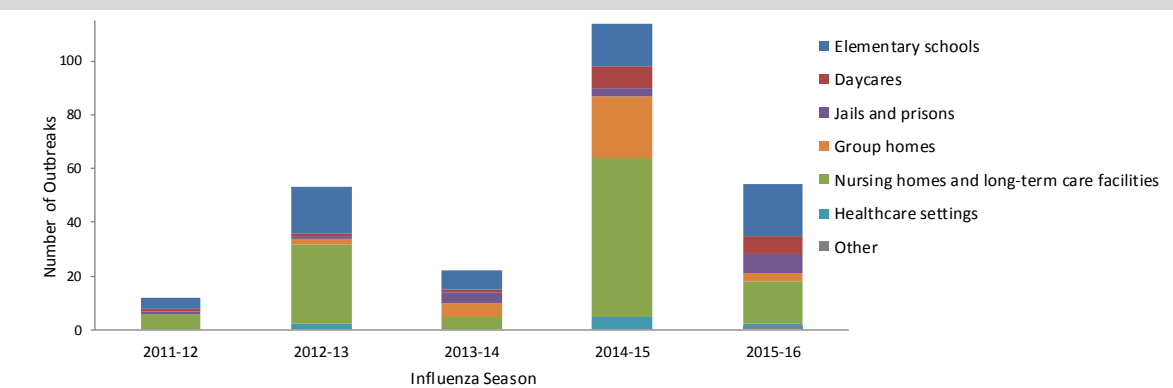


Figure 8 shows the distribution of outbreaks by facility type and season.

Influenza activity typically increases in children before older age groups. Increased 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

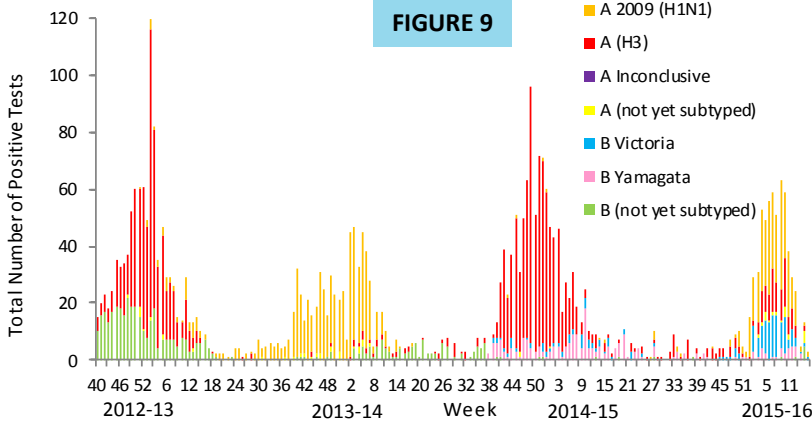


FIGURE 9

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. In the early part of the 2015-16 influenza season, influenza A (H3) was the most commonly identified subtype. This change was also observed nationally.

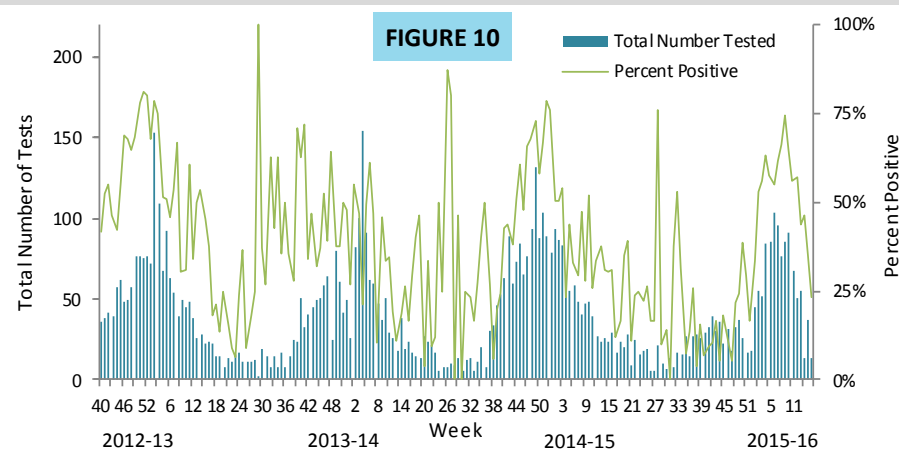


FIGURE 10

Influenza B Yamagata lineage and influenza B Victoria lineage have also been identified by BPHL this season.

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 still above 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. April 27, 2016**

Specimen	Current Week 16	Previous Week 15	Current 2015-16 Season
Total Specimens Tested	13	37	1379
Influenza positive specimens (% of total specimen tested)	3 (23%)	13 (35%)	639 (46%)
Influenza A 2009 (H1N1) (% of influenza positives)	2 (67%)	1 (8%)	309 (48%)
Influenza A (H3) (% of influenza positives)	-	2 (15%)	136 (21%)
Influenza A not yet subtyped (% of influenza positives)	-	4 (31%)	19 (3%)
Influenza A inconclusive** (% of influenza positives)	-	-	5 (1%)
Influenza B Yamagata (% of influenza positives)	-	-	38 (6%)
Influenza B Victoria (% of influenza positives)	1 (33%)	1 (8%)	125 (20%)
Influenza B not yet subtyped (% of influenza positives)	-	5 (38%)	7 (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.

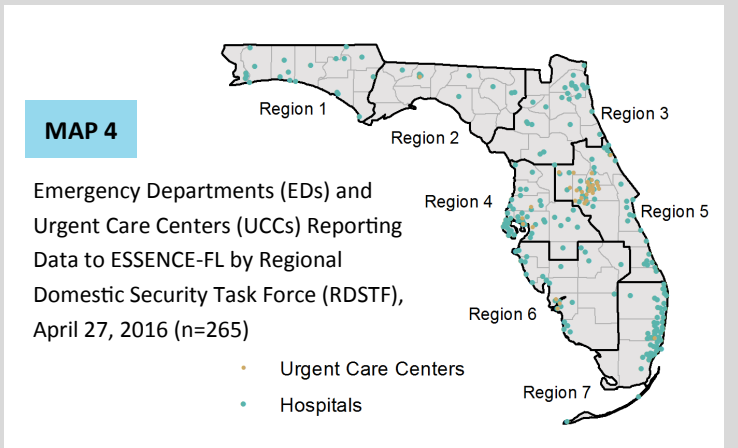
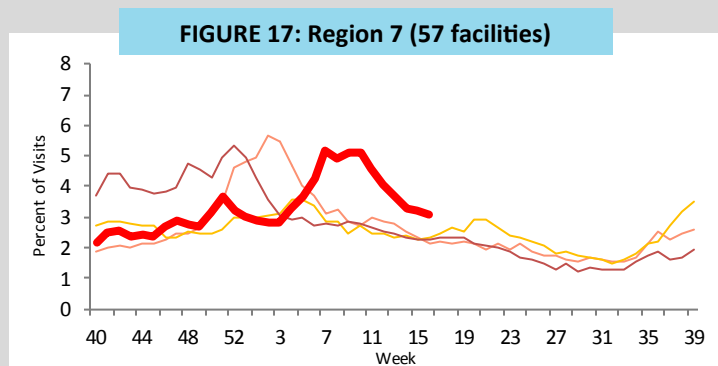
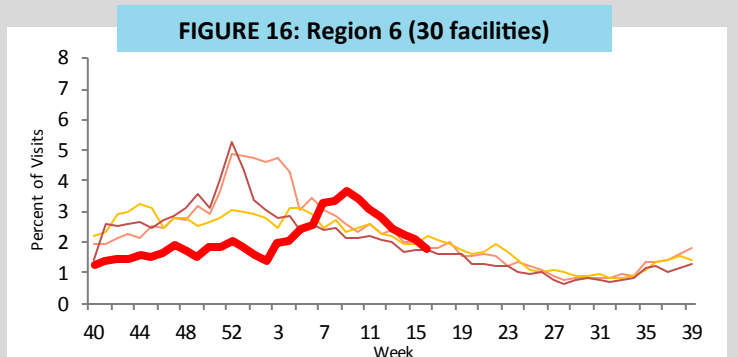
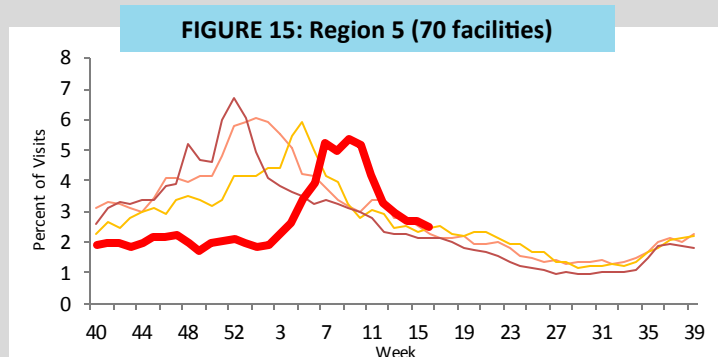
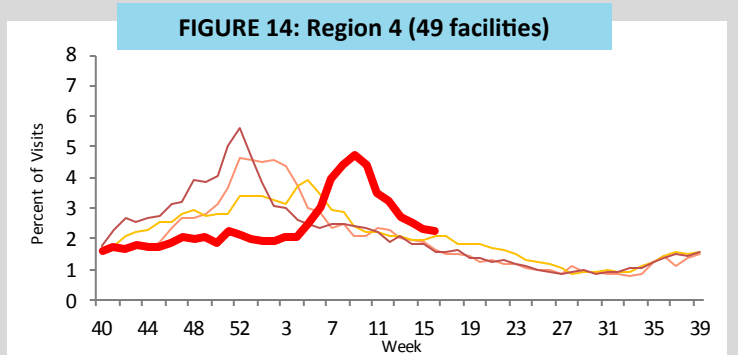
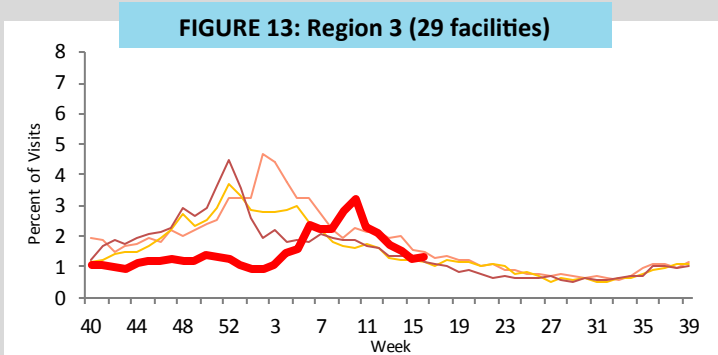
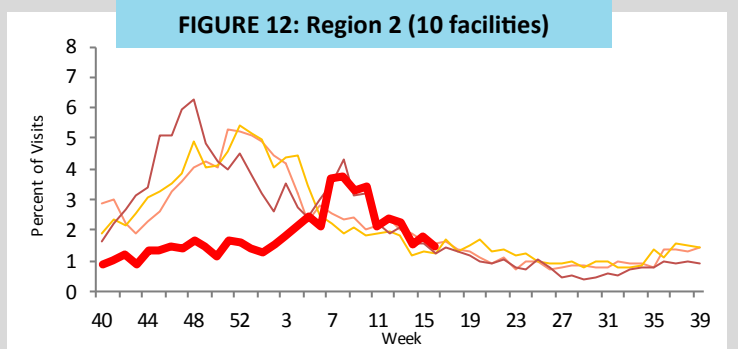
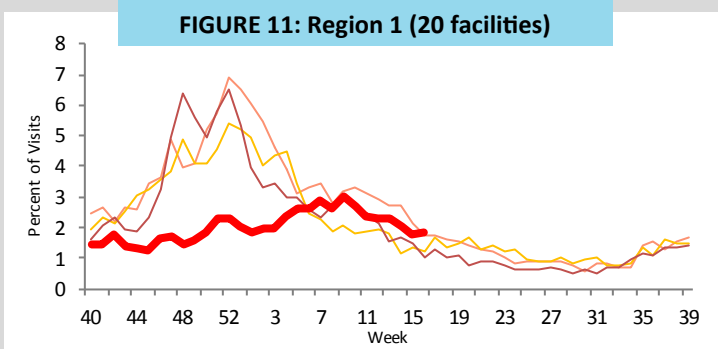
**Influenza A inconclusive test results are due to technical difficulties including an insufficient sample for testing or internal sample control failure and occur occasionally in routine laboratory testing.

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

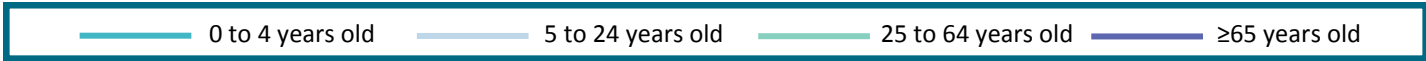
ED and UCC Visits for ILI by Region

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 16, 2016*. In week 16, ED and UCC ILI visits increased slightly in regions 1 and 3 and decreased in all other regions. ED and UCC visits are similar to levels seen in previous seasons in all regions except for region 7, where levels remain slightly above those seen in previous seasons 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.

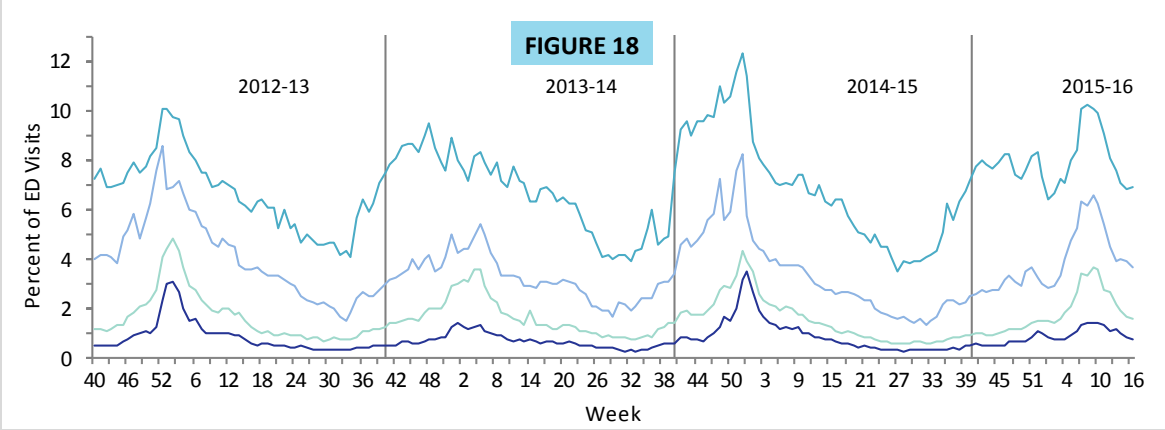


ED and UCC Visits for ILI by Age Group

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 16, 2016.

In week 16, ED and UCC visits for ILI increased slightly in the 0-4 age group and decreased in all other age groups. ED and UCC visits for ILI remain above levels seen in previous seasons in the 0-4 and 5-24 age groups at this time. ED and UCC visits for ILI are similar to levels seen in previous seasons in the 25-64 and ≥65 age groups at this time.



Visits to Outpatient Providers for ILI by Age Group*

ILI = influenza-like illness

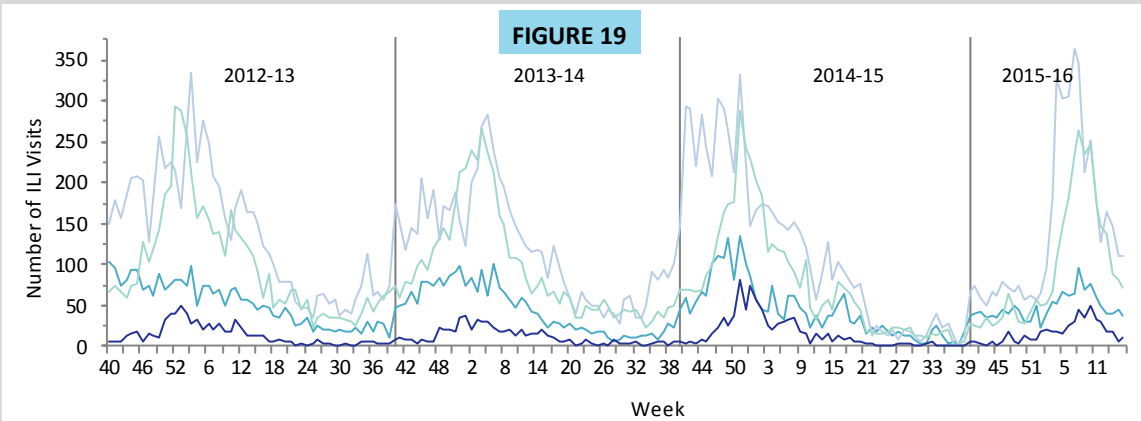


Figure 19 shows the number of visits for ILI reported by ILINet outpatient providers statewide (n=42) by age group, week 40, 2012 to week 16, 2016.

In week 16, the number of visits for ILI increased slightly in the ≥65 age group and decreased or remained the same in all other age groups. The number of visits for ILI is similar to levels seen in previous seasons for all age groups at this time.

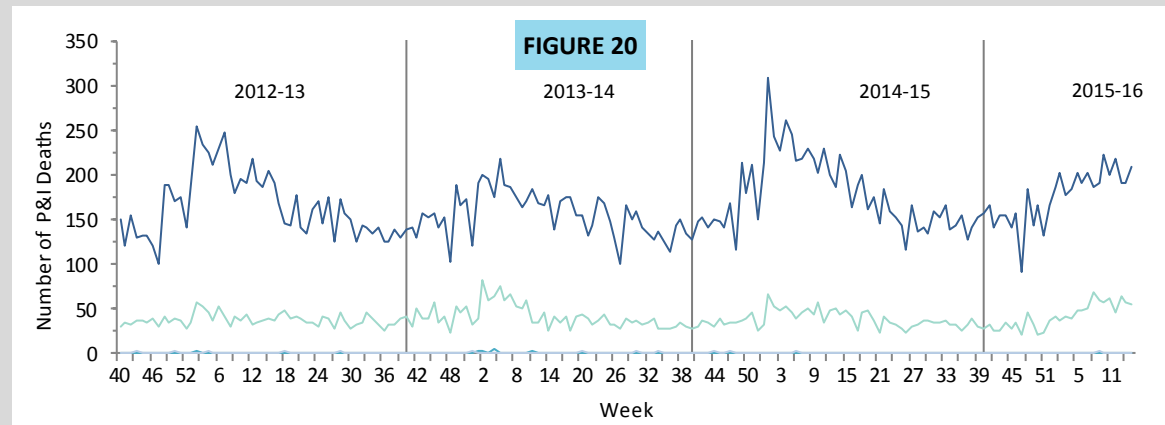
*Data presented here are counts, not proportions. This is because age group denominator data is not available through ILINet.

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 15, 2016.

As of week 15 (ending April 16, 2016), the number of P&I deaths increased in the 5-24 and ≥65 age groups. The number of P&I deaths remained the same in the 0-4 age group and decreased in the 25-64 age group. Levels are slightly above those seen in previous seasons in the 25-64 and ≥65 age groups at this time. Levels are similar to those seen in previous seasons in the 0-4 and 5-24 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 15, 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

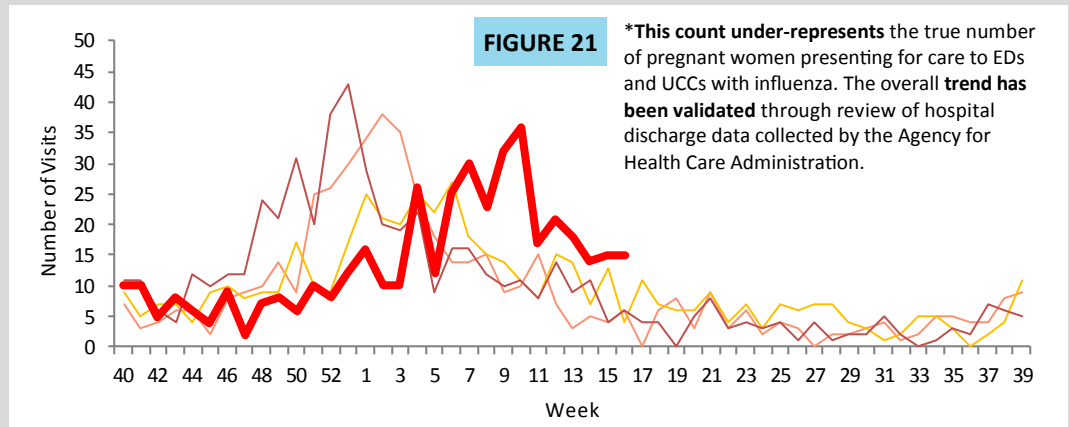
ED and UCC Visits for ILI by Pregnant Women

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 16, 2016.

In week 16, the number of visits to EDs and UCCs by pregnant women with mention of influenza remained stable and is above levels seen in previous seasons at this time.



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

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

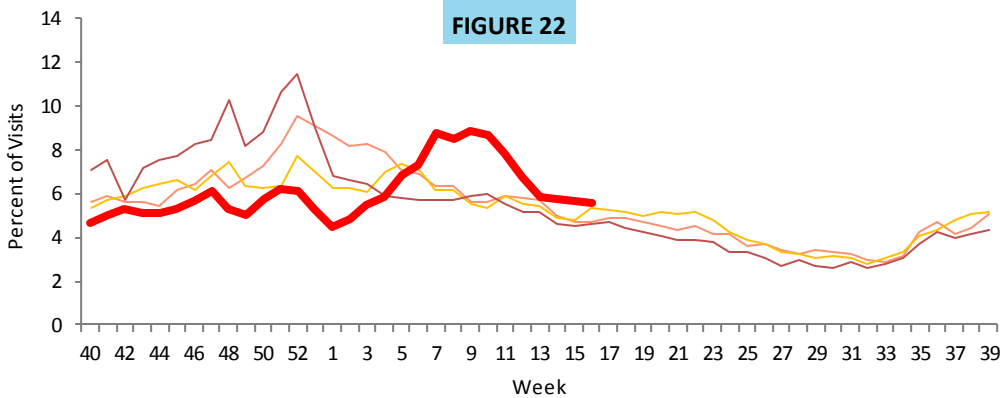


Figure 22 shows the percent of ILI visits among all ED and UCC visits for children ≤ 18 years old, as reported into ESSENCE-FL, week 40, 2012 to week 16, 2016.

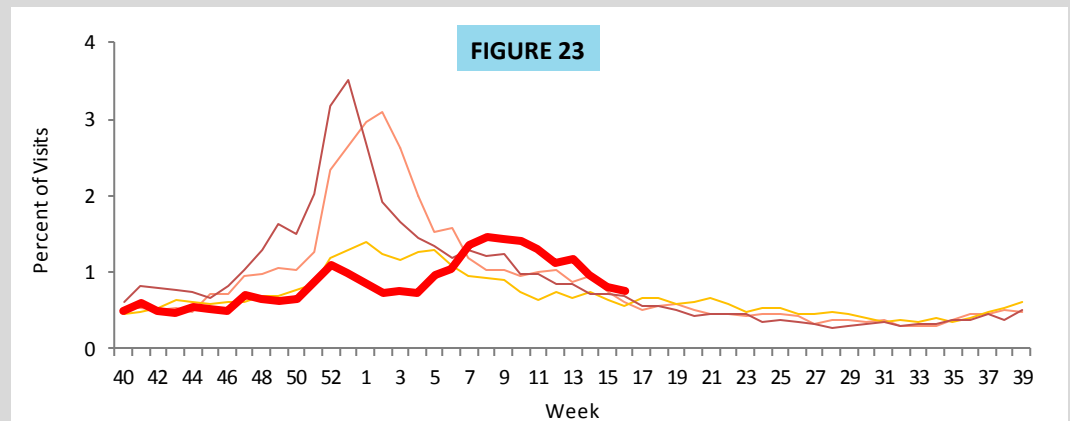
In week 16, the percent of ILI visits among all ED and UCC visits for children ≤ 18 years old decreased, but is slightly above levels seen in previous seasons at this time.

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 16, 2016.

In week 16, the percent of ILI visits among all ED and UCC visits for adults ≥ 65 years old decreased, but is slightly above levels seen in previous seasons at this time.



ILI Activity by Setting Type

ILI = influenza-like illness

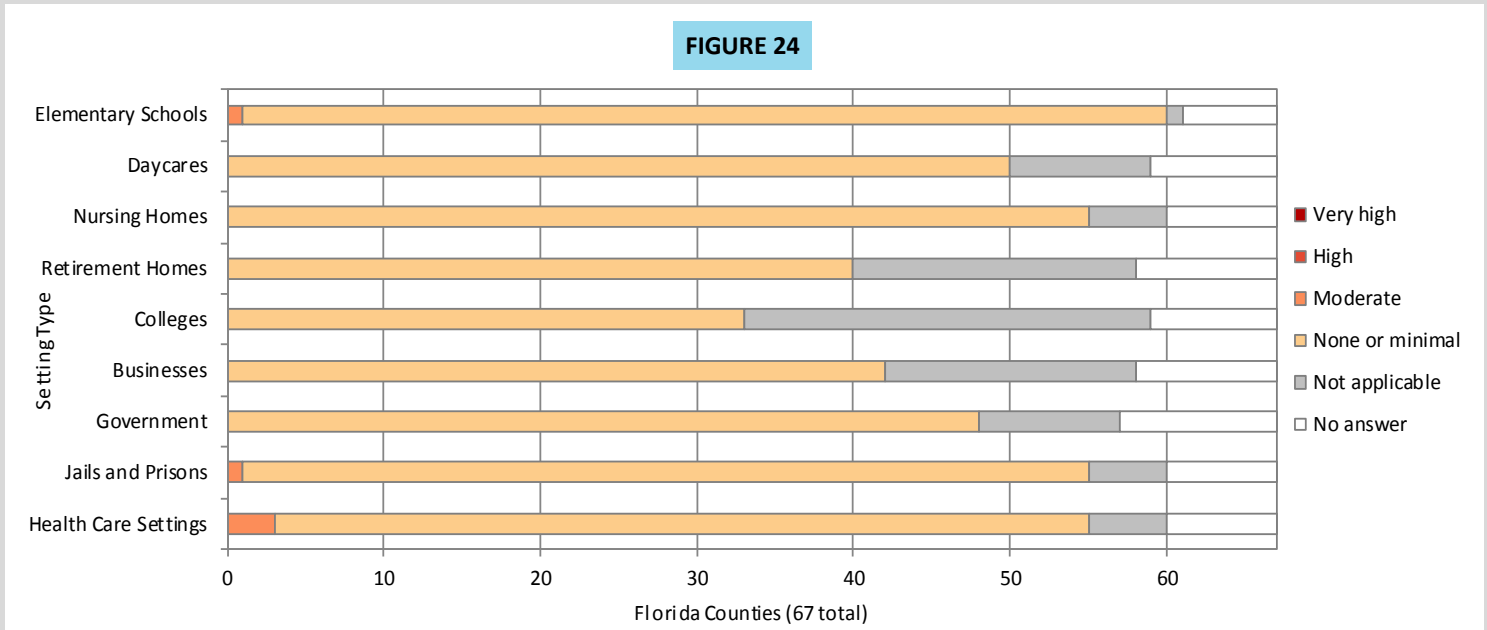
County health departments are asked to evaluate influenza activity in certain settings within their county. The assessment scale for activity ranges from no or minimal activity to very high activity.

Figure 24 shows the results of the influenza activity assessment for week 16, 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, one county (2%) reported moderate influenza or ILI activity.

In daycare settings, 50 counties (86%) reported no or minimal influenza or ILI activity.

Settings for Adults over 65

In nursing homes, 55 counties (89%) reported no or minimal influenza or ILI activity.

In retirement homes, 38 counties (79%) reported no or minimal influenza or ILI activity.

Settings for Adults ages 18 to 65

In colleges, 33 of 41 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 (83%) reported no or minimal influenza or ILI activity.

Other Unique settings

In jails and prisons, one county (2%) reported moderate influenza or ILI activity.

In health care settings, including rehabilitation facilities and mental health facilities, three counties (5%) reported moderate influenza or ILI activity.

Laboratory Viral Respiratory Surveillance

FIGURE 25

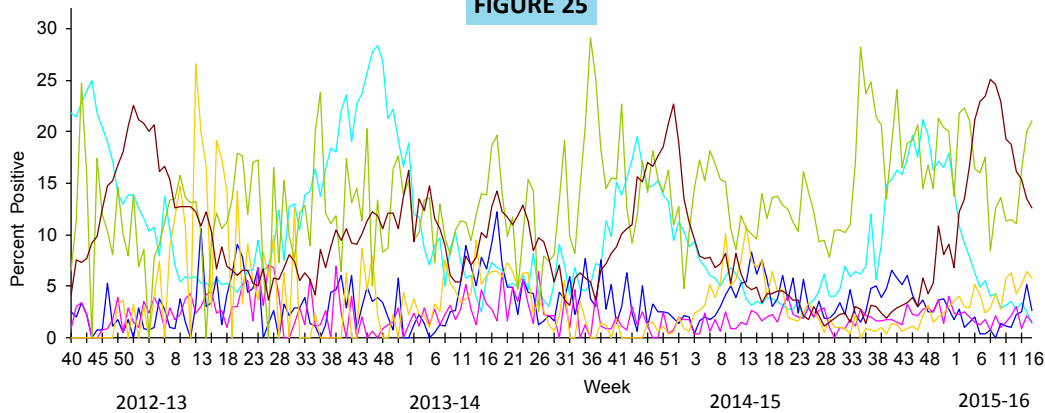
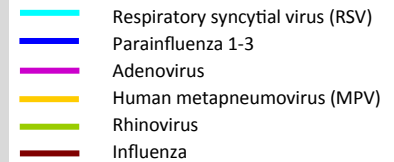


Figure 25 shows the percent of laboratory results testing positive for eight common respiratory viruses, as reported by hospital laboratories (n=11), week 40, 2012 to week 16, 2016.

In week 16, the percent of specimens testing positive for influenza decreased and is similar to levels seen in previous seasons at this time. The percent of specimens testing positive for rhinovirus increased notably 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 (NREVVSS) 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. NREVVSS 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)**