



Summary

Week 42: October 15-21, 2017

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

- During week 42, influenza activity increased but remained at low levels overall across the state, although preliminary data indicate some high-risk subpopulations (children) are seeing larger increases in flu activity (see page 10). Influenza activity is expected to increase as we head into the winter months.
 - The percent of emergency department (ED) and urgent care center (UCC) visits for ILI among children aged ≤18 years increased notably and was slightly above levels observed in previous seasons at this time.
 - Flu activity in children often precedes activity in other age groups. Influenza spreads easily among children based on their close interactions with one another (less than 6 feet) and hygiene practices. Sick children should stay home from school. People are most infectious early in the course of their illness (within the first few days of symptoms and even one day before symptom onset).
 - Flu vaccines are safe and continue to be the best way to protect children against influenza infection. Children who have not yet been vaccinated for the 2017-18 influenza season should get vaccinated as soon as possible.
 - To locate a flu shot near you, contact your physician, your local county health department, or use the Florida Department of Health's flu shot locator: <http://www.floridahealth.gov/programs-and-services/prevention/flu-prevention/locate-a-flu-shot.html>.
- No influenza-associated pediatric deaths were reported. No influenza-associated pediatric deaths have been reported so far during the 2017-18 season.
- Florida reported sporadic activity to the Centers of Disease Control and Prevention (CDC) in week 42.
- The majority of counties reported no influenza activity or mild influenza activity. Three counties reported moderate influenza activity.
- Two outbreaks of influenza A and one outbreak of ILI were reported.
- Since July, the most common influenza subtype detected at the Bureau of Public Health Laboratories (BPHL) has been influenza A (H3). It is still too early to say if influenza A (H3) will continue to predominate throughout the season.
- Respiratory syncytial virus (RSV) activity in children <5 years increased, and has remained higher than levels observed in previous seasons for several weeks in a row (see page 12).

National influenza activity:

- Influenza activity remains at low levels nationally.
- Consistent with the trend observed in Florida, influenza A (H3) has been the most common influenza subtype reported to the Centers for Disease Control and Prevention (CDC) by public health laboratories across the nation since July.
- The CDC Advisory Committee on Immunization Practices (ACIP) voted in favor of the recommendation that **live attenuated influenza vaccine (LAIV) should not be used during the 2017-18 influenza season**. This recommendation follows concerns about lower effectiveness of LAIV during the 2013-14 and 2015-16 influenza seasons against influenza A 2009 (H1N1) viruses. **The ACIP continues to recommend annual influenza vaccination with either the inactivated influenza vaccine (IIV) or recombinant influenza vaccine (RIV) for everyone aged six months and older.**
- There is an increased risk for highly pathogenic avian influenza (HPAI) virus identification in birds as we enter the fall migratory season. HPAI has not been identified in Florida birds (and would be expected to be observed in northern states first), but identifications are possible. No human HPAI infections have been identified in Florida or any other states.
 - To learn more about HPAI, please visit: www.floridahealth.gov/novelflu.

Weekly State Influenza Activity

Sporadic

For more information see page 2 ►



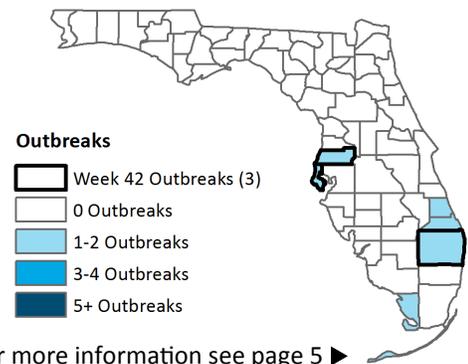
Predominately Circulating Strain

A (H3)

For more information see page 7 ►

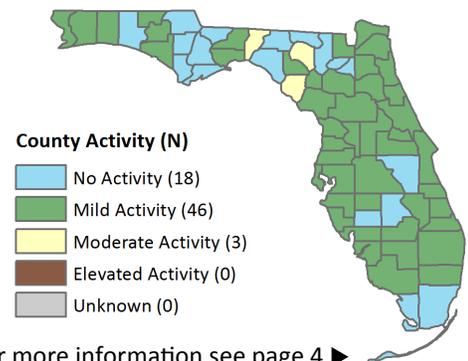


Influenza and ILI Outbreaks Reported as of 10/21/2017



For more information see page 5 ►

County Influenza Activity



For more information see page 4 ►

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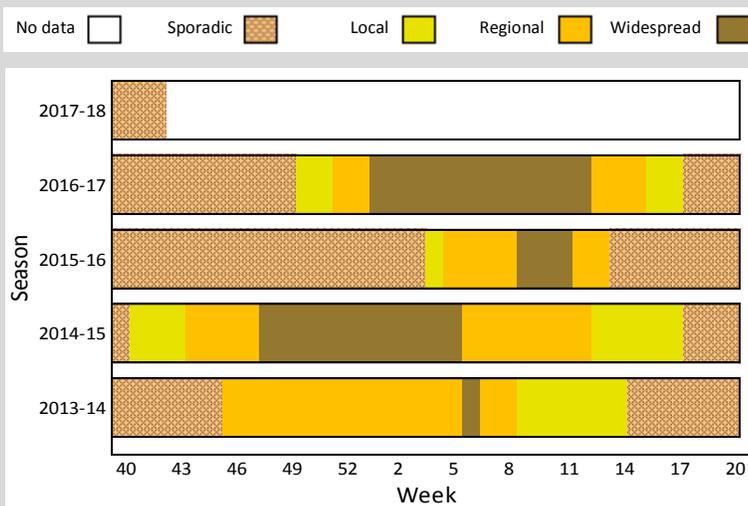
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Weekly State Influenza Activity Reporting

Below is the state influenza activity level reported to CDC each week since the 2013-14 influenza season. **Florida reported sporadic influenza activity for week 42.**



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. These activities are particularly important at the start of flu season in order to identify potential changes in circulating influenza strains.

Note: Surveillance case definitions for influenza-like illness (ILI) vary across surveillance systems. For more information on influenza surveillance systems and associated case definitions used in Florida, see page 14 ►

Statewide ILI Visits

ED and UCC Visits for ILI by Flu Season

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

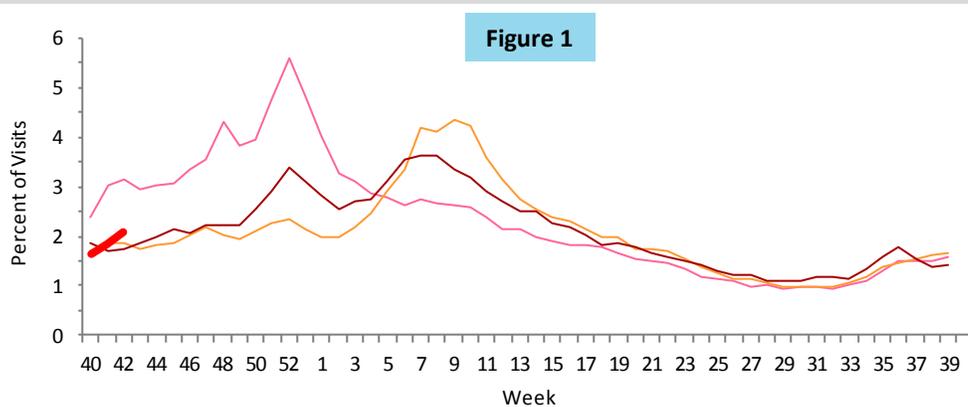


Figure 1 shows the percent of visits for ILI from ED and UCC chief complaint data for ESSENCE-FL participating facilities (n=308), week 40, 2014 to week 42, 2017.

In week 42, the percent of visits to EDs and UCCs for ILI increased and was similar to levels seen in previous seasons at this time. Some high-risk subpopulations (children) are beginning to see larger increases in flu activity (see page 10). Activity in children often precedes activity in other age groups.

2017-18 2016-17 2015-16 2014-15

The ESSENCE-FL ILI syndrome is composed of chief complaints that include the words “influenza” or “flu,” or chief complaints that include the words “fever” and “cough,” or “fever” and “sore throat.” For more information on ESSENCE-FL, see page 10.

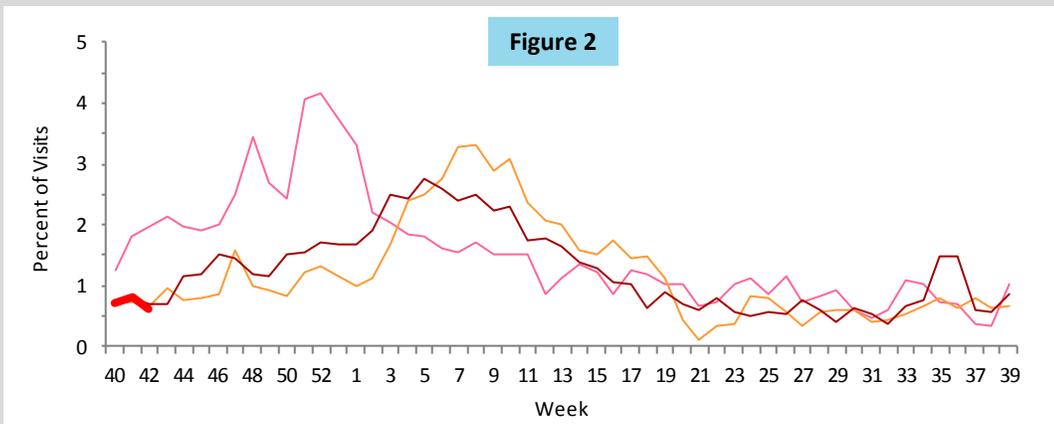


Visits for ILI to Outpatient Providers by Flu Season

ILI = influenza-like illness

Figure 2 shows the percent of visits for ILI reported by ILINet outpatient providers statewide (n=44), week 40, 2014 to week 42, 2017. For ILINet, influenza-like illness (ILI) is defined as a fever $\geq 100^{\circ}\text{F}$ AND sore throat and/or cough in the absence of another known cause.

In week 42, the percent of visits for ILI reported by ILINet outpatient providers decreased and was slightly below levels seen in previous seasons at this time.



P&I Deaths* from Vital Statistics by Flu Season

P&I = pneumonia and influenza

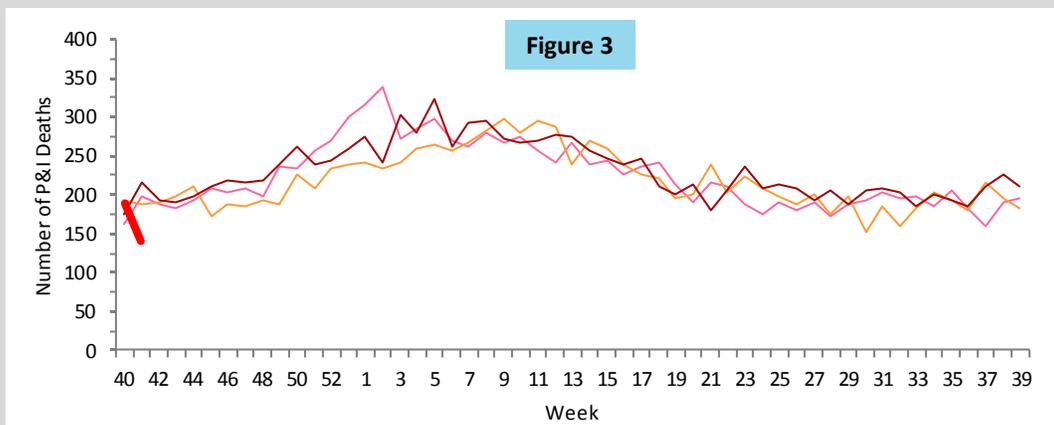


Figure 3 shows P&I deaths* for all Florida counties from the Bureau of Vital Statistics, as reported into ESSENCE-FL, week 40, 2014 to week 41, 2017.

In week 41 (ending October 14, 2017), 149 P&I deaths were reported.

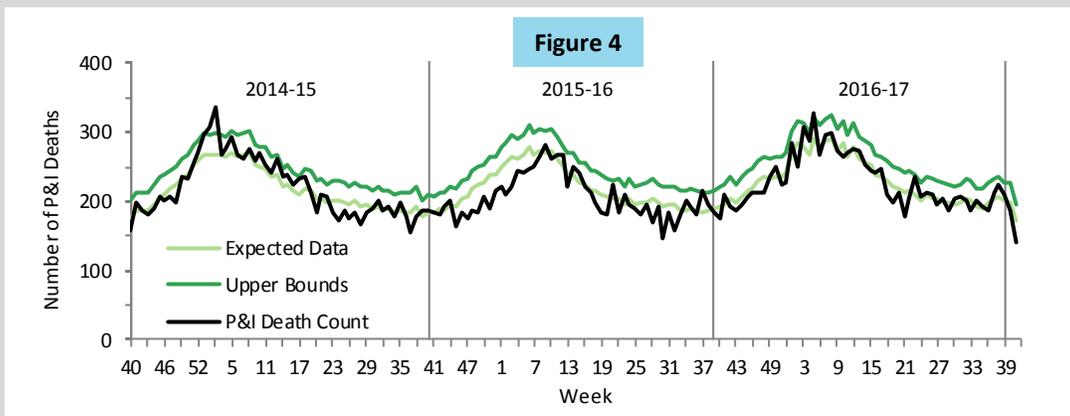
The preliminary number of P&I deaths decreased and was below levels seen in previous seasons at this time.

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 41 (ending October 14, 2017), 149 preliminary estimated P&I deaths were reported, which is below the expected number of deaths (210) for week 41.

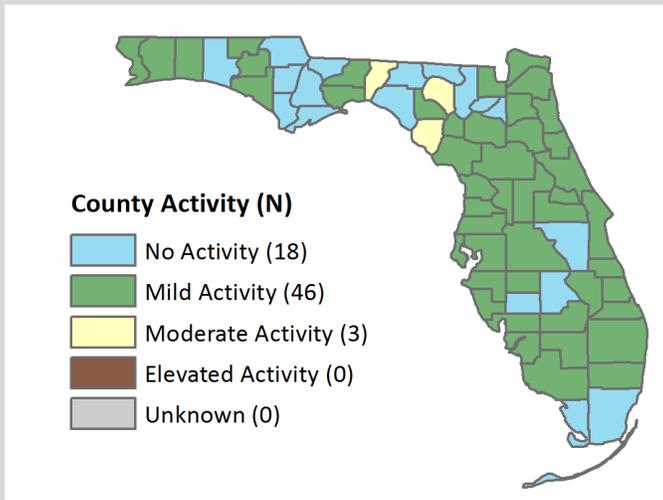


* Current season P&I death counts are preliminary estimates and may change as more data are received. The most recent data available are displayed here. Vital statistics death records received in ESSENCE-FL are considered to be complete through week 41, 2017.

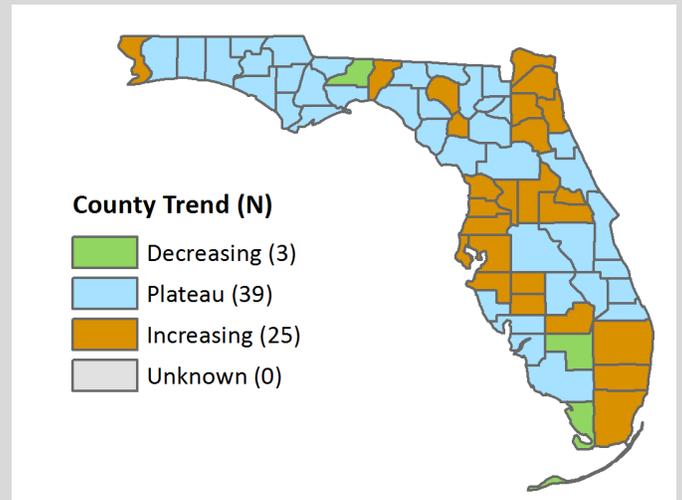
County influenza activity data are reported by county health departments through EpiGateway on a weekly basis. Information is used to determine county activity and includes laboratory results, outbreak reports, and ILI activity. **The figures below reflect a county health department's assessment of influenza activity within their county. For week 42, 25 counties reported increasing activity, 39 counties reported activity at a plateau, and three counties reported decreasing activity.**

County Influenza Activity

Map 1 County Influenza Activity Level for Week 42 Reported by 9:30 a.m. October 25, 2017



Map 2 County Influenza Activity Trend for Week 42 Reported by 9:30 a.m. October 25, 2017



As of 9:30 a.m. October 25, 2017, 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, 2013 to week 42, 2017.

In week 42, no influenza-associated pediatric deaths were reported. No influenza-associated pediatric deaths have been reported so far during the 2017-18 season. Eleven influenza-associated pediatric deaths were reported last season.

While rare, Florida receives reports of influenza-associated pediatric deaths each season. **Most deaths occur 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 children against influenza. Now is the perfect time to get vaccinated. 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

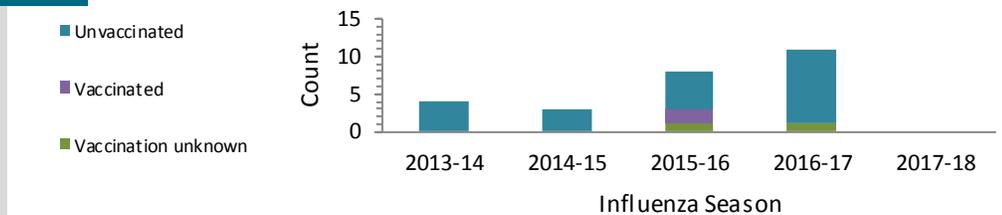


Figure 6: Influenza-Associated Pediatric Deaths by Medical History

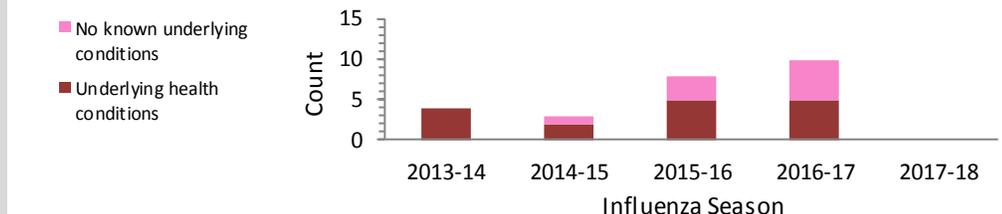
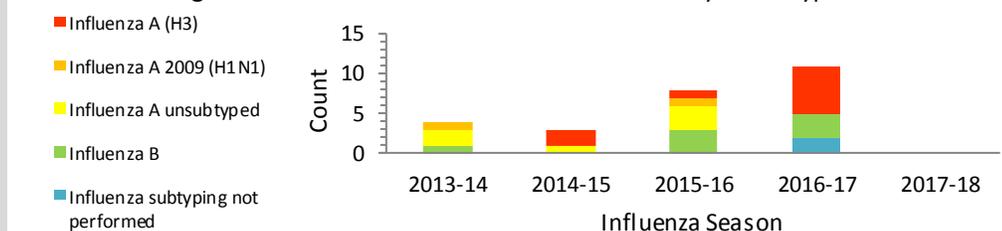


Figure 7: Influenza-Associated Pediatric Deaths by Strain Type



Reported Influenza and ILI Outbreaks

ILI = influenza-like illness

Map 3 shows influenza and ILI outbreaks by county for week 40, 2017 through week 42, 2017, as reported into Merlin.

In week 42, two outbreaks of influenza A and one outbreak of ILI were reported in Merlin.

A steady number of influenza A outbreaks have been reported each week over the last two months. While early season outbreaks are expected, the detection of these early outbreaks is important as it can serve as early indicators of unusual or more severe strains of influenza. **Based on the data available for the outbreaks that have been reported thus far, it is still not possible to make any predictions about the severity or timing of peak influenza activity based on these early outbreak reports.**

For more detailed information on influenza and ILI outbreaks reported in week 42, see page 6. **Data presented on outbreaks are preliminary and subject to change as outbreak investigations progress.**

Map 3 Influenza and ILI Outbreaks by County Week 40, 2017 through Week 42, 2017

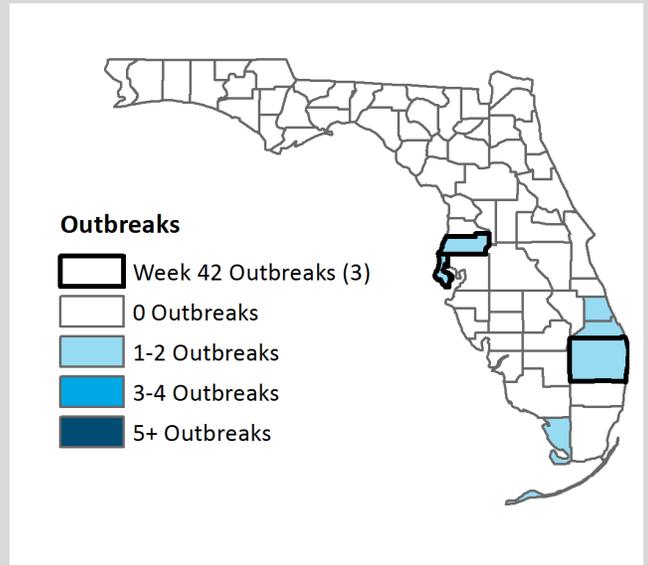


Table 1: Summary of Florida Influenza and ILI Outbreaks by Setting, Week 40, 2017 through Week 42, 2017*

Setting	Total	A (H3)	A 2009 (H1N1)	A Unsubtyped	A & B Unsubtyped	B Yamagata	B Victoria	B Unsubtyped	Influenza Unspecified	Other respiratory viruses	Currently unknown pathogen
Schools	-	-	-	-	-	-	-	-	-	-	-
Daycares	-	-	-	-	-	-	-	-	-	-	-
Jails & prisons	-	-	-	-	-	-	-	-	-	-	-
Mental health facilities	-	-	-	-	-	-	-	-	-	-	-
Nursing homes & long-term care facilities	6	1	-	2	-	-	-	-	1	-	2
Health care facilities	-	-	-	-	-	-	-	-	-	-	-
Other	1	1	-	-	-	-	-	-	-	-	-
Total	7	2	0	2	0	0	0	0	1	0	2

*Outbreak etiology is updated for two weeks after initial report.

Reported Influenza and ILI Outbreaks by Facility Type

ILI = influenza-like illness

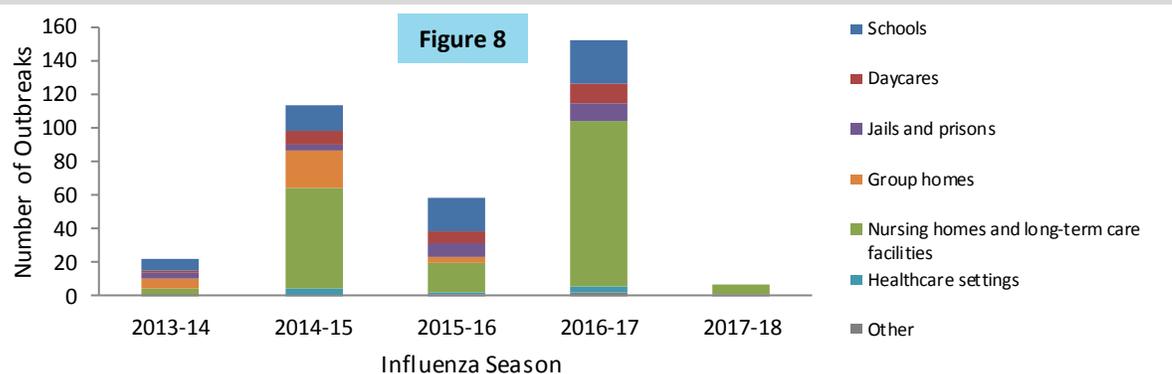


Figure 8 shows the distribution of outbreaks by facility type and season.

In week 42, three outbreaks of influenza and ILI were reported. The majority of outbreaks reported so far during the 2017-18 season have been in facilities serving adults ≥65 years old.

Reported Influenza and ILI Outbreaks

ILI = influenza-like illness

In week 42, two outbreaks of influenza A and one outbreak of ILI were reported into Merlin.

Pasco County:

- **A skilled nursing facility** reported 13 residents and six staff members with ILI. Three specimens were collected for testing at BPHL. All three specimens tested positive for influenza A (H3) by PCR at BPHL. The facility estimated that 60 staff members were vaccinated for the 2017-18 influenza season. Vaccination status for all residents is unknown. Infection control measures were reviewed with facility leadership. This investigation is ongoing.

Pinellas County:

- **An assisted living facility** reported two individuals with ILI. No specimens have been available for testing at BPHL thus far. The etiology of this outbreak is not yet known. Vaccination status for all residents and staff members is currently unknown. This investigation is ongoing.

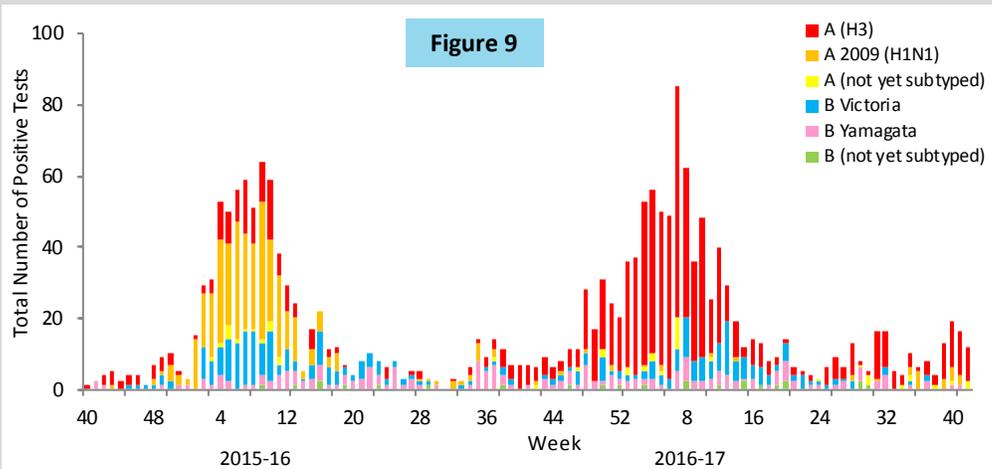
Palm Beach County:

- **An skilled nursing facility** reported six residents and one staff member with ILI. Specimens collected from three individuals tested positive for influenza A by rapid antigen testing at a commercial laboratory. No specimens were available for testing at BPHL. Vaccination status for all residents and staff members is unknown. Infection control measures were reviewed with facility leadership. This investigation is closed.

In week 41 (ending October 14, 2017), one outbreak was reported into Merlin. No updates were made to this outbreak during week 42.

BPHL Viral Influenza Specimen Testing

BPHL = Bureau of Public Health Laboratories



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.*

The most common influenza subtype detected at BPHL statewide for the 2016-17 influenza season has been influenza A (H3). Seasons in which A (H3) viruses predominate are associated with more severe illness in young children and adults ≥65 years old. It is still too early to say if influenza A (H3) will continue to predominate throughout the season.

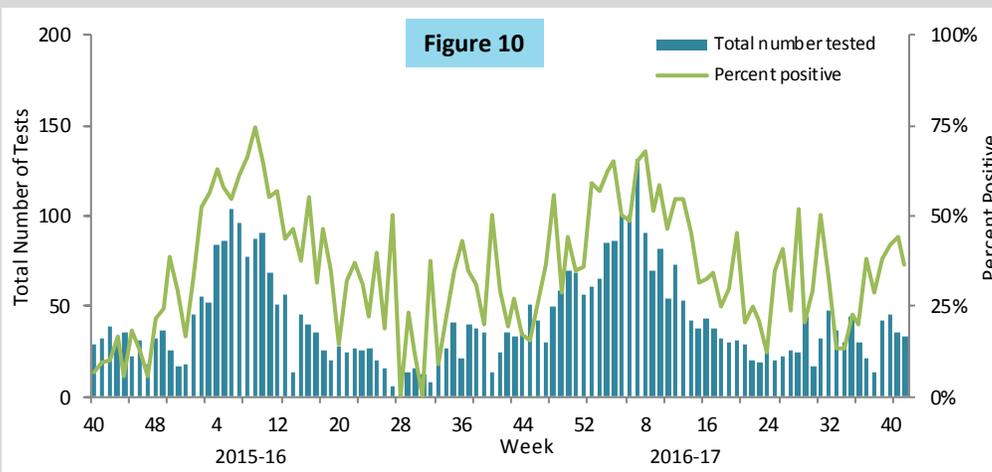


Figure 10 shows the number of specimens tested by BPHL and the percent that were positive for influenza by lab event date*.

In week 42, the percent of specimens testing positive for influenza decreased and was similar to levels observed 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. October 25, 2017

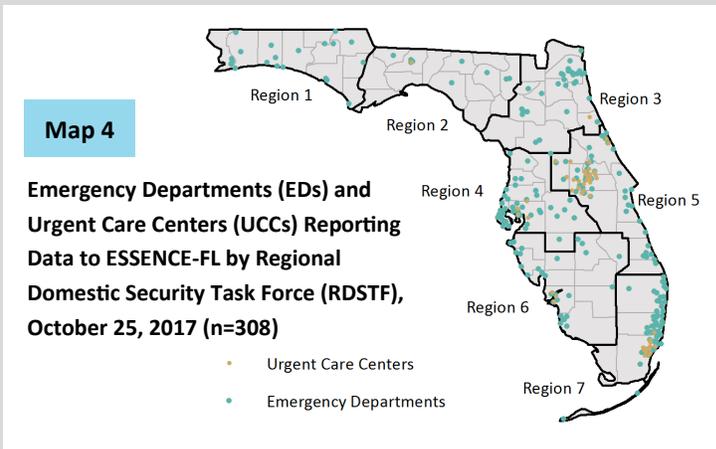
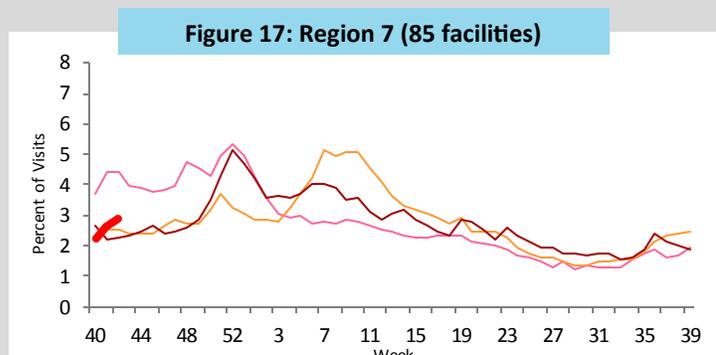
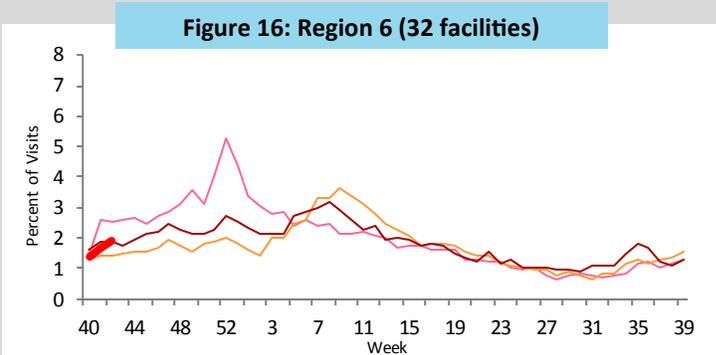
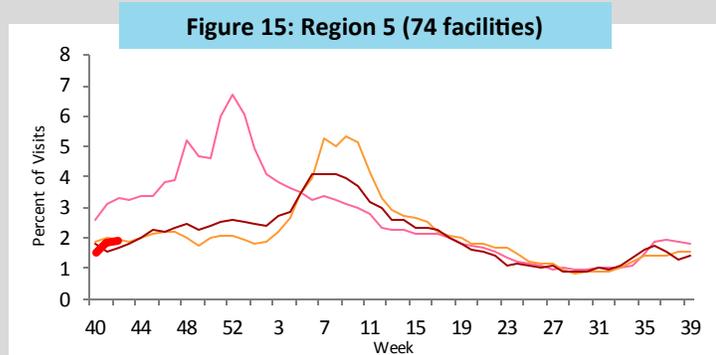
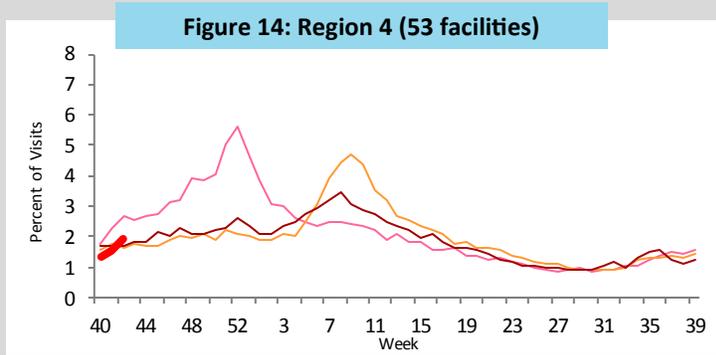
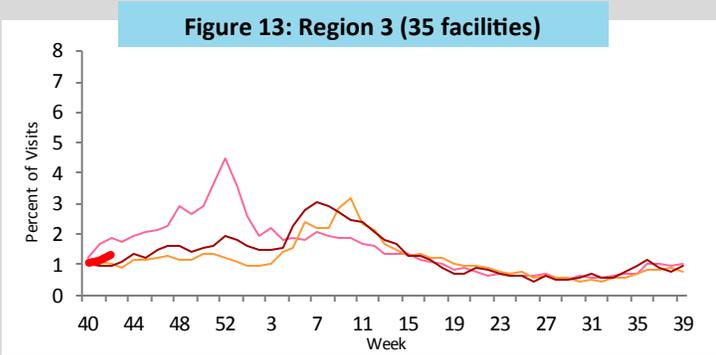
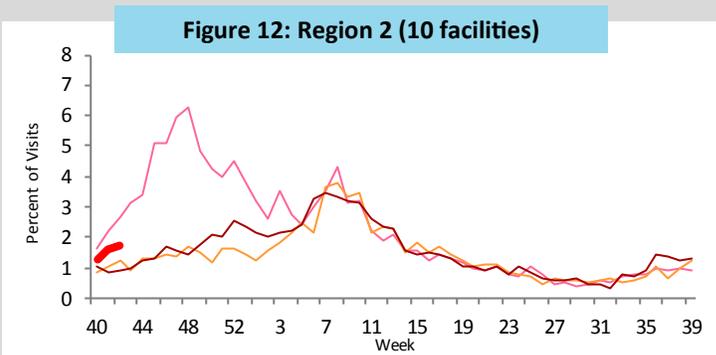
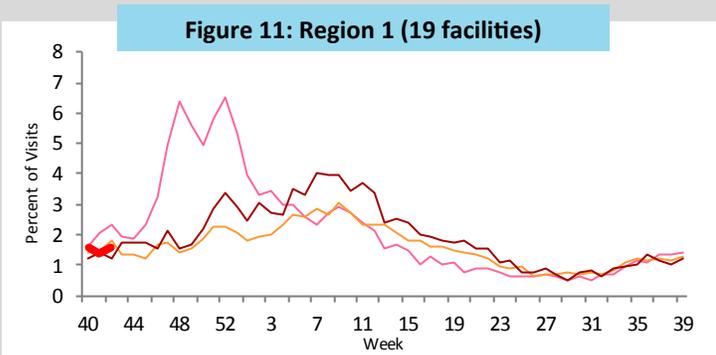
Influenza Type	Current Week 42	Previous Week 41	Current 2017-18 Season
Total Specimens Tested	33	36	114
Influenza positive specimens (% of total specimen tested)	12 (36.4%)	16 (44.4%)	47 (41.2%)
Influenza A 2009 (H1N1) (% of influenza positives)	-	3 (18.8%)	7 (14.9%)
Influenza A (H3) (% of influenza positives)	10 (83.3%)	12 (75.0%)	35 (74.5%)
Influenza A not yet subtyped (% of influenza positives)	2 (16.7%)	-	3 (6.4%)
Influenza B Yamagata (% of influenza positives)	-	1 (6.3%)	2 (4.3%)
Influenza B Victoria (% of influenza positives)	-	-	-
Influenza B not yet subtyped (% of influenza positives)	-	-	-

*"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.

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=308), by ESSENCE-FL Regional Domestic Security Task Force (RDSTF) regions (see map 4) from week 40, 2014 to week 42, 2017*. In week 42, the percent of ED and UCC visits for ILI increased in all regions. ILI activity in all regions was similar to levels observed in previous seasons at this time.



*There is no week 53 for the 2013-14, 2015-16, and 2016-17 seasons; the week 53 data point for those seasons is an average of weeks 52 and 1.

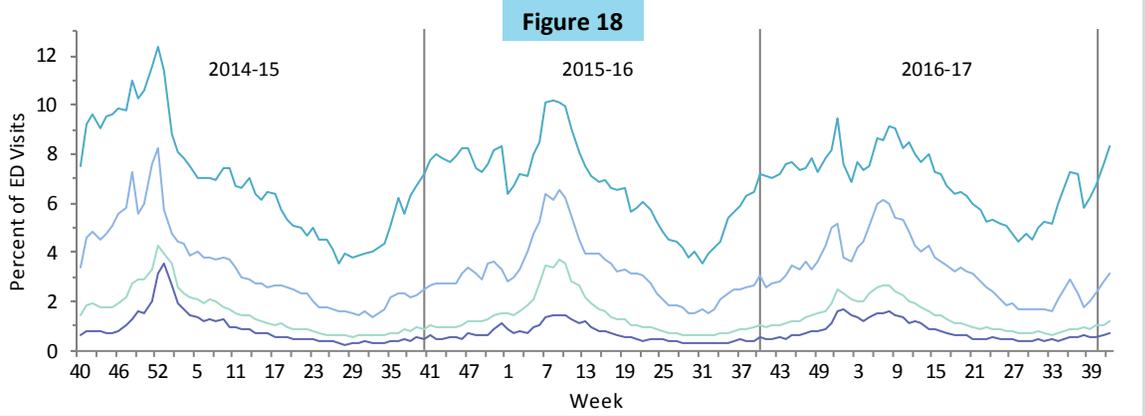
0 to 4 years old 5 to 24 years old 25 to 64 years old ≥65 years old

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=308), week 40, 2014 to week 42, 2017.

In week 42, ED and UCC visits for ILI increased in all age groups. Levels were similar to those observed in previous seasons at this time in all age groups.



Visits to Outpatient Providers for ILI by Age Group*

ILI = influenza-like illness

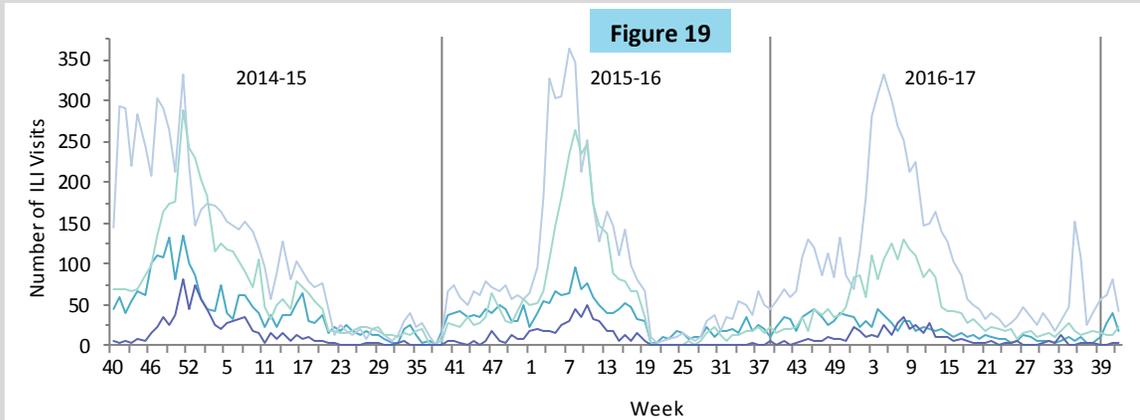


Figure 19 shows the number of visits for ILI reported by ILINet outpatient providers statewide (n=44) by age group, week 40, 2014 to week 42, 2017.

In week 42, the number of visits for ILI remained the same in the ≥65 year age group and decreased in all other age groups. Levels were similar to or below those observed in previous seasons at this time in all age groups.

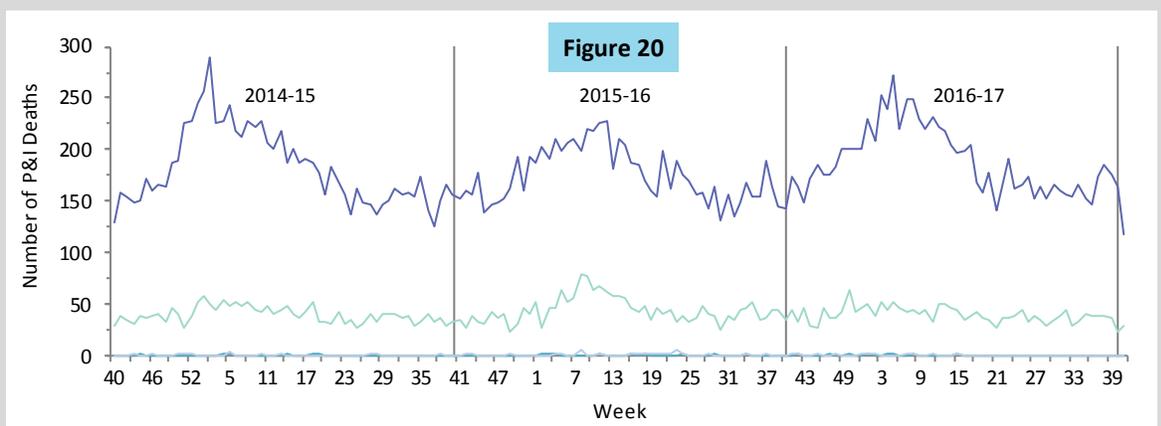
*Data presented here are counts, not proportions. This is because age group denominator data is not available through ILINet.

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, 2014 to week 41, 2017.

In week 41 (ending October 14, 2017), the number of P&I deaths increased in the 5-24 and 25-64 year age groups, remained the same in the 0-4 year age group, and decreased in the ≥65 year age group. Levels were similar to those observed in previous seasons at this time in all age groups.



*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 41, 2017.

ESSENCE-FL collects data daily from 308 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" and "cough," or "fever" and "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.

— 2017-18
 — 2016-17
 — 2015-16
 — 2014-15

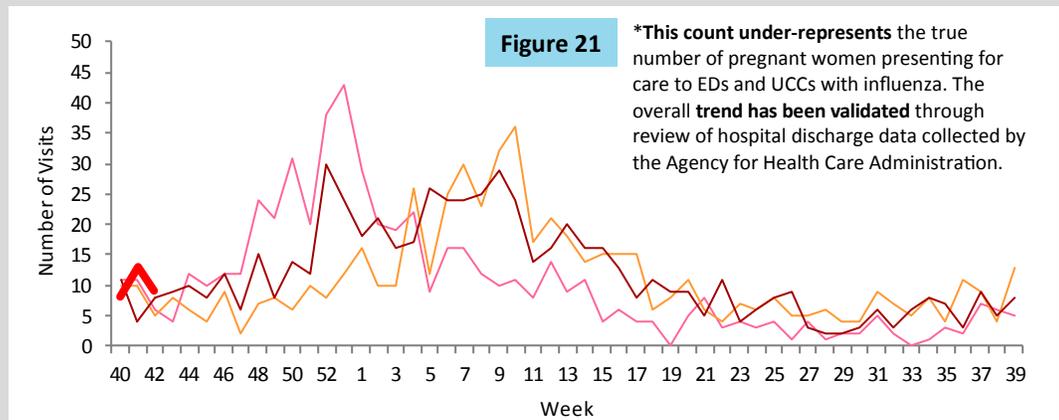
ED and UCC Visits for ILI by Pregnant Women

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

Pregnant women and their babies are at higher 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, 2014 to week 42, 2017.

In week 42, the number of visits to EDs and UCCs by pregnant women with mention of influenza decreased and was similar to levels observed 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

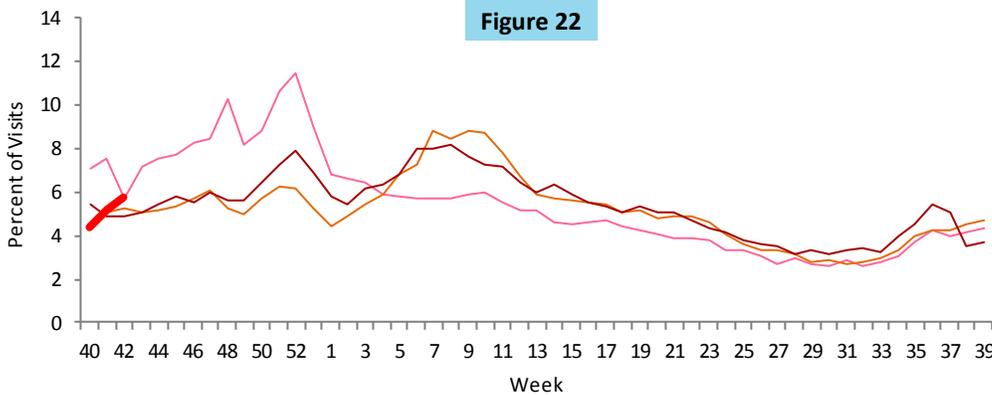


Figure 22 shows the percent of ILI visits among all ED and UCC visits for children ≤ 18 years old, as reported into ESSENCE-FL, week 40, 2014 to week 42, 2017.

In week 42, the percent of ILI visits among all ED and UCC visits for children ≤ 18 years old increased and was slightly above levels observed in previous seasons at this time.

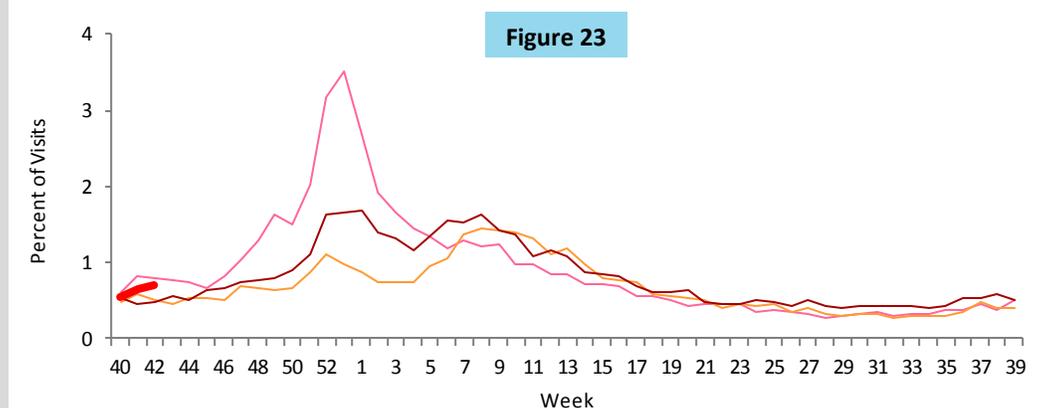
Influenza spreads easily among children based on their close interactions (less than six feet) and hygiene practices. Sick children should stay home from school. Flu activity in children often precedes activity in other age groups.

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, 2014 to week 42, 2017.

In week 42, the percent of ILI visits among all ED and UCC visits for adults ≥ 65 years old increased. Levels were similar to those observed 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.

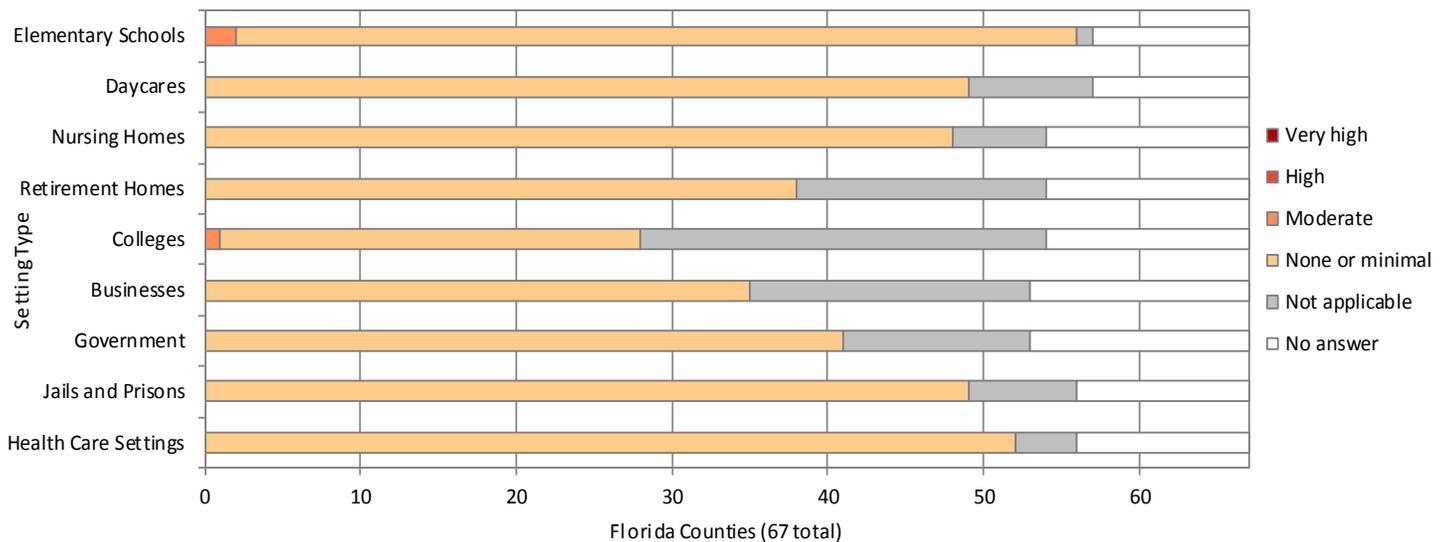
Figure 24 shows the results of the influenza activity assessment for week 42, 2017.

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

Figure 24



Settings for Children <18 Years Old

In elementary schools, 54 counties (81.8%) reported no or minimal influenza or ILI activity. Two counties (3.0%) reported moderate influenza or ILI activity.

In daycare settings, 49 counties (83.1%) reported no or minimal influenza or ILI activity.

Settings for Adults >65 Years Old

In nursing homes, 48 counties (78.7%) reported no or minimal influenza or ILI activity.

In retirement homes, 38 counties (74.5%) reported no or minimal influenza or ILI activity.

Settings for Adults 18 to 65 Years Old

In colleges, 27 of 41 counties (65.9%) reported no or minimal influenza or ILI activity. One county (2.4%) reported moderate influenza or ILI activity.

In businesses, 35 counties (70.0%) reported no or minimal influenza or ILI activity.

In government offices, 41 counties (74.5%) reported no or minimal influenza or ILI activity.

Other Unique Settings

In jails and prisons, 49 counties (81.7%) reported no or minimal influenza or ILI activity.

In health care settings, including rehabilitation facilities and mental health facilities, 52 counties (82.5%) reported no or minimal influenza or ILI activity.

RSV Activity Summary and Seasonality

RSV = respiratory syncytial virus

RSV activity:

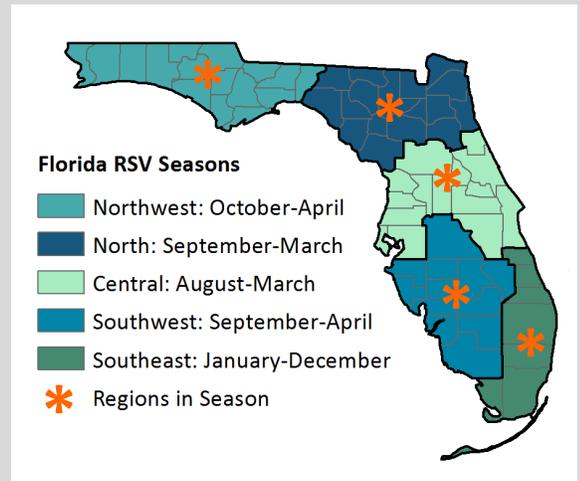
- In week 42, the percent of children <5 years old diagnosed with RSV at EDs and UCCs increased and remained above levels observed in previous seasons at this time.
- RSV activity this fall has remained higher than levels observed in previous seasons for several weeks in a row. All regions are currently in RSV season.
- To learn more about RSV in Florida, please visit: <http://www.floridahealth.gov/rsv>.

RSV Seasonality:

- RSV activity in Florida typically peaks in November through January, though activity can vary dramatically by region. According to CDC, the start of RSV season is marked by the first two consecutive weeks during which the average percentage of specimens testing positive for RSV is $\geq 10\%$.
- Florida has established regular RSV seasons based on these thresholds.
- Florida's RSV season is longer than the rest of the nation and has distinct regional seasonality. For more information on RSV seasonality in Florida, see the American Academy of Pediatrics' (AAP) 2015 Red Book.

Map 5

Florida Respiratory Syncytial Virus (RSV) Regional Season Breakdown



RSV surveillance goals:

- A statewide RSV surveillance system was implemented in Florida to support clinical decision-making for prophylaxis of premature infants. The determination of unique seasonal and geographic trends of RSV activity has important implications as it relates to prescribing patterns for initiating prophylaxis to children at high risk for RSV infection. The AAP currently recommends that preapproval for prophylactic treatment be made based on state surveillance data.
- See the back page of this report for more information on RSV surveillance systems used in Florida: page 14 ►

ED and UCC Visits for RSV by Children <5 Years Old

ED = emergency department, UCC = urgent care center, RSV = respiratory syncytial virus

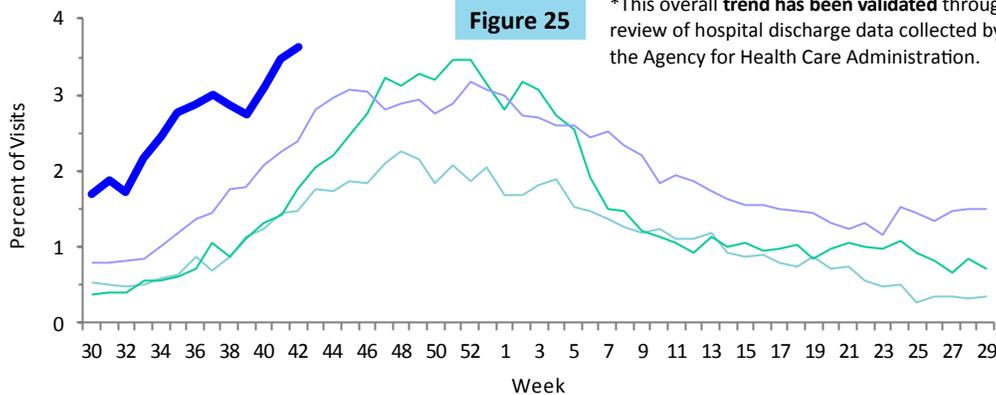


Figure 25 shows the percent of visits to EDs and UCCs with discharge diagnoses that include RSV or RSV-associated illness, as reported by participating ESSENCE-FL facilities (n=308), week 30, 2014 to week 42, 2017.

In week 42, the percent of children presenting to participating EDs and UCCs for care with RSV increased and remained above levels observed in previous seasons at this time.

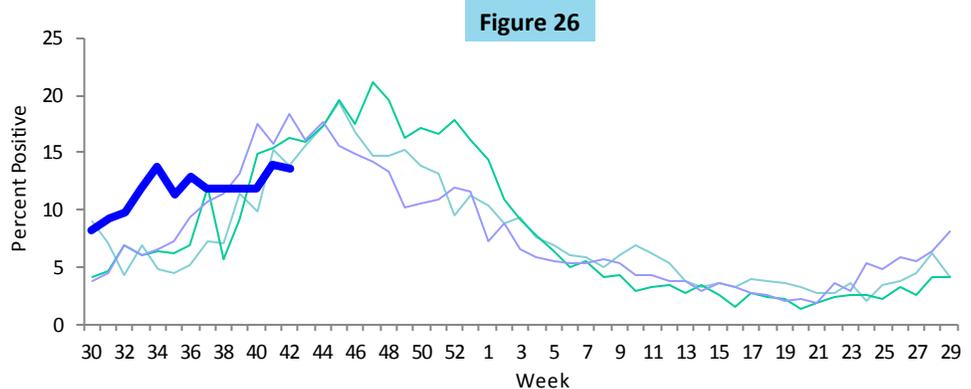
— 2017-18 — 2015-16
— 2016-17 — 2014-15

Laboratory RSV Surveillance

RSV = respiratory syncytial virus

Figure 26 shows the percent of laboratory results testing positive for RSV, as reported by hospital laboratories (n=9), week 30, 2014 to week 42, 2017.

In week 42, the percent of specimens testing positive for RSV decreased slightly and was similar to levels observed in previous seasons at this time.



— 2017-18 — 2015-16
— 2016-17 — 2014-15

Other Respiratory Virus Surveillance

Statewide activity:

- In week 42, the percent of specimens testing positive for rhinovirus, human metapneumovirus (MPV), adenovirus, and parainfluenza 1-3, and RSV decreased.
- The percent of specimens testing positive for RSV and rhinovirus remained higher than other respiratory viruses under surveillance.

Enterovirus D68 (EV-D68) activity:

- In week 42, no new cases of EV-D68 were identified in Florida.
 - One case of EV-D68 has been identified in Florida so far in 2017. The case was retrospectively identified when a specimen collected from an outbreak reported in week 33 (ending August 19, 2017) tested positive for EV-D68 by PCR at BPHL. No additional specimens collected during this outbreak investigation were positive for EV-D68.
- To learn more about EV-D68, please visit: <http://www.floridahealth.gov/diseases-and-conditions/d68>.

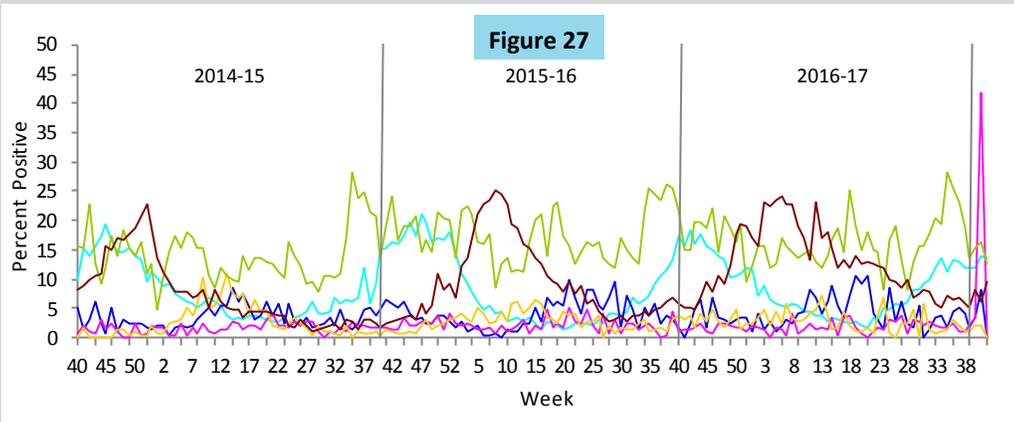
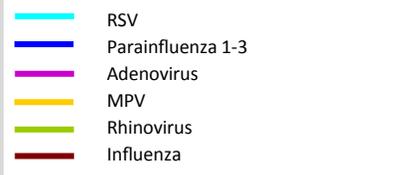
Outbreaks:

- In week 42, no outbreaks of RSV, parainfluenza, adenovirus, MPV, rhinovirus, enterovirus, or coronavirus were reported.

Laboratory Viral Respiratory Surveillance

Figure 27 shows the percent of laboratory results testing positive for eight common respiratory viruses, as reported by hospital laboratories (n=8), week 40, 2014 to week 42, 2017.

Recent data show a large spike in the percent of specimens testing positive for adenovirus. Preliminary analysis suggest this is a data artifact due to a reduction in the number of facilities that have submitted data in the last two weeks.



Non-Influenza ARIES Laboratory Outpatient Surveillance*

ARIES = Acute Respiratory Infection Epidemiology and Surveillance Program

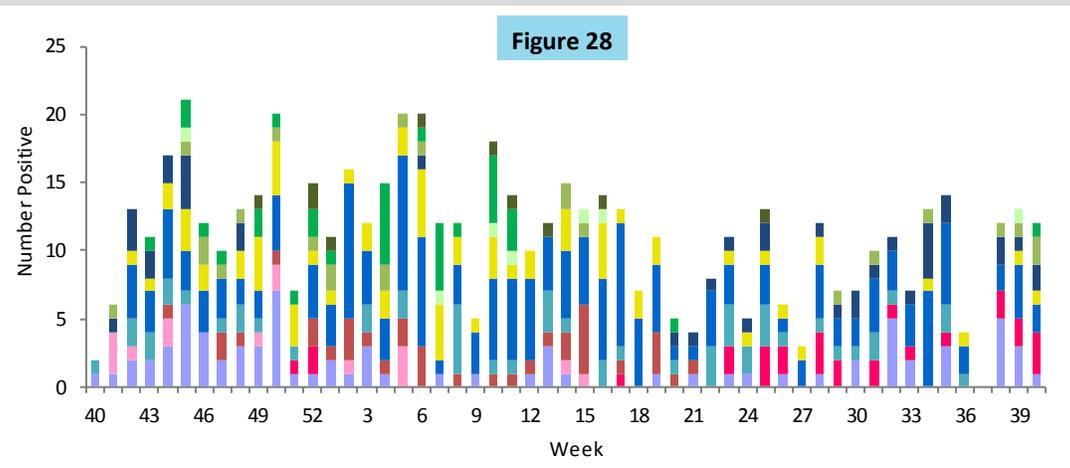
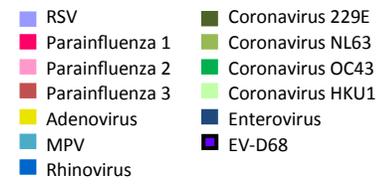


Figure 28 shows the number of specimens testing positive for 12 common respiratory viruses, as reported by BPHL and ARIES outpatient providers statewide (n=7), week 40, 2016 to week 41, 2017.

In week 41 (ending October 14, 2017), specimens submitted by ARIES providers tested positive for RSV, parainfluenza 1, rhinovirus, adenovirus, enterovirus, coronavirus NL63, and coronavirus OC43.



*Data presented here are counts, not proportions. The most recent data available are displayed here. ARIES laboratory data are currently considered to be complete through week 41, 2017. Laboratory results for specimens that have not yet been tested in full will be included in future reports.

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 influenza-like illness (ILI) and total visit counts, as well as submit ILI specimens to the Bureau of Public Health Laboratories (BPHL) for confirmatory testing.

ESSENCE-FL Syndromic Surveillance and Vital Statistics Portal · Data source for figures 1, 3-7, 11-18, 20-23, 25; map 4

- Electronic Surveillance System for the Early Notification of Community-based Epidemics (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. Participating EDs and UCCs (n=308) electronically transmit visit data into ESSENCE-FL daily or hourly.
- For statewide and regional data on ILI, visits are counted as ED or UCC visits to participating facilities that include the words “influenza” or “flu” in patient chief complaints. Chief complaints with the words “fever” and “cough,” or “fever” and “sore throat” are also counted as ILI.
- 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.
- For respiratory syncytial virus (RSV) surveillance, visits are counted as ED or UCC visits to participating facilities for which RSV or RSV-associated illness is included in the discharge diagnosis. Death record literals are also queried using a free-text query that searches for references to RSV on death certificates for children <18 years old. Any mention of RSV in the death certificate literals, with certain exceptions, is counted as an RSV-associated pediatric 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 Merlin · Data source for figure 8, map 3, and table 1

- Merlin tracks influenza and ILI outbreak investigations by CHDs. Reports by CHDs include the type of respiratory disease causing the outbreak and settings where outbreaks are occurring. CHD epidemiologists report outbreaks of influenza or ILI into Merlin, Florida’s reportable disease surveillance 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 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 figures 26-27

- 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 eight 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).

Acute Respiratory Infection Epidemiology and Surveillance (ARIES) Program · Data source for figure 28

- Acute Respiratory Infection Epidemiology and Surveillance Program (ARIES) is a nationwide surveillance system composed of nine participating jurisdictions. Florida has seven sentinel providers enrolled in ARIES who submit weekly ILI counts, as well as submit ILI specimens to BPHL for testing.

Case-Based Influenza Surveillance

- Death in a child whose laboratory-confirmed influenza infection has been identified as a contributing to the child’s death is reportable in Florida. Influenza-associated pediatric deaths are documented by CHDs in Merlin.
- In addition, an individual of any age infected with novel or pandemic influenza strain(s) is reportable in Florida. Pandemic strain influenza cases are documented by CHDs in Merlin.
- For more information about reportable diseases, please visit www.Floridahealth.gov/diseasereporting.

Summary

September 2017

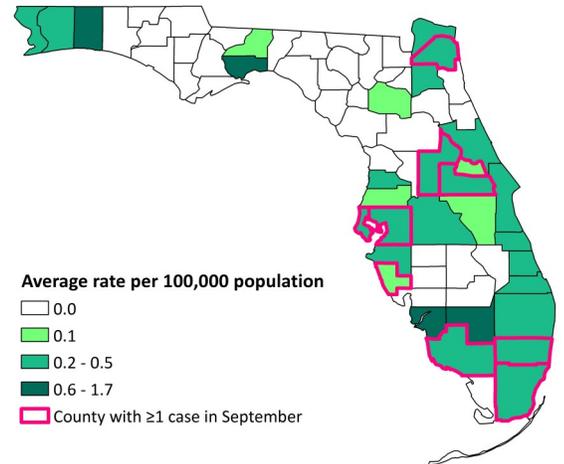
State pertussis activity:

- **Twenty-two confirmed and probable pertussis cases** were reported among 10 counties in September.
 - Reported pertussis cases are starting to decrease after having been increased during the summer months. This is consistent with seasonal trends in past years.
 - Since January 1, 2017, 294 cases of pertussis were reported among 34 of Florida’s 67 counties.
- There has been an overall trend of an increase in reported pertussis cases per year. Pertussis is naturally cyclic in nature with peaks in disease every 3-5 years.
- **There have been no recently reported outbreaks of pertussis.** However, in September, two cases were associated with each other through living in the same household.
 - For most pertussis cases, exposure to other known cases is never identified, and they are not able to be linked to outbreaks.
- **In September, for every pertussis case identified, there was an average of four exposed contacts who were recommended antibiotics to prevent illness.** Pertussis is a contagious disease that spreads person to person, usually through coughing or sneezing. For those diagnosed with pertussis, antibiotics can shorten the amount of time they are contagious to others. Antibiotics can also be used to prevent illness in those who have been exposed to pertussis cases while contagious.
- **Infants less than one year old had the highest incidence of pertussis.** This is consistent with national trends, which also show the highest incidence rate in infants less than one year old. **Infants less than two months old were also most severely affected by pertussis,** as measured by emergency department visits and inpatient hospitalizations. Infants are at greatest risk for getting pertussis and having serious complications from infection. Infants less than two months old are too young to receive vaccinations against pertussis, which is why vaccination of other age groups is so important to help prevent infection in infants.
- Vaccination is the best way to prevent pertussis infections. **In September, over a third of reported cases had not received the recommended number of pertussis vaccinations for their age.** In general, those who have received at least one pertussis vaccination have less severe outcomes than those who have never been vaccinated.
- To learn more about pertussis, please visit <http://www.floridahealth.gov/pertussis>.

National pertussis activity:

- The number of pertussis cases has been gradually increasing since the 1980s, peaking in 2012 at levels not seen since the 1950s. Since 2012, the number of pertussis cases has started to gradually decrease.
- Pertussis incidence has remained highest among infants less than one year old and lowest among those age 20 and older since the 1990s.

Map 6 Average Pertussis Incidence Rates per 100,000 Population, June 1, 2017 through August 1, 2017



Pertussis surveillance goals:

- Pertussis surveillance is conducted to identify cases for treatment to prevent death, limit transmission in settings with infants or others who may transmit pertussis to infants, and identify and prevent outbreaks.
- Surveillance is also conducted to identify contacts of cases and recommend appropriate prevention measures, including exclusion, antibiotic prophylaxis and immunization and to monitor the effectiveness of immunization programs and vaccines. For more information on the data sources used in Florida for pertussis surveillance, see page 21 ►

Pertussis Cases by Month Reported

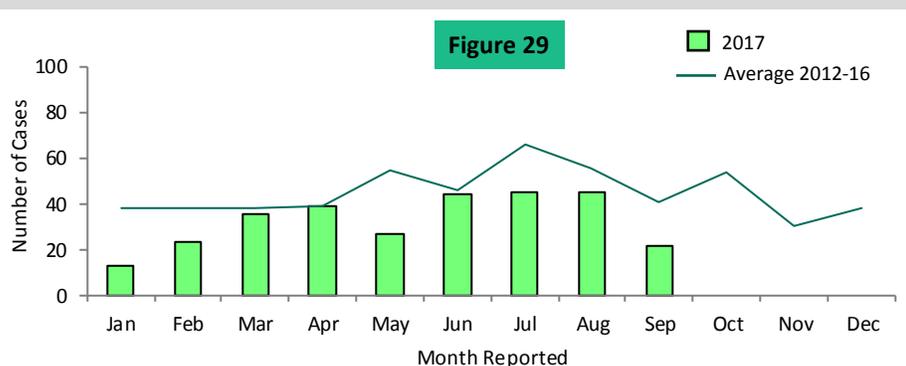


Figure 29 shows the number of confirmed and probable cases of pertussis reported into Merlin, January 2017 through September 2017 and the previous five-year average.

Thus far in 2017, the number of reported pertussis cases has been below average, except in April when two outbreaks occurred. In general, the number of reported pertussis cases tends to be highest during the summer months.

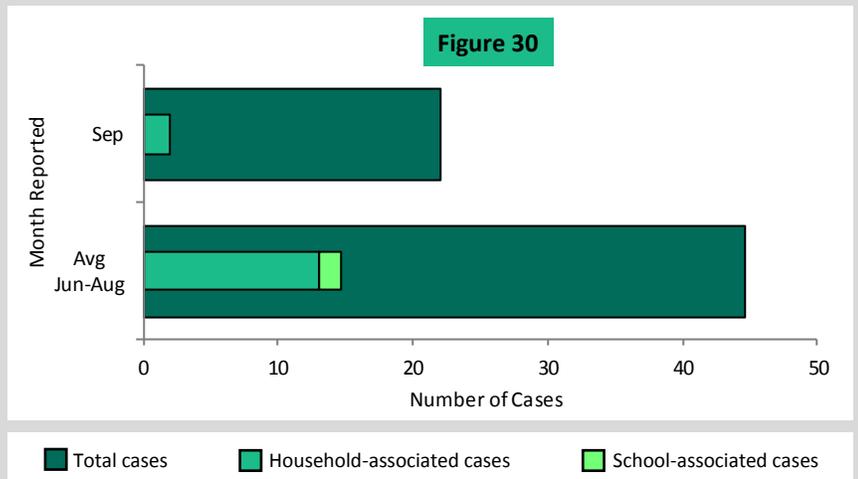
Pertussis Outbreaks

Figure 30 shows the number of confirmed and probable cases that were associated with at least one other case and the total number of confirmed and probable cases as reported into Merlin, September 2017 and the previous three-month average. Cases associated with at least one other case are shown by type of association.

Most pertussis cases were sporadic and not associated with other cases. However, in September, 2 cases were associated with a household cluster.

Outbreak Summary:

No outbreaks of pertussis were reported in September. However, four outbreaks of pertussis were reported earlier in the year in Pinellas (2 outbreaks in March), Nassau (1 outbreak in April), and Hillsborough (1 outbreak in April) Counties; all took place in a school setting.



Pertussis Treatment and Contacts

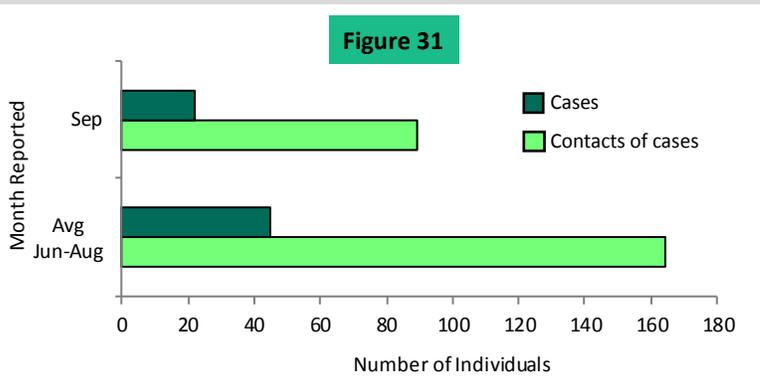


Figure 31 shows the number of confirmed and probable cases of pertussis, as reported into Merlin, September 2017 (n=22) and the previous three-month average. The figure also shows the number of contacts who were recommended antibiotics to prevent illness, September 2017 (n=89) and the previous three-month average.

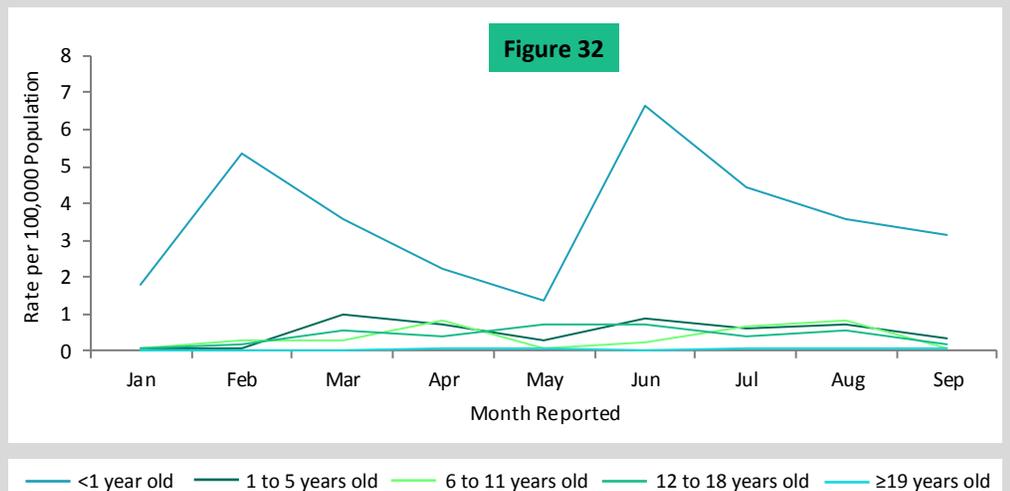
In September, 89 contacts of cases were recommended antibiotics, bringing the total number of contacts this year to 1,126.

On average, for each case there are four people exposed to the case who are recommended antibiotics to prevent illness.

Pertussis Age-Specific Incidence Rates

Figure 32 shows the age-specific incidence rates of confirmed and probable cases of pertussis, as reported into Merlin, January 2017 through September 2017.

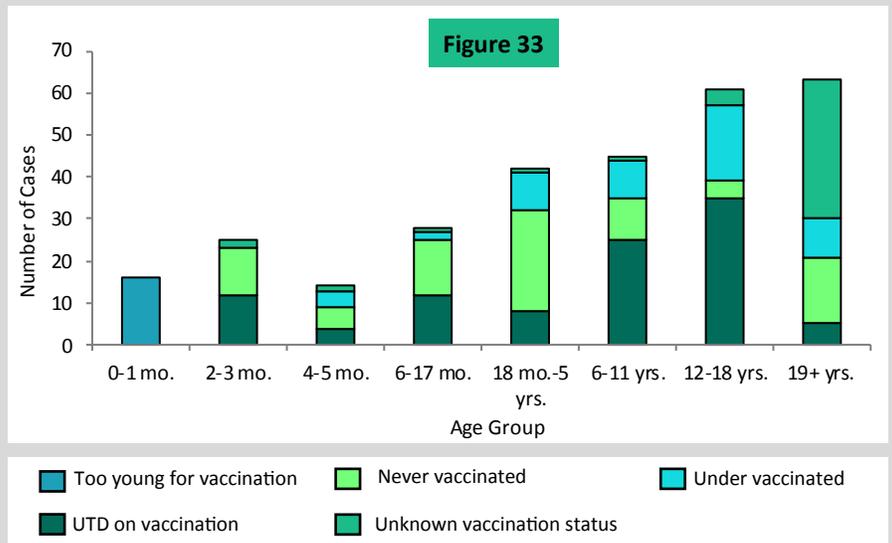
In September, the incidence rate was highest among infants <1 year old, which is consistent with previous months. Infants experience the greatest burden of pertussis infections, not only in number of cases but also in severity. Infants less than two months old are too young to receive vaccinations against pertussis, which is why vaccination of other age groups is so important to help prevent infection in



Vaccination History for Pertussis Cases

Figure 33 shows the vaccination status of pertussis cases by age group for confirmed and probable cases of pertussis, as reported into Merlin, January 1, 2017 through September 30, 2017 (n=294).

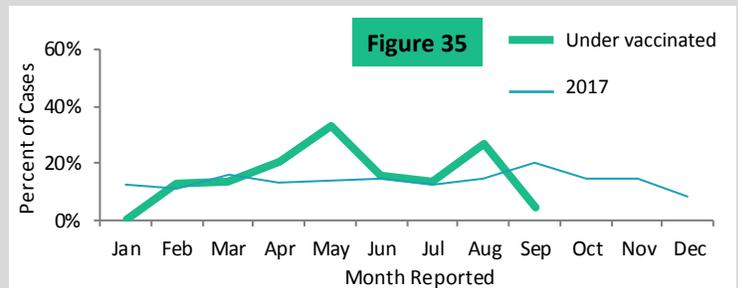
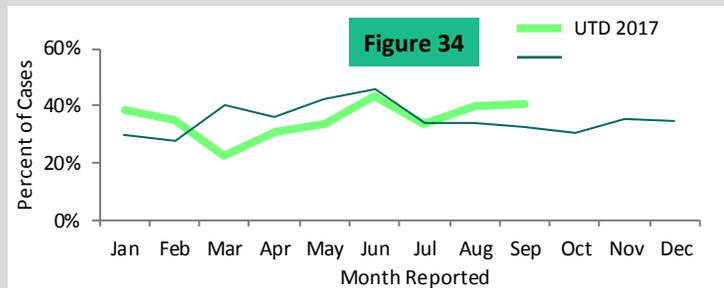
The majority of cases age 5 years and younger were not UTD on their pertussis vaccinations. The only age groups with more than half of cases up to date on pertussis vaccinations were school-aged children 6-18 years old.



Pertussis Cases in Vaccinated Individuals

Figure 34 shows the percent of confirmed and probable pertussis cases who were UTD on their pertussis vaccinations, as reported into Merlin, January 2017 through September 2017 and the previous five-year average. Figure 35 shows the percent of these cases who were under vaccinated during the same time periods.

Although individuals who have been vaccinated can still get pertussis, vaccination remains the best way to prevent pertussis.



Pertussis Outcomes

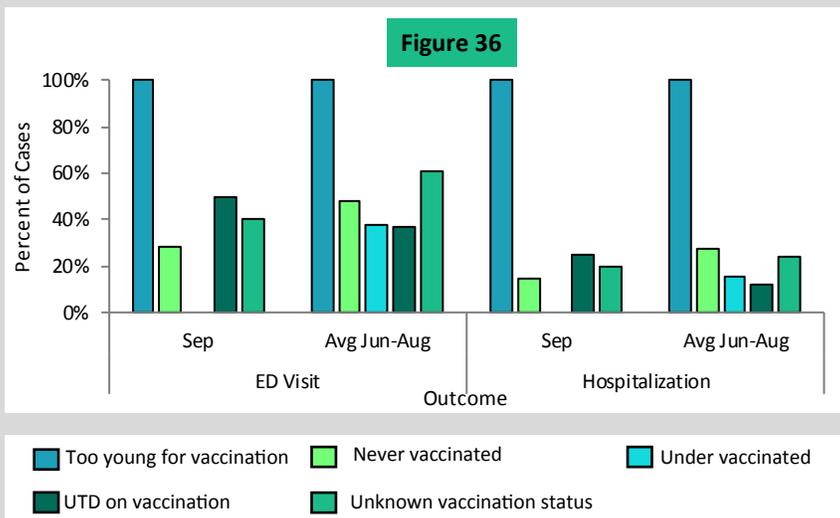


Figure 36 shows the percent of confirmed and probable cases of pertussis with select outcomes by vaccination status, as reported into Merlin, September 2017 and the previous three-month average.

Infants too young for vaccination (age 0-1 months) are most severely affected by pertussis, with 1 (100%) requiring an emergency department visit and inpatient hospitalization in September.

In general, older individuals are more likely to experience paroxysmal cough while younger individuals are more likely to experience posttussive vomiting and whoop. Primarily infants less than one year old experience apnea.

Summary

September 2017

State varicella activity:

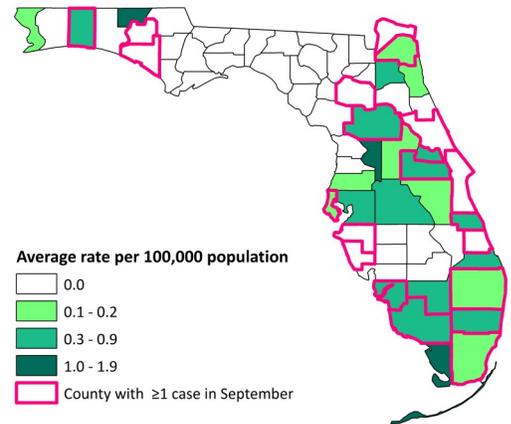
- **Forty-seven confirmed and probable varicella cases were reported among 20 counties in September.**
 - Reported varicella cases have remained steady throughout the summer after an increase in the spring. This is consistent with seasonal trends in past years.
 - Since January 1, 2017, 494 cases of varicella were reported among 50 of Florida’s 67 counties.
- In Florida, the number of varicella cases increased in 2015 after steadily decreasing since 2008. Thus far in 2017, the number of varicella cases is slightly lower than seen in 2016.
- **There have been no recent outbreaks of varicella.** In September ten cases were associated with other cases through living in the same household.
 - For most varicella cases, exposure to other known cases is never identified, and they are not able to be linked to outbreaks.
- **In September children age one to five years old had the highest incidence of varicella.** This is a change from previous months when infants less than one year old had the highest incidence.
- Vaccination is the best way to prevent varicella infections. **In September, 32% of cases were not up to date on their varicella vaccinations.** In general, those who have received at least one varicella vaccination even if they later develop disease have less severe outcomes than those who have never been vaccinated.
- In recent months, infants too young for vaccination and those not up to date on their vaccinations were most likely to visit the emergency department. Few varicella cases require inpatient hospitalization.
- To learn more about varicella, please visit <http://www.floridahealth.gov/varicella>.

National varicella activity:

- Varicella incidence has decreased significantly since a vaccine became available in 1995 and has continued to decrease since 2006 when recommendations changed from one to two doses of varicella vaccine.
 - From 2006 –2015 all age groups saw a significant decrease in incidence with the largest decline in children age 5-9 years and age 10-14 years.
- Although not all states report varicella cases to the CDC, based on available data the number of varicella cases nationally has steadily decreased each year from 2012-2015.

Map 7

Average Varicella Incidence Rates per 100,000 Population, June through August 2017.



Surveillance goals:

- Varicella surveillance is conducted to identify and control outbreaks and monitor trends and severe outcomes.
- Surveillance is also conducted to monitor effectiveness of immunization programs and vaccines. For more information on the data sources used in Florida for varicella surveillance, see page 21 ►

Varicella Cases by Month Reported

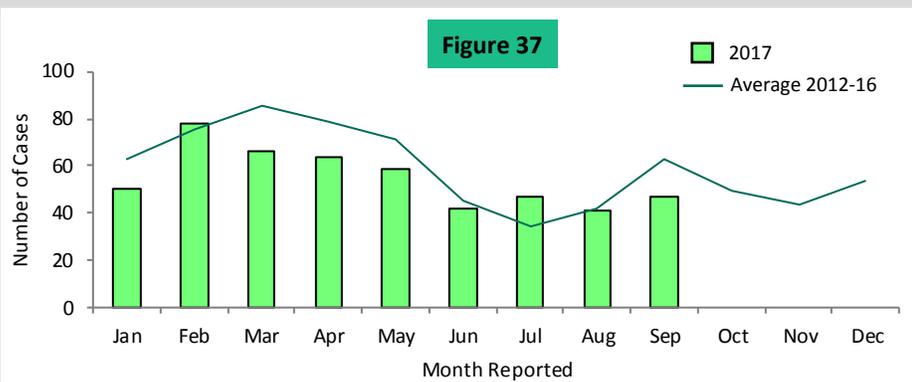


Figure 37 shows the number of confirmed and probable cases of varicella reported into Merlin, January 2017 through September 2017 and the previous five-year average.

Thus far in 2017, the number of reported varicella cases has been below average except for peaks in February and July, which was around the same time as three outbreaks. In general, varicella cases peak in the spring and fall.

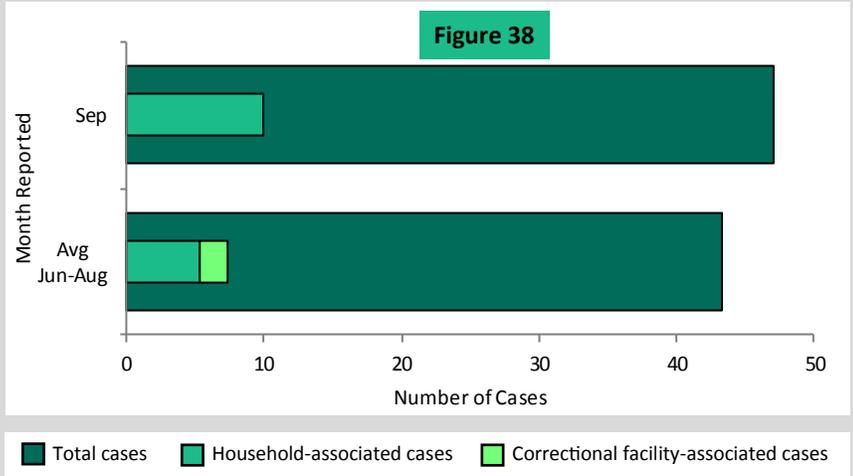
Varicella Outbreaks

Figure 38 shows the number of confirmed and probable cases that were associated with at least one other case and the total number of confirmed and probable cases as reported into Merlin, September 2017 and the previous three-month average. Cases associated with at least one other case are shown by type of association.

Most varicella cases were not associated with other cases. In September, there were 10 cases associated through living in the same household.

Outbreak Summary:

No varicella outbreaks were reported into Merlin during September, however, three outbreaks in correctional facilities (2 outbreaks in Sumter County, 1 outbreak in Liberty County) and one outbreak in a daycare (Duval County) were reported earlier in 2017.



Varicella Age-Specific Incidence Rates

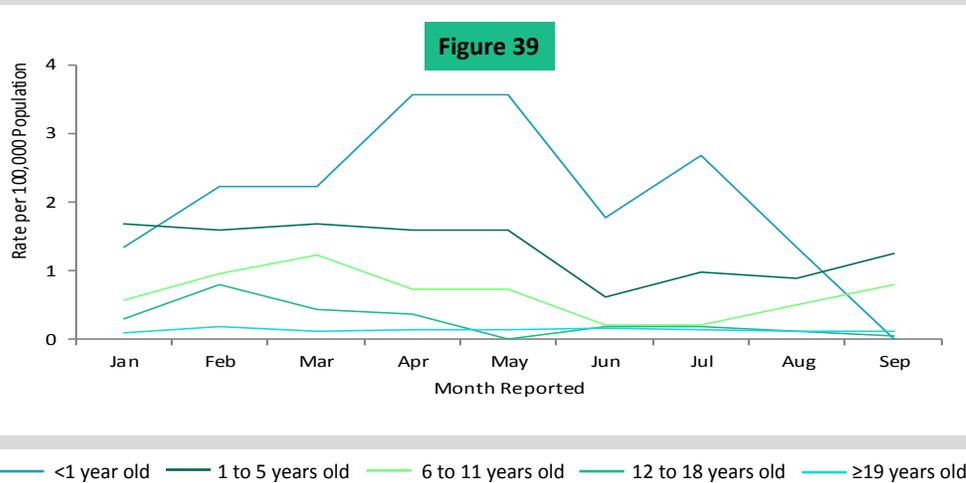


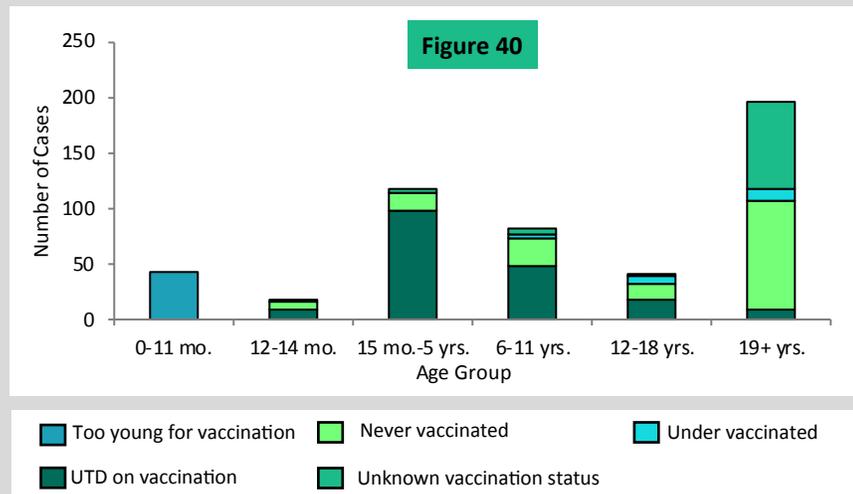
Figure 39 shows the age-specific incidence rates of confirmed and probable cases of varicella, as reported into Merlin, January 2017 through September 2017.

In September, the incidence rate was highest among children age 1-5 years old. However, from February to August the incidence rate was highest among infants less than one year old. Infants less than one year old are too young to receive vaccinations against varicella, which is why vaccination of other age groups is so important to help prevent infection in infants.

Vaccination History for Varicella Cases

Figure 40 shows the vaccination status of varicella cases by age group for confirmed and probable cases of varicella, as reported into Merlin, January 2017 through September 2017 (n=494).

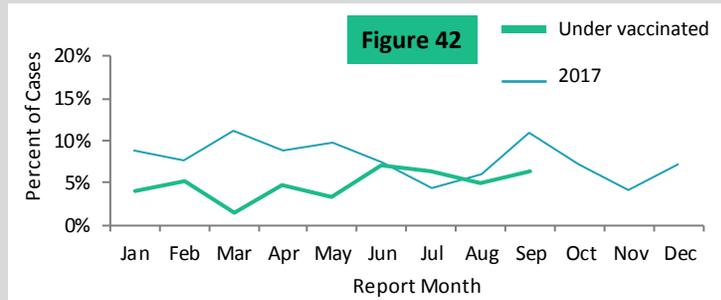
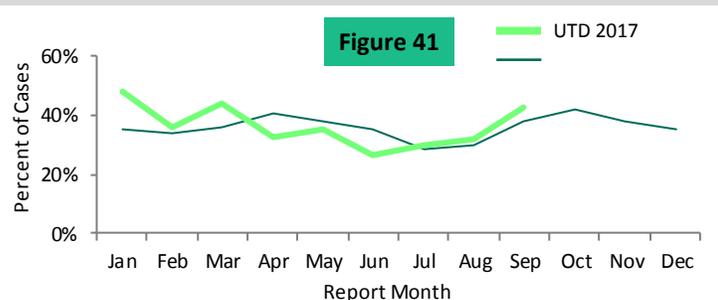
Varicella vaccinations are recommended at 12-15 months of age and 4-6 years of age. The majority, 98 (84%) of cases age 15 months—5 years old were up to date (UTD) on their varicella vaccinations, while half 160 (50%) of cases age six years and older were not up to date.



Varicella Cases in Vaccinated Individuals

Figure 40 shows the percent of confirmed and probable varicella cases who were UTD on their varicella vaccinations, as reported into Merlin, January 1, 2017 through September 30, 2017 and the previous five-year average. **Figure 41** shows the percent of these cases who were under vaccinated during the same time periods.

Although individuals who have been vaccinated can still get varicella, vaccination remains the best way to prevent varicella and severe complications.

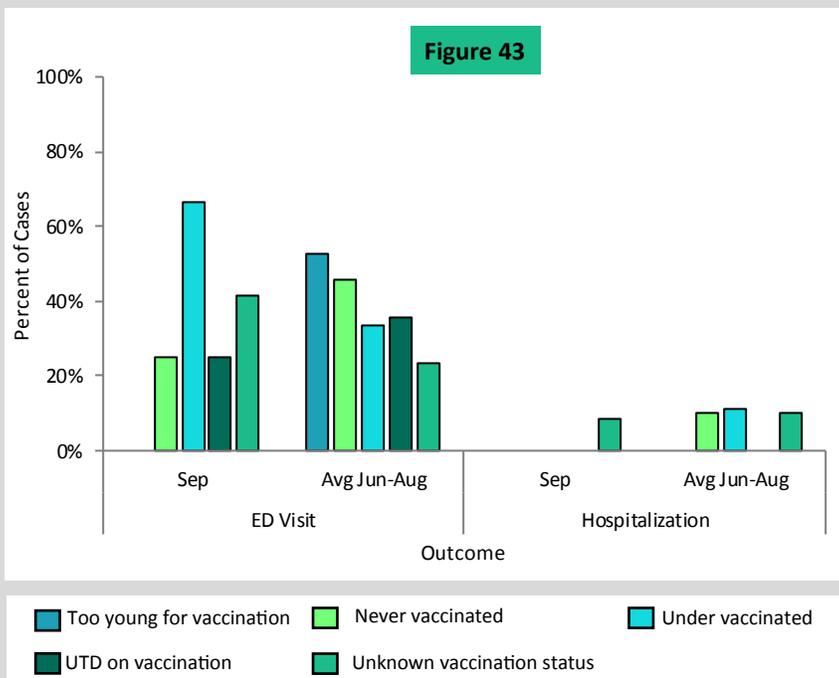


Varicella Outcomes

Figure 42 shows the percent of confirmed and probable cases of varicella with select outcomes by vaccination status, as reported into Merlin, September 2017 and the previous three-month average.

In general, cases who were UTD on their vaccinations were less likely to experience fever and vesicle lesions. Cases too young to be vaccinated or not yet vaccinated were more likely to experience papule lesions.

Infants too young for vaccination and those not UTD on their vaccinations were most likely to visit the ED. Few varicella cases require inpatient hospitalization; recent cases requiring hospitalization were either not up to date on varicella vaccinations or of unknown vaccination status.



Case Data

- Pertussis and varicella are reportable diseases in Florida. Case information is documented by county health department (CHD) epidemiologists in Merlin, Florida's reportable disease surveillance system.
- CHD epidemiologists also report outbreaks of pertussis and varicella into Merlin. Outbreaks are defined as two or more cases associated with a specific setting outside of the home. Two or more cases among members of the same household are considered household-associated cases.
- Current case information is preliminary and may change as more data are received. The most recent data available are displayed in this report.
- For more information about reportable diseases, please visit www.Floridahealth.gov/diseasereporting.

Population Data

- Population data used to calculate incidence rates are from FLHealthCHARTS (Community Health Assessment Resource Tool Set).
- For more information about FLHealthCHARTS, please visit www.flhealthcharts.com.

Vaccination Data

- Vaccination data are from Merlin, as reported by CHD epidemiologists.
- Vaccination status is determined using the Advisory Committee on Immunization Practices Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, 2017.
- Cases are considered up-to-date if they have received the recommended number of doses of vaccine for a particular disease for their age at the time of their illness onset. Cases are considered under vaccinated if they have received at least one but not all doses of vaccine recommended for a particular disease for their age at the time of their illness onset.
- For more information about immunization schedules, please visit <https://www.cdc.gov/vaccines/schedules/index.html>.