

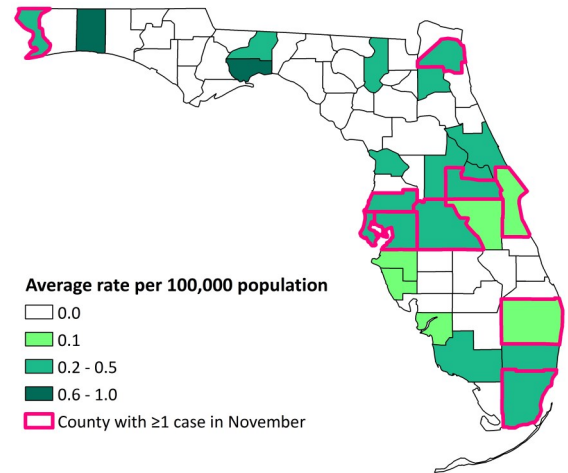
Summary

November 2017

State pertussis activity:

- **Twenty-one confirmed and probable pertussis cases** were reported among 10 counties in November.
 - Decreased pertussis activity was observed during the fall months, which is consistent with trends observed in previous years at this time.
 - From January 1, 2017 through November 30, 2017, 336 confirmed and probable cases of pertussis were reported among 36 of Florida's 67 counties.
- Since 2014, an overall decrease in the annual number of confirmed and probable cases of pertussis reported has been observed. Pertussis is naturally cyclic in nature with peaks in disease every 3-5 years.
- **One outbreak of pertussis was reported in November involving two students at a school in Hillsborough County.**
 - For most pertussis cases, exposure to other known cases is never identified, and they are not able to be linked to outbreaks.
- **In November, for every pertussis case identified, there was an average of three exposed contacts who were recommended antibiotics to prevent illness.** 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 someone with pertussis while they are 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 November, ten (48%) 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>.

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



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.

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 24 ►

Pertussis Cases by Month Reported

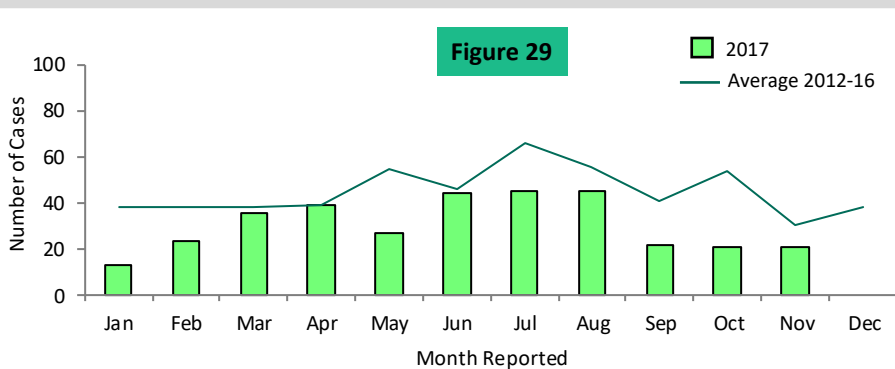


Figure 29 shows the number of confirmed and probable cases of pertussis reported into Merlin, January 2017 through November 2017 and the previous five-year average.

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.

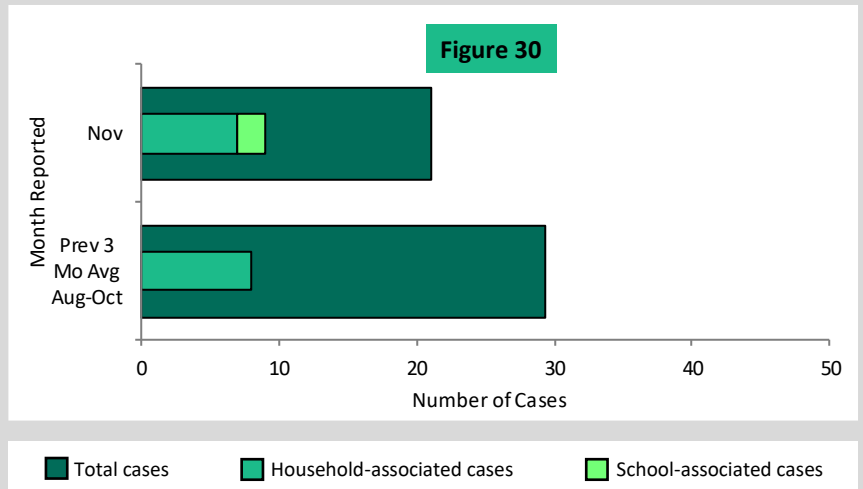
Pertussis Outbreaks

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, November 2017 and the previous three-month average. Cases associated with at least one other case are shown by type of association.

In November, 9 (43%) cases were associated with other cases including two cases part of an outbreak and seven cases connected to other cases through living in the same household.

Outbreak Summary:

In November an outbreak of pertussis was reported at a Hillsborough County school among two students. From January 1, 2017 through October 31, 2017, a total of four outbreaks of pertussis were reported. All of the outbreaks reported thus far have been in school settings.



Pertussis Treatment and Contacts

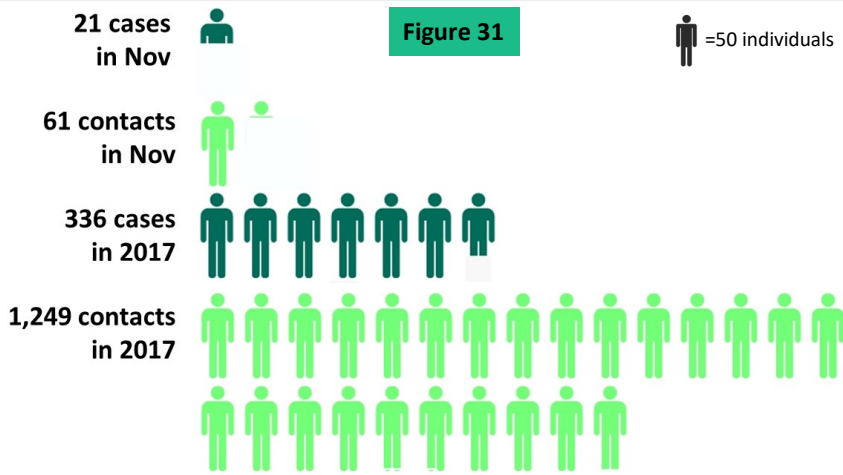
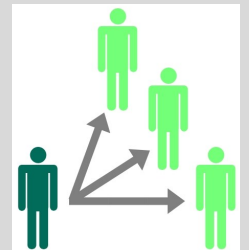


Figure 31 shows the number of confirmed and probable cases of pertussis, as reported into Merlin, and the number of contacts who were recommended antibiotics to prevent illness, November 2017 and 2017 to date.

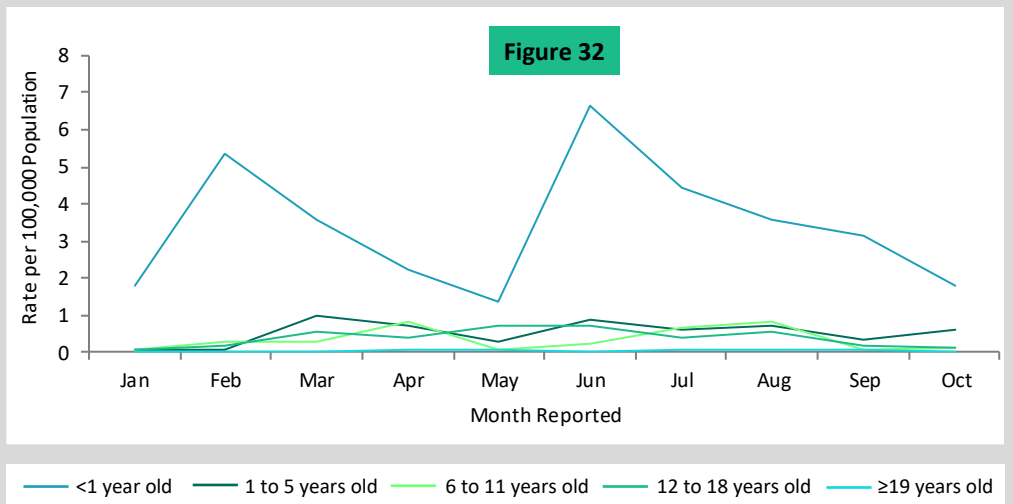
On average, for each case reported in November there were three people exposed to the case who were recommended antibiotics to prevent illness.



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 November 2017.

In November, 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 infants.

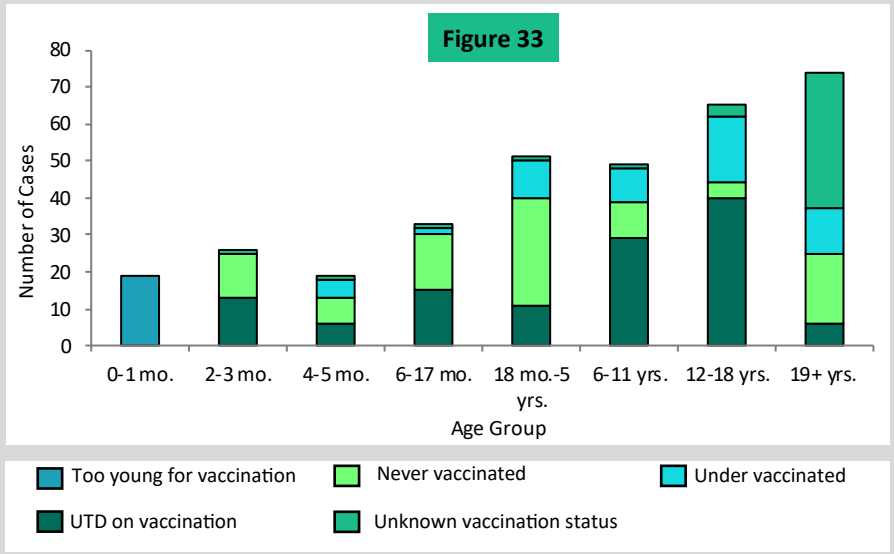


Vaccination History for Pertussis Cases

UTD = up-to-date

Figure 33 shows the vaccination status of pertussis cases by age group for confirmed and probable cases of pertussis, as reported into Merlin, January 2017 through November 2017 (n=312).

The majority of cases age 5 years and younger were not up to date 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.

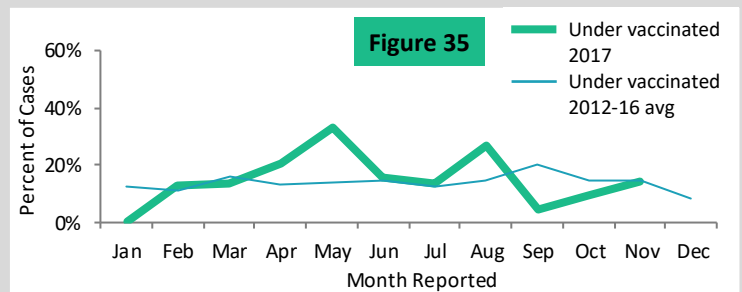
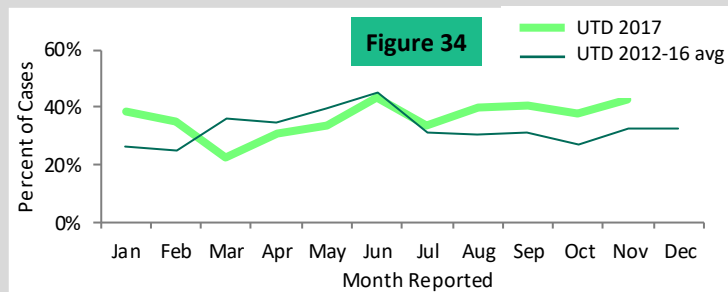


Pertussis Cases in Vaccinated Individuals

UTD = up-to-date

Figure 34 shows the percent of confirmed and probable pertussis cases who were up to date on their pertussis vaccinations, as reported into Merlin, January 2017 through November 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 and severe complications.



Pertussis Outcomes

UTD = up-to-date, ED = emergency department

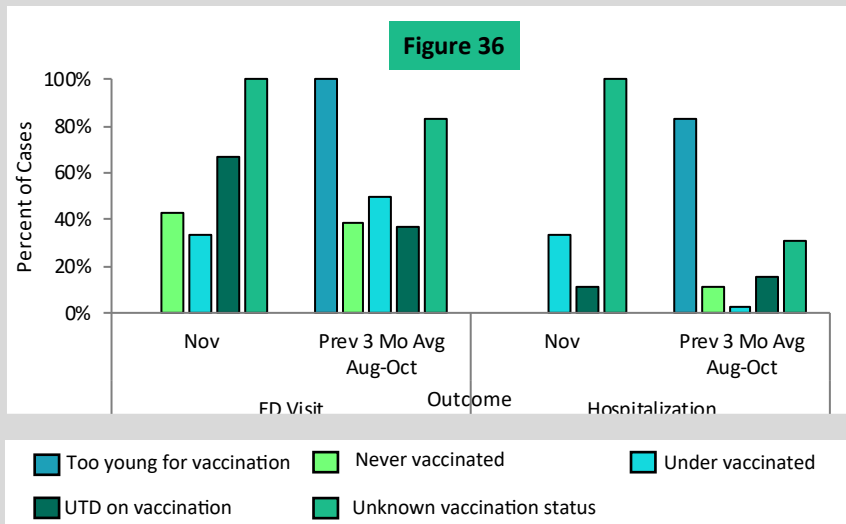


Figure 36 shows the percent of confirmed and probable cases of pertussis with select outcomes by vaccination status, as reported into Merlin, November 2017 and the previous three-month average.

In November, cases with unknown vaccination status were more likely to visit the emergency department and require inpatient hospitalization. However, in previous months infants too young for vaccination (age 0-1 months) were most severely affected by pertussis.

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.

Case Data

- Pertussis, varicella, and mumps 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, varicella, and mumps 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 from cases are from Merlin, as identified 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>.