

April 2018

## Summary

### State pertussis activity:

- **Twenty-two confirmed and probable pertussis cases** were reported among 12 counties in April.
  - Pertussis activity increased slightly from the previous month and but remained consistent with trends observed in previous years at this time.
  - From January 1, 2018 through April 30, 2018, 88 confirmed and probable cases of pertussis were reported among 24 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 cyclic in nature with peaks in disease every 3-5 years.
- **There were two outbreaks of pertussis reported in April.**
  - Both outbreaks were in school settings and consisted of two cases each.
  - For most pertussis cases, exposure to other known cases is never identified, and they are not able to be linked to outbreaks.
- **In April, 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. 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 April, 55% of reported cases had not received the recommended number of pertussis vaccinations for their age or had unknown vaccination status. In general, those who have received at least one pertussis vaccination have less severe outcomes than those who have never been vaccinated. **In April, those who were never vaccinated were most likely to visit the emergency department and require hospitalization.**
- 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.
- **A new study** found that pertussis vaccination reduces transmission of disease, but that more doses are required for disease elimination. This highlights the importance of keeping school-aged children up-to-date on vaccinations to prevent transmission in the community, especially infants too young to be vaccinated.

### Pertussis surveillance goals:

- Pertussis surveillance is conducted to identify cases to 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 11. ▶

### Map 2

Map 2 shows the previous three-month average of pertussis incidence rates per 100,000 population, January through March 2018 (green shading). Counties with one or more cases reported in April 2018 are highlighted in pink.

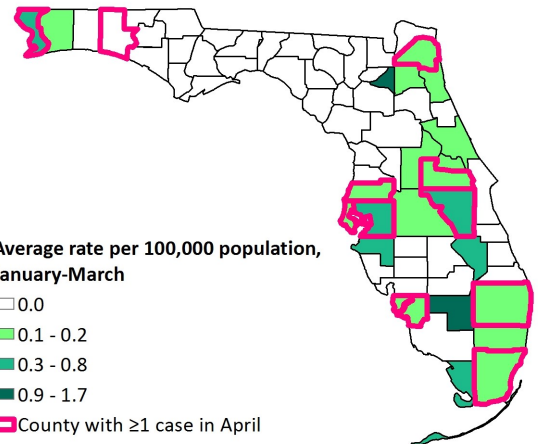
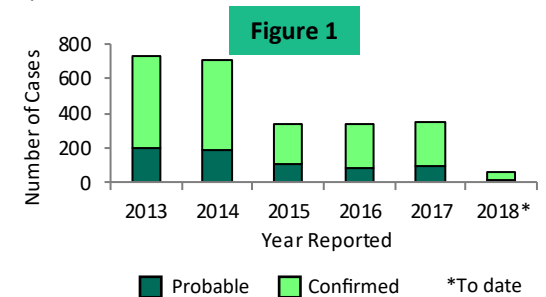


Figure 1 shows the number of confirmed and probable cases of pertussis reported into Merlin, 2013 through April 2018.



## Pertussis Cases by Month Reported

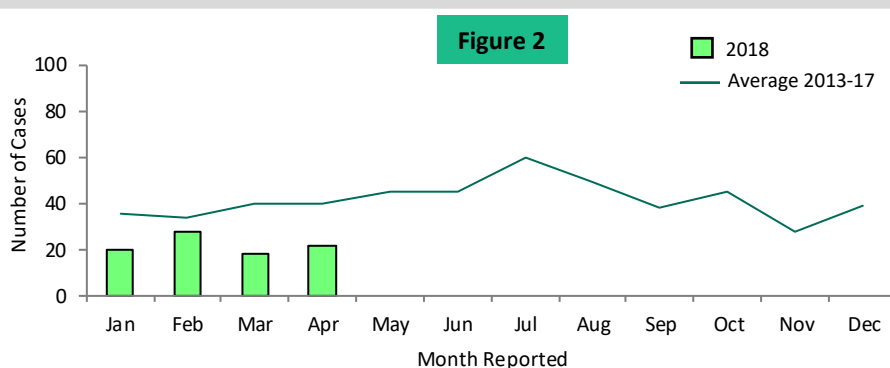


Figure 2 shows the number of confirmed and probable cases of pertussis reported into Merlin, January 2018 through April 2018 and the previous five-year average.

**In April, the number of reported pertussis cases increased slightly from March and remained below the five-year average. In general, the number of reported pertussis cases tends to be highest during the summer months.**

## Pertussis Outbreaks

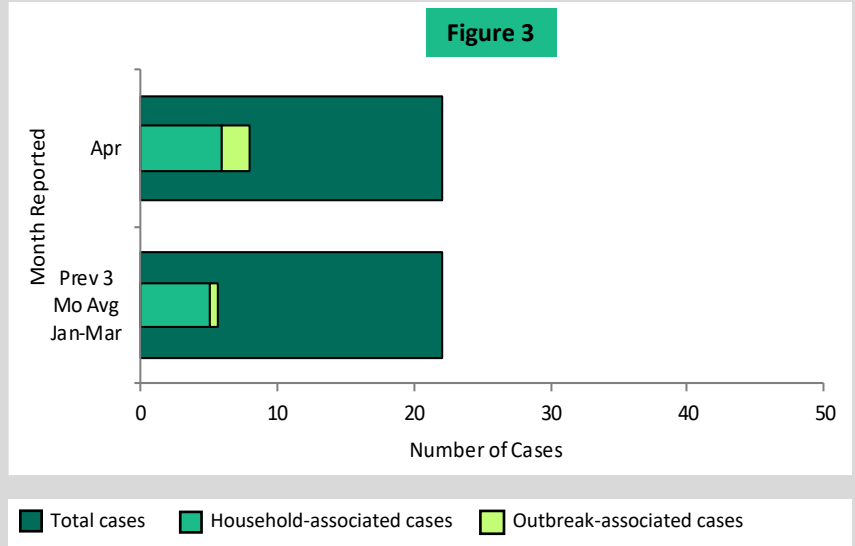
Figure 3 shows the number of confirmed and probable cases that were associated with at least one other case and the total number of confirmed and probable cases as reported into Merlin, April 2018 and the previous three-month average.

In April, six (27%) cases were associated with transmission within households and two (9%) cases were outbreak associated.

### Outbreak Summary:

In April, two outbreaks of pertussis were reported. Both outbreaks were in school settings in Escambia and Hillsborough counties. Each outbreak consisted of 2 cases, where the first case was reported in March, and the second case was reported in April.

See [page 11](#) for outbreak definitions.



## Pertussis Treatment and Contacts

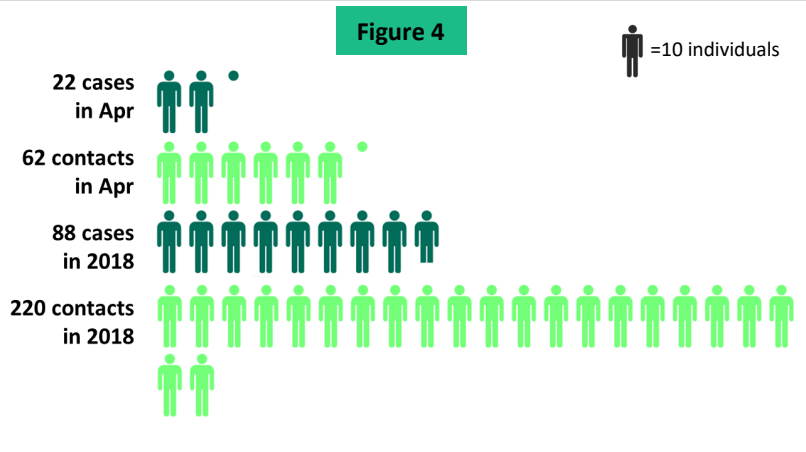
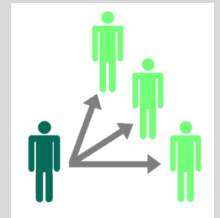


Figure 4 shows the number of confirmed and probable cases of pertussis, as reported into Merlin, and the number of contacts who were recommended antibiotics to prevent illness, April 2018 and 2018 to date.

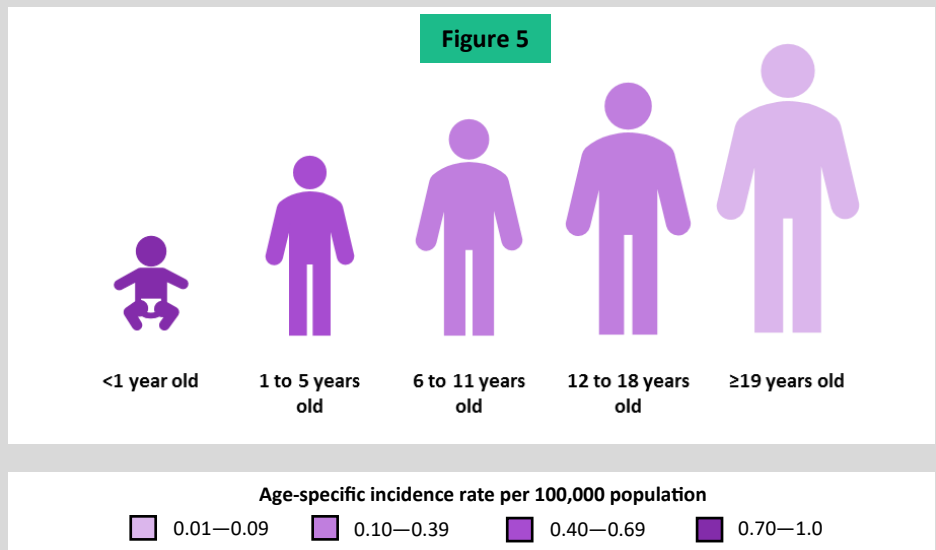
On average, for each case reported in March there were three people exposed to the case who were recommended antibiotics to prevent illness.



## Pertussis Age-Specific Incidence Rates

Figure 5 shows the age-specific incidence rates of confirmed and probable cases of pertussis, as reported into Merlin, April 2018.

In April, the incidence rate was highest among infants less than one year old at 0.8 cases per 100,000 population, 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 grandparents, parents, siblings, and other age groups is so important to help prevent infection in infants.



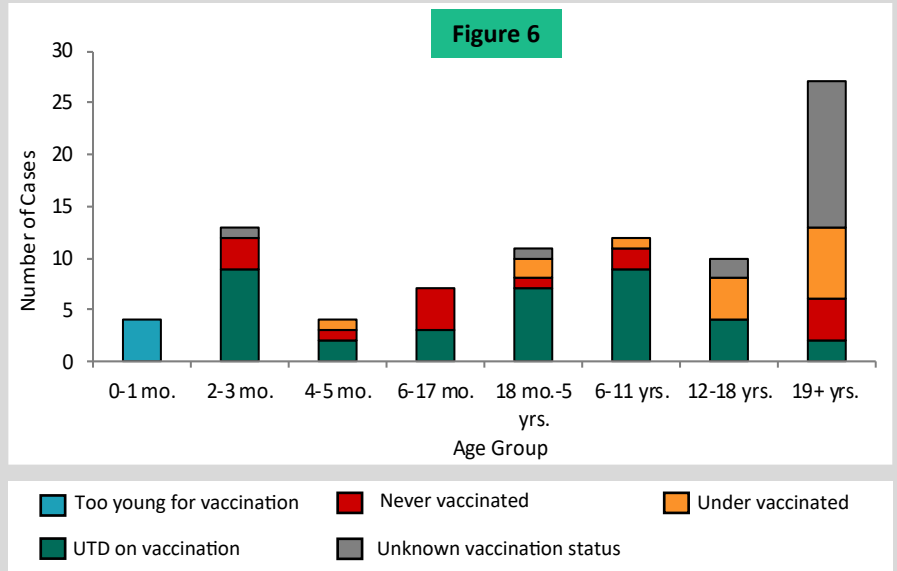
## Vaccination History for Pertussis Cases

UTD = up-to-date

**Figure 6** shows the vaccination status of pertussis cases by age group for confirmed and probable cases of pertussis, as reported into Merlin, January through April 2018 (n=88).

**Half or more of individuals in the 4-5 months and 6-17 months age groups were not up-to-date on their pertussis vaccinations.** In general, those who have received at least one pertussis vaccination have less severe outcomes than those who have never been vaccinated.

See [page 11](#) for links to the CDC recommended vaccination schedules.

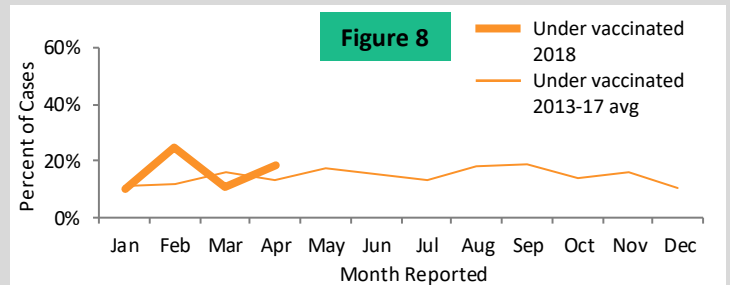
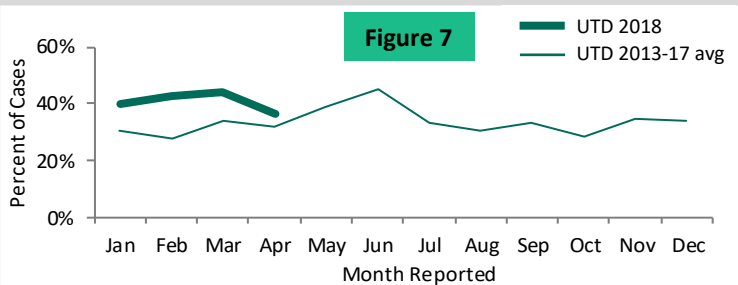


## Pertussis Cases in Vaccinated Individuals

UTD = up-to-date

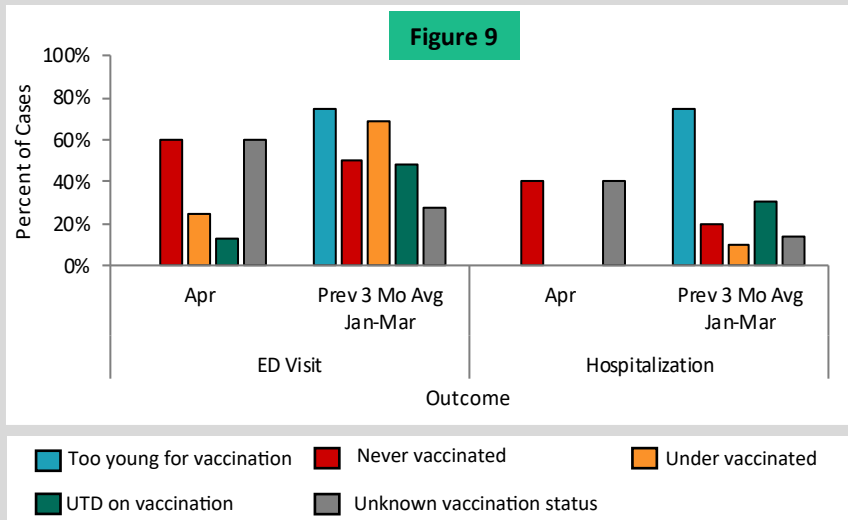
**Figure 7** shows the percent of confirmed and probable pertussis cases who were up-to-date on their pertussis vaccinations, as reported into Merlin, January through April 2018 and the previous five-year average. **Figure 8** shows the percent of these cases who were under vaccinated during the same time periods.

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



## Pertussis Outcomes

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



**Figure 9** shows the percent of confirmed and probable cases of pertussis with select outcomes by vaccination status, as reported into Merlin, April 2018 and the previous three-month average.

**In April, cases who were never vaccinated or who had unknown vaccination status were more likely to visit the emergency department and require inpatient hospitalization.**

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

- Current case information is preliminary and will change as new data are gathered. The most recent data available are displayed in this report.
- 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.
  - Household-associated cases are defined as two or more cases exposed within the same household.
  - Pertussis and mumps outbreaks are defined as two or more cases associated with a specific setting outside of a household.
  - Varicella outbreaks are defined as five or more cases associated with a specific setting outside of a household.
- For more information about reportable diseases, please visit [www.Floridahealth.gov/diseasereporting](http://www.Floridahealth.gov/diseasereporting).
- For more information about Florida's guides to surveillance and investigation, including disease specific probable and confirmed case definitions, please visit [www.Floridahealth.gov/gsi](http://www.Floridahealth.gov/gsi).

## 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](http://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, 2018.
- 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>.
- For a full text version of a new study on pertussis vaccination, please visit <http://www.cidid.org/publications-1/2018/3/29/the-impact-of-past-vaccination-coverage-and-immunity-on-pertussis-resurgence>