Section 1

Notable Outbreaks and Case Investigations

Section 1: Notable Outbreaks and Case Investigations

In Florida, any disease outbreak in a community, hospital or institution and any grouping or clustering of patients having similar disease, symptoms, syndromes or etiological agents that may indicate the presence of an outbreak are reportable as per Florida Administrative Code Chapter 64D-3. Selected outbreaks and case investigations of public health importance that occurred in 2019 and 2020 are briefly summarized in this section.

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Bacterial Diseases

Legionellosis Outbreak Associated With Federal Prison—Sumter County November 2019–February 2020

Authors

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Background

On January 15, 2020 the Florida Department of Health in Sumter County (FDOH-Sumter) was notified of an influenza-like illness (ILI) outbreak at the Federal Correctional Complex (FCC) Coleman-Satellite Camp. At the time of initial report, there were 45 cases of ILI since December 2019 with 14 cases resulting in pneumonia. On January 22, 2020, FDOH-Sumter received a report of two urine antigen laboratory results positive for *Legionella* Serogroup 1. The Regional Environmental Epidemiologist (REE) was notified on January 22, 2020, and in accordance with the Florida Department of Health's (the Department) *Guidelines for the Surveillance, Investigation and Control of Legionnaires' Disease in Florida*[1] (GSI), FDOH-Sumter initiated a full epidemiologic and environmental waterborne disease outbreak investigation the same day.

Methods

Epidemiologic Investigation

FDOH-Sumter obtained and reviewed the medical records for all reports of legionellosis from the FCC Coleman-Satellite Camp. Active surveillance for additional cases within the facility was performed and recommendations on legionellosis testing methods were provided to facility staff. State-level monitoring for additional cases was conducted. An outbreak-specific questionnaire was developed and administered in person to cases and matched controls. Controls were matched by age and dorm assignments and selected by FCC Coleman staff according to those parameters. The data were recorded electronically using Microsoft Forms and analyzed using Microsoft Excel 2016 and EpiInfo 7.

A confirmed case of Legionnaires' disease was defined as an individual who had overnight exposure to the FCC Coleman-Satellite Camp within 14 days of onset of clinically compatible symptoms (pneumonia and at least two of these symptoms: fever, cough, shortness of breath and/or myalgia) with confirmatory laboratory evidence of infection (i.e., positive culture, urine antigen test, fourfold rise in antibodies) between November 2019 and February 2020.

Figure 1: Google Maps image of the FCC Coleman Satellite Camp facility areas, November 2019–February 2020

A suspect case of Legionnaires' disease was defined as an individual who had overnight exposure to the FCC Coleman-Satellite Camp within 14 days of onset of clinically compatible symptoms (pneumonia and at least two of these symptoms: fever, cough, shortness of breath and/or myalgia) with supportive laboratory evidence of infection (i.e., single positive antibody titer) between November 2019 and February 2020.

A confirmed case of Pontiac fever was defined as an individual who had overnight exposure to the FCC Coleman-Satellite Camp within 5 to 72 hours of onset of clinically compatible symptoms (fever, chills, myalgia, malaise, headache, fatigue, nausea or vomiting) without pneumonia and with confirmatory laboratory evidence of infection (i.e., positive culture, urine antigen test, 4-fold rise in antibodies) between November 2019 and February 2020.

A suspect case of Pontiac fever was defined as an individual who had overnight exposure to the FCC Coleman-Satellite Camp within 5 to 72 hours of onset of clinically compatible symptoms (fever, chills, myalgia, malaise, headache, fatigue, nausea or vomiting) without pneumonia and with supportive laboratory evidence of infection (i.e., single positive antibody titer) between November 2019 and February 2020.

Laboratory Analysis

Clinical specimens were requested from all persons at the FCC Coleman-Satellite Camp who presented with acute respiratory symptoms consistent with legionellosis between November 2019–February 2020. The specimens were tested by a private laboratory. Environmental samples were collected by FDOH-Sumter and the REE and were tested by the Bureau of Public Health Laboratories in Jacksonville (BPHL-Jacksonville).

Environmental Assessment

On January 23, 2020, an environmental health assessment of the facility was conducted by FDOH-Sumter and the REE. The facility plumbing was visually inspected on site but building blueprint diagrams were not available for review. Free chlorine levels, pH and water temperature were measured and recorded throughout the facility premise plumbing.

On February 20, 2020, the REE and FDOH-Sumter staff returned to the facility for an environmental health assessment of the cooling tower units closest to the Satellite Camp and the cosmetology building. FCC Coleman staff and Federal Bureau of Prisons staff assisted the FDOH-Sumter assessment team.

Results

Epidemiologic Investigation

A total of 34 cases of legionellosis were identified as part of the outbreak investigation: two confirmed cases of Legionnaires' disease, two confirmed cases of Pontiac fever, five suspect cases of Legionnaires' disease and 25 suspect cases of Pontiac fever. Cases ranged in age from 23 to 73 years old (median 45.5 years) and all were female. Symptoms reported among cases included cough (85%), myalgia (59%), fever (56%) and headache (56%). Onset dates ranged from November 4, 2019 through February 3, 2020 (Figure 2). Three cases were hospitalized and no deaths were reported among cases. Incubation period and duration of illness were not reported for the outbreak cases.

A case control study was conducted to identify statistically significant exposures. The controls were matched by age and dorm assigned and selected by the facility staff. All cases and controls were interviewed in person by eight FDOH epidemiology staff from four county health departments and two REEs on February 26, 2020. One selected control refused interview, so there were 32 cases and 31 controls. No exposures were found to be statistically significant.

Laboratory Analysis

Four clinical specimens tested positive by urine antigen and 30 clinical specimens were positive by one antibody titer. For the 30 suspect cases, either no convalescent specimen was collected or the convalescent specimen did not demonstrate a four-fold increase in antibody titer levels from the first test.

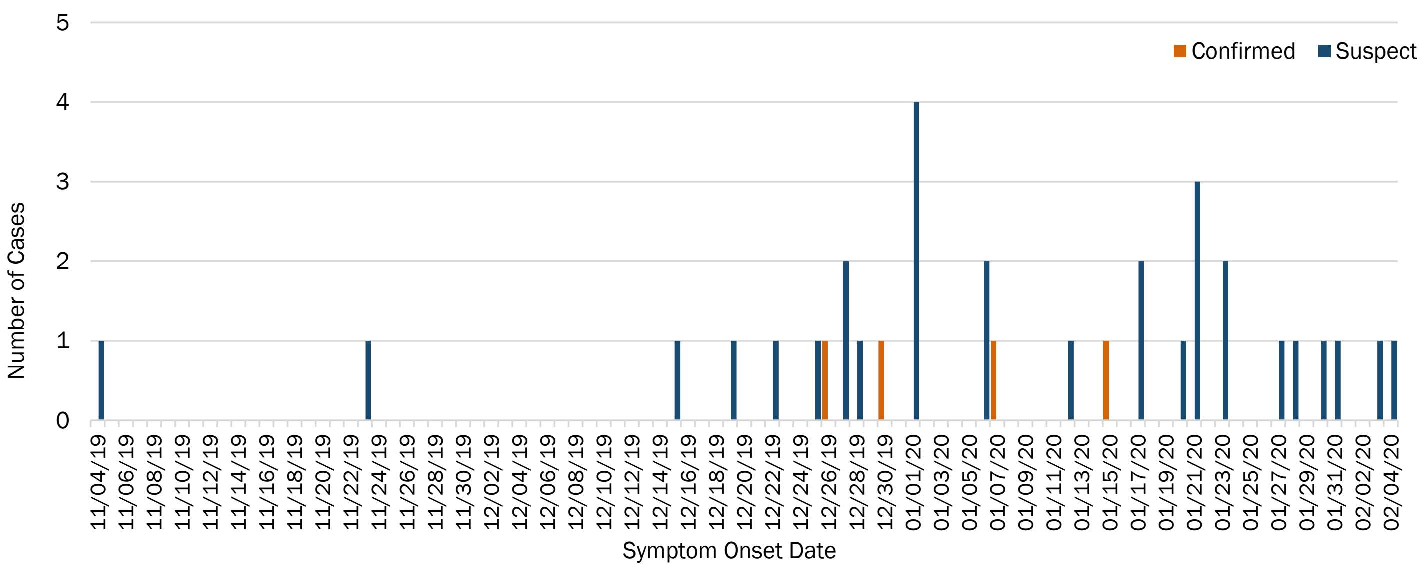
Thirty environmental samples were collected between January 23, 2020 and February 20, 2020, including 16 one-liter bulk water bottles and 14 swabs, and all samples tested negative for growth of *Legionella pneumophilia* by BPHL-Jacksonville.

Environmental Assessment

Premise plumbing water samples of the FCC Coleman-Satellite Camp F1 and F3 showers and sinks, ground floor boiler, food service boiler and the facility water main access locations were collected on January 23, 2020 and analyzed by BPHL -Jacksonville. Water temperatures, pH and residual free chlorine were also measured when collecting samples and other areas for the premise plumbing. Hot water temperatures ranged from 105°F to 128.8°F with a median of 108.7°F and free chlorine residual results ranged from 0.18 ppm to 1.25 ppm with a median of 0.81 ppm. On February 8, 2020 the facility installed point-of-use filters on the showers to protect against *Legionella* in the FCC Coleman-Satellite Camp.

Following the reports of two additional cases with onset dates in February 2020, on February 20, 2020 water samples of the three Satellite Camp cooling tower units and the cosmetology building premise plumbing were collected along with water temperatures, pH and residual free chlorine measurements. During the weekend of February 21–22, 2020, the premise plumbing was hyper-chlorinated by the facility along with the three cooling tower units nearest the Satellite Camp. After the case control study interviews, the interview team was given a tour of the facility and it was learned one of the Satellite Camp cooling tower units had tested positive for 230 CFU/mL of *Legionella pneumophilia* Serogroup 1 in June 2019 through routine testing by a private company. According to the facility staff, the specific camp tower unit was immediately taken off line on July 15, 2020 and drained and cleaned.

Figure 2: Cases associated with legionellosis outbreak at FCC Coleman Satellite Camp November 2019 – February 2020, by illness onset date (n=34)



Conclusions

This investigation conducted by FDOH-Sumter was initiated in accordance with the *FDOH GSI of Legionnaires' Disease in Florida*[1] on January 22, 2020 after receiving notification of two confirmed *Legionella pneumophilia* cases who stayed overnight at the FCC Coleman-Satellite Camp within 12 months. After a full epidemiological and environmental health assessment, 34 legionellosis cases were associated with this facility. No environmental water samples collected by FDOH-Sumter tested positive for the presence of *Legionella* bacteria. One routine environmental sample collected and tested by a private company contracted by FCC Coleman-Satellite Camp tested positive for *Legionella pneumophilia* Serogroup 1 in cooling tower unit 3 in June 2019.

In June of 2019, FCC Coleman had tested 13 different cool tower units on the property and the Satellite Camp tower 3 unit that was positive was the only unit positive for *Legionella* spp. during that round of environmental samples. Detection of 230 CFU/mL of *Legionella* in a cooling tower indicates a level 4 remedial action wherein cleaning and/or biocide treatment of the equipment is indicated. It is additionally stated that a level of *Legionella* between 100-999 CFU/mL represents a moderately high level of concern and is approaching levels that may cause an outbreak.

Legionellosis is an infection caused by the inhalation or aspiration of water contaminated with *Legionella* bacteria and can be classified into two forms of illness. Legionnaires' disease, a serious and sometimes fatal form of pneumonia, is characterized by a nonproductive cough, shortness of breath, fever, diarrhea, headaches, muscle aches and the presence of pneumonia.[2,3] The other form of legionellosis, called Pontiac fever, is less severe illness without the presence of pneumonia that usually resolves without treatment within two to five days. The incubation period for development of both forms of legionellosis is typically 2 to 14 days after exposure to the pathogenic bacteria; however, in practice determination of the exact exposure relative to symptom onset is often difficult.

The facility had not been associated with any previous legionellosis clusters or outbreaks in the past and did not have a *Legionella* water management program in place at the time of the initial investigation. FDOH-Sumter recommended the facility implement a water management program for the prevention and control of *Legionella*.

References

1. Centers for Disease Control and Prevention. *Legionella* (Legionnaires' Disease and Pontiac Fever): Signs and Symptoms. https://www.cdc.gov/legionella/about/signs-symptoms.html.
2. Florida Department of Health. (2014). Guidelines for the Surveillance, Investigation and Control of Legionnaires' Disease in Florida. https://floridahealth.sharepoint.com/sites/GSI/EpiDocs/gsi-legionella-update-final.pdf.
3. Heymann, D. (2015). Control of Communicable Diseases Manual. *American Public Health Association*, *20*, 334–337.

Viral Diseases

Hand, Foot and Mouth Disease Outbreak at a Local University

Authors

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Background

On November 1, 2019, the Florida Department of Health in Leon County (FDOH-Leon) was contacted by a health clinic medical director about an outbreak of hand, foot and mouth disease among college-age students at a local university. FDOH-Leon immediately initiated an outbreak investigation and active case finding.

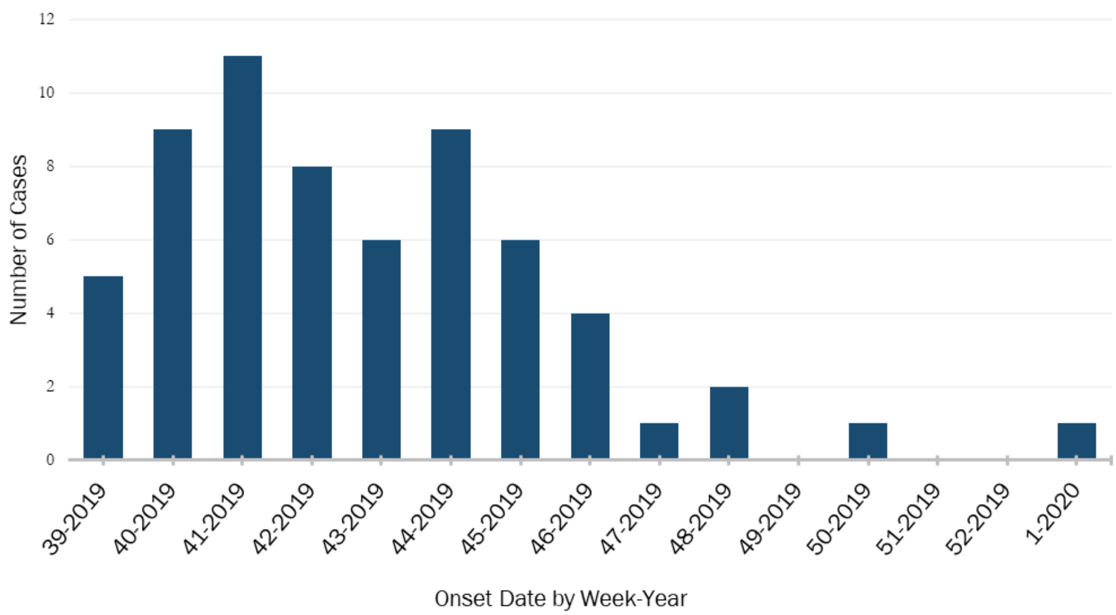
Hand, foot and mouth disease (HFMD) is a contagious viral illness caused by different viruses. Although it is common in infants and children younger than 5 years old, older children and adults can also contract HFMD. Symptoms often include the following: fever, reduced appetite, sore throat and a feeling of being unwell. Painful sores may develop in the mouth. A rash of flat red spots may develop on the hands and feet, including the palms and soles, as well as on other parts of the body. These symptoms usually appear in stages and not all at once. Symptomology and severity often differ among cases but adults are more likely than children to be asymptomatic.

Section 1: Notable Outbreaks and Case Investigations

Methods

FDOH-Leon collected a list of ill persons from the health clinic medical director. A confirmed case of HFMD was defined as a person affiliated with the local university with multiple papulovesicular or maculopapular lesions affecting the palms of hands, soles of feet, arms, legs, face, oral mucosa or buttocks from September 24, 2019, to January 2020. Cases were interviewed and educated by the local university health clinic providers. All ill persons were provided information on HFMD, hand washing and hygiene and cleaning and disinfecting frequently touched surfaces. Individuals were instructed to notify their personal close contacts. If the ill person provided consent, university housing was notified to perform deep cleaning of the individual's dormitory and bathroom. At this time, there is no specific medical treatment for HFMD and symptoms typically resolve on their own in 7 to 10 days. Active monitoring and surveillance at the institution remained for 2 consecutive incubation periods after the final clinically diagnosed case.

Figure 1. Weekly Number of Hand, Foot and Mouth Cases Among University Students by Onset Date, Leon County, September 24, 2019–January 4, 2020



Results

The index case was a 21-year-old male who developed a rash and sore throat on September 24, 2019, and subsequently was diagnosed by a university health clinic provider on September 25, 2019. Five days after diagnosis of the index case, 4 symptomatic persons affiliated with the local university were medically evaluated at the university health clinic and clinically diagnosed with HFMD. A total of 63 people met the HFMD confirmed surveillance case classification with onsets ranging from September 24, 2019, to January 4, 2020 (Figure 1). The duration of illness ranged from 6 to 10 days. Cases were adults ages 18 to 24 years old with a median age of 19. All cases reported symptoms of rash, 87% reported sore throat, 66% reported fever and 24% reported cough.

Conclusions

While HFMD is common in infants and children younger than 5 years old, this investigation is a reminder that individuals of all ages are susceptible to contracting the disease. Additionally, many communicable diseases such as HFMD can spread quickly in individuals who attend schools or daycares and those who reside in congregate or group settings. Proper education and mitigation measures are needed in order to slow the spread of disease. The institution took the necessary precautions by educating students and residents to practice proper hygiene, disinfecting of communal areas, providing residents with sanitation materials, advising students to stay home if ill and offering telemedicine consultations for those unsure about their condition.

Reference

1. Centers for Disease Control and Prevention. Hand, Foot, and Mouth Disease (HFMD). https://www.cdc.gov/hand-foot-mouth/about/treatment.html.

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Measles Acquired Through International Travel in a College Student

Authors

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Background

On January 18, 2020, the Florida Department of Health in Hillsborough County (FDOH-Hillsborough) was notified by a local hospital of a 21-year-old male with suspected measles and an investigation was immediately initiated. Measles was suspected after evaluation of symptom progression along with a report of recent international travel to Brazil with a possible epidemiological connection to other measles cases. The patient had been informed by a family friend in Brazil that during the patient's time in Brazil, measles cases had been identified and associated with a New Year's party that the patient had attended. Specimens were collected by the hospital and sent to the Bureau of Public Health Laboratories (BPHL). On January 21, 2020, the patient tested PCR-positive for measles.

Methods

FDOH-Hillsborough interviewed the suspected measles patient on January 18, 2020 and collected a thorough vaccination history, travel history and symptomology. The patient stated that he was born in Brazil and was vaccinated for measles as a child, reportedly receiving doses of vaccine in 1998, 1999 and 2000. The patient traveled to Brazil from December 15, 2019 to January 6, 2020. On January 14, 2020, the patient developed fever, sore throat, cough, conjunctivitis and nasal congestion. On January 17, the patient developed a rash on his face and presented to a Hillsborough County urgent care clinic (UCC). The patient was diagnosed with an allergic reaction and sent home. The following day, January 18, 2020, the rash progressed to his trunk and the patient visited a Hillsborough County emergency department (ED). The ED performed rapid testing for group A *Streptococcus* (strep), which was positive. The patient was diagnosed with strep throat, given a penicillin shot and discharged home. Later that day, the patient was called by a friend, a physician in Brazil, who had recently diagnosed measles in individuals who had attended the same large party that the patient had attended in Brazil. The patient returned to the ED on January 18, 2020 and provided the information to the hospital, which prompted a suspicion of measles in the patient by the hospital and therefore the hospital notified FDOH-Hillsborough. Nasopharyngeal (NP), blood and urine specimens were collected by the hospital on January 18, and on January 20, the hospital authorized for testing at BPHL. On January 21, the NP and urine were PCR-positive for measles.

FDOH-Hillsborough collected information on all activities during the patient's infectious period. The patient was a current student at a college in Hillsborough and had attended classes while infectious. Possible exposures were also identified at the UCC, ED and at a pharmacy where a prescription was filled. Lists of potential exposed customers, patients and staff were elicited from the UCC, ED and pharmacy. Contacts were interviewed about their vaccination status and current health, were educated on measles and directed to follow up with a health care provider and FDOH-Hillsborough if they developed any symptoms.

To assess college exposures, the patient's class schedule and activities were reviewed with the college and it was determined that because all students and faculty attend a daily chapel session together, everyone should be considered potentially exposed. Proof of vaccination and immunity were reviewed by FDOH-Hillsborough for all student and faculty. Any student without documentation of immunization was advised to isolate in their room during the incubation period. FDOH-Hillsborough provided educational letters to the college, spoke at the college and provided a measles, mumps and rubella (MMR) vaccination opportunity to anyone without proof of previous vaccination. A press release was also issued on January 23, 2020.

All contacts from all locations were monitored through the incubation period and additional notifications were provided to the local medical community through mass email and fax correspondence. Additional surveillance was conducted using Florida's syndromic surveillance system.

Results

The patient reported an onset of rash on January 17, 2020, indicating an infectious period of January 13, 2020, until January 21, 2020. During the January 18 interview, FDOH-Hillsborough advised the patient to isolate until specimens had been collected and testing had been finalized, preventing any additional exposures on January 19 to 21. From January 13 to 18, potential exposures were identified among the patient's roommate, a Hillsborough County pharmacy, the UCC, the ED and at the patient's college.

FDOH-Hillsborough identified one roommate who was successfully contacted and was fully vaccinated. FDOH-Hillsborough notified the pharmacy and the staff on shift of the possible exposure. The UCC identified 4 staff and 12 patients with possible exposures. Of these 16 individuals, 13 were successfully contacted by FDOH-Hillsborough and 12 had evidence of immunity. The ED identified approximately 225 potentially exposed staff and patients and 183 were contacted, with 172 having evidence of immunity. Seven patients did not have immunity, resulting in 1 infant being recommended to receive immune globulin as prophylaxis.

The college had an enrollment of 479 students and about 80 current faculty. FDOH-Hillsborough, in collaboration with college leadership, reviewed immunity status of all students and faculty. All faculty had evidence of immunity. The student review resulted in an initial list of about 60 unvaccinated students and five with unknown vaccination status. The 65 students were advised to isolate either in their dorm rooms or at their off-campus housing. All isolated students were interviewed and educated on measles and surveyed on their interest in vaccination. The college agreed to provide support services such as food, nursing and remote learning for all isolated students on campus. FDOH-Hillsborough offered vaccination to all unvaccinated students with 11 accepting. Additional students were able to locate vaccination records, and as result, 30 students without evidence of immunity remained in isolation during their incubation periods. No secondary measles cases were identified among the possible exposures at any of the locations.

Conclusions

This case investigation highlights the importance of physicians collecting a thorough travel history and the value of awareness of the locations of international measles outbreaks. Even with the initial delays in measles identification, the notification of FDOH-Hillsborough on January 18, 2020, prevented additional exposures from occurring while measles testing was being performed. The college's entrance requirement for documentation of measles vaccine history aided in quickly determining the immunity status of hundreds of possible exposures, many of whom were residents of states outside Florida or countries other than the U.S.

Atypical West Nile Virus Disease Outbreak in Florida During the Coronavirus Disease-19 (COVID-19) Pandemic

Authors

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Background

West Nile virus (WNV) is the most common mosquito-transmitted human pathogen in Florida. Activity is generally seasonal, with annual disease incidence fluctuating considerably. Most infections are asymptomatic, with <1% developing neuroinvasive disease. Due to the risk of blood transfusion transmission, universal blood donor screening began in 2003. During 2020, the Florida Department of Health (the Department) identified intense WNV activity in Florida, with a high number of WNV-positive blood donors.

Section 1: Notable Outbreaks and Case Investigations

Methods

Epidemiologic Investigation

WNV disease cases were classified as confirmed or probable using the national Council of State and Territorial Epidemiologists surveillance case definition. While asymptomatic blood donors do not meet case criteria, they are still indicative of virus activity in an area and are reported by Florida to the Centers for Disease Control and Prevention (CDC). Blood banks are required to report donors who screen positive for WNV and the county health departments conduct similar investigations following the receipt of positive laboratory results. Local mosquito control programs were notified of suspected cases as appropriate. Syndromic surveillance queries of emergency room chief complaint and discharge diagnoses were also used as part of the case-finding efforts, targeting individuals between 30–80 years of age with possible WNV disease, encephalitis or meningitis.

Due to the atypical distribution of activity in the state and the high number of blood donors reported, additional data analysis was performed to compare the 2020 WNV activity among symptomatic cases and blood donors to historical data (2001–19). Chi-square or Fisher's exact test were used to test for statistical significance.

Laboratory Analysis

Confirmatory testing was performed at reference laboratories, such as the Department's Bureau of Public Health Laboratories or CDC for all symptomatic cases and blood donors.

Results

Epidemiologic Investigation

During 2020, 41 WNV-positive blood donors in Florida were reported. Four subsequently developed a febrile illness. An additional 47 WNV disease cases (44 neuroinvasive and 3 non-neuroinvasive) were also identified. Six of the symptomatic cases were first identified using the syndromic surveillance query, 1 of whom had not initially been diagnosed with or tested for WNV infection.

Activity primarily occurred in southern Florida, with Miami-Dade County representing the vast majority (34 asymptomatic blood donors and 28 symptomatic cases, including 2 blood donors). This was almost double the cumulative historical activity for Miami-Dade County; statewide, 2020 had the second-highest number of WNV infections reported. Miami-Dade reported early season transmission (April–September) peaking in July, while activity in other counties occurred later (June–October). Historically, activity primarily occurs in Florida during the summer months, peaking in August. Increased WNV activity was primarily identified among counties that regularly report no activity; environmental conditions were thought to contribute to the atypical distribution.

Historically, few blood donors are reported annually (range 0–8), with the overall ratio of neuroinvasive cases to blood donors at 7.44:1. During 2020, this ratio was approximately 1.07:1. In 2020, blood donors were reported from five blood banks; one represented 72% of Miami-Dade County's blood donors alone. Ethnicity was statistically significant, with a higher proportion of Hispanic individuals reported in 2020 (47% of symptomatic cases and 51% of blood donors vs. 5% of symptomatic cases and 7% of blood donors historically), most likely reflecting the differences in underlying population demographics in south Florida compared to other parts of the state. Age was also significant among symptomatic cases, occurring in older individuals on average in 2020 (range 29–85, median 63) than historically (range 2–93, median 53). A statistically significant higher proportion of homeless blood donors were reported in 2020 (49%) than historically (5%; data from 2005–2019). Overall, there were 20 blood donors and 1 symptomatic case who reported being homeless.

Conclusions

Both the high numbers of blood donors and homeless person infections identified in Miami-Dade County have not previously been seen in Florida. Many blood banks had a reduction in donors during 2020 due to COVID-19; the blood bank associated with most positive samples reported a 40% reduction. This blood bank provides cash incentives for donations and represented most homeless blood donors (95%). The full impact that COVID-19 played on exposure risk to WNV is unknown and should be investigated further.

Section 1: Notable Outbreaks and Case Investigations

Responding to a Dengue Fever Outbreak During the Coronavirus Disease-19 (COVID-19) Pandemic, Key Largo, Florida, 2020

Authors

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Background

Dengue virus (DENV), an arbovirus, is a leading cause of acute febrile illness among returning U.S. travelers. While previously endemic in Florida, locally acquired cases were not identified after 1935 until the 2009–10 Key West outbreak. Since then, there has been at least 1 local case almost annually. Despite decreases in travel during the COVID-19 pandemic, a local dengue fever (DF) outbreak was identified in Key Largo in 2020. Dengue fever and COVID-19 can have similar febrile illnesses, making detection of DF cases more challenging.

Methods

Epidemiologic Investigation

The Florida Department of Health in Monroe County (FDOH-Monroe) issued a mosquito-borne illness advisory on March 9, 2020, following the identification of a local DF case in Key Largo (symptom onset February 18, 2020). Due to an increased number of COVID-19 cases, an executive order restricting public access in multiple southeast Florida counties was also implemented at the end of March. No additional cases were identified until several concerned residents called FDOH reporting suspected DF illness on June 16, 2020. This was followed the next day by a report from the local hospital of another suspected case. On June 26, a mosquito-borne illness alert was issued after eight cases were confirmed. While also responding to COVID-19, FDOH-Monroe set up a hotline for residents to report DF-like illness, interviewed suspected DF cases, conducted site visits, provided extensive health care provider and community outreach and promptly provided updates to partners and local media. The State Health Office provided surge support for these activities remotely. Suspected DF cases were asked to provide contact information for persons with shared mosquito exposure risks (e.g., same households, workplaces or outdoor events). Contacts were called and offered DENV testing if they reported a recent unexplained febrile illness. FDOH also conducted syndromic surveillance of local hospital chief complaint and discharge diagnosis records. DF cases were classified as confirmed or probable using the national Council of State and Territorial Epidemiologists surveillance case definition.

Laboratory Analysis

FDOH-Monroe offered sample collection at their local clinic for individuals reporting symptoms consistent with DF. Samples were sent to the Department's Bureau of Public Health Laboratories (BPHL) for DENV polymerase chain reaction (PCR) and antibody testing (IgM and IgG) as appropriate. BPHL also performed confirmatory testing for commercially positive samples. When available, acute samples where only commercial dengue serology had been ordered were also sent to BPHL for PCR testing. The Centers for Disease Control and Prevention (CDC) assisted with serotyping PCR-positive samples and provided PCR testing for mosquito pools collected by the Florida Keys Mosquito Control District (FKMCD).

Environmental Assessment

FKMCD was notified of possible mosquito exposure locations for suspected cases during the 2-week incubation period before symptom onset through the potential 1-week viremic period after symptom onset. FKMCD enhanced aerial and truck spraying and canvassed neighborhoods to conduct vector surveillance, remove mosquito breeding sites and provide mosquito control education.

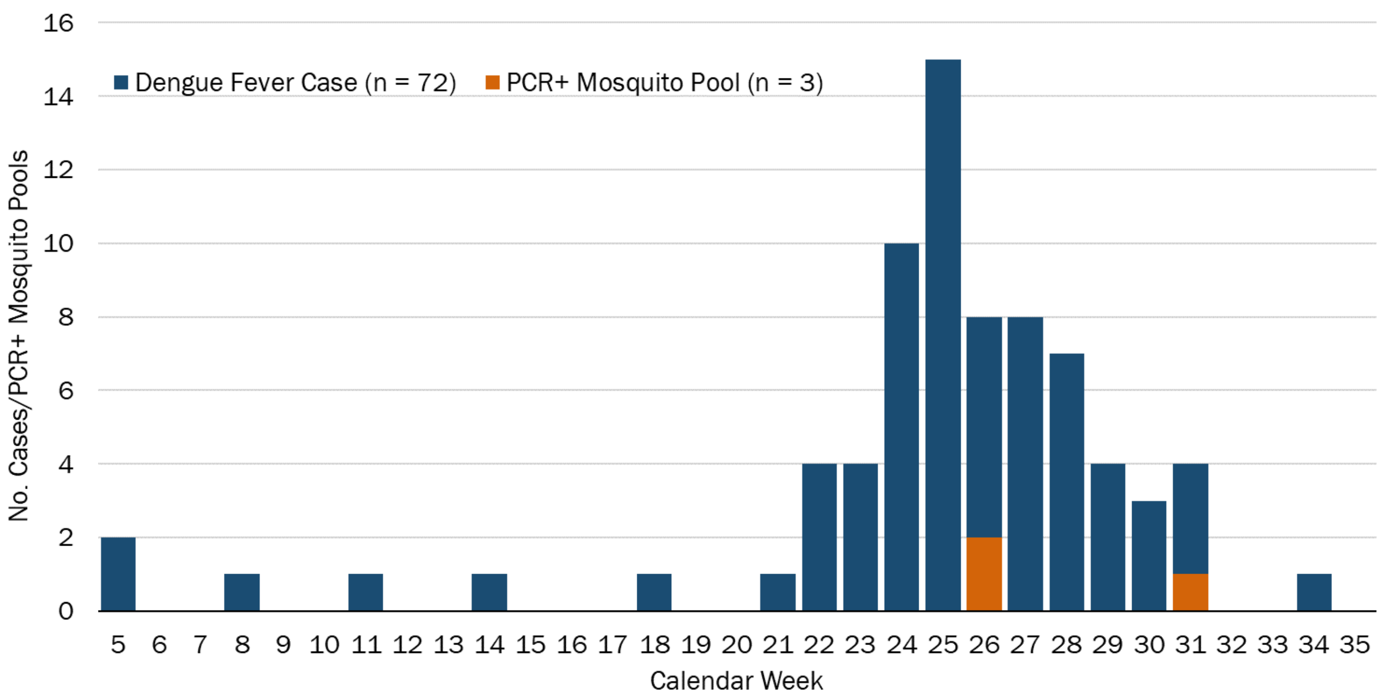
Results

Epidemiologic Investigation

Seventy-two locally acquired DF cases were identified. Retrospective case finding and testing identified IgM-positive cases with reported symptom onset as early as January. The case median age was 54 years (range = 8–86 years) and slightly more cases were female (51%). Most cases were white and non-Hispanic (83%). Two cases had unknown race and ethnicity. Eight cases (11%) were hospitalized and no deaths occurred. Self-reporting, including via contact outreach, drove case identification with 61% of cases self-reported and 64% of the positive samples collected directly by FDOH.

Laboratory Analysis

Forty-three cases sought care for their illness within 1 week of symptom onset. For most of these cases (58%), clinicians ordered COVID-19 testing but no evidence of commercial DF testing was identified. Testing was ordered for both DF and COVID-19 in just under one-third of the cases (30%), while 3 cases (7%) were tested only for DF. For 2 additional cases (5%) neither DF nor COVID-19 testing were ordered. Of the 16 acute cases with testing requested for DF, most (75%) had DENV antibody testing with no PCR, while DENV PCR testing was ordered for only 4 cases (25%). No acute samples were tested using the DENV non-structural protein (NS1) test, an alternative to the DENV PCR test. Of 26 case samples collected within a week of symptom onset with both DENV PCR and IgM testing results from any lab, 14 (54%) were DENV PCR-positive and IgM-negative while only 4 (15%) were DENV IgM-positive and PCR-negative, with the remaining 8 samples (31%) both PCR- and IgM-positive. All PCR-positive cases were serotype DENV-1. Three (3%) of 96 *Aedes aegypti* mosquito pools collected between June 18 and September 21, 2020, also tested positive for DENV-1.



Conclusions

The COVID-19 pandemic is suspected to have negatively impacted dengue surveillance due to reluctance to seek medical care, competing demands on providers during a rapidly evolving pandemic and similar clinical presentations for COVID-19 and DF. Aggressive community engagement helped deflect some of these impacts as self-reporting and contact outreach contributed to identification of nearly two-thirds of all DF cases. Pandemic-related travel restrictions may also have limited spread of DENV. Only 30% of cases seeking medical care had evidence of testing for both COVID-19 and DF. Commercial DENV PCR and NS1 testing were underutilized despite CDC testing recommendations to use either of these tests in combination with serologic testing for samples collected within 7 days of symptom onset. Acute samples tested according to CDC recommendations demonstrated that 54% of cases with only DENV IgM testing would have been missed compared to just 15% missed using DENV PCR testing alone. The PCR testing also provides valuable serotype information. Provider outreach is needed along with additional study to understand barriers to ordering recommended DENV testing. While no DF cases have been identified with symptom onset after August 2020, surveillance is ongoing to ensure there is no DENV reemergence, as was seen in the Key West 2009–10 outbreak.

Widespread Outbreak of Hepatitis A in Florida Due to Person-to-Person Spread

Authors

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Background

Beginning in 2016, several states, including Florida, noted an increase in hepatitis A infections compared to the 2013–15 period. In 2017, several states reported hepatitis A outbreaks associated with drug use and homelessness and among men who have sex with men (MSM). In Florida, hepatitis A cases related to person-to-person spread continued to increase, consistent with similar trends seen in other parts of the country and a hepatitis A outbreak in Florida was declared in 2018. A public health emergency due to hepatitis A was declared in 2019. The outbreak was declared over on August 31, 2021, when case numbers returned to baseline incidence observed prior to the outbreak period.

Summary of Outbreak

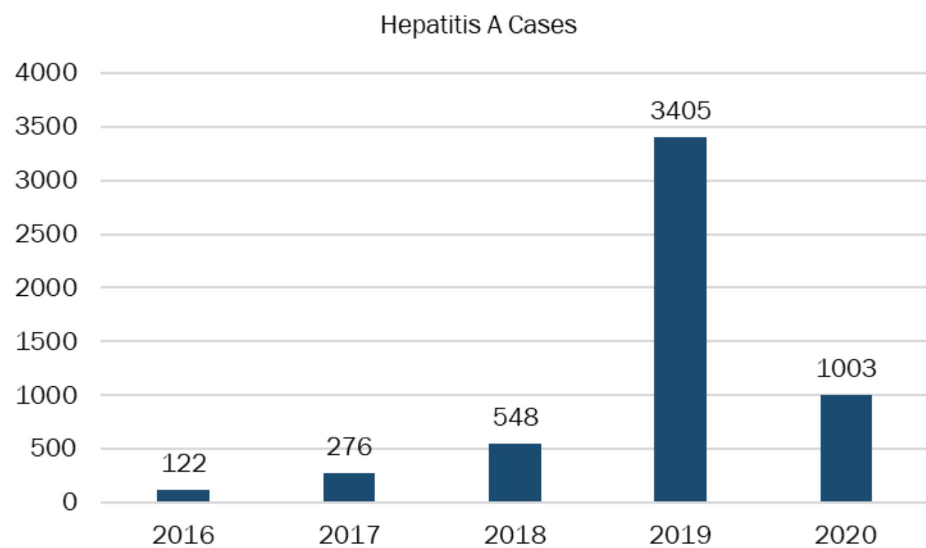
From 2018 until the outbreak was declared over in 2021, 5,103 cases and 77 (1.5%) deaths were reported. Approximately two-thirds of cases were hospitalized for their illnesses. The greatest number of cases were reported during 2019–20, totaling 4,408 cases and 70 deaths (Figure 1). During the outbreak, hepatitis A cases were most common in males (64%), non-Hispanic whites (82%) and in the 30–39-year age group. For cases with identified risk factors, 55% reported recent drug use, 17% reported recent homelessness and 5% occurred among MSM. Coinfection with hepatitis B (2%), hepatitis C (20%) or both (2%) were frequently noted. Current or recent incarceration was also commonly noted (22%) and several counties reported outbreaks in correctional facilities, often with epidemiologic linkages to homeless shelters or drug rehabilitation facilities.

Cases were observed statewide, with the highest incidence rates in Pasco, Volusia and Escambia counties. During the pre-outbreak period prior to 2016, a large proportion of hepatitis A cases in Florida were acquired from international travel outside the U.S. However, during the outbreak period, only about 1% of cases were thought to be acquired outside the U.S.

Following the public health emergency declaration in 2019, numerous control measures were put into place statewide, focused primarily on improved access to hepatitis A vaccination for high-risk populations and post-exposure prophylaxis for close contacts, when feasible. From January 2019 to March 2020, more than 370,000 first doses of hepatitis A vaccine were administered to adults statewide by both private providers and county health departments. Following the COVID-19 pandemic onset in March 2020, hepatitis A vaccination activities continued, but at lower levels compared to 2019 due to the competing demands of the COVID-19 response.

Conclusions

Over recent years, Florida observed increased rates of hepatitis A as part of an ongoing statewide outbreak associated with person-to-person transmission, primarily among persons with recent drug use, homelessness, and incarceration and among MSM. Similar patterns have been observed nationally during this time frame and several states have ongoing outbreaks. Adults in the 30–39-year age range are likely too old to have been vaccinated in childhood and too young to have been exposed in childhood during the high-incidence periods of the pre-vaccination era. High-risk exposures in this largely unvaccinated age range have fueled ongoing spread of person-to-person transmission over many months. After extensive effort to increase vaccination access to the hard-to-reach and high-risk populations, the prolonged hepatitis A outbreak in Florida came under control in 2021. Additional details regarding hepatitis A case data during 2019–20 can be found in the hepatitis A section of the main report.



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Rabies Vaccine Failure in a Cat Vaccinated Annually 11 Times, Florida—2020

Authors

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Background

Rabies vaccination failure occurs rarely. In December 2020, a 14-year-old, 6.1 kg, castrated, domestic longhair cat with outdoor access and history of feline immunodeficiency virus (FIV) was evaluated in a veterinary clinic for anorexia. The cat had received rabies vaccines (1-year duration) annually for 11 years, most recently on January 15, 2020. During hospitalization, the cat bit a clinic staff member. Euthanasia was elected as the cat's clinical condition continued to deteriorate and rabies testing was also performed, leading to a rabies diagnosis. A public health investigation was performed to understand factors contributing to this rabies vaccination failure and to guide future practices.

Methods

The cat's veterinary medical records during 2009–20 were reviewed. Two reference laboratories performed comprehensive rabies diagnostics on blood and tissue samples collected at necropsy. The United States Department of Agriculture (USDA) and vaccine manufacturer were contacted to ensure their awareness and obtain information about vaccine lot efficacy. Additional FIV and feline leukemia virus (FeLV) diagnostics were performed.

Results

Real-time reverse transcription-polymerase chain reaction (RT-PCR) detected rabies viral RNA in brain and salivary gland tissues. Antigenic typing and sequence analysis identified the eastern raccoon rabies virus variant. The rapid fluorescent focus inhibition titer for rabies neutralizing antibodies was inadequate (i.e., incomplete neutralization at 1:5 dilution) to convey immunocompetency against rabies. FIV and FeLV DNA were not detected by viral culture or RT-PCR in splenic, lymph node or kidney tissues. A rapid immunoassay test on postmortem blood (i.e., unvalidated specimen) suggested presence of FIV antibodies and FeLV antigen. A western blot assay detected FIV proteins, confirming FIV infection. The vaccine manufacturer did not report any deficiencies of vaccine efficacy.

Conclusions

Although the cause of vaccination failure is unclear in this case, immunocompromising conditions, including FIV, aging and no booster vaccination after unrecognized rabies exposure might have contributed. This case highlights the need for systematic data collection of all possible contributing factors when rabies vaccination failures occur to better understand prevalence and risk factors of these rare events and provide vaccination guidance for immunocompromised pets. Therefore, local and state jurisdictions should confirm and report the vaccination status of rabid owned animals. Additionally, to prevent human rabies fatalities, public health officials and veterinarians should consider rabies in the differential diagnosis of vaccinated animals with rabies exposure risk when human exposure occurs.

Section 1: Notable Outbreaks and Case Investigations

Parasitic Infections

Cyclosporiasis Outbreak Associated With a Restaurant—Duval County, June 2019

Authors

Paul Rehme, DVM, MPH; Muniba McCabe, MPH

Background

On Saturday, June 22, 2019, the Florida Department of Health in Duval County (FDOH-Duval) was notified of an outbreak of gastrointestinal illness among employees of a Jacksonville restaurant by the restaurant corporate manager. About 20 employees were reported ill with onset dates around June 18, 2019. On Sunday, June 23, 2019, the Regional Environmental Epidemiologist (REE) was notified by the Florida Poison Information Center Network that 16 out of 17 persons who dined at the restaurant with a group on June 11, 2019, were ill with a gastrointestinal illness. This information was sent to FDOH-Duval. FDOH-Duval began an outbreak investigation on June 24, 2019.

On June 24, 2019, another individual called to report he was in a different group (24 persons) who all became ill except 1 person after eating at the same restaurant on June 13, 2019. Between June 23 and July 3, 2019, 7 independent groups of patrons were identified by FDOH-Duval Epidemiology reporting gastrointestinal illness after they ate food from the same restaurant between June 11 and June 15, 2019.

Methods

Epidemiologic Investigation

Restaurant management distributed an illness survey developed by FDOH-Duval to all 134 employees to complete. FDOH-Duval and the REE developed a questionnaire in Epi Info™ 7 to capture information from people who ate at the restaurant. Information was requested from persons who were ill as well as those who were not. A case-control study was conducted using the employee questionnaires and a retrospective cohort study was conducted using patron interviews/surveys. Information from both employees and patrons was entered into the Epi Info database. Epi Info was used to conduct both descriptive and analytical epidemiology.

A confirmed case was defined as a person who ate at the restaurant from June 11 to 24, 2019, who subsequently developed diarrhea plus one other symptom (e.g., nausea, vomiting, abdominal cramps, fever, headache) with a positive laboratory test for *Cyclospora*. A probable case was defined as a person who ate at the restaurant from June 11 to 24, 2019, who subsequently developed diarrhea plus 1 other symptom.

Environmental Assessment

On June 25, 2019, FDOH-Duval Environmental Health (EH), the REE and the Florida Department of Business and Professional Regulation (DBPR) conducted a joint environmental assessment at the restaurant. During the assessment, invoices were requested for produce items.

Laboratory Analysis

Six stool specimens were submitted by FDOH-Duval to the Bureau of Public Health Laboratories (BPHL)–Jacksonville for this investigation from 3 patrons and 3 employees. In addition, numerous stool specimens were collected by hospital staff and private providers.

Results

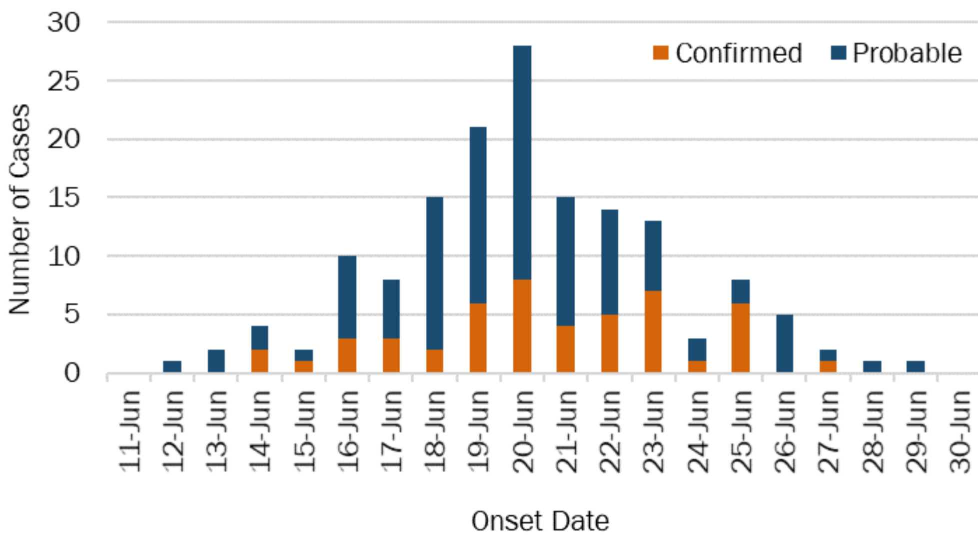
Epidemiologic Investigation

FDOH–Duval either interviewed or received information for 218 persons who ate at the restaurant including 83 employees and 135 patrons. One hundred and fifty-three people met the outbreak case definition; 50 confirmed cases and 103 probable.

The cases were 64% female and 36% male. The median age was 43 years old and ranged from 15–86 years old. The most prevalent symptoms were diarrhea (100%), nausea (80%), abdominal cramps (70%) and fatigue (66%).

Date of exposure ranged from June 11–June 24, 2019. Onset dates ranged from June 12–June 29, 2019 (Figure 1). The incubation period ranged from 1–11 days with a median of seven days.

Figure 1. Cases Associated With a Restaurant Outbreak by Onset Date, June 2019 (n=153)



During the initial week of the investigation, FDOH-Duval determined that all persons from the first 2 groups who were ill had eaten the Caesar salad and those who did not eat the salad were not ill. However, a third group of 6 patrons who were ill did not eat Caesar salad. The ill persons had all eaten bruschetta with fresh basil. After a review of ingredients used to make the Caesar salad it was noted that the Caesar salad also contained fresh basil.

Food items were analyzed for 2 different groups, employees and patrons. The employee data were analyzed using a case-control study to examine whether the employee ate food that contained fresh basil or not. The cases were employees who met the case definition and the controls were employees who ate at the restaurant but did not meet the case definition. The odds ratio for persons eating foods containing fresh basil was 5.6 with a 95% confidence interval of 1.9–16.3.

The food items eaten by patrons were analyzed using a retrospective cohort study. Many of the groups who ate at the restaurant ordered from a fixed menu with a smaller selection of food items and therefore those selected items were used for the analysis. If a person could not recall what they had eaten, their information was not used in the analysis. Due to the low numbers of non-ill persons who completed interviews/surveys, most of the individual items were found not to be statistically significant or minimally so. Therefore, the data were analyzed in terms of whether a case had eaten foods containing fresh basil or not. This analysis showed a relative risk of 3.6 (95% CI: 1.37–9.47).

Environmental Assessment

The joint environmental assessment found minor food safety issues, which would not likely have contributed to this outbreak. Management at the restaurant noted that employees often ate food prepared at the restaurant and that it was encouraged.

The salad preparation process was observed from start to finish with no significant adverse findings. The recipe for the Caesar salad and pesto dressing was obtained. Romaine lettuce was received by the head and leaves were washed individually under cold running water. Fresh basil was received in sealed plastic bags and was also individually washed under cold running water. The pesto dressing was made from fresh ingredients including basil and was typically consumed within 3 days.

Produce invoices were obtained from the restaurant. The invoices indicated that produce was received daily from 1 local produce distributor. It was delivered in a refrigerated truck and immediately transferred to a produce refrigerator at the restaurant. Information on the original source of romaine lettuce and basil was requested from the local distributor.

The restaurant received basil, which could have contributed to this outbreak, from 3 different original sources, 1 in Mexico and 2 in Colombia. However, FDOH-Duval was investigating a *Cyclospora* outbreak at another restaurant in Jacksonville and FDOH-Hillsborough was investigating 1 in Tampa. Those outbreaks involved 11 and 9 people respectively. Both were also attributed to fresh basil and they only had 1 original source, which was the source of this outbreak.

Information on the source of the fresh basil was shared with the Florida Department of Agriculture and Consumer Services (FDACS) and the U.S. Food and Drug Administration (FDA) for the purpose of traceback and trace-forward investigations.

FDACS and the FDA were able to trace back the source of the fresh basil from the local distributor to the supplier in Mexico. At the time of this outbreak, there were several other clusters of cyclosporiasis throughout the United States. Ultimately, several of these other clusters were linked to the same original source of fresh basil and an alert was issued by the FDA about the product on July 25, 2019, along with a voluntary recall.(1)

Laboratory Analysis

Fifty-three stool specimens tested positive by either ova and parasite analysis or polymerase chain reaction. FDOH-Duval was also notified by the Minnesota Department of Health that 2 out-of-state residents who ate at the restaurant tested positive for *Cyclospora*.

Conclusions

This outbreak involving 153 cases was associated with a point-source exposure from eating food containing fresh basil at a local restaurant. While the original focus was on romaine lettuce and the Caesar salad, subsequent epidemiologic evidence implicated fresh basil as the source of the infection. All food was consumed during a period when a specific batch of fresh basil would have been used as a food ingredient. Epidemiologic analysis of the food history data confirmed that the fresh basil was the most likely contaminated ingredient.

Outbreaks of cyclosporiasis in the past have been linked to raspberries, lettuce, basil and snow peas, as well as contaminated water.(2) Most times the produce has been imported into the United States but there is at least 1 documented instance where it was grown domestically.(2) The organism cannot be transmitted person to person as the unsporulated oocysts must be outside the host for 1–2 weeks prior to sporulating and becoming infectious.(2,3)

Prevention is through thorough washing of all produce prior to serving. However, the infective *Cyclospora* cyst is not likely to be completely removed through routine washing. It is resistant to chlorination and other disinfectant methods for produce. Appropriate hygienic procedures are required at the farm for prevention.(3,4)

In this outbreak, the restaurant likely received fresh basil contaminated with *Cyclospora* cysts. Although the restaurant washed the basil appropriately, the organisms were not completely removed. The basil was then used in various recipes and consumed by the patrons who became infected. The incubation period, clinical signs and symptoms, duration and response to therapy were all characteristic of *Cyclospora* infection.

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Non-Infectious Agents

Outbreak of Severe Lung Injury Associated With E-cigarette Use or Vaping Products, Florida, January 2019—February 2020

Authors

Prakash Mulay, MBBS, MPH; Laura Matthias, MPH; Thomas Troelstrup, MPH

Background

In August 2019, the Centers for Disease Control and Prevention (CDC) issued an alert urging clinicians to report possible cases of unexplained pulmonary injury possibly linked to e-cigarette use or vaping to their local health departments.[(1)] E-cigarettes are also called e-hookahs, vapes, vape pens, mods, tank systems and electronic nicotine delivery systems (ENDS). Use of e-cigarettes is known as vaping. The liquid used for vaping contains nicotine, tetrahydrocannabinol (THC), cannabinoid (CBD), flavoring substances and additives.

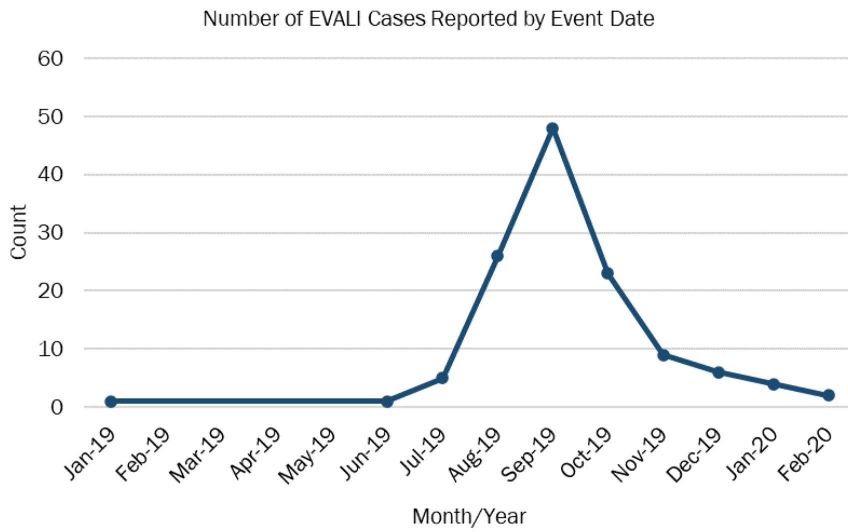
The Florida Department of Health (the Department) in partnership with the CDC conducted surveillance for e-cigarette, or vaping, product use-associated lung injury (EVALI) cases. Nationally, the number of EVALI cases started to decline gradually after a sharp rise August to September 2019. As a result of this decline, CDC concluded surveillance and stopped reporting on the number of cases in February 2020. As of February 2020, a total of 2,807 hospitalized EVALI cases (including 68 deaths) were reported in the U.S.[(2)]

Methods

As a part of EVALI surveillance, the Department developed and implemented surveillance and investigation to determine the extent and severity of the lung injuries. In addition to provider reporting, the Bureau of Epidemiology developed guidance for Florida county health departments (CHDs) to conduct EVALI surveillance. The Electronic Surveillance System for the Early Notification of Community-based Epidemics–Florida (ESSENCE-FL) was used for active surveillance. EVALI cases were identified by searching Florida Poison Information Center Network (FPICN) exposure calls, emergency department (ED) visits and urgent care center (UCC) visits. CHD epidemiologists conducted investigations by collecting medical records and laboratory results and conducting interviews with the patient or a proxy. Patients who were hospitalized or died due to pulmonary illness were classified based on clinical presentation of lung injury (e.g., pulmonary infiltrates on chest radiograph or chest computed tomography (CT), laboratory test for common respiratory infections and history of use of e-cigarettes (vaping) prior to onset of illness. An extended data screen in Florida's reportable disease surveillance system (Merlin) was created to include additional questions related to use of e-cigarettes. CHDs in collaboration with the FDOH Bureau of Public Health Laboratories (BPHL) facilitated collection and shipping of vaping products for testing. All data were collected electronically in Merlin and periodically sent to CDC as a part of national surveillance.

Results

Between July 2019 and February 2020, the Department investigated 125 confirmed and probable cases of EVALI, which included 3 deaths. Cases were predominantly male (67.2%) and ranged in age from 15 to 71 years old with a median age 25 years. All cases were hospitalized or died prior to hospitalization. Cases were reported from 30 counties in Florida. An increasing trend of EVALI cases was observed in August 2019 (20.8%), which peaked in September 2019 (38.4%). Cases reported vaping THC (n=72), nicotine (n=37), CBD (n=10) and flavors (n=3).



Symptoms commonly experienced by EVALI patients were cough, difficulty breathing, shortness of breath, chest pain and fatigue, which developed over days to a week with some developing respiratory failure requiring intubation. Other symptoms reported by some patients included fever, chest pain, weight loss, nausea and diarrhea. Chest radiographs of patients showed bilateral opacities and CT imaging of the chest demonstrated diffuse ground-glass opacities. Evaluation for infectious etiologies was negative among the majority of the patients.

Conclusions

In Florida, the epidemiologic investigation identified several hospitalizations and deaths associated with EVALI in a short period of time. Outreach and education were conducted by the Department's Bureau of Tobacco Free Florida and Public Health Research Unit. On September 12, 2019, the Bureau of Epidemiology sent out a letter to Florida's health care providers with guidance on managing and reporting cases of EVALI.

CDC in collaboration with the U.S. Food and Drug Administration (FDA) analyzed samples submitted by the state and local health departments. Analysis of those samples showed a strong link between EVALI cases and vitamin E acetate identified in THC-containing products. EVALI patients who only used nicotine-containing products may have multiple contributing causes for lung injury; for example, some patients might not accurately report the content of THC or other compounds in the vaping products they have used. It is also possible that the recent increase in the number of cases of EVALI may be a result of 1 or more chemicals of concern in nicotine-containing products or due to the recent increase in popularity and use of the e-cigarettes.(3)

The decline in the number of EVALI cases reported each week since September 2019 indicates that the outbreak peaked in September. Reasons for the decline may be due to rapid public health action to increase public awareness, possible removal of vitamin E acetate from these products by the manufacturers and actions by enforcement agencies to seize illicit THC-containing products.(4)

EVALI can be prevented by not using THC-containing e-cigarette or vaping products from informal sources like friends, family or in-person and online dealers. People should not add vitamin E acetate or any other substances to vaping products. E-cigarettes should never be used by youths, young adults, people who do not use tobacco products and pregnant women.

Resources

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Health Care-Associated Infections (HAI)

Containment of a *Klebsiella pneumoniae* carbapenemase (KPC)-producing *Serratia marcescens* outbreak in a Ventilator-Capable Skilled Nursing Facility (vSNF) through Collaboration

Authors

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1)Florida Department of Health

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Background

Antibiotic resistance is one of the largest public health challenges. *Klebsiella pneumoniae* carbapenemase (KPC) is one of several mechanisms of resistance through which carbapenem-resistant Enterobacteriaceae confers antibiotic resistance and thereby making infections difficult to treat. On May 15, 2018, the Florida Department of Health in Miami-Dade (FDOH-Miami Dade) was notified by an acute care hospital (ACH) of 3 patients with carbapenem-resistant *Serratia marcescens* to be admitted from the same ventilator-capable skilled nursing facility (vSNF). The patients shared common risk factors such as tracheotomies, ventilator and hemodialysis dependence, and indwelling catheters.

Methods

In collaboration, with the ACH and vSNF, we initiated a containment response that consisted of infection control assessments, point-prevalence surveys (PPS), and retrospective and prospective laboratory surveillance. Infection control assessments were conducted biweekly with assessment of respiratory care, environmental cleaning, and adherence to hand hygiene. PPS were collected in the ventilator-capable unit biweekly through rectal swabs; and were tested by the Southeast regional Antibiotic Resistance Laboratory Network (ARLN) in Tennessee. Expanded surveillance was instituted in partnership with the local ACH to identify positive patients who might have been missed by the PPS.

Results

From June 2018 to February 2019, a total of 12 biweekly screenings were conducted, which identified 11 additional patients colonized with KPC-producing *Serratia marcescens*; an additional 6 cases were identified through surveillance at the ACH. Infection control assessments revealed an overall lack of hand hygiene compliance (62%) with greater reduction in HH compliance after body fluid exposure (43.8%) and after contact with patient surroundings (40%) (Table 1). Environmental cleaning observations identified lack of standardized methods to cleaning and disinfection techniques to include revealed lack of EPA-registered disinfectant use and failure to follow instructions for use.

Table 1. Hand Hygiene Compliance Rate by Opportunity (n=63)

Opportunity	Hand hygiene compliance (%)
Before Touching a Patient (n=18)	88.8
Before Clean/Aseptic Procedure (n=2)	100.0
After Touching a Patient (n=7)	85.7
After Body Fluid Exposure Risk (n=16)	43.8
After Touching Patient Surroundings (n=20)	40.0

Conclusions

Collaboration is essential for the containment of antibiotic resistance organism outbreaks. Throughout the course of the investigation, the most concerning issues at the vSNF included lack of hand hygiene, a paucity of adherence to protective personal equipment (PPE) when treating patients with multidrug-resistant organisms, and gaps in environmental cleaning and disinfection. These deficiencies in infection control led to a total of 20 patients becoming infected or colonized with KPC-producing *S. marcescens* over a nine-month period. Collaboration with CDC, ARLN in Tennessee, Florida Department of Health, local acute care hospitals and the vSNF, was instrumental for the successful containment of the state's first reported outbreak of *Klebsiella pneumoniae* carbapenemase-producing *Serratia marcescens* in a vSNF.

Candida auris in a Specialty Care Unit, 2020

Authors

Christopher Prestel, MD; Erica Anderson, MPH2; Kendra Edwards; Maria Rivera, MPH; Nychie Q. Dotson, PhD

Background

Three *Candida auris* bloodstream infections and 1 urinary tract infection was reported to the Florida Department of Health's Health Care-Associated Infection Prevention Program in July 2020. The four patients all had recent diagnoses of coronavirus disease 2019 (COVID-19) and received care in the same dedicated COVID-19 unit of an acute care hospital (hospital A). *C. auris* is a multidrug-resistant yeast that can cause invasive infection and spread in health care settings. Before the COVID-19 pandemic, hospital A conducted admission screening for *C. auris* and admitted colonized patients to a separate dedicated ward. Hospital A's COVID-19 unit spanned 5 wings on 4 floors, with 12–20 private, intensive care–capable rooms per wing. Only patients with positive test results for SARS-CoV-2, the virus that causes COVID-19, at the time of admission were admitted to this unit. After patient discharge, room turnover procedures included thorough cleaning of all surfaces and floor and ultraviolet disinfection.

Methods

In response to the 4 clinical *C. auris* infections, unit-wide point prevalence surveys to identify additional hospitalized patients colonized with *C. auris* were conducted during August 4–18; patients on all 4 floors were screened sequentially and rescreened only if their initial result was indeterminate. A joint investigation with Hospital A's infection prevention team, the Florida Department of Health, and CDC was conducted and focused on infection prevention and control at the facility including observation of health care personnel (HCP) use of personal protective equipment (PPE), contact with and disinfection of shared medical equipment, hand hygiene, and supply storage.

Results

Sixty-seven patients were in the COVID-19 unit and screened during point prevalence surveys; 35 (52%) received positive test results. Mean age of colonized patients was 69 years (range = 38–101 years) and 60% were male. Six (17%) patients later went on to have clinical infections with C. auris. HCP in the COVID-19 unit were observed wearing multiple layers of gowns and gloves during care of COVID-19 patients. HCP donned eye protection, an N95 respirator, a cloth isolation gown, gloves, a bouffant cap, and shoe covers on entry to the COVID-19 unit; these were worn during the entire shift. A second, disposable isolation gown and pair of gloves were donned before entering individual patient rooms, then doffed and discarded upon exit. Alcohol-based hand sanitizer was used on gloved hands after doffing outer gloves. HCP removed all PPE and performed hand hygiene before exiting the unit. Opportunities for contamination of the base layer of gown and gloves were observed during doffing and through direct contact with the patient care environment or potentially contaminated surfaces such as mobile computers. Mobile computers and medical equipment were not always disinfected between uses, medical supplies were stored in open bins in hallways and accessed by HCP wearing the base PPE layer, and missed opportunities for performing hand hygiene were observed.

Conclusions

The COVID-19 pandemic has prompted facilities to implement PPE conservation strategies during anticipated or existing shortages and to use PPE in ways that are not routine (e.g., extended wear and reuse) out of perception of increased protection for HCP and may be motivated by fear of becoming infected with SARS-CoV-2 and may increase risks for self-contamination when doffing. CDC does not recommend the use of more than one isolation gown or pair of gloves at a time when providing care to patients with suspected or confirmed SARS-CoV-2 infection. When managing SARS-CoV-2 patients in a dedicated ward, HCP should maintain standard practices (e.g., hand hygiene at indicated times and recommended cleaning and disinfection) intended to prevent transmission of other pathogens. Outbreaks such as that described in this report highlight the importance of adhering to recommended infection control and PPE practices and continuing surveillance for novel pathogens like *C. auris*.

Verona Integron-Encoded Metallo-β-Lactamase-Producing Carbapenem-Resistant *Pseudomonas aeruginosa* Infection Related to Medical Tourism

Authors

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Background

Pseudomonas aeruginosa (P. aeruginosa) is a gram-negative bacillus that proliferates in health care environments, causes invasive infections, and acquires antibiotic resistance genes like Verona integron-encoded metallo-β-lactamase (VIM), conferring resistance to carbapenem antibiotics, often the last line of treatment for resistant infections. In 2019, the Centers for Disease Control and Prevention (CDC) issued a travel alert after detection of 12 VIM-producing carbapenem-resistant *P. aeruginosa* (VIM-CRPA) surgical site infections associated with surgery in Mexico; eleven occurred after bariatric surgery in Tijuana.

Section 1: Notable Outbreaks and Case Investigations

Methods

In July 2020, a 28-year-old female with a history of morbid obesity traveled to Tijuana, Mexico, for bariatric gastric bypass. She was discharged without complication and completed a 10-day prophylactic course of cephalexin before returning to Florida. Nine days post-operation she developed abdominal pain with swelling, redness, and drainage at the incision site prompting her to seek treatment at a Florida emergency department. The incision site was cultured and CRPA was identified and sent to the Florida Bureau of Public Health Laboratories to identify potential carbapenemase genes by GeneXpert; VIM-CRPA was identified in the isolate. The patient recovered following some minor complications and several courses of intravenous antibiotic therapy. Patient interview revealed she received surgery at the same health care facility and by a surgeon implicated in the 2019 CDC travel advisory.

Conclusions

We report a case of VIM-CRPA associated with bariatric surgery in Tijuana, Mexico. Detection of this case and others since the travel advisory two years ago suggests ongoing transmission. CDC provided updated guidance for health care providers, public health officials, and updated medical tourism patient education. This update includes patients alerting their providers to receipt of health care outside of the U.S. Rapid identification of highly resistant bacteria and appropriate care are key to prevent transmission.

HAI Outbreaks

Facility type	Number of outbreaks in 2019	Number of outbreaks in 2020
Acute Care Hospitals	• *Acinetobacter baumannii*: 1 • *Enterobacter cloacae* complex:1 • *Escherichia coli*: 1 • *Klebsiella oxytoca*: 1 • *Klebsiella pneumoniae*: 1	• *Raoultella ornithinolytica*: 2 • *Pseudomonas aeruginosa*:6 • *Candida auris*: 20 • *Acinetobacter baumannii*: 3 • Carbapenem-producing organisms (CPO): 16
Long-Term Acute Care Hospitals		• *Pseudomonas aeruginosa*:4 • *Klebsiella pneumoniae*: 2 • *Candida auris*: 6 • Carbapenem-producing organisms (CPO): 4
Nursing Home/Skilled Nursing home (SNF)		• Carbapenem-producing organisms (CPO): 1
Ventilator-capable Nursing Home/ Skilled Nursing Facility (vSNF)		• Carbapenem-producing organisms (CPO): 2

Section 2

Data Summaries for Reportable Diseases and Conditions—2019

Anaplasmosis

Key Points

Anaplasmosis was previously known as human granulocytic ehrlichiosis (HGE), but was later renamed human granulocytic anaplasmosis (HGA) when the bacterium genus was changed from *Ehrlichia* to *Anaplasma*. Anaplasmosis is transmitted to humans by tick bites primarily from *Ixodes scapularis*, the black-legged tick, and *Ixodes pacificus*, the western black-legged tick. Co-infection with other pathogens found in these vectors is possible. Unlike ehrlichiosis, most HGA cases reported in Florida are due to infections acquired in the northeastern and midwestern U.S. *Anaplasma* infections can be acquired in Florida, but it is uncommon.

Nationally, cases are most common in males more than 40 years old. In 2019, 20 out of 21 cases reported in Florida were more than 40 years old and 62% were males. Onset dates ranged from April to November, consistent with national peak activity. Twenty of the 21 cases were acquired in northeastern U.S., while one case was acquired in the Midwest (Wisconsin). The vector is common in both regions and continues to expand its range. The continued increase in cases is attributed to vector expansion. Two anaplasmosis cases were co-infected with Lyme disease.

Disease Facts

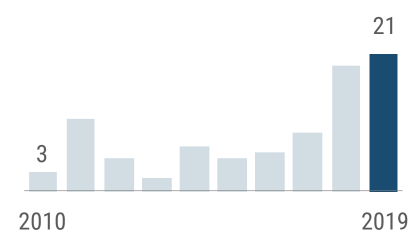
Caused by *Anaplasma phagocytophilum* bacteria

Illness includes fever, headache, chills, malaise, and muscle aches; more severe infections can occur in elderly and immunocompromised people

Transmitted via bite of infective tick

Under surveillance to monitor incidence over time, estimate burden of illness, and target areas of high incidence for prevention education

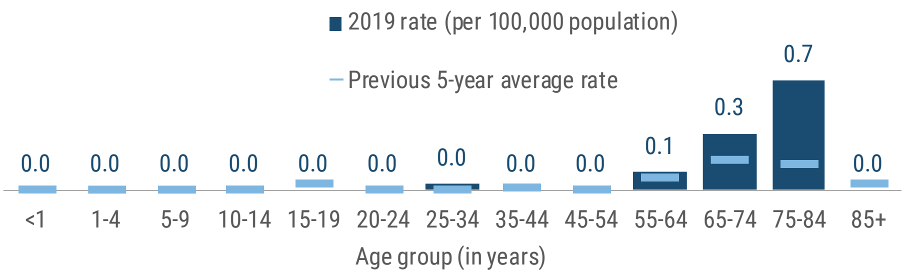
Anaplasmosis incidence increased slightly in 2019.



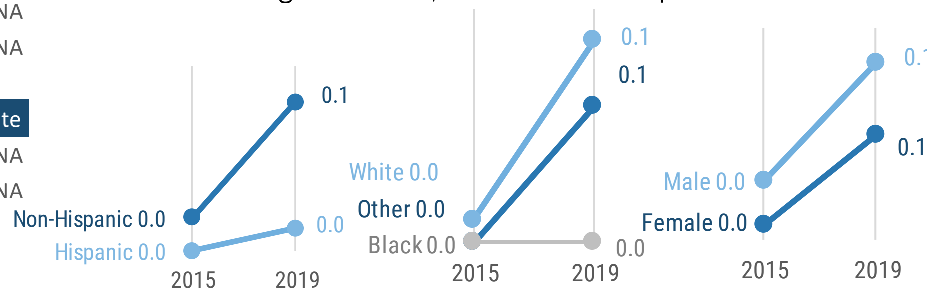
Disease Trends

Summary			
Number of cases			21
Rate (per 100,000 population)			0.1
Change from 5-year average rate			+119.4%
Age (in Years)			
Mean			69
Median			70
Min-max			32 - 80
Gender	**Number**	**(Percent)**	**Rate**
Female	8	(38.1)	NA
Male	13	(61.9)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	20	(95.2)	0.1
Black	0	(0.0)	NA
Other	1	(4.8)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	19	(95.0)	NA
Hispanic	1	(5.0)	NA
Unknown ethnicity	1		

The anaplasmosis rate (per 100,000 population) is highest in adults, particularly in adults 55 to 84 years old.



The anaplasmosis rate (per 100,000 population) increased in all demographics from 2015 to 2019, except for blacks, where rates remained stable. Rates were higher in males, whites and non-Hispanics in 2019.

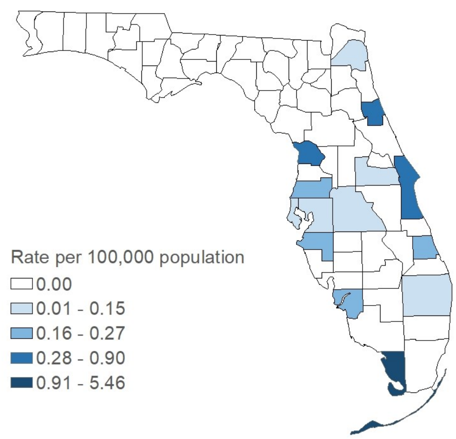


Rates are by county of residence for infections acquired in Florida (21 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

Anaplasmosis

Summary	Number
Number of cases	21
Case Classification	**Number (Percent)**
Confirmed	17 (81.0)
Probable	4 (19.0)
Outcome	**Number (Percent)**
Hospitalized	8 (38.1)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	0 (0.0)
Acquired in the U.S., not Florida	21 (100.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	20 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	1

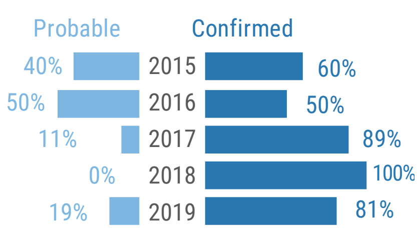
Anaplasmosis is primarily imported from other U.S. states where it is highly endemic. In 2019, the counties with the most imported cases were Monroe (4), Brevard (3), Lee (2) and Palm Beach (2). The remaining ten counties each reported one imported case.



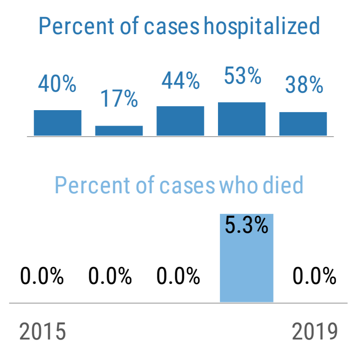
Rates are by county of residence for infections acquired in Florida (21 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

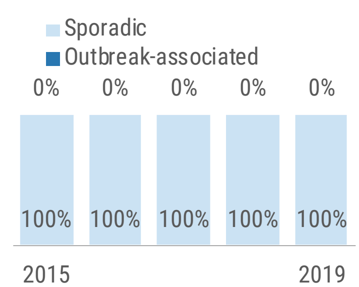
Between 50% and 100% of anaplasmosis cases are confirmed; 81% of 2019 cases were confirmed.



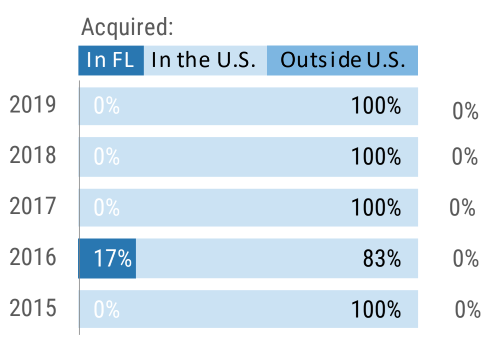
Between 17% and 53% of cases are hospitalized each year; deaths are uncommon.



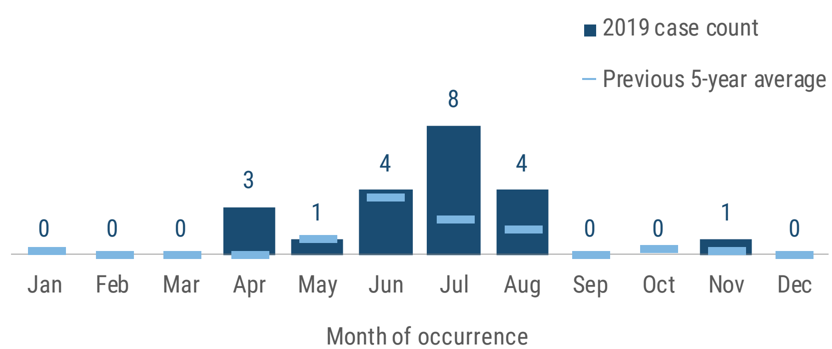
All cases were sporadic; no outbreak-associated cases were identified.



Anaplasmosis is primarily imported from northern U.S. states where it is highly endemic. In 2019, 100% of infections were imported from other states.



Anaplasmosis peak transmission occurs during the summer months. In 2019, activity was highest in July.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status, and month of occurrence.

Babesiosis

Key Points

Babesiosis became nationally notifiable in 2011 and became reportable in Florida in October 2016. Most U.S. reported cases have been *B. microti* infections acquired in parts of the northeastern and north-central regions. Sporadic U.S. cases may be caused by other *Babesia* species, such as *B. duncani* and related organisms in several western states, as well as *B. divergens*-like variant M01 in various states. Zoonotic *Babesia* species have also been reported in Europe, Africa, Japan, Taiwan, India and Mexico. Some infections may be asymptomatic and can lead to transfusion-associated cases in both endemic and non-endemic areas like Florida.

B. microti circulates between *Ixodes scapularis* (blacklegged tick) and animal reservoir hosts, primarily small mammals such as *Peromyscus leucopus* (white-footed mouse). This enzootic cycle is shared by the etiologic agents of Lyme disease (*Borrelia burgdorferi*) and human anaplasmosis (*Anaplasma phagocytophilum*) and co-infections can occur. Both babesiosis case numbers and the endemic area seem to be increasing. The full geographic extent of *B. microti* and novel *Babesia* agents are unknown. Asplenia, advanced age and weakened immune systems are risk factors for severe disease. One hospitalized case was asplenic.

Disease Facts

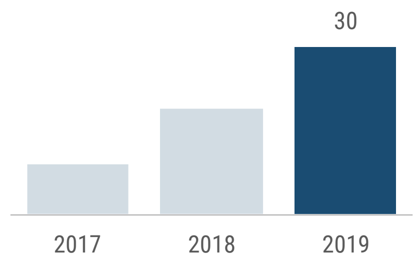
Caused by *Babesia* parasites, most commonly *Babesia microti*

Illness includes hemolytic anemia and influenza-like symptoms (e.g., fever, chills, body aches, weakness, fatigue); complications can include thrombocytopenia, disseminated intravascular coagulation, hemodynamic instability, acute respiratory distress, myocardial infarction, renal failure, hepatic dysfunction, altered mental status, and death; can be asymptomatic

Transmitted via bite of infective tick

Under surveillance to monitor incidence over time, estimate burden of illness, and target areas of high incidence for prevention education

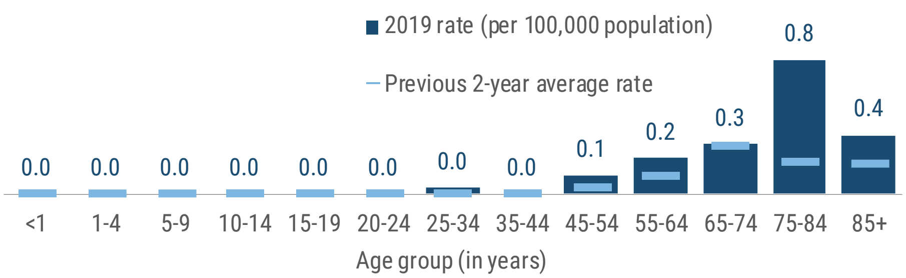
Babesiosis cases have continued to increase.



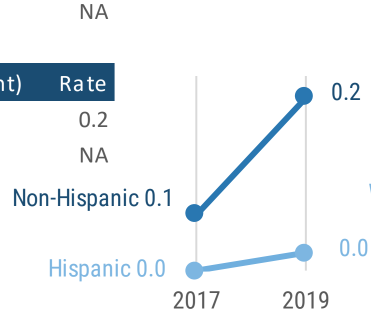
Disease Trends

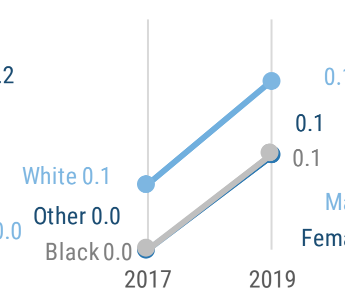
Summary			
Number of cases			30
Rate (per 100,000 population)			0.1
Change from 2-year average incidence			+109.8%
Age (in Years)			
Mean			68
Median			72
Min-max			29 - 88
Gender	**Number**	**(Percent)**	**Rate**
Female	8	(26.7)	NA
Male	22	(73.3)	0.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	24	(85.7)	0.1
Black	3	(10.7)	NA
Other	1	(3.6)	NA
Unknown race	2		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	28	(96.6)	0.2
Hispanic	1	(3.4)	NA
Unknown ethnicity	1		

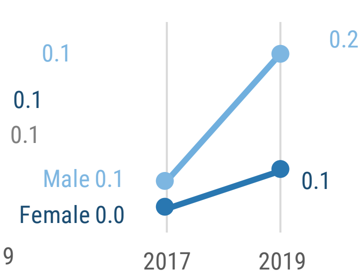
The babesiosis rates were highest in adults ages 75 to 84 years old. Advanced age is a risk factor for more severe illness.



The babesiosis rate (per 100,000 population) increased in all demographics from 2017 to 2019. The rates were highest in non-Hispanics and males.



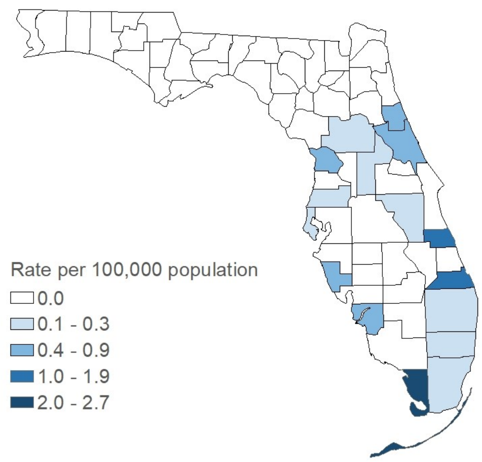




Babesiosis

Summary	Number
Number of cases	30
Case Classification	**Number (Percent)**
Confirmed	27 (90.0)
Probable	3 (10.0)
Outcome	**Number (Percent)**
Hospitalized	8 (26.7)
Died	1 (3.3)
Imported Status	**Number (Percent)**
Acquired in Florida	0 (0)
Acquired in the U.S., not Florida	30 (100)
Acquired outside the U.S.	0 (0)
Acquired location unknown	0 (0)
Outbreak Status	**Number (Percent)**
Sporadic	30 (100)
Outbreak-associated	0 (0)
Outbreak status unknown	0 (0)

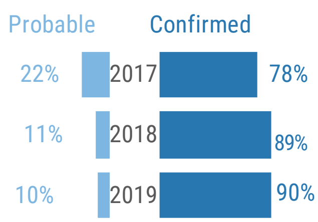
In 2019, all babesiosis cases were acquired in the U.S., but not in Florida. Most cases were reported from the central and south part of the state.



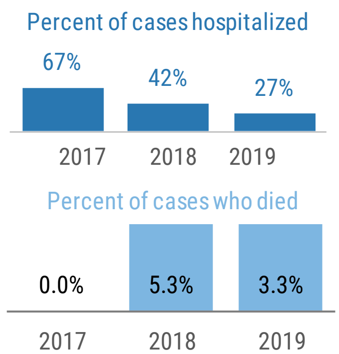
Rates are by county of residence for infections acquired in Florida (30 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

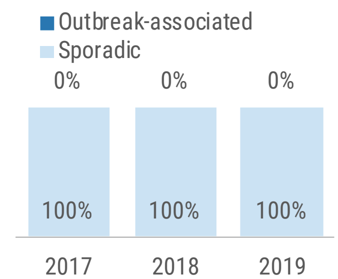
The majority of babesiosis cases were confirmed.



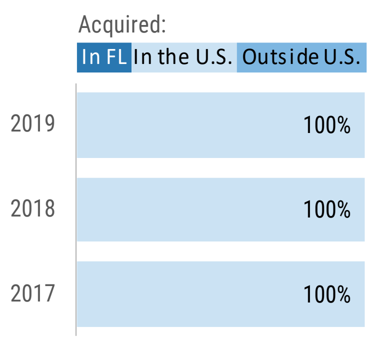
In 2019, 27% of cases were hospitalized. One death was reported in a patient with a PICC line with a positive bacterial blood culture.



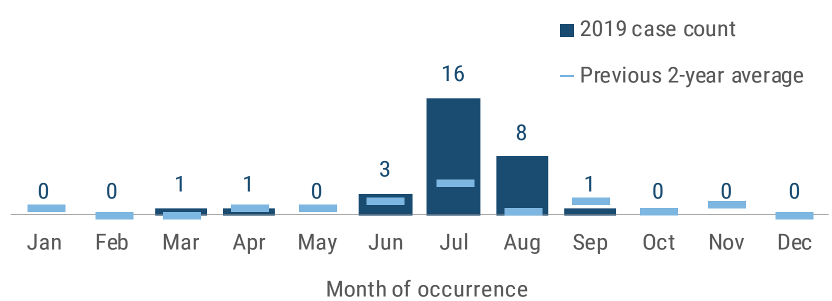
All cases were sporadic; no outbreak-associated cases have been identified.



All cases were acquired in the U.S., but not in Florida.



Babesiosis cases peaked in summer months with the most cases reported in July and August in 2019. This correlates with peak outdoor activity in northern states where all exposures occurred.



See Appendix III: Report Terminology for explanations of case classification, outcome, and month of occurrence.

Campylobacteriosis

Key Points

Campylobacteriosis is the most common bacterial cause of diarrheal illness in the U.S. The Centers for Disease Control and Prevention estimates that *Campylobacter* infection affects at least 1.5 million U.S. residents each year. While most cases are not part of recognized outbreaks, outbreaks in the U.S. have historically been associated with poultry, raw (unpasteurized) dairy products, seafood, produce, untreated water, puppies and live poultry.

The use of culture-independent diagnostic testing (CIDT) to identify *Campylobacter* has increased dramatically in recent years. Florida changed the campylobacteriosis surveillance case definition in January and July 2011, January 2015 and January 2017 to account for CIDTs, increasing the number of reported cases in each of those years.

Campylobacteriosis occurs year-round in Florida, with a slight seasonal increase in spring and summer. Campylobacteriosis incidence is consistently highest in infants <1 year old, followed by children 1 to 4 years old.

Disease Facts

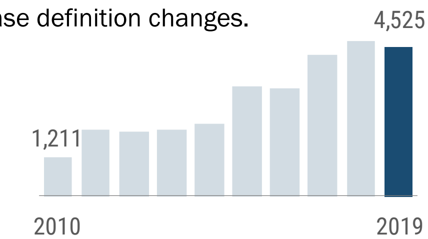
Caused by *Campylobacter* bacteria

Illness is gastroenteritis (diarrhea, vomiting)

Transmitted via fecal-oral route, including person to person, animal to person, foodborne and waterborne

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

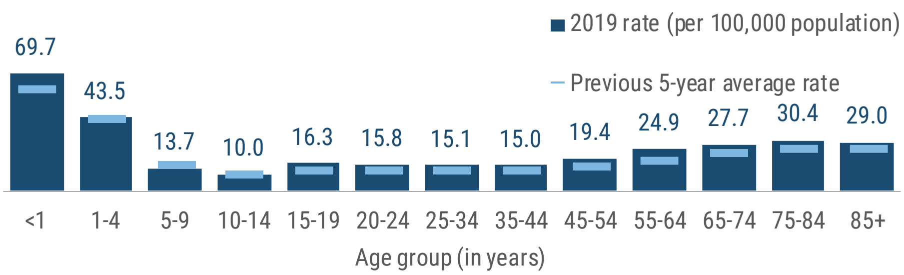
Campylobacteriosis incidence has increased over the past 10 years. Notable increases in 2011, 2015 and 2017 are primarily due to case definition changes.



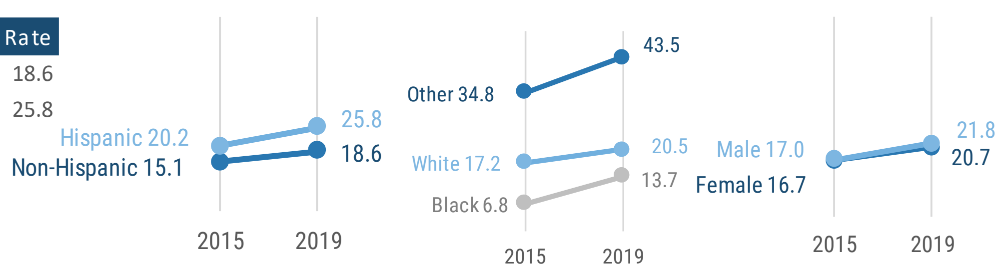
Disease Trends

Summary		
Number of cases		4,525
Rate (per 100,000 population)		21.3
Change from 5-year average rate		+21.2%
Age (in Years)		
Mean		45
Median		50
Min-max		0 - 100
Gender	**Number (Percent)**	**Rate**
Female	2,255 (49.8)	20.7
Male	2,269 (50.2)	21.8
Unknown gender	1	
Race	**Number (Percent)**	**Rate**
White	3,365 (76.6)	20.5
Black	494 (11.2)	13.7
Other	533 (12.1)	43.5
Unknown race	133	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	2,914 (66.9)	18.6
Hispanic	1,442 (33.1)	25.8
Unknown ethnicity	169	

The campylobacteriosis rate (per 100,000 population) is highest in infants <1 year old and children 1 to 4 years old, followed by adults 75 years and older.



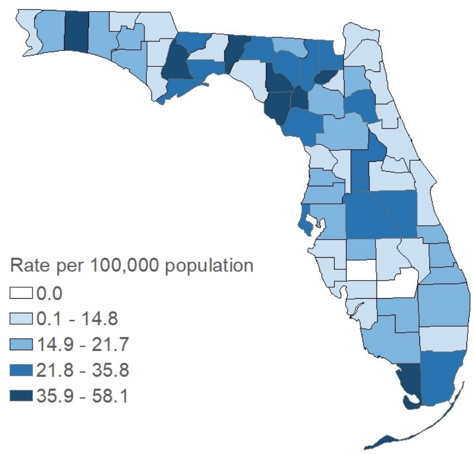
The campylobacteriosis rate (per 100,000 population) increased in all demographics from 2015 to 2019. The rates were higher in males, whites and Hispanics compared to females, blacks and non-Hispanics in 2019. The rate was notably higher in other races compared to whites and blacks in 2019.



Campylobacteriosis

Summary	Number
Number of cases	4,525
Case Classification	**Number (Percent)**
Confirmed	1,276 (28.2)
Probable	3,249 (71.8)
Outcome	**Number (Percent)**
Hospitalized	1,753 (38.7)
Died	28 (0.6)
Sensitive Situation	**Number (Percent)**
Daycare	121 (2.7)
Health care	79 (1.7)
Food handler	53 (1.2)
Imported Status	**Number (Percent)**
Acquired in Florida	3,685 (91.0)
Acquired in the U.S., not Florida	52 (1.3)
Acquired outside the U.S.	313 (7.7)
Acquired location unknown	475
Outbreak Status	**Number (Percent)**
Sporadic	4,175 (95.2)
Outbreak-associated	210 (4.8)
Outbreak status unknown	140

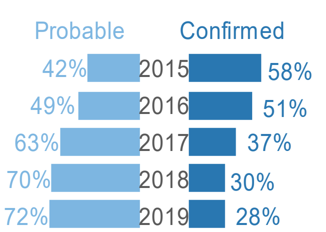
Campylobacteriosis occurs throughout the state. In 2019, rates (per 100,000 population) were highest in small, rural counties, particularly in the northern part of the state.



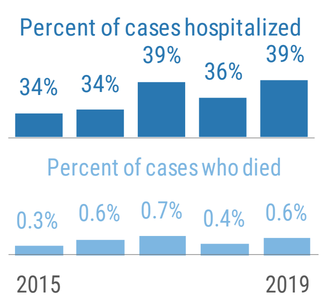
Rates are by county of residence for infections acquired in Florida (4,525 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

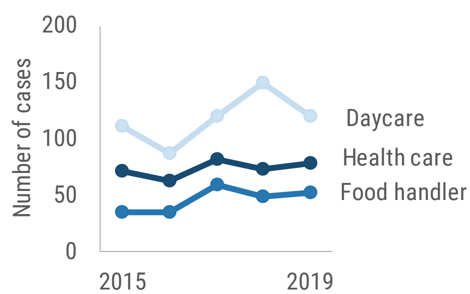
The percentage of confirmed cases began decreasing in 2015 due to case definition changes and increased use of CIDT.



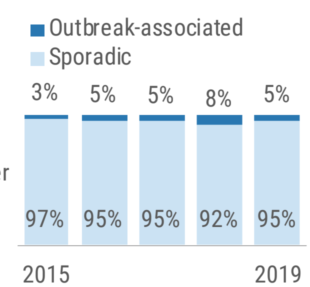
Between 30% and 40% of cases are hospitalized each year. Very few cases die.



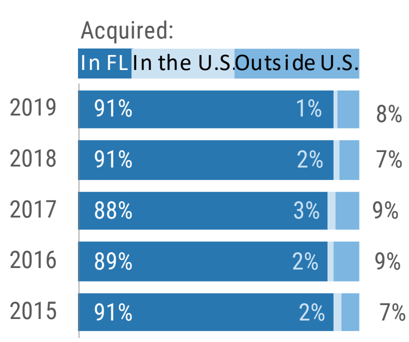
Cases in sensitive situations are monitored. No outbreaks have been identified in these settings in recent years.



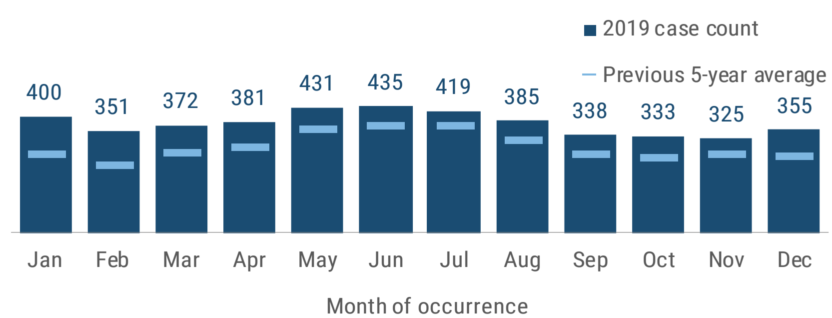
Most cases are sporadic; less than 10% were outbreak-associated and often reflect household clusters.



Most cases were acquired in Florida; a small number of cases were imported from other states and countries.



Campylobacteriosis occurred throughout 2019, though cases were slightly higher in spring and summer, which is consistent with past years. In 2019, the largest number of cases was reported in June.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Carbon Monoxide Poisoning

Key Points

Carbon monoxide (CO) is an invisible, odorless and tasteless gas that is highly poisonous. It can cause sudden illness and death if present in sufficient concentration in the ambient air. Floridians are exposed to CO during significant power outages by using alternative fuel or power sources such as generators or gasoline-powered equipment placed inside or too close to the windows causing CO to build up indoors.

In 2017, 359 CO poisoning cases occurred after Hurricane Irma, a Category 4 storm, made landfall in Florida on September 10, causing extensive power outages and generator use throughout the state. In 2018, Hurricane Michael, a Category 5 storm, made landfall in the Florida Panhandle on October 10, causing 19 sporadic cases associated with inappropriate generator use. The fewer number of cases associated with Hurricane Michael reflects the smaller population of impacted counties compared to counties affected by Hurricane Irma.

The most commonly identified exposures for 2019 cases were automobile and recreational vehicles (RVs) (43%), generators (13.4%) and fires (13.4%).

Disease Facts

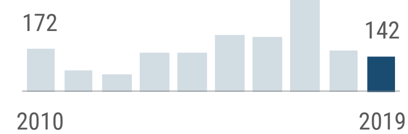
Caused by carbon monoxide (CO) gas

Illness includes headache, dizziness, weakness, nausea, vomiting, chest pain and confusion; high levels of CO inhalation can cause loss of consciousness and death

Exposure to CO gas is from combustion fumes (produced by cars and trucks, generators, stoves, lanterns, burning charcoal and wood and gas ranges and heating systems)

Under surveillance to identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions, measure impact of public health interventions

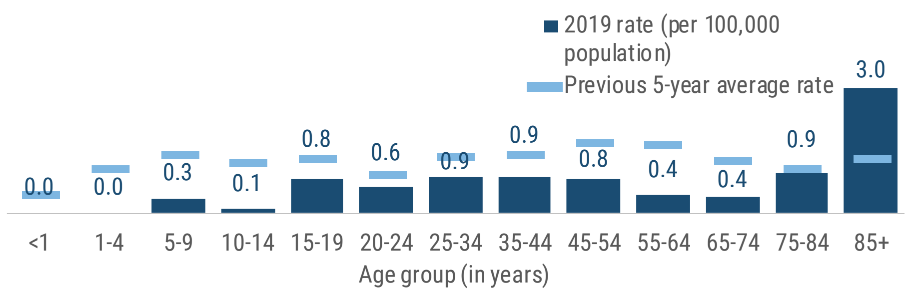
After the sharp increase in 2017 as a result of Hurricane Irma, CO poisoning incidence returned to an average level in 2018 and decreased in 2019.



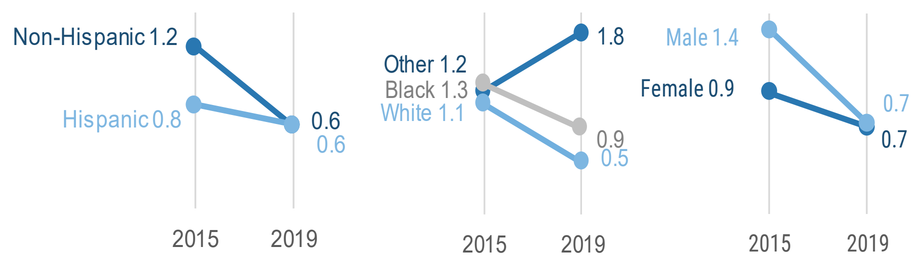
Disease Trends

Summary	Number	(Percent)	Rate
Number of cases			142
Rate (per 100,000 population)			0.7
Change from 5-year average rate			-49.7%
Age (in Years)			
Mean			49
Median			46
Min-max			5 - 96
Gender	**Number**	**(Percent)**	**Rate**
Female	71	(50.0)	0.7
Male	71	(50.0)	0.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	85	(61.6)	0.5
Black	31	(22.5)	0.9
Other	22	(15.9)	1.8
Unknown race	4		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	100	(73.5)	0.6
Hispanic	36	(26.5)	0.6
Unknown ethnicity	6		

In 2019, the CO poisoning rate (per 100,000 population) was highest in adults 85 years and older. In past years, the rate was highest in adults 25 to 44 years old. The difference seen in the previous five-year average rate is likely being driven by the spike in cases in 2017.



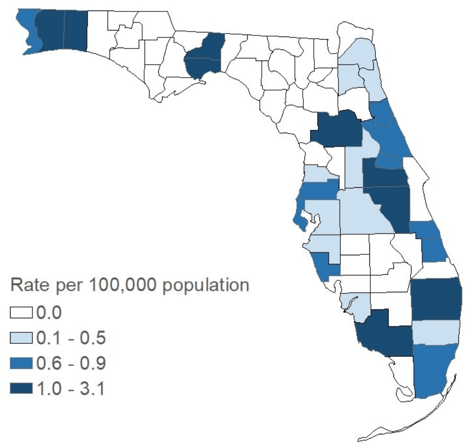
In 2019, CO poisoning rates (per 100,000 population) were the same for all genders and ethnicities and higher in blacks and other races. While the rates decreased slightly in whites, blacks and Hispanics over the past five years, rates increased in other races over the same time period.



Carbon Monoxide Poisoning

Summary	Number
Number of cases	142
Case Classification	**Number (Percent)**
Confirmed	111 (78.2)
Probable	31 (21.8)
Outcome	**Number (Percent)**
Hospitalized	43 (30.3)
Died	5 (3.5)
Imported Status	**Number (Percent)**
Exposed in Florida	141 (100.0)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	0 (0.0)
Exposed location unknown	1
Outbreak Status	**Number (Percent)**
Sporadic	50 (35.2)
Outbreak-associated	92 (64.8)
Outbreak status unknown	0
Exposure Type	**Number (Percent)**
Automobile/RV	61 (43.0)
Fire	19 (13.4)
Generator	19 (13.4)
Other	11 (7.7)
Fuel-burning appliances	9 (6.3)
Power tools (including mower)	9 (6.3)

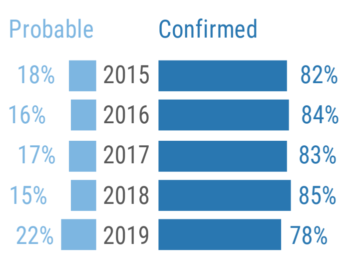
Carbon monoxide poisonings in 2019 were concentrated in northwest, central and southern Florida. Rates (per 100,000) varied across counties throughout the state.



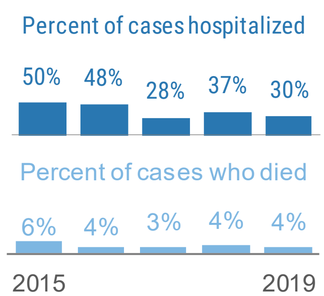
Rates are by county of residence for cases exposed in Florida (142 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

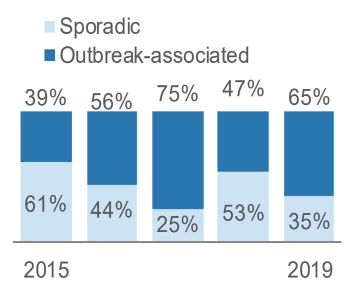
Most CO poisoning cases are confirmed. In 2019, 78% of cases were confirmed.



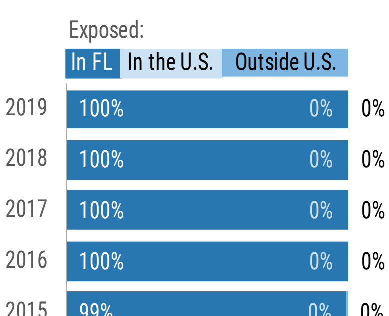
Between 28% and 50% of cases are hospitalized each year; deaths do occur.



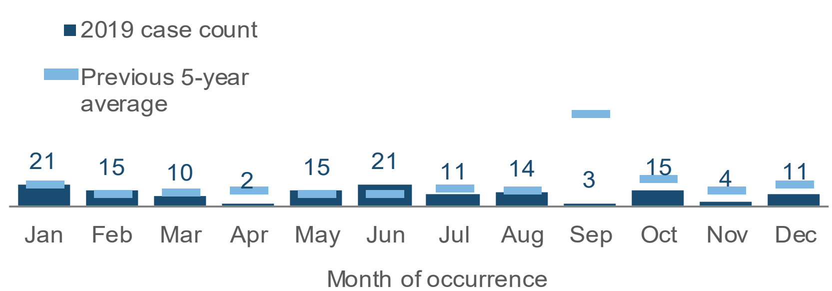
More than half (65%) of CO poisoning cases were linked to at least one other case in 2019. Over half of these cases were associated with exposure to automobile (61 cases) or generator exhaust (19 cases).



All CO poisoning cases were exposed in Florida in 2019.



CO poisoning cases were highest in January and June in 2019. Historically, CO poisonings tend to increase during cold winter months and during large power outages.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Chlamydia (Excluding Neonatal Conjunctivitis)

Key Points

Chlamydia is the most commonly reported sexually transmitted disease in Florida and in the U.S.; incidence rates have been slowly increasing over the past decade. Incidence is highest among females 20 to 24 years old and non-Hispanic blacks. If untreated, chlamydia can lead to serious reproductive complications and can make it difficult for females to conceive. As the infection is frequently asymptomatic, screening is necessary to identify most infections; early detection and treatment can prevent sequelae.

The rate of chlamydia in races other than white and black has increased over the past 10 years, particularly in the past four years. The rate has decreased in non-Hispanic blacks, primarily driven by a decrease in infections in young black females.

Disease Facts

Caused by *Chlamydia trachomatis* bacteria

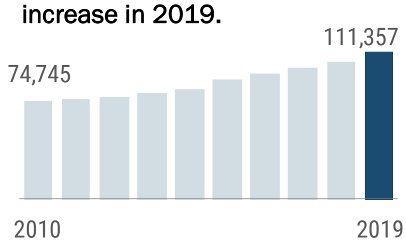
Illness is frequently asymptomatic; sometimes abnormal discharge from vagina or penis, burning sensation when urinating; severe complications can include pelvic inflammatory disease, infertility and ectopic pregnancies

Transmitted sexually via vaginal, anal or oral sex and sometimes from mother to child during pregnancy or delivery

Under surveillance to implement interventions immediately for every case, monitor incidence over time, estimate burden of illness, target prevention education programs, evaluate treatment and prevention programs

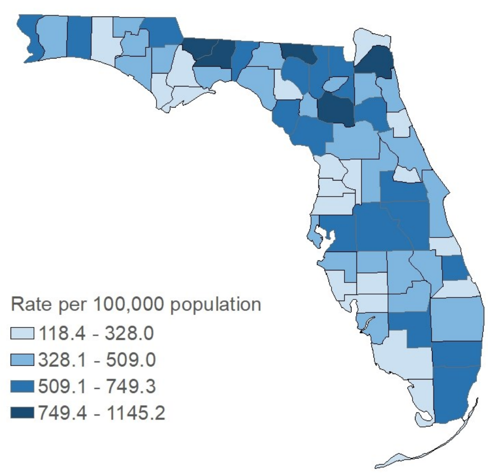
Disease Trends

Chlamydia incidence continued to increase in 2019.



Summary			
Number of cases			111,357
Rate (per 100,000 population)			523.6
Change from 5-year average rate			+12.1%
Age (in Years)			
Mean			25
Median			22
Min-max			4 - 94
Gender	**Number**	**(Percent)**	**Rate**
Female	71,249	(64.0)	655.4
Male	40,059	(36.0)	385.3
Unknown gender	49		
Race	**Number**	**(Percent)**	**Rate**
White	32,436	(37.5)	197.3
Black	37,864	(43.8)	1050.7
Other	16,112	(18.6)	1314.9
Unknown race	24,945		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	65,903	(80.0)	420.2
Hispanic	16,521	(20.0)	295.8
Unknown ethnicity	28,933		

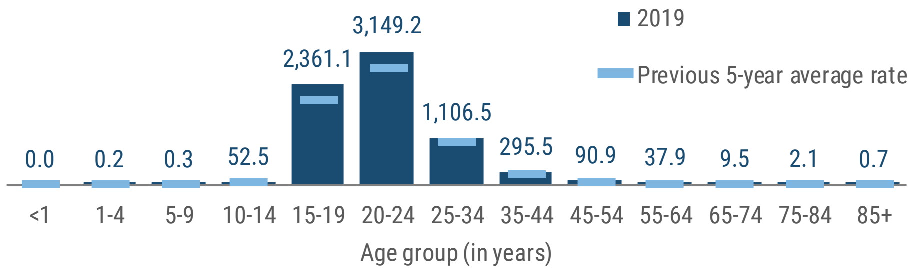
Chlamydia occurs throughout the state. The highest rates (per 100,000 population) in 2019 were in Leon (1,145.2), Gadsden (1,076.7), Alachua (1,004.3), Duval (817.5) and Hamilton (804.8) counties. These counties accounted for 13% of the state's cases, but only 7.5% of the state's population. The largest number of cases were reported in Miami-Dade (14,735 cases) and Broward (12,265 cases) counties. These two counties accounted for 24% of the state's cases and 22% of the state's population.



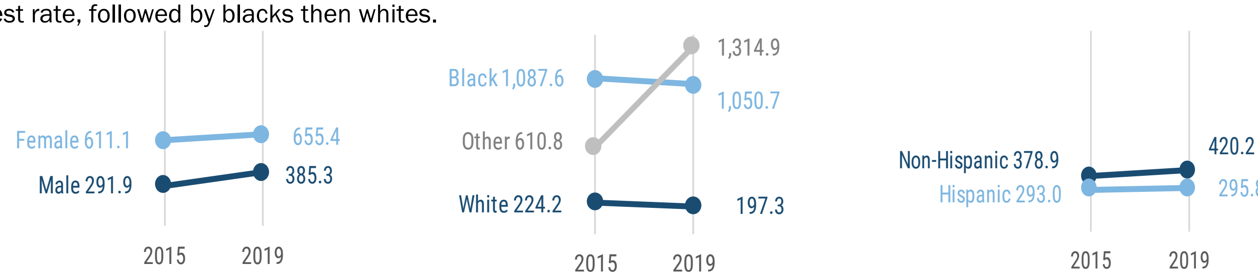
Rates are by county of residence, regardless of where infection was acquired (111,357 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

Chlamydia (Excluding Neonatal Conjunctivitis)

Chlamydia rates (per 100,000 population) are highest in adults 20 to 24 years old, followed by teenagers 15 to 19 years old. Rates in adults rapidly decrease with age. The rate in adults 20 to 24 years old is more than 10 times the rate in adults 35 to 44 years old and 35 times the rate in adults 45 to 54 years old.



Chlamydia rates (per 100,000 population) have increased in all genders, ethnicity groups and other races from 2015 to 2019, but decreased slightly in blacks and whites. The rate in other races almost tripled in that time and now that group has the highest rate, followed by blacks then whites.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chlamydia cases (excluding neonatal conjunctivitis) were missing 21.4% of ethnicity data in 2015 and 14.4% of race data in 2015.

Overall, rates have increased in males in both age groups and in females 20 to 24 years old. The rate in both age groups in black females has decreased over the past 10 years. The rates in other races in both age groups and both genders have increased steadily, as have rates in Hispanic males in both age groups.

Females 15–19 years old

	2010 rate	10-year trend	2019 rate
Total	**3,285.9**		**3,640.3**
White	1,746.5		1,892.2
Black	8,305.9		5,623.7
Hispanic	1,481.6		1,610.4
Other	1,504.6		6,126.0

Males 15–19 years old

	2010 rate	10-year trend	2019 rate
Total	**776.3**		**1,137.5**
White	246.2		333.8
Black	2,425.3		2,429.1
Hispanic	304.7		391.8
Other	381.7		2,177.3

Females 20–24 years old

	2010 rate	10-year trend	2019 rate
Total	**3,416.6**		**4,353.5**
White	1,904.0		2,132.3
Black	8,014.7		6,876.5
Hispanic	1,915.4		2,086.7
Other	1,910.3		7,188.2

Males 20–24 years old

	2010 rate	10-year trend	2019 rate
Total	**1,331.9**		**1,996.2**
White	607.5		767.9
Black	3,799.5		3,752.4
Hispanic	658.2		871.3
Other	818.6		3,440.6

Ciguatera Fish Poisoning

Key Points

Ciguatoxin is produced by dinoflagellates in the genus *Gambierdiscus*. Marine dinoflagellates are typically found in tropical and subtropical waters and are eaten by herbivorous fish that are in turn eaten by larger carnivorous fish, causing the toxins to bioaccumulate in larger fish such as barracuda or grouper. While case finding in Florida is thought to be more complete than in other states, under-reporting is still likely due to lack of recognition and reporting by medical practitioners. Single cases of ciguatera fish poisoning warrant a full investigation and are generally characterized as outbreaks for public health purposes. Prior to 2015, all cases were classified as outbreak-associated for this report. Starting in 2015, cases were only classified as outbreak-associated for this report when at least two or more people had a common exposure.

Thirty-nine investigations occurred in 2019 involving 68 cases, of which 1 case was a non-Florida resident. Investigations involved an average of 1.7 cases with a range of 1 to 5 cases. The most common fish consumed was barracuda. Cases were most commonly associated with recreationally harvested fish. In 2019, cases were investigated throughout the year, with the largest number of cases occurring in January and August.

Disease Facts

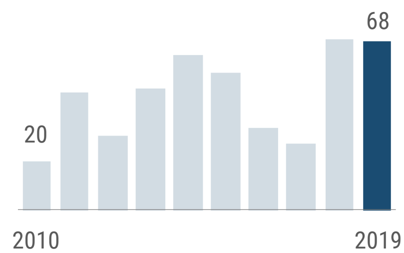
Caused by ciguatoxins produced by marine dinoflagellates (associated with tropical fish)

Illness includes nausea, vomiting and neurologic symptoms (e.g., tingling fingers or toes, temperature reversal); anecdotal evidence of long-term periodic recurring symptoms

Exposed through consuming fish containing ciguatoxins

Under surveillance to identify and control outbreaks, identify high-risk products (e.g., barracuda, grouper)

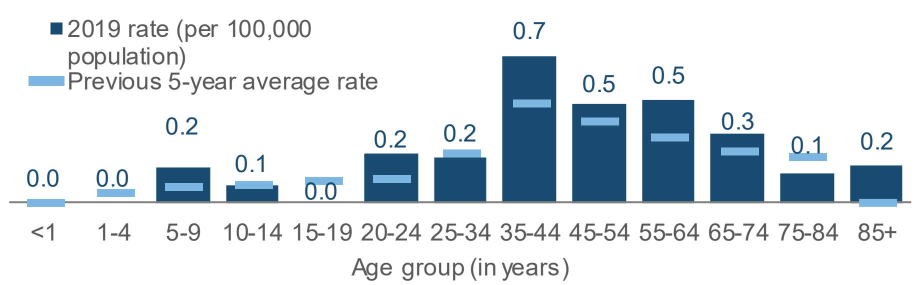
Ciguatera fish poisoning cases reported in 2019 were above the 10-year average of 46.7 cases.



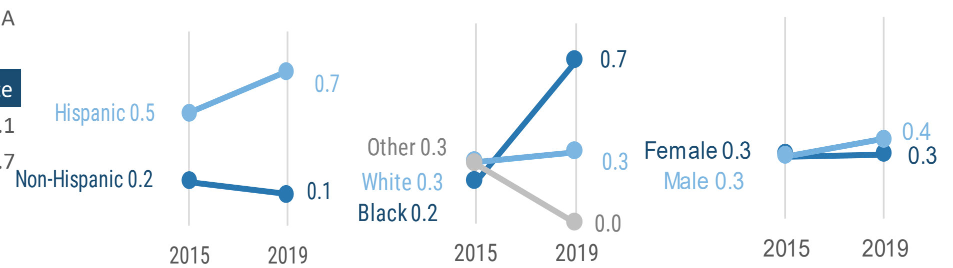
Disease Trends

Summary			
Number of cases			68
Rate (per 100,000 population)			0.3
Change from 5-year average rate			+30.3%
Age (in Years)			
Mean			47
Median			47
Min-max			8 - 85
Gender	**Number**	**(Percent)**	**Rate**
Female	31	(45.6)	0.3
Male	37	(54.4)	0.4
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	53	(85.5)	0.3
Black	0	(0.0)	NA
Other	9	(14.5)	NA
Unknown race	6		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	23	(36.5)	0.1
Hispanic	40	(63.5)	0.7
Unknown ethnicity	5		

The ciguatera fish poisoning rate (per 100,000 population) is generally highest in adults ages 25 to 74 years. In 2019, 65 cases were reported in adults and three cases were reported in those less than 20 years old.



The ciguatera fish poisoning rate (per 100,000 population) is generally similar in males and females. The rate was notably higher in Hispanics and blacks in 2019.

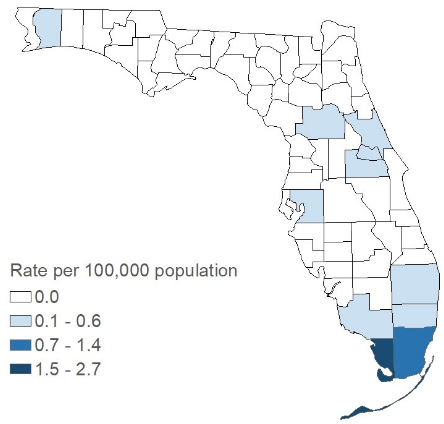


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Ciguatera fish poisoning cases were missing 7.4% of ethnicity data in 2019 and 8.8% of race data in 2019.

Ciguatera Fish Poisoning

Summary	Number
Number of cases	68
Outcome	**Number (Percent)**
Hospitalized	10 (14.7)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Exposed in Florida	61 (89.7)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	7 (10.3)
Exposed location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	23 (33.8)
Outbreak-associated	45 (66.2)
Outbreak status unknown	0

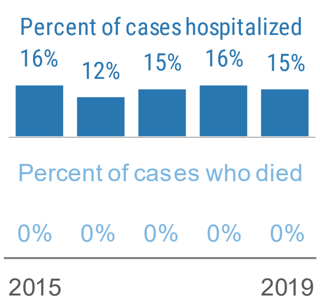
Ciguatera fish poisoning cases tend to occur in coastal counties, particularly in south Florida. In 2019, the rate per 100,000 population was highest in Monroe County (two cases); Miami-Dade County accounted for over half of all cases (42).



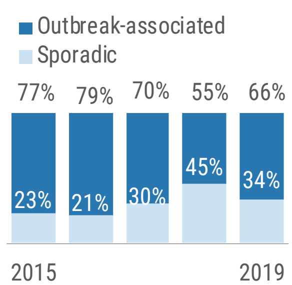
Rates are by county of residence for cases exposed in Florida (68 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

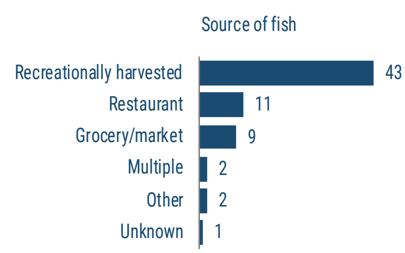
Less than 25% of cases are hospitalized. No deaths have been identified in recent years.



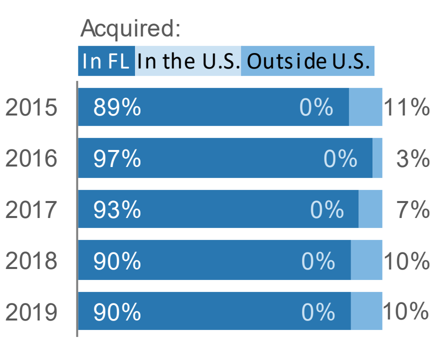
Most cases are outbreak-associated. Implicated fish are commonly shared by multiple people.



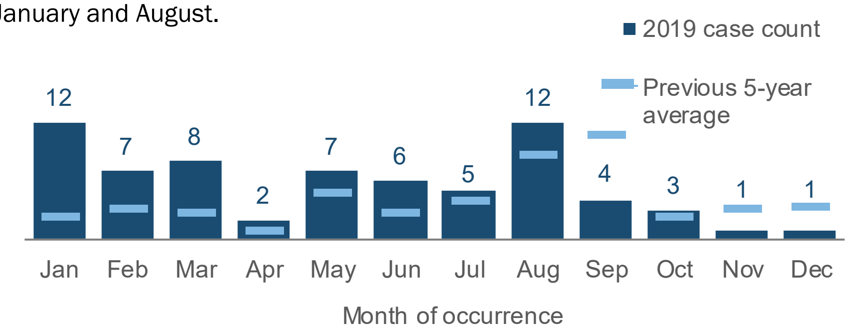
Most fish causing ciguatera fish poisoning were recreationally harvested. Sometimes, multiple sources of fish are identified, and occasionally, no source can be identified.



More than 85% of cases are exposed in Florida each year.



Ciguatera fish poisoning generally peaks in August and September. However, cases were distributed across months in 2019 with 12 cases reported in January and August.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Cryptosporidiosis

Key Points

During the past two decades, *Cryptosporidium* has become recognized as one of the most common causes of waterborne disease (recreational water and drinking water) in humans in the U.S. Diagnostic capabilities have improved over the years, making it easier to identify illnesses caused by this parasite.

Cryptosporidiosis in Florida and the U.S. has a seasonal and cyclical trend. Following a sharp increase in cases in 2014 in all genders, races and ethnicities, cases have generally decreased. Cryptosporidiosis incidence is consistently highest in children 1 to 4 years old.

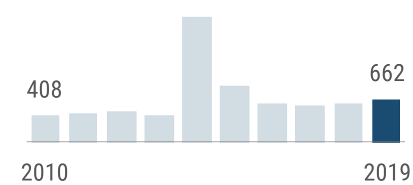
Cryptosporidiosis incidence peaked in 2014 when there were 6 waterborne outbreaks investigated, including 134 cases associated with swimming pools, a recreational water park and kiddie pools. Additional community-wide outbreaks in 2014 were associated with person-to-person transmission and daycares.

There were no reported waterborne disease outbreaks due to *Cryptosporidium* in 2019, which is a decrease from the 2 outbreaks reported in 2018. Reported clusters of illness were associated with person-to-person transmission, travel, daycares and exposure to animals and livestock.

Disease Facts

- **Caused** by *Cryptosporidium* parasites
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, animal to person, waterborne and foodborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food/water source, ill food handler), monitor incidence over time, estimate burden of illness

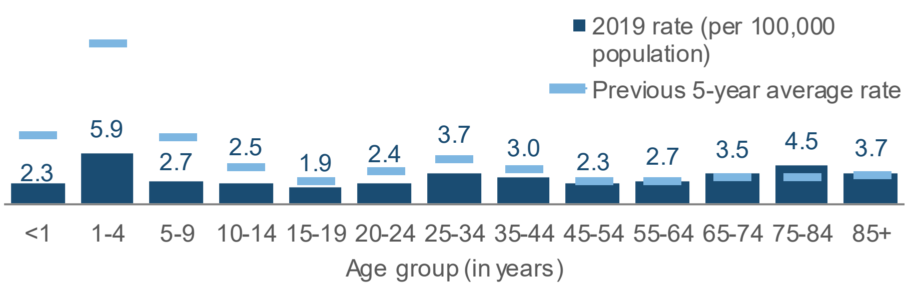
Cryptosporidiosis incidence increased sharply in 2014, decreased in 2015 and 2016 and has remained relatively stable since.



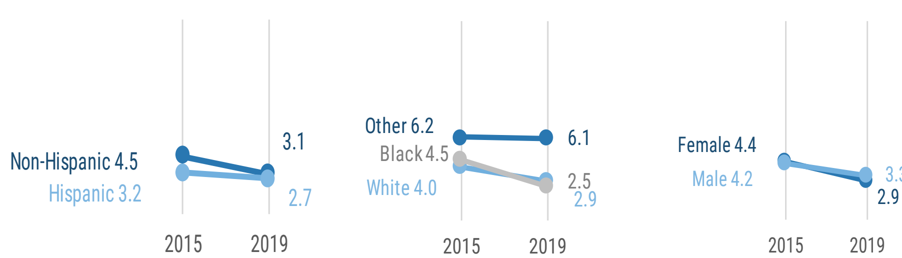
Disease Trends

Summary		
Number of cases		662
Rate (per 100,000 population)		3.1
Change from 5-year average rate		-30.6%
Age (in Years)		
Mean		42
Median		41
Min-max		0 - 96
Gender	**Number (Percent)**	**Rate**
Female	314 (47.5)	2.9
Male	347 (52.5)	3.3
Unknown gender	1	
Race	**Number (Percent)**	**Rate**
White	482 (74.6)	2.9
Black	89 (13.8)	2.5
Other	75 (11.6)	6.1
Unknown race	16	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	490 (76.2)	3.1
Hispanic	153 (23.8)	2.7
Unknown ethnicity	19	

The cryptosporidiosis rate (per 100,000 population) is consistently highest in children 1 to 4 years old, which remained true in 2019.



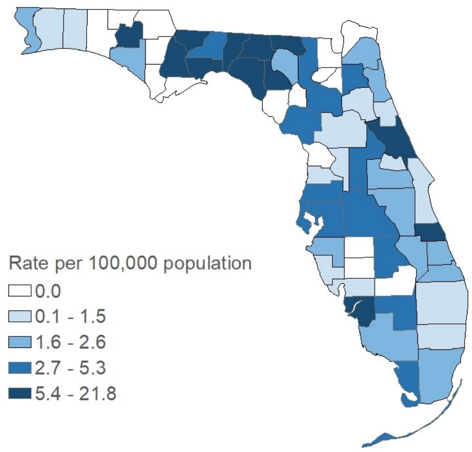
The cryptosporidiosis rate (per 100,000 population) decreased among all demographics from 2015 to 2019. Rates were lower by gender, race and ethnicity in 2019.



Cryptosporidiosis

Summary	Number
Number of cases	662
Case Classification	**Number (Percent)**
Confirmed	262 (39.6)
Probable	400 (60.4)
Outcome	**Number (Percent)**
Hospitalized	253 (38.2)
Died	3 (0.5)
Sensitive Situation	**Number (Percent)**
Daycare	33 (5.0)
Health care	21 (3.2)
Food handler	10 (1.5)
Imported Status	**Number (Percent)**
Acquired in Florida	538 (90.3)
Acquired in the U.S., not Florida	7 (1.2)
Acquired outside the U.S.	51 (8.6)
Acquired location unknown	66
Outbreak Status	**Number (Percent)**
Sporadic	620 (93.8)
Outbreak-associated	41 (6.2)
Outbreak status unknown	1

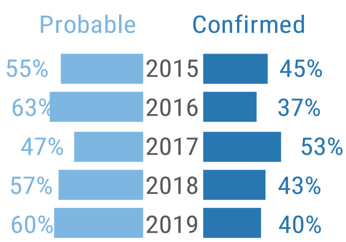
Cryptosporidiosis occurs throughout the state. The highest rates (per 100,000) in 2019 generally occurred in small, rural counties with lower rates in many of the large metropolitan areas of the state.



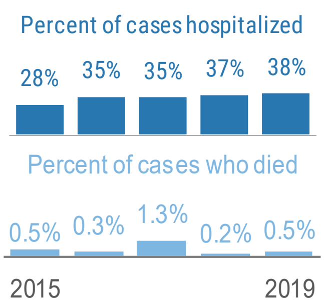
Rates are by county of residence for infections acquired in Florida (662 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

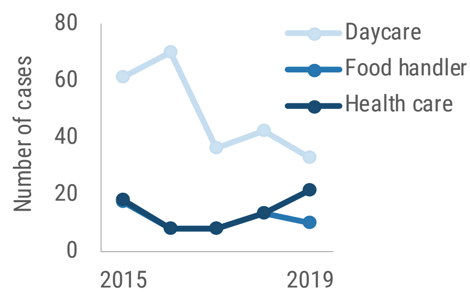
Unlike many other reportable diseases, less than half of cryptosporidiosis cases are confirmed.



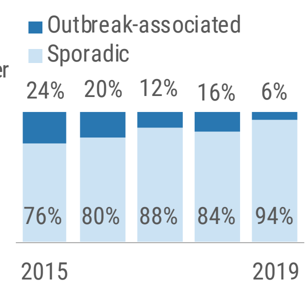
Hospitalizations and deaths are typically related to underlying conditions and comorbidities.



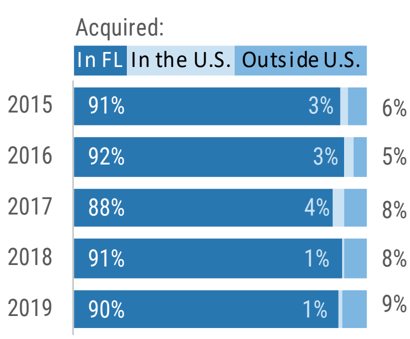
Many cases occurred in daycare settings. People in sensitive situations may pose a risk for transmitting infection to others.



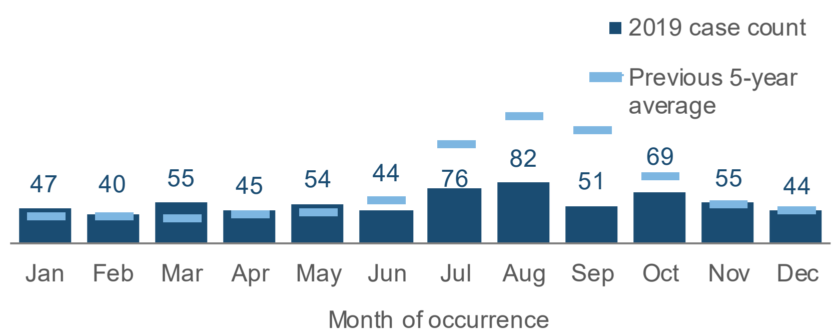
Most cryptosporidiosis case are sporadic. Only 6% were outbreak-associated in 2019.



Most cryptosporidiosis infections are acquired within Florida.



Cryptosporidiosis cases peak in the summer and early fall months, similar to other enteric diseases.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Cyclosporiasis

Key Points

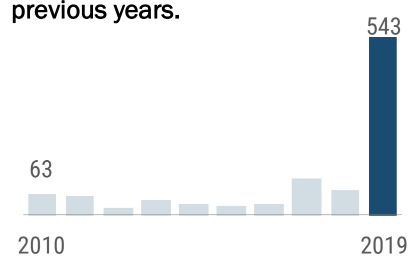
Cyclosporiasis incidence is strongly seasonal, peaking annually in June and July. Large multistate outbreaks of cyclosporiasis were identified in 2013, 2014, 2015, 2018 and 2019. In the U.S., cyclosporiasis outbreaks are primarily foodborne and have been linked to various types of imported fresh produce, including basil, cilantro, mesclun lettuce, raspberries and snow peas. More recently, domestically grown produce has been implicated.

In 2019, 2,408 laboratory-confirmed cases of cyclosporiasis were reported nationally as of November 19, 2019 (the most recent date for which national data were available). These cases were reported by 37 different states, had illness onset from May to August 2019 and had no history of international travel during the 14-day period prior to illness onset. Florida reported 527 (97%) of its 543 cases during this same time period. The large increase in cases in Florida was attributed in part to several large outbreaks associated with imported basil from Mexico; at least 175 cases were directly linked to those outbreaks. In addition, 20 other outbreaks were investigated in Florida for a total of 23 outbreaks involving 268 cases. Several of these outbreaks, including the 1 attributed to basil, were part of multi-state outbreaks.

Disease Facts

- **Caused** by *Cyclospora* parasites
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral, including foodborne and less commonly waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness

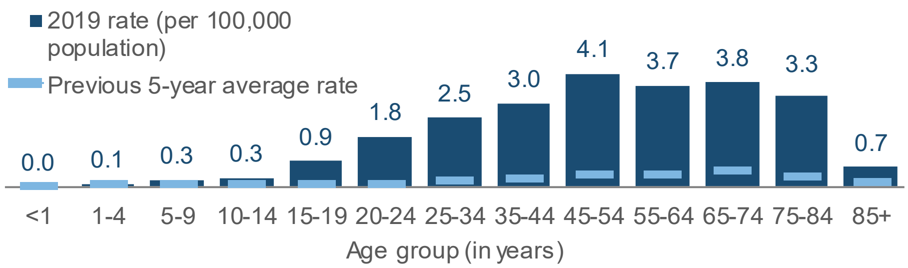
Cyclosporiasis incidence dramatically increased in 2019 compared to previous years.



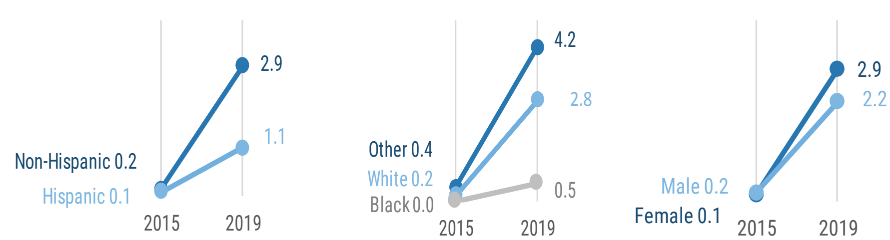
Disease Trends

Summary			
Number of cases			543
Rate (per 100,000 population)			2.6
Change from 5-year average rate			+796.1%
Age (in Years)			
Mean			51
Median			52
Min-max			2 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	315	(58.0)	2.9
Male	228	(42.0)	2.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	457	(86.7)	2.8
Black	18	(3.4)	NA
Other	52	(9.9)	4.2
Unknown race	16		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	462	(88.3)	2.9
Hispanic	61	(11.7)	1.1
Unknown ethnicity	20		

The cyclosporiasis rate (per 100,000 population) is consistently higher in adults ≥25 years old. In 2019, the rate peaked at 45–54 years of age and remained high through age 84.



Cyclosporiasis rates (per 100,000 population) increased in all gender, race and ethnicity groups from 2015 to 2019. Rates were similar in gender groups, but higher in other races, whites and non-Hispanics in 2019.

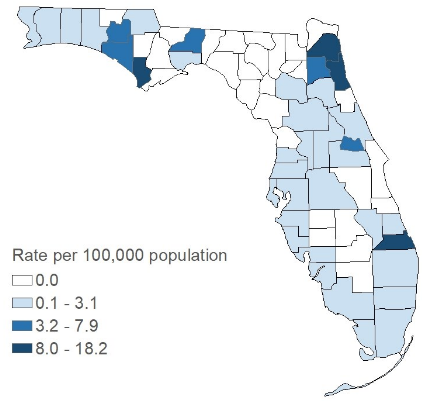


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Cyclosporiasis cases were missing 12.5% of ethnicity data in 2015 and 12.5% of race data in 2015.

Cyclosporiasis

Summary	Number
Number of cases	543
Case Classification	**Number (Percent)**
Confirmed	395 (72.7)
Probable	148 (27.3)
Outcome	**Number (Percent)**
Hospitalized	34 (6.3)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	419 (92.3)
Acquired in the U.S., not Florida	15 (3.3)
Acquired outside the U.S.	20 (4.4)
Acquired location unknown	89
Outbreak Status	**Number (Percent)**
Sporadic	264 (49.6)
Outbreak-associated	268 (50.4)
Outbreak status unknown	11

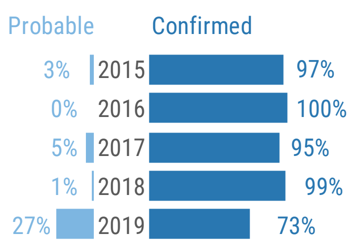
Cyclosporiasis cases occurred throughout the state in 2019 with an overall rate of 2.55 per 100,000 population. High county rates were skewed by low case counts (Gulf and Washington counties) or by the presence of large outbreaks (Duval, St. Johns, Martin and Leon counties).



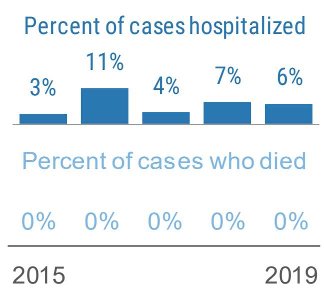
Rates are by county of residence for infections acquired in Florida (543 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

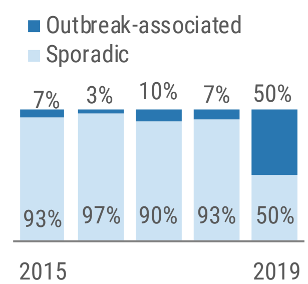
The majority of cyclosporiasis cases are confirmed. Probable cases are symptomatic people epidemiologically linked to confirmed cases.



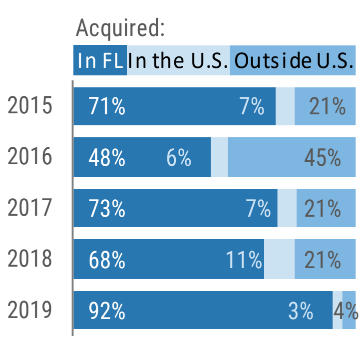
Few cyclosporiasis cases are hospitalized. No deaths have occurred in recent years.



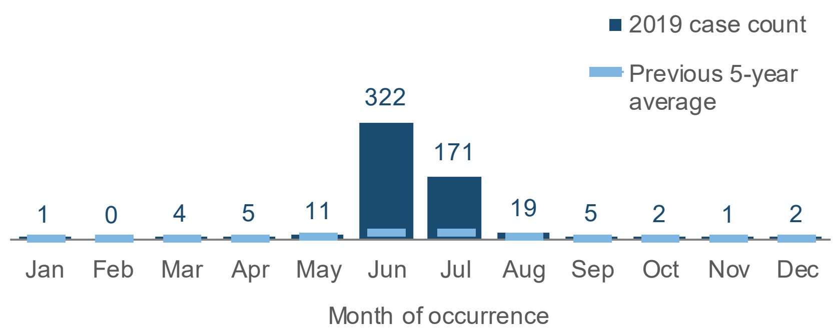
Half of the cyclosporiasis cases in 2019 were outbreak-associated, which is a contrast to previous years.



Most cyclosporiasis infections are acquired in Florida. Half of infections acquired outside the U.S. were from Mexico (10 cases).



Cyclosporiasis has a very strong seasonal pattern with cases primarily occurring May through August, peaking in June and July. Few cases occur during the rest of the year.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Dengue Fever

Key Points

Historically the Americas, predominantly the Caribbean, have served as primary sources of dengue virus exposures in Florida residents. However, at least one locally acquired case has been identified each year from 2009 to 2019, with the exception of 2017. Introductions have been primarily in south Florida. Two outbreaks of locally acquired dengue fever have occurred; 1 in Monroe County (2009 to 2010) and 1 in Martin County (2013). In 2019, the highest number of travel-associated cases identified in a single year was reported, largely driven by an outbreak of DENV-2 in Cuba. There were 18 locally acquired cases in 2019. This represented the most introductions in a single year, though most were sporadic cases; 6 cases involved household clusters and 2 cases were in the same neighborhood.

Disease Facts

Caused by dengue viruses (DENV-1, DENV-2, DENV-3, DENV-4)

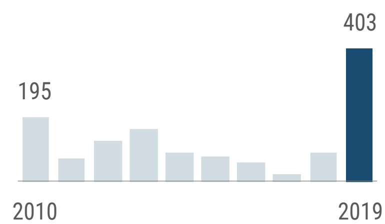
Illness is acute febrile with headache, joint and muscle pain, rash and eye pain; severe dengue (dengue hemorrhagic fever or dengue shock syndrome) symptoms include severe abdominal pain, vomiting and mucosal bleeding

Transmitted via bite of infective mosquito, rarely by blood transfusion or organ transplant

Under surveillance to identify individual cases, implement control measures to prevent introduction and active transmission, monitor incidence over time, estimate burden of illness

One death was reported in a local case. Local cases were identified in Miami-Dade (16), Broward (1) and Hillsborough (1) counties. The serotypes for local cases were DENV-2 (14), DENV-1 (2), DENV-3 (1) and unknown (1). Identification of one-third of the travel-associated cases and over half of the local cases was attributed to active case finding. Infected residents and non-residents who are infectious and bitten by mosquitoes while in Florida could pose a potential risk for introduction of dengue fever; however, cases in non-Florida residents are not included in counts in this report. Twenty-eight dengue fever cases were identified in non-Florida residents while traveling in Florida in 2019. Of the 403 cases reported in 2019, 5 were identified in 2018 but not reported until 2019. Similarly, 5 additional cases were identified in 2019 but were not reported until 2020 and will therefore be included in the 2020 report. Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data.

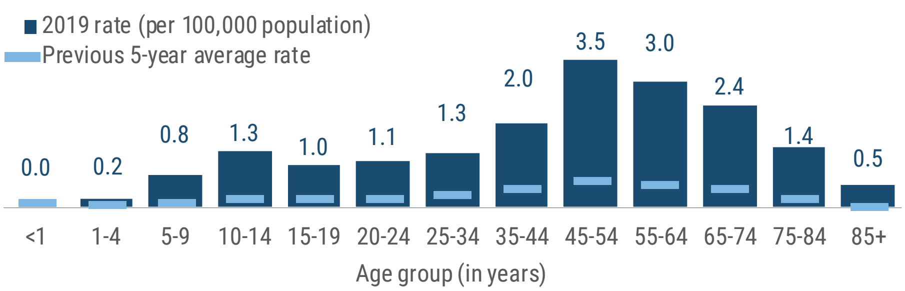
Dengue fever incidence was above average in 2019.



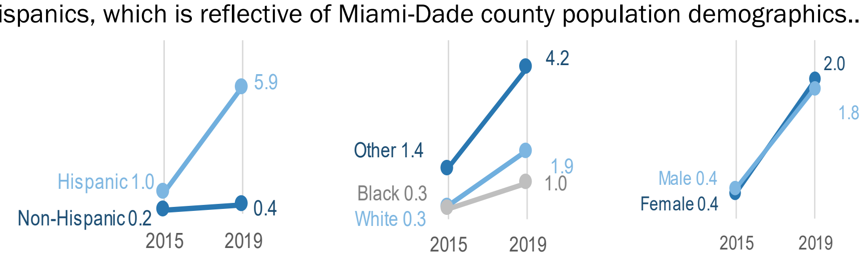
Disease Trends

Summary			
Number of cases			403
Rate (per 100,000 population)			1.9
Change from 5-year average rate			+452.4%
Age (in Years)			
Mean			49
Median			52
Min-max			4 - 88
Gender	**Number**	**(Percent)**	**Rate**
Female	213	(52.8)	2.0
Male	190	(47.2)	1.8
Race	**Number**	**(Percent)**	**Rate**
White	316	(78.4)	1.9
Black	37	(9.2)	1.0
Other	50	(12.4)	4.2
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	72	(17.9)	0.4
Hispanic	330	(81.9)	5.9
Unknown ethnicity	1		

The dengue fever rate (per 100,000 population) has historically been highest in adults 25 to 74 years old. In 2019, the rate was highest in adults 45 to 54 years old; the youngest case was 4 years old.



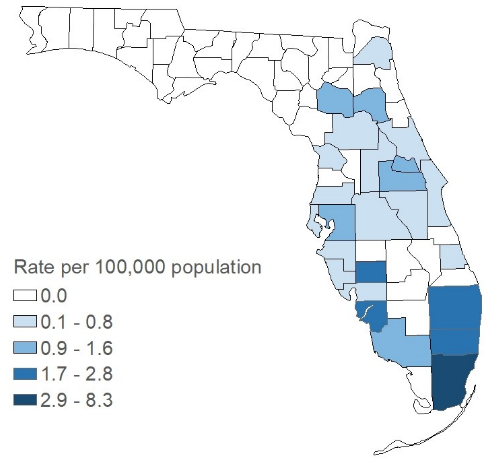
The dengue fever rate (per 100,000 population) is similar in both genders, blacks, whites and non-Hispanics. In 2019, rates were higher in other races and Hispanics, which is reflective of Miami-Dade county population demographics..



Dengue Fever

Summary	Number
Number of cases	403
Case Classification	**Number (Percent)**
Confirmed	355 (88.1)
Probable	48 (11.9)
Outcome	**Number (Percent)**
Hospitalized	195 (48.4)
Died	1 (0.2)
Imported Status	**Number (Percent)**
Acquired in Florida	18 (4.5)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	385 (95.5)
Acquired location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	379 (94.0)
Outbreak-associated	24 (6.0)
Outbreak status unknown	0

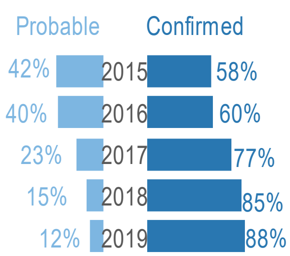
Dengue fever disproportionally affected south Florida, with Miami-Dade County reporting over 200 travel-related cases alone. Locally acquired cases were identified in Broward (1), Hillsborough (1) and Miami-Dade (16) counties.



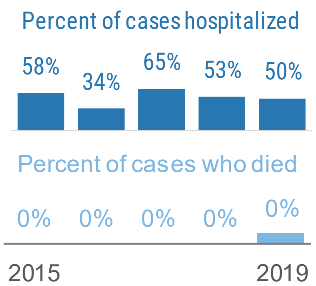
Rates are by county of residence, regardless of where infection was acquired (403 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

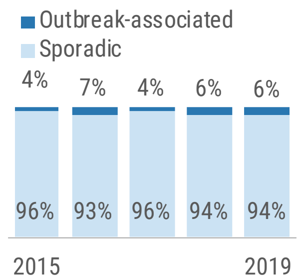
The highest percentage of confirmed cases was identified in 2019, primarily due to testing performed at public health laboratories and active case finding.



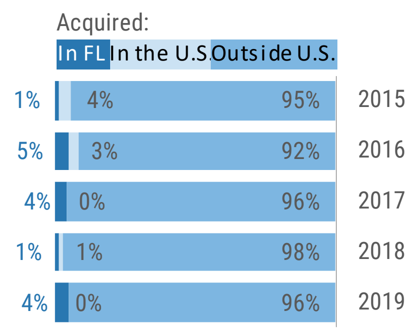
The rate of hospitalization is relatively high and one death was reported in a locally acquired case. Fourteen cases reported symptoms consistent with severe dengue.



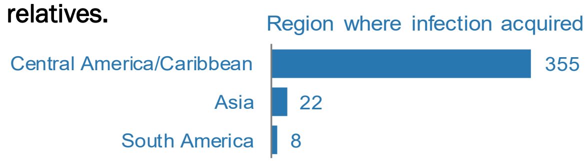
Two household clusters were linked to family members who had recently returned from Cuba.

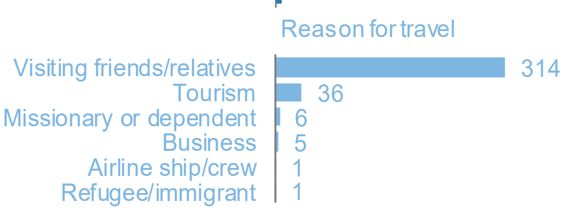


Eighteen cases were acquired in Florida in 2019; all others were imported from other countries or U.S. territories with endemic transmission.

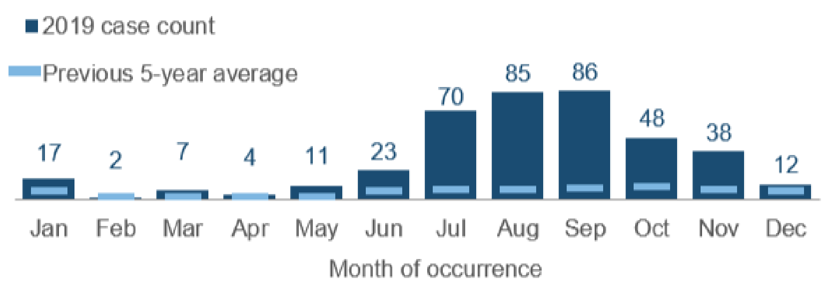


Most dengue fever cases were acquired in the Caribbean, primarily Cuba, while visiting friends and relatives.





Dengue fever cases are most common in summer and fall but can be imported any time of year. In 2019, locally acquired cases occurred from March to December. The majority of travel-related cases occurred during July to October.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Ehrlichiosis

Key Points

Ehrlichiosis is a broad term used to describe illnesses caused by a group of bacterial pathogens. At least 3 different *Ehrlichia* species are known to cause human illness in the U.S. Both *Ehrlichia chaffeensis*, also known as human monocytic ehrlichiosis (HME), and *Ehrlichia ewingii* are transmitted by the lone star tick (*Amblyomma americanum*), one of the most commonly encountered ticks in the southeastern U.S. A third *Ehrlichia* species, called *Ehrlichia muris eauclairensis*, has been reported in a small number of cases in Minnesota and Wisconsin; it is transmitted by the black-legged tick (*Ixodes scapularis*).

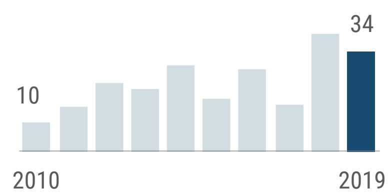
Disease Facts

- **Caused** by *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, *Ehrlichia muris eauclairensis* bacteria
- **Illness** includes fever, headache, fatigue and muscle aches
- **Transmitted** via bite of infective tick; rarely through blood transfusion and organ transplant
- **Under surveillance** to monitor incidence over time, estimate burden of illness, understand epidemiology of each species, target areas of high incidence for prevention education

Ehrlichiosis cases present with similar symptoms regardless of species causing infection and are indistinguishable by serologic testing. *E. ewingii* and *E. muris eauclairensis* are most frequently identified in immunocompromised patients. Severe illness is most frequent in adults ≥70 years old, children <10 years old and those who are immunocompromised. Delays in treatment can increase risk for severe outcomes across all age groups. At least 47% of cases had to seek medical care more than once before rickettsial illness was suspected.

Erhlichiosis incidence in Florida decreased slightly in 2019, but was still above the five-year average. The majority of cases were in males. Most cases involved whites and non-Hispanics, which may in part be due to more homogenous population demographics in northern and central Florida, where most exposures occur.

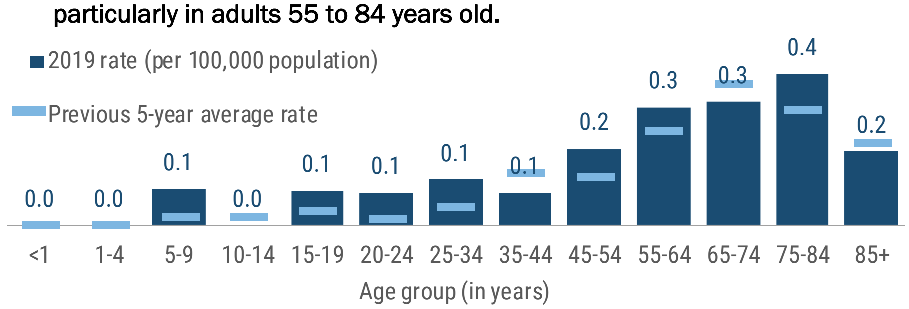
Ehrlichiosis incidence decreased slightly in 2019.



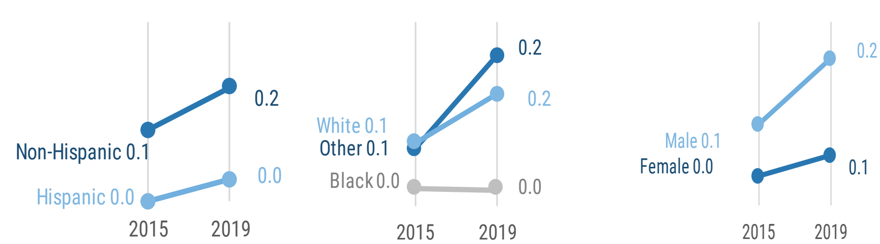
Disease Trends

Summary		
Number of cases		34
Rate (per 100,000 population)		0.2
Change from 5-year average rate		+23.8%
Age (in Years)		
Mean		56
Median		60
Min-max		9 - 90
Gender	**Number (Percent)**	**Rate**
Female	9 (26.5)	NA
Male	25 (73.5)	0.2
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	30 (88.2)	0.2
Black	1 (2.9)	NA
Other	3 (8.8)	NA
Unknown race	0	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	30 (93.8)	0.2
Hispanic	2 (6.3)	NA
Unknown ethnicity	2	

The ehrlichiosis rate (per 100,000 population) is highest in adults, particularly in adults 55 to 84 years old.



Ehrlichiosis rates (per 100,000 population) increased in most demographics from 2015 to 2019, except for blacks, where rates remained stable. Rates were higher in males, whites and other races in 2019.



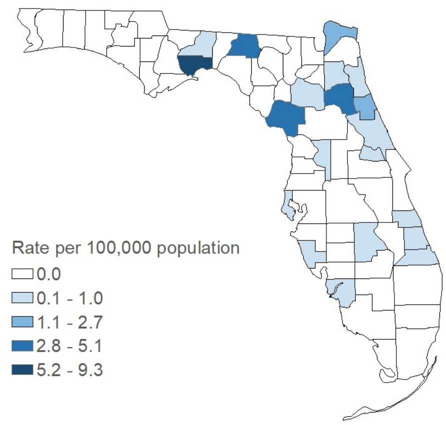
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Ehrlichiosis cases were missing 5.9% of ethnicity data in 2019.

Ehrlichiosis

Summary	Number
Number of cases	34
Case Classification	**Number (Percent)**
Confirmed	23 (67.6)
Probable	11 (32.4)
Outcome	**Number (Percent)**
Hospitalized	29 (85.3)
Died	1 (2.9)
Imported Status	**Number (Percent)**
Acquired in Florida	21 (70.0)
Acquired in the U.S., not Florida	9 (30.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	4
Outbreak Status	**Number (Percent)**
Sporadic	34 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0

Of note, two cases from 2017 were reported in 2019 due to an electronic laboratory data feed issue.

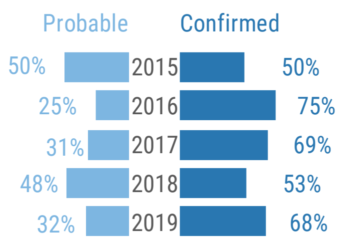
Most ehrlichiosis infections acquired within Florida are in residents of northern and central counties. In 2019, 4 cases each were reported in Putnam and Volusia counties and 2 cases each in Flagler, Levy, Nassau and Wakulla counties. The remaining 6 counties each had 1 case reported.



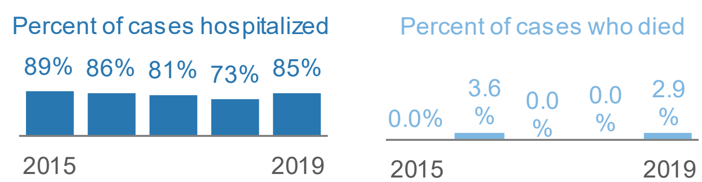
Rates are by county of residence for infections acquired in Florida (34 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

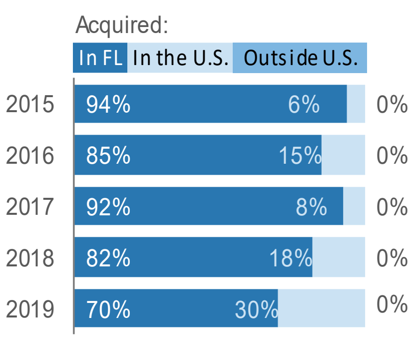
Between 50% and 75% of ehrlichiosis cases are confirmed; 68% of 2019 cases were confirmed.



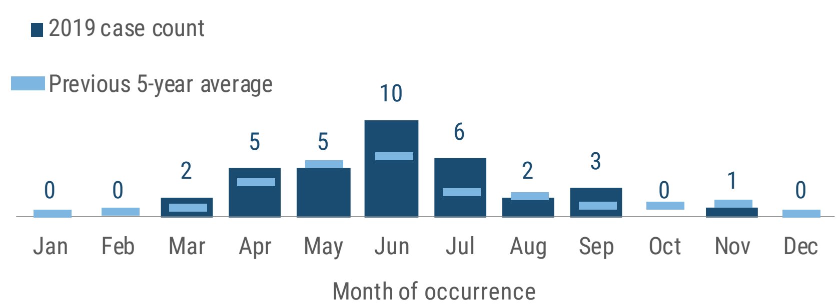
Most ehrlichiosis cases are hospitalized; deaths are uncommon. Although severe illness is more common in older adults, 9 of the 11 cases (82%) in people <50 years old were hospitalized in 2019.



Most infections are acquired in Florida. In 2019, 9 infections were imported from other states and 4 cases had an unknown location of exposure.



Ehrlichiosis cases are reported year-round, though peak transmission occurs during the summer months. Activity was highest in June in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Giardiasis, Acute

Key Points

Giardia intestinalis (also known as *G. lamblia* and *G. duodenalis*) is the most common intestinal parasite in humans identified in the U.S. and a common cause of outbreaks associated with untreated surface and groundwater. Annually, an estimated 1.2 million cases occur in the U.S., and hospitalizations resulting from giardiasis cost approximately $34 million.* Case reports have associated giardiasis with the development of chronic enteric disorders, allergies and reactive arthritis.

Disease Facts

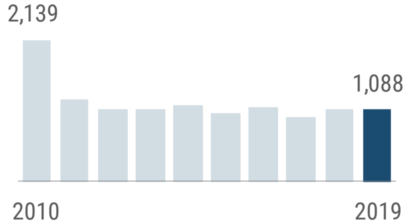
- **Caused** by *Giardia* parasites
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, animal to person, waterborne and foodborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food/water source, ill food handler), monitor incidence over time, estimate burden of illness

From August 2008 to January 2011, laboratory-confirmed cases no longer had to be symptomatic to meet the confirmed case definition, resulting in an increase in reported cases in 2009 and 2010.

Giardiasis is a common parasitic disease reported in Florida. Giardiasis incidence is highest in children 1 to 4 years old, followed by children 5 to 9 years old, then infants <1 year old. It occurs throughout the state year-round, though the highest rates (per 100,000 population) are in small, rural counties.

Giardia lives in the intestines of an infected person or animal and is shed through the feces. Outside of the body, *Giardia* has the potential to survive from weeks to months.

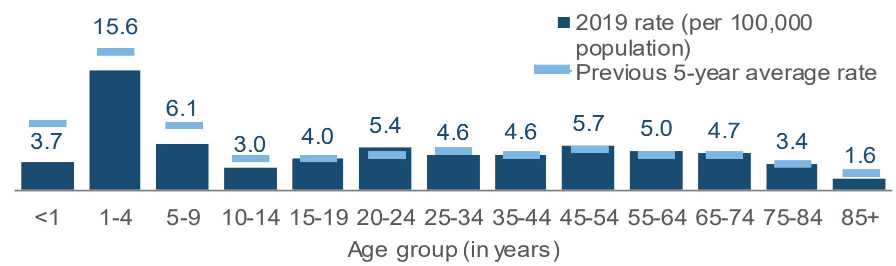
Giardiasis incidence has remained relatively consistent since the last case definition change in 2011.



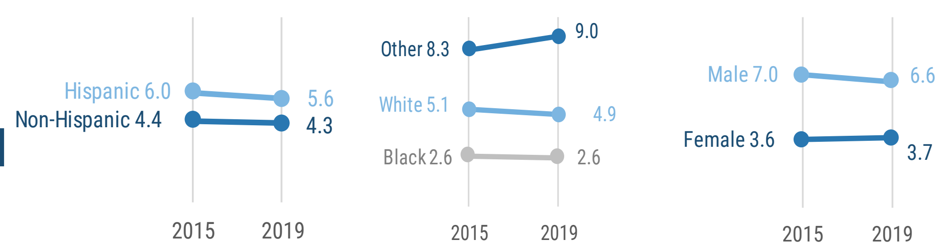
Disease Trends

Summary			
Number of cases			1,088
Rate (per 100,000 population)			5.1
Change from 5-year average rate			-4.8%
Age (in Years)			
Mean			37
Median			37
Min-max			0 - 96
Gender	**Number**	**(Percent)**	**Rate**
Female	397	(36.5)	3.7
Male	690	(63.5)	6.6
Unknown gender	1		
Race	**Number**	**(Percent)**	**Rate**
White	798	(79.6)	4.9
Black	94	(9.4)	2.6
Other	110	(11.0)	9.0
Unknown race	86		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	674	(68.4)	4.3
Hispanic	312	(31.6)	5.6
Unknown ethnicity	102		

The giardiasis rate (per 100,000 population) is consistently highest in children 1 to 4 years old and children 5 to 9 years old, which remained true in 2019.



In 2019, the giardiasis rate (per 100,000 population) increased in other races and females compared to 2015. The increase was most notable in other races.



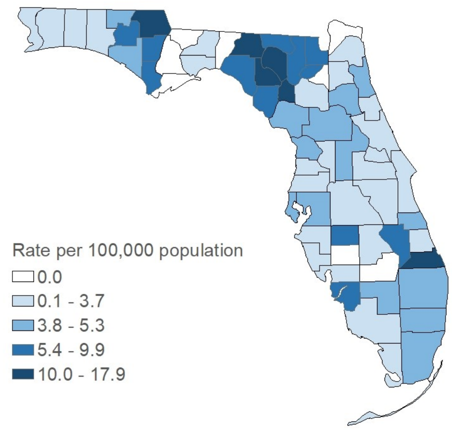
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute giardiasis cases were missing 7.7% of ethnicity data in 2015, 6.3% of race data in 2015, 9.4% of ethnicity data in 2019 and 7.9% of race data in 2019.

*For more information, visit https://www.cdc.gov/mmwr/preview/mmwrhtml/ss6403a2.htm

Giardiasis, Acute

Summary	Number
Number of cases	1,088
Case Classification	**Number (Percent)**
Confirmed	1,049 (96.4)
Probable	39 (3.6)
Outcome	**Number (Percent)**
Hospitalized	147 (13.5)
Died	3 (0.3)
Sensitive Situation	**Number (Percent)**
Daycare	46 (4.2)
Health care	16 (1.5)
Food handler	15 (1.4)
Imported Status	**Number (Percent)**
Acquired in Florida	814 (86.8)
Acquired in the U.S., not Florida	24 (2.6)
Acquired outside the U.S.	100 (10.7)
Acquired location unknown	150
Outbreak Status	**Number (Percent)**
Sporadic	972 (91.6)
Outbreak-associated	89 (8.4)
Outbreak status unknown	27

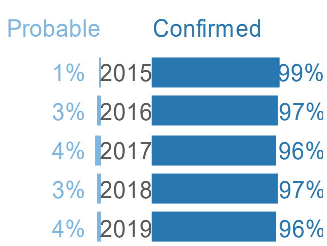
Giardiasis occurs throughout the state. In 2019, rates (per 100,000 population) were consistently highest in small, rural counties.



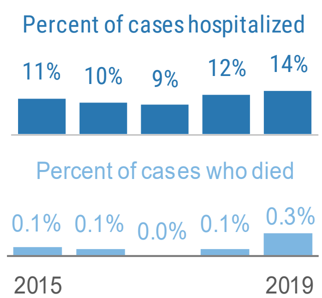
Rates are by county of residence for infections acquired in Florida (1,088 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

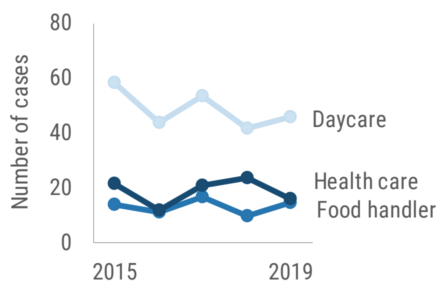
Most cases are confirmed. Probable cases are epidemiologically linked to confirmed cases.



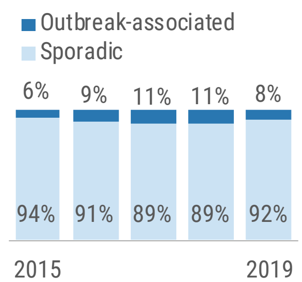
Between 9% and 14% of cases are hospitalized; deaths are very rare.



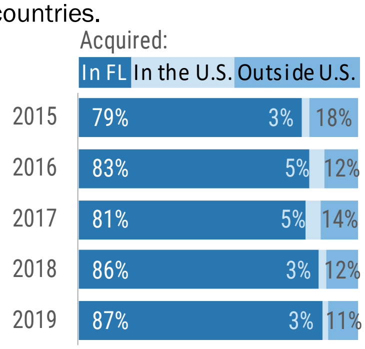
Cases in sensitive situations are monitored. People in sensitive situations may pose a risk for transmitting infection to others.



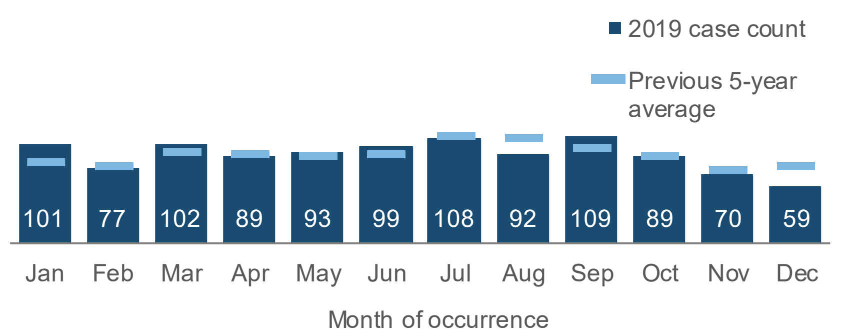
Outbreak-associated giardiasis cases typically reflect small household clusters.



Between 79% to 87% of giardiasis infections are acquired in Florida each year; some infections are acquired in other states and countries.



Giardiasis occurs throughout the year with a small increase in the summer and early fall months. In 2019, incidence was highest in July and September.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Gonorrhea (Excluding Neonatal Conjunctivitis)

Key Points

Over the past 10 years there has been a shift in the demographics of those less than 25 years old diagnosed with gonorrhea. Historically, the gonorrhea rate was higher in females than males for persons 15 to 24 years old. During 2015, this shifted for persons 20 to 24 years old, with more male than female patients in that age group diagnosed. The rates in males have been increasing in most age groups since 2014.

The Florida Department of Health is 1 of 10 recipients of the Centers for Disease Control and Prevention's (CDC) Sexually Transmitted Disease Surveillance Network Grant. This grant requires awardees to randomly sample 10% of the reported gonorrhea cases across the state and conduct in-depth interviews to gather more information about potential risk factors. This includes information about their sexual behaviors and preferences as well as self-reported demographic information. Data from this grant are used to identify at-risk subpopulations and better target prevention efforts for these groups.

Disease Facts

Caused by *Neisseria gonorrhoeae* bacteria

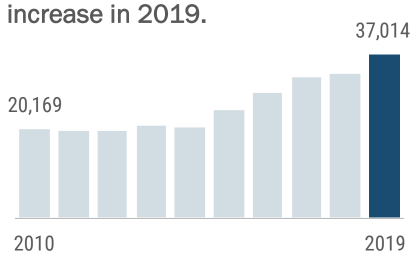
Illness is frequently asymptomatic; sometimes abnormal discharge from vagina or penis or burning sensation when urinating

Transmitted sexually via anal, vaginal or oral sex and sometimes from mother to child during pregnancy or delivery

Under surveillance to implement effective interventions immediately for every case, monitor incidence over time, estimate burden of illness and evaluate treatment and prevention programs

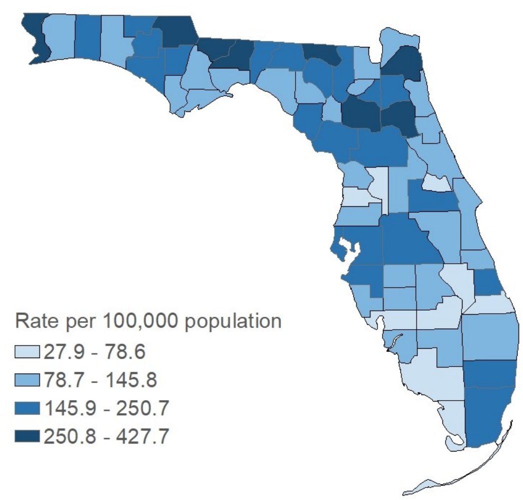
Disease Trends

Gonorrhea incidence continued to increase in 2019.



Summary			
Number of cases			37,014
Rate (per 100,000 population)			174.0
Change from 5-year average rate			+28.7%
Age (in Years)			
Mean			29
Median			26
Min-max			1 - 94
Gender	**Number**	**(Percent)**	**Rate**
Female	13,599	(36.8)	125.1
Male	23,403	(63.2)	225.1
Unknown gender	12		
Race	**Number**	**(Percent)**	**Rate**
White	12,061	(37.8)	73.4
Black	16,182	(50.7)	449.1
Other	3,643	(11.4)	297.3
Unknown race	5,128		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	25,223	(82.5)	160.8
Hispanic	5,361	(17.5)	96.0
Unknown ethnicity	6,430		

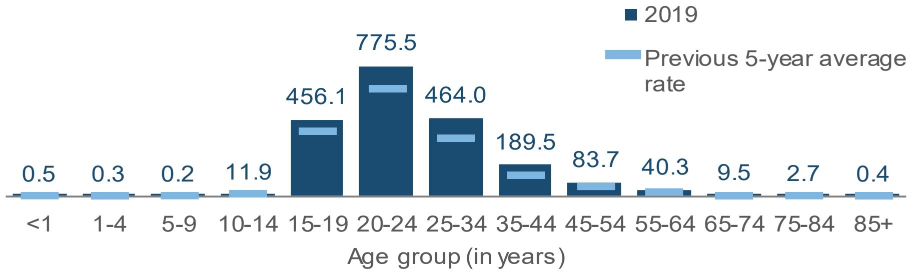
Gonorrhea occurs throughout the state. Higher rates (per 100,000 population) were clustered in the northern part of the state in 2019. The highest rates were in Gadsden (427.7), Duval (411.4), Leon (369.4), Hamilton (304.3) and Escambia (296.4) counties. These counties accounted for 17% of the state's cases but only 7.7% of the state's population.



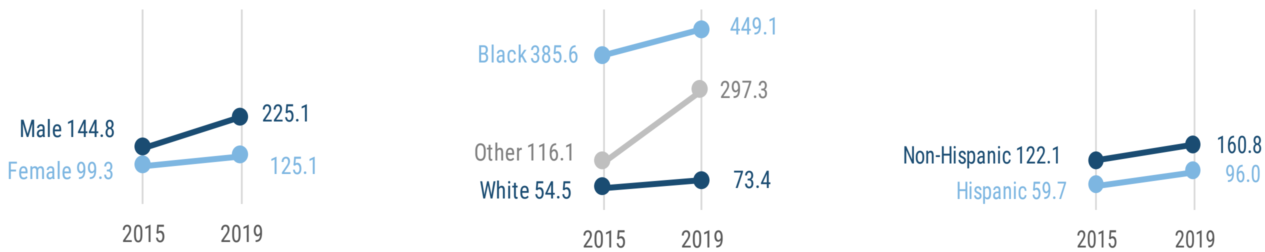
Rates are by county of residence, regardless of where infection was acquired (37,014 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

Gonorrhea (Excluding Neonatal Conjunctivitis)

Gonorrhea rates are highest in teenagers and adults 15 to 34 years old, peaking in adults 20 to 24 years old.



Gonorrhea rates (per 100,000 population) have increased in all genders, races and ethnicity groups from 2015 to 2019, but the most noticeable increase was in other races. The rates were almost seven times higher in blacks than whites in 2019. Rates are higher in males than females and higher in non-Hispanics than Hispanics.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Gonorrhea cases (excluding neonatal conjunctivitis) were missing 13.5% of ethnicity data in 2016 and 8.6% of race data in 2016.

The gonorrhea rate (per 100,000 population) in males has increased in all age groups primarily affected by gonorrhea over the past 10 years. However, the increase is most pronounced in adults 25 to 34 years old, particularly in the last 4 years. In females, the rate has decreased from 10 years ago in people 15 to 19 years old but has increased in young adults and adults 20 to 34 years old.

Teenagers 15–19 years old

Gender	2010 rate	10-year trend	2019 rate
Male	318.1		366.4
Female	629.0		549.7

Young adults 20–24 years old

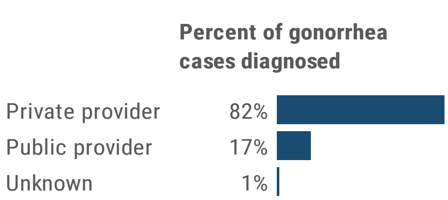
Gender	2010 rate	10-year trend	2019 rate
Male	536.3		842.8
Female	617.1		704.4

Adults 25–34 years old

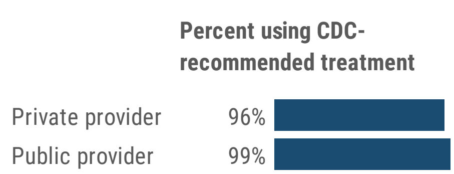
Gender	2010 rate	10-year trend	2019 rate
Male	243.8		622.9
Female	186.8		299.5

With the looming threat of antibiotic-resistant *Neisseria gonorrhoeae*, it is important that patients diagnosed with gonorrhea are treated with CDC-recommended antibiotics. Currently, ceftriaxone paired with azithromycin is the recommended treatment. Ceftriaxone is the last available antibiotic to treat *N. gonorrhoeae*; the bacteria have not developed a resistance to ceftriaxone yet.

In 2019, 82% of diagnosed gonorrhea cases in Florida were diagnosed at private providers' offices, while 17% were diagnosed in public providers' offices.



Public providers used CDC-recommended treatment more often than private providers in 2019. Common reasons for not receiving CDC-recommended treatment are drug allergies and medication cost.



Haemophilus influenzae Invasive Disease in Children <5 Years

Key Points

There are 6 identifiable serotypes of *H. influenzae*, named "a" through "f." Only *H. influenzae* serotype b (Hib) is vaccine-preventable. Meningitis and septicemia due to invasive Hib in children <5 years old have almost been eliminated since the introduction of effective Hib conjugate vaccines in the late 1980s. There were no cases of invasive Hib reported in 2019, consistent with no cases reported in 2018. *H. influenzae* invasive disease can sometimes result in serious complications and even death. There were 6 deaths among other *H. influenzae* cases in 2019, 4 of whom had nontypeable strains, 1 with a not type b strain and 1 with an unknown strain. No deaths in 2019 had *H. influenzae* meningitis or bacteremia listed as a cause of death on the death certificates.

Disease Facts

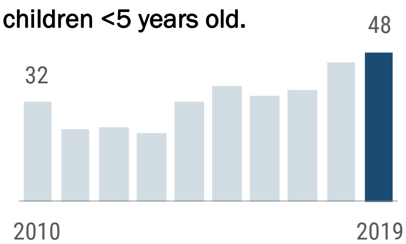
Caused by *Haemophilus influenzae* bacteria

Illness can present as pneumonia, bacteremia, septicemia, meningitis, epiglottitis, septic arthritis, cellulitis or purulent pericarditis; less frequently endocarditis and osteomyelitis

Transmitted person to person by inhalation of infective respiratory tract droplets or direct contact with infective respiratory tract secretions

Under surveillance to identify and control outbreaks, monitor incidence over time, monitor effectiveness of immunization programs and vaccines

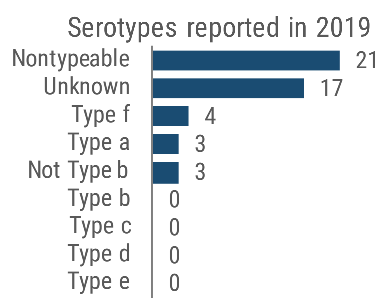
Between 20 and 48 invasive *H. influenzae* cases are reported each year in children <5 years old.

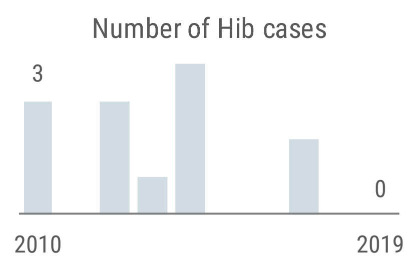


Disease Trends

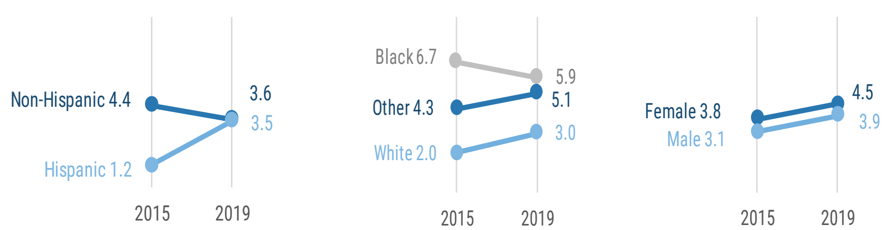
Summary			
Number of cases			48
Rate (per 100,000 population)			4.2
Change from 5-year average rate			+26.6%
Age (in Years)			
Mean			1
Median			0
Min-max			0 - 4
Gender	**Number**	**(Percent)**	**Rate**
Female	25	(52.1)	4.5
Male	23	(47.9)	3.9
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	24	(54.5)	3.0
Black	15	(34.1)	NA
Other	5	(11.4)	NA
Unknown race	4		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	28	(68.3)	3.6
Hispanic	13	(31.7)	NA
Unknown ethnicity	7		

Many (44%) cases had nontypeable strains, followed by serotype f (8%); samples from 17 cases (35%) were not available for serotype testing.





The rate (per 100,000 population) of invasive *H. influenzae* in children <5 years old was higher in females than males and higher in non-Hispanics than Hispanics in 2019. The rate was highest in blacks, followed by other and then whites in 2019, though whites had the largest increase from 2015 to 2019.

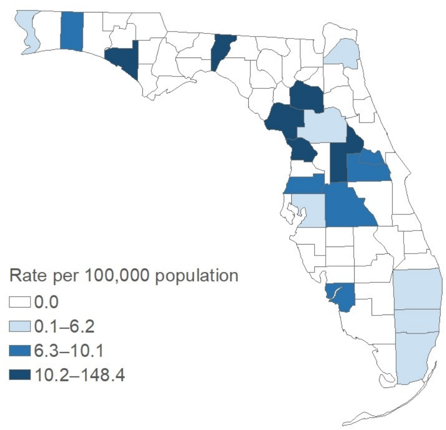


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. H. influenzae invasive disease cases in children less than 5 years old were missing 14.6% of ethnicity data in 2019 and 8.3% of race data in 2019.

Haemophilus influenzae Invasive Disease in Children <5 Years

Summary	Number
Number of cases	48
Case Classification	**Number (Percent)**
Confirmed	48 (100.0)
Probable	0 (0.0)
Outcome	**Number (Percent)**
Hospitalized	45 (93.8)
Died	6 (12.5)
Imported Status	**Number (Percent)**
Acquired in Florida	41 (100.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	7
Outbreak Status	**Number (Percent)**
Sporadic	44 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	4

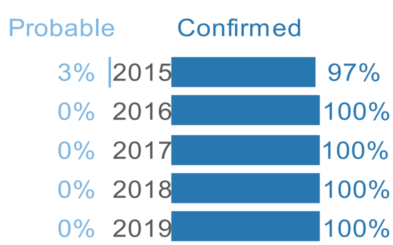
Invasive *H. influenzae* cases in children <5 years old were identified in most areas of the state in 2019, but primarily in central Florida. The highest rates (per 100,000 population) were in small, rural counties.



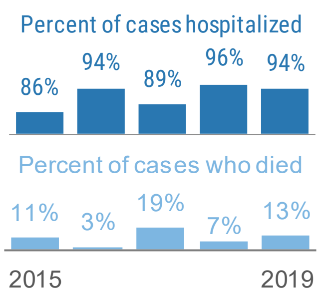
Rates are by county of residence for infections acquired in Florida (48 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

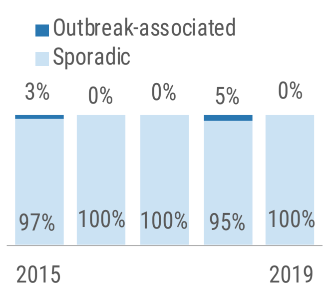
All cases were confirmed by culture or polymerase chain reaction (PCR) in 2019, which is consistent with past years. Probable cases are based on Hib antigen detection in cerebrospinal fluid, which is rare.



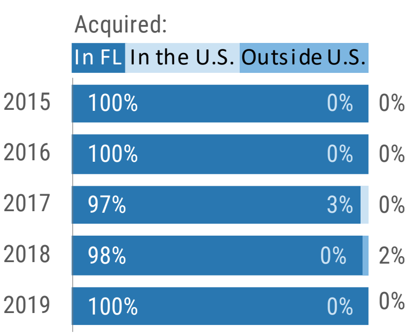
A large percentage of invasive *H. influenzae* cases in children <5 years old are hospitalized. Six children died in 2019.



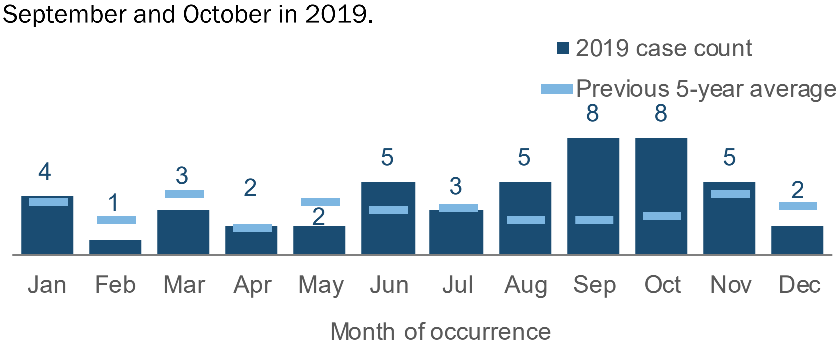
Almost all cases are sporadic. Outbreak-associated cases are usually vertical transmission from mother to infant.



Most infections are acquired in Florida. In 2019, all cases were acquired in Florida.



There is not a distinct seasonality to invasive *H. influenzae* in children <5 years old. It occurs in low numbers year-round. More cases were reported in September and October in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hansen's Disease (Leprosy)

Key Points

With early diagnosis and treatment, Hansen's disease can be cured. However, if left untreated, the nerve damage can be permanent. Leprosy was once feared as a highly contagious and devastating disease. However, it is now recognized that the disease is not spread through casual contact, and most people (about 95%) are resistant to infection. For those who do become infected, effective treatment is available. Historically, the disease was not thought to be endemic in Florida. More recently in Florida and other parts of the southern U.S., infections have been identified in both people and armadillos believed to have been exposed in the region.

Due to the long incubation period for Hansen's disease and a mobile population, location of exposure is often difficult to identify.

Disease Facts

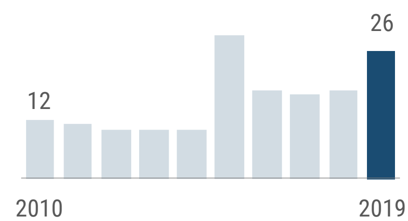
Caused by *Mycobacterium leprae* bacteria

Illness mainly affects the skin (e.g., discolored patches of skin, nodules on the skin, ulcers on soles of feet), nerves (e.g., numbness in affected areas, muscle weakness or paralysis, enlarged nerves), and mucous membranes (e.g., stuffy nose, nosebleeds)

Transmission thought to be person-to-person via respiratory droplets following extended close contact with an infected person (still not clearly defined, but it is hard to spread)

Under surveillance to facilitate early diagnosis and appropriate treatment by an expert to minimize permanent nerve damage and prevent further transmission

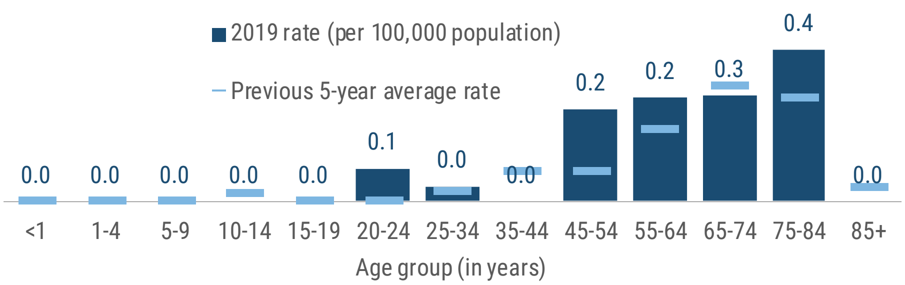
Hansen's disease incidence increased in 2019.



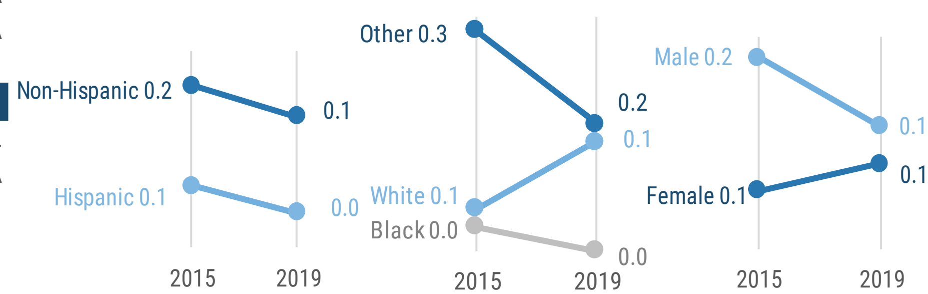
Disease Trends

Summary		
Number of cases		26
Rate (per 100,000 population)		0.1
Change from 5-year average rate		+34.5%
Age (in Years)		
Mean		61
Median		62
Min-max		21 - 81
Gender	**Number (Percent)**	**Rate**
Female	11 (42.3)	NA
Male	15 (57.7)	NA
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	23 (92.0)	0.1
Black	0 (0.0)	NA
Other	2 (8.0)	NA
Unknown race	1	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	21 (91.3)	0.1
Hispanic	2 (8.7)	NA
Unknown ethnicity	3	

The Hansen's disease rate (per 100,000 population) is consistently highest in adults over 55 years old. The increase in 2019 was most noticeable in those aged 75–84 years old.



The rates remained stable across the demographics from 2015–2019. Rates were highest in non-Hispanics, other races, and the same for males and females in 2019.

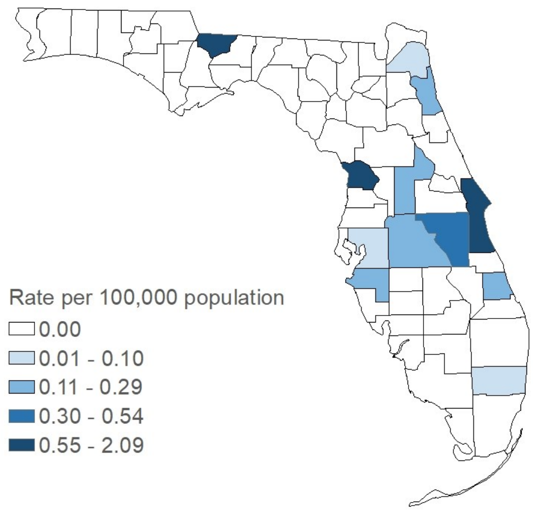


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hansen's disease (leprosy) cases were missing 11.5% of ethnicity data in 2019.

Hansen's Disease (Leprosy)

Summary	Number
Number of cases	26
Outcome	**Number (Percent)**
Hospitalized	0 (0.0)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	13 (86.7)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	2 (13.3)
Acquired location unknown	11
Outbreak Status	**Number (Percent)**
Sporadic	25 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	1

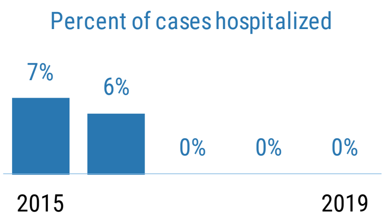
Hansen's disease cases occurred throughout the state in 2019, with the highest rates (per 100,000 population) in central Florida.



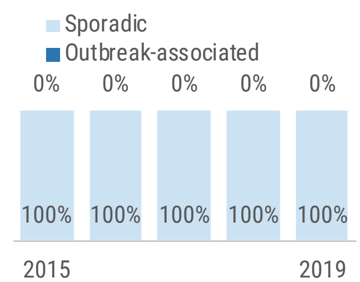
Rates are by county of residence, regardless of where infection was acquired (26 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

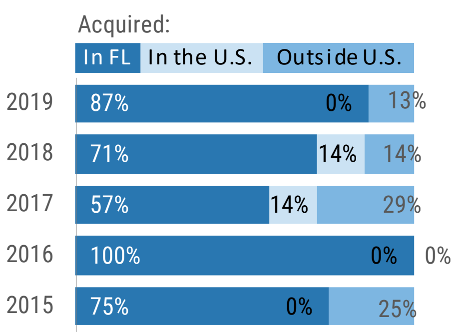
Hospitalizations and deaths due to Hansen's disease are rare. No cases were hospitalized or died due to the disease in 2019.



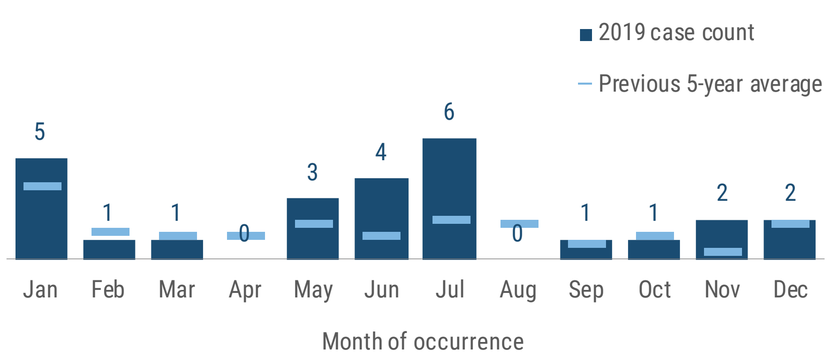
All cases were sporadic; no outbreak-associated cases were identified.



Most cases of Hansen's disease were acquired in Florida in 2019.



Hansen's disease cases occurred throughout the year in 2019. Peak activity occurred between May and July but cases were also seen in January.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Hepatitis A

Key Points

The best way to prevent hepatitis A infection is through vaccination. Vaccination is recommended for all children at age 1 year, travelers to countries where hepatitis A is common, families and caregivers of adoptees from countries where hepatitis A is common, men who have sex with men, persons who use recreational drugs (injection or non-injection), persons experiencing homelessness, persons with chronic liver disease or clotting factor disorders, persons with direct contact with others who have hepatitis A and anyone who wishes to obtain immunity.

Disease Facts

Caused by hepatitis A virus (HAV)

Illness includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)

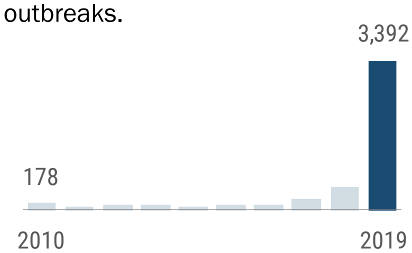
Transmitted via fecal-oral route, including person to person, foodborne and waterborne

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor effectiveness of immunization programs

Incidence increased substantially in 2019, with more than 3,000 cases reported. Most cases occurred in central Florida, with almost half (263 cases) reported in Pinellas, Hillsborough and Pasco counties. The majority of cases were in adults (median of 39 years old), males (63.8%), whites (88.5%) and non-Hispanics (92.6%).

In 2019, the most commonly reported risk factor was drug use in 57.8% of cases. Other risk factors included homelessness in 14% of cases and men who have sex with men in 24.3% of cases. No foodborne outbreaks of hepatitis A were reported in 2019.

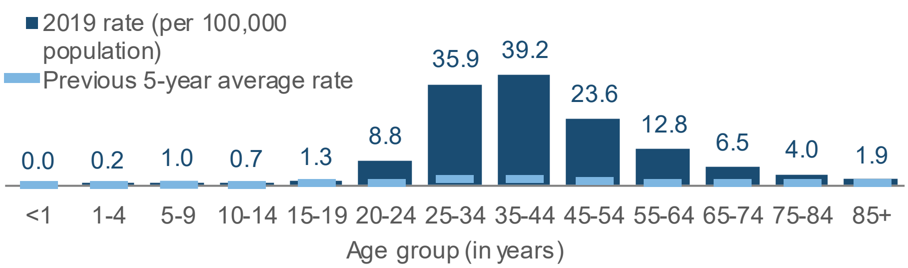
Hepatitis A incidence increased dramatically in 2019 due to large outbreaks.



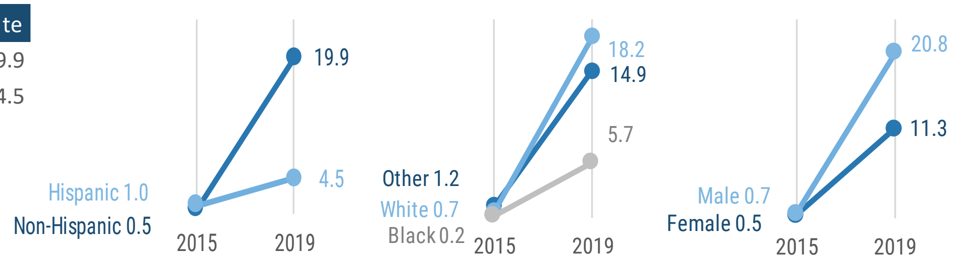
Disease Trends

Summary			
Number of cases			3,392
Rate (per 100,000 population)			15.9
Change from 5-year average rate			+1,294.1%
Age (in Years)			
Mean			42
Median			39
Min-max			1 - 93
Gender	**Number**	**(Percent)**	**Rate**
Female	1,227	(36.2)	11.3
Male	2,165	(63.8)	20.8
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	2,991	(88.5)	18.2
Black	205	(6.1)	5.7
Other	182	(5.4)	14.9
Unknown race	14		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	3,118	(92.6)	19.9
Hispanic	249	(7.4)	4.5
Unknown ethnicity	25		

The hepatitis A rate (per 100,000 population) is consistently highest in adults 25 to 44 years old. The increase in 2019 was most noticeable in this age group, but noticeable increases also occurred in adults 20 to 34 years old and 45 to 64 years old.



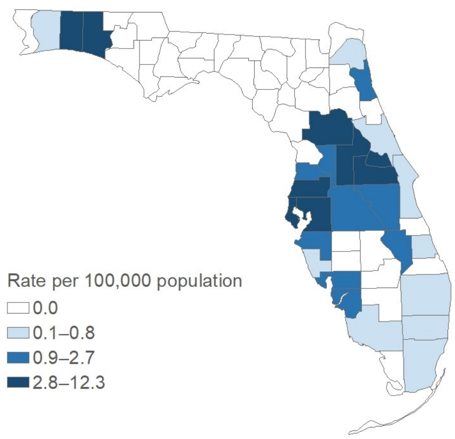
The increased hepatitis A incidence in 2019 was evident in rates (per 100,000 population) for all demographic groups, though most notably in males, whites, other races and non-Hispanics.



Hepatitis A

Summary	Number
Number of cases	3,392
Case Classification	**Number (Percent)**
Confirmed	3,392 (100.0)
Probable	0 (0.0)
Outcome	**Number (Percent)**
Hospitalized	2,641 (77.9)
Died	141 (4.2)
Sensitive Situation	**Number (Percent)**
Daycare	7 (0.2)
Health care	54 (1.6)
Food handler	139 (4.1)
Imported Status	**Number (Percent)**
Acquired in Florida	3,161 (98.4)
Acquired in the U.S., not Florida	12 (0.4)
Acquired outside the U.S.	38 (1.2)
Acquired location unknown	181
Outbreak Status	**Number (Percent)**
Sporadic	2,476 (73.7)
Outbreak-associated	882 (26.3)
Outbreak status unknown	34

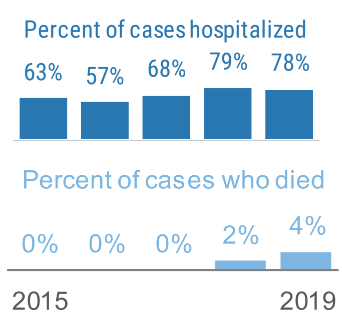
Hepatitis A cases occurred throughout the state in 2019, with the highest rates (per 100,000 population) in central Florida.



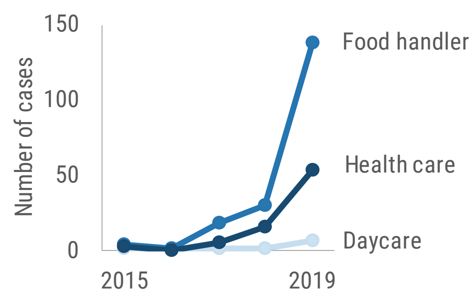
Rates are by county of residence for infections acquired in Florida (3,392 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

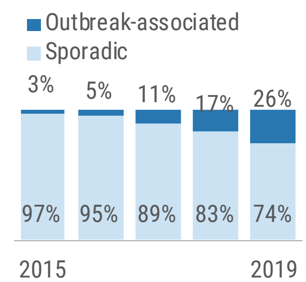
Each year, 50% to 80% of hepatitis A cases are hospitalized, though deaths are uncommon in otherwise healthy individuals.



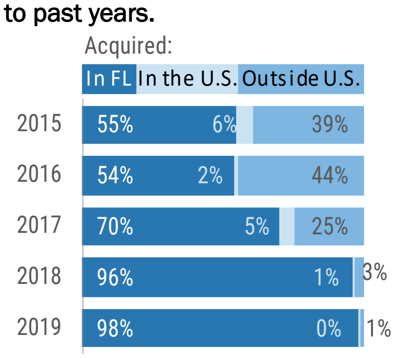
The increase in cases resulted in more infections in persons in sensitive situations, including food handlers and health care workers. However, no outbreaks were reported as a result of these infections.



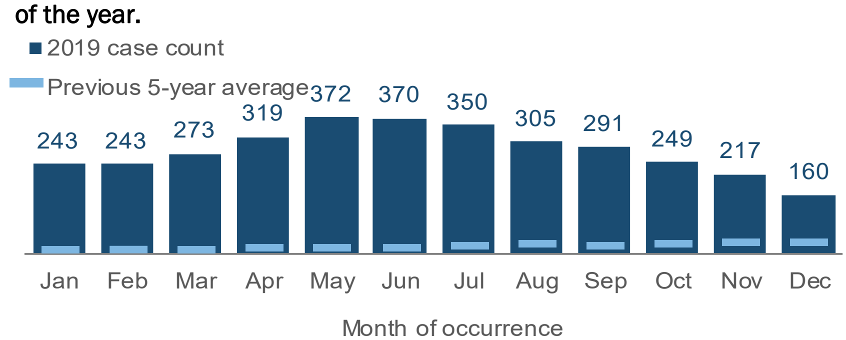
More outbreak-associated cases were identified in 2018 and 2019 than previous years.



A larger proportion of infections were acquired in Florida in 2019 compared to past years.



In 2019, the number of cases was highest in the summer months, but case counts substantially exceeded the previous five-year average in each month of the year.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Hepatitis B, Acute

Key Points

Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis B from chronic diagnoses, making surveillance challenging. Incidence has increased over the last decade despite increased vaccination. The identified increase is likely due to several factors, including an enhanced surveillance project focusing on hepatitis infections in young adults 18 to 25 years old, implemented from 2012 to 2016, and changes in risk behaviors among young adults. Updated laboratory reporting guidance from June 2014, requiring laboratories participating in electronic laboratory reporting to submit all negative hepatitis results in addition to positive results, has also helped identify more acute cases.

Routine vaccination against hepatitis B is recommended for all children at birth (since 1994), all unvaccinated children and adolescents less than 19 years old, adults at risk for hepatitis B and adults 19 to 59 years old with diabetes.

Disease Facts

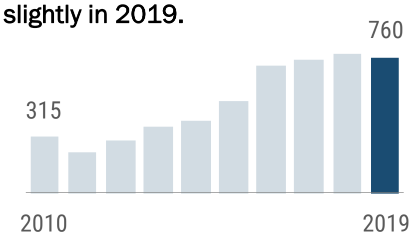
Caused by hepatitis B virus (HBV)

Illness includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (may be asymptomatic)

Transmitted via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks) or from mother to child during pregnancy or delivery

Under surveillance to prevent HBV transmission, identify and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions, monitor effectiveness of immunization programs

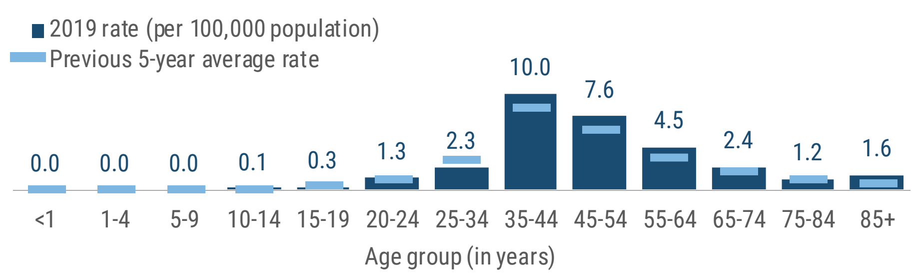
Acute hepatitis B cases decreased slightly in 2019.



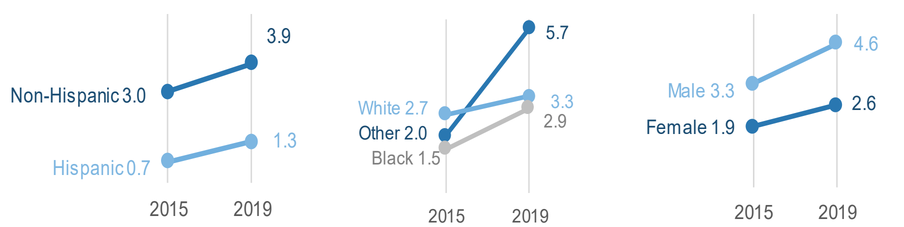
Disease Trends

Summary		
Number of cases		760
Rate (per 100,000 population)		3.6
Change from 5-year average rate		+14.8%
Age (in Years)		
Mean		48
Median		46
Min-max		14 - 96
Gender	**Number (Percent)**	**Rate**
Female	285 (37.5)	2.6
Male	475 (62.5)	4.6
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	549 (75.7)	3.3
Black	106 (14.6)	2.9
Other	70 (9.7)	5.7
Unknown race	35	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	613 (89.1)	3.9
Hispanic	75 (10.9)	1.3
Unknown ethnicity	72	

The acute hepatitis B rate (per 100,000 population) is consistently highest in adults 35 to 44 years old and decreases steadily with age. The rate in adults 25 to 34 years old was lower in 2019 than the previous five-year average.



The acute hepatitis B rate (per 100,000 population) is higher in males than females and higher in non-Hispanics than Hispanics. In 2019, rates were similar in blacks and whites but notably higher in other races.



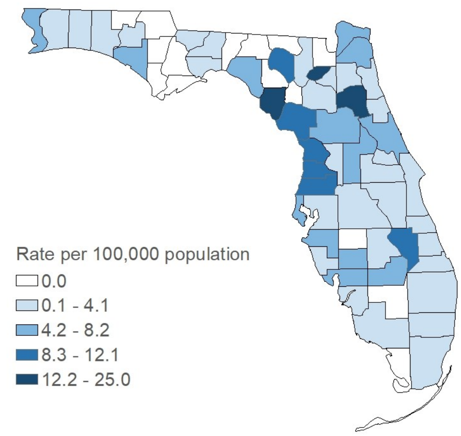
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis B cases were missing 7.5% of ethnicity data in 2015 and 9.5% of ethnicity data in 2019.

Hepatitis B, Acute

Summary	Number
Number of cases	760
Case Classification	**Number (Percent)**
Confirmed	596 (78.4)
Probable	164 (21.6)
Outcome	**Number (Percent)**
Hospitalized	446 (58.7)
Died	21 (2.8)
Imported Status	**Number (Percent)**
Acquired in Florida	544 (97.5)
Acquired in the U.S., not Florida	4 (0.7)
Acquired outside the U.S.	10 (1.8)
Acquired location unknown	202
Outbreak Status	**Number (Percent)**
Sporadic	592 (96.6)
Outbreak-associated	21 (3.4)
Outbreak status unknown	147

In 2019, 21 outbreak-associated cases were identified, including 14 (67%) pairs of acute cases. Seven (33%) cases were linked to chronic hepatitis B cases, 5 (24%) cases were linked to household contacts and 16 (76%) cases were epidemiologically linked to sexual contacts.

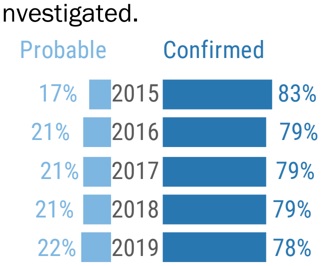
Acute hepatitis B cases occurred in most parts of the state in 2019, though less commonly in the central and eastern parts of the Florida Panhandle. The rates (per 100,000 population) were highest in primarily small, rural counties across the rest of the state.



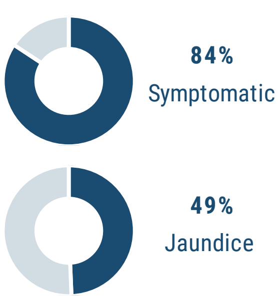
Rates are by county of residence, regardless of where infection was acquired (760 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

More than 75% of cases are confirmed each year. In 2019, 97% of cases were investigated.



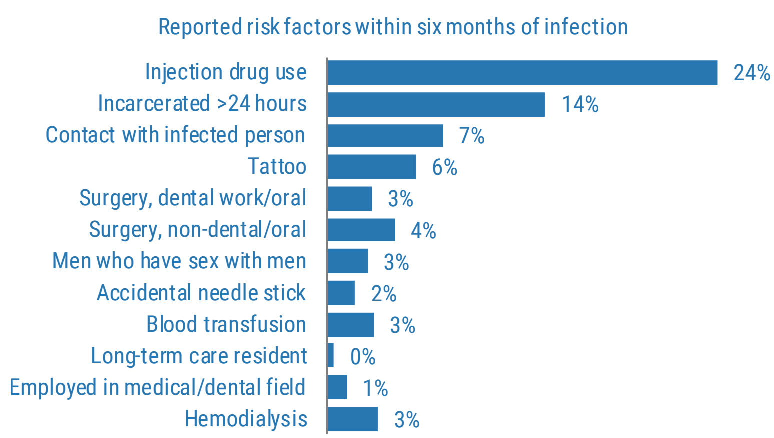
Over 80% of acute hepatitis B cases reported in 2019 were symptomatic, but fewer than half had jaundice.



Most acute hepatitis B cases tested positive for hepatitis B surface antigen and IgM antibody to hepatitis B core antigen. The IgM antibody is an indicator of acute infection.

Test type	Percent of cases	Test interpretation
Hepatitis B surface antigen	82%	Acute or chronic HBV infection, no immunity developed
Hepatitis B core antibody, IgM	78%	HBV is multiplying
Hepatitis B DNA	42%	HBV has stopped multiplying
Hepatitis B core antibody, total	23%	Amount of HBV in blood
Hepatitis B e antigen	22%	Acute HBV infection
Hepatitis B e antibody	10%	Immunity to HBV
Hepatitis B surface antibody	10%	Hepatitis B core antibdy, IgM

Similar to past years, the most common risk factors for hepatitis B infection reported in 2019 included injection drug use, non-injection drug use and incarceration.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hepatitis B, Chronic

Key Points

Hepatitis B incidence is highest among adults 35 to 44 years old. Given the large burden of chronic hepatitis and limited county resources, there have been concerns regarding data completeness and case ascertainment. Earlier data are less reliable. Over the past few years, improvements in electronic laboratory reporting, logic within the surveillance application and expansion of reporting requirements are believed to have improved case ascertainment. In 2014, reporting requirements were updated to include mandatory reporting of all positive and negative hepatitis results, as well as all liver function tests, to support the identification of acute hepatitis B cases. Electronic laboratory reporting (ELR) has continued to expand. Acute clinical symptoms or prior negative laboratory results are required to differentiate acute from chronic hepatitis B. Cases that do not meet the clinical criteria for acute hepatitis B or do not have prior negative laboratory results to indicate acute infection are reported as chronic. Chronic cases are not required to be investigated.

Given the large volume of laboratory results received electronically that are not investigated and for which no clinical information is available, it is likely that acute hepatitis B infections are misclassified as chronic.

Disease Facts

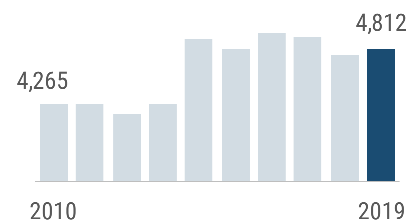
Caused by hepatitis B virus (HBV)

Illness can include chronic liver disease (e.g., cirrhosis and liver cancer), though it is often asymptomatic; two to six percent of acute infections in adults become chronic

Transmitted via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks) or from mother to child during pregnancy or delivery

Under surveillance to prevent HBV transmission, identify acute infections and prevent outbreaks, assist in evaluating the impact of public health interventions, monitor effectiveness of immunization programs

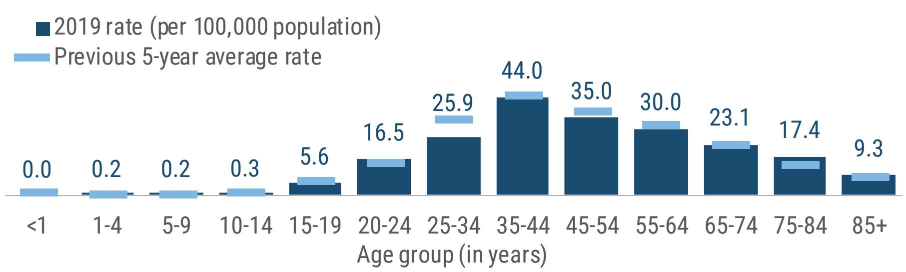
Chronic hepatitis B incidence has remained relatively constant since 2014.



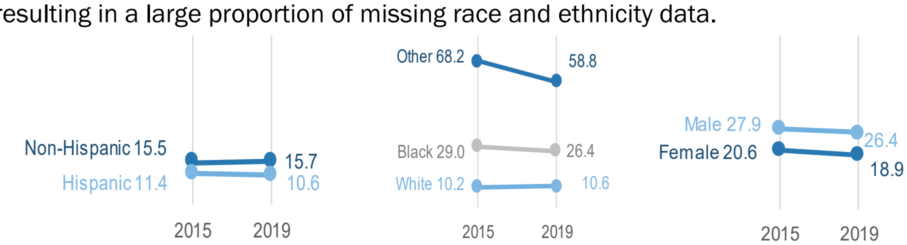
Disease Trends

Summary			
Number of cases			4,812
Rate (per 100,000 population)			22.6
Change from 5-year average rate			-6.2%
Age (in Years)			
Mean			48
Median			47
Min-max			1 - 97
Gender	**Number**	**(Percent)**	**Rate**
Female	2,059	(42.9)	18.9
Male	2,745	(57.1)	26.4
Unknown gender	8		
Race	**Number**	**(Percent)**	**Rate**
White	1,740	(51.0)	10.6
Black	953	(27.9)	26.4
Other	720	(21.1)	58.8
Unknown race	1,399		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	2,463	(80.7)	15.7
Hispanic	590	(19.3)	10.6
Unknown ethnicity	1,759		

Similar to acute hepatitis B, the rate (per 100,000 population) of chronic hepatitis B was highest in adults 35 to 44 years old. The rate in adults 25 to 34 years old was lower in 2019 than the previous five-year average.



Chronic hepatitis B rates (per 100,000 population) are similar by gender and ethnicity groups, though rates vary by race. Few chronic cases were investigated, resulting in a large proportion of missing race and ethnicity data.

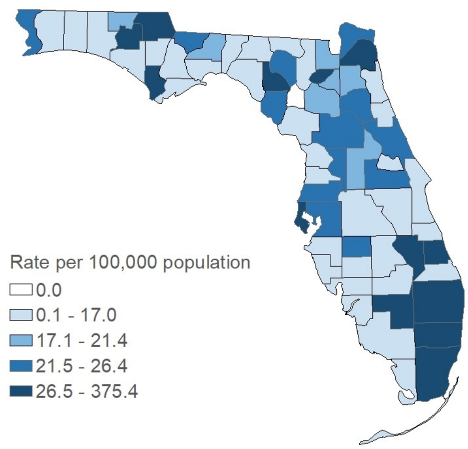


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chronic hepatitis B cases were missing 40.2% of ethnicity data in 2015, 32.2% of race data in 2015, 36.6% of ethnicity data in 2019 and 29.1% of race data in 2019.

Hepatitis B, Chronic

Summary	Number
Number of cases	4,812
Case Classification	**Number (Percent)**
Confirmed	2,284 (47.5)
Probable	2,528 (52.5)
Outcome	**Number (Percent)**
Hospitalized	215 (4.5)
Died	23 (0.5)
Imported Status	**Number (Percent)**
Acquired in Florida	485 (96.2)
Acquired in the U.S., not Florida	1 (0.2)
Acquired outside the U.S.	18 (3.6)
Acquired location unknown	4,308
Outbreak Status	**Number (Percent)**
Sporadic	816 (99.3)
Outbreak-associated	6 (0.7)
Outbreak status unknown	3,990

Chronic hepatitis B occurred throughout the state in 2019, with the highest rates (per 100,000 population) in small, rural counties across the state and in large counties in southeast Florida.



Rates are by county of residence, regardless of where infection was acquired (4,812 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

Most chronic hepatitis B cases tested positive for hepatitis B surface antigen. A small number of cases had immunoglobulin M antibody to hepatitis B core antigen but did not meet the case definition for acute hepatitis B.

Test type	Percent of cases	Test interpretation
Hepatitis B surface antigen	89%	Acute or chronic HBV infection, no immunity developed
Hepatitis B DNA	37%	HBV has stopped multiplying
Hepatitis B core antibody, total	27%	Acute HBV infection
Hepatitis B e antibody	15%	Immunity to HBV
Hepatitis B e antigen	10%	Amount of HBV in blood
Hepatitis B surface antibody	4%	HBV is multiplying
Hepatitis B core antibdy, IgM	2%	Hepatitis B core antibdy, IgM

Less than half of chronic hepatitis B cases were confirmed. Very few cases were investigated.

Probable	Year	Confirmed
71%	2015	29%
66%	2016	34%
57%	2017	43%
56%	2018	44%
53%	2019	47%

In 2019, 276 chronic hepatitis B cases (5.7%) were also diagnosed with HIV. The majority of people with co-infections were male, black and 45 to 54 years old.

Gender	Percent of cases
Male	86%
Female	14%
Race	
White	46%
Black	49%
Other	2%
Unknown	4%

Age group	Percent of cases
15—19	0.4%
20—24	2.0%
25—34	11.7%
35—44	21.8%
45—54	29.6%
55—64	28.4%
65—74	5.5%
75—84	0.8%
85+	0.0%

Order of infection can not be determined from these charts. Race and ethnicity data are from the enhanced HIV/AIDS Reporting System as demographic data were more complete.

See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hepatitis B, Pregnant Women

Key Points

Hepatitis B is a vaccine-preventable disease. Identification of HBV in pregnant women allows for appropriate treatment of their infants, significantly reducing the infants' risk of contracting HBV. Rates for HBV infections in pregnant women are per 100,000 women ages 15 to 44 years old.

The 2016 National Immunization Survey estimates that HBV vaccination coverage for a birth dose administered from birth through 3 years old was 75% in the U.S. and 59% in Florida. Birthing hospitals have standing orders to administer the birth dose of the HBV vaccine; however, pediatricians sometimes choose to wait to give the first dose in their private offices. With lower-than-expected vaccination rates, Florida is currently working with the Florida Chapter of the American Academy of Pediatrics to provide education reminding health care providers that the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices recommends the birth dose be given within 24 hours to help decrease HBV infections in newborns.

Incidence of hepatitis in pregnant women has generally decreased over the past 10 years, possibly due to increased vaccination of women of childbearing age or changes in case ascertainment and protocol. In the U.S., Asians have a high HBV carrier rate (7%–16%) and account for most HBV diagnoses in the other races category.

Disease Facts

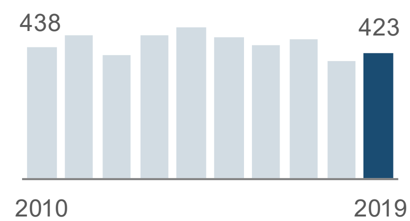
Caused by hepatitis B virus (HBV)

Illness is acute or chronic; about 90% of children who are infected at birth or during the first year of life will become chronically infected

Transmitted via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks) or from mother to child during pregnancy or delivery

Under surveillance to identify individual cases and implement control measures to prevent HBV transmission from mother to baby; monitor and evaluate effectiveness of screening programs

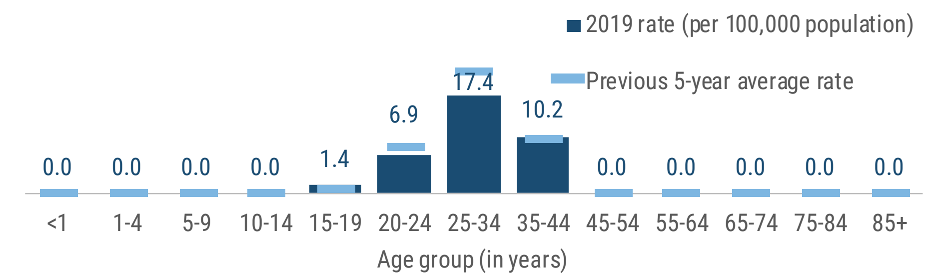
HBV infections in pregnant women have declined over the past 10 years, but have remained relatively consistent since 2010.



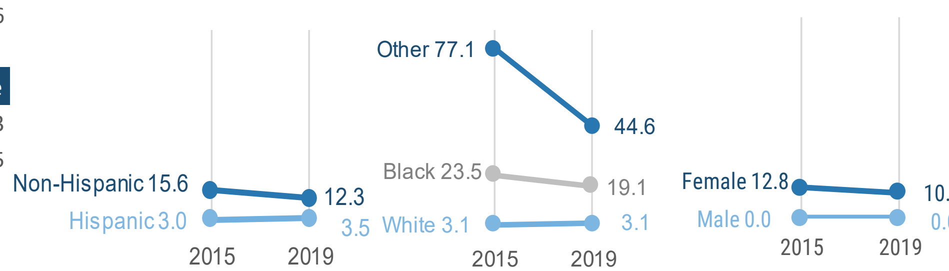
Disease Trends

Summary			
Number of cases			423
Rate (per 100,000 population)			10.9
Change from 5-year average rate			-11.2%
Age (in Years)			
Mean			32
Median			32
Min-max			17 - 49
Gender	**Number**	**(Percent)**	**Rate**
Female	421	(100.0)	10.9
Male	0	(0.0)	NA
Unknown gender	2		
Race	**Number**	**(Percent)**	**Rate**
White	88	(24.3)	3.1
Black	153	(42.3)	19.1
Other	121	(33.4)	44.6
Unknown race	61		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	331	(89.0)	12.3
Hispanic	41	(11.0)	3.5
Unknown ethnicity	51		

The HBV infection rate (per 100,000 population) in pregnant women is highest in women 25 to 34 years old, with much lower rates in older and younger women of childbearing age.



The HBV infection rate (per 100,000 population) in pregnant women decreased slightly across most demographics from 2014 to 2018, except in other races where the decrease was dramatic. The rate is highest in other races, followed by blacks and then whites, and higher in non-Hispanics than Hispanics.

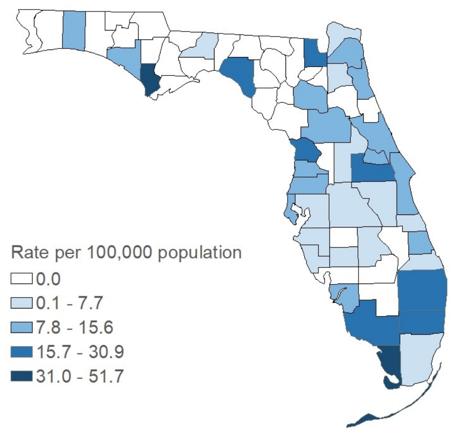


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hepatitis B surface antigen cases in pregnant women were missing 6.5% of ethnicity data in 2015, 6.1% of race data in 2015, 12.1% of ethnicity data in 2019 and 14.4% of race data in 2019.

Hepatitis B, Pregnant Women

Summary	Number
Number of cases	423
Outcome	**Number (Percent)**
Hospitalized	36 (8.5)
Died	2 (0.5)
Imported Status	**Number (Percent)**
Acquired in Florida	174 (59.6)
Acquired in the U.S., not Florida	2 (0.7)
Acquired outside the U.S.	116 (39.7)
Acquired location unknown	131

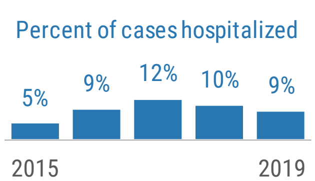
Similar to the distribution of chronic hepatitis B, the highest rates (per 100,000 population) of HBV infection in pregnant women are clustered in south Florida. Unlike chronic HBV infections, many counties in the Panhandle did not identify any HBV infections in pregnant women in 2019.

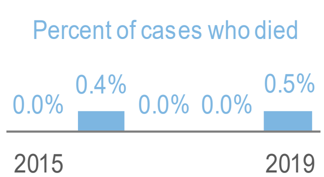


Rates are by county of residence, regardless of where infection was acquired (423 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

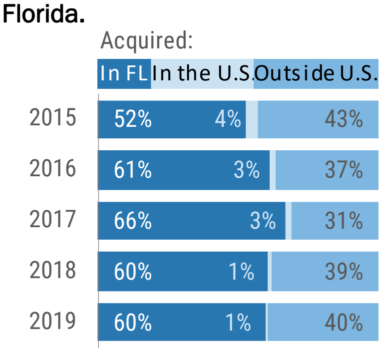
More Disease Trends

Between 5% and 12% of cases are hospitalized each year; deaths are rare. Two cases died in 2019.

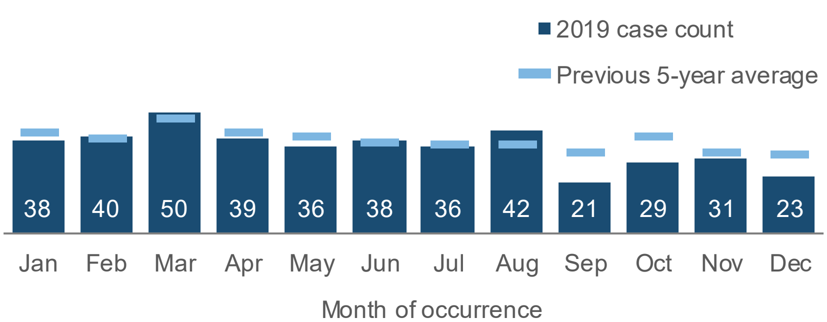




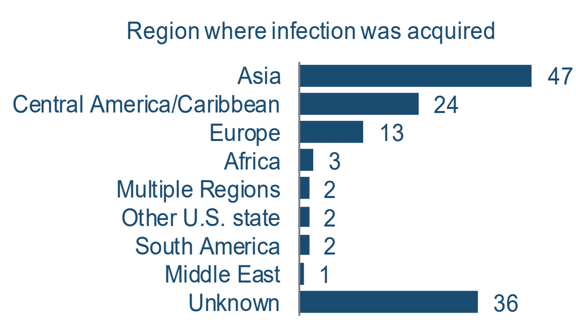
Generally, between 30% and 40% of infections are acquired outside Florida.



There is no seasonality to HBV infections in pregnant women. The number of cases that occurred in 2019 varied by month, from 21 cases in September to 50 cases in March.



For infections known to be acquired outside Florida, Asia and Central America/Caribbean are the most common regions where exposure occurred.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status and month of occurrence.

Hepatitis C, Acute

Key Points

Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis C from chronic diagnoses, making surveillance challenging. Incidence has increased since 2008, likely due to several factors, including a change in case definition in 2008, an enhanced surveillance project focusing on hepatitis infections in young adults initiated in 2012 and changes in risk behaviors in young adults. Additionally, updated laboratory reporting guidance in June 2014 required laboratories participating in electronic laboratory reporting to submit all negative hepatitis results in addition to all positive results.

Disease Facts

Caused by hepatitis C virus (HCV)

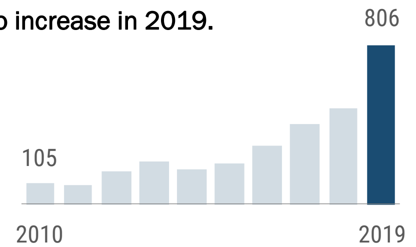
Illness includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)

Transmitted via blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), from mother to child during pregnancy or delivery or rarely through anal or vaginal sex

Under surveillance to prevent HCV transmission, identify and prevent outbreaks, assist in evaluating the impact of public health interventions and screening programs

New hepatitis C diagnoses are frequently associated with drug use and sharing of injection equipment. In 2019, most reported cases were sporadic. Thirteen outbreak-associated cases were identified, of which 11 (85%) were epidemiologically linked to a chronic hepatitis C case. Of the 13 outbreak-associated cases, 5 (38%) were epidemiologically linked through sexual contact, 5 (38%) through household contact and 1 (8%) was linked for other reasons.

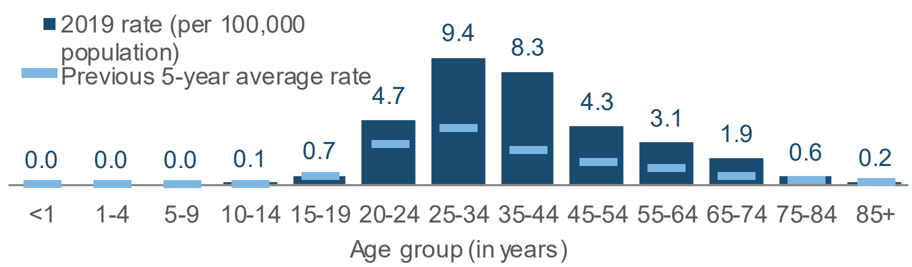
Acute hepatitis C incidence continued to increase in 2019.



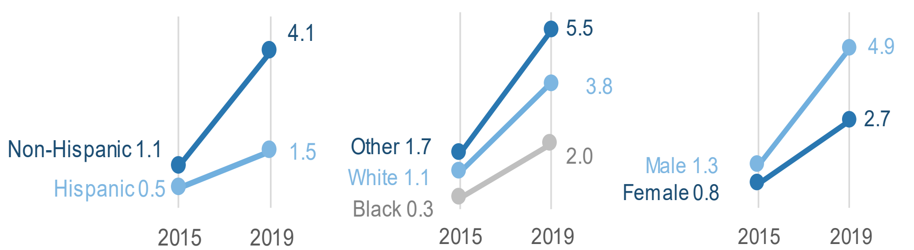
Disease Trends

Summary		
Number of cases		806
Rate (per 100,000 population)		3.8
Change from 5-year average rate		+144.1%
Age (in Years)		
Mean		41
Median		38
Min-max		14 - 89
Gender	**Number (Percent)**	**Rate**
Female	294 (36.6)	2.7
Male	509 (63.4)	4.9
Unknown gender	3	
Race	**Number (Percent)**	**Rate**
White	631 (81.9)	3.8
Black	72 (9.4)	2.0
Other	67 (8.7)	5.5
Unknown race	36	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	644 (88.5)	4.1
Hispanic	84 (11.5)	1.5
Unknown ethnicity	78	

The acute hepatitis C rate (per 100,000 population) is higher in younger adults compared to acute hepatitis B. The highest rate is in adults ages 25 to 34 years old, followed by adults 35 to 44 years old. In 2019, rates in all adult age groups exceeded the previous five-year average.



The acute hepatitis C rates (per 100,000 population) increased across all age, race and ethnicity groups from 2015 to 2019. The rate was higher in males compared to females, higher in non-Hispanics compared to Hispanics and higher in whites and other races compared to blacks.

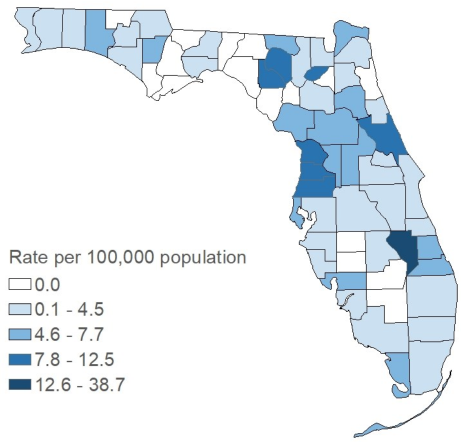


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis C cases were missing 9.0% of ethnicity data in 2015 and 9.7% of ethnicity data in 2019.

Hepatitis C, Acute

Summary	Number
Number of cases	806
Case Classification	**Number (Percent)**
Confirmed	599 (74.3)
Probable	207 (25.7)
Outcome	**Number (Percent)**
Hospitalized	368 (45.7)
Died	11 (1.4)
Imported Status	**Number (Percent)**
Acquired in Florida	536 (99.3)
Acquired in the U.S., not Florida	3 (0.6)
Acquired outside the U.S.	1 (0.2)
Acquired location unknown	266
Outbreak Status	**Number (Percent)**
Sporadic	645 (98.0)
Outbreak-associated	13 (2.0)
Outbreak status unknown	148

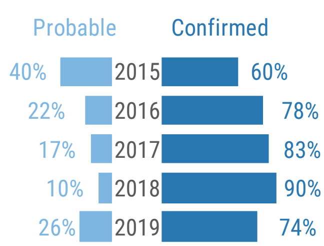
Acute hepatitis C cases were reported in most parts of the state in 2019, though less commonly in the central and eastern parts of the Florida Panhandle. The highest rates (per 100,000 population) occurred in small, rural counties across the state.



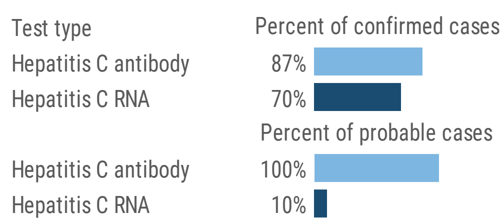
Rates are by county of residence, regardless of where infection was acquired (806 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

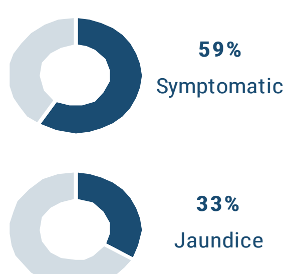
Over half of acute hepatitis C cases are confirmed each year. In 2019, 96% of cases were investigated.



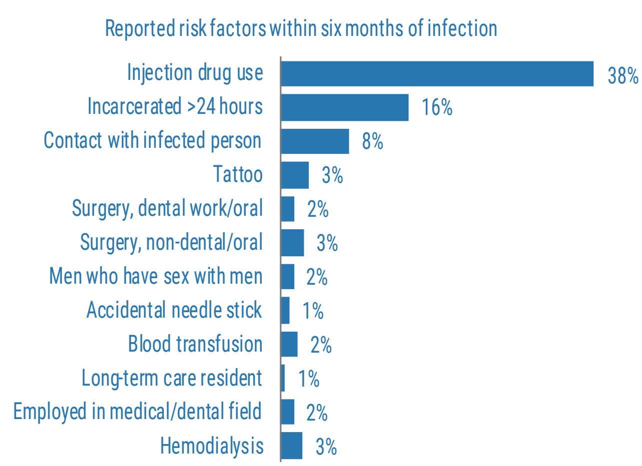
Almost all confirmed cases of acute hepatitis C were positive for hepatitis C antibody and most were positive for hepatitis C RNA. Only a small portion of probable cases were positive for hepatitis C RNA.



Fifty-nine percent of acute hepatitis C cases reported in 2019 were symptomatic, but only 33% had jaundice.



Similar to past years, the most common risk factors for hepatitis C infection reported in 2019 included injection drug use, non-injection drug use and incarceration.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hepatitis C, Chronic (Including Perinatal)

Key Points

Hepatitis C incidence is highest among adults 25 to 34 years old. Changes in treatment options for HCV have led to an increased focus on identifying HCV infections. Given the large burden of chronic hepatitis and limited county resources, there have been concerns regarding data completeness and case ascertainment. Earlier data are less reliable. Over the past few years, improvements in electronic laboratory reporting, logic within the surveillance application and expansion of reporting requirements are believed to have improved case ascertainment. Acute clinical symptoms or prior negative laboratory results are required to differentiate acute from chronic hepatitis C. Cases that do not meet the clinical criteria for acute hepatitis C or do not have prior negative laboratory results to indicate acute infection are reported as chronic.

Chronic cases are not required to be investigated. Given the volume of laboratory results received electronically for which no clinical information is available, it is likely that many acute HCV infections are misclassified as chronic. The high rate of chronic diagnoses in young adults (18 to 25 years old), for example, supports the theory that acute infections are not initially identified. An enhanced surveillance project focusing on chronic infections in young adults was implemented from 2012 through 2016 to help identify risk factors and acute infections.

Disease Facts

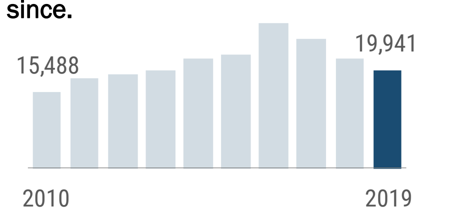
Caused by hepatitis C virus (HCV)

Illness can include chronic liver disease (e.g., cirrhosis and liver cancer), though it is often asymptomatic; 70% to 85% of acute infections in adults become chronic

Transmitted via blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), from mother to child during pregnancy or delivery or rarely through anal or vaginal sex

Under surveillance to prevent HCV transmission, identify acute infections and prevent outbreaks, assist in evaluating the impact of public health interventions and screening programs

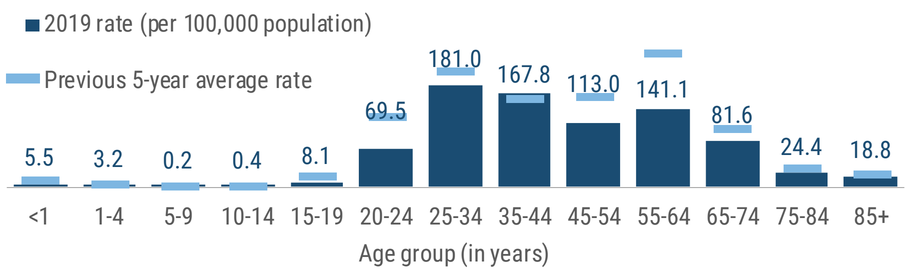
Chronic hepatitis C incidence increased in 2016 due to a case definition expansion but has decreased each year since.



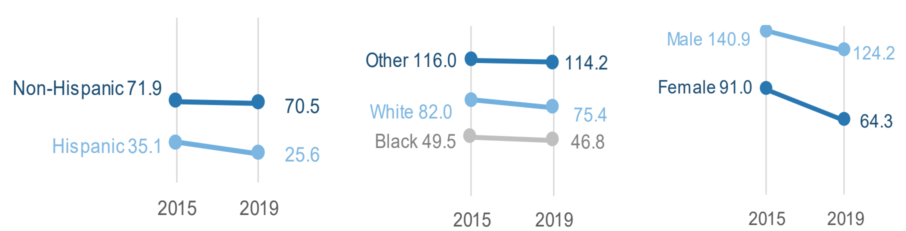
Disease Trends

Summary			
Number of cases			19,941
Rate (per 100,000 population)			93.8
Change from 5-year average rate			-23.2%
Age (in Years)			
Mean			45
Median			43
Min-max			0 - 100
Gender	**Number**	**(Percent)**	**Rate**
Female	6,990	(35.1)	64.3
Male	12,913	(64.9)	124.2
Unknown gender	38		
Race	**Number**	**(Percent)**	**Rate**
White	12,401	(80.1)	75.4
Black	1,686	(10.9)	46.8
Other	1,399	(9.0)	114.2
Unknown race	4,455		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	11,058	(88.5)	70.5
Hispanic	1,431	(11.5)	25.6
Unknown ethnicity	7,452		

The rate of chronic hepatitis C (per 100,000 population) was highest in adults 25 to 34 years old.



The chronic hepatitis C rate (per 100,000 population) was higher in males than females and higher in non-Hispanics than Hispanics. Rates were lower in blacks than in whites and other races. Few chronic cases were investigated, resulting in a large proportion of missing race and ethnicity data.

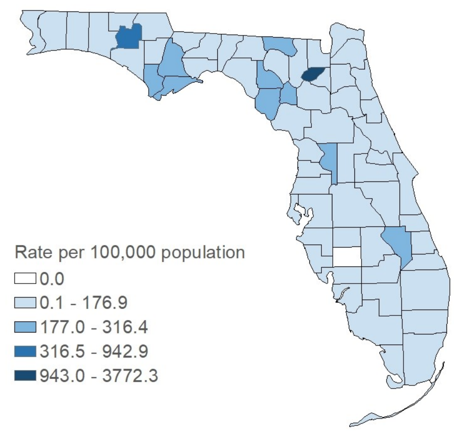


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chronic hepatitis C cases (including perinatal) were missing 45.5% of ethnicity data in 2015, 32.3% of race data in 2015, 37.4% of ethnicity data in 2019 and 22.3% of race data in 2019.

Hepatitis C, Chronic (Including Perinatal)

Summary	Number
Number of cases	19,941
Case Classification	**Number (Percent)**
Confirmed	14,461 (72.5)
Probable	5,480 (27.5)
Outcome	**Number (Percent)**
Hospitalized	1,101 (5.5)
Died	40 (0.2)
Imported Status	**Number (Percent)**
Acquired in Florida	2,483 (99.0)
Acquired in the U.S., not Florida	21 (0.8)
Acquired outside the U.S.	3 (0.1)
Acquired location unknown	17,434
Outbreak Status	**Number (Percent)**
Sporadic	4,279 (98.5)
Outbreak-associated	64 (1.5)
Outbreak status unknown	15,598

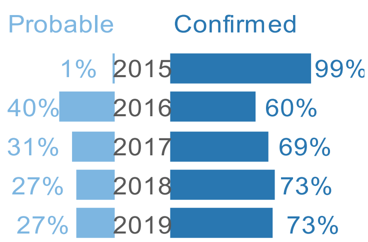
Chronic hepatitis C occurred throughout the state in 2019 with the highest rates in small counties in northern and central Florida, particularly in the Panhandle.



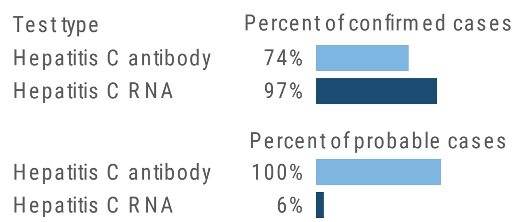
Rates are by county of residence, regardless of where infection was acquired (19,941 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

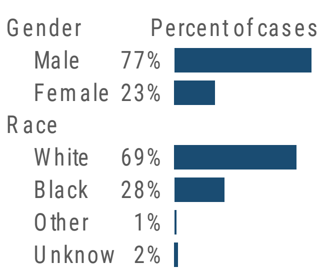
Almost 75% of chronic hepatitis C cases were confirmed in 2019. The probable case classification expanded in 2016, resulting in an increase in probable cases.

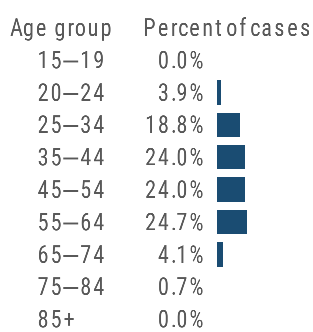


Almost all confirmed cases of chronic hepatitis C were positive for hepatitis C ribonucleic acid (RNA) and most were positive for hepatitis C antibody in 2019. Only a small portion of probable cases were positive for hepatitis C RNA.



In 2019, 423 (2.1%) chronic hepatitis C cases were also diagnosed with HIV. The majority of people with co-infections were male, white and 55 to 64 years old.





Order of infection can not be determined from these charts. Race and ethnicity data are from the enhanced HIV/AIDS Reporting System as demographic data were more complete for these cases.

See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

HIV/AIDS

Key Points

HIV is a life-threatening infection that attacks the body's immune system and leaves a person vulnerable to opportunistic infections. The Centers for Disease Control and Prevention estimates that 1.2 million people are living with HIV (prevalence) in the U.S., nearly half of whom live in the southern U.S. Florida is a large state in the south with a diverse population, substantial HIV morbidity and unique challenges with respect to HIV/AIDS surveillance, prevention and patient care.

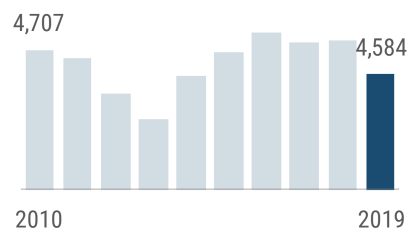
HIV incidence (new diagnoses) has been gradually decreasing over the past five years, representing a two percent decline from 2015–2019. Rates are consistently highest in adults 20 to 34 years old. In 2019, male-to-male sexual contact continued to account for most (75%) HIV diagnoses among males.

Disease Facts

- **Caused** by human immunodeficiency virus (HIV)
- **Illness** is flu-like primary infection; AIDS (acquired immunodeficiency syndrome) is defined as HIV with CD4 count <200 cells/µL or occurrence of opportunistic infection
- **Transmitted** via anal or vaginal sex, blood exposure (e.g., sharing injection drug needles, receiving infected blood transfusion [rare due to donor screening]) or vertically during pregnancy, delivery or breastfeeding
- **Under surveillance** to enhance efforts to prevent HIV transmission, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions

Untreated, HIV can continue to weaken the immune system and develop into AIDS. Florida observed a 47% decrease in AIDS diagnoses from 2010 to 2019, as well as a 38% decrease in HIV-related deaths over that same time period. These trends suggest that an increase in testing and diagnosis of individuals earlier in disease stage, along with linkage to care, retention in care and maintaining a suppressed viral load allow persons with HIV to live longer and have a more productive life.

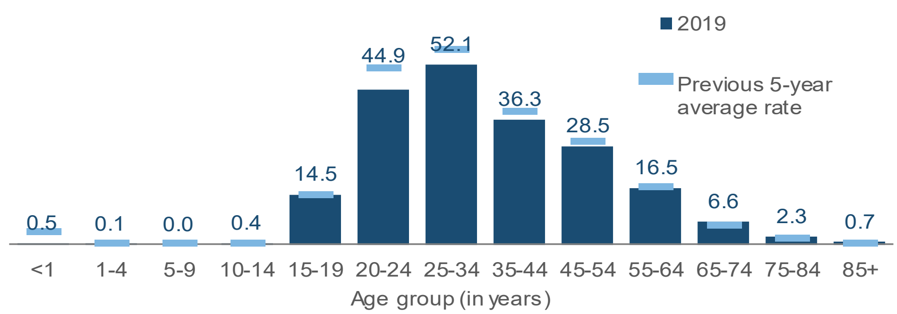
HIV incidence has been gradually decreasing over the past 5 years.



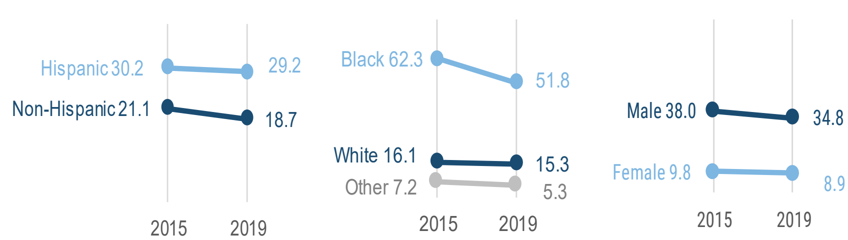
Disease Trends

Summary		
Number of diagnoses		4,584
Rate (per 100,000 population)		21.6
Change from 5-year average rate		-7.5%
Age (in Years)		
Mean		38
Median		35
Min-max		0 - 88
Gender	**Number (Percent)**	**Rate**
Female	966 (21.1)	8.9
Male	3,618 (78.9)	34.8
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	2,520 (56.6)	15.3
Black	1,868 (41.9)	51.8
Other	65 (1.5)	5.3
Unknown race	131	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	2,925 (64.2)	18.7
Hispanic	1,632 (35.8)	29.2
Unknown ethnicity	27	

HIV incidence rates (per 100,000 population) are consistently highest in adults 20 to 34 years old.



In 2019, HIV incidence rates (per 100,000 population) were 3.9 times higher among males than females and 3.4 times higher among blacks than whites.



HIV/AIDS

Male-to-male sexual contact was the primary mode of exposure among males who received an HIV diagnosis in 2019 (75%) and heterosexual contact was the primary mode of exposure among females (89%).

Mode of exposure	Female		Male	
Male-to-male sexual contact (MMSC)	NA	NA	2,711	74.9%
Heterosexual contact	860	89.0%	662	18.3%
Injection drug use (IDU)	102	10.6%	122	3.4%
MMSC and IDU	NA	NA	108	3.0%
Pediatric transmission	3	0.3%	5	0.1%
Transgender sexual contact	1	0.1%	10	0.3%
Total	966		3,618	

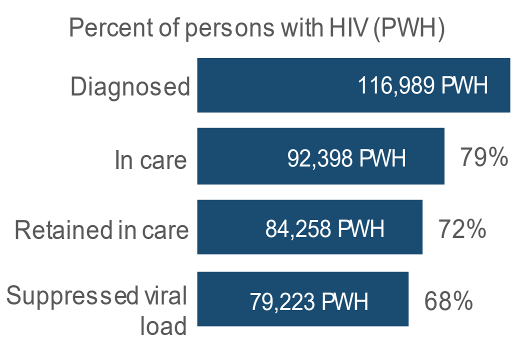
Note: Pediatric transmission includes perinatal exposure and pediatric diagnoses without a confirmed mode of exposure. Transgender sexual contact includes transgender males or females whose mode of exposure was sexual contact.

Race/ethnicity	Female	Male
White	3.6	15.9
Black	30.8	77.4
Hispanic	7.5	51.5

In 2019, the HIV incidence rate (per 100,000 population) among black females was 8.6 times higher than white females. The rate among black males was 4.9 times higher than white males, while the rate in Hispanic males was 3.2 times higher than white males.

The HIV care continuum reflects the series of steps a person living with an HIV diagnosis takes from initial diagnosis to being retained in care and achieving a very low level of HIV in the body (viral suppression). Persons with HIV (PWH) with a suppressed viral load (less than 200 copies/mL) are highly unlikely to transmit the virus.

There were 116,989 PWH in Florida in 2019, 72% of whom were retained in care and 68% of whom had a suppressed viral load.



HIV care continuum definitions

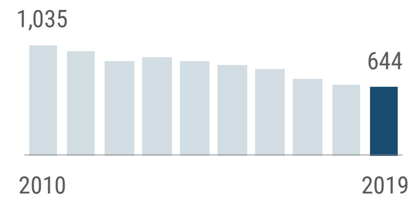
In care: documented HIV-related care at least once in 2019

Retained in care: documented HIV-related care at least two times, at least three months apart in 2019

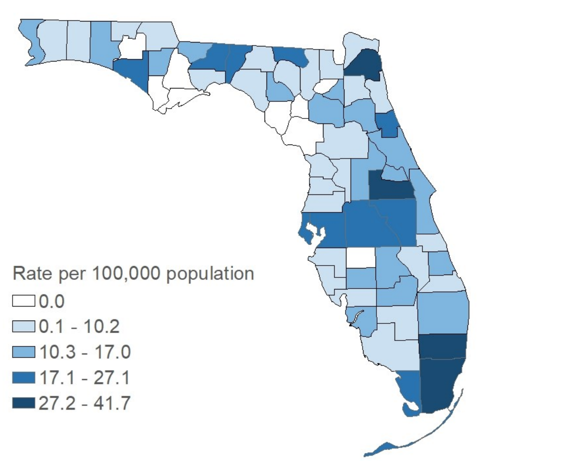
Suppressed viral load: less than 200 copies/mL

HIV was the ninth leading cause of death for people 24 to 44 years old in Florida in 2019. Following the advent of antiretroviral therapy, there has been an 85% decline in Florida resident deaths due to HIV from 1995 (4,336 deaths) to 2019 (644 deaths).

Deaths due to HIV decreased by 38% from 2010 to 2019 and by 3% since 2018 alone.



High HIV incidence rates (per 100,000 population) occurred in the central and southeastern parts of the state in 2019. One-half (50%) of diagnoses were in 3 counties, including Miami-Dade (1,181 diagnoses), Broward (624 diagnoses) and Orange (474 diagnoses).



HIV diagnosis rates are by county of residence at diagnosis and exclude Florida Department of Corrections cases (4,584 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

To access more information on HIV surveillance, visit FloridaHealth.gov/diseases-and-conditions/aids/surveillance/index.html.

To find a care provider or to learn more about the resources available to persons living with HIV, visit FloridaHealth.gov/diseases-and-conditions/aids/index.html.

Lead Poisoning in Children <6 Years Old

Key Points

Lead poisoning is most often identified in children as part of routine screening. The Centers for Medicare and Medicaid Services requires blood lead screening for all Medicaid-enrolled children at 12 and 24 months old; if not previously screened, children must be screened between 24 and 72 months old. The Centers for Disease Control and Prevention recommends all children who are foreign-born or otherwise identified as high-risk be screened for lead. Children in this age group are more likely to put lead-contaminated hands, toys or paint chips in their mouths, making them more vulnerable to lead poisoning than older children. The most common sources of lead exposure for children include paint dust, flakes or chips in houses built prior to the elimination of lead in paints in 1978. Less common sources include glazed ceramic dishes, toys or jewelry, parental occupations or hobbies involving lead and folk medicines or cosmetics from other countries.

In 2017, the Florida Department of Health changed the case definition for lead poisoning from ≥10 to ≥5 µg/dL to align with current national guidelines based on the adverse health effects caused by blood lead levels <10 µg/dL in both children and adults. The large increase in cases in 2017 was driven by cases with blood lead levels ≥5 and <10 µg/dL, which accounted for 77% of 2017 cases. Prior to 2010, lead poisoning case data were primarily stored outside the state's reportable disease surveillance system; therefore, only cases from 2010 and later are presented here.

Disease Facts

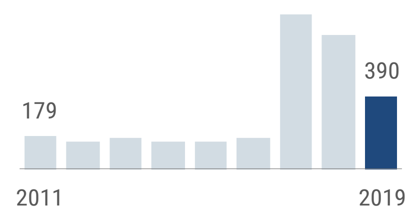
Caused by lead

Illness includes a wide range of adverse health effects (e.g., difficulty learning, sluggishness, fatigue, seizures, coma, death)

Exposure is most commonly by ingestion of paint dust in houses built prior to elimination of lead in paints in 1978

Under surveillance to estimate burden among children, ensure follow-up care for identified cases, identify need for environmental remediation to prevent new cases and exacerbation of illness, help target public health interventions

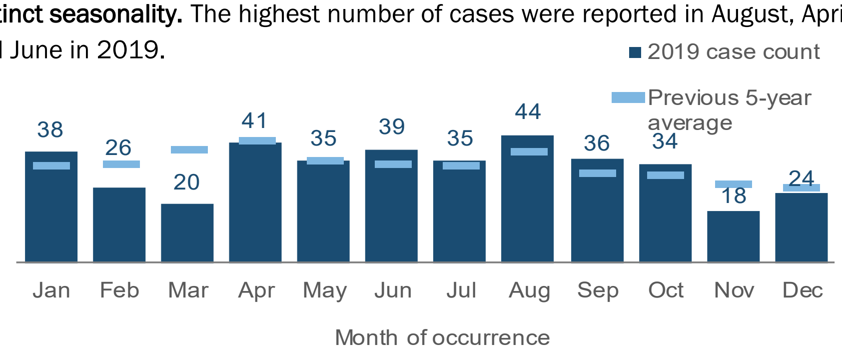
Lead poisoning incidence increased dramatically in 2017 due to a case definition expansion. Incidence decreased in 2018 and 2019.



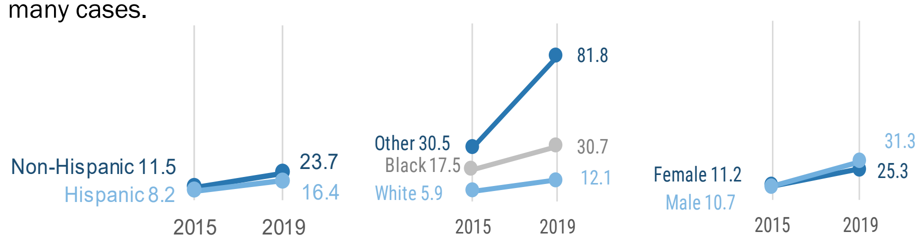
Disease Trends

Summary		
Number of cases		390
Rate (per 100,000 population)		28.4
Change from 5-year average rate		-4.5%
Age (in Years)		
Mean		2
Median		1
Min-max		0 - 5
Gender	**Number (Percent)**	**Rate**
Female	170 (43.6)	25.3
Male	220 (56.4)	31.3
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	115 (37.6)	12.1
Black	94 (30.7)	30.7
Other	97 (31.7)	81.8
Unknown race	84	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	220 (75.1)	23.7
Hispanic	73 (24.9)	16.4
Unknown ethnicity	97	

Lead poisoning in children <6 years old occurs throughout the year, with no distinct seasonality. The highest number of cases were reported in August, April and June in 2019.



Compared to lead poisoning in adults, where occupational exposure results in much higher incidence rates in men than women, rates (per 100,000 population) in children <6 years old are more similar in males and females. The rate is higher in blacks and other races than in whites. Because few cases with blood lead levels ≥5 and <10 µg/dL are investigated, race and ethnicity data are missing for many cases.

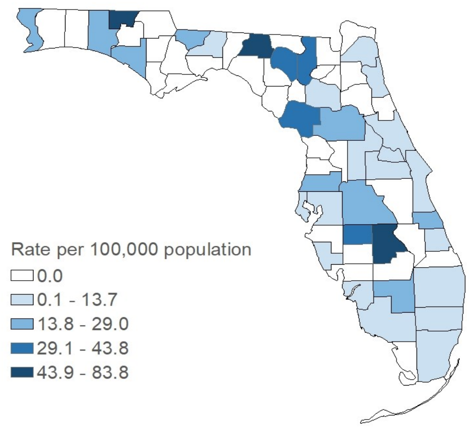


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases in children less than 6 years old were missing 5.5% of ethnicity data in 2015, 24.9% of ethnicity data in 2019 and 21.5% of race data in 2019.

Lead Poisoning in Children <6 Years Old

Summary	Number
Number of cases	390
Outcome	**Number (Percent)**
Hospitalized	1 (0.3)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Exposed in Florida	147 (85.5)
Exposed in the U.S., not Florida	5 (2.9)
Exposed outside the U.S.	20 (11.6)
Exposed location unknown	218
Outbreak Status	**Number (Percent)**
Sporadic	167 (90.3)
Outbreak-associated	18 (9.7)
Outbreak status unknown	205
Age Group	**Number (Percent)**
Children (<6 years old)	390 (31.3)
Adult (?6 years old)	858 (68.8)

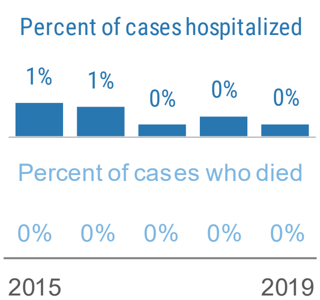
Lead poisoning in children <6 years old occurred in most parts of the state in 2019. The lead poisoning rates (per 100,000 population) are typically highest in small, rural counties.



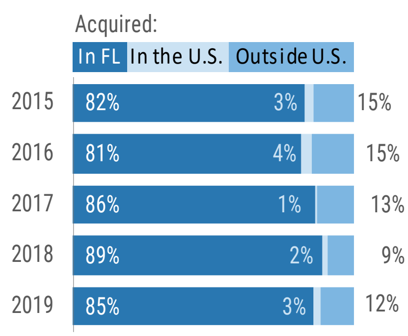
Rates are by county of residence for cases exposed in Florida (390 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

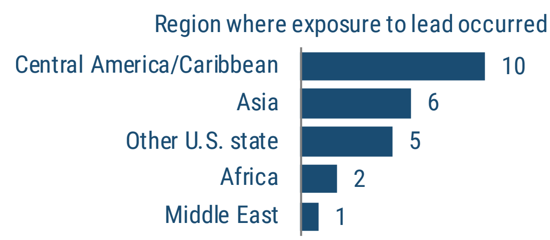
More Disease Trends

Hospitalizations and deaths in children <6 years old with lead poisoning are rare.

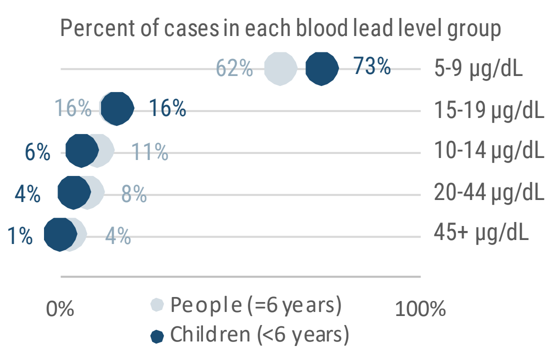


For cases known to be exposed outside Florida, Central America/Caribbean is the most common region where lead exposure occurred. The location of exposure was unknown for 79% of cases because 75% of cases had blood lead levels ≥5 and <10 µg/dL and were not investigated.

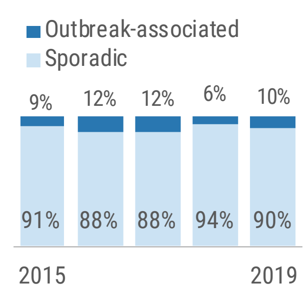




Children <6 years old have a larger proportion of cases with blood lead levels <10 µg/dL compared to adults (73% versus 62%, respectively). Lead poisoning cases in adults are primarily identified through occupational testing and they tend to have higher blood lead levels than children.



Most lead poisoning cases are sporadic. In 2019, there were 17 outbreak-associated cases associated with 7 different small household clusters, each ranging from 2 to 3 cases. Common exposures included imported food and spices, lead-based paint, glazed countertop tiles and unknown sources of lead exposure.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Lead Poisoning in People ≥6 Years Old

Key Points

Adult lead poisoning is primarily caused by exposure to lead in the workplace or during certain activities where lead is used. High-risk occupations include battery manufacturing, painting, nonferrous smelting, radiator repair, scrap metal recycling, work at firing ranges and construction and renovation. High-risk activities include recreational target shooting, home remodeling, casting bullets and fishing weights, making stained glass and consuming traditional remedies. The Occupational Safety and Health Administration requires regular lead screening for employees in high-risk occupations, making occupational lead poisoning cases more easily identifiable. Adults with non-occupational exposures are unlikely to be tested, making identification difficult.

In 2017, the Florida Department of Health changed the case definition for lead poisoning from ≥10 to ≥5 µg/dL to align with current national guidelines based on the adverse health effects caused by blood lead levels <10 µg/dL in both children and adults. The large increase in cases in 2017 was driven by cases with blood lead levels ≥5 and <10 µg/dL, which accounted for 57% of 2017 adult cases. Prior to 2010, lead poisoning case data were primarily stored outside Florida's reportable disease surveillance system; therefore, only cases from 2010 and later are presented here.

Disease Facts

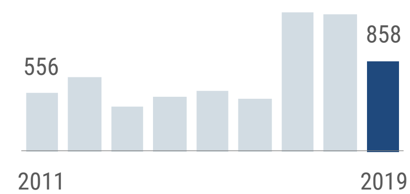
Caused by lead

Illness includes a wide range of adverse health effects (e.g., arthralgia, headache, cognitive dysfunction, adverse reproductive outcomes, renal failure, hypertension, encephalopathy) but is often asymptomatic

Exposure is by inhalation or ingestion of lead, most often dust or fumes that occur when lead is melted

Under surveillance to identify cases among adults with high-risk occupations or hobbies, need for environmental remediation to prevent new cases and exacerbation of illness, prevent take-home lead exposures, help target public health interventions for high-risk populations

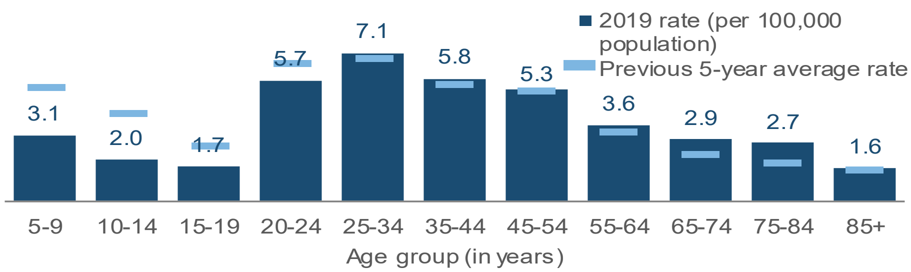
Lead poisoning incidence increased dramatically in 2017 due to a case definition expansion. Incidence decreased in 2019.



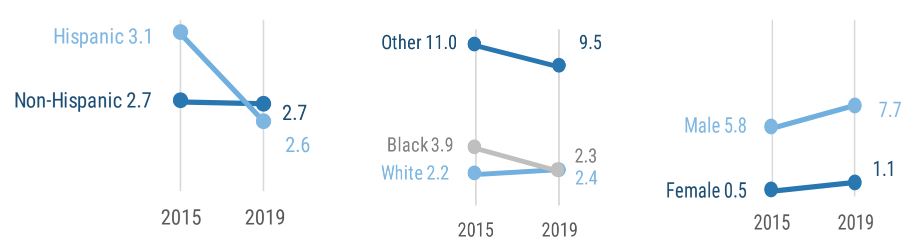
Disease Trends

Summary			
Number of cases			858
Rate (per 100,000 population)			4.3
Change from 5-year average rate			-1.9%
Age (in Years)			
Mean			42
Median			40
Min-max			6 - 94
Gender	**Number**	**(Percent)**	**Rate**
Female	113	(13.2)	1.1
Male	745	(86.8)	7.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	375	(67.4)	2.4
Black	76	(13.7)	2.3
Other	105	(18.9)	9.5
Unknown race	302		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	400	(74.9)	2.7
Hispanic	134	(25.1)	2.6
Unknown ethnicity	324		

The rate (per 100,000 population) of lead poisoning in people ≥6 years old is highest in adults 25 to 34 years old, followed by adults 35 to 44 years old.



The rate (per 100,000 population) of lead poisoning in people ≥6 years old is notably higher in males than females, likely due to the type of occupations and hobbies that result in lead exposure. The rate is similar by ethnicity and in blacks and whites, but is higher in other races. Since few cases with blood lead levels ≥5 and <10 µg/dL are investigated, race and ethnicity data are missing for many cases.

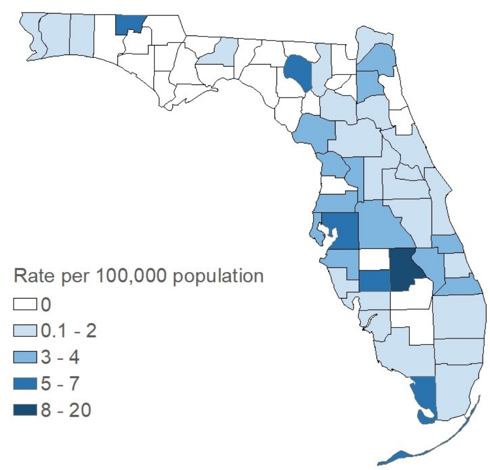


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases in people more than 6 years old were missing 8.4% of ethnicity data in 2015, 6.1% of race data in 2015, 37.8% of ethnicity data in 2019 and 35.2% of race data in 2019.

Lead Poisoning in People ≥6 Years Old

Summary	Number
Number of cases	858
Outcome	**Number (Percent)**
Hospitalized	3 (0.3)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Exposed in Florida	276 (92.3)
Exposed in the U.S., not Florida	14 (4.7)
Exposed outside the U.S.	9 (3.0)
Exposed location unknown	559
Outbreak Status	**Number (Percent)**
Sporadic	321 (95.0)
Outbreak-associated	17 (5.0)
Outbreak status unknown	520
Age Group	**Number (Percent)**
Children (<6 years old)	390 (31.3)
Adult (?6 years old)	858 (68.8)

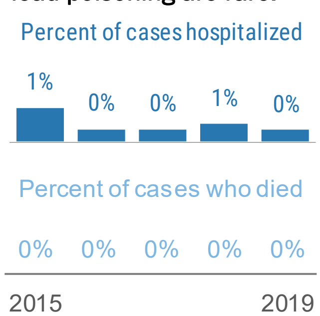
Lead poisoning in people ≥6 years old occurred in most parts of the state in 2019, though there are fewer counties with cases in the Panhandle region.



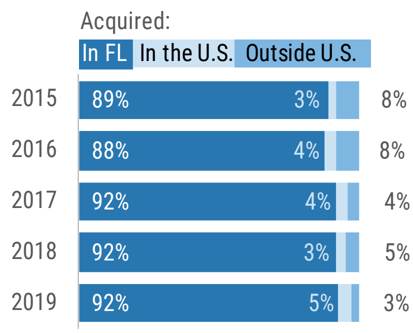
Rates are by county of residence for cases exposed in Florida (858 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

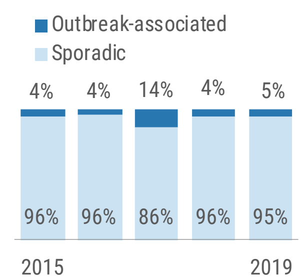
Hospitalizations and deaths in people ≥6 years old with lead poisoning are rare.



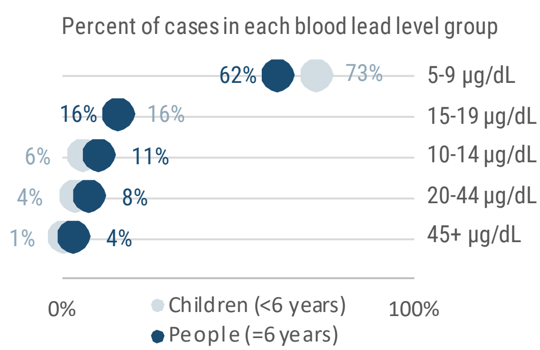
Of cases where the exposure location was known, most were exposed in Florida.



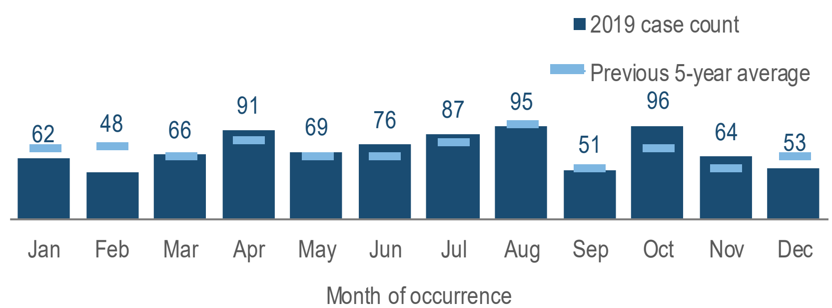
Most lead poisoning cases are sporadic. In 2019, 17 outbreak-associated cases were identified. Seven cases (41%) were exposed from working at a gun range.



Lead poisoning cases in adults are primarily identified through occupational testing and they tend to have higher blood lead levels than children.



Lead poisoning cases in people ≥6 years old occur throughout the year, with no distinct seasonality. The highest number of cases were reported in October, August and April in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Legionellosis

Key Points

Recently identified sources of *Legionella* infection in Florida and the U.S. include decorative fountains, hot tubs, cooling towers (air conditioning units for large buildings) and potable water systems. Over the past decade, the increasing incidence in Florida is consistent with the increase observed nationally. This increase is likely due to a number of factors, including aging infrastructure and a greater percentage of the population age ≥64 years. Older adults and those with weakened immune systems are at highest risk for developing disease. While the incidence did not increase from 2018, the 2019 incidence remained higher than any other year in the past decade.

In Florida, sporadic cases of both Legionnaires' disease and Pontiac fever (two distinct presentations of legionellosis) are monitored. Single cases of legionellosis that occur at a health care facility or other facility where a person spent their entire exposure period warrant a full investigation and are generally characterized as outbreaks for public health purposes. However, these cases are not consistently classified as outbreak-associated and therefore not all cases are reflected in the table on the following page.

Disease Facts

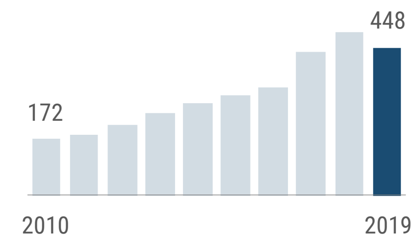
Caused by *Legionella* bacteria

Illness includes fever, muscle pain, cough and shortness of breath; pneumonia can occur

Transmitted by inhaling aerosolized water containing the bacteria

Under surveillance to identify and control outbreaks, identify and mitigate common reservoirs, monitor incidence over time, estimate burden of illness

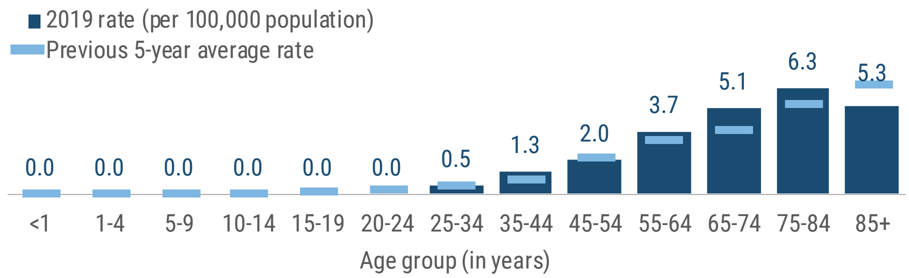
Legionellosis incidence decreased slightly in 2019.



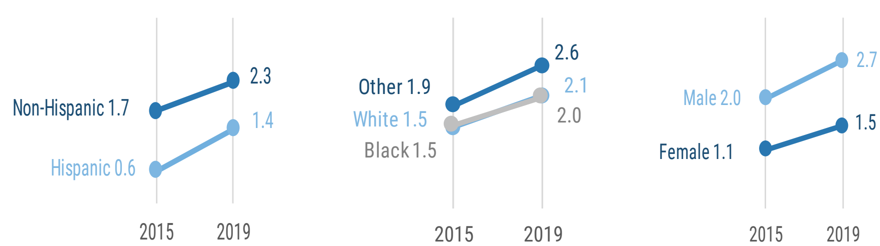
Disease Trends

Summary			
Number of cases			448
Rate (per 100,000 population)			2.1
Change from 5-year average rate			+16.1%
Age (in Years)			
Mean			64
Median			66
Min-max			25 - 99
Gender	**Number**	**(Percent)**	**Rate**
Female	165	(36.9)	1.5
Male	282	(63.1)	2.7
Unknown gender	1		
Race	**Number**	**(Percent)**	**Rate**
White	339	(76.4)	2.1
Black	73	(16.4)	2.0
Other	32	(7.2)	2.6
Unknown race	4		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	361	(82.0)	2.3
Hispanic	79	(18.0)	1.4
Unknown ethnicity	8		

Legionellosis is most common in older adults. The rate (per 100,000 population) begins increasing in middle-aged adults and continues to increase with age.



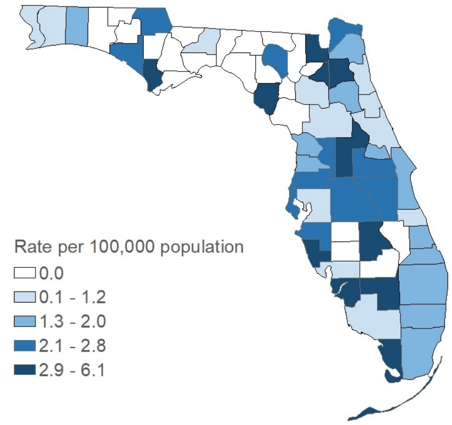
The legionellosis rate (per 100,000 population) has increased in all demographics from 2015 to 2019. Rates were higher in males but generally similar by race and ethnicity in 2019.



Legionellosis

Summary	Number
Number of cases	448
Outcome	**Number (Percent)**
Hospitalized	434 (96.9)
Died	41 (9.2)
Imported Status	**Number (Percent)**
Acquired in Florida	394 (96.8)
Acquired in the U.S., not Florida	9 (2.2)
Acquired outside the U.S.	4 (1.0)
Acquired location unknown	41
Outbreak Status	**Number (Percent)**
Sporadic	415 (93.5)
Outbreak-associated	29 (6.5)
Outbreak status unknown	4

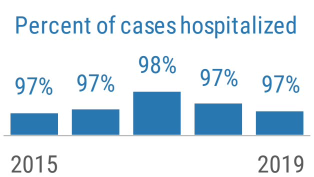
Legionellosis occurred in most parts of the state in 2019, but is notably absent from most counties in the Panhandle.

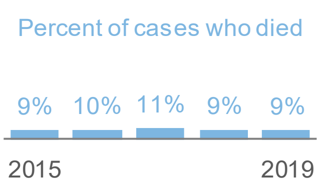


Rates are by county of residence for infections acquired in Florida (448 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

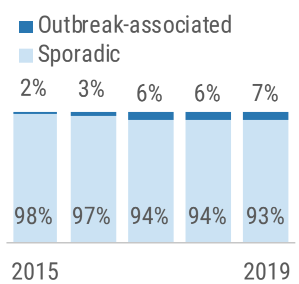
More Disease Trends

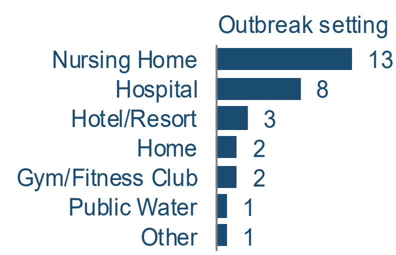
Most legionellosis cases are hospitalized, and deaths do occur. Those primarily affected are older adults and people with underlying conditions. Pneumonia is commonly identified among cases.



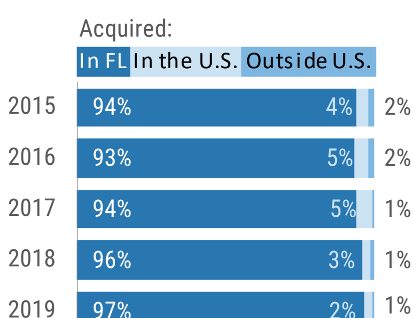


In 2019, 30 outbreaks were identified, some of which included non-Florida residents (who are not included in counts in this report). Nursing homes and hospitals were the most commonly identified outbreak settings.

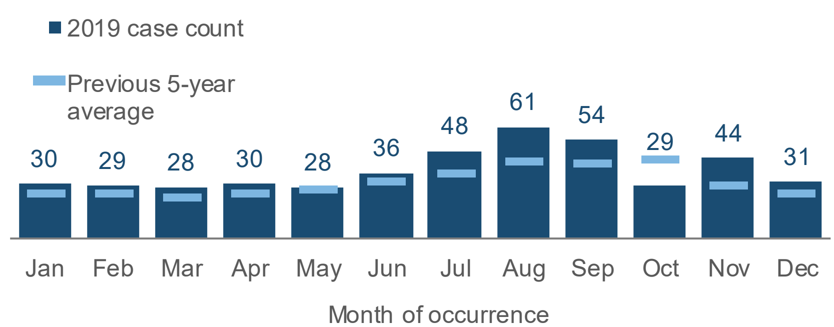




Between 93% and 97% of *Legionella* infections are acquired in Florida; some infections were imported from other states and countries.



Legionellosis cases increase slightly in the summer and early fall months with 48 to 61 cases reported each month from July to September 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Listeriosis

Key Points

Listeriosis primarily affects adults ≥75 years old, people with weakened immune systems, pregnant women and infants born to infected mothers. Listeriosis is of particular concern for pregnant women because infection during pregnancy can cause fetal loss, preterm labor, stillbirths and illness or death in newborn infants. The confirmed case definition for listeriosis was expanded in 2019, which may affect the disease reporting trends.

Historically, *Listeria* outbreaks have been linked to deli meats and hot dogs; however, new vehicles have been identified as sources of outbreaks including soft cheeses, frozen vegetables, sprouts, raw milk, melons, caramel apples, smoked seafood and ice cream.

Disease Facts

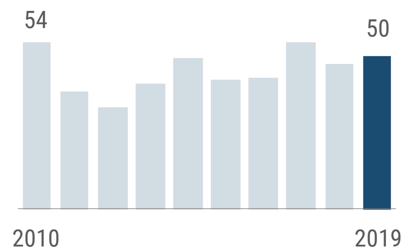
Caused by *Listeria monocytogenes* bacteria

Illness is usually invasive when bacteria have spread beyond gastrointestinal tract; initial illness is often characterized by fever and diarrhea

Transmission is foodborne; can be transmitted to fetus during pregnancy

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness, reduce stillbirths

The number of listeriosis cases reported annually ranges from 25 to 54.

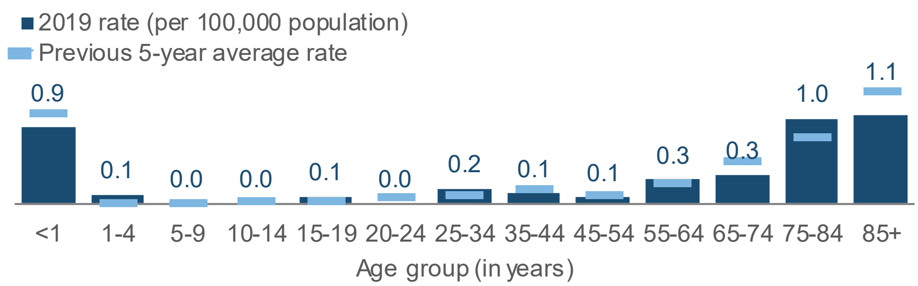


Whole genome sequencing (WGS) is now used to determine whether *Listeria* isolates are related, indicating the illnesses may have come from the same source. The Centers for Disease Control and Prevention monitors WGS data from across the country to identify clusters of possibly related cases. In 2019, Florida identified 6 cases associated with multistate outbreaks.

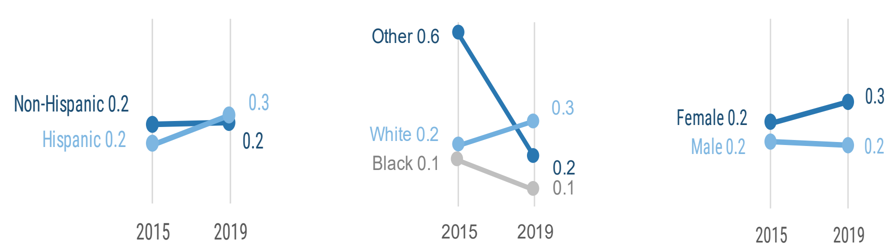
Disease Trends

Summary			
Number of cases			50
Rate (per 100,000 population)			0.2
Change from 5-year average rate			+1.3%
Age (in Years)			
Mean			61
Median			69
Min-max			0 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	32	(64.0)	0.3
Male	18	(36.0)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	46	(92.0)	0.3
Black	2	(4.0)	NA
Other	2	(4.0)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	36	(72.0)	0.2
Hispanic	14	(28.0)	NA
Unknown ethnicity	0		

The listeriosis rate (per 100,000 population) is highest in infants (who can acquire infection from the mother during pregnancy) and adults ≥75 years old.



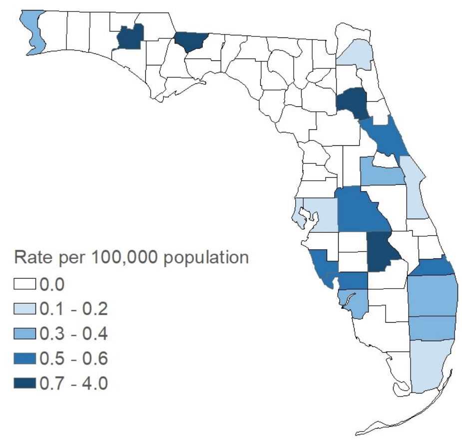
The listeriosis rate (per 100,000 population) was similar by gender, race and ethnicity in 2019. Most demographic rates remained stable from 2015 to 2019, except for the rates for other races which decreased and whites, females and Hispanic rates which increased slightly.



Listeriosis

Summary	Number
Number of cases	50
Outcome	**Number (Percent)**
Hospitalized	47 (94.0)
Died	10 (20.0)
Imported Status	**Number (Percent)**
Acquired in Florida	44 (100.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	6
Outbreak Status	**Number (Percent)**
Sporadic	41 (83.7)
Outbreak-associated	8 (16.3)
Outbreak status unknown	1

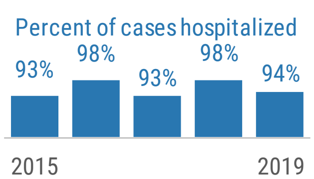
Listeriosis did not have a geographic pattern in 2019. Rates (per 100,000 population) were highest in small, rural counties in different parts of the state.

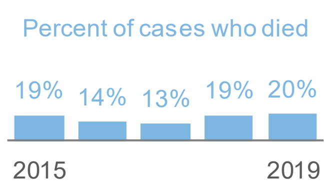


Rates are by county of residence for infections acquired in Florida (50 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

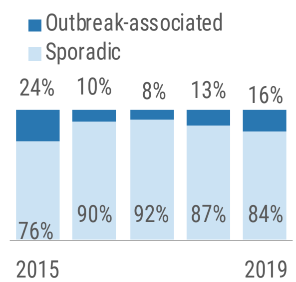
More Disease Trends

Most listeriosis cases are hospitalized; deaths do occur. Those primarily affected are older adults who likely have underlying conditions.

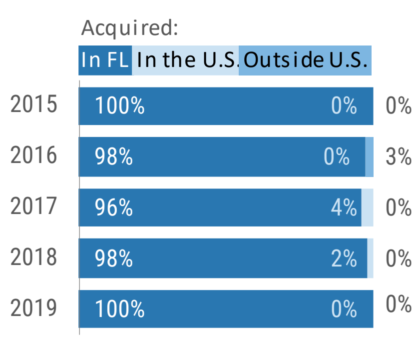




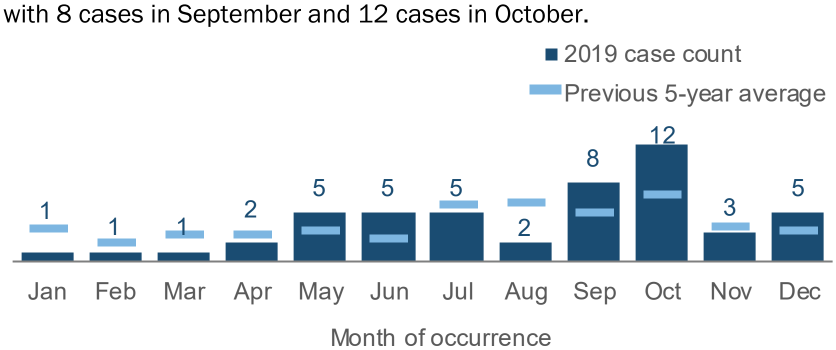
Each year, a few cases are linked to multistate outbreaks through whole genome sequencing. Six cases reported in 2019 matched multistate outbreaks.



Most *Listeria* infections are acquired in Florida.



Listeriosis cases occur all year and do not exhibit a strong seasonality. Additionally, low case counts make it difficult to interpret trends. However, it can be noted the early fall months had the highest number of cases reported with 8 cases in September and 12 cases in October.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Lyme Disease

Key Points

Lyme disease is the most common tick-borne disease in the U.S. The Centers for Disease Control and Prevention (CDC) estimates that about 476,000 Lyme disease cases are reported each year. Nationally, Lyme disease cases are concentrated in the Northeast and upper Midwest, with 14 states accounting for most of the reported cases each year.

Lyme disease incidence in Florida has generally increased over the past decade. This increase may be due to increases in animal host and reservoir populations and the slowly expanding geographic range of the vector tick due to ecological factors. In 2019, incidence of Lyme disease decreased slightly from 2018, falling below the previous five-year average incidence. COVID-19 travel restrictions may have contributed to this decrease.

The majority of Florida cases were acquired during travel to other U.S. states in 2019. However, 1 case was acquired outside of the U.S., in Greece or Italy.

There were 92 acute and 55 late-manifestation cases reported in 2019. Eleven Lyme disease cases were co-infected with *Babesia* and 2 with *Anaplasma*. Case counts and rates from this report may differ from those found in other tick-borne disease reports as different criteria are used to assemble the data.

Disease Facts

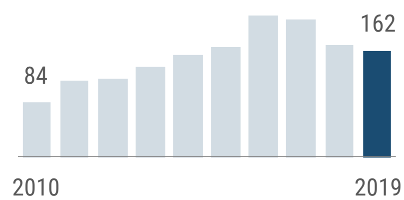
Caused by *Borrelia burgdorferi* bacteria

Illness can be acute or late manifestation; both can include fever, headache, fatigue, joint pain, muscle pain, bone pain and erythema migrans (characteristic bull's-eye rash); late manifestation can also include Bell's palsy, severe joint pain with swelling, shooting pain, tingling in hands and feet, irregular heartbeat, dizziness, shortness of breath and short-term memory loss

Transmitted via bite of infective *Ixodes scapularis* tick

Under surveillance to monitor incidence over time, estimate burden of illness and degree of endemicity, target areas of high incidence for prevention education

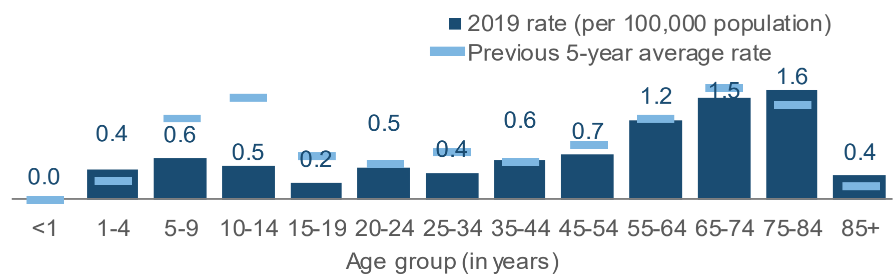
Lyme disease incidence in 2019 decreased slightly from 2018.



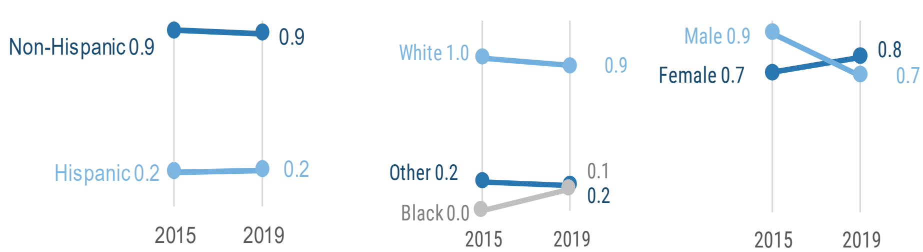
Disease Trends

Summary			
Number of cases			162
Rate (per 100,000 population)			0.8
Change from 5-year average rate			-15.9%
Age (in Years)			
Mean			52
Median			59
Min-max			2 - 95
Gender	**Number**	**(Percent)**	**Rate**
Female	88	(54.3)	0.8
Male	74	(45.7)	0.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	151	(95.6)	0.9
Black	5	(3.2)	NA
Other	2	(1.3)	NA
Unknown race	4		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	146	(93.0)	0.9
Hispanic	11	(7.0)	NA
Unknown ethnicity	5		

In 2019, the Lyme disease rate (per 100,000 population) was highest in adults 74 to 84 years old, followed by adults 65 to 74 years old and 55 to 64 years old. The rate in 2019 was notably lower than the previous five-year average rate for adolescents 10 to 14 years old and children 5 to 9 years old.



In 2019, the Lyme disease rate (per 100,000 population) was similar by gender groups, but higher in non-Hispanics. The rate was highest in whites, followed by other races, then blacks. The rate increased from 2015 to 2019 in females and blacks and remained stable for all other demographics.

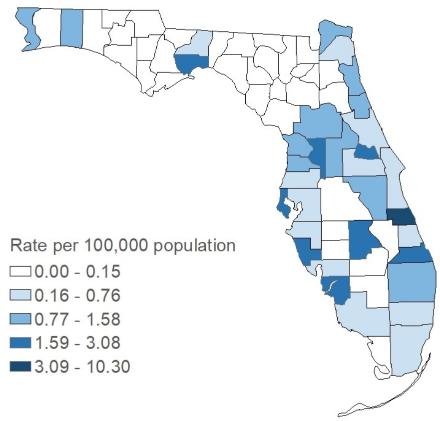


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lyme disease cases were missing 8.4% of ethnicity data in 2015 and 8.4% of race data in 2015.

Lyme Disease

Summary	Number
Number of cases	162
Case Classification	**Number (Percent)**
Confirmed	78 (48.1)
Probable	84 (51.9)
Outcome	**Number (Percent)**
Hospitalized	8 (4.9)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	20 (14.4)
Acquired in the U.S., not Florida	118 (84.9)
Acquired outside the U.S.	1 (0.7)
Acquired location unknown	23
Outbreak Status	**Number (Percent)**
Sporadic	157 (97.5)
Outbreak-associated	4 (2.5)
Outbreak status unknown	1

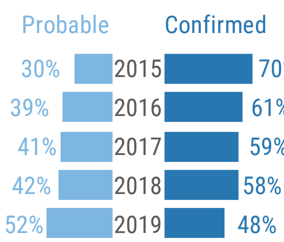
Lyme disease is primarily imported from other U.S. states where it is highly endemic; however, 20 infections were acquired in Florida in 2019. Three cases were reported in Palm Beach County and 2 cases were reported in Osceola County. The remaining 15 counties each had 1 case reported.



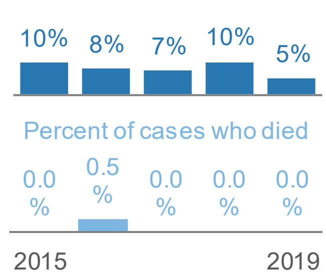
Rates are by county of residence for infections acquired in Florida (162 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

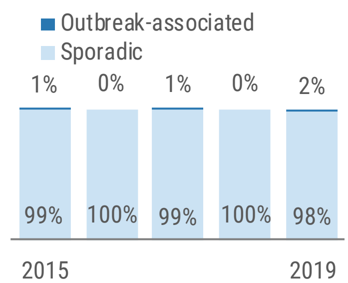
Between 48% and 70% of cases are confirmed annually; 48% of 2019 cases were confirmed.



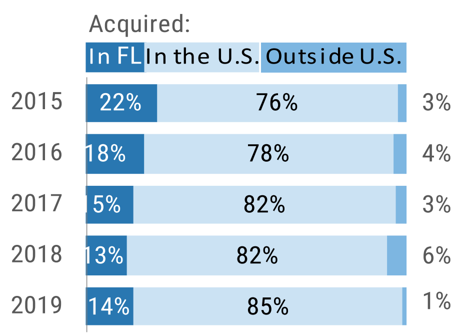
The hospitalization rate for people with Lyme disease is low; deaths are rare.



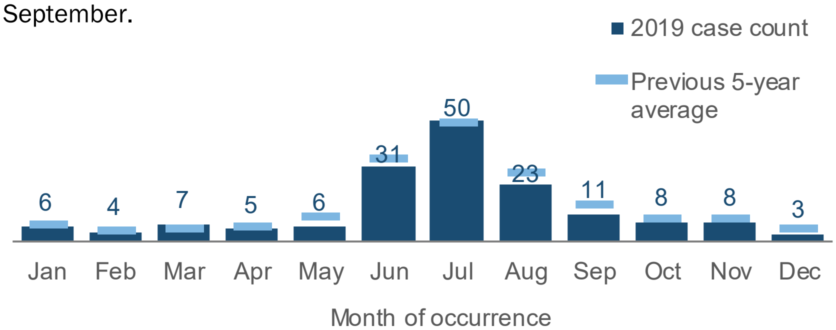
Almost all Lyme disease cases are sporadic. Two small travel-associated outbreaks were reported, each involving 2 family members exposed while travelling together to high-incidence states (NY and PA).



Lyme disease is primarily imported from other U.S. states where it is highly endemic. One case in 2019 was imported from another country.



Lyme disease cases are reported year-round, but there is a strong seasonal peak in the summer. In 2019, 71% of cases occurred from June to September.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Malaria

Key Points

The number of malaria cases imported from Central America and the Caribbean has increased in recent years, though most cases are still infected in Africa. All cases in 2019 were among people traveling to countries with endemic transmission (primarily African countries) while visiting friends and relatives with the majority exposed in Nigeria (16), Ghana (10) and Cote d'Ivoire (6). One family trip to Nigeria to visit friends/ relatives resulted in a cluster of 5 *P. falciparum* cases. Four of theses cases were children. The family did not take prophylactic medication to prevent malaria infection while traveling.

Four cases had illness onset in late December 2019 and were not identified and reported until 2020.

Disease Facts

Caused by *Plasmodium falciparum, P. malariae, P. ovale, P. vivax* parasites; a zoonotic malaria in non-human primates, *P. knowlesi,* can also infect people

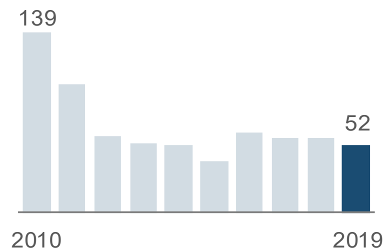
Illness can be uncomplicated or severe; common symptoms include high fever with chills, rigor, sweats, headache, nausea and vomiting

Transmitted via bite of infective mosquito; rarely by blood transfusion or organ transplant

Under surveillance to identify individual cases and implement control measures to prevent introduction and active transmission, monitor incidence over time, estimate burden of illness

It is important to note that infected residents and non-residents pose a potential malaria introduction risk since the malaria vector *Anopheles quadrimaculatus* is common in Florida; however, cases in non-Florida residents are not included in counts in this report. In 2019, 20 non-Florida residents were diagnosed with malaria while traveling in Florida (12 cases from Africa, 4 cases from southern Asia [India], 3 from Central and South America and 1 from Oceania). The 12 cases from Africa were infected with *P. falciparum* (9), *P. ovale* (2) and *P. malariae* (1). All 8 non-African residents were infected with *P. vivax*. An Italian couple was infected with *P. falciparum* while visiting Cote d'Ivoire. Both developed febrile illness, delayed seeking medical care and traveled to Florida instead. The husband died on the plane. The wife became critically ill with cerebral malaria but survived following treatment at a Florida hospital.

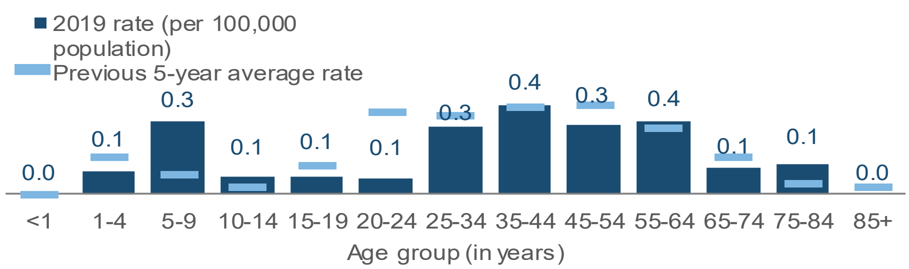
The number of reported malaria cases has remained relatively consistent since 2012.



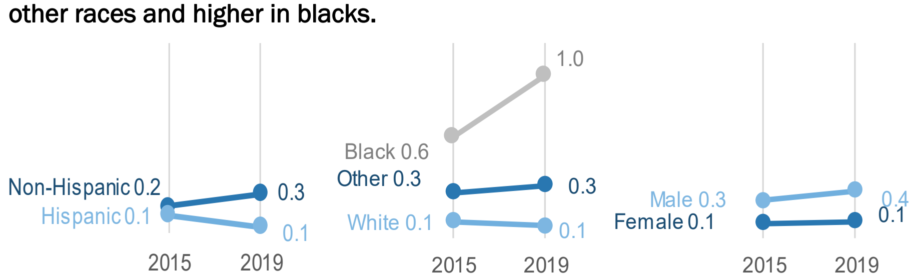
Disease Trends

Summary			
Number of cases			52
Rate (per 100,000 population)			0.2
Change from 5-year average rate			-8.2%
Age (in Years)			
Mean			42
Median			43
Min-max			4 - 83
Gender	**Number**	**(Percent)**	**Rate**
Female	14	(26.9)	NA
Male	38	(73.1)	0.4
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	13	(25.0)	NA
Black	36	(69.2)	1.0
Other	3	(5.8)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	49	(94.2)	0.3
Hispanic	3	(5.8)	NA
Unknown ethnicity	0		

The malaria rate (per 100,000 population) varies by age. Historically, rates are highest in adults 20 to 64 years old. In 2019, rates were highest in adults 35 to 44 and 55 to 64 years old. Children <5 years old are one of the most vulnerable groups affected by malaria and are at higher risk for severe disease and death. In 2019, the single case in a child 1 to 4 years old was infected with *P. falciparum* while visiting family in Nigeria.



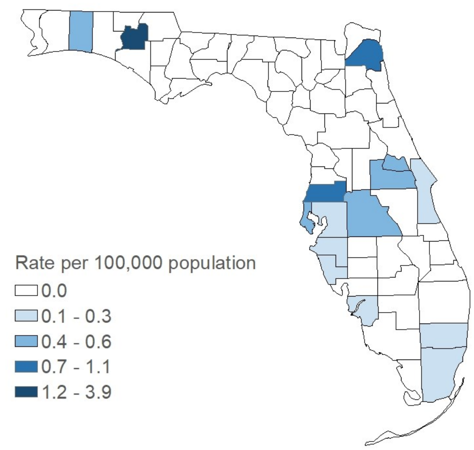
The malaria rate (per 100,000 population) was similar in males, females, Hispanics and non-Hispanics in 2019. By race, the rate was similar in whites and other races and higher in blacks.



Malaria

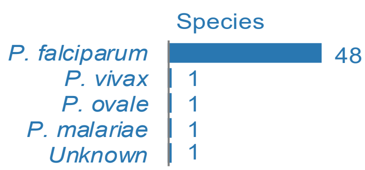
Summary	Number
Number of cases	52
Outcome	**Number (Percent)**
Hospitalized	38 (75.0)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	0 (0.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	52 (100.0)
Acquired location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	38 (73.1)
Outbreak-associated	14 (26.9)
Outbreak status unknown	0

Malaria cases were identified in residents of 15 counties across Florida in 2019. Duval county had the most cases (10), primarily due to a family cluster of 5 cases.



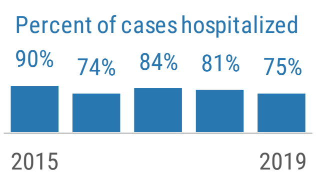
Rates are by county of residence, regardless of where infection was acquired (52 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

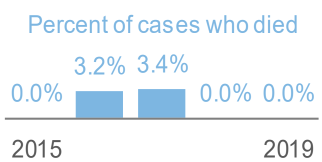
In 2019, the majority (92%) of infections were caused by *P. falciparum*. One sample was unable to be speciated.



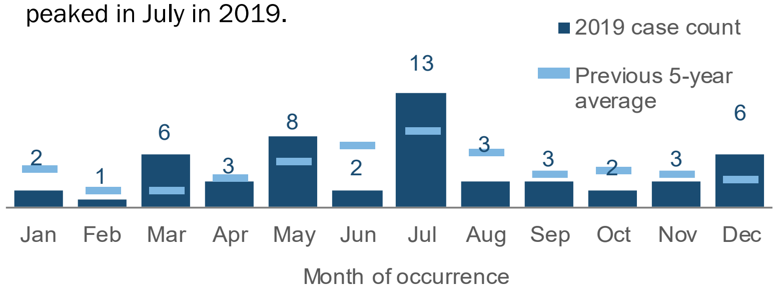
More Disease Trends

The majority of malaria cases are hospitalized; deaths do occur. No deaths were reported in Florida residents in 2019.

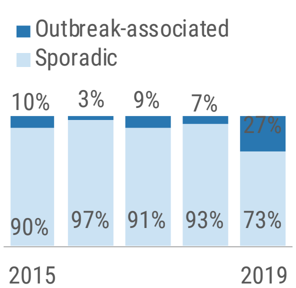




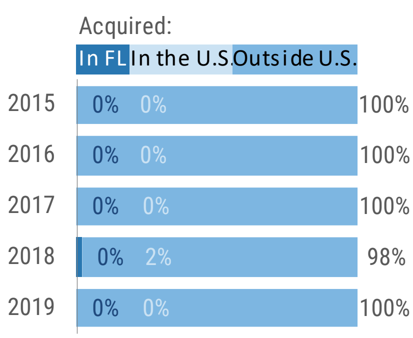
Malaria cases are imported into Florida year-round, but activity peaked in July in 2019.

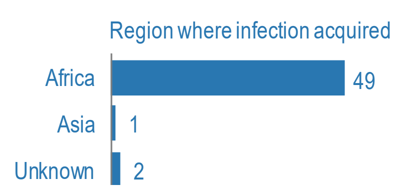


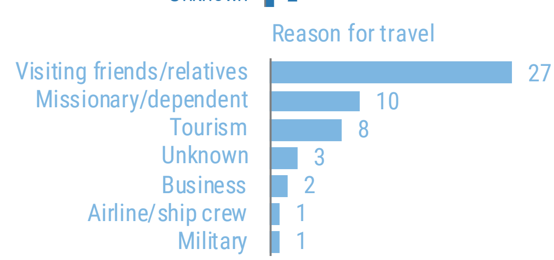
Several family clusters were identified in 2019 with travel to Africa to visit friends and family. Additionally, there was a cluster of 2 cases who served as missionaries in Zambia.



Africa remained the most common region where people were infected. Two cases had travel to several countries in multiple regions and the location of exposure was unknown. The most common reason for travel among people with malaria was visiting friends and relatives.







See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Meningococcal Disease

Key Points

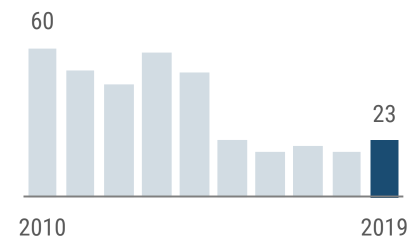
Five *Neisseria meningitidis* serogroups cause almost all invasive disease (A, B, C, Y and W). Vaccines are available to provide protection against these serogroups. In 2016, the incidence of meningococcal disease reached a historic low in Florida. The number of cases reported each year since has remained relatively stable, but was slightly higher in 2019. The increase could not be explained by an outbreak since no cases were known to be connected.

The most commonly identified serogroup causing meningococcal disease can vary year to year. In 2019, serogroup B was the most frequently identified serogroup in Florida with 39% of the cases. Serogroups C and Y caused 17% each of the total cases for 2019.

Disease Facts

- **Caused** by *Neisseria meningitidis* bacteria
- **Illness** is most commonly neurological (meningitis) or bloodstream infections (septicemia)
- **Transmitted** person to person by direct contact with respiratory droplets from nose or throat of colonized or infected person
- **Under surveillance** to take immediate public health actions in response to every suspected meningococcal disease case to prevent secondary transmission, monitor effectiveness of immunization programs and vaccines

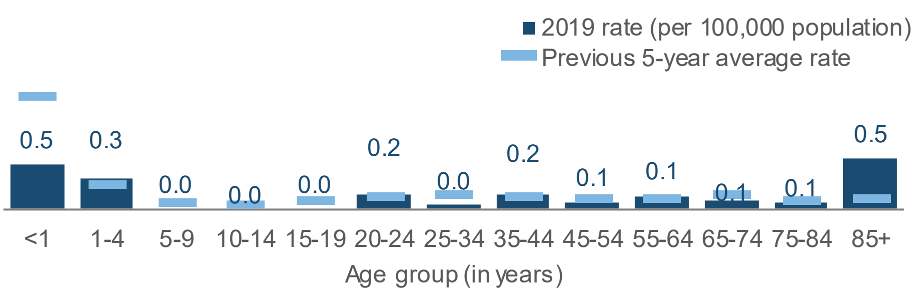
Meningococcal disease incidence increased slightly in 2019.



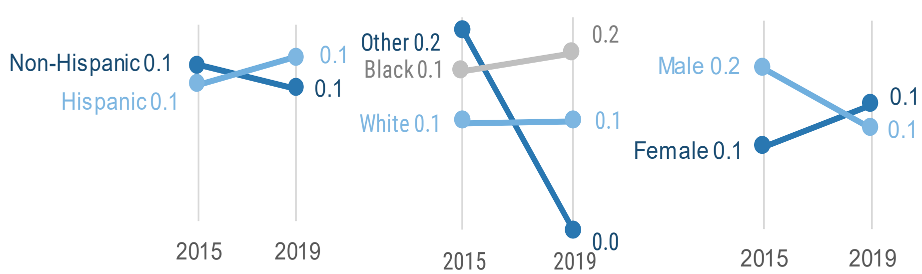
Disease Trends

Summary			
Number of cases			23
Rate (per 100,000 population)			0.1
Change from 5-year average rate			-16.6%
Age (in Years)			
Mean			46
Median			50
Min-max			0 - 89
Gender	**Number**	**(Percent)**	**Rate**
Female	13	(56.5)	NA
Male	10	(43.5)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	17	(73.9)	NA
Black	6	(26.1)	NA
Other	0	(0.0)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	16	(69.6)	NA
Hispanic	7	(30.4)	NA
Unknown ethnicity	0		

The rate of meningococcal disease cases was highest in those <1 year old and those 85 years or older.



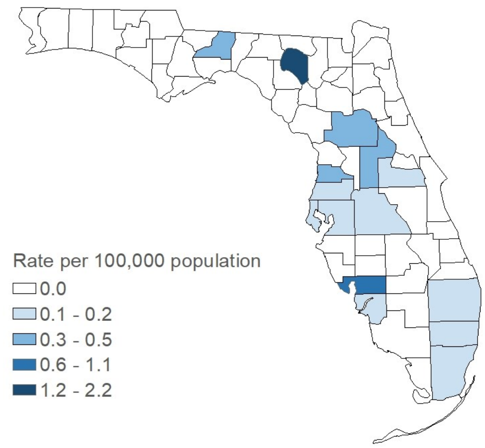
Meningococcal disease rates were similar among all races, genders and ethnicities from 2015–19.



Meningococcal Disease

Summary	Number
Number of cases	23
Case Classification	**Number (Percent)**
Confirmed	23 (100.0)
Probable	0 (0.0)
Outcome	**Number (Percent)**
Hospitalized	21 (91.3)
Died	3 (13.0)
Imported Status	**Number (Percent)**
Acquired in Florida	18 (81.8)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	4 (18.2)
Acquired location unknown	1
Outbreak Status	**Number (Percent)**
Sporadic	23 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0

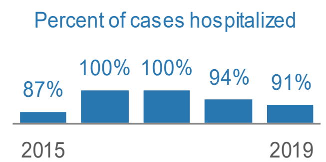
Meningococcal disease cases occurred in residents of 15 Florida counties. The rates were highest in Suwannee and Charlotte counties due to low population. Broward, Dade and Palm Beach had 3 cases each. Most counties had 1 case each.

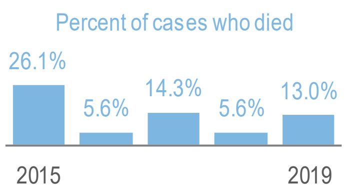


Rates are by county of residence for infections acquired in Florida (23 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

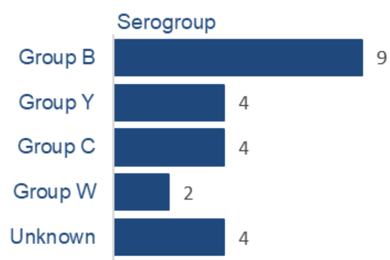
More Disease Trends

The hospitalization rate for people with meningococcal disease decreased in 2019; however, the death rate doubled.

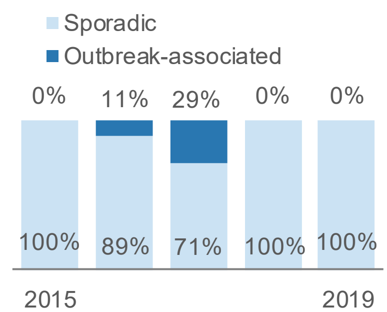




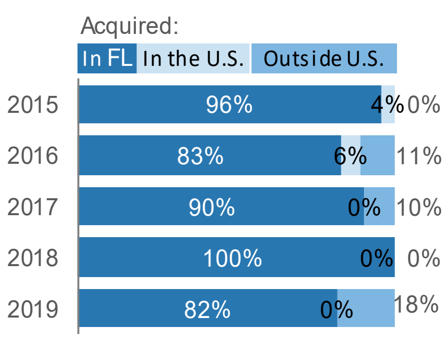
In 2019, the most common serogroup identified was serogroup B.



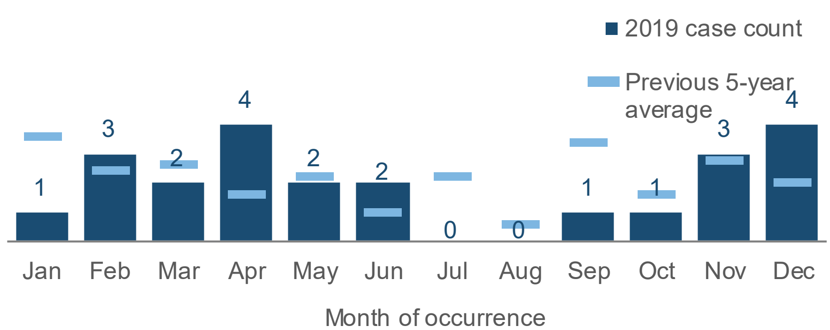
All meningococcal disease cases were sporadic in 2019.



Meningococcal disease is primarily acquired in Florida. In 2019, 5 cases were potentially acquired outside the U.S.



Nationally, meningococcal disease peaks in late winter and early spring. Slightly more cases were reported in April and December in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Mumps

Key Points

Despite routine vaccination, mumps has been increasing in the U.S., mainly due to outbreaks in young adults in settings with close contact like college campuses. Nationally, 2,515 mumps cases were reported in 2018, with over half in people 15 to 39 years old. Well over one-third of the cases were reported from the Pacific and Middle Atlantic regions of the country, with several college outbreaks driving the increased incidence in those states. Waning immunity is thought to play a role in these outbreaks.

Mumps incidence in Florida increased dramatically in 2017 and increased again in 2019. The elevated incidence over these three years was partly due to efforts by state and county health department staff to maintain awareness of mumps disease in the medical community by educating providers on reporting guidance and appropriate testing. From 2017 through 2019, staff also increased surveillance efforts to obtain specimens for testing at the state public health laboratory for both sporadic and outbreak-associated cases.

Disease Facts

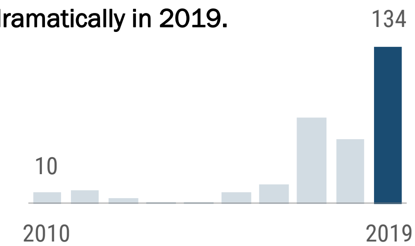
Caused by mumps virus

Illness includes fever, headache, muscle aches, tiredness and loss of appetite, followed by swelling of salivary glands, in some cases orchitis and oophoritis

Transmitted person to person via droplets of saliva or mucus from the mouth, nose or throat of an infected person, usually when they cough, sneeze or talk

Under surveillance to prevent further transmission through isolation and vaccination of contacts, identify and control outbreaks, monitor effectiveness of immunization programs and vaccines

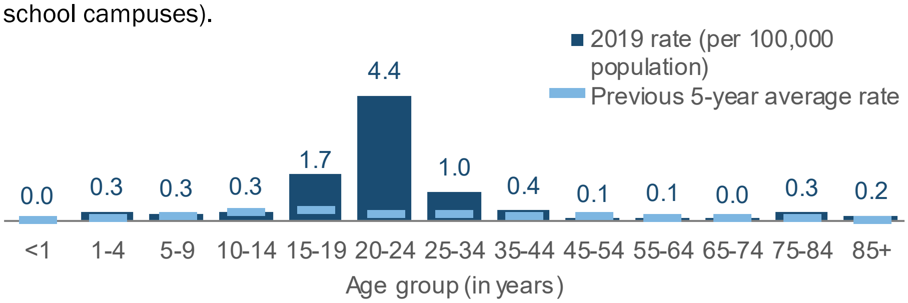
Mumps incidence increased dramatically in 2019.



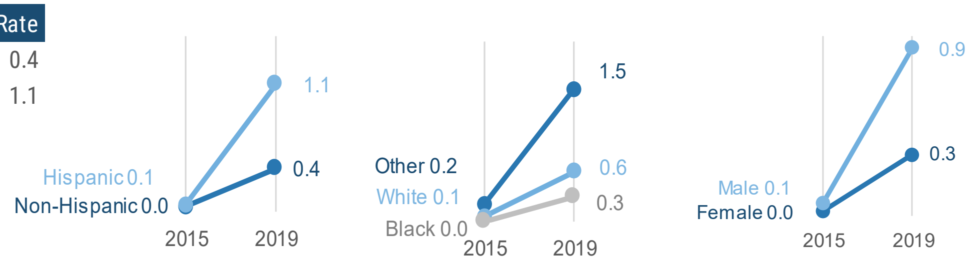
Disease Trends

Summary			
Number of cases			134
Rate (per 100,000 population)			0.6
Change from 5-year average rate			+316.2%
Age (in Years)			
Mean			26
Median			22
Min-max			1 - 86
Gender	**Number**	**(Percent)**	**Rate**
Female	37	(27.6)	0.3
Male	97	(72.4)	0.9
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	92	(76.7)	0.6
Black	10	(8.3)	NA
Other	18	(15.0)	NA
Unknown race	14		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	59	(49.2)	0.4
Hispanic	61	(50.8)	1.1
Unknown ethnicity	14		

In 2019, the mumps rate (per 100,000 population) was highest in adults 20 to 24 years old followed by those ages 15 to 19 years old. This may be due to waning immunity from vaccine and time spent in close-contact settings (e.g., school campuses).



Mumps rates (per 100,000 population) have increased across all gender, race and ethnicity groups from 2015 to 2019, though the increase was disproportionately larger among other races and Hispanics.

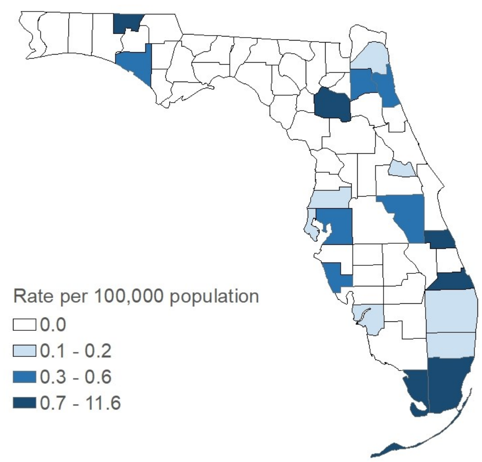


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Mumps cases were missing 10.4% of ethnicity data in 2019 and 10.4% of race data in 2019.

Mumps

Summary	Number
Number of cases	134
Case Classification	**Number (Percent)**
Confirmed	67 (50.0)
Probable	67 (50.0)
Outcome	**Number (Percent)**
Hospitalized	18 (13.4)
Died	1 (0.7)
Imported Status	**Number (Percent)**
Acquired in Florida	99 (92.5)
Acquired in the U.S., not Florida	4 (3.7)
Acquired outside the U.S.	4 (3.7)
Acquired location unknown	27
Outbreak Status	**Number (Percent)**
Sporadic	38 (28.6)
Outbreak-associated	95 (71.4)
Outbreak status unknown	1

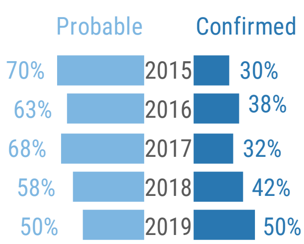
In 2019, most mumps cases were acquired in Florida. Cases occurred in counties throughout Florida.



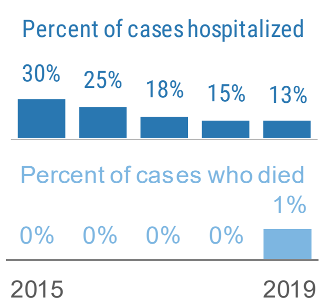
Rates are by county of residence for infections acquired in Florida (134 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

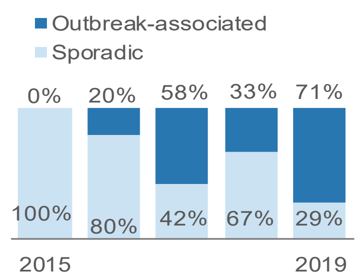
Generally between 30% and 50% of cases are confirmed each year.



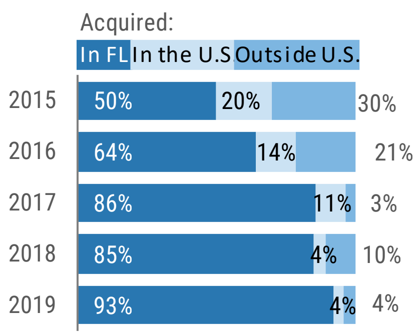
Some mumps cases are hospitalized. One death was reported in 2019.



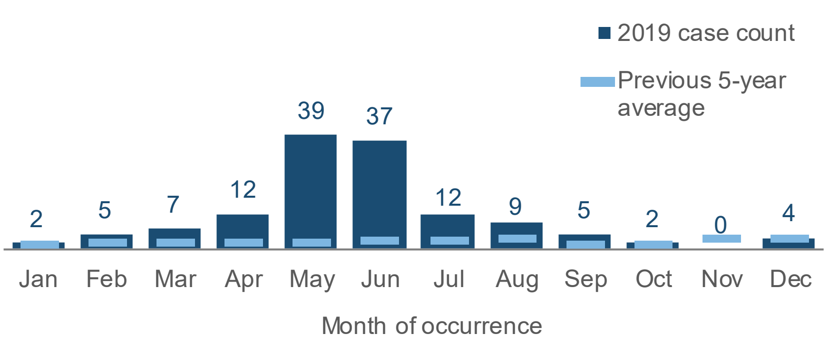
71% of cases were outbreak-associated in 2019, which is an increase from 2018.



Most mumps infections were acquired in Florida in 2019; 8 infections were imported from other states and countries.



Mumps cases occurred throughout the year in Florida in 2019. More cases were reported in May and June.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Pertussis

Key Points

Nationally, the number of pertussis cases reported increased starting in the 1980s, peaked in 2012, and has gradually decreased since. Pertussis is cyclical in nature with peaks in disease every 3 to 5 years. In Florida, pertussis cases last peaked in 2013. Pertussis incidence in 2019 remained consistent with that seen during non-peak years. There were 2 pertussis outbreaks reported in 2019. Both of the outbreaks occurred in school settings, with the largest involving 5 cases.

Older adults often have milder infections and serve as reservoirs and sources of infection for infants and young children. Infants have the greatest burden of pertussis infections, both in number of cases and severity. Infants <2 months old are too young to be vaccinated, underscoring the importance of vaccinating pregnant women and family members of infants to protect infants from infection. The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices recommends that all pregnant women should receive a dose of Tdap (tetanus, diphtheria, pertussis) vaccine during the third trimester of each pregnancy to help protect their babies. In addition, all children and adults who plan to have close contact with infants should receive a dose of Tdap if they have not previously received one.

Disease Facts

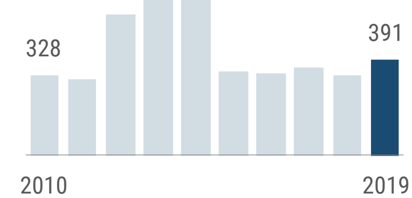
Caused by *Bordetella pertussis* bacteria

Illness includes runny nose, low-grade fever, mild cough and apnea that progresses to paroxysmal cough, or "whoop," with posttussive vomiting and exhaustion

Transmitted person to person via inhalation of infective aerosolized respiratory tract droplets

Under surveillance to identify cases for treatment to prevent death, identify and prevent outbreaks, limit transmission in settings with infants or others who may transmit to infants, monitor effectiveness of immunization programs and vaccines

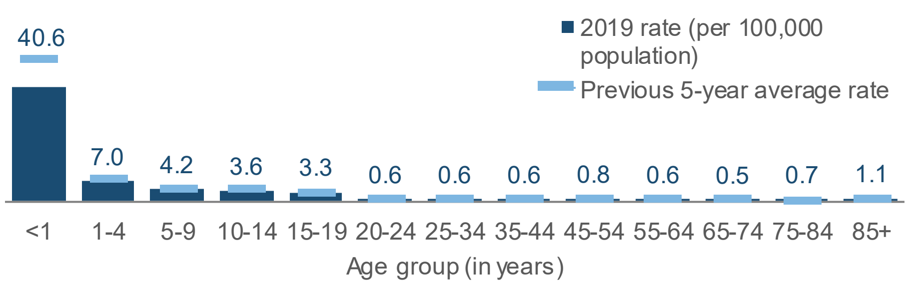
Pertussis incidence in 2019 was consistent with incidence in non-peak years.



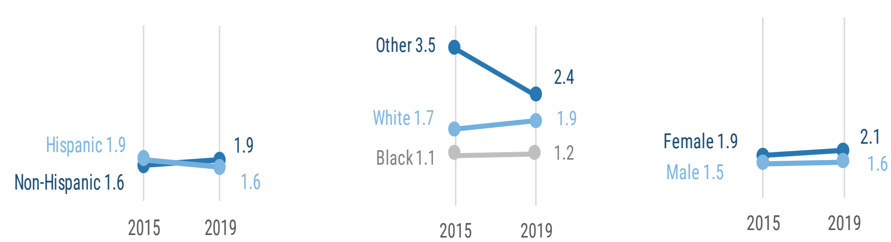
Disease Trends

Summary	Number (Percent)	Rate
Number of cases		391
Rate (per 100,000 population)		1.8
Change from 5-year average rate		-11.0%
Age (in Years)		
Mean		18
Median		9
Min-max		0 - 93
Gender	**Number (Percent)**	**Rate**
Female	225 (57.5)	2.1
Male	166 (42.5)	1.6
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	309 (81.1)	1.9
Black	42 (11.0)	1.2
Other	30 (7.9)	2.4
Unknown race	10	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	291 (77.0)	1.9
Hispanic	87 (23.0)	1.6
Unknown ethnicity	13	

The pertussis rate (per 100,000 population) is highest in infants <1 year old.



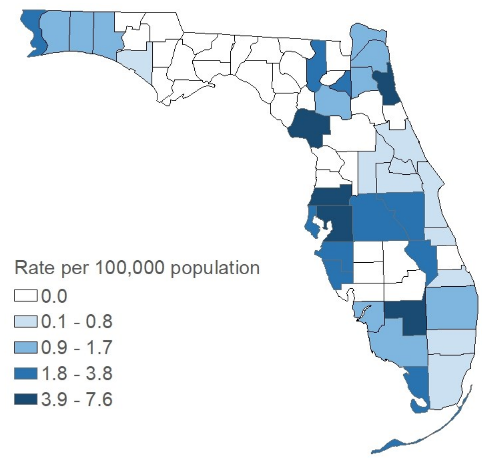
Pertussis rates (per 100,000 population) have remained fairly stable between 2015 and 2019. The most notable decrease was in other races.



Pertussis

Summary	Number
Number of cases	391
Case Classification	**Number (Percent)**
Confirmed	276 (70.6)
Probable	115 (29.4)
Outcome	**Number (Percent)**
Hospitalized	91 (23.3)
Died	1 (0.3)
Imported Status	**Number (Percent)**
Acquired in Florida	365 (98.4)
Acquired in the U.S., not Florida	6 (1.6)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	20
Outbreak Status	**Number (Percent)**
Sporadic	276 (71.5)
Outbreak-associated	110 (28.5)
Outbreak status unknown	5

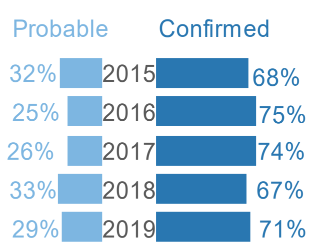
In 2019, pertussis cases occurred in the more populated areas of the state in south and central Florida. However, there was a notable amount of cases in the Panhandle as well.



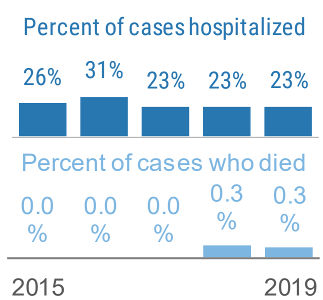
Rates are by county of residence for infections acquired in Florida (391 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

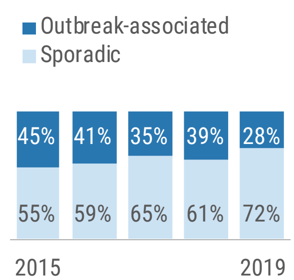
About two-thirds of pertussis cases are confirmed. Probable cases are clinically compatible but lack confirmatory testing.



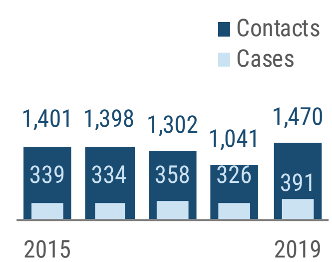
Between 20% to 31% of pertussis cases are hospitalized. Deaths from pertussis are rare.



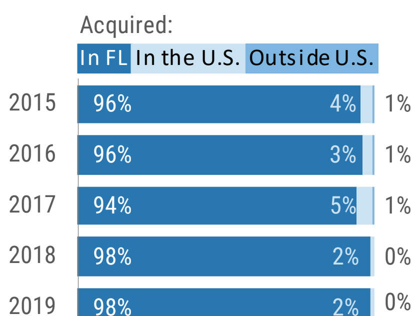
The percentage of cases that were outbreak-associated decreased in 2019.



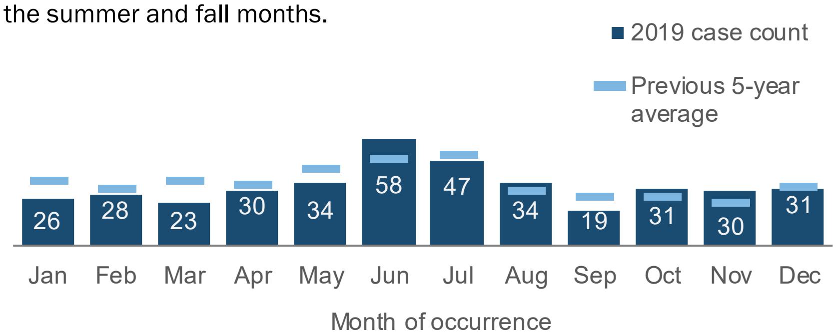
For each pertussis case, an average of 3 exposed contacts are recommended antibiotics to prevent illness.



Most pertussis cases are acquired in Florida; a small number of cases are imported from other states and countries.



Pertussis cases did not have a distinct seasonality in 2019. In general, pertussis does not have a seasonal pattern, although cases may increase in the summer and fall months.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Pesticide-Related Illness and Injury, Acute

Key Points

Pesticides are used in agricultural, residential, recreational and other various settings throughout the state. Exposures resulting in illness or injury can occur from pesticide drift, consumption of contaminated food or water, or improper use, storage or application of household pesticides such as insect repellents, foggers, rodent poisons, weed killers and mosquito, flea and tick control products.

Prior to January 2012, suspect sporadic cases (i.e., not part of a cluster) and suspect cases associated with non-occupational exposures (typically limited household exposures) met the surveillance case definition. The case definition was changed in January 2012 to exclude these cases, substantially decreasing the number of cases reported. Incidence since 2012 has remained relatively stable with a slight decrease in 2016.

In 2019, 17 cases (48.6%) had a low severity of illness and 17 cases (48.6%) had moderate severity of illness. One case had severe illness and no deaths were reported. The 13 outbreak-associated cases in 2019 were associated with 4 in-state outbreaks. One outbreak was associated with residential yard spraying (St. Johns: two cases), 1 was associated with a residence sprayed for bed bugs (Martin: 2 cases), 1 involved a truck that was sprayed for cockroaches (St. Johns: two cases) and 1 was related to a workplace exposure in which pesticide was inhaled via the air vents (Lake: 6 cases, Seminole: 1 case).

Disease Facts

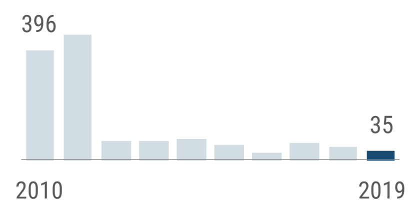
Caused by pesticides

Illness can be respiratory, gastrointestinal, neurological, dermal, etc., depending on the agent

Exposure depends on several factors (e.g., agent, application method, environmental conditions); dermal, inhalation and ingestion are most common routes of exposure

Under surveillance to identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions and occupational exposure, improve administration and proper use of pesticides to reduce exposure

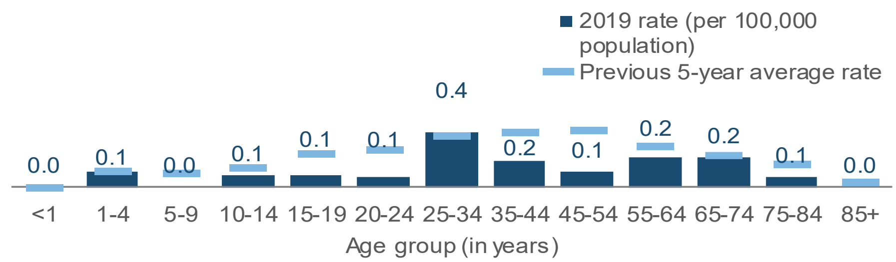
Pesticide-related case incidence has remained relatively stable since the 2012 case definition change.



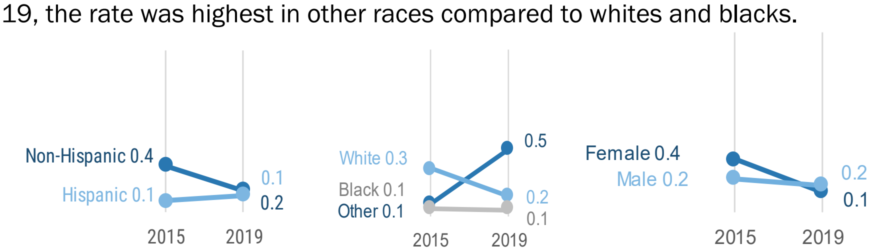
Disease Trends

Summary		
Number of cases		35
Rate (per 100,000 population)		0.2
Change from 5-year average rate		-39.4%
Age (in Years)		
Mean		42
Median		38
Min-max		3 - 82
Gender	**Number (Percent)**	**Rate**
Female	15 (44.1)	NA
Male	19 (55.9)	NA
Unknown gender	1	
Race	**Number (Percent)**	**Rate**
White	25 (75.8)	0.2
Black	2 (6.1)	NA
Other	6 (18.2)	NA
Unknown race	2	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	26 (78.8)	0.2
Hispanic	7 (21.2)	NA
Unknown ethnicity	2	

In 2019, the rate (per 100,000 population) of acute pesticide-related illness and injury was highest in people 25 to 34 years old.



Since 2015, rates (per 100,000 population) of acute pesticide-related illness and injury have increased slightly in other races and remained fairly stable for all other demographics. While rates were similar by gender and ethnicity groups in 2019, the rate was highest in other races compared to whites and blacks.

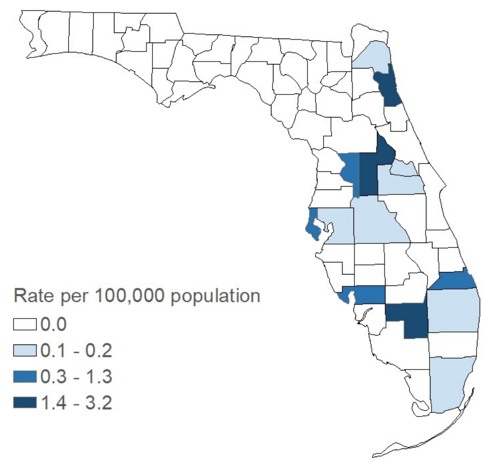


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute pesticide-related illness and injury cases were missing 5.7% of ethnicity data in 2019 and 5.7% of race data in 2019.

Pesticide-Related Illness and Injury, Acute

Summary	Number
Number of cases	35
Case Classification	**Number (Percent)**
Confirmed	10 (28.6)
Probable	4 (11.4)
Suspect	21 (60.0)
Outcome	**Number (Percent)**
Hospitalized	4 (11.4)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Exposed in Florida	34 (100.0)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	0 (0.0)
Exposed location unknown	1
Outbreak Status	**Number (Percent)**
Sporadic	21 (61.8)
Outbreak-associated	13 (38.2)
Outbreak status unknown	1

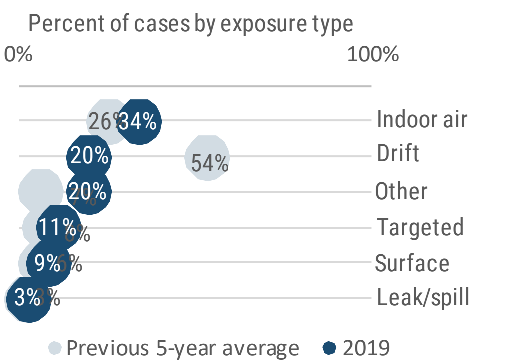
Acute pesticide-related illnesses and injuries occurred in residents of 11 Florida counties in 2019. The most cases occurred in St. Johns (8 cases) and Lake (7 cases) counties.



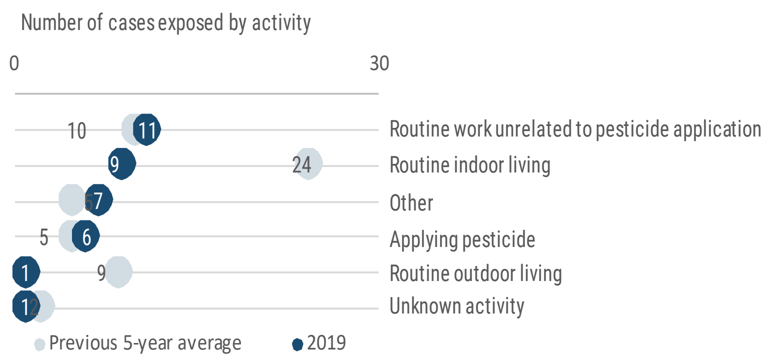
Rates are by county of residence, regardless of where exposure occurred (35 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

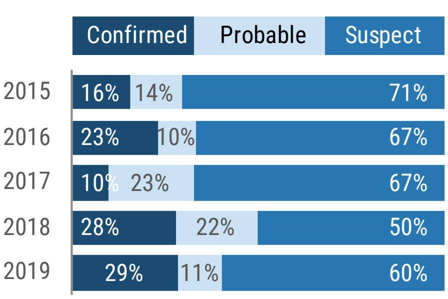
Indoor air was the most common exposure type and was above the previous five-year average in 2019. Note: cases can report >1 exposure type.



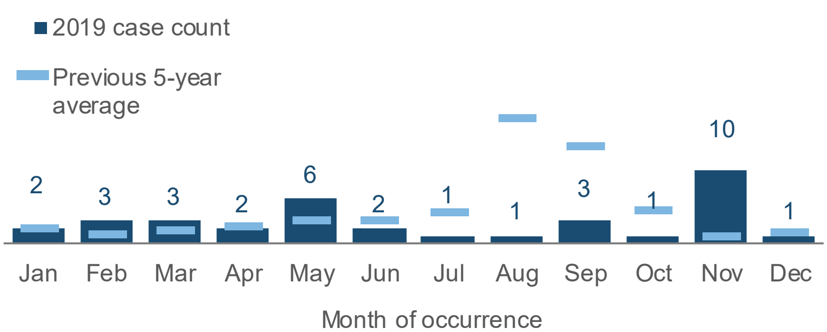
In 2019, 11 cases (31%) were exposed to pesticide while doing routine indoor activities unrelated to pesticide application work. This is consistent with the previous five-year average.



From 2015 to 2019, between 50% and 71% of cases were suspect each year. Less than one-third were confirmed in 2019.



Acute pesticide-related illnesses and injuries were reported throughout the year but were highest in May and November.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Rabies, Animal and Possible Exposure

Key Points for Humans

The first case of human rabies acquired in Florida since 1948 was reported in 2017; exposure was attributed to a bite from a rabid bat. In 2018, another human rabies case was reported in a 6-year-old male from Lake County. The child developed a fatal rabies infection after being bitten by a sick bat found near the family's home about 2 weeks prior to symptom onset. No medical attention was sought at the time of the bite. The rabies virus strain involved was associated with *Tadarida brasiliensis* (Brazilian free-tailed) bats.

The animals most frequently diagnosed with rabies in Florida are raccoons, bats, unvaccinated cats and foxes. Rabies is endemic in the raccoon and bat populations of Florida. Rabies frequently spreads from raccoons, and occasionally bats, to other animal species such as foxes and cats.

Incidence of human exposures to suspected rabid animals for which PEP is recommended has increased since case reporting was initiated, primarily due to PEP recommendations related to dog bites. Contributing factors may include more animal bites, lack of rabies PEP training and fewer local resources to find and confine or test biting animals. Case counts and rates from this report may differ from those found in other rabies reports as different criteria are used to assemble the data.

Disease Facts

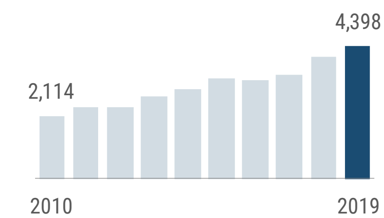
Caused by rabies virus

Illness in humans includes fever, headache, insomnia, confusion, hallucinations, increase in saliva, difficulty swallowing and fear of water; near 100% fatality rate; death usually occurs within days of symptom onset

Transmitted when infectious saliva or nervous tissue comes in contact with open wound or mucous membrane via bite

Under surveillance to identify and mitigate sources of exposure, evaluate adherence to guidance on rabies post-exposure prophylaxis (PEP)

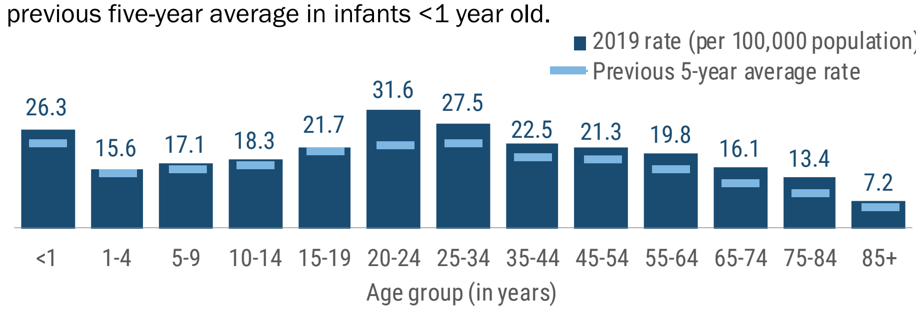
Possible human exposures to rabies increased in 2019.



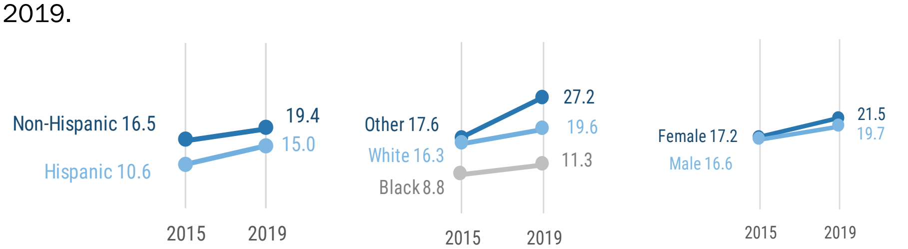
Human Trends

Summary		
Number of cases		4,398
Rate (per 100,000 population)		20.7
Change from 5-year average rate		+21.7%
Age (in Years)		
Mean		39
Median		37
Min-max		0 - 96
Gender	**Number (Percent)**	**Rate**
Female	2,342 (53.3)	21.5
Male	2,052 (46.7)	19.7
Unknown gender	4	
Race	**Number (Percent)**	**Rate**
White	3,229 (81.3)	19.6
Black	409 (10.3)	11.3
Other	333 (8.4)	27.2
Unknown race	427	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	3,043 (78.4)	19.4
Hispanic	840 (21.6)	15.0
Unknown ethnicity	515	

Human exposures to suspected rabid animals for which PEP is recommended occurs in all age groups, but the rate (per 100,000 population) tends to be highest in people 15 to 34 years old. The rate in 2019 was higher than the previous five-year average in infants <1 year old.



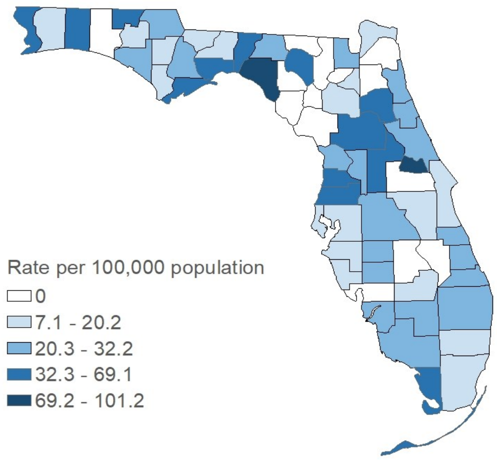
The rate (per 100,000 population) of human exposures to suspected rabid animals for which PEP is recommended is highest in females, other races, whites and non-Hispanics in 2019. The rate increased in all demographics from 2015 to 2019.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Possible human exposure to rabies cases were missing 10.9% of ethnicity data in 2015, 10.7% of race data in 2015, 11.7% of ethnicity data in 2019, and 9.7% of race data in 2019.

Rabies, Animal and Possible Exposure

Human exposures to suspected rabid animals for which PEP is recommended occur throughout the state. The rate (per 100,000 population) was high in both rural and urban counties in 2019.



Rates are by county of residence for cases exposed in Florida (4,398 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

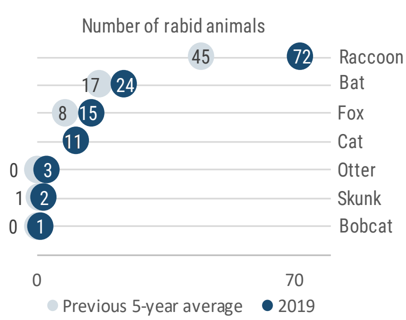
Animal Trends

Key Points for Animals

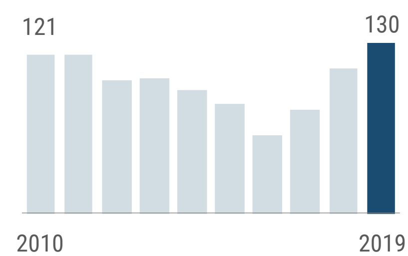
Laboratory testing for animal rabies is only done when animals potentially expose (e.g., bite) humans or domestic (owned) animals; thus, these data do not necessarily correlate with the true prevalence of rabies by animal species in Florida.

There is generally a much greater risk for rabies exposure to people when domestic animals are infected versus wildlife. Properly administered rabies vaccines are highly effective in protecting domestic animals like cats, dogs and ferrets against rabies infection, and rabies vaccination is required for these animals per section 828.30, *Florida Statues*.

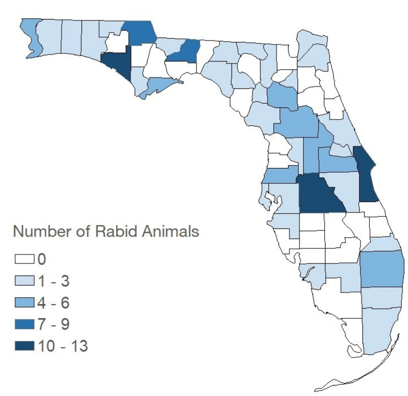
In 2019, raccoons remained the most commonly identified rabid animal, followed by bats, cats and foxes.



The number of rabid animals identified has generally decreased over the past decade, but has increased since 2017. Rabies activity is cyclical.



Rabid animals were identified throughout the state in 2019.



Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis

Key Points

Spotted fever rickettsioses (SFRs) are a group of tick-borne diseases caused by closely related *Rickettsia* bacteria. The most serious and commonly reported spotted fever group rickettsiosis in the U.S. is Rocky Mountain spotted fever (RMSF) caused by *R. rickettsii*. Other causes of SFR include *R. parkeri*, *R. africae* and *R. conorii*. The principal imported and locally acquired tick vectors in Florida are the American dog tick (*Dermacentor variabilis*) and the Gulf Coast tick (*Amblyomma maculatum*).

Human antibodies to spotted fever rickettsial species such as *R. parkeri*, *R. amblyommii*, *R. africae* and *R. conorii* cross-react with serologic tests for the RMSF organism *R. rickettsii*. Antibody-based testing for RMSF is strongly cross-reactive with other SFR. More than 96% of cases in 2019 were probable because eschar swabs or convalescent serology samples were either not available or not obtained. Most cases are probable and only require a single RMSF titer of 1:64 or higher. Acute titers of 1:64 are frequently found to be false positive results when convalescent testing is subsequently performed.

Disease Facts

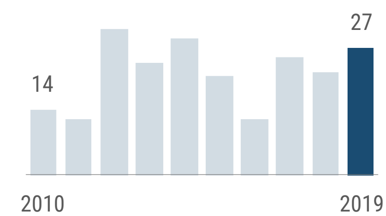
Caused by certain *Rickettsia* bacteria; most commonly *Rickettsia rickettsii*, *R. parkeri*, *R. africae*, *R. conorii*

Illness includes fever, headache, abdominal pain, vomiting and muscle pain; rash develops in 80% of cases; eschar is commonly seen in SFR other than RMSF

Transmitted via bite of infective tick

Under surveillance to monitor incidence over time, estimate burden of illness, monitor geographical and temporal occurrence, target areas of high incidence for prevention education

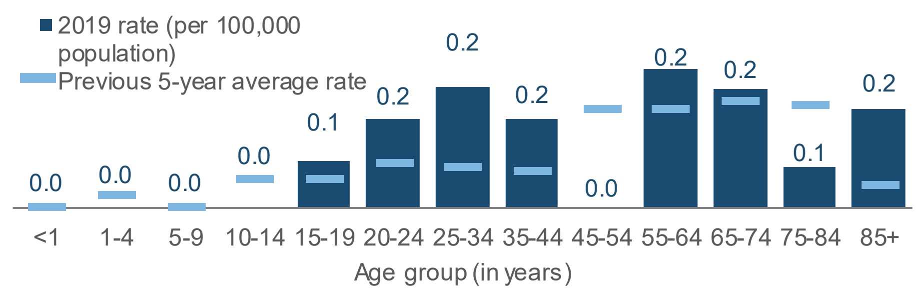
RMSF and SFR incidence varies by year.



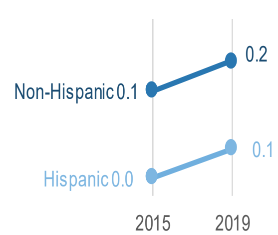
Disease Trends

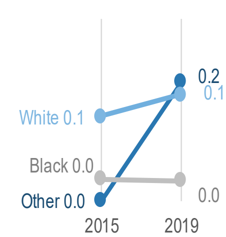
Summary		
Number of cases		27
Rate (per 100,000 population)		0.1
Change from 5-year average rate		+17.6%
Age (in Years)		
Mean		50
Median		57
Min-max		17 - 85
Gender	**Number (Percent)**	**Rate**
Female	8 (29.6)	NA
Male	19 (70.4)	NA
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	24 (88.9)	0.1
Black	1 (3.7)	NA
Other	2 (7.4)	NA
Unknown race	0	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	24 (88.9)	0.2
Hispanic	3 (11.1)	NA
Unknown ethnicity	0	

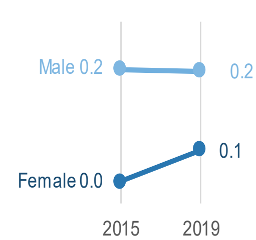
In 2019, the RMSF and SFR rates (per 100,000 population) were highest in adults 55 to 64 years old followed by adults 25 to 34 and 65 to 74 years old. The rate in 2019 was notably lower than the previous five-year average rate for adults 45 to 54 years old and 75 to 84 years old.



RMSF and SFR rates (per 100,000 population) increased in all demographics from 2015–19, except for blacks, where rates remained stable. Rates were higher in males, whites, other races and non-Hispanics in 2019.





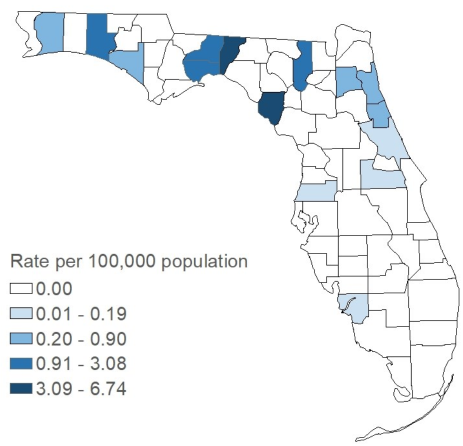


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Rocky Mountain spotted fever and spotted fever rickettsiosis cases were missing 9.5% of ethnicity data in 2015 and 9.5% of race data in 2015.

Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis

Summary	Number
Number of cases	27
Case Classification	**Number (Percent)**
Confirmed	1 (3.7)
Probable	26 (96.3)
Outcome	**Number (Percent)**
Hospitalized	12 (44.4)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	18 (72.0)
Acquired in the U.S., not Florida	7 (28.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	2
Outbreak Status	**Number (Percent)**
Sporadic	27 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0

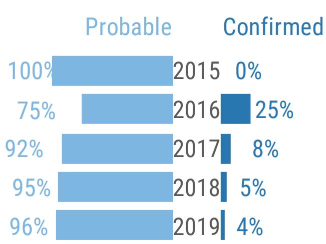
Most *Rickettsia* infections acquired within Florida are in residents of northern and central counties. Four cases each were reported in Lee and Leon counties and 2 cases were reported in Pasco county in 2019. The remaining 17 counties each had 1 case reported.



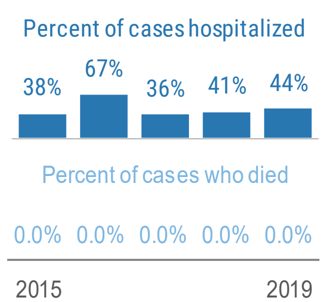
Rates are by county of residence for infections acquired in Florida (27 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

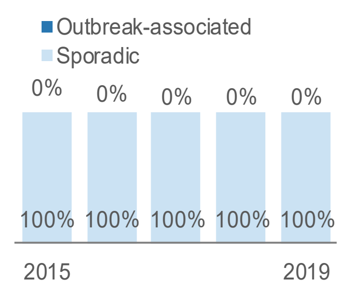
Most RMSF and SFR cases are not confirmed due to laboratory testing limitations. In 2019, the only confirmed case (Walton County) demonstrated a fourfold increase in titer.



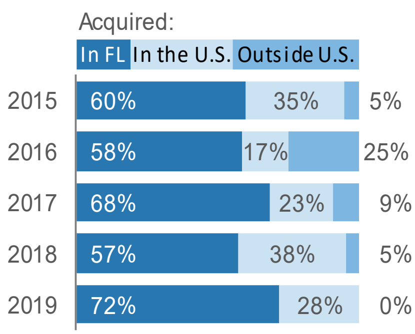
Typically more than 35% of cases are hospitalized; deaths are rare.



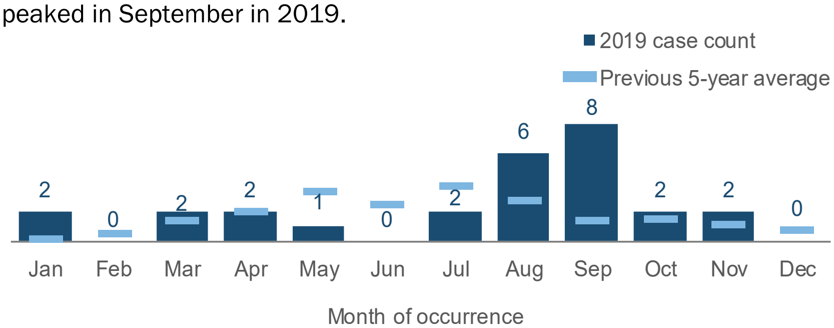
Most RMSF and SFR cases are sporadic. No outbreak-associated cases have been identified since 2014.



Most cases are acquired in Florida. In 2019, 7 cases were imported from other states.



RMSF and SFR cases are reported year-round without distinct seasonality, though peak transmission typically occurs during the summer months. Cases peaked in September in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Salmonellosis

Key Points

Salmonellosis is one of the most common bacterial causes of diarrheal illness in the U.S. The Centers for Disease Control and Prevention estimates that *Salmonella* bacteria cause about 1.35 million infections, 26,500 hospitalizations and 420 deaths in the U.S. each year. Florida frequently has the highest number and one of the highest incidence rates of salmonellosis cases in the U.S. The seasonal pattern is very strong, with cases peaking in late summer to early fall. Incidence is highest in infants <1 year old and decreases dramatically with age.

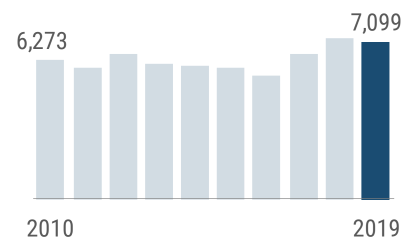
Disease Facts

- **Caused** by *Salmonella* bacteria (excluding *Salmonella* serotype Typhi)
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, animal to person, foodborne and waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

The use of culture-independent diagnostic testing (CIDT) to identify *Salmonella* has increased in recent years. Florida changed the salmonellosis surveillance case definition in January 2017 to include CIDT in the criteria for probable cases, contributing to the increase in cases reported in 2017–19.

Most outbreak-associated cases are reflective of household clusters; however, some cases are part of in-state or multistate outbreaks. In 2019, Florida identified 77 cases associated with 19 different multistate outbreaks. A variety of vehicles were identified for 13 of these multistate outbreaks, including chicken, shelled eggs, pig ears, pork, cut fruit, papaya, prepackaged salad mix, iceberg lettuce and live poultry. Four in-state outbreaks were identified in 2019.

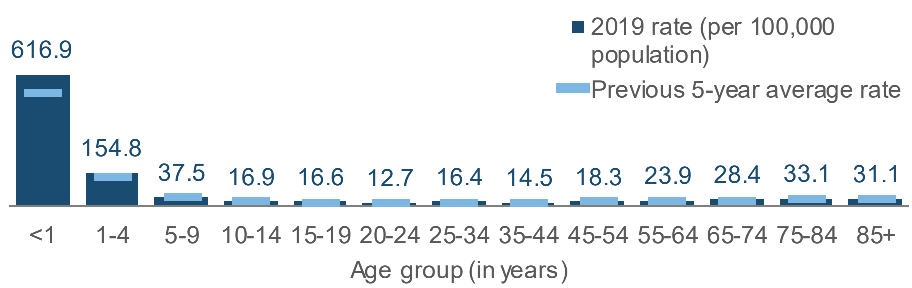
Salmonellosis incidence has remained relatively stable over the past ten years, but has increased since 2016 likely due to CIDT.



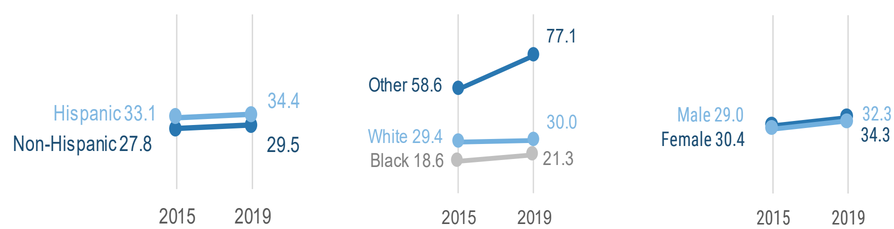
Disease Trends

Summary			
Number of cases			7,099
Rate (per 100,000 population)			33.4
Change from 5-year average rate			+8.0%
Age (in Years)			
Mean			29
Median			18
Min-max			0 - 101
Gender	**Number**	**(Percent)**	**Rate**
Female	3,732	(52.6)	34.3
Male	3,362	(47.4)	32.3
Unknown gender	5		
Race	**Number**	**(Percent)**	**Rate**
White	4,937	(74.3)	30.0
Black	767	(11.5)	21.3
Other	945	(14.2)	77.1
Unknown race	450		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	4,624	(70.7)	29.5
Hispanic	1,920	(29.3)	34.4
Unknown ethnicity	555		

The salmonellosis rate (per 100,000 population) is highest in infants <1 year old and children 1 to 4 years old, then decreases dramatically with age.



The salmonellosis rate (per 100,000 population) remained relatively stable in all demographics from 2015 to 2019 except in other races where it increased. The rates were similar across gender and ethnicity groups in 2019. The rate was notably higher in other races compared to whites and blacks in 2019.

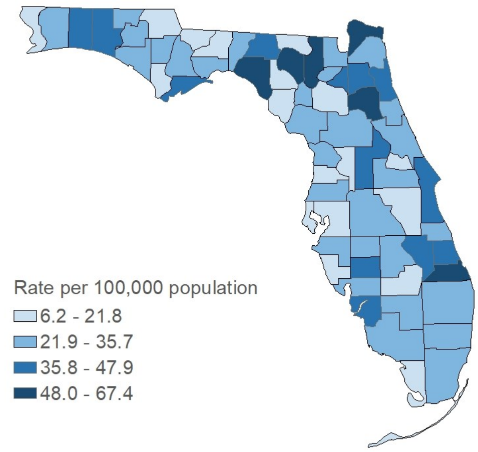


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Salmonellosis cases were missing 7.8% of ethnicity data in 2019 and 6.3% of race data in 2019.

Salmonellosis

Summary	Number
Number of cases	7,099
Case Classification	**Number (Percent)**
Confirmed	6,235 (87.8)
Probable	864 (12.2)
Outcome	**Number (Percent)**
Hospitalized	1,810 (25.5)
Died	40 (0.6)
Sensitive Situation	**Number (Percent)**
Daycare	475 (6.7)
Health care	69 (1.0)
Food handler	59 (0.8)
Imported Status	**Number (Percent)**
Acquired in Florida	5,211 (97.0)
Acquired in the U.S., not Florida	41 (0.8)
Acquired outside the U.S.	121 (2.3)
Acquired location unknown	1,726
Outbreak Status	**Number (Percent)**
Sporadic	6,150 (92.5)
Outbreak-associated	497 (7.5)
Outbreak status unknown	452

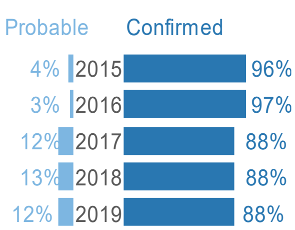
Salmonellosis occurs throughout the state. In 2019, the highest rates (per 100,000 population) were primarily in small, rural counties.



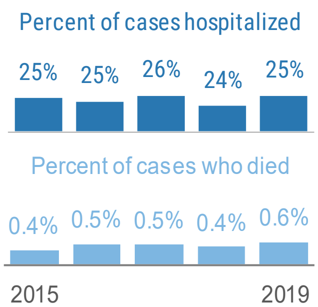
Rates are by county of residence for infections acquired in Florida (7,099 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

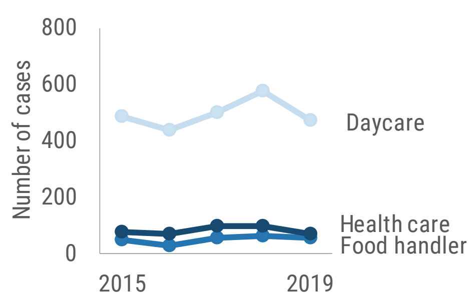
The case definition changed in 2017 to include CIDT in the probable case classification, resulting in more probable cases.



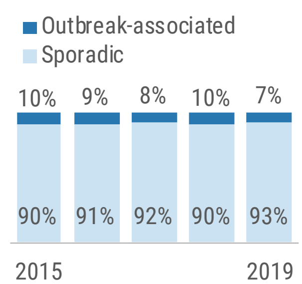
Approximately 25% of cases are hospitalized each year. Very few cases die.



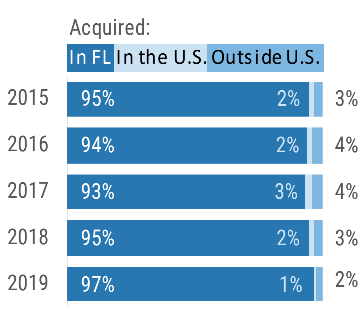
Cases in sensitive situations are monitored. The large number of cases in daycares reflects the age distribution of cases.



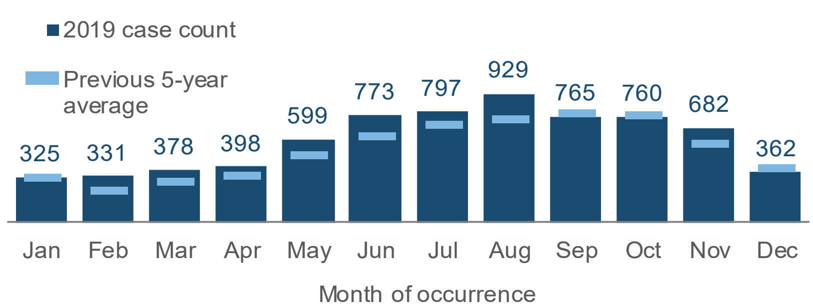
Most cases were sporadic; less than 11% are outbreak-associated and often reflect household clusters.



***Salmonella* infections were primarily acquired in Florida;** a small number of infections were imported from other states and countries.



Salmonellosis occurred throughout 2019, but has a strong seasonal pattern with cases peaking late summer to early fall, which is consistent with past years. The largest number of cases was reported in August in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection

Key Points

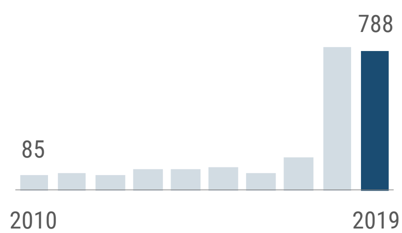
STEC infection is a common cause of diarrheal illness in the U.S., resulting in an estimated 265,000 illnesses each year. STEC infection incidence in Florida has generally increased over the past 10 years, likely due to advancements in laboratory techniques, resulting in improved identification of STEC infection. The dramatic increase in 2018 was due to a surveillance case definition change in January 2018 that expanded the probable case classification to include culture-independent diagnostic testing (CIDT).

Most outbreak-associated cases are reflective of household clusters; however, some cases are part of in-state or multistate outbreaks. In 2019, Florida identified 14 cases associated with 6 different multistate outbreaks. Of the 4 multistate outbreaks where a source was identified, 2 were linked to consumption of romaine lettuce, 1 to consumption of leafy greens and 1 to consumption of bison. In 2019, Florida identified 18 cases associated with 2 different in-state outbreaks. One outbreak was in a daycare and 1 outbreak was associated with a restaurant.

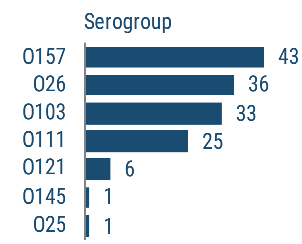
Disease Facts

- **Caused** by Shiga toxin-producing *Escherichia coli* (STEC) bacteria
- **Illness** is gastroenteritis (diarrhea, vomiting); less frequently, infection can lead to hemolytic uremic syndrome (HUS)
- **Transmitted** via fecal-oral route; including person to person, animal to person, foodborne and waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

STEC infection incidence increased dramatically in 2018 due to a case definition change. Cases decreased slightly in 2019.



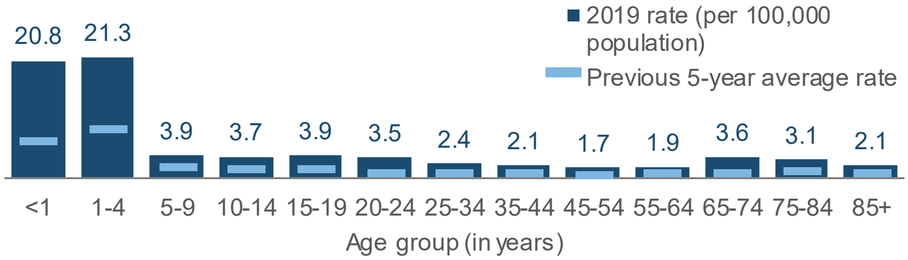
Serogroup O157 and the top six non-O157 serogroups were the cause of 48% of all confirmed STEC infections in 2019.



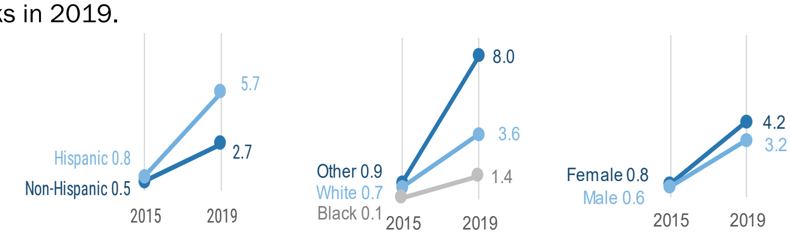
Disease Trends

Summary			
Number of cases			788
Rate (per 100,000 population)			3.7
Change from 5-year average rate			+183.7%
Age (in Years)			
Mean			29
Median			22
Min-max			0 - 95
Gender	**Number**	**(Percent)**	**Rate**
Female	457	(58.1)	4.2
Male	329	(41.9)	3.2
Unknown gender	2		
Race	**Number**	**(Percent)**	**Rate**
White	594	(80.2)	3.6
Black	49	(6.6)	1.4
Other	98	(13.2)	8.0
Unknown race	47		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	425	(57.4)	2.7
Hispanic	316	(42.6)	5.7
Unknown ethnicity	47		

The STEC infection rate (per 100,000 population) was highest in children 1 to 4 years old followed by infants <1 year old. Children <5 years old are particularly vulnerable to STEC infection and are at highest risk of developing HUS. Two (50%) of the 4 HUS cases reported in 2019 were in children ≤5 years old.



The STEC infection rate (per 100,000 population) increased in all demographics from 2015 to 2019, driven primarily by the dramatic increase in cases in 2018. The rates were similar by gender in 2019, but higher in Hispanics than non-Hispanics. The rate was notably higher in other races compared to whites and blacks in 2019.

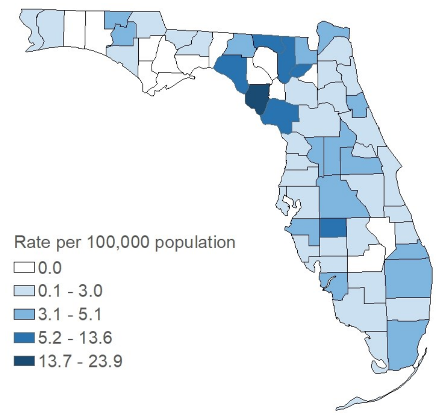


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. STEC infection cases were missing 9.6% of ethnicity data in 2015, 8.9% of race data in 2015, 6.0% of ethnicity data in 2019 and 6.0% of race data in 2019.

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection

Summary	Number
Number of cases	788
Case Classification	**Number (Percent)**
Confirmed	304 (38.6)
Probable	484 (61.4)
Outcome	**Number (Percent)**
Hospitalized	172 (21.8)
Died	2 (0.3)
Sensitive Situation	**Number (Percent)**
Daycare	81 (10.3)
Health care	15 (1.9)
Food handler	18 (2.3)
Imported Status	**Number (Percent)**
Acquired in Florida	544 (85.1)
Acquired in the U.S., not Florida	17 (2.7)
Acquired outside the U.S.	78 (12.2)
Acquired location unknown	149
Outbreak Status	**Number (Percent)**
Sporadic	562 (75.7)
Outbreak-associated	180 (24.3)
Outbreak status unknown	46

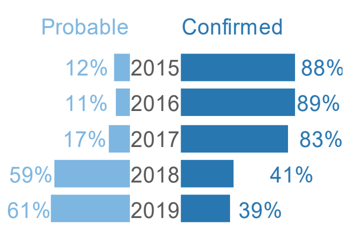
STEC infection cases occurred in most areas of the state, though less commonly in the Florida Panhandle in 2019. The highest rates (per 100,000 population) were primarily in small, rural counties in 2019.



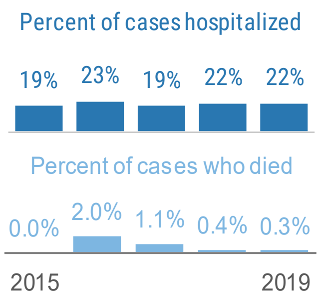
Rates are by county of residence for infections acquired in Florida (788 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

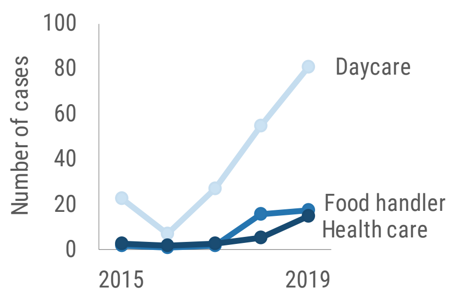
The case definition changed in 2018 to include CIDT in the probable case classification, resulting in more probable cases.



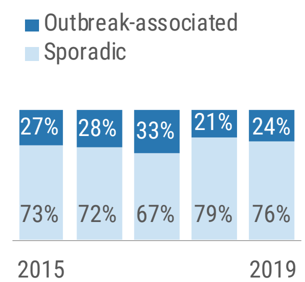
Between 19% and 23% of cases are hospitalized each year. Very few cases die (more likely in cases who develop HUS).



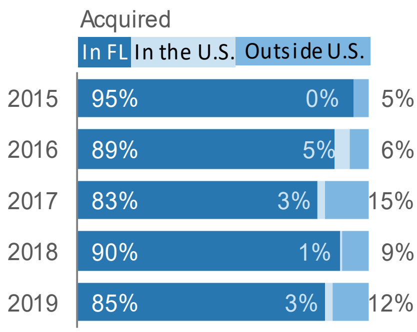
Outbreaks in daycares in 2015, 2017, 2018 and 2019 contributed to higher numbers of cases in that setting.



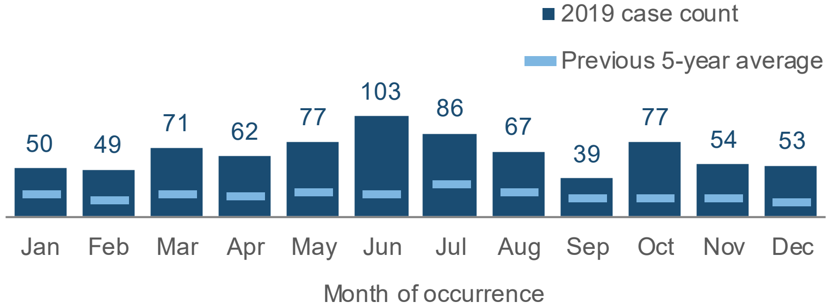
Less than 35% of cases are outbreak-associated each year.



Most STEC infections are acquired in Florida; some infections are acquired in other states or countries.



There is no distinct seasonality to STEC infection cases in Florida. Cases occur at moderate levels year-round. More cases occurred in June and July in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Shigellosis

Key Points

Shigellosis is a common cause of diarrheal illness in the U.S., resulting in an estimated 450,000 illnesses each year*. Shigellosis has a cyclic temporal pattern with large community-wide outbreaks, frequently involving daycare centers, occurring every 3 to 5 years. Incidence is consistently highest in children <10 years old.

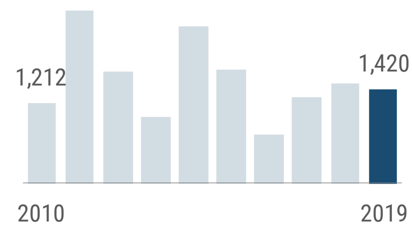
The use of culture-independent diagnostic testing (CIDT) to identify *Shigella* has increased in recent years. Florida changed the shigellosis surveillance case definition in January 2017 to include CIDT in the criteria for probable cases, contributing to the increase in cases reported in 2017.

Antimicrobial resistance in *Shigella* is a growing concern. In the U.S., most *Shigella* is already resistant to ampicillin and trimethoprim/sulfamethoxazole. Health care providers rely on alternative drugs such as ciprofloxacin and azithromycin to treat *Shigella* infections when needed, though treatment of shigellosis with antibiotics is not routinely recommended.

Disease Facts

- **Caused** by *Shigella* bacteria
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, foodborne and waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., ill daycare attendee), monitor incidence over time, estimate burden of illness

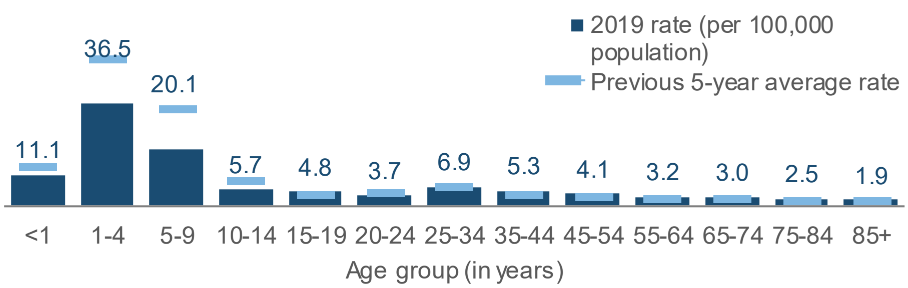
Shigellosis incidence decreased in 2019, consistent with historic cyclical patterns; recent peaks occurred in 2011 and 2014.



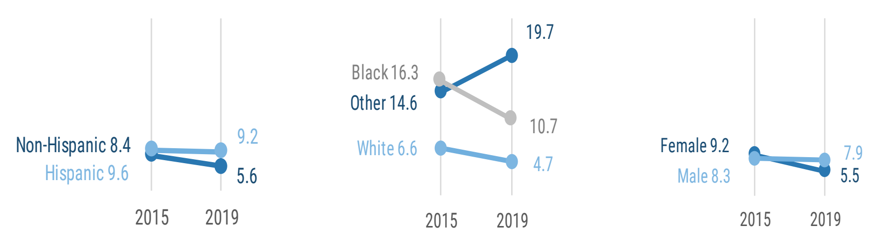
Disease Trends

Summary			
Number of cases			1,420
Rate (per 100,000 population)			6.7
Change from 5-year average rate			-12.7%
Age (in Years)			
Mean			25
Median			19
Min-max			0 - 101
Gender	**Number**	**(Percent)**	**Rate**
Female	595	(42.0)	5.5
Male	823	(58.0)	7.9
Unknown gender	2		
Race	**Number**	**(Percent)**	**Rate**
White	769	(55.1)	4.7
Black	385	(27.6)	10.7
Other	242	(17.3)	19.7
Unknown race	24		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	875	(62.9)	5.6
Hispanic	516	(37.1)	9.2
Unknown ethnicity	29		

The shigellosis rate (per 100,000 population) is highest in children 1 to 4 years old, followed by children 5 to 9 years old then infants <1 year old.



The shigellosis rate (per 100,000 population) decreased in all demographics from 2015 to 2019, except in other races where it increased. The rates were slightly higher in males and Hispanics compared to females and non-Hispanics in 2019. The rate was highest in other races, followed by blacks then whites in 2019.

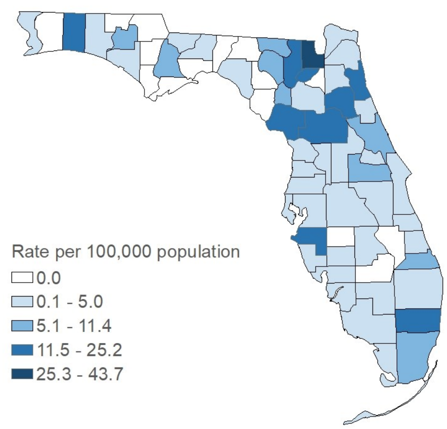


*For more information, visit CDC's Shigellosis webpage at https://www.cdc.gov/shigella/general-information.html

Shigellosis

Summary	Number
Number of cases	1,420
Case Classification	**Number (Percent)**
Confirmed	638 (44.9)
Probable	782 (55.1)
Outcome	**Number (Percent)**
Hospitalized	315 (22.2)
Died	5 (0.4)
Sensitive Situation	**Number (Percent)**
Daycare	200 (14.1)
Health care	22 (1.5)
Food handler	31 (2.2)
Imported Status	**Number (Percent)**
Acquired in Florida	1,192 (91.3)
Acquired in the U.S., not Florida	12 (0.9)
Acquired outside the U.S.	102 (7.8)
Acquired location unknown	114
Outbreak Status	**Number (Percent)**
Sporadic	1,003 (71.1)
Outbreak-associated	407 (28.9)
Outbreak status unknown	10

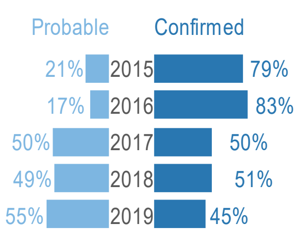
Shigellosis cases occurred in most areas of the state, though less commonly in the Florida Panhandle in 2019. The highest rates (per 100,000 population) were in northern and southeast Florida. Geographic distribution varies by year, often driven by clusters in counties experiencing large outbreaks.



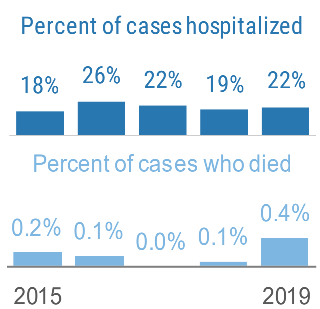
Rates are by county of residence for infections acquired in Florida (1,420 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

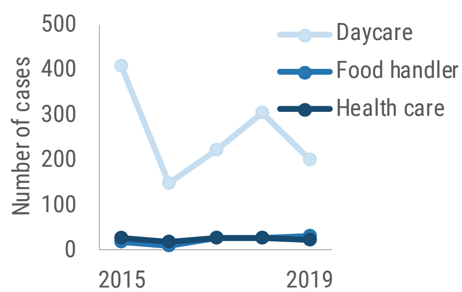
The case definition changed in 2017 to include CIDT in the probable case classification, resulting in more probable cases.



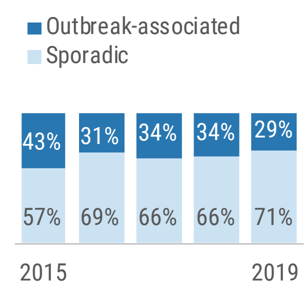
Between 18% and 26% of cases are hospitalized each year. Deaths are rare.



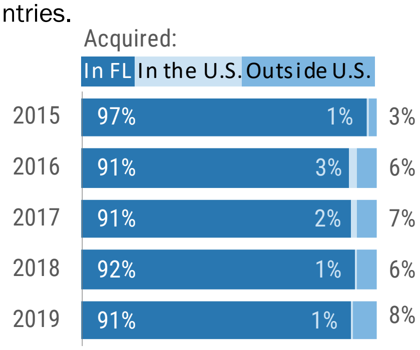
Person-to-person outbreaks are common in daycare settings. In 2019, 26% of outbreak-associated cases occurred in daycare settings.



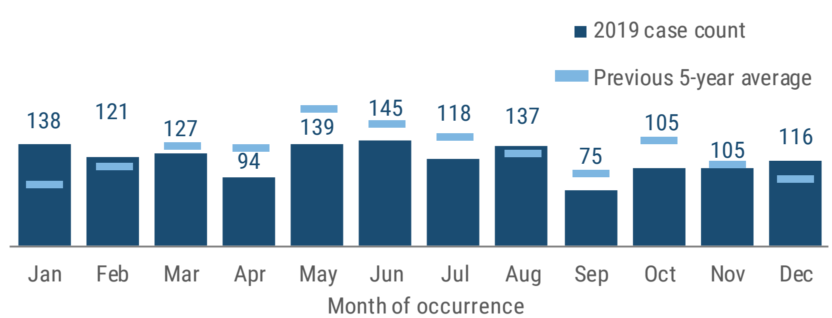
Outbreaks are common; as few as 10 *Shigella* bacteria can result in illness, making it easy to spread from person to person.



Most *Shigella* infections are acquired in Florida; a small number of infections are acquired from other states and countries.



Shigellosis occurred throughout 2019, with activity peaking during the summer. The largest number of cases was reported in June in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Syphilis (Excluding Congenital)

Key Points

Syphilis is separated into early syphilis (i.e., syphilis of less than one year duration, which includes latent and infectious stages) and late or late latent syphilis (i.e., syphilis diagnosed more than one year after infection). Syphilis creates an open sore at the point of infection, called a primary lesion, during the infectious stage. A primary lesion can work as a conduit for HIV transmission and puts either the person displaying the lesion or their sexual partners at risk of HIV infection if either partner is living with HIV. In 2019, 45% of infectious syphilis cases were reported in individuals who were known to be coinfected with HIV, which was a 12% increase from 2018.

Disease Facts

Caused by *Treponema pallidum* bacteria

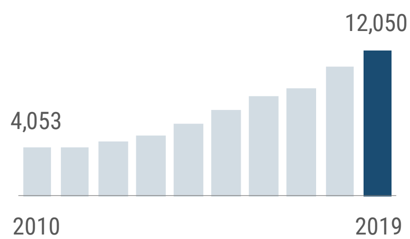
Illness includes sores on genitals, anus or mouth; rash on the body

Transmitted sexually via anal, vaginal or oral sex and sometimes from mother to infant during pregnancy or delivery

Under surveillance to implement interventions immediately for every case, monitor incidence over time, estimate burden of illness, target prevention education programs, evaluate treatment and prevention programs

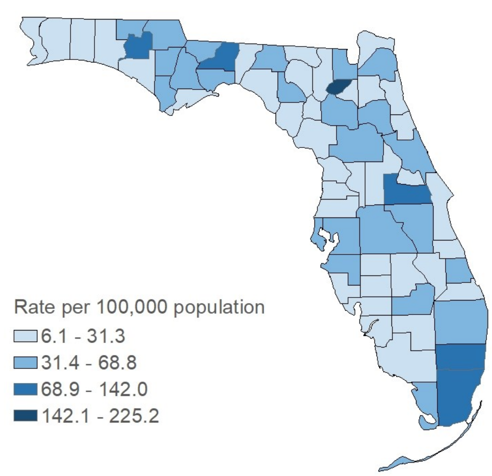
Disease Trends

In 2019, syphilis incidence continued to increase both in Florida and nationally.



Summary		
Number of cases		12,050
Rate (per 100,000 population)		56.7
Change from 5-year average rate		+41.0%
Age (in Years)		
Mean		37
Median		34
Min-max		13 - 92
Gender	**Number (Percent)**	**Rate**
Female	2,176 (18.1)	20.0
Male	9,873 (81.9)	95.0
Unknown gender	1	
Race	**Number (Percent)**	**Rate**
White	5,965 (52.3)	36.3
Black	4,092 (35.9)	113.6
Other	1,351 (11.8)	110.3
Unknown race	642	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	7,432 (67.1)	47.4
Hispanic	3,647 (32.9)	65.3
Unknown ethnicity	971	

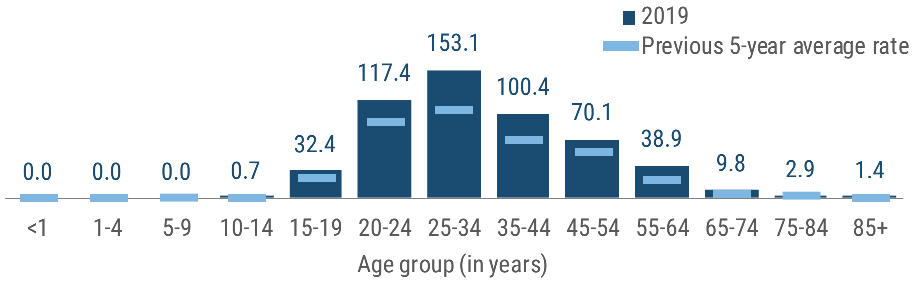
Syphilis occurs throughout the state. The highest rates (per 100,000 population) in 2019 were in large counties, including Miami-Dade (113.3), Broward (105.3) and Orange (84.4) as well as in small rural counties, including Union (225.2 based on 36 cases), Gadsden (62.6) and Washington (142.0).



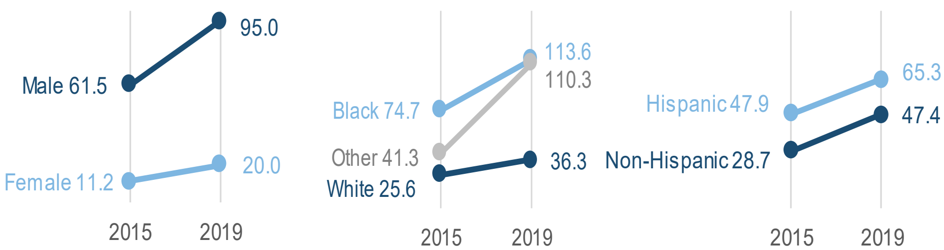
Rates are by county of residence, regardless of where infection was acquired (12,050 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

Syphilis (Excluding Congenital)

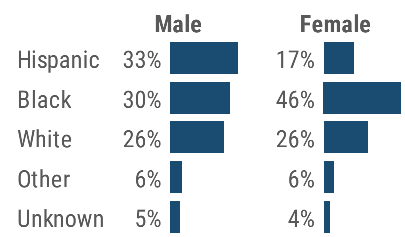
The syphilis rate (per 100,000 population) is highest in adults 20 to 54 years old and peaks in adults 25 to 34 years old.



The syphilis rate (per 100,000 population) increased in all gender, race and ethnic groups from 2015 to 2019. The increase was most notable in males and in other races. The rates are highest in men, blacks and Hispanics.



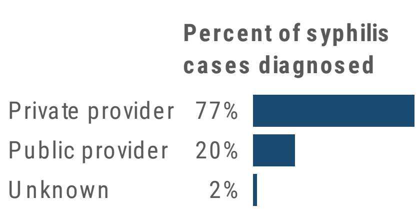
Race and ethnicity differed between genders. Black females and Hispanic males were at increased risk for syphilis.

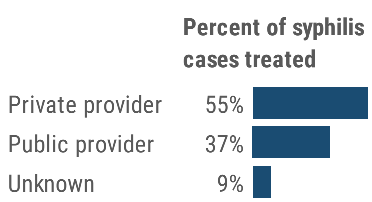


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Syphilis cases (excluding congenital) were missing 6.8% of ethnicity data in 2015.

In 2019, most people (77%) went to their own private provider for sexually transmitted disease testing. However, the recommended treatment for syphilis, per the Centers for Disease Control and Prevention, is parenterally administered penicillin G benzathine. As many providers do not keep the standard benzathine penicillin product Bicillin on hand, they often refer their patients to county health departments for treatment.

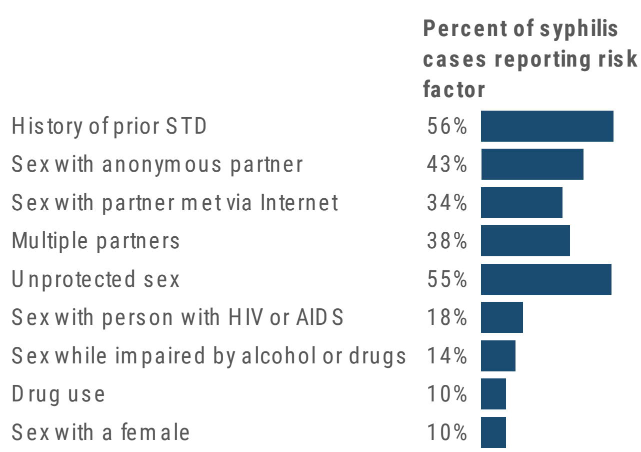
In 2019, 37% of syphilis cases were treated by public providers.





Men who have sex with men (MSM) are identified through risk behavior information collected during case investigations. The true incidence of the MSM risk is difficult to estimate due to many factors. In 2019, most (69%) syphilis cases in males were in men who reported having sex with other men.

MSM with syphilis who were interviewed in 2019 (6,709 men) disclosed an array of risk behaviors, which included sex with anonymous partners and sex with females.



Tuberculosis

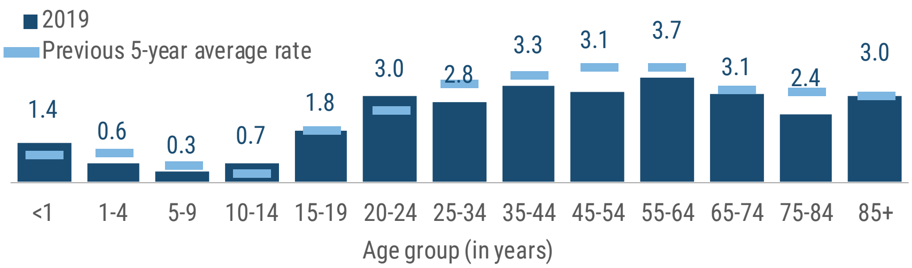
Key Points

Tuberculosis (TB) continues to be a public health threat in Florida. Incidence has generally declined over the past decade, though small fluctuations can occur year to year. Slight increases in 2015, 2016 and 2018 were observed after historic lows in 2014 and 2017. In 2019, cases decreased by 6%. Medically underserved and low-income populations, including racial and ethnic minorities, have high rates of TB. In Florida, TB incidence is much higher in men than women. The rate per 100,000 population in blacks in Florida was more than three times as high as the rate in whites in 2019.

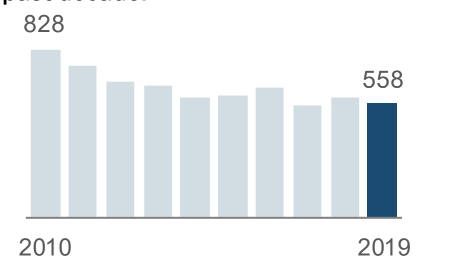
Disease Facts

- **Caused** by *Mycobacterium tuberculosis* bacteria
- **Illness** is usually respiratory (severe cough, pain in chest), but can affect all parts of the body including kidneys, spine or brain
- **Transmitted** via inhalation of aerosolized droplets from people with active tuberculosis
- **Under surveillance** to implement effective interventions immediately for every case to prevent further transmission, monitor directly observed therapy prevention programs, evaluate trends

The TB rate (per 100,000 population) is low in children and ranged from 2.4 to 3.7 in adults 25 to 84 years old.



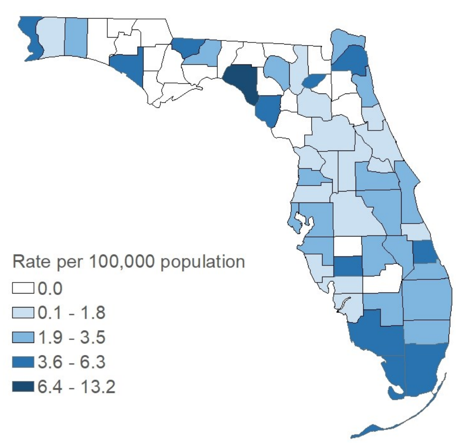
Despite a slight increase in 2018, TB incidence has generally decreased over the past decade.



Disease Trends

Summary			
Number of cases			558
Rate (per 100,000 population)			2.6
Change from 5-year average rate			-11.5%
Age (in Years)			
Mean			48
Median			50
Min-max			0 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	196	(35.1)	1.8
Male	362	(64.9)	3.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	269	(48.2)	1.6
Black	210	(37.6)	5.8
Other	79	(14.2)	6.4
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	377	(67.6)	2.4
Hispanic	181	(32.4)	3.2
Unknown ethnicity	0		

TB occurred in most parts of the state in 2019, though was less common in the Panhandle. While the highest rates (per 100,000 population) tended to be in small, rural counties, over 31% of all TB cases were in Miami-Dade (118 cases) and Broward (56 cases) counties.

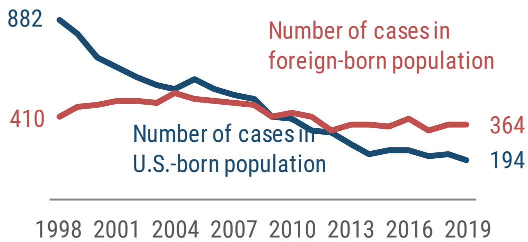


Rates are by county of residence, regardless of where infection was acquired (558 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

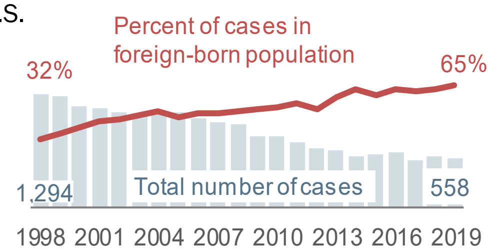
Tuberculosis

The rate of TB in the U.S.-born population in Florida has been decreasing faster than the rate among the foreign-born population. Being born in a country where TB is prevalent is one of the most significant risk factors for developing TB and is a focus for TB prevention and control efforts in Florida. In 2019, 65% of all TB cases in Florida were in the foreign-born population. The most common countries of origin in 2019 included Haiti, Mexico, the Philippines, Vietnam, Guatemala, Colombia and Cuba, accounting for 224 (61%) of 364 cases identified in the foreign-born population.

In 1998, there were twice as many TB cases in the U.S.-born population than the foreign-born population. In 2019, 65% more cases were in foreign-born people than U.S.-born.

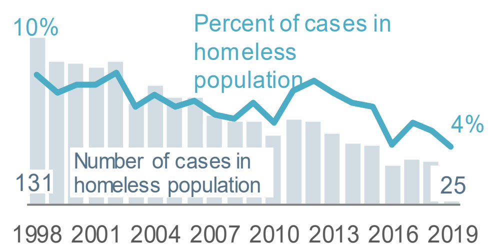


As the number of TB cases has declined in Florida, the percent of those cases in the foreign-born population has increased. In 2019, 65% of cases were in people born outside the U.S.

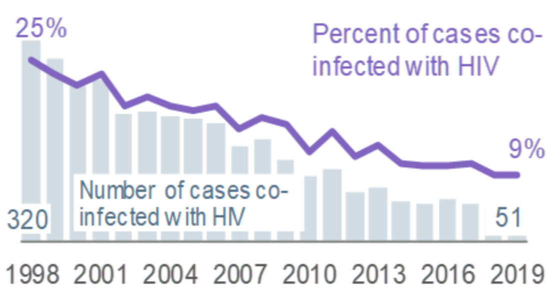


People experiencing homelessness are at increased risk for disease and are a focus for TB prevention and control efforts in Florida. Since 1998, the total number of TB cases among the homeless population in Florida has decreased by over 50%; however, in the same time period, the percent of people with TB who are homeless remained relatively stable (8% to 10%) until 2012. Since 2012, the percent of people with TB who are homeless decreased from 9.6% to 4% in 2019.

Despite a slight increase in 2017, the number and percent of cases among the homeless population has steadily decreased since 2012.



In 2019, 9% of TB cases were co-infected with HIV. This is a slight decrease from 2017 and is consistent with the overall decreasing trend.



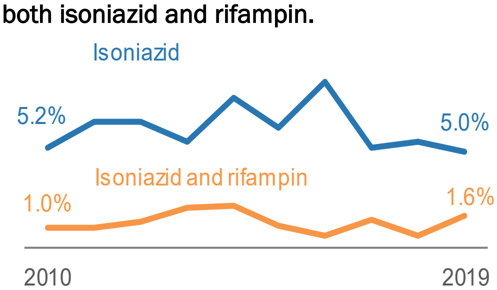
Untreated HIV infection remains the biggest risk factor for developing active TB disease following infection with TB and is a focus for TB prevention and control efforts in Florida. TB and HIV co-infection has been declining modestly but steadily over time in Florida. In the last three years the decline has leveled off at around 10%.

Drug resistance arises due to improper use of antibiotics in the chemotherapy of drug-susceptible TB patients. Multidrug-resistant TB is caused by *M. tuberculosis* bacteria that are resistant to at least isoniazid and rifampin, the two most potent TB drugs. In 2019, 437 TB cases were tested in Florida for resistance to isoniazid and rifampin. Over the past 10 years:

- Resistance to isoniazid alone ranged from 5% to 9%.
- Resistance to isoniazid and rifampin ranged from 0.6 to 2.2%.

In 2019, resistance to isoniazid alone decreased and resistance to isoniazid and rifampin increased, but were within the 10-year ranges.

In 2019, 5% of tested cases were resistant to isoniazid alone and 1.6% were resistant to both isoniazid and rifampin.



Varicella (Chickenpox)

Key Points

Varicella is a childhood disease that became reportable in Florida in late 2006. A vaccine was first released in the U.S. in 1995, and a 2-dose schedule was recommended in 2008 by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices. Beginning with the 2008 to 2009 school year, children entering kindergarten in Florida were required to receive two doses of varicella vaccine per Florida Administrative Code Rule 64D-3.046. Due to effective vaccination programs, there was a steady decrease in incidence in Florida from 2008 to 2014. Incidence increased slightly in 2015 and has remained elevated.

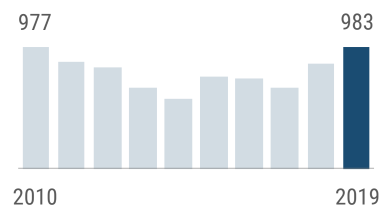
Disease Facts

- **Caused** by varicella-zoster virus (VZV)
- **Illness** commonly includes vesicular rash, itching, tiredness and fever
- **Transmitted** person to person by contact with or inhalation of aerosolized infective respiratory tract droplets or secretions, or direct contact with VZV vesicular lesions
- **Under surveillance** to identify and control outbreaks, monitor effectiveness of immunization programs and vaccines, monitor trends and severe outcomes

The rate of varicella remained highest among infants <1 year old who are too young to be vaccinated. As a result, vaccination of siblings and caregivers is particularly important to protect this group.

The number of outbreak-associated cases decreased from 256 (30.8%) in 2018 to 235 (24.4%) in 2019. Of the 235 outbreak-associated cases identified, most were small household clusters. Two outbreaks (defined as 5 or more cases linked in a single setting) were identified in 2019, including 1 outbreak in a daycare and 1 outbreak in a shelter. Counties with ≥10 outbreak-associated cases included Miami-Dade (55), Broward (30) and Palm Beach (20).

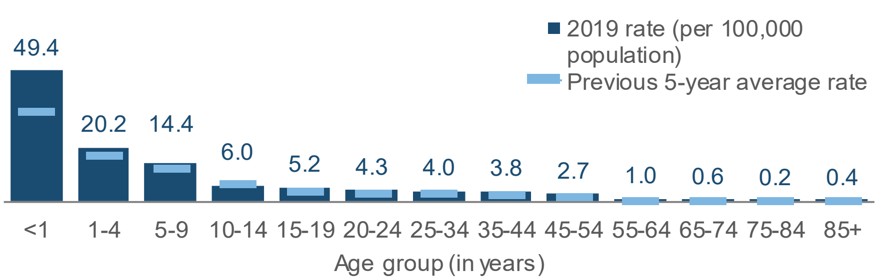
Varicella incidence increased in 2019.



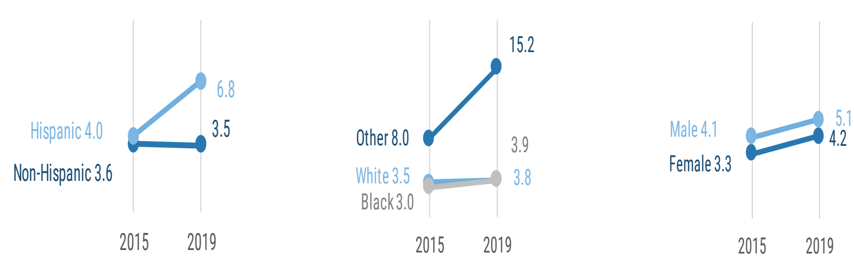
Disease Trends

Summary			
Number of cases			983
Rate (per 100,000 population)			4.6
Change from 5-year average rate			+31.9%
Age (in Years)			
Mean			19
Median			11
Min-max			0 - 95
Gender	**Number**	**(Percent)**	**Rate**
Female	455	(46.4)	4.2
Male	526	(53.6)	5.1
Unknown gender	2		
Race	**Number**	**(Percent)**	**Rate**
White	622	(65.7)	3.8
Black	139	(14.7)	3.9
Other	186	(19.6)	15.2
Unknown race	36		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	550	(59.1)	3.5
Hispanic	380	(40.9)	6.8
Unknown ethnicity	53		

The varicella rate (per 100,000 population) remained highest in infants <1 year old in 2019, exceeding the previous five-year average.



The varicella rate (per 100,000 population) is relatively similar among males and females. It is also similar among whites and blacks, and since 2015, the rate in other races has increased notably. The rate in Hispanics has also increased since 2015.

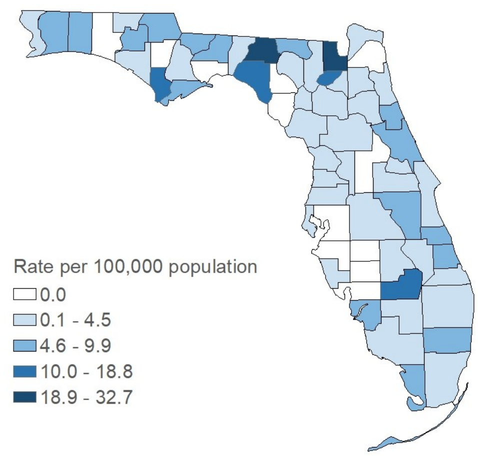


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Varicella cases were missing 5.4% of ethnicity data in 2019.

Varicella (Chickenpox)

Summary	Number
Number of cases	983
Case Classification	**Number (Percent)**
Confirmed	350 (35.6)
Probable	633 (64.4)
Outcome	**Number (Percent)**
Hospitalized	73 (7.4)
Died	1 (0.1)
Imported Status	**Number (Percent)**
Acquired in Florida	856 (95.7)
Acquired in the U.S., not Florida	9 (1.0)
Acquired outside the U.S.	29 (3.2)
Acquired location unknown	89
Outbreak Status	**Number (Percent)**
Sporadic	727 (75.6)
Outbreak-associated	235 (24.4)
Outbreak status unknown	21

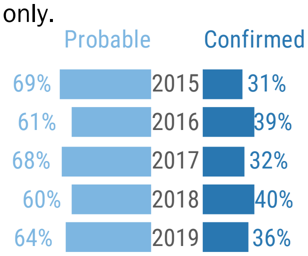
Varicella occurred throughout the state in 2019. Rates (per 100,000 population) varied regardless of county population.



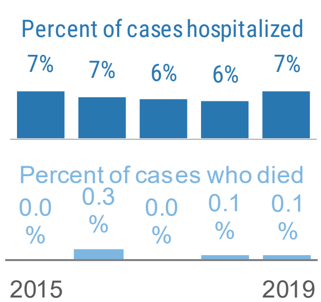
Rates are by county of residence for infections acquired in Florida (983 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

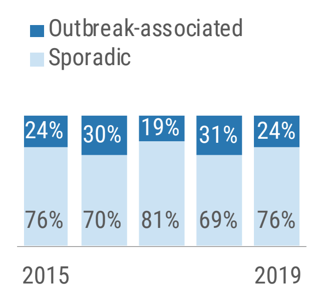
Just over one-third of cases are confirmed. Most varicella cases are classified as probable based on symptoms only.



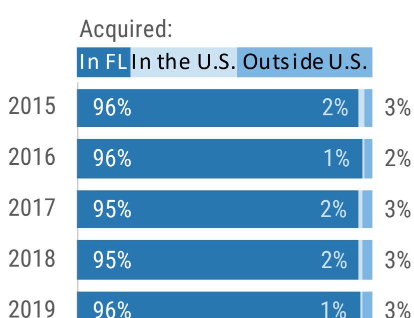
Most varicella cases do not require hospitalization; deaths are very rare.



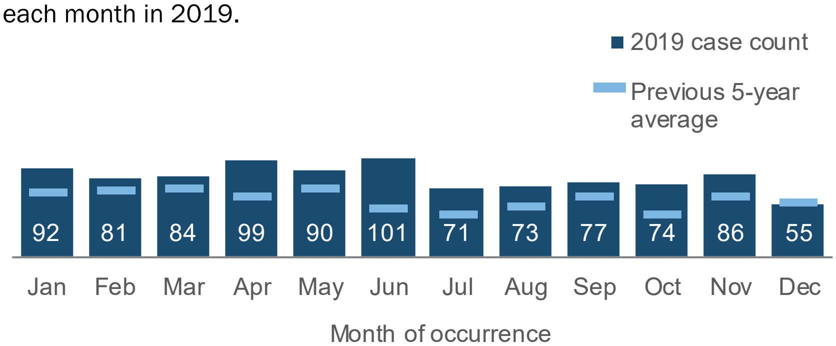
Less than one-third of cases are outbreak-associated. In 2019, 24% of cases were outbreak-associated.



Most VZV infections are acquired in Florida. Each year, a few cases are imported from other states and countries.



Due to robust vaccination programs, there is no longer discernable seasonality for varicella in Florida. Between 55 and 101 cases occurred each month in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Vibriosis (Excluding Cholera)

Key Points

Vibrio species are endemic in Florida's seawater. Incidence is typically higher in the summer when exposure to seawater is more common and warmer water is conducive to bacterial growth. Incidence increased notably in 2017, largely due to a change in the probable case definition, which expanded in 2017 to include culture-independent diagnostic testing (CIDT).

Vibrio vulnificus infections typically occur in people who have chronic kidney or liver disease, a history of alcoholism or are immunocompromised. Of the 27 *V. vulnificus* cases in 2019, 24 (88.9%) had underlying medical conditions. *V. vulnificus* can cause particularly severe disease, with about 50% of bloodstream infections being fatal.

Of the 27 cases due to *V. vulnificus* in 2019, 24 (88.9%) were hospitalized and 2 (7.4%) died, accounting for 2 of the 7 total vibriosis deaths. The remaining 5 deaths were associated with infection with *V. cholerae* type non-O1 (2 cases), *V. alginolyticus* (1 case), *V. fluvialis* (1 case) and an unidentified *Vibrio* species (1 case). Of the 7 people who died from vibriosis, 3 reported having a wound with seawater exposure, 1 had multiple exposures and 3 had other or unknown exposures.

Disease Facts

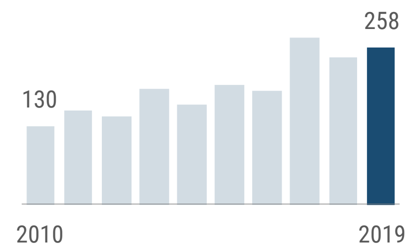
Caused by bacteria in the family Vibrionaceae

Illness can be gastroenteritis (diarrhea, vomiting), bacteremia, septicemia, wound infection, cellulitis; other common symptoms include low-grade fever, headache and chills

Transmitted via food, water, wound infections from direct contact with brackish water or salt water where the bacteria naturally live or direct contact with marine wildlife

Under surveillance to identify sources of transmission (e.g., shellfish collection area) and mitigate source, monitor incidence over time, estimate burden of illness

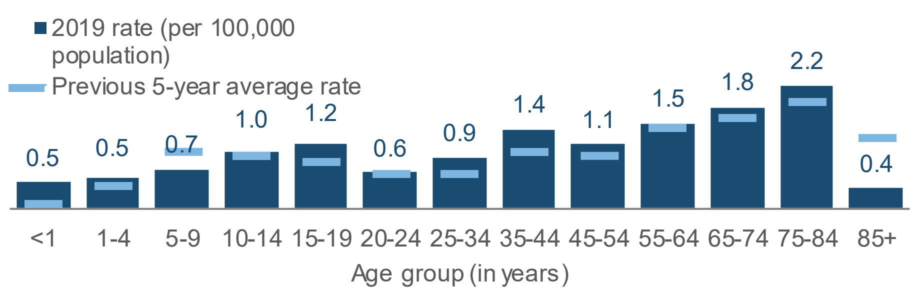
Vibriosis incidence increased slightly in 2019.



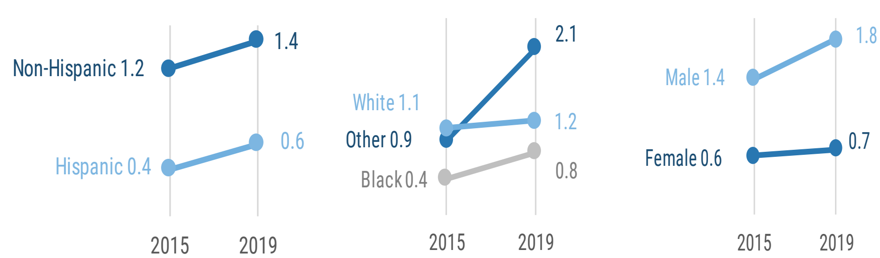
Disease Trends

Summary			
Number of cases			258
Rate (per 100,000 population)			1.2
Change from 5-year average rate			+15.6%
Age (in Years)			
Mean			48
Median			52
Min-max			0 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	72	(27.9)	0.7
Male	186	(72.1)	1.8
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	196	(78.4)	1.2
Black	28	(11.2)	0.8
Other	26	(10.4)	2.1
Unknown race	8		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	217	(87.1)	1.4
Hispanic	32	(12.9)	0.6
Unknown ethnicity	9		

The vibriosis rate (per 100,000 population) is usually highest in adults 55 to 84 years old. In 2019, the rate was highest in adults 75 to 84 years old.



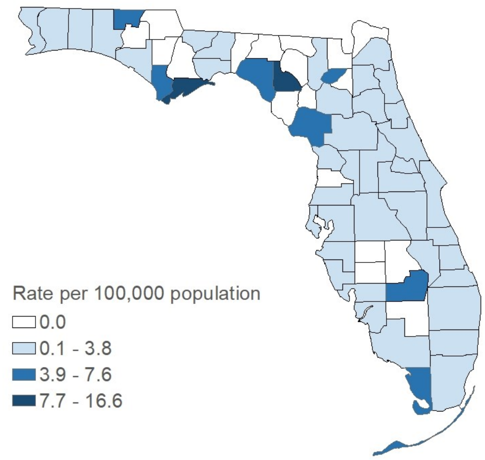
Vibriosis rates (per 100,000 population) increased in all gender, race and ethnicity groups from 2015 to 2019. The rate is consistently higher in males, whites and non-Hispanics.



Vibriosis (Excluding Cholera)

Summary	Number
Number of cases	258
Case Classification	**Number (Percent)**
Confirmed	188 (72.9)
Probable	70 (27.1)
Outcome	**Number (Percent)**
Hospitalized	113 (43.8)
Died	7 (2.7)
Imported Status	**Number (Percent)**
Acquired in Florida	225 (91.5)
Acquired in the U.S., not Florida	9 (3.7)
Acquired outside the U.S.	12 (4.9)
Acquired location unknown	12
Outbreak Status	**Number (Percent)**
Sporadic	250 (96.9)
Outbreak-associated	8 (3.1)
Outbreak status unknown	0

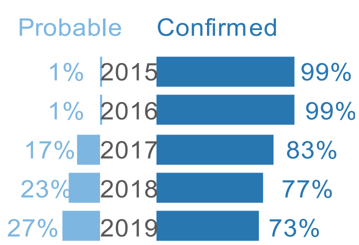
Vibriosis occurred in most parts of the state in 2019. The rates (per 100,000 population) varied across the state with some of the highest rates in low-population counties.



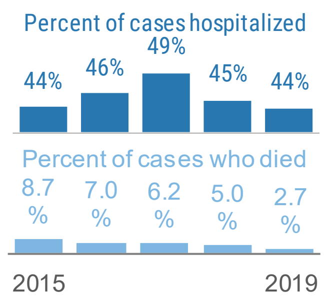
Rates are by county of residence for infections acquired in Florida (258 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

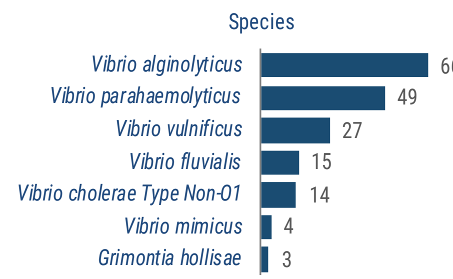
The case definition changed in 2017 to include CIDT in the probable case classification, resulting in more probable cases.



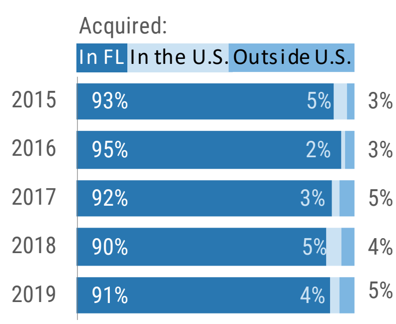
Between 40% and 50% of cases are hospitalized; deaths do occur. Two people infected with *V. vulnificus* died in 2019.



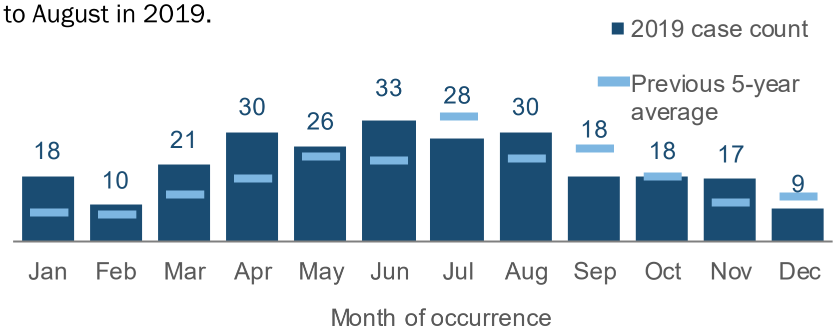
In 2019, the most commonly reported *Vibrio* species were *V. alginolyticus*, *V. parahaemolyticus* and *V. vulnificus*. The number of other *Vibrio* infections was largely due to CIDT, which cannot differentiate between species.



Most *Vibrio* infections are acquired in Florida. In 2019, 21 infections were acquired in other states or countries.



Vibriosis occurs throughout the year in Florida, with activity typically peaking during the summer months. Over 26 cases occurred each month from April to August in 2019.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Zika Virus Disease and Infection

Key Points

Zika emerged in Brazil in 2015, followed by local transmission throughout the Americas and the Caribbean. In 2016, over 1,400 cases were reported in Florida, with most being travel-associated; however, 285 cases were locally acquired. Active transmission of Zika virus was identified in four areas in Miami-Dade County in 2016. Three-hundred cases were locally acquired and linked to exposure in 2016.

Unlike dengue fever, infection with Zika virus leads to lifetime immunity, which is believed to be the primary reason for the substantial decrease in incidence in endemic countries and subsequent decreased risk for introduction in non-endemic areas such as Florida. As a result, only 2 locally acquired cases were identified with symptom onset in September 2017.

Unlike other diseases and conditions in this report, non-Florida residents are included in Zika case counts. Non-Florida residents made up about 7% of cases reported from 2016 to 2017, compared to 18% of cases in 2018, and returning to about 7% of cases in 2019. Only 21% (299) of cases were pregnant in 2016, compared to much larger proportions in 2017 (136, 49%), 2018 (82, 71%) and 2019 (28, 64%). This increase was primarily related to the absence of local transmission and significant decrease in regional outbreaks. It is important to note that prolonged Zika Immunoglobulin M (IgM) antibody detection of 2 years or longer is possible as are false positive IgM antibody results. As a result, since November 2019, CDC has recommended utilizing Zika nucleic acid amplification rather than antibody testing.

Disease Facts

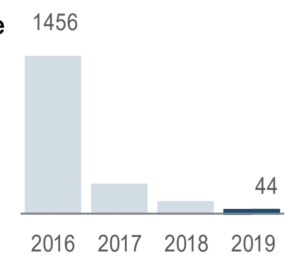
Caused by Zika virus

Illness is frequently asymptomatic; common symptoms include fever, rash, headache, joint pain, conjunctivitis and muscle pain; microcephaly and other severe birth defects may occur when mother is infected during pregnancy; post-infection Guillain-Barré syndrome

Transmitted via bite of infective mosquito, blood transfusions, sex with infected partner or from mother to child during pregnancy

Under surveillance to identify individual cases and implement control measures to prevent local transmission, monitor incidence over time, estimate burden of illness, identify infants born to infected mothers for follow-up

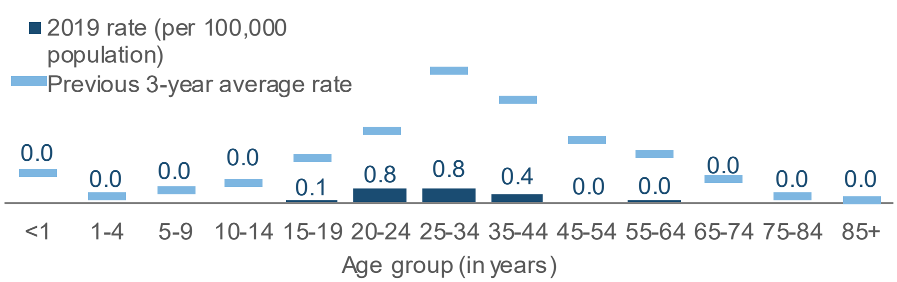
The incidence of Zika virus disease and infection has decreased drastically since 2016.



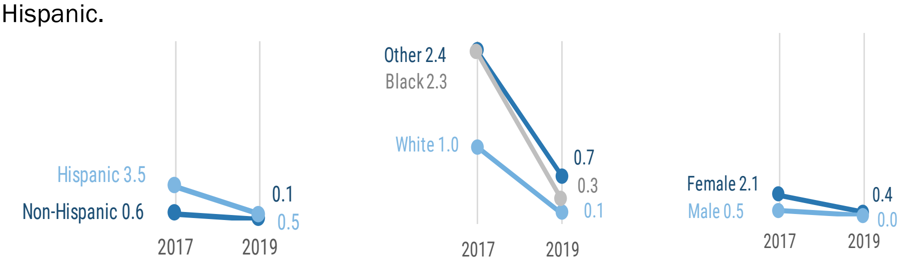
Disease Trends

Summary			
Number of cases			44
Rate (per 100,000 population)			0.2
Change from 3-year average incidence			-93.2%
Age (in Years)			
Mean			30
Median			29
Min-max			17 - 63
Gender	**Number**	**(Percent)**	**Rate**
Female	43	(97.7)	0.4
Male	1	(2.3)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	24	(54.5)	0.1
Black	12	(27.3)	NA
Other	8	(18.2)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	14	(31.8)	NA
Hispanic	30	(68.2)	0.5
Unknown ethnicity	0		

The rate of Zika virus disease and infection (per 100,000 population) is highest in adults 20 to 34 years old. Due to the possibility of adverse pregnancy and fetal outcomes associated with Zika virus infection during pregnancy, testing is focused on pregnant women.



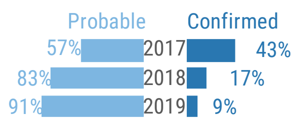
The rates of Zika virus disease and infection (per 100,000 population) vary by gender, race and ethnicity. In 2019, the majority of cases were female, white and Hispanic.



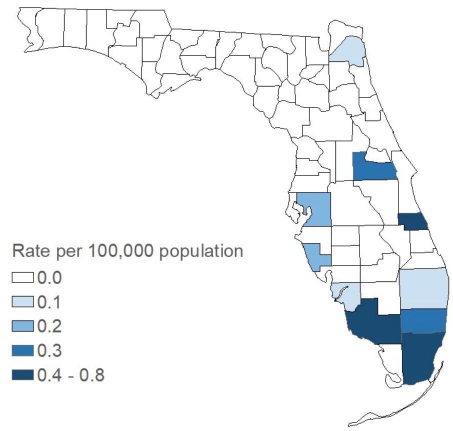
Zika Virus Disease and Infection

Summary	Number
Number of cases	44
Case Classification	**Number (Percent)**
Confirmed	4 (9.1)
Probable	40 (90.9)
Type	**Number (Percent)**
Non-congenital	44 (100)
Congenital	0 (0)
Residence Status	**Number (Percent)**
Florida resident	41 (93.2)
Non-Florida resident	3 (6.8)
Special Populations	**Number (Percent)**
Pregnant women	28 (63.6)
Symptom Status	**Number (Percent)**
Symptomatic	0 (0)
Asymptomatic	44 (100)

Very few cases met confirmatory case criteria in 2019; positive results were only from antibody testing rather than detection of Zika virus.



Imported Zika cases were more commonly reported in central and south Florida, with the highest rates (per 100,000 population) concentrated in south Florida counties where there are a higher proportion of residents born outside of the U.S. More than half of these cases were reported among Miami-Dade County residents.



Rates are by county of residence, regardless of where infection was acquired (44 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

Haiti and Cuba were the top two countries where infections were acquired in both 2018 and 2019.

Top 5 exposure locations for 2018

Country	Number	Percent
Haiti	43	37%
Cuba	22	19%
Venezuela	16	14%
Honduras	8	7%
Dominican Republic	4	3%

Top 5 exposure locations for 2019

Country	Number	Percent
Haiti	11	25%
Cuba	10	23%
Guatemala	5	11%
Honduras	4	9%
Venezuela	3	7%

All 2019 cases were in individuals without symptoms and the date of virus exposure cannot be definitively determined.

	2018		2019	
Imported Status	Number	Percent	Number	Percent
Travel-related	111	97%	41	93%
Undetermined (exposed in 2016)	2	2%	3	7%
Locally acquired (exposed in 2016)	0	0%	0	0%
Locally acquired (exposed in 2017)	0	0%	0	0%
Locally acquired (unknown exposure year)	1	1%	0	0%
Locally acquired (laboratory exposure)	1	1%	0	0%

Note: The undetermined category includes individuals who spent time in Miami-Dade County where local transmission was ongoing in 2016 and who spent time in countries or territories with widespread Zika virus transmission. The exact location of exposure was not confirmed for these individuals.

Due to the possibility of adverse pregnancy and fetal outcomes associated with Zika virus infection during pregnancy, outreach to pregnant women and their providers was a high priority for the Florida Department of Health. From 2016 to 2018, eight congenital Zika syndrome (CZS) cases and two healthy-appearing infants with Zika virus infection were reported. No CZS cases were identified in 2019. Six sexual transmission cases were reported from 2016 to 2017; however, none were reported in 2018 or 2019.

See Appendix III: Report Terminology for explanations of case classification, outcome and month of occurrence.

Section 2

Data Summaries for Reportable Diseases and Conditions—2020

Campylobacteriosis

Key Points

Campylobacteriosis is the most common bacterial cause of diarrheal illness in the U.S. The Centers for Disease Control and Prevention estimates that *Campylobacter* infection affects at least 1.5 million U.S. residents each year. While most cases are not part of recognized outbreaks, outbreaks in the U.S. have historically been associated with poultry, raw (unpasteurized) dairy products, seafood, produce, untreated water, puppies and live poultry.

The use of culture-independent diagnostic testing (CIDT) to identify *Campylobacter* has increased dramatically in recent years. Florida changed the campylobacteriosis surveillance case definition in January 2011, July 2011, January 2015 and January 2017 to account for CIDTs, increasing the number of reported cases in those years.

Campylobacteriosis occurs year-round in Florida, with a slight seasonal increase in spring and summer. Campylobacteriosis incidence is consistently highest in infants <1 year old, followed by children 1 to 4 years old.

Disease Facts

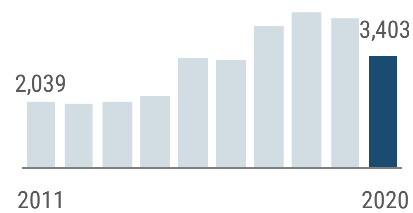
Caused by *Campylobacter* bacteria

Illness is gastroenteritis (diarrhea, vomiting)

Transmitted via fecal-oral route, including person to person, animal to person, foodborne and waterborne

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

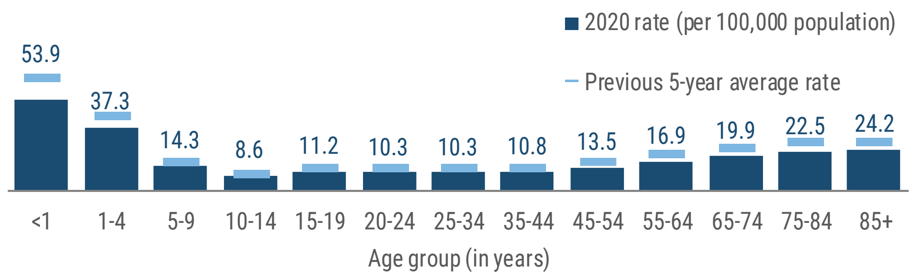
Campylobacteriosis incidence has increased over the past 10 years. Notable increases in 2015 and 2017 are primarily due to case definition changes.



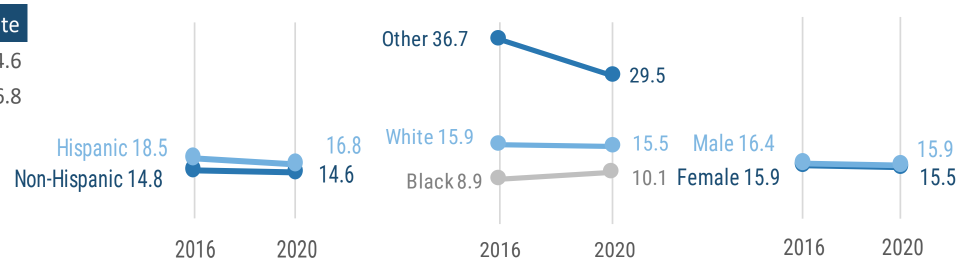
Disease Trends

Summary			
Number of cases			3,403
Rate (per 100,000 population)			15.7
Change from 5-year average rate			-19.6%
Age (in Years)			
Mean			44
Median			48
Min-max			0 - 106
Gender	**Number**	**(Percent)**	**Rate**
Female	1,718	(50.5)	15.5
Male	1,685	(49.5)	15.9
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	2,583	(77.7)	15.5
Black	371	(11.2)	10.1
Other	371	(11.2)	29.5
Unknown race	78		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	2,314	(70.5)	14.6
Hispanic	970	(29.5)	16.8
Unknown ethnicity	119		

The campylobacteriosis rate (per 100,000 population) was highest in infants <1 year old and children 1 to 4 years old, followed by adults 75 years and older.



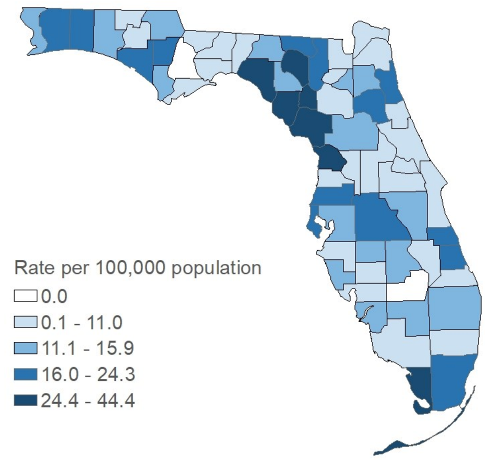
The campylobacteriosis rate (per 100,000 population) decreased in all demographics except for blacks from 2016 to 2020. The rates were slightly higher in males, whites and Hispanics compared to females, blacks and non-Hispanics in 2020. The rate was notably higher in other races compared to whites and blacks in 2020.



Campylobacteriosis

Summary	Number
Number of cases	3,403
Case Classification	**Number (Percent)**
Confirmed	1,221 (35.9)
Probable	2,182 (64.1)
Outcome	**Number (Percent)**
Hospitalized	1,318 (38.7)
Died	55 (1.6)
Sensitive Situation	**Number (Percent)**
Daycare	64 (1.9)
Health care	67 (2.0)
Food handler	33 (1.0)
Imported Status	**Number (Percent)**
Acquired in Florida	2,974 (97.3)
Acquired in the U.S., not Florida	16 (0.5)
Acquired outside the U.S.	68 (2.2)
Acquired location unknown	345
Outbreak Status	**Number (Percent)**
Sporadic	3,053 (96.1)
Outbreak-associated	125 (3.9)
Outbreak status unknown	225

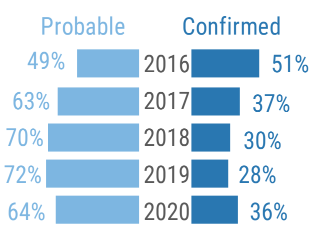
Campylobacteriosis occurs throughout the state. In 2020, rates (per 100,000 population) were highest in small, rural counties, particularly in the north central part of the state.



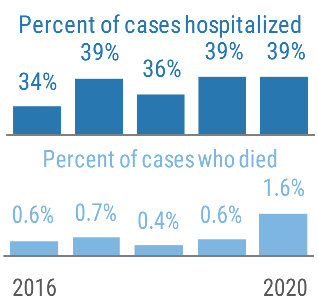
Rates are by county of residence for infections acquired in Florida (3,403 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

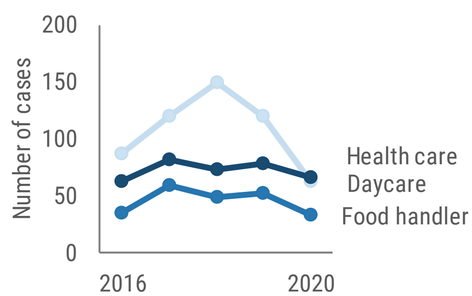
Between 28% and 51% of cases are confirmed due to case definition changes and increased use of CIDT.



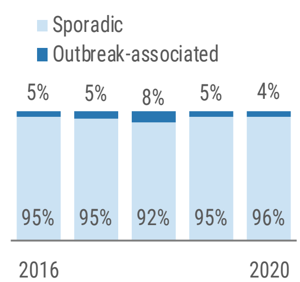
Between 34% and 39% of cases are hospitalized each year. Very few cases die.



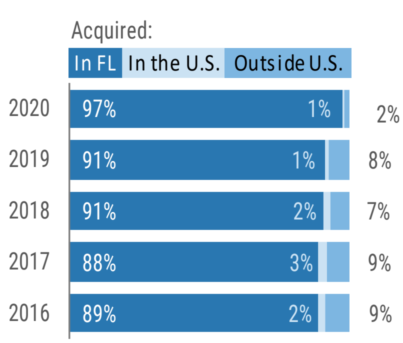
Cases in sensitive situations are monitored. No outbreaks have been identified in these settings in recent years.



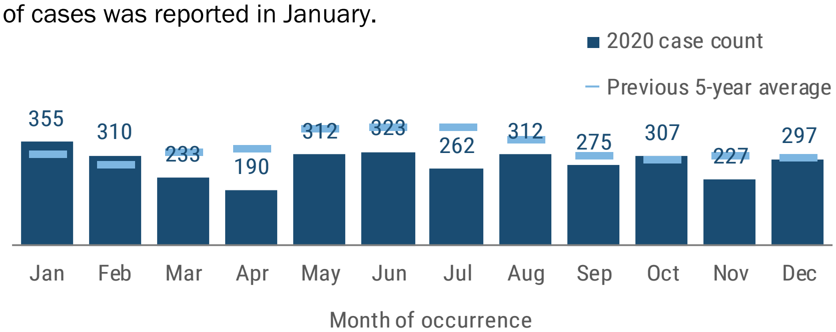
Most cases are sporadic; outbreak-associated cases often reflect household clusters.



Most cases were acquired in Florida; a small number of cases were imported from other states and countries.



Campylobacteriosis occurred throughout 2020, though cases were lower in spring, which is not consistent with past years. In 2020, the largest number of cases was reported in January.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Carbon Monoxide Poisoning

Key Points

Carbon monoxide (CO) is an invisible, odorless and tasteless gas that is highly poisonous. It can cause sudden illness and death if present in sufficient concentration in the ambient air. Floridians are exposed to CO during significant power outages by using alternative fuel or power sources such as generators or gasoline-powered equipment placed inside the home or too close to windows causing CO to build up indoors.

In 2017, 359 CO poisoning cases occurred after Hurricane Irma, a Category 4 storm, made landfall in Florida on September 10, causing extensive power outages and generator use throughout the state.

In 2018, Hurricane Michael, a Category 5 storm, made landfall in the Florida Panhandle on October 10, causing 19 sporadic cases associated with inappropriate generator use. The fewer number of cases associated with Hurricane Michael reflects the smaller population of impacted counties compared to counties affected by Hurricane Irma.

The most commonly identified exposures for 2020 cases were automobile and recreational vehicles (RVs) (35%) and generators (15%).

Disease Facts

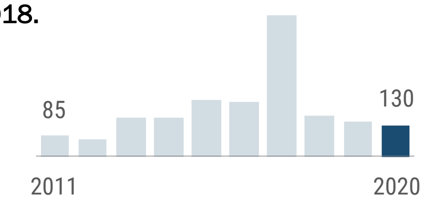
Caused by carbon monoxide (CO) gas

Illness includes headache, dizziness, weakness, nausea, vomiting, chest pain and confusion; high levels of CO inhalation can cause loss of consciousness and death

Exposure to CO gas is from combustion fumes (produced by cars and trucks, generators, stoves, lanterns, burning charcoal and wood, and gas ranges and heating systems)

Under surveillance to identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions, measure impact of public health interventions

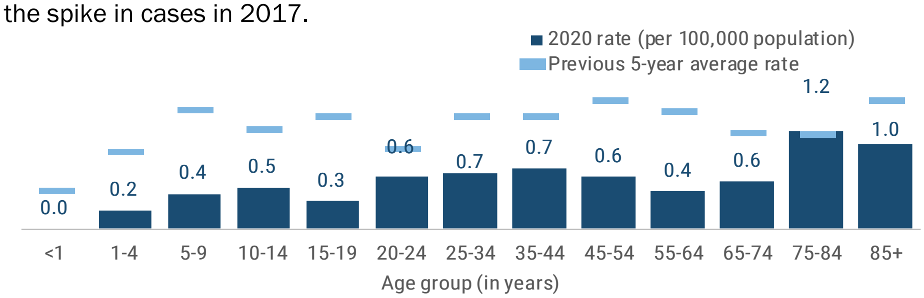
After the sharp increase in 2017 as a result of Hurricane Irma, CO poisoning incidence returned to an average level in 2018.



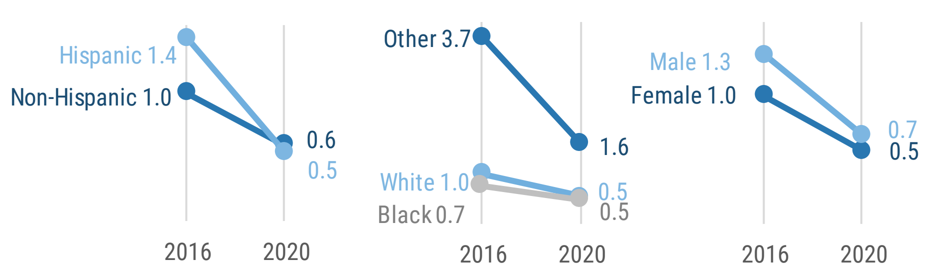
Disease Trends

Summary	Number	(Percent)	Rate
Number of cases			130
Rate (per 100,000 population)			0.6
Change from 5-year average rate			-53.8%
Age (in Years)			
Mean			47
Median			45
Min-max			4 - 97
Gender	**Number**	**(Percent)**	**Rate**
Female	60	(46.2)	0.5
Male	70	(53.8)	0.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	90	(70.9)	0.5
Black	17	(13.4)	NA
Other	20	(15.7)	1.6
Unknown race	3		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	93	(75.0)	0.6
Hispanic	31	(25.0)	0.5
Unknown ethnicity	6		

In 2020, the CO poisoning rate (per 100,000 population) was highest in adults 75 to 84 years old. In past years, the rate was highest in adults 45 to 54 years old. The difference seen in the previous five-year average rate is likely being driven by the spike in cases in 2017.



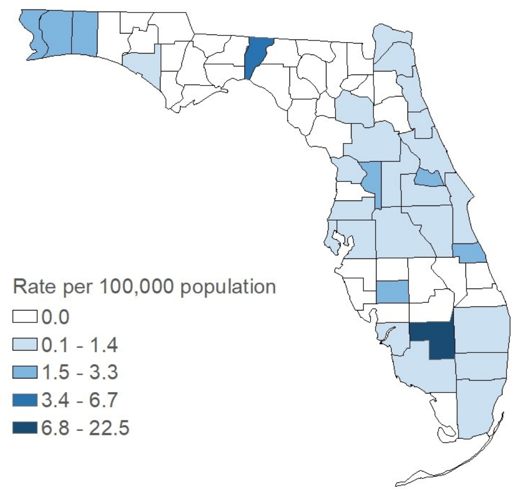
In 2020, CO poisoning rates (per 100,000 population) were slightly higher in males and non-Hispanics and notably higher in other races. The rates decreased in all demographics over the past 5 years.



Carbon Monoxide Poisoning

Summary	Number
Number of cases	130
Case Classification	**Number (Percent)**
Confirmed	113 (86.9)
Probable	17 (13.1)
Outcome	**Number (Percent)**
Hospitalized	47 (36.2)
Died	6 (4.6)
Imported Status	**Number (Percent)**
Exposed in Florida	130 (100.0)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	0 (0.0)
Exposed location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	49 (38.0)
Outbreak-associated	80 (62.0)
Outbreak status unknown	1
Exposure Type	**Number (Percent)**
Automobile/RV	46 (35.4)
Generator	20 (15.4)
Other	15 (11.5)
Fire	13 (10.0)
Power tools (including mower)	12 (9.2)
Portable fuel-burning grill/stove	11 (8.5)

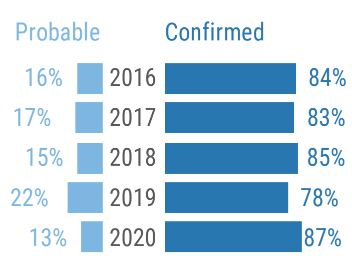
Carbon monoxide poisonings in 2020 were concentrated in northeast, central and south Florida. Rates (per 100,000) were highest in small, rural counties throughout the state.



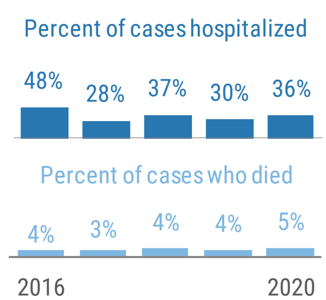
Rates are by county of residence for cases exposed in Florida (130 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2017 by county.

More Disease Trends

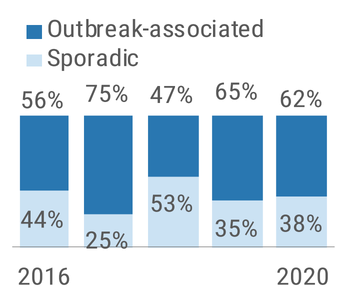
Most CO poisoning cases are confirmed. In 2020, 87% of cases were confirmed.



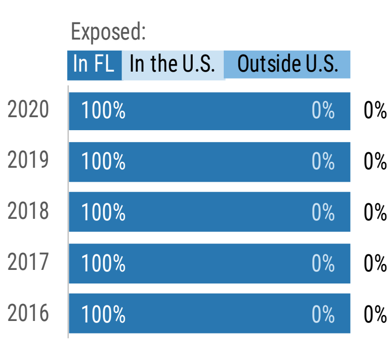
Between 28% and 48% of cases are hospitalized each year; deaths do occur.



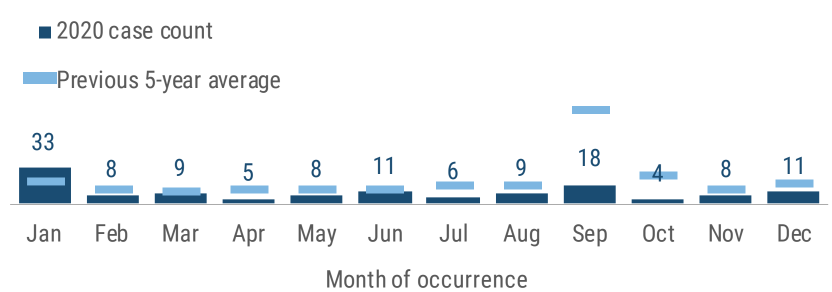
More than half (62%) of CO poisoning cases were linked to at least 1 other case in 2020. Over half of these cases were associated with exposure to automobiles (46 cases) or generator exhaust (20 cases).



All CO poisoning cases were exposed in Florida.



CO poisoning cases were highest in January and September in 2020. Historically, CO poisonings tend to increase during cold winter months and during large power outages.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Chlamydia (Excluding Neonatal Conjunctivitis)

Key Points

Chlamydia is the most commonly reported sexually transmitted disease in Florida and the U.S.; incidence rates have been slowly increasing over the past decade. Incidence is highest among females 20 to 24 years old and non-Hispanic blacks. If untreated, chlamydia can lead to serious reproductive complications and can make it difficult for females to conceive. As the infection is frequently asymptomatic, screening is necessary to identify most infections; early detection and treatment can prevent sequelae.

The rate of chlamydia in races other than white and black has increased over the past 10 years, particularly in the past four years. The rate has decreased in non-Hispanic blacks, primarily driven by a decrease in infections in young black females.

Disease Facts

Caused by *Chlamydia trachomatis* bacteria

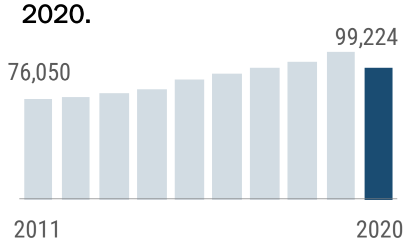
Illness is frequently asymptomatic; sometimes abnormal discharge from vagina or penis, burning sensation when urinating; severe complications can include pelvic inflammatory disease, infertility and ectopic pregnancies

Transmitted sexually via vaginal, anal or oral sex and sometimes from mother to child during pregnancy or delivery

Under surveillance to implement interventions immediately for every case, monitor incidence over time, estimate burden of illness, target prevention education programs, evaluate treatment and prevention programs

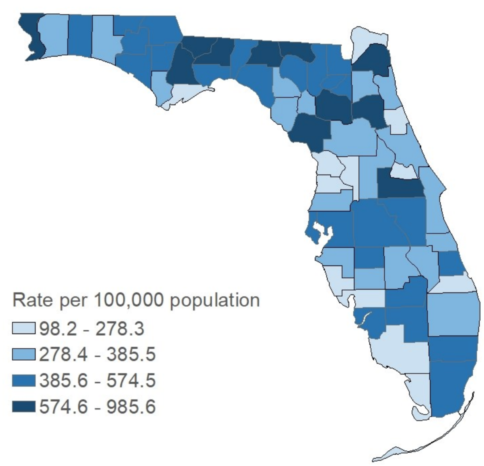
Disease Trends

Chlamydia incidence decreased in 2020.



Summary			
Number of cases			99,224
Rate (per 100,000 population)			458.5
Change from 5-year average rate			-5.9%
Age (in Years)			
Mean			25
Median			23
Min-max			4 - 98
Gender	**Number**	**(Percent)**	**Rate**
Female	63,915	(64.4)	577.7
Male	35,270	(35.6)	333.5
Unknown gender	39		
Race	**Number**	**(Percent)**	**Rate**
White	26,917	(36.5)	161.0
Black	33,692	(45.7)	917.7
Other	13,103	(17.8)	1043.5
Unknown race	25,512		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	55,424	(79.8)	349.2
Hispanic	14,019	(20.2)	242.9
Unknown ethnicity	29,781		

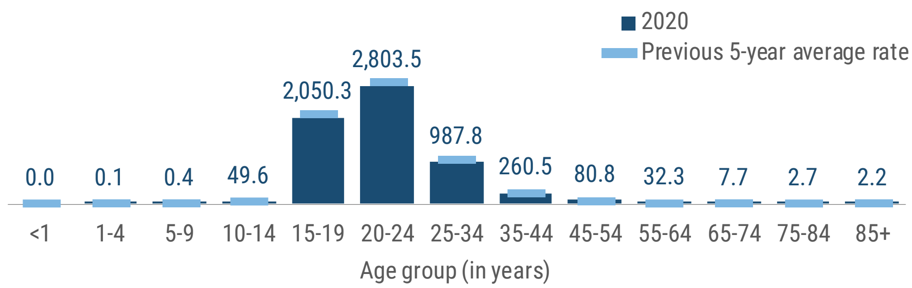
Chlamydia occurs throughout the state. The highest rates (per 100,000 population) in 2020 were in Leon (985.6), Gadsden (955.9), Alachua (931.6) and Hamilton (875.6) counties. The largest number of cases were reported in Miami-Dade (12,423 cases) and Broward (10,081 cases) counties. These 2 counties accounted for 23% of the state's cases and 22% of the state's population.



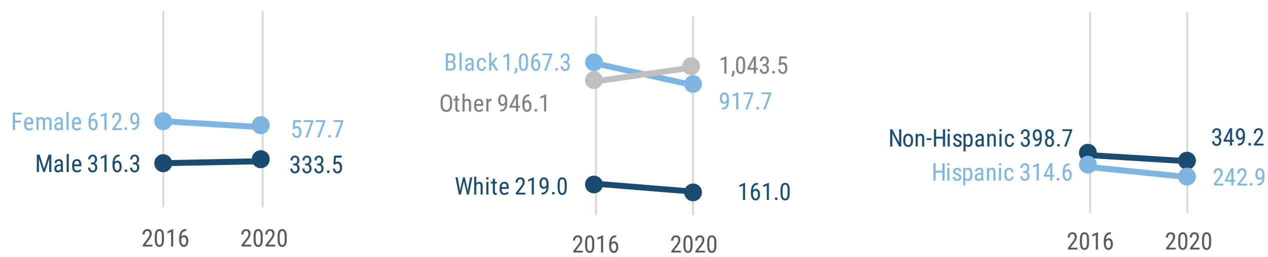
Rates are by county of residence, regardless of where infection was acquired (99,224 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

Chlamydia (Excluding Neonatal Conjunctivitis)

Chlamydia rates (per 100,000 population) are highest in adults 20 to 24 years old, followed by teenagers 15 to 19 years old. Rates in adults rapidly decrease with age. The rate in adults 20 to 24 years old is more than 10 times the rate in adults 35 to 44 years old and 35 times the rate in adults 45 to 54 years old.



Chlamydia rates (per 100,000 population) decreased in both ethnicity groups, blacks, whites and females from 2016 to 2020. The rate in males and other races increased during this timeframe.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chlamydia cases (excluding neonatal conjunctivitis) were missing 19.3% of ethnicity data in 2016 and 14.3% of race data in 2016.

Overall, rates have increased in males 15 to 24 years old and in females 20 to 24 years old. However, in 2020, rates declined from the previous year. The rate in both age groups in black females has decreased over the past 10 years. The rates in other races in both age groups and both genders have increased steadily as have rates in Hispanic males in both age groups.

Females 15–19 years old

	2011 rate	10-year trend	2020 rate
Total	**3,188.4**		**3,170.2**
White	1,774.9		1,484.8
Black	7,375.1		4,839.8
Hispanic	1,428.1		1,277.7
Other	1,589.4		4,600.2

Males 15–19 years old

	2011 rate	10-year trend	2020 rate
Total	**748.6**		**977.1**
White	257.5		240.8
Black	2,137.2		2,158.0
Hispanic	312.7		288.1
Other	347.2		1,443.6

Females 20–24 years old

	2011 rate	10-year trend	2020 rate
Total	**3,491.9**		**3,899.0**
White	1,975.2		1,786.1
Black	7,730.5		5,940.5
Hispanic	1,790.3		1,770.7
Other	2,091.3		5,945.6

Males 20–24 years old

	2011 rate	10-year trend	2020 rate
Total	**1,324.3**		**1,749.2**
White	612.8		572.1
Black	3,561.2		3,365.4
Hispanic	609.5		729.2
Other	822.8		2,904.5

Ciguatera Fish Poisoning

Key Points

Ciguatoxin is produced by dinoflagellates in the genus *Gambierdiscus*. Marine dinoflagellates are typically found in tropical and subtropical waters and are eaten by herbivorous fish that are in turn eaten by larger carnivorous fish, causing the toxins to bioaccumulate in fish such as barracuda or grouper. While case finding in Florida is thought to be more complete than in other states, under-reporting is still likely due to lack of recognition and reporting by medical practitioners.

Single cases of ciguatera fish poisoning warrant a full investigation and are generally characterized as outbreaks for public health purposes. Prior to 2015, all cases were classified as outbreak-associated for this report. Starting in 2015, cases were only classified as outbreak-associated for this report when at least 2 or more people had a common exposure. Eighteen investigations occurred in 2020 involving 27 cases. Six cases reported in 2020 were associated with 2 investigations that occurred in 2019. Investigations involved an average of 1.5 cases with a range of 1 to 5 cases. The most common fish consumed was barracuda. Cases were most commonly associated with recreationally harvested fish. In 2020, cases were investigated throughout the year, with the largest number of cases occurring in February, August and December.

Disease Facts

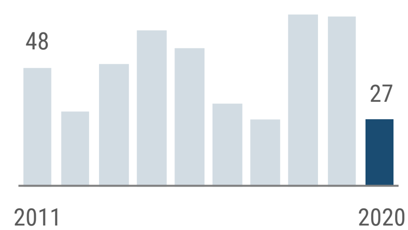
Caused by ciguatoxins produced by marine dinoflagellates (associated with tropical fish)

Illness includes nausea, vomiting and neurologic symptoms (e.g., tingling fingers or toes, temperature reversal); anecdotal evidence of long-term periodic recurring symptoms

Exposed through consuming fish containing ciguatoxins

Under surveillance to identify and control outbreaks, identify high-risk products (e.g., barracuda, grouper)

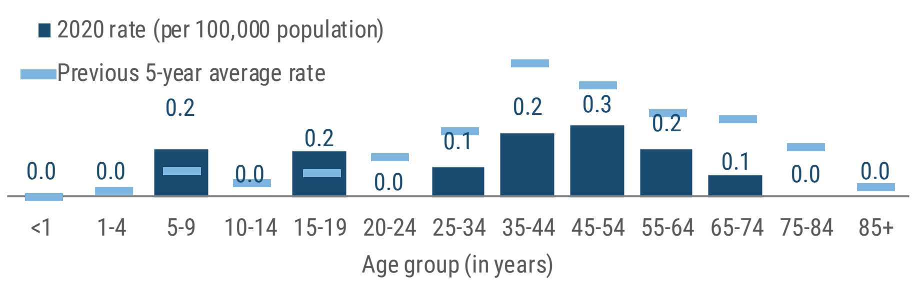
Ciguatera fish poisoning cases decreased significantly in 2020 compared to the previous 2 years.



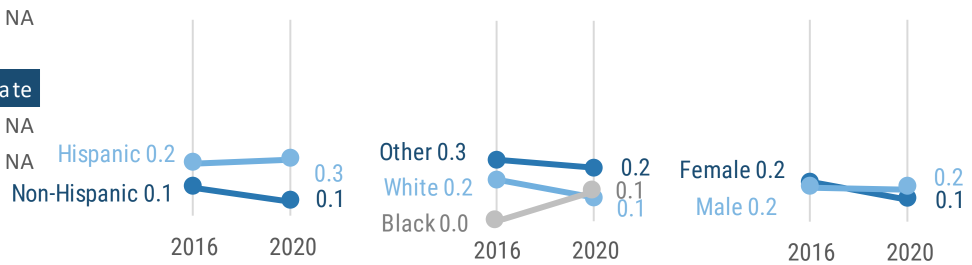
Disease Trends

Summary		
Number of cases		27
Rate (per 100,000 population)		0.1
Change from 5-year average rate		-49.1%
Age (in Years)		
Mean		42
Median		45
Min-max		5 - 67
Gender	**Number (Percent)**	**Rate**
Female	11 (40.7)	NA
Male	16 (59.3)	NA
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	17 (68.0)	NA
Black	5 (20.0)	NA
Other	3 (12.0)	NA
Unknown race	2	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	11 (42.3)	NA
Hispanic	15 (57.7)	NA
Unknown ethnicity	1	

The ciguatera fish poisoning rate (per 100,000 population) is generally highest in adults ages 25 to 74 years. In 2020, 21 cases were reported in that age group and 6 were less than 20 years of age.



The ciguatera fish poisoning rate (per 100,000 population) is generally similar in males and females as well as in whites and blacks. The rate was slightly higher in other races and higher in Hispanics in 2020.

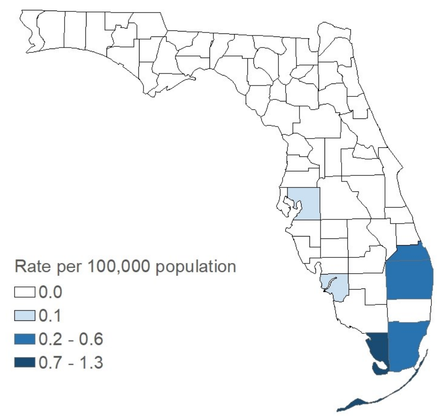


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Ciguatera fish poisoning cases were missing 7.4% of race data in 2020.

Ciguatera Fish Poisoning

Summary	Number
Number of cases	27
Outcome	**Number (Percent)**
Hospitalized	4 (14.8)
Died	0 0%
Imported Status	**Number (Percent)**
Exposed in Florida	21 (80.8)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	5 (19.2)
Exposed location unknown	1
Outbreak Status	**Number (Percent)**
Sporadic	14 (53.8)
Outbreak-associated	12 (46.2)
Outbreak status unknown	1

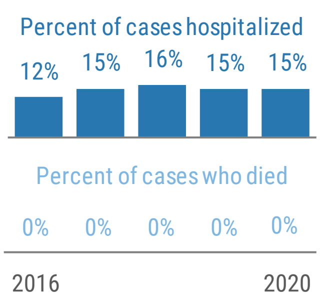
Ciguatera fish poisoning cases occur most commonly in south Florida. In 2020, Miami-Dade and Palm Beach counties accounted for 85% of the cases (17 and 6 cases, respectively). No other county reported more than 1 case.



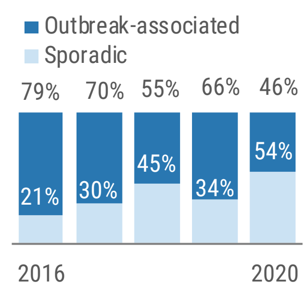
Rates are by county of residence for cases exposed in Florida (21 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2017 by county.

More Disease Trends

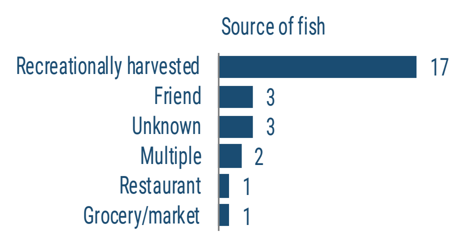
Less than 16% of cases were hospitalized. No deaths have been identified in recent years.



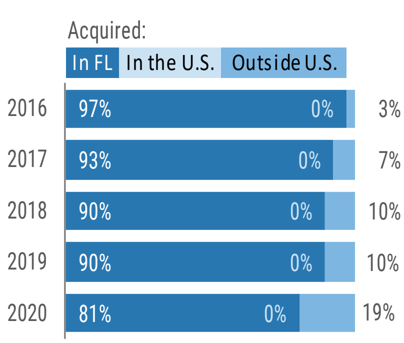
Most cases are outbreak-associated. Implicated fish are commonly shared by multiple people.



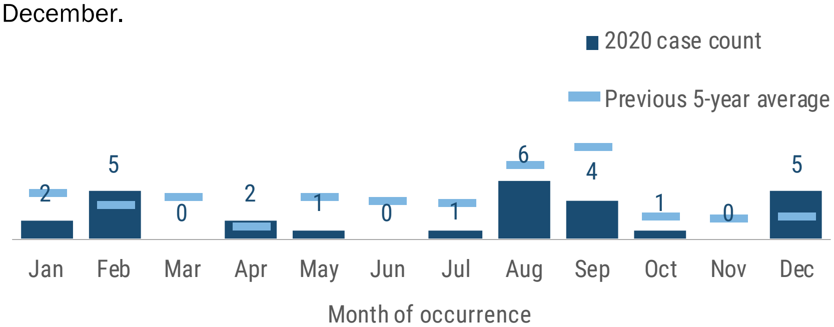
Most fish causing ciguatera fish poisoning were recreationally harvested. Sometimes multiple sources of fish are identified, and occasionally no source can be identified.



More than 81% of cases are exposed in Florida each year.



Ciguatera fish poisoning generally peaks in August and September, which occurred in 2020. However, 5 cases also occurred in both February and December.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Cryptosporidiosis

Key Points

During the past two decades, *Cryptosporidium* has become recognized as one of the most common causes of waterborne disease (recreational water and drinking water) in humans in the U.S. Diagnostic capabilities have improved over the years, making it easier to identify illnesses caused by this parasite.

Cryptosporidiosis in Florida and the U.S. has a seasonal and cyclical trend. Following a sharp increase in cases in 2014 in all genders, races and ethnicities, cases have generally decreased. Cryptosporidiosis incidence is consistently highest in children 1 to 4 years old.

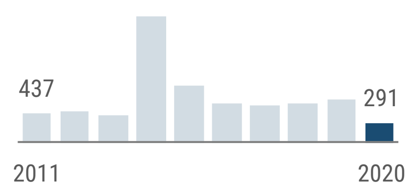
Disease Facts

- **Caused** by *Cryptosporidium* parasites
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, animal to person, waterborne and foodborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food/water source, ill food handler), monitor incidence over time, estimate burden of illness

Cryptosporidiosis incidence peaked in 2014 when there were 6 waterborne outbreaks investigated, including 134 cases associated with swimming pools, a recreational water park and kiddie pools. Additional community-wide outbreaks in 2014 were associated with person-to-person transmission and daycares.

There were no reported waterborne outbreaks due to *Cryptosporidium* in 2020. Other reported clusters of illness were associated with person-to-person transmission, travel, daycares and exposure to animals and livestock.

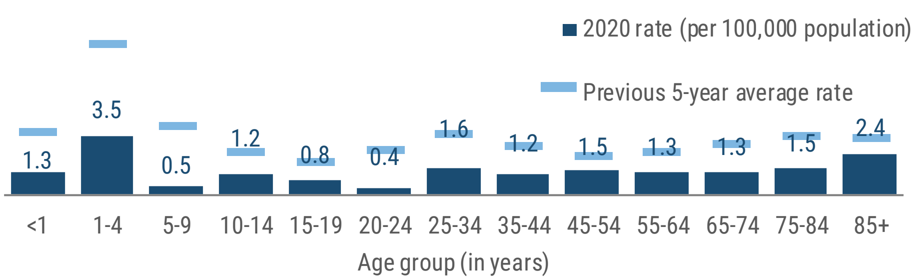
Cryptosporidiosis incidence increased sharply in 2014, decreased in 2015 and has remained relatively stable since.



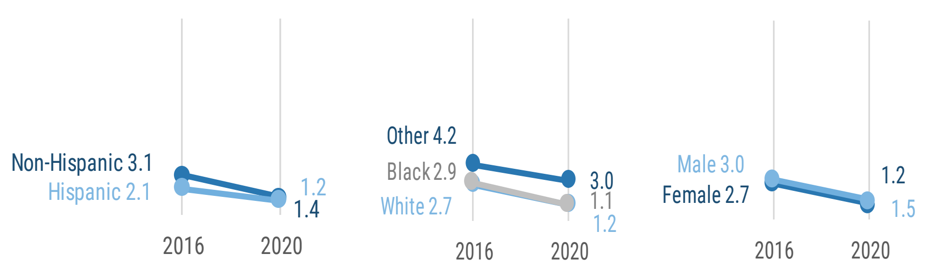
Disease Trends

Summary		
Number of cases		291
Rate (per 100,000 population)		1.3
Change from 5-year average rate		-57.4%
Age (in Years)		
Mean		43
Median		45
Min-max		0 - 90
Gender	**Number (Percent)**	**Rate**
Female	134 (46.0)	1.2
Male	157 (54.0)	1.5
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	207 (72.1)	1.2
Black	42 (14.6)	1.1
Other	38 (13.2)	3.0
Unknown race	4	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	216 (76.3)	1.4
Hispanic	67 (23.7)	1.2
Unknown ethnicity	8	

The cryptosporidiosis rate (per 100,000 population) is consistently highest in children 1 to 4 years old, which remained true in 2020.



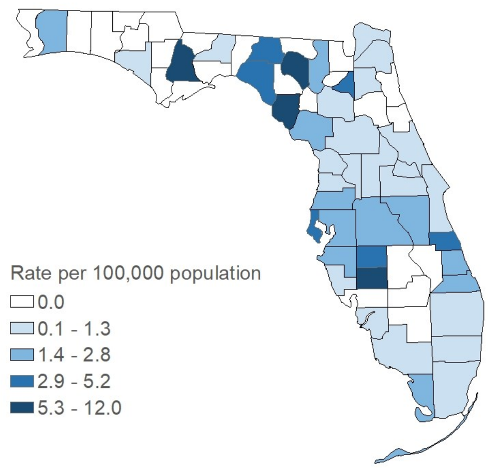
The cryptosporidiosis rate (per 100,000 population) decreased among all demographics from 2016 to 2020. Rates were similar by gender, race and ethnicity in 2020.



Cryptosporidiosis

Summary	Number
Number of cases	291
Case Classification	**Number (Percent)**
Confirmed	137 (47.1)
Probable	154 (52.9)
Outcome	**Number (Percent)**
Hospitalized	116 (39.9)
Died	1 (0.3)
Sensitive Situation	**Number (Percent)**
Daycare	8 (2.7)
Health care	5 (1.7)
Food handler	6 (2.1)
Imported Status	**Number (Percent)**
Acquired in Florida	256 (97.0)
Acquired in the U.S., not Florida	1 (0.4)
Acquired outside the U.S.	7 (2.7)
Acquired location unknown	27
Outbreak Status	**Number (Percent)**
Sporadic	280 (98.2)
Outbreak-associated	5 (1.8)
Outbreak status unknown	6

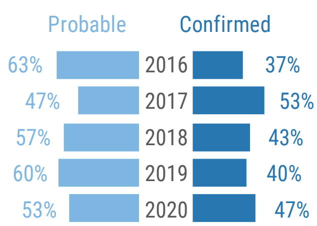
Cryptosporidiosis occurs throughout the state. The highest rates (per 100,000) in 2020 generally occurred in small, rural counties with lower rates in many of the large metropolitan areas of the state.



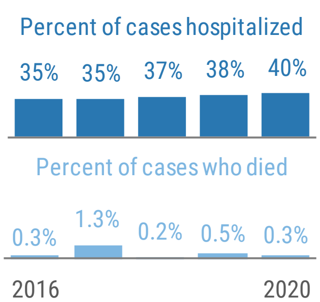
Rates are by county of residence for infections acquired in Florida (291 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

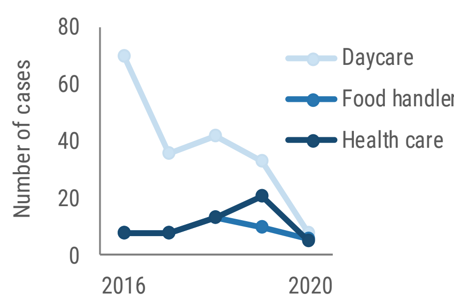
Unlike many other reportable diseases, less than half of cryptosporidiosis cases are confirmed.



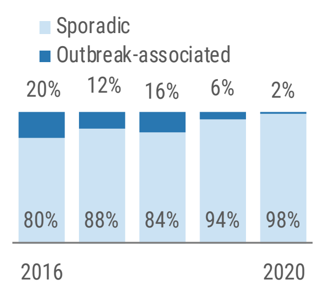
Hospitalizations and deaths are typically related to underlying conditions and comorbidities.



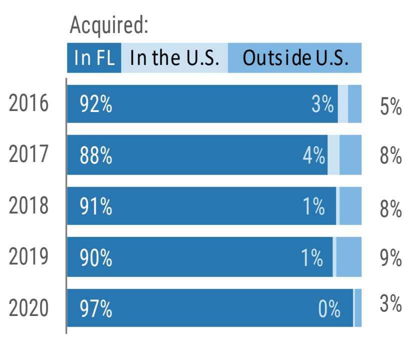
Cases occurring in daycare settings decreased in 2020. People in sensitive situations may pose a risk for transmitting infection to others.



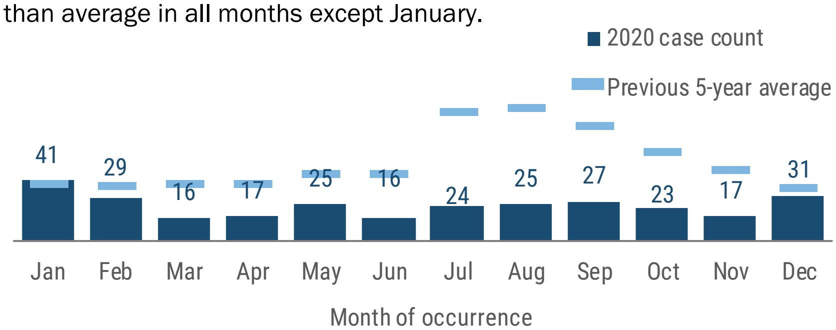
Most cryptosporidiosis case are sporadic. Only 2% were outbreak-associated in 2020.



Most cryptosporidiosis infections are acquired within Florida.



In previous years, cryptosporidiosis cases peaked in the summer and early fall months, similar to other enteric diseases. In 2020, cases remained lower than average in all months except January.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Cyclosporiasis

Key Points

Cyclosporiasis incidence is strongly seasonal, peaking annually in June and July. Large multistate outbreaks of cyclosporiasis have been identified numerous times over the last several years, including 2020. In the U.S., cyclosporiasis outbreaks are primarily foodborne and have been linked to various types of imported fresh produce, including basil, cilantro, mesclun lettuce, raspberries and snow peas. More recently, domestically grown produce has been implicated.

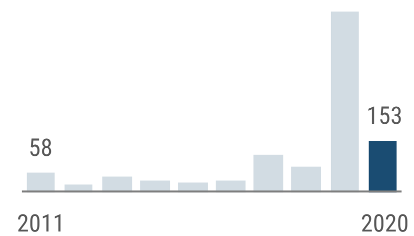
In 2020, 1,241 laboratory-confirmed cases of cyclosporiasis were reported nationally as of September 24, 2020 (the most recent date for which national data were available). These cases were reported by 34 different states, had illness onsets from May to August 2020 and had no history of international travel during the 14-day period prior to illness onset. Florida reported 122 (80%) of its 153 cases during this same time period.

The number of cases in Florida, while significantly down from 2019, remained high mainly due to frequent outbreaks. Several multi-state outbreaks occurred, including 1 attributed to bagged salads. Globalization of food distribution typically results in the same products being sold and consumed across the U.S. While cases cannot always be linked to a particular outbreak, Florida's continued increase is likely a result of the same food products driving the national case numbers. Most cases are now acquired in Florida compared to past years when a much larger percentage were acquired outside the U.S.

Disease Facts

- **Caused** by *Cyclospora* parasites
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral, including foodborne and less commonly waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness

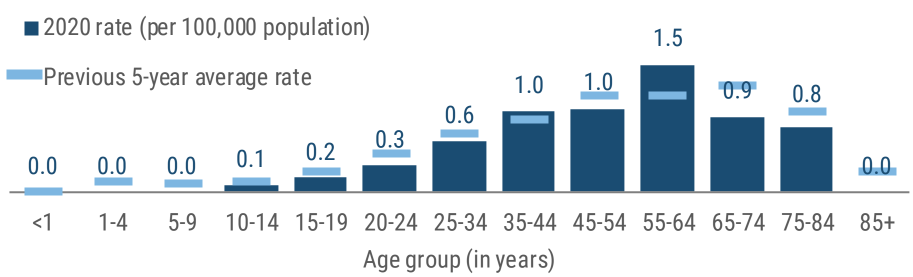
Cyclosporiasis incidence decreased from 2019 but was still above the 10-year average of 112 cases.



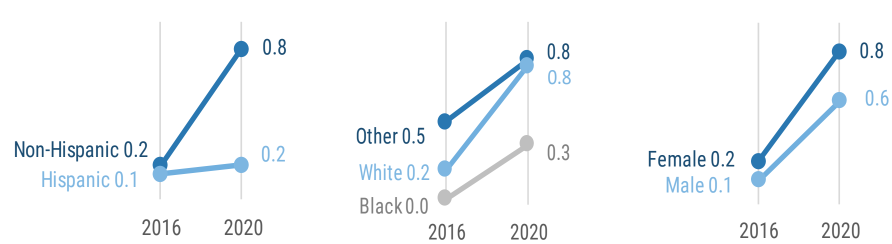
Disease Trends

Summary			
Number of cases			153
Rate (per 100,000 population)			0.7
Change from 5-year average rate			-7.2%
Age (in Years)			
Mean			52
Median			55
Min-max			11 - 83
Gender	**Number**	**(Percent)**	**Rate**
Female	93	(60.8)	0.8
Male	60	(39.2)	0.6
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	127	(85.2)	0.8
Black	12	(8.1)	NA
Other	10	(6.7)	NA
Unknown race	4		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	134	(92.4)	0.8
Hispanic	11	(7.6)	NA
Unknown ethnicity	8		

The cyclosporiasis rate (per 100,000 population) is consistently higher in adults ≥25 years old. The rate peaked in the 55- to 64 year-old age group in 2020.



The cyclosporiasis rate (per 100,000 population) was higher in females, other races, whites and non-Hispanics in 2020. Rates increased among all demographics in the past 5 years.

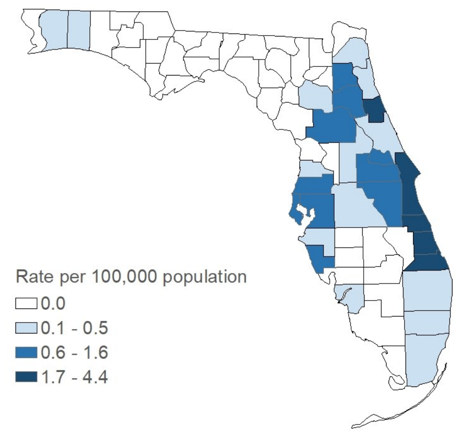


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Cyclosporiasis cases were missing 5.2% of ethnicity data in 2020.

Cyclosporiasis

Summary	Number
Number of cases	153
Case Classification	**Number (Percent)**
Confirmed	150 (98.0)
Probable	3 (2.0)
Outcome	**Number (Percent)**
Hospitalized	13 (8.5)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	126 (97.7)
Acquired in the U.S., not Florida	3 (2.3)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	24
Outbreak Status	**Number (Percent)**
Sporadic	82 (56.2)
Outbreak-associated	64 (43.8)
Outbreak status unknown	7

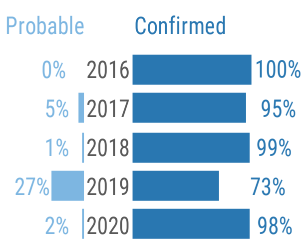
Cyclosporiasis cases occurred throughout the state in 2020. The rate (per 100,000 population) was highest in Flagler County (attributed to an outbreak); Orange and Hillsborough counties had the most reported cases (17 and 16, respectively).



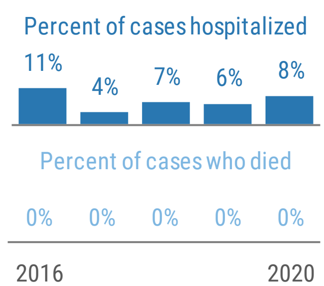
Rates are by county of residence for infections acquired in Florida (153 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

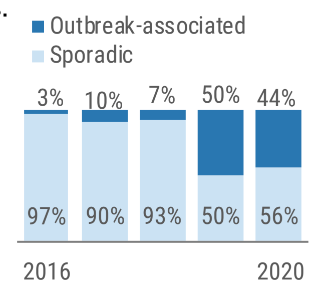
The majority of cyclosporiasis cases are confirmed. Probable cases are symptomatic people epidemiologically linked to confirmed cases.



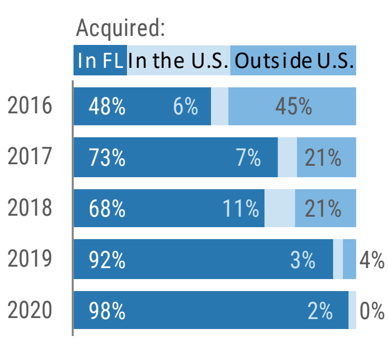
Few cyclosporiasis cases are hospitalized. No deaths have occurred in recent years.



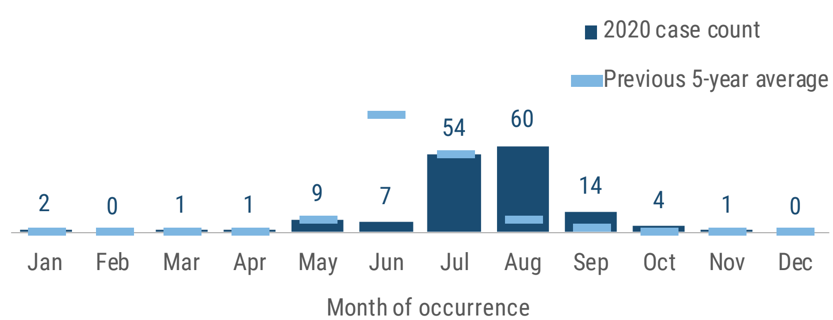
Although the majority of cyclosporiasis cases are sporadic, the percentage of outbreak-associated cases has increased in the last 2 years.



Almost all cyclosporiasis infections were acquired in Florida in 2020, in contrast to past years.



Cyclosporiasis has a very strong seasonal pattern with cases primarily occurring May through August, peaking in June and July. In 2020, the peak was in August with some cases still occurring in September.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Dengue Fever

Key Points

Historically the Americas, predominantly the Caribbean, have served as primary sources of dengue virus exposures in Florida residents. However, at least 1 locally acquired case has been identified each year from 2009 to 2020, with the exception of 2017. Introductions have been primarily in south Florida. Incidence of travel-related dengue fever cases was much lower in 2020 compared to the abnormally high activity reported in 2019. This decrease was attributed to COVID-19 pandemic travel restrictions. Despite the decrease in travel-related cases, there was an outbreak of locally acquired dengue fever in Monroe County (DENV-1). There was also a local DENV-1 household cluster in Miami-Dade and a local DENV-2 case with travel to at least 2 Florida counties.

Disease Facts

Caused by dengue viruses (DENV-1, DENV-2, DENV-3, DENV-4)

Illness is acute febrile with headache, joint and muscle pain, rash and eye pain; severe dengue (dengue hemorrhagic fever or dengue shock syndrome) symptoms include severe abdominal pain, vomiting and mucosal bleeding

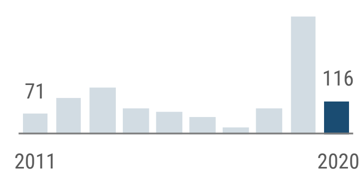
Transmitted via bite of infective mosquito, rarely by blood transfusion or organ transplant

Under surveillance to identify individual cases, implement control measures to prevent introduction and active transmission, monitor incidence over time, estimate burden of illness

Three outbreaks of locally acquired dengue fever have occurred; 2 in Monroe County (2009–10 and 2020) and 1 in Martin County (2013).

Infected residents and non-residents who are infectious and bitten by mosquitoes while in Florida could pose a potential risk for introduction of dengue fever; however, cases in non-Florida residents are not included in counts in this report. Nine dengue fever cases were identified in non-Florida residents while traveling in Florida in 2020, including 3 locally acquired cases. Of the 116 cases reported in 2020, 5 were identified in 2019 but not reported until 2020. Similarly, 7 additional cases were identified in 2020 but were not reported until 2021 and will be included in the 2021 report. Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data.

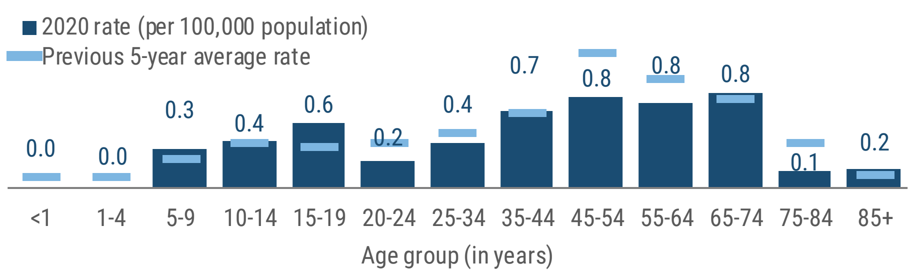
Dengue fever incidence returned to an average level in 2020.



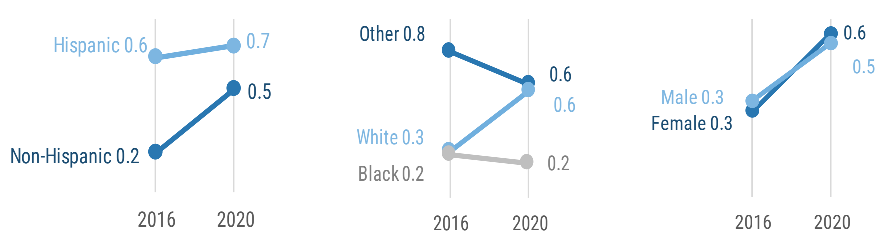
Disease Trends

Summary		
Number of cases		116
Rate (per 100,000 population)		0.5
Change from 5-year average rate		-14.6%
Age (in Years)		
Mean		46
Median		48
Min-max		8 - 86
Gender	**Number (Percent)**	**Rate**
Female	61 (52.6)	0.6
Male	55 (47.4)	0.5
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	100 (86.2)	0.6
Black	7 (6.1)	NA
Other	8 (6.9)	NA
Unknown race	1	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	76 (65.5)	0.5
Hispanic	39 (33.6)	0.7
Unknown ethnicity	1	

The dengue fever rate (per 100,000 population) has historically been highest in adults 25 to 74 years old. In 2020, rates were highest in adults 45 to 74 years old (which reflect population demographics of Monroe County); the youngest case was 8 years old.



The dengue fever rate (per 100,000 population) increased across all demographics between 2016 and 2020 except in blacks and other races.

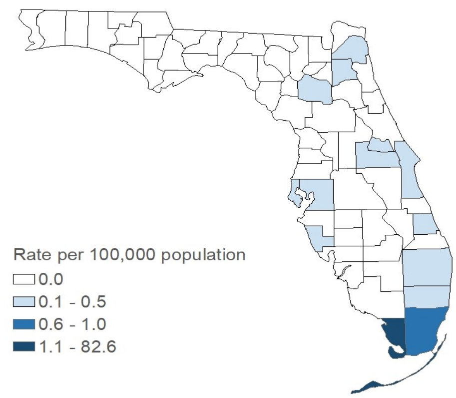


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Dengue fever cases were missing 6.5% of race data in 2016.

Dengue Fever

Summary	Number
Number of cases	116
Case Classification	**Number (Percent)**
Confirmed	65 (56.0)
Probable	51 (44.0)
Outcome	**Number (Percent)**
Hospitalized	24 (20.7)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	72 (62.1)
Acquired in the U.S., not Florida	5 (4.3)
Acquired outside the U.S.	39 (33.6)
Acquired location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	45 (38.8)
Outbreak-associated	71 (61.2)
Outbreak status unknown	0

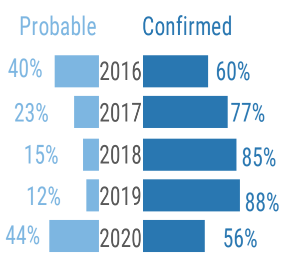
Travel-related dengue fever cases were identified more frequently in Miami-Dade County residents in 2020 (22 cases). Locally acquired cases were identified in Miami-Dade County (4) and Monroe County (72, including 3 non-Florida residents and 2 cases reported late that are not included in this report); an additional locally acquired case had possible exposures in multiple counties and the county of exposure is unknown.



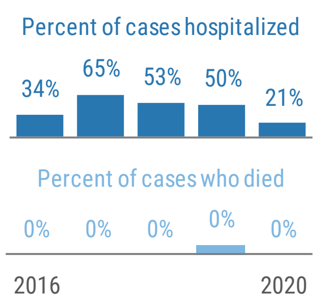
Rates are by county of residence, regardless of where infection was acquired (116 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

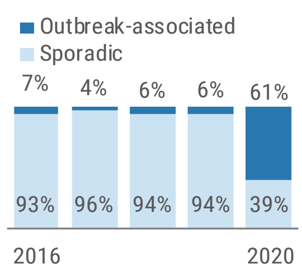
The percentage of confirmed cases was lower in 2020 than in the previous 4 years, likely due to retrospective case finding.



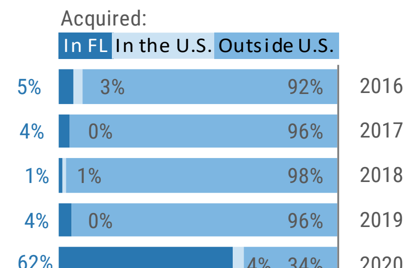
The rate of hospitalization was lower in 2020. No severe dengue cases or deaths were reported.



In addition to the dengue fever outbreak in Monroe County, there was a household cluster of three locally acquired dengue fever cases in Miami-Dade County.

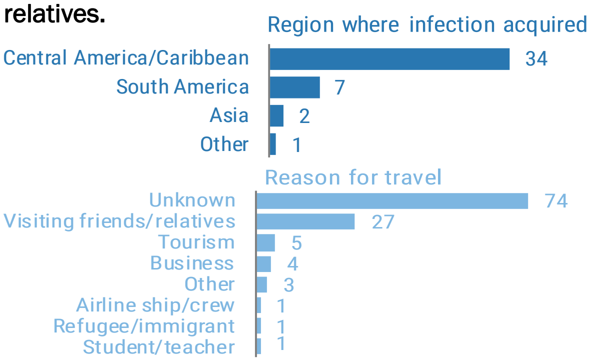


In 2020, 62% of cases were locally acquired, primarily due to an outbreak in Key Largo, Monroe County; all others were imported from other countries or U.S. territories with endemic transmission.

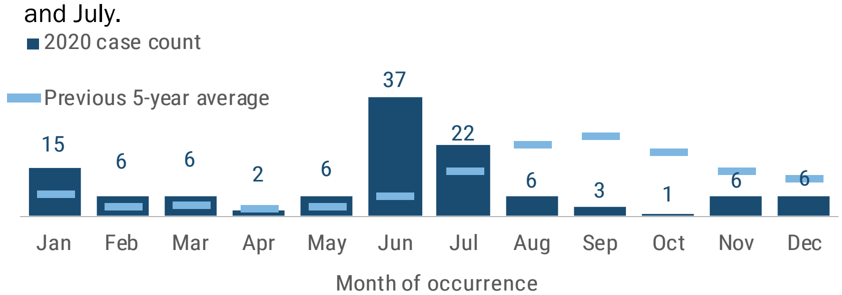


Most travel-related dengue fever cases were acquired in the Caribbean while visiting friends and relatives.

Region where infection acquired



Dengue fever cases are most common in summer and fall but can be imported any time of year. Locally acquired cases associated with the Monroe County outbreak occurred from February (a non-Florida resident not included in this report) to August, with most cases occurring in June and July.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Giardiasis, Acute

Key Points

Giardia intestinalis (also known as *G. lamblia* and *G. duodenalis*) is the most common intestinal parasite of humans identified in the U.S. and a common cause of outbreaks associated with untreated surface water and groundwater. Annually, an estimated 1.1 million cases occur in the U.S., and hospitalizations resulting from giardiasis cost approximately $34 million.* Case reports have associated giardiasis with the development of chronic enteric disorders, allergies and reactive arthritis.

Disease Facts

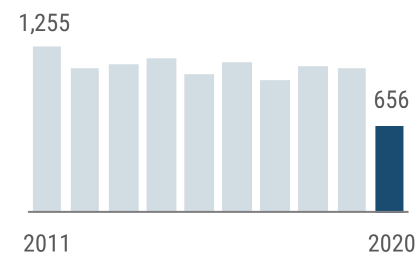
- **Caused** by *Giardia* parasites
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, animal to person, waterborne and foodborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food/water source, ill food handler), monitor incidence over time, estimate burden of illness

From August 2008 to January 2011, laboratory-confirmed cases no longer had to be symptomatic to meet the confirmed case definition, resulting in an increase in reported cases in 2009 and 2010.

Giardiasis is a common parasitic disease reported in Florida. Giardiasis incidence is highest in children 1 to 4 years old, followed by children 5 to 9 years old, then infants <1 year old. It occurs throughout the state year-round, though the highest rates (per 100,000 population) are in small, rural counties.

Giardia lives in the intestines of an infected person or animal and is shed through the feces. Outside of the body, *Giardia* has the potential to survive from weeks to months.

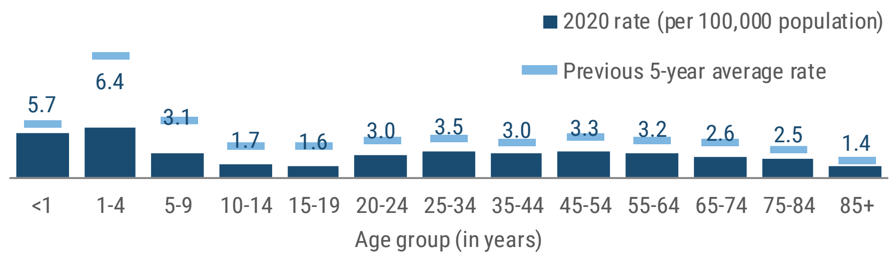
Giardiasis cases decreased in 2020.



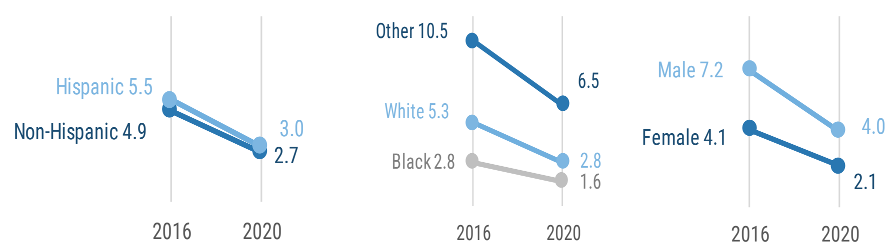
Disease Trends

Summary			
Number of cases			656
Rate (per 100,000 population)			3.0
Change from 5-year average rate			-41.8%
Age (in Years)			
Mean			39
Median			40
Min-max			0 - 93
Gender	**Number**	**(Percent)**	**Rate**
Female	236	(36.0)	2.1
Male	420	(64.0)	4.0
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	467	(76.9)	2.8
Black	59	(9.7)	1.6
Other	81	(13.3)	6.5
Unknown race	49		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	430	(71.2)	2.7
Hispanic	174	(28.8)	3.0
Unknown ethnicity	52		

The giardiasis rate (per 100,000 population) is consistently highest in children 1 to 4 years old, followed by infants <1 year old and children 5 to 9 years old, which remained true in 2020.



In 2020, the giardiasis rate (per 100,000 population) was lower in all gender, race and ethnicity groups compared to 2016. The decrease was most notable in females.



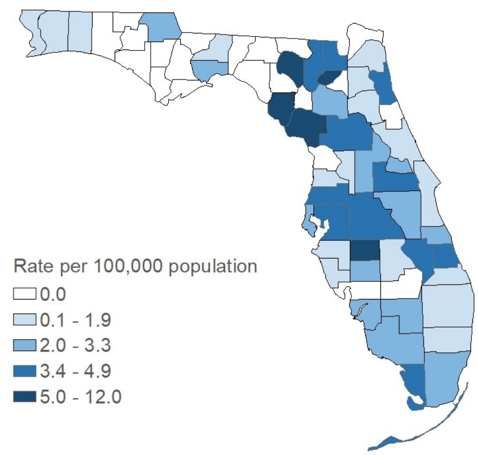
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute giardiasis cases were missing 9.1% of ethnicity data in 2016, 7.7% of race data in 2016, 7.9% of ethnicity data in 2020 and 7.5% of race data in 2020.

*For more information, visit www.cdc.gov/mmwr/preview/mmwrhtml/ss6403a2.htm

Giardiasis, Acute

Summary	Number
Number of cases	656
Case Classification	**Number (Percent)**
Confirmed	641 (97.7)
Probable	15 (2.3)
Outcome	**Number (Percent)**
Hospitalized	85 (13.0)
Died	5 (0.8)
Sensitive Situation	**Number (Percent)**
Daycare	17 (2.6)
Health care	12 (1.8)
Food handler	8 (1.2)
Imported Status	**Number (Percent)**
Acquired in Florida	518 (92.8)
Acquired in the U.S., not Florida	11 (2.0)
Acquired outside the U.S.	29 (5.2)
Acquired location unknown	98
Outbreak Status	**Number (Percent)**
Sporadic	581 (93.1)
Outbreak-associated	43 (6.9)
Outbreak status unknown	32

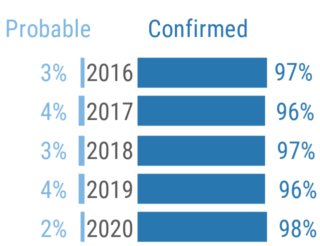
Giardiasis occurs throughout the state. In 2020, rates (per 100,000 population) were consistently highest in small, rural counties.



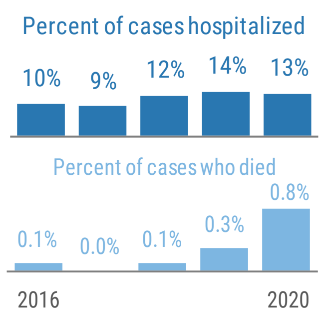
Rates are by county of residence for infections acquired in Florida (656 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

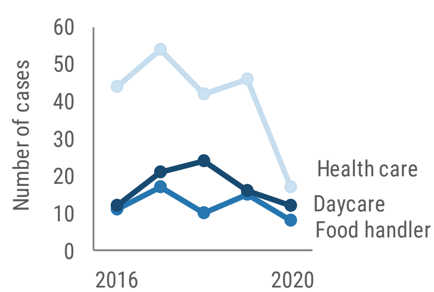
Most cases are confirmed. Probable cases are epidemiologically linked to confirmed cases.



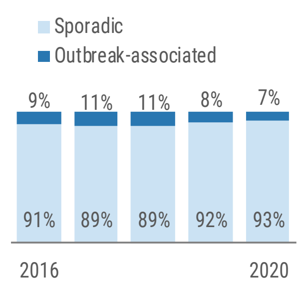
Between 9% and 14% of cases are hospitalized; deaths are very rare.



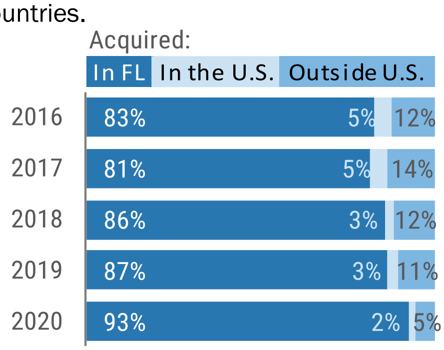
Cases in sensitive situations are monitored. People in sensitive situations may pose a risk for transmitting infection to others.



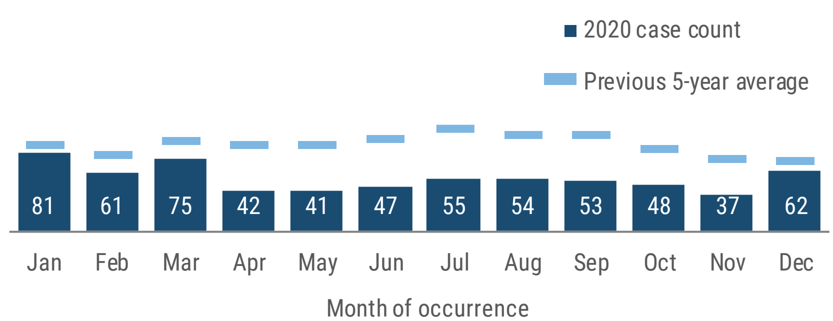
Outbreak-associated giardiasis cases typically reflect small household clusters.



Between 81% to 93% of giardiasis infections are acquired in Florida each year; some infections are acquired in other states and countries.



Giardiasis occurs throughout the year with usually a small increase in the summer and early fall months. In 2020, incidence was highest in January and March.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Gonorrhea (Excluding Neonatal Conjunctivitis)

Key Points

Over the past 10 years there has been a shift in the demographics of those less than 25 years old diagnosed with gonorrhea. Historically, the gonorrhea rate was higher in females than males for persons 15 to 24 years old. During 2015, this shifted for persons 20 to 24 years old, with more male than female patients in that age group diagnosed. The rates in males have been increasing in most age groups since 2014.

The Florida Department of Health is 1 of 10 recipients of the Centers for Disease Control and Prevention's (CDC) Sexually Transmitted Disease Surveillance Network Grant. This grant requires awardees to randomly sample 10% of the reported gonorrhea cases across the state and conduct in-depth interviews to gather more information about potential risk factors. This includes information about their sexual behaviors and preferences as well as self-reported demographic information. Data from this grant are used to identify at-risk subpopulations and better target prevention efforts for these groups.

Disease Facts

Caused by *Neisseria gonorrhoeae* bacteria

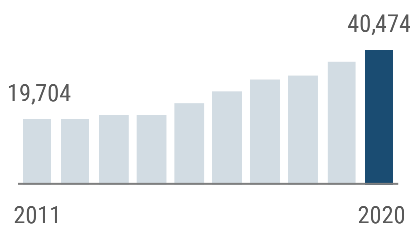
Illness is frequently asymptomatic; sometimes abnormal discharge from vagina or penis or burning sensation when urinating

Transmitted sexually via anal, vaginal or oral sex and sometimes from mother to child during pregnancy or delivery

Under surveillance to implement effective interventions immediately for every case, monitor incidence over time, estimate burden of illness and evaluate treatment and prevention programs

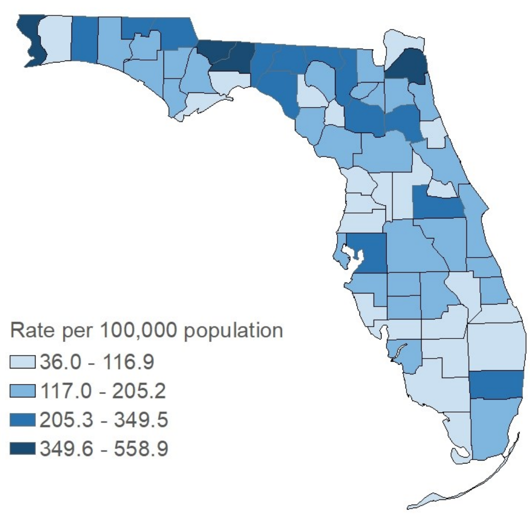
Disease Trends

Gonorrhea incidence continued to increase in 2020.



Summary			
Number of cases			40,474
Rate (per 100,000 population)			187.0
Change from 5-year average rate			+25.5%
Age (in Years)			
Mean			28
Median			26
Min-max			1 - 83
Gender	**Number**	**(Percent)**	**Rate**
Female	15,974	(39.5)	144.4
Male	24,493	(60.5)	231.6
Unknown gender	7		
Race	**Number**	**(Percent)**	**Rate**
White	11,597	(34.3)	69.4
Black	18,403	(54.5)	501.3
Other	3,769	(11.2)	300.2
Unknown race	6,705		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	26,792	(83.3)	168.8
Hispanic	5,373	(16.7)	93.1
Unknown ethnicity	8,309		

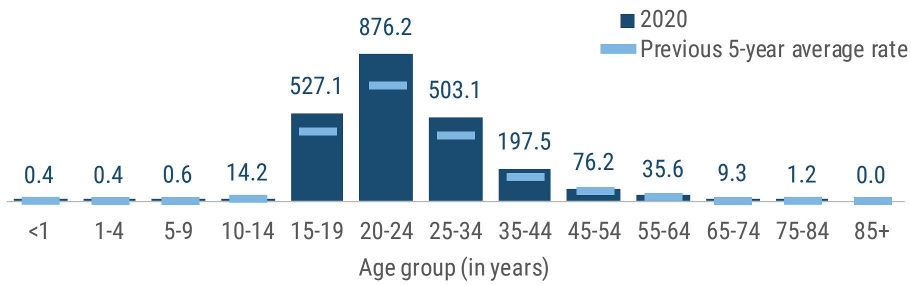
Gonorrhea occurs throughout the state. Higher rates (per 100,000 population) were clustered in the northern part of the state in 2020. The highest rates were in Gadsden (558.9), Duval (435.3), Leon (430.3), Escambia (374.6) and Alachua (349.5) counties. These counties accounted for 19.8% of the state's cases but only 8.9% of the state's population.



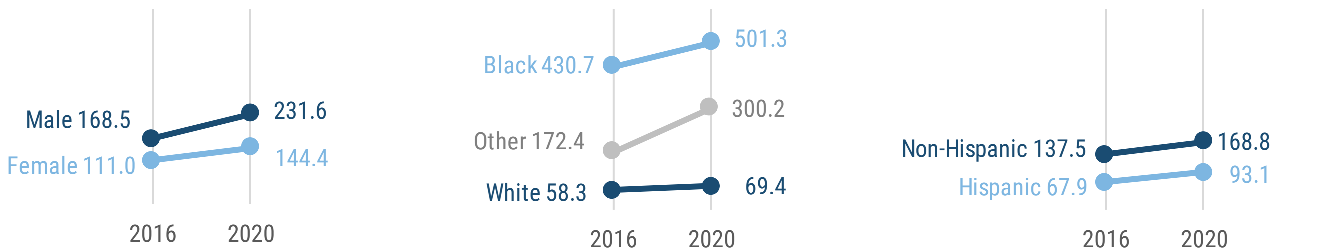
Rates are by county of residence, regardless of where infection was acquired (40,474 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

Gonorrhea (Excluding Neonatal Conjunctivitis)

Gonorrhea rates are highest in teenagers and adults 15 to 34 years old, peaking in adults 20 to 24 years old.



Gonorrhea rates (per 100,000 population) have increased in all genders, races and ethnicity groups from 2016 to 2020, but the most noticeable increase was in other races. The rates were 7 times higher in blacks than whites in 2020. Rates are higher in males than females and higher in non-Hispanics than Hispanics.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Gonorrhea cases (excluding neonatal conjunctivitis) were missing 13.5% of ethnicity data in 2016 and 8.6% of race data in 2016.

The gonorrhea rate (per 100,000 population) in males has increased in all age groups primarily affected by gonorrhea over the past 10 years. However, the increase is most pronounced in adults 25 to 34 years old, particularly in the last 4 years. In females, the rate increased in 2020 among those 15 to 34 years old.

Teenagers 15–19 years old

Gender	2011 rate	10-year trend	2020 rate
Male	261.3		413.6
Female	563.6		645.8

Young adults 20–24 years old

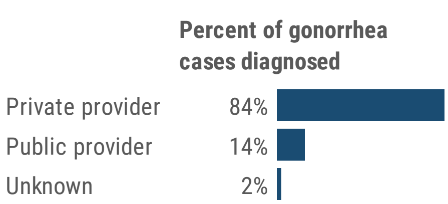
Gender	2011 rate	10-year trend	2020 rate
Male	504.0		911.5
Female	599.7		839.1

Adults 25–34 years old

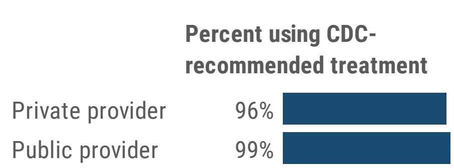
Gender	2011 rate	10-year trend	2020 rate
Male	251.3		652.8
Female	191.3		347.9

With the looming threat of antibiotic-resistant *Neisseria gonorrhoeae*, it is important that patients diagnosed with gonorrhea are treated with CDC-recommended antibiotics. Currently, ceftriaxone paired with azithromycin is the recommended treatment. Ceftriaxone is the last available antibiotic to treat *N. gonorrhoeae*; the bacteria have not developed a resistance to ceftriaxone yet.

In 2020, 84% of diagnosed gonorrhea cases in Florida were diagnosed at private providers' offices, while 14% were diagnosed in public providers' offices.



Public providers used CDC-recommended treatment more often than private providers in 2020. Common reasons for not receiving CDC-recommended treatment are drug allergies and medication cost.



Hansen's Disease (Leprosy)

Key Points

With early diagnosis and treatment, Hansen's disease can be cured. However, if left untreated, the nerve damage can be permanent. Leprosy was once feared as a highly contagious and devastating disease. However, it is now recognized that the disease is not spread through casual contact, and most people (about 95%) are resistant to infection. For those who do become infected, effective treatment is available. Historically, the disease was not thought to be endemic in Florida. More recently in Florida and other parts of the southern U.S., infections have been identified in both people and armadillos believed to have been exposed in the region.

Due to the long incubation period for Hansen's disease and a mobile population, location of exposure is often difficult to identify.

Disease Facts

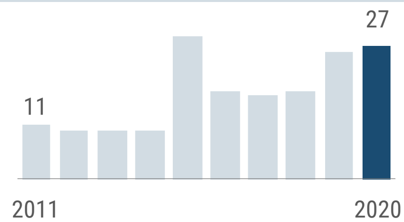
Caused by *Mycobacterium leprae* bacteria

Illness mainly affects the skin (e.g., discolored patches of skin, nodules on the skin, ulcers on soles of feet), nerves (e.g., numbness in affected areas, muscle weakness or paralysis, enlarged nerves), and mucous membranes (e.g., stuffy nose, nosebleeds)

Transmission thought to be person-to-person via respiratory droplets following extended close contact with an infected person (still not clearly defined, but it is hard to spread)

Under surveillance to facilitate early diagnosis and appropriate treatment by an expert to minimize permanent nerve damage and prevent further transmission

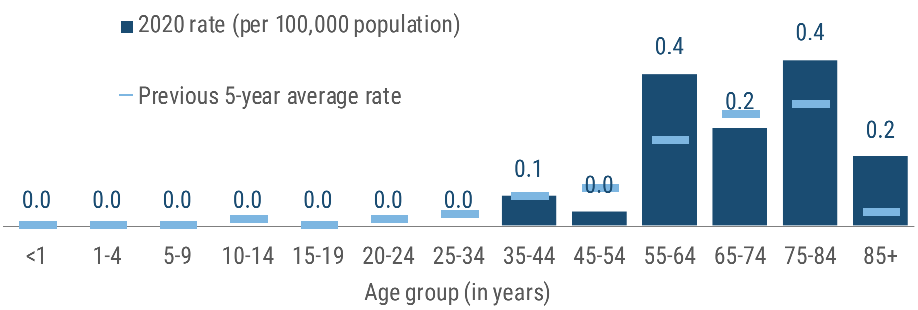
Hansen's disease incidence increased in 2020.



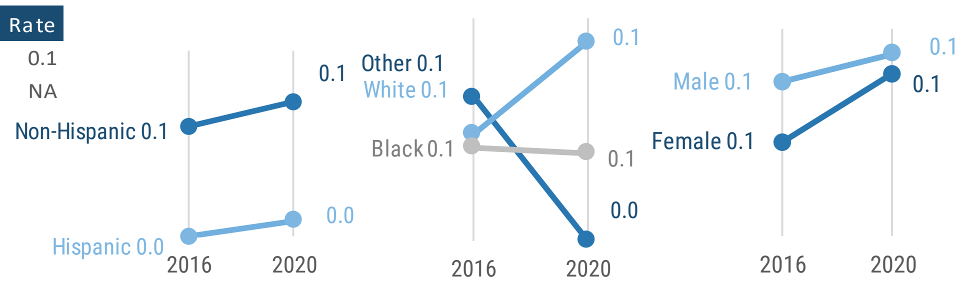
Disease Trends

Summary		
Number of cases		27
Rate (per 100,000 population)		0.1
Change from 5-year average rate		+18.7%
Age (in Years)		
Mean		65
Median		64
Min-max		37 - 90
Gender	**Number (Percent)**	**Rate**
Female	13 (48.1)	NA
Male	14 (51.9)	NA
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	21 (91.3)	0.1
Black	2 (8.7)	NA
Other	0 (0.0)	NA
Unknown race	4	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	23 (95.8)	0.1
Hispanic	1 (4.2)	NA
Unknown ethnicity	3	

The Hansen's disease rate (per 100,000 population) is consistently highest in adults 55 to 84 years old.



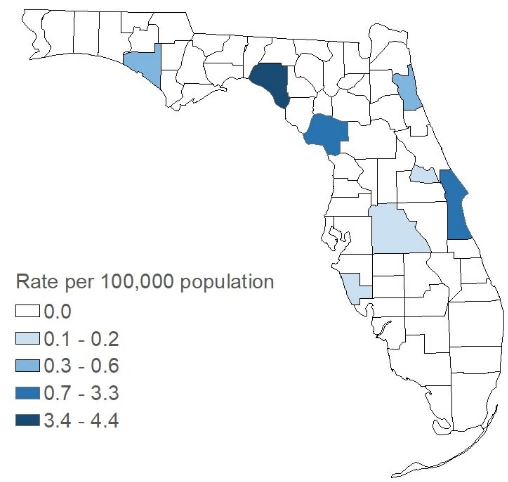
Hansen's disease rates (per 100,000 population) in 2020 were similar for all demographic groups. All groups remained stable from 2016–20 except for other races who decreased.



Hansen's Disease (Leprosy)

Summary	Number
Number of cases	27
Outcome	**Number (Percent)**
Hospitalized	0 (0.0)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	3 (75.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	1 (25.0)
Acquired location unknown	23
Outbreak Status	**Number (Percent)**
Sporadic	27 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0

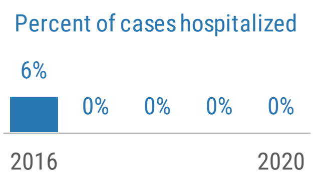
Hansen's disease cases occurred mostly in northern and central parts of the state in 2020.

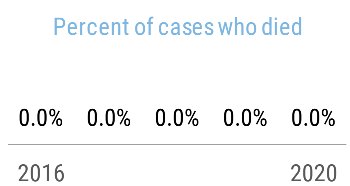


Rates are by county of residence, regardless of where infection was acquired (27 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

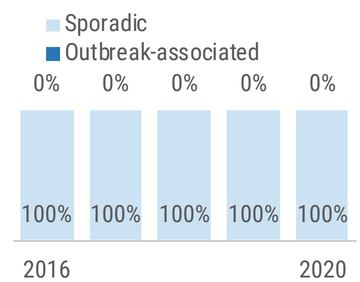
More Disease Trends

Few cases are hospitalized each year; deaths are uncommon. No cases were hospitalized or died due to the disease in 2020.

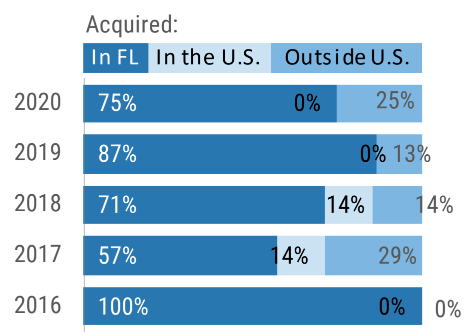




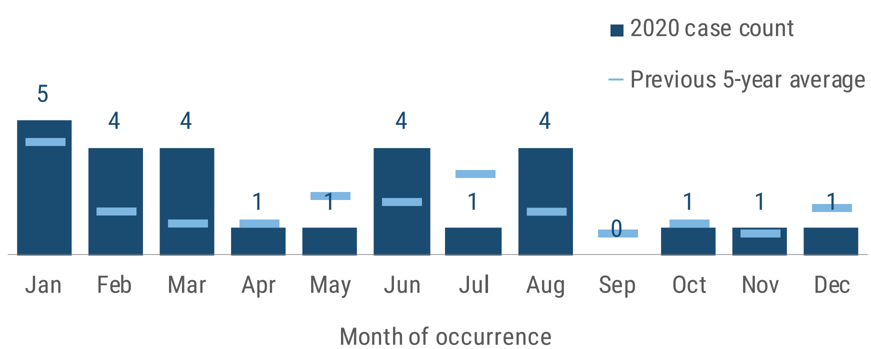
All cases were sporadic; no outbreak-associated cases were identified.



Most cases of Hansen's disease were acquired in Florida in 2020.



Hansen's disease cases were reported throughout the year in 2020. Most cases were reported in January.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hansen's disease (leprosy) cases were missing 11.1% of ethnicity data in 2020 and 14.8% of race data in 2020.

Hepatitis A

Key Points

The best way to prevent hepatitis A infection is through vaccination. Vaccination is recommended for all children at age 1 year, travelers to countries where hepatitis A is common, families and caregivers of adoptees from countries where hepatitis A is common, men who have sex with men, persons who use recreational drugs (injection or non-injection), persons experiencing homelessness, persons with chronic liver disease or clotting factor disorders, persons with direct contact with others who have hepatitis A and anyone who wishes to obtain immunity.

Disease Facts

Caused by hepatitis A virus (HAV)

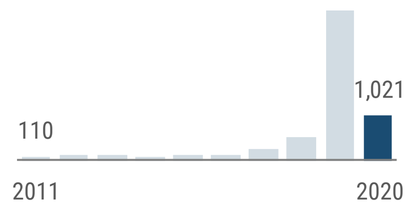
Illness includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)

Transmitted via fecal-oral route, including person to person, foodborne and waterborne

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor effectiveness of immunization programs

Incidence remained high in 2020, though it decreased from the previous high observed in 2019. The majority of cases were in adults (median of 40 years old), males, whites and non-Hispanics.

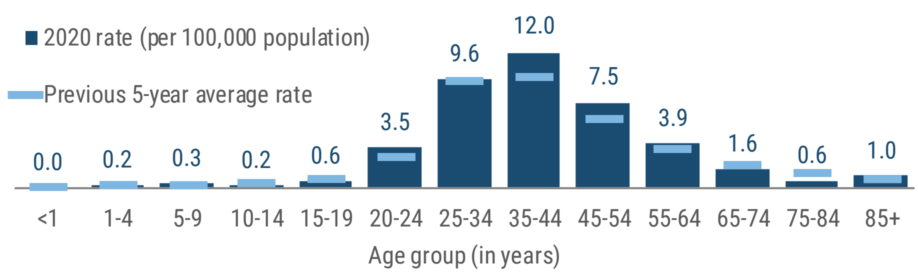
Hepatitis A incidence remained at historic highs for 2020, though it decreased from the previous year.



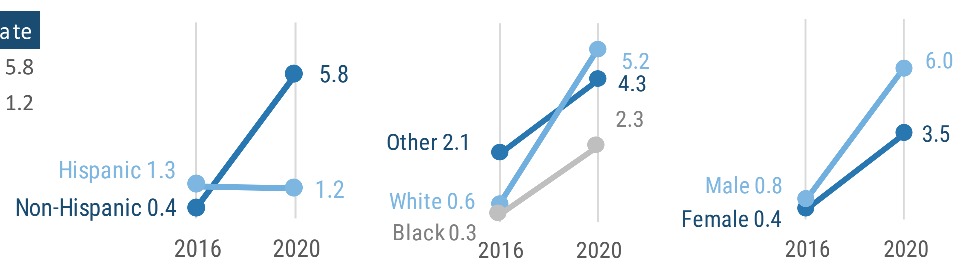
Disease Trends

Summary			
Number of cases			1,021
Rate (per 100,000 population)			4.7
Change from 5-year average rate			+11.7%
Age (in Years)			
Mean			42
Median			40
Min-max			2 - 98
Gender	**Number**	**(Percent)**	**Rate**
Female	382	(37.4)	3.5
Male	639	(62.6)	6.0
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	873	(86.4)	5.2
Black	84	(8.3)	2.3
Other	54	(5.3)	4.3
Unknown race	10		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	927	(93.1)	5.8
Hispanic	69	(6.9)	1.2
Unknown ethnicity	25		

The hepatitis A rate (per 100,000 population) is consistently highest in adults 25 to 54 years old.



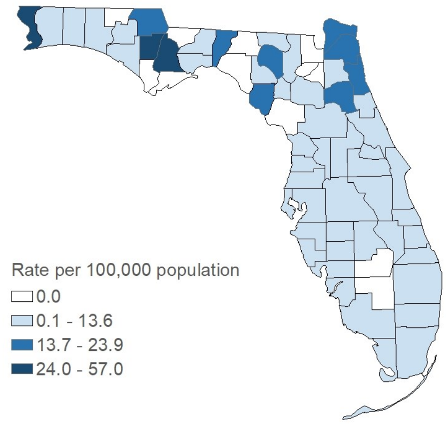
Hepatitis A rates (per 100,000 population) in 2020 remained high for all demographic groups. Only Hispanics noted a slight decrease.



Hepatitis A

Summary	Number
Number of cases	1,021
Case Classification	**Number (Percent)**
Confirmed	1,021 (100.0)
Probable	0 (0.0)
Outcome	**Number (Percent)**
Hospitalized	740 (72.5)
Died	51 (5.0)
Sensitive Situation	**Number (Percent)**
Daycare	2 (0.2)
Health care	14 (1.4)
Food handler	35 (3.4)
Imported Status	**Number (Percent)**
Acquired in Florida	892 (98.7)
Acquired in the U.S., not Florida	3 (0.3)
Acquired outside the U.S.	9 (1.0)
Acquired location unknown	117
Outbreak Status	**Number (Percent)**
Sporadic	804 (81.5)
Outbreak-associated	182 (18.5)
Outbreak status unknown	35

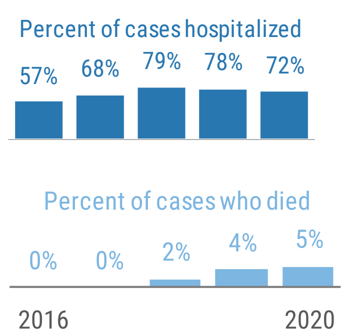
Hepatitis A cases occurred throughout the state in 2020, though the rate (per 100,000 population) was high in counties in the Panhandle and northeast Florida.



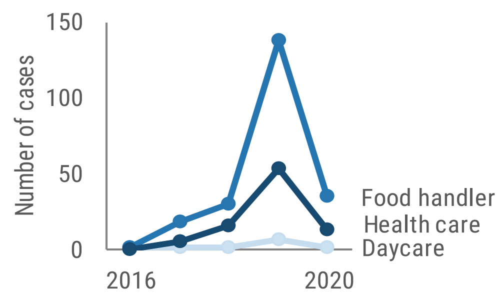
Rates are by county of residence for infections acquired in Florida (1,021 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

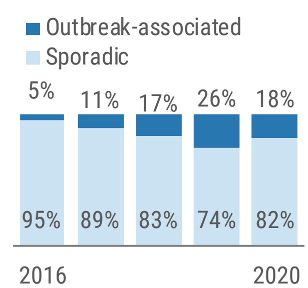
Each year, 57% to 79% of hepatitis A cases are hospitalized, though deaths are rare.



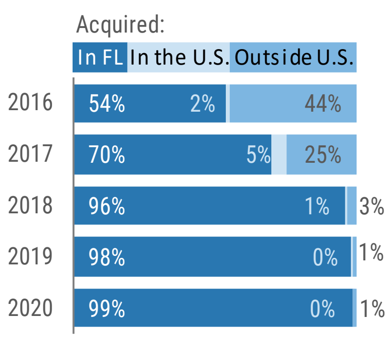
Cases in sensitive situations were highest in food handlers, followed by health care workers and daycare, similar to previous years.



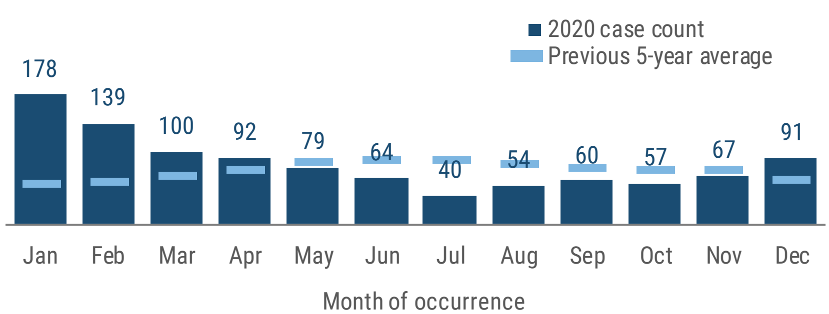
More outbreak-associated cases were identified in 2019 and 2020 than previous years.



Almost all cases of hepatitis A were acquired in Florida in 2020.



Hepatitis A case numbers gradually declined throughout the first half of the year before stabilizing and increasing slightly in December.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Hepatitis B, Acute

Key Points

Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis B from chronic diagnoses, making surveillance challenging. Incidence has increased over the last decade despite increased vaccination. The identified increase is likely due to several factors, including an enhanced surveillance project focusing on hepatitis infections in young adults 18 to 25 years old implemented from 2012 to 2016 and changes in risk behaviors among young adults. Updated laboratory reporting guidance from June 2014 requiring laboratories participating in electronic laboratory reporting to submit all negative hepatitis results in addition to positive results has also helped identify more acute cases.

Routine vaccination against hepatitis B is recommended for all children at birth (since 1994), all unvaccinated children and adolescents less than 19 years old, adults at risk for hepatitis B and adults 19 to 59 years old with diabetes.

Disease Facts

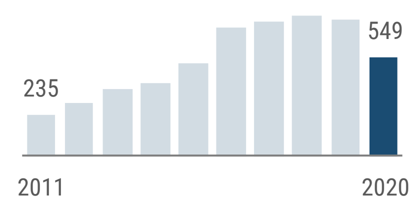
Caused by hepatitis B virus (HBV)

Illness includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)

Transmitted via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks) or from mother to child during pregnancy or delivery

Under surveillance to prevent HBV transmission, identify and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions, monitor effectiveness of immunization programs

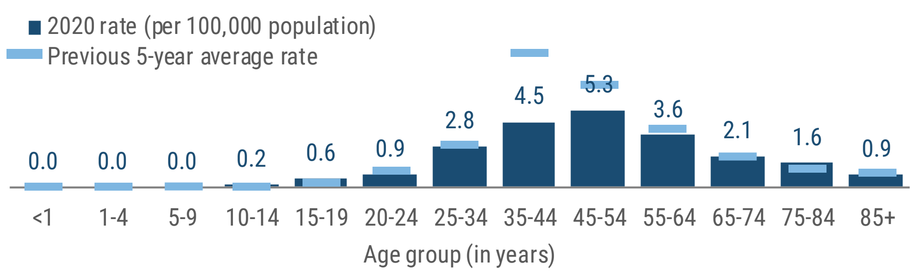
Acute hepatitis B incidence decreased in 2020.



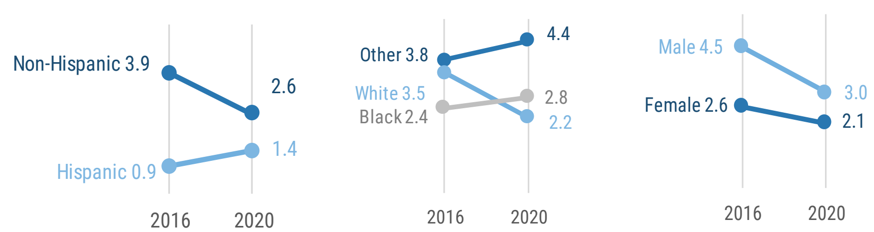
Disease Trends

Summary		
Number of cases		549
Rate (per 100,000 population)		2.5
Change from 5-year average rate		-25.6%
Age (in Years)		
Mean		49
Median		48
Min-max		10 - 90
Gender	**Number (Percent)**	**Rate**
Female	228 (41.5)	2.1
Male	321 (58.5)	3.0
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	362 (69.9)	2.2
Black	101 (19.5)	2.8
Other	55 (10.6)	4.4
Unknown race	31	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	413 (83.6)	2.6
Hispanic	81 (16.4)	1.4
Unknown ethnicity	55	

The acute hepatitis B rate (per 100,000 population) is consistently highest in adults 35 to 54 years old and decreases steadily with age. The rate in adults 25 to 34 years old was lower in 2020 than the previous five-year average.



The acute hepatitis B rate (per 100,000 population) is higher in males than females and higher in non-Hispanics than Hispanics. In 2020, rates were similar in blacks and whites but notably higher in other races.



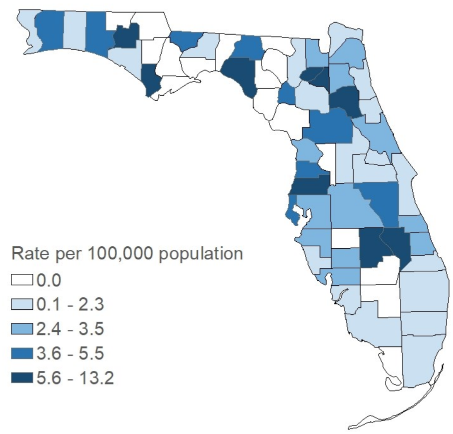
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis B cases were missing 9.2% of ethnicity data in 2016, 5.8% of race data in 2016, 10.0% of ethnicity data in 2020 and 5.6% of race data in 2020.

Hepatitis B, Acute

Summary	Number
Number of cases	549
Case Classification	**Number (Percent)**
Confirmed	456 (83.1)
Probable	93 (16.9)
Outcome	**Number (Percent)**
Hospitalized	239 (43.5)
Died	13 (2.4)
Imported Status	**Number (Percent)**
Acquired in Florida	344 (99.4)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	2 (0.6)
Acquired location unknown	203
Outbreak Status	**Number (Percent)**
Sporadic	351 (98.3)
Outbreak-associated	6 (1.7)
Outbreak status unknown	192

In 2020, 6 outbreak-associated cases were identified, including 4 (67%) cases linked to sexual contact, 3 (50%) pairs of acute cases, 2 (33%) cases linked to chronic hepatitis B cases and 1 (17%) case linked to a household contact.

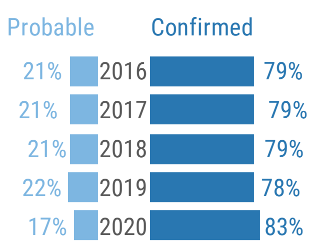
Acute hepatitis B cases occurred in most parts of the state in 2020, though less commonly in the central and eastern parts of the Florida Panhandle. The rates (per 100,000 population) were highest in the western part of the Panhandle and primarily small, rural counties across the rest of the state.



Rates are by county of residence, regardless of where infection was acquired (549 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

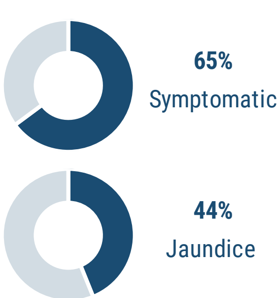
More than 78% of cases are confirmed each year. In 2020, 83% of cases were confirmed.



Most acute hepatitis B cases tested positive for hepatitis B surface antigen and immunoglobulin M (IgM) antibody to hepatitis B core antigen. The IgM antibody is an indicator of acute infection.

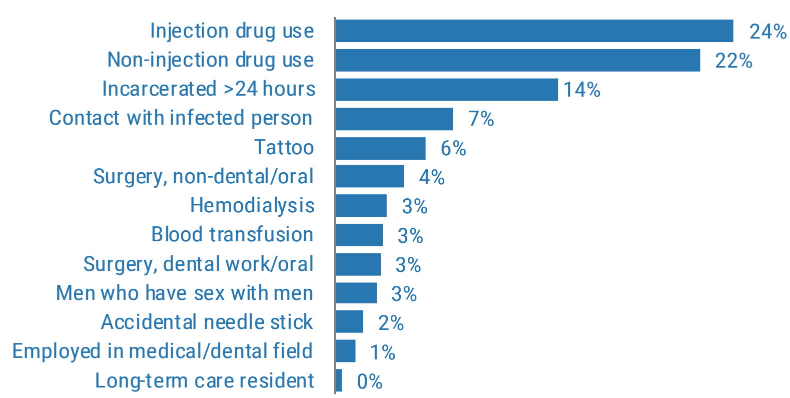
Test type	Percent of cases	Test interpretation
Hepatitis B surface antigen	82%	Acute or chronic HBV infection, no immunity developed
Hepatitis B core antibdy, IgM	78%	HBV is multiplying
Hepatitis B DNA	42%	HBV has stopped multiplying
Hepatitis B core antibody, total	23%	Amount of HBV in blood
Hepatitis B e antigen	22%	Acute HBV infection
Hepatitis B e antibody	10%	Immunity to HBV
Hepatitis B surface antibody	10%	Hepatitis B core antibdy, IgM

65% of acute hepatitis B cases reported in 2020 were symptomatic, but fewer than half had jaundice.



Similar to past years, the most common risk factors for hepatitis B infection reported in 2020 included injection drug use, non-injection drug use and incarceration.

Reported risk factors within six months of infection



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hepatitis B, Chronic

Key Points

Hepatitis B incidence is highest among adults 34 to 44 years old. Given the large burden of chronic hepatitis and limited county resources, there have been concerns regarding data completeness and case ascertainment. Earlier data are less reliable. Over the past few years, improvements in electronic laboratory reporting (ELR), logic within the surveillance application and expansion of reporting requirements are believed to have improved case ascertainment. In 2014, reporting requirements were updated to include mandatory reporting of all positive and negative hepatitis results, as well as all liver function tests, to support the identification of acute hepatitis B cases. ELR has continued to expand.

Disease Facts

Caused by hepatitis B virus (HBV)

Illness can include chronic liver disease (e.g., cirrhosis and liver cancer), though it is often asymptomatic; two to six percent of acute infections in adults become chronic

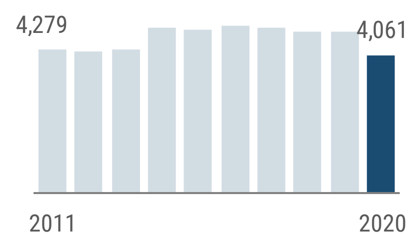
Transmitted via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks) or from mother to child during pregnancy or delivery

Under surveillance to prevent HBV transmission, identify acute infections and prevent outbreaks, assist in evaluating the impact of public health interventions, monitor effectiveness of immunization programs

Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis B from chronic. Cases that do not meet the clinical criteria for acute hepatitis B or do not have prior negative laboratory results to indicate acute infection are reported as chronic. There is no requirement to investigate chronic cases.

Given the large volume of laboratory results received electronically that are not investigated and for which no clinical information is available, it is likely that acute hepatitis B infections are misclassified as chronic.

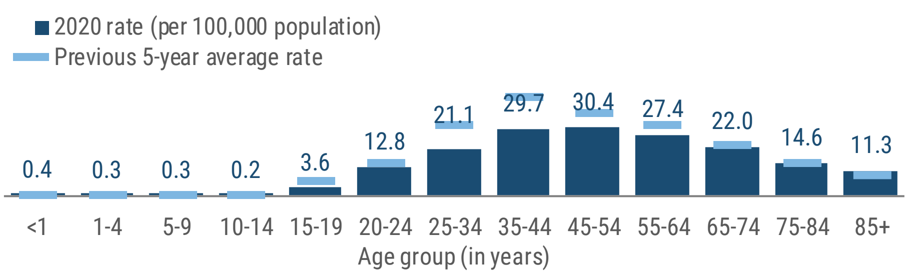
Chronic hepatitis B incidence decreased in 2020.



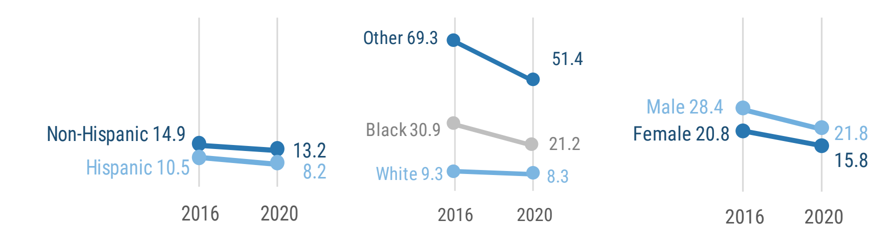
Disease Trends

Summary			
Number of cases			4,061
Rate (per 100,000 population)			18.8
Change from 5-year average rate			-20.6%
Age (in Years)			
Mean			50
Median			50
Min-max			0 - 100
Gender	**Number**	**(Percent)**	**Rate**
Female	1,746	(43.1)	15.8
Male	2,305	(56.9)	21.8
Unknown gender	10		
Race	**Number**	**(Percent)**	**Rate**
White	1,380	(49.3)	8.3
Black	777	(27.7)	21.2
Other	645	(23.0)	51.4
Unknown race	1,259		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	2,088	(81.6)	13.2
Hispanic	471	(18.4)	8.2
Unknown ethnicity	1,502		

Similar to acute hepatitis B, the rate (per 100,000 population) of chronic hepatitis B is highest in adults 35 to 54 years old. The rates in most age groups were lower in 2020 than the previous five-year average.



Chronic hepatitis B rates (per 100,000 population) are similar by gender and ethnicity groups, though rates vary by race. Few chronic cases are investigated, causing a large proportion of race and ethnicity data to be missing.

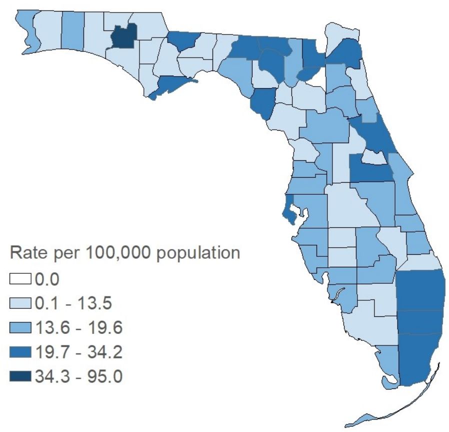


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chronic hepatitis B cases were missing 43.6% of ethnicity data in 2016, 34.0% of race data in 2016, 37.0% of ethnicity data in 2020 and 31.0% of race data in 2020.

Hepatitis B, Chronic

Summary	Number
Number of cases	4,061
Case Classification	**Number (Percent)**
Confirmed	2,060 (50.7)
Probable	2,001 (49.3)
Outcome	**Number (Percent)**
Hospitalized	99 (2.4)
Died	33 (0.8)
Imported Status	**Number (Percent)**
Acquired in Florida	266 (96.7)
Acquired in the U.S., not Florida	1 (0.4)
Acquired outside the U.S.	8 (2.9)
Acquired location unknown	3,786
Outbreak Status	**Number (Percent)**
Sporadic	402 (99.3)
Outbreak-associated	3 (0.7)
Outbreak status unknown	3,656

Chronic hepatitis B occurred throughout the state in 2020, with the highest rates (per 100,000 population) in small, rural counties across the state and in large counties in southeast Florida.



Rates are by county of residence, regardless of where infection was acquired (4,061 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

Most chronic hepatitis B cases tested positive for hepatitis B surface antigen. A small number of cases had immunoglobulin M (IgM) antibody to hepatitis B core antigen but did not meet the case definition for acute hepatitis B.

Test type	Percent of cases	Test interpretation
Hepatitis B surface antigen	89%	Acute or chronic HBV infection, no immunity developed
Hepatitis B DNA	37%	HBV has stopped multiplying
Hepatitis B core antibody, total	27%	Acute HBV infection
Hepatitis B e antibody	15%	Immunity to HBV
Hepatitis B e antigen	10%	Amount of HBV in blood
Hepatitis B surface antibody	4%	HBV is multiplying
Hepatitis B core antibdy, IgM	2%	Hepatitis B core antibdy, IgM

Just over half (51%) of chronic hepatitis B cases were confirmed in 2020. Very few cases were investigated.

Probable		Confirmed
66%	2016	34%
57%	2017	43%
56%	2018	44%
53%	2019	47%
49%	2020	51%

In 2020, 217 chronic hepatitis B cases (5.3%) were also diagnosed with HIV. The majority of people with co-infections were male, black and 45 to 54 years old.

Gender	Percent of cases
Male	86%
Female	14%
Race	
White	46%
Black	49%
Other	2%
Unknown	4%

Age group	Percent of cases
15–19	0.4%
20–24	2.0%
25–34	11.7%
35–44	21.8%
45–54	29.6%
55–64	28.4%
65–74	5.5%
75–84	0.8%
85+	0.0%

Order of infection can not be determined from these charts. Race and ethnicity data are from the enhanced HIV/AIDS Reporting System as demographic data were more complete.

See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hepatitis B, Pregnant Women

Key Points

Hepatitis B is a vaccine-preventable disease. Identification of HBV in pregnant women allows for appropriate treatment of their infants, significantly reducing the infants' risk of contracting HBV. Rates for HBV infections in pregnant women are per 100,000 women ages 15 to 44 years old.

The 2016 National Immunization Survey estimates that HBV vaccination coverage for a birth dose administered from birth through 3 years old was 75% in the U.S. and 59% in Florida. Birthing hospitals have standing orders to administer the birth dose of the HBV vaccine; however, pediatricians sometimes choose to wait to give the first dose in their private offices. With lower-than-expected vaccination rates, Florida is currently working with the Florida Chapter of the American Academy of Pediatrics to provide education reminding health care providers that the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices recommends the birth dose be given within 24 hours to help decrease HBV infections in newborns.

Incidence of HBV in pregnant women has generally decreased over the past 10 years, possibly due to increased vaccination of women of childbearing age or changes in case ascertainment and protocol. In the U.S., Asians have a high HBV carrier rate (7–16%) and account for most HBV diagnoses in the other races category.

Disease Facts

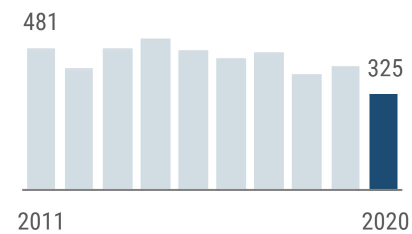
Caused by hepatitis B virus (HBV)

Illness is acute or chronic; about 90% of children who are infected at birth or during the first year of life will become chronically infected

Transmitted via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks) or from mother to child during pregnancy or delivery

Under surveillance to identify individual cases and implement control measures to prevent HBV transmission from mother to baby; monitor and evaluate effectiveness of screening programs

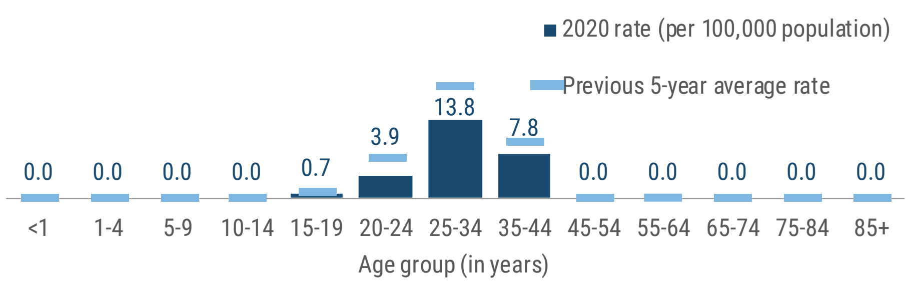
HBV infections in pregnant women have declined over the past 10 years but have remained relatively consistent since 2011.



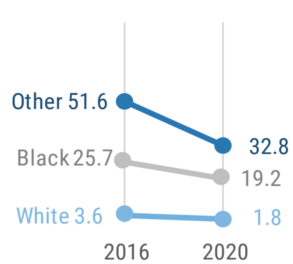
Disease Trends

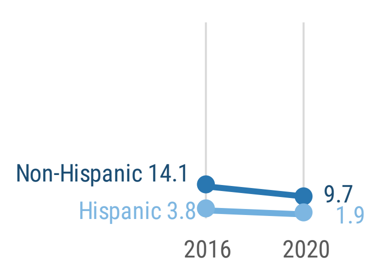
Summary		
Number of cases		325
Rate (per 100,000 population)		8.3
Change from 5-year average rate		-29.2%
Age (in Years)		
Mean		32
Median		32
Min-max		17 - 45
Gender	**Number (Percent)**	**Rate**
Female	325 (100.0)	8.3
Male	0 (0.0)	NA
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	50 (16.8)	1.8
Black	156 (52.5)	19.2
Other	91 (30.6)	32.8
Unknown race	28	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	263 (92.0)	9.7
Hispanic	23 (8.0)	1.9
Unknown ethnicity	39	

The HBV infection rate (per 100,000 population) in pregnant women is highest in women 25 to 34 years old, with much lower rates in older and younger women of childbearing age.



The HBV infection rate (per 100,000 population) in pregnant women decreased slightly across all demographics from 2016 to 2020, except in other races where the decrease was dramatic. The rate is highest in other races, followed by blacks and then whites, and is higher in non-Hispanics than Hispanics.



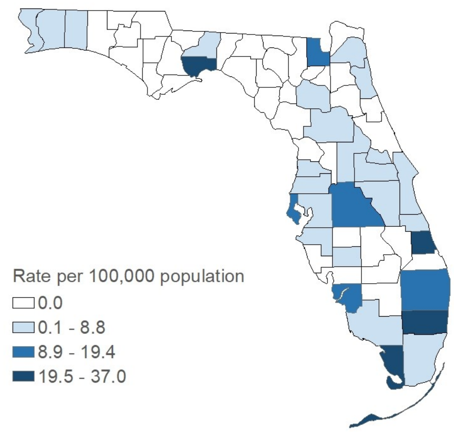


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hepatitis B surface antigen cases in pregnant women were missing 6.7% of ethnicity data in 2016, 5.6% of race data in 2016, 12.0% of ethnicity data in 2020 and 8.6% of race data in 2020.

Hepatitis B, Pregnant Women

Summary	Number
Number of cases	325
Outcome	**Number (Percent)**
Hospitalized	32 (9.8)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	181 (78.4)
Acquired in the U.S., not Florida	5 (2.2)
Acquired outside the U.S.	45 (19.5)
Acquired location unknown	94

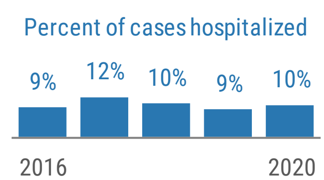
Similar to the distribution of chronic hepatitis B, the highest rates (per 100,000 population) of HBV infection in pregnant women are clustered in south Florida. Unlike chronic HBV infections, many counties in the Panhandle did not identify any HBV infections in pregnant women in 2020.

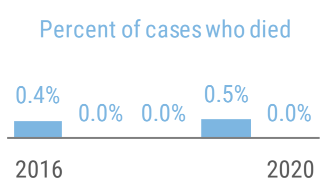


Rates are by county of residence, regardless of where infection was acquired (325 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

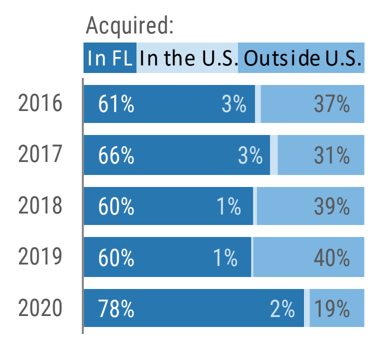
More Disease Trends

Between 9% and 12% of cases are hospitalized each year; deaths are rare. No deaths were identified in 2020.

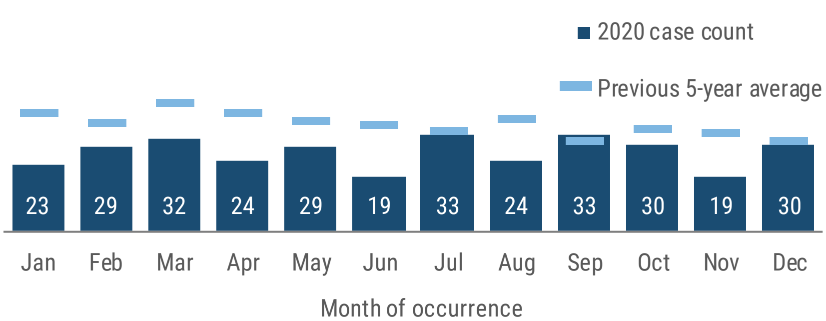




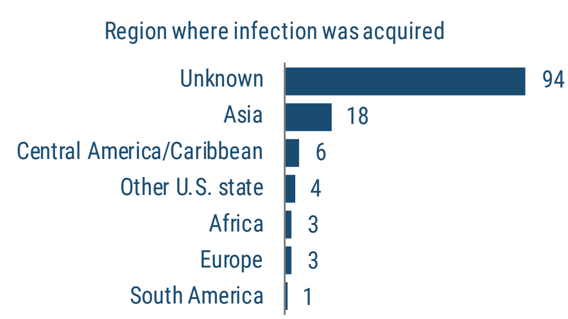
Generally, between 19% and 40% of infections are acquired outside Florida.



There is no seasonality to HBV infections in pregnant women. The number of cases that occurred in 2020 varied by month from 19 cases in June and November to 33 cases in July and September.



For infections known to be acquired outside Florida, Asia and Central America/Caribbean are the most common regions where exposure occurred.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status and month of occurrence.

Hepatitis C, Acute

Key Points

Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis C from chronic diagnoses, making surveillance challenging. Incidence has increased since 2008, likely due to several factors, including a change in case definition in 2008, an enhanced surveillance project focusing on hepatitis infections in young adults initiated in 2012 and changes in risk behaviors in young adults. Updated laboratory reporting guidance from June 2014 requiring laboratories participating in electronic laboratory reporting to submit all negative hepatitis results in addition to positive results has also helped identify more acute cases.

Disease Facts

Caused by hepatitis C virus (HCV)

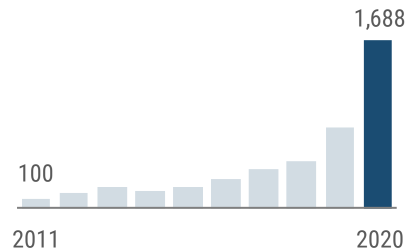
Illness includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)

Transmitted via blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), from mother to child during pregnancy or delivery or rarely through anal or vaginal sex

Under surveillance to prevent HCV transmission, identify and prevent outbreaks, assist in evaluating the impact of public health interventions and screening programs

New hepatitis C diagnoses are frequently associated with drug use and sharing of injection equipment. In 2020, most reported cases were sporadic. Twelve outbreak-associated cases were identified, of which 5 (42%) were epidemiologically linked to chronic hepatitis C cases. Of the 12 outbreak-associated cases, 6 (50%) were epidemiologically linked through sexual contact, 2 (17%) were linked to acute hepatitis C cases and 1 (8%) was linked for other reasons.

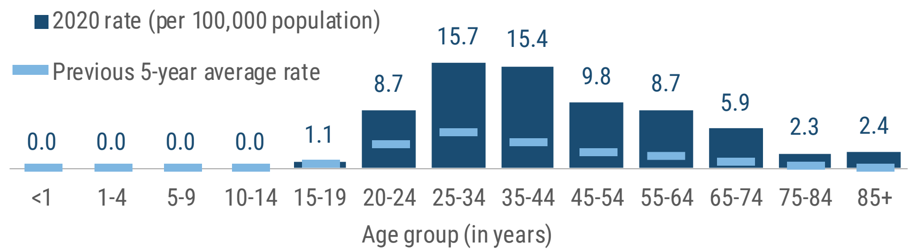
Acute hepatitis C incidence dramatically increased in 2020.



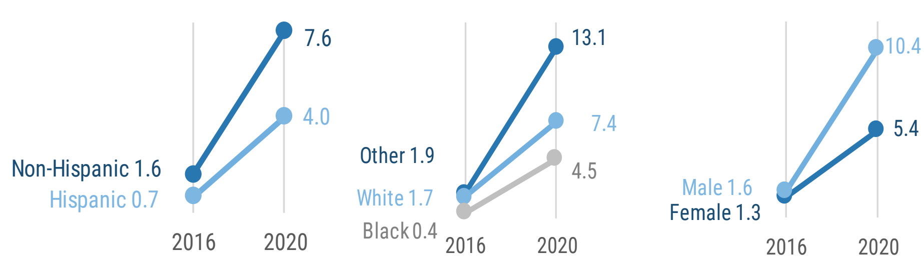
Disease Trends

Summary		
Number of cases		1,688
Rate (per 100,000 population)		7.8
Change from 5-year average rate		+267.3%
Age (in Years)		
Mean		44
Median		41
Min-max		16 - 94
Gender	**Number (Percent)**	**Rate**
Female	593 (35.1)	5.4
Male	1,095 (64.9)	10.4
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	1,236 (79.0)	7.4
Black	165 (10.5)	4.5
Other	164 (10.5)	13.1
Unknown race	123	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	1,208 (83.8)	7.6
Hispanic	233 (16.2)	4.0
Unknown ethnicity	247	

The acute hepatitis C rate (per 100,000 population) is higher in younger adults compared to acute hepatitis B. The highest rate is in adults ages 25 to 34 years old, followed by adults 35 to 44 years old. In 2020, rates in all adult age groups exceeded the previous five-year average.



Acute hepatitis C rates (per 100,000 population) increased across demographic groups from 2016 to 2020. The rate was higher in males compared to females, higher in non-Hispanics compared to Hispanics and higher in whites and other races compared to blacks.

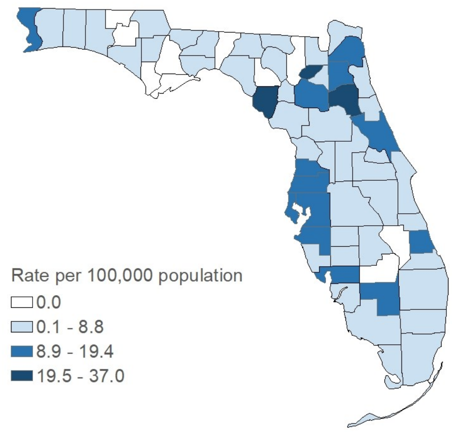


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis C cases were missing 5.3% of ethnicity data in 2016, 14.6% of ethnicity data in 2020 and 7.3% of race data in 2020.

Hepatitis C, Acute

Summary	Number
Number of cases	1,688
Case Classification	**Number (Percent)**
Confirmed	1,336 (79.1)
Probable	352 (20.9)
Outcome	**Number (Percent)**
Hospitalized	380 (22.5)
Died	47 (2.8)
Imported Status	**Number (Percent)**
Acquired in Florida	668 (99.3)
Acquired in the U.S., not Florida	4 (0.6)
Acquired outside the U.S.	1 (0.1)
Acquired location unknown	1,015
Outbreak Status	**Number (Percent)**
Sporadic	783 (98.5)
Outbreak-associated	12 (1.5)
Outbreak status unknown	893

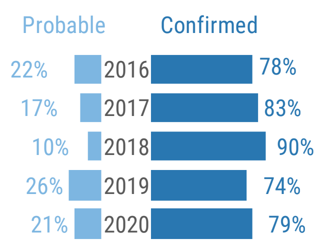
Acute hepatitis C cases were reported in most parts of the state in 2020. The highest rates (per 100,000 population) occurred in small, rural counties across the state.



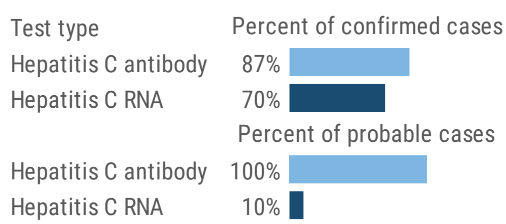
Rates are by county of residence, regardless of where infection was acquired (1,688 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

More than 74% of cases are confirmed each year. In 2020, 66% of cases were investigated.

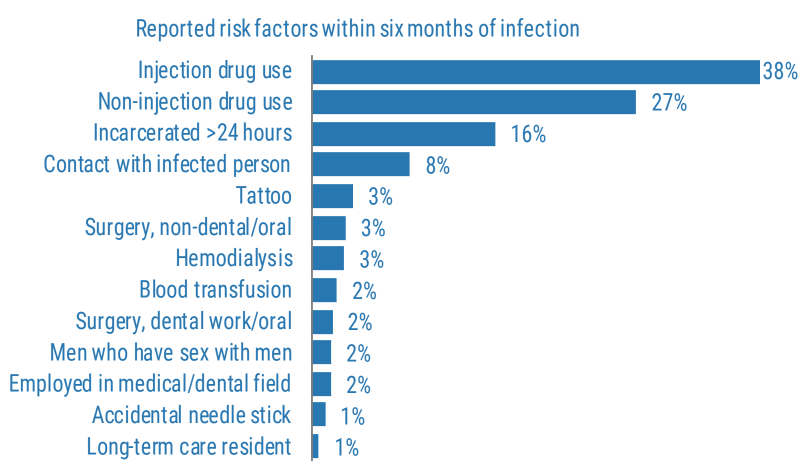


Almost all confirmed cases of acute hepatitis C were positive for hepatitis C antibody and most were positive for hepatitis C RNA. Only a small portion of probable cases were positive for hepatitis C RNA.



One-fourth of acute hepatitis C cases reported in 2020 were symptomatic, but only 14% had jaundice.

Similar to past years, the most common risk factors for hepatitis C infection reported in 2020 included injection drug use, non-injection drug use and incarceration.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Hepatitis C, Chronic (Including Perinatal)

Key Points

Hepatitis C incidence is highest among adults 25 to 34 years old. Changes in treatment options for HCV have led to an increased focus on identifying HCV infections. Given the large burden of chronic hepatitis C and limited county resources, there have been concerns regarding data completeness and case ascertainment. Earlier data are less reliable. Over the past few years, improvements in electronic laboratory reporting, logic within the surveillance application and expansion of reporting requirements are believed to have improved case ascertainment. Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis C from chronic.

Disease Facts

Caused by hepatitis C virus (HCV)

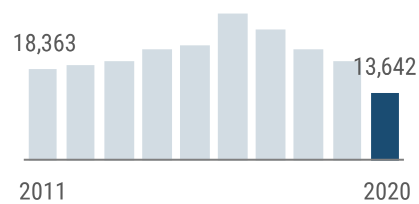
Illness can include chronic liver disease (e.g., cirrhosis and liver cancer), though it is often asymptomatic; 70% to 85% of acute infections in adults become chronic

Transmitted via blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), from mother to child during pregnancy or delivery or rarely through anal or vaginal sex

Under surveillance to prevent HCV transmission, identify acute infections and prevent outbreaks, assist in evaluating the impact of public health interventions and screening programs

Cases that do not meet the clinical criteria for acute hepatitis C or do not have prior negative laboratory results to indicate acute infection are reported as chronic. There is no requirement to investigate chronic cases. Given the volume of laboratory results received electronically for which no clinical information is available, it is likely that many acute HCV infections are misclassified as chronic. The high rate of chronic diagnoses in young adults (18 to 25 years old), for example, supports the theory that acute infections are not initially identified. An enhanced surveillance project focusing on chronic infections in young adults was implemented from 2012 through 2016 to help identify risk factors and acute infections.

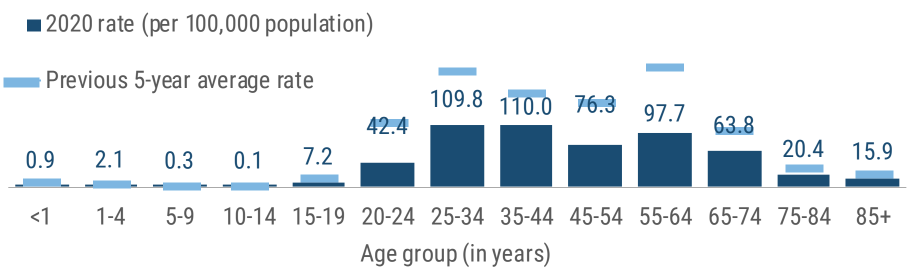
Chronic hepatitis C incidence increased in 2016 due to a case definition expansion but has decreased each year since.



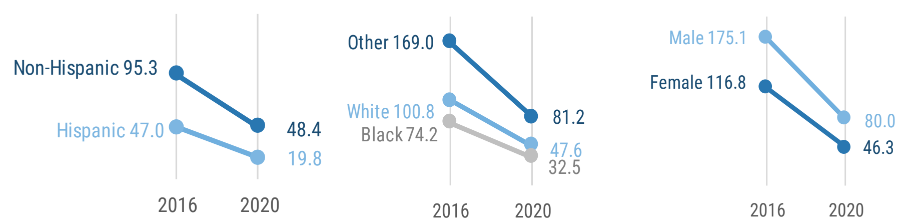
Disease Trends

Summary			
Number of cases			13,642
Rate (per 100,000 population)			63.0
Change from 5-year average rate			-46.5%
Age (in Years)			
Mean			47
Median			45
Min-max			0 - 100
Gender	**Number**	**(Percent)**	**Rate**
Female	5,121	(37.7)	46.3
Male	8,466	(62.3)	80.0
Unknown gender	55		
Race	**Number**	**(Percent)**	**Rate**
White	7,964	(78.3)	47.6
Black	1,194	(11.7)	32.5
Other	1,019	(10.0)	81.2
Unknown race	3,465		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	7,685	(87.0)	48.4
Hispanic	1,145	(13.0)	19.8
Unknown ethnicity	4,812		

The rate of chronic hepatitis C (per 100,000 population) is highest in adults 35 to 44 years old, followed closely by adults 25 to 34 years old.



The chronic hepatitis C rate (per 100,000 population) is higher in males than females and higher in non-Hispanics than Hispanics. Rates are lower in blacks than in whites and other races. Few chronic cases are investigated, causing a large proportion of race and ethnicity data to be missing.

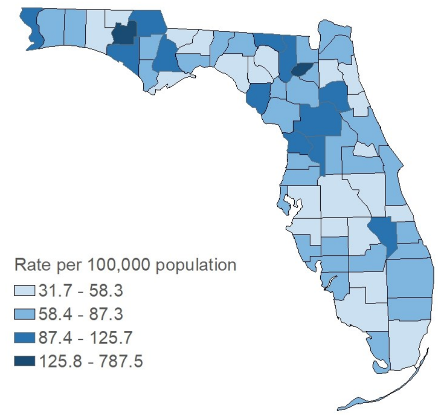


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chronic hepatitis C cases (including perinatal) were missing 42.7% of ethnicity data in 2016, 31.3% of race data in 2016, 35.3% of ethnicity data in 2020 and 25.4% of race data in 2020.

Hepatitis C, Chronic (Including Perinatal)

Summary	Number
Number of cases	13,642
Case Classification	**Number (Percent)**
Confirmed	9,370 (68.7)
Probable	4,272 (31.3)
Outcome	**Number (Percent)**
Hospitalized	520 (3.8)
Died	83 (0.6)
Imported Status	**Number (Percent)**
Acquired in Florida	1,360 (98.7)
Acquired in the U.S., not Florida	11 (0.8)
Acquired outside the U.S.	7 (0.5)
Acquired location unknown	12,264
Outbreak Status	**Number (Percent)**
Sporadic	2,149 (99.3)
Outbreak-associated	15 (0.7)
Outbreak status unknown	11,478

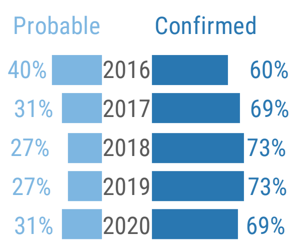
Chronic hepatitis C occurred throughout the state in 2020 with the highest rates in small counties in northern and central Florida, particularly in the Panhandle.



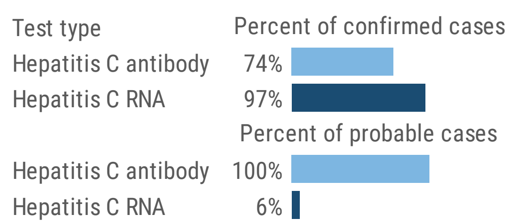
Rates are by county of residence, regardless of where infection was acquired (13,642 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

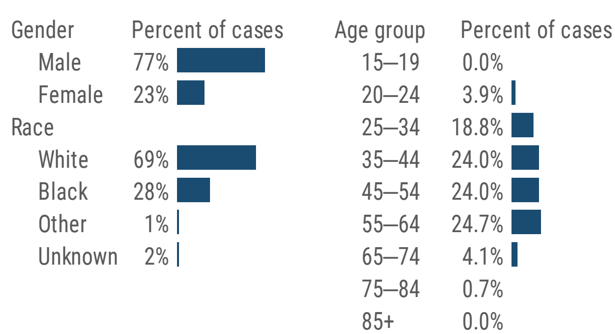
Most cases of chronic hepatitis C cases were confirmed in 2020. The probable case classification expanded in 2016, resulting in a large increase in probable cases.



Almost all confirmed cases of chronic hepatitis C were positive for hepatitis C RNA and most were positive for hepatitis C antibody in 2020. Only a small portion of probable cases were positive for hepatitis C RNA.



In 2020, 344 (2.5%) chronic hepatitis C cases were also diagnosed with HIV. The majority of people with co-infections were male, white and 55 to 64 years old.



Order of infection can not be determined from these charts. Race and ethnicity data are from the enhanced HIV/AIDS Reporting System as demographic data were more complete for these cases.

See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

HIV/AIDS

Key Points

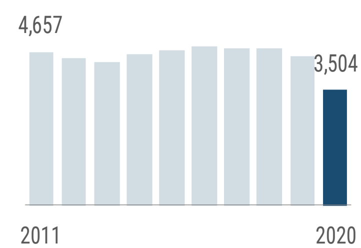
HIV is a life-threatening infection that attacks the body's immune system and leaves a person vulnerable to opportunistic infections. The Centers for Disease Control and Prevention estimates that 1.2 million people are living with HIV (prevalence) in the U.S., nearly half of whom live in the southern U.S. Florida is a large state in the south with a diverse population, substantial HIV morbidity and unique challenges with respect to HIV/AIDS surveillance, prevention and patient care. Date for 2020 should be interpreted with caution due to the impact of COVID-19 on HIV testing, care-related services and case surveillance activities in state and local jurisdictions.

Disease Facts

- **Caused** by human immunodeficiency virus (HIV)
- **Illness** is flu-like primary infection; AIDS (acquired immunodeficiency syndrome) is defined as HIV with CD4 count <200 cells/µL or occurrence of opportunistic infection
- **Transmitted** via anal or vaginal sex, blood exposure (e.g., sharing injection drug needles, receiving infected blood transfusion [rare due to donor screening]) or vertically during pregnancy, delivery or breastfeeding
- **Under surveillance** to enhance efforts to prevent HIV transmission, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions

HIV incidence (new diagnoses) has been gradually decreasing over the past five years, with a 27% decline from 2016 to 2020. Rates are consistently highest in adults 20 to 34 years old. In 2020, male-to-male sexual contact continued to account for most (76%) HIV diagnoses among males. Untreated, HIV can continue to weaken the immune system and develop into AIDS. Florida observed a 54% decrease in AIDS diagnoses from 2011 to 2020 and a 34% decrease in HIV-related deaths. These trends suggest that an increase in testing and diagnosis of individuals earlier in disease stage, along with linkage to care, retention in care and maintaining a suppressed viral load allow persons with HIV to live longer and have a more productive life.

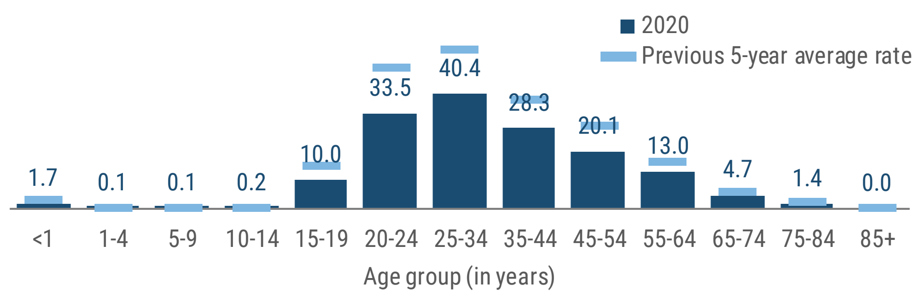
HIV incidence has been gradually decreasing over the past 5 years.



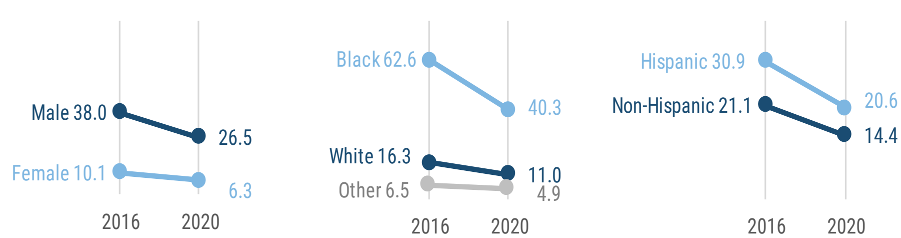
Disease Trends

Summary	Number	(Percent)	Rate
Number of diagnoses			3,504
Rate (per 100,000 population)			16.2
Change from 5-year average rate			-29.3%
Age (in Years)			
Mean			38
Median			35
Min-max			0 - 82
Gender	**Number**	**(Percent)**	**Rate**
Female	701	(20.0)	6.3
Male	2,803	(80.0)	26.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	1,841	(54.4)	11.0
Black	1,480	(43.7)	40.3
Other	62	(1.8)	4.9
Unknown race	121		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	2,286	(65.8)	14.4
Hispanic	1,187	(34.2)	20.6
Unknown ethnicity	31		

HIV incidence rates (per 100,000 population) are consistently highest in adults 20 to 34 years old.



In 2020, HIV incidence rates (per 100,000 population) were 4.2 times higher among males than females and 3.7 times higher among blacks than whites.



HIV/AIDS

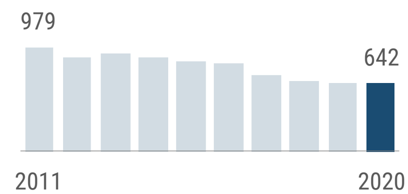
Male-to-male sexual contact was the primary mode of exposure among males who received an HIV diagnosis in 2020 (76%), and heterosexual contact was the primary mode of exposure among females (88%).

Mode of exposure	Female		Male	
Male-to-male sexual contact (MMSC)	NA	NA	2,120	75.6%
Heterosexual contact	617	88.0%	483	17.2%
Injection drug use (IDU)	77	11.0%	101	3.6%
MMSC and IDU	NA	NA	76	2.7%
Pediatric transmission	5	0.7%	2	0.1%
Transgender sexual contact	2	0.3%	21	0.7%
Total	701		2,803	

Note: Pediatric transmission includes perinatal exposure and pediatric diagnoses without a confirmed mode of exposure. Transgender sexual contact includes transgender males or females whose mode of exposure was sexual contact.

Following the advent of antiretroviral therapy, there has been an 85% decline in Florida resident deaths due to HIV from 1995 (4,336 deaths) to 2020 (642 deaths).

Deaths due to HIV decreased by 44% from 2009 to 2018 and by 8% since 2017 alone.

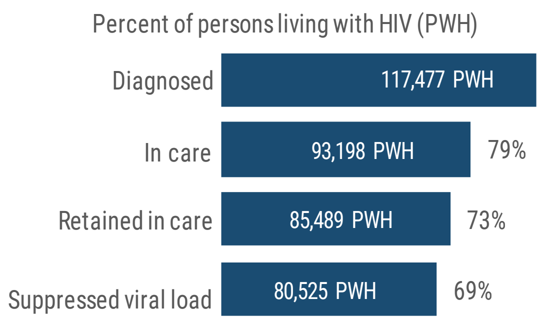


Race/ethnicity	Female	Male
White	2.9	11.5
Black	22.3	62.2
Hispanic	4.3	37.3

In 2020, the HIV incidence rate (per 100,000 population) among black females was 7.7 times higher than white females. The rate among black males was 5.4 times higher than white males, while the rate in Hispanic males was 3.2 times higher than white males.

The HIV care continuum reflects the series of steps a person living with an HIV diagnosis takes from initial diagnosis to being retained in care and achieving a very low level of HIV in the body (viral suppression). Persons with HIV (PWH) with a suppressed viral load (less than 200 copies/mL) are highly unlikely to transmit the virus.

There were 117,477 PWH in Florida in 2020, 73% of whom were retained in care and 69% of whom had a suppressed viral load.



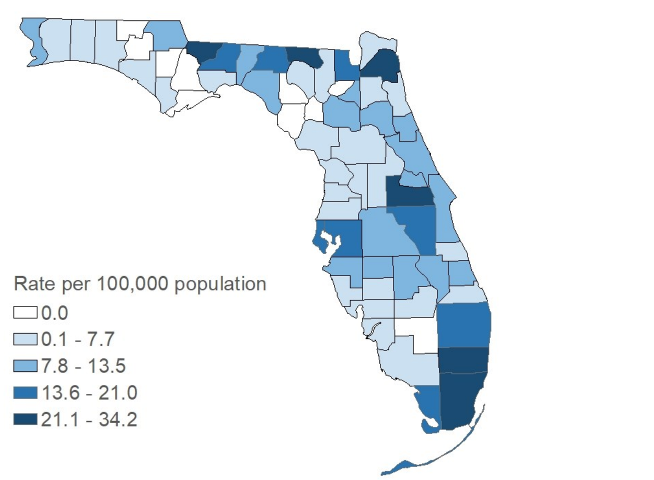
HIV care continuum definitions

In care: documented HIV-related care at least once in 2020

Retained in care: documented HIV-related care at least two times, at least three months apart in 2020

Suppressed viral load: less than 200 copies/mL

High HIV incidence rates (per 100,000 population) occurred in the central and southeastern parts of the state in 2020. Almost half (47%) of diagnoses were in 3 counties, including Miami-Dade (813 diagnoses), Broward (467 diagnoses) and Orange (374 diagnoses).



HIV diagnosis rates are by county of where the resident was diagnosed, excluding Florida Department of Corrections cases (49 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

To access more information on HIV surveillance, visit FloridaHealth.gov/diseases-and-conditions/aids/surveillance/index.html.

To find a care provider or to learn more about the resources available to persons living with HIV, visit FloridaHealth.gov/diseases-and-conditions/aids/index.html.

Lead Poisoning in Children <6 Years Old

Key Points

Lead poisoning is most often identified in children as part of routine screening. The Centers for Medicare and Medicaid Services requires blood lead screening in all Medicaid-enrolled children at 12 and 24 months old; if not previously screened, children must be screened between 24 and 72 months old. The Centers for Disease Control and Prevention recommends all children who are foreign-born or otherwise identified as high-risk be screened for lead. Children in this age group are more likely to put lead-contaminated hands, toys or paint chips in their mouths, making them more vulnerable to lead poisoning than older children. The most common sources of lead exposure for children include paint dust, flakes or chips in houses built prior to the elimination of lead in paints in 1978. Less common sources include glazed ceramic dishes, toys or jewelry, parental occupations or hobbies involving lead and folk medicines or cosmetics from other countries.

In 2017, the Florida Department of Health changed the case definition for lead poisoning from ≥10 to ≥5 µg/dL to align with current national guidelines based on the adverse health effects caused by blood lead levels <10 µg/dL in both children and adults. The large increase in cases in 2017 was driven by cases with blood lead levels ≥5 and <10 µg/dL, which accounted for 77% of 2017 cases.

Disease Facts

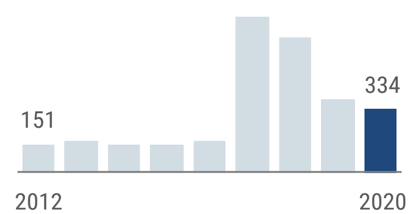
Caused by lead

Illness includes a wide range of adverse health effects (e.g., difficulty learning, sluggishness, fatigue, seizures, coma, death)

Exposure is most commonly by ingestion of paint dust in houses built prior to elimination of lead in paints in 1978

Under surveillance to estimate burden among children, ensure follow-up care for identified cases, identify need for environmental remediation to prevent new cases and exacerbation of illness, help target public health interventions

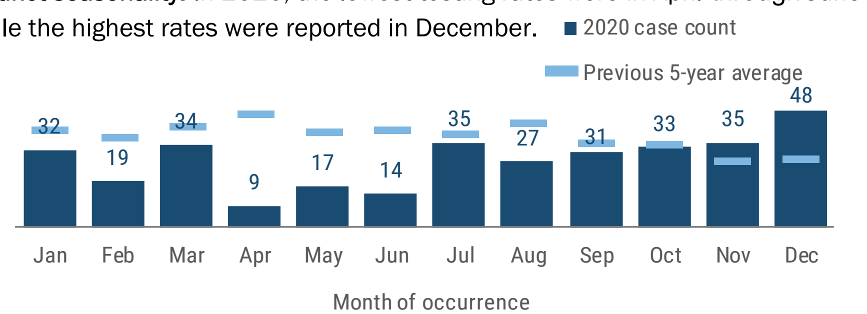
Lead poisoning incidence increased dramatically in 2017 due to a case definition expansion. Incidence has continued to decrease.



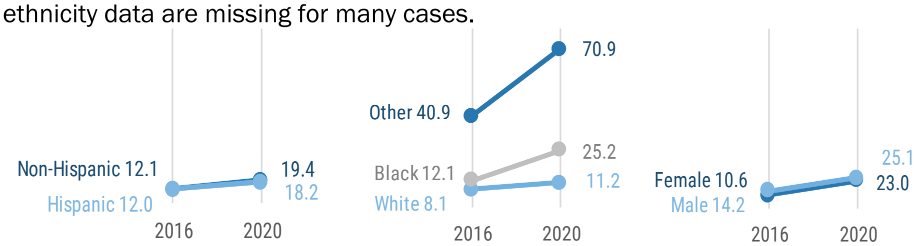
Disease Trends

Summary		
Number of cases		334
Rate (per 100,000 population)		24.1
Change from 5-year average rate		-27.0%
Age (in Years)		
Mean		2
Median		1
Min-max		0 - 5
Gender	**Number (Percent)**	**Rate**
Female	156 (46.7)	23.0
Male	178 (53.3)	25.1
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	108 (40.3)	11.2
Black	77 (28.7)	25.2
Other	83 (31.0)	70.9
Unknown race	66	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	180 (68.4)	19.4
Hispanic	83 (31.6)	18.2
Unknown ethnicity	71	

Lead poisoning in children <6 years old occurs throughout the year with no distinct seasonality. In 2020, the lowest testing rates were in April through June while the highest rates were reported in December.



Compared to lead poisoning in adults, where occupational exposure results in much higher incidence rates in men than women, rates (per 100,000 population) in children <6 years old are more similar in males and females. The rate is higher in blacks and other races than in whites, but similar by ethnicity. Because few cases with blood lead levels ≥5 and <10 µg/dL are investigated, race and ethnicity data are missing for many cases.

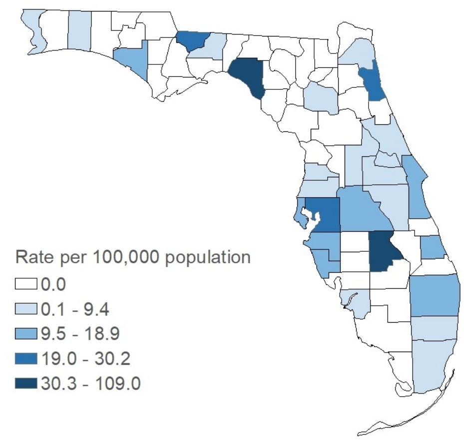


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases in children less than 6 years old were missing 21.3% of ethnicity data in 2020 and 19.8% of race data in 2020.

Lead Poisoning in Children <6 Years Old

Summary	Number
Number of cases	334
Outcome	**Number (Percent)**
Hospitalized	1 (0.3)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Exposed in Florida	146 (94.8)
Exposed in the U.S., not Florida	5 (3.2)
Exposed outside the U.S.	3 (1.9)
Exposed location unknown	180
Outbreak Status	**Number (Percent)**
Sporadic	156 (92.9)
Outbreak-associated	12 (7.1)
Outbreak status unknown	166
Age Group	**Number (Percent)**
Children (<6 years old)	334 (31.9)
Adults (≥6 years old)	712 (68.1)

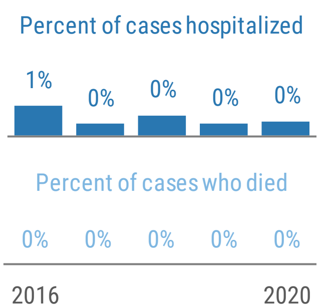
Lead poisoning in children <6 years old occurred in most parts of the state in 2020. The lead poisoning rates (per 100,000 population) are typically highest in small, rural counties.



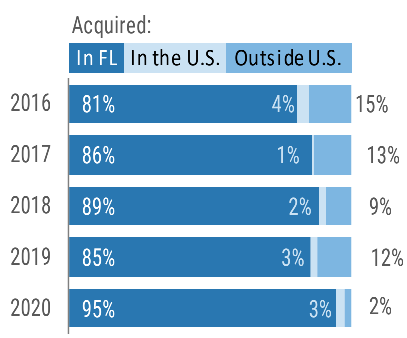
Rates are by county of residence for cases exposed in Florida (334 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

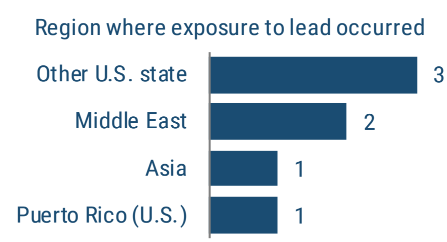
More Disease Trends

Hospitalizations and deaths in children <6 years old with lead poisoning are rare.



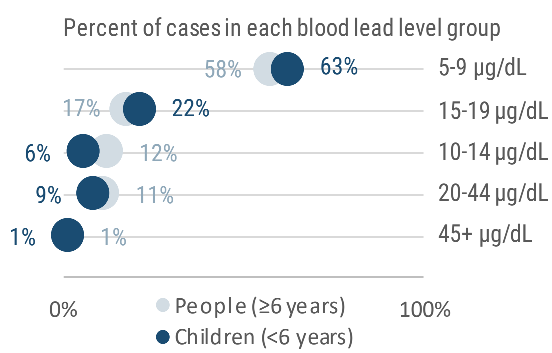
Most lead poisoning cases were exposed in Florida. In 2020, seven cases were exposed in other regions. Three were imported from other U.S. states, 2 from the Middle East and 1 each from Asia and Puerto Rico.





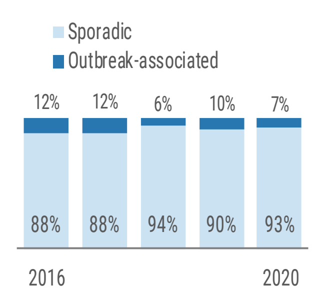
Children <6 years old have a larger proportion of cases with blood lead levels <10 µg/dL compared to adults (63% versus 58%, respectively).

Lead poisoning cases in adults are primarily identified through occupational testing, and they tend to have higher blood lead levels than children.



Most lead poisoning cases are sporadic. In 2020, there were 12 outbreak-associated cases associated with 6 different small household clusters.

Common exposures included imported food and spices, lead-based paint, lead pipes and unknown sources of lead exposure.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Lead Poisoning in People ≥6 Years Old

Key Points

Adult lead poisoning is primarily caused by exposure to lead in the workplace or during certain activities where lead is used. High-risk occupations include battery manufacturing, painting, nonferrous smelting, radiator repair, scrap metal recycling, work at firing ranges and construction and renovation. High-risk activities include recreational target shooting, home remodeling, casting bullets and fishing weights, making stained glass and consuming traditional remedies. The Occupational Safety and Health Administration requires regular lead screening for employees in high-risk occupations, making occupational lead poisoning cases more easily identifiable. Adults with non-occupational exposures are unlikely to be tested, making identification difficult.

In 2017, the Florida Department of Health changed the case definition for lead poisoning from ≥10 µg/dL to ≥5 µg/dL to align with current national guidelines based on the adverse health effects caused by blood lead levels <10 µg/dL in both children and adults. The large increase in cases in 2017 was driven by cases with blood lead levels ≥5 and <10 µg/dL, which accounted for 57% of 2017 cases.

Disease Facts

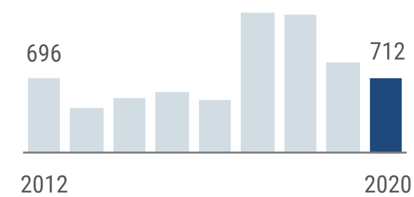
Caused by lead

Illness includes a wide range of adverse health effects (e.g., arthralgia, headache, cognitive dysfunction, adverse reproductive outcomes, renal failure, hypertension, encephalopathy) but is often asymptomatic

Exposure is by inhalation or ingestion of lead, most often dust or fumes that occur when lead is melted

Under surveillance to identify cases among adults with high-risk occupations or hobbies, need for environmental remediation to prevent new cases and exacerbation of illness, prevent take-home lead exposures, help target public health interventions for high-risk populations

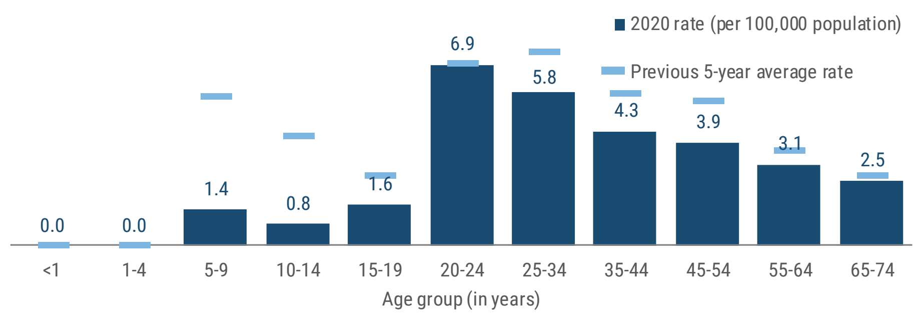
Lead poisoning incidence increased dramatically in 2017 due to a case definition expansion. Incidence decreased in 2020.



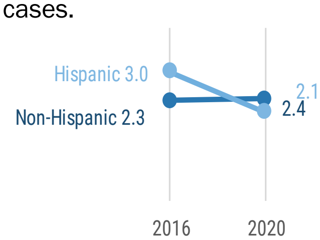
Disease Trends

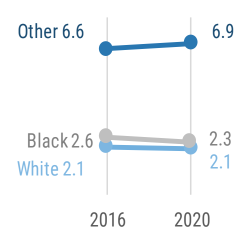
Summary			
Number of cases			712
Rate (per 100,000 population)			3.5
Change from 5-year average rate			-25.1%
Age (in Years)			
Mean			43
Median			40
Min-max			6 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	89	(12.5)	0.9
Male	623	(87.5)	6.3
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	327	(67.6)	2.1
Black	79	(16.3)	2.3
Other	78	(16.1)	6.9
Unknown race	228		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	354	(76.5)	2.4
Hispanic	109	(23.5)	2.1
Unknown ethnicity	249		

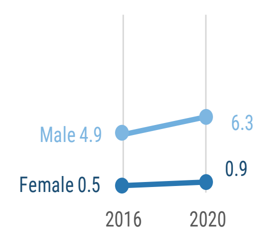
The rate (per 100,000 population) of lead poisoning in people ≥6 years old is highest in adults 20 to 24 years old followed by adults 25 to 34 years old.



The rate (per 100,000 population) of lead poisoning in people ≥6 years old is notably higher in males than females, likely due to the type of occupations and hobbies that result in lead exposure. The rate is similar by ethnicity and in blacks and whites but is higher in other races. Because few cases with blood lead levels ≥5 and <10 µg/dL are investigated, race and ethnicity data are missing for many cases.





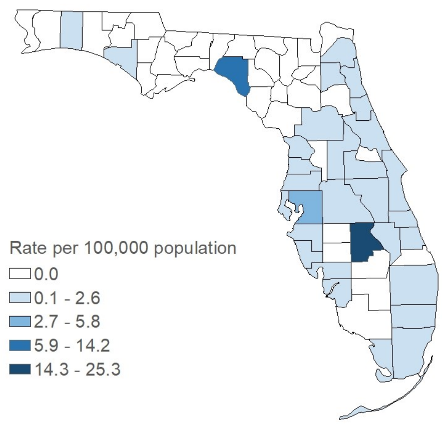


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases in people ≥6 years old were missing 6.4% of ethnicity data in 2016, 7.4% of race data in 2016, 35.0% of ethnicity data in 2020 and 32.0% of race data in 2020.

Lead Poisoning in People ≥6 Years Old

Summary	Number
Number of cases	712
Outcome	**Number (Percent)**
Hospitalized	2 (0.3)
Died	1 (0.1)
Imported Status	**Number (Percent)**
Exposed in Florida	274 (98.6)
Exposed in the U.S., not Florida	3 (1.1)
Exposed outside the U.S.	1 (0.4)
Exposed location unknown	434
Outbreak Status	**Number (Percent)**
Sporadic	328 (97.9)
Outbreak-associated	7 (2.1)
Outbreak status unknown	377
Age Group	**Number (Percent)**
Children (<6 years old)	334 (31.9)
Adults (≥6 years old)	712 (68.1)

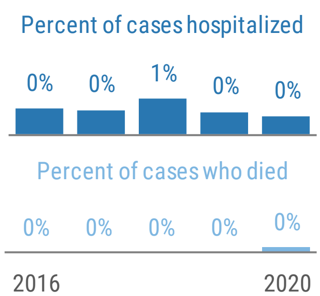
Lead poisoning in people ≥6 years old occurred in most parts of the state in 2020, though there were fewer counties with cases in the Panhandle region.



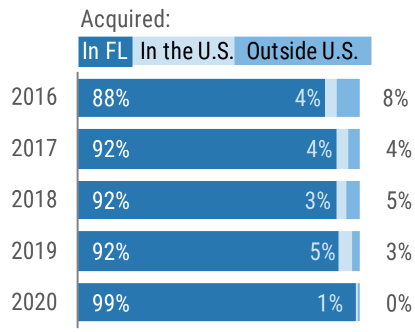
Rates are by county of residence for cases exposed in Florida (712 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

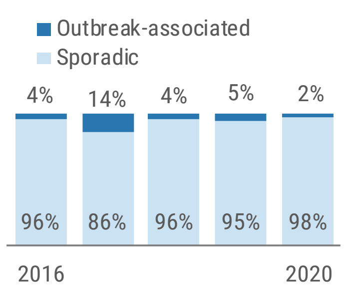
Hospitalizations and deaths in people ≥6 years old with lead poisoning are rare.



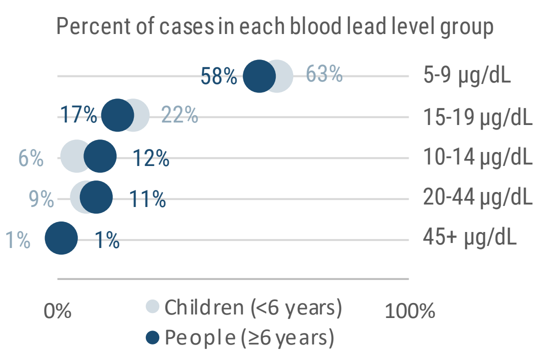
Of cases where the exposure location was known, most were exposed in Florida.



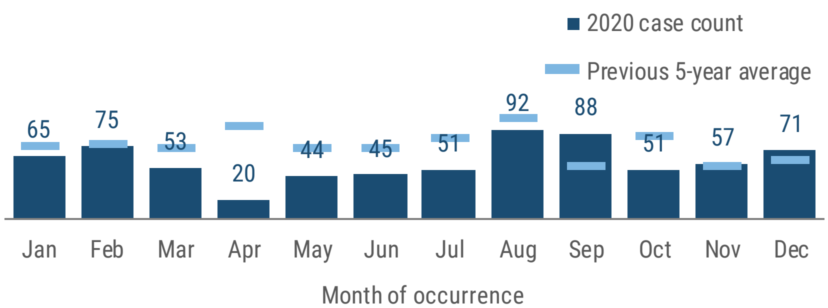
Most lead poisoning cases are sporadic. In 2020, 7 outbreak-associated cases were identified. Of the 7, 3 cases were exposed from ammunition making.



Lead poisoning cases in adults are primarily identified through occupational testing and they tend to have higher blood lead levels than children.



Lead poisoning cases in people ≥6 years old occur throughout the year with no distinct seasonality. The highest number of cases were reported in February, August and September in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Legionellosis

Key Points

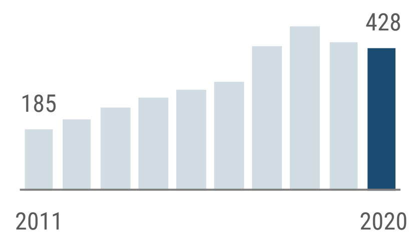
Recently identified sources of *Legionella* infection in Florida and the U.S. include decorative fountains, hot tubs, cooling towers (air conditioning units for large buildings) and potable water systems. Over the past decade, the increasing incidence in Florida is consistent with the increase observed nationally. This increase is likely due to several factors, including aging infrastructure and a greater percentage of the population ≥64 years old. Older adults and those with weakened immune systems are at highest risk for developing disease. At the start of 2020, Florida updated the legionellosis case definition, which may have contributed to changes in reported trends.

In Florida, sporadic cases of both Legionnaires' disease and Pontiac fever (two distinct presentations of legionellosis) are monitored. Single cases of legionellosis that occur at a health care facility or other facility where a person spent their entire exposure period warrant a full investigation and are generally characterized as outbreaks for public health purposes. However, these cases are not consistently classified as outbreak-associated and therefore not all cases are reflected in the table on the following page.

Disease Facts

- **Caused** by *Legionella* bacteria
- **Illness** includes fever, muscle pain, cough and shortness of breath; pneumonia may occur
- **Transmitted** by inhaling aerosolized water containing the bacteria
- **Under surveillance** to identify and control outbreaks, identify and mitigate common reservoirs, monitor incidence over time, estimate burden of illness

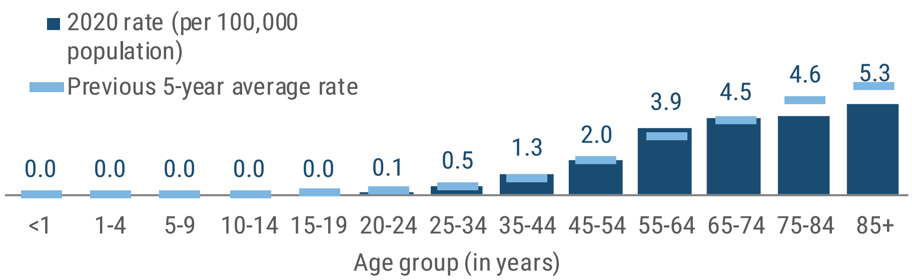
Legionellosis incidence continued to decrease in 2020.



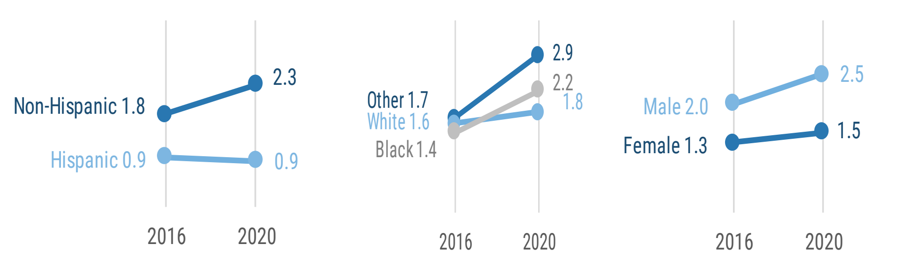
Disease Trends

Summary			
Number of cases			428
Rate (per 100,000 population)			2.0
Change from 5-year average rate			+1.4%
Age (in Years)			
Mean			64
Median			64
Min-max			24 - 103
Gender	**Number**	**(Percent)**	**Rate**
Female	161	(37.6)	1.5
Male	267	(62.4)	2.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	307	(72.2)	1.8
Black	82	(19.3)	2.2
Other	36	(8.5)	2.9
Unknown race	3		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	365	(88.0)	2.3
Hispanic	50	(12.0)	0.9
Unknown ethnicity	13		

Legionellosis is most common in older adults. The rate (per 100,000 population) begins increasing in middle-aged adults and continues to increase with age.



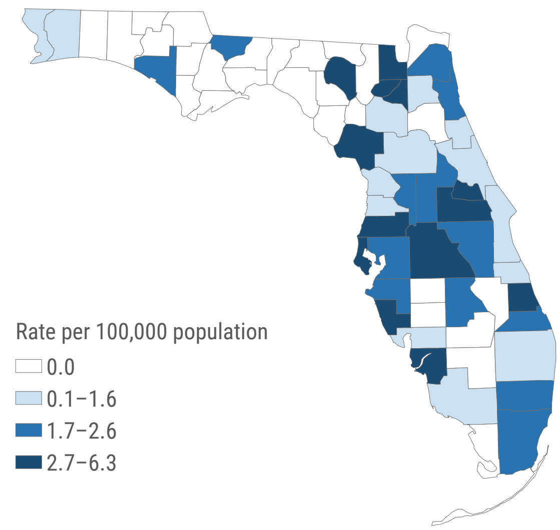
The legionellosis rate (per 100,000 population) increased in all demographics from 2016 to 2020. Rates were higher in males and non-Hispanics but generally similar by race in 2020.



Legionellosis

Summary	Number
Number of cases	428
Outcome	**Number (Percent)**
Hospitalized	404 (94.4)
Died	38 (8.9)
Imported Status	**Number (Percent)**
Acquired in Florida	393 (99.2)
Acquired in the U.S., not Florida	3 (0.8)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	32
Outbreak Status	**Number (Percent)**
Sporadic	391 (93.1)
Outbreak-associated	29 (6.9)
Outbreak status unknown	8

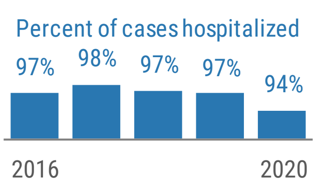
Legionellosis occurred in most parts of the state in 2020 but is notably absent from most counties in the Panhandle.

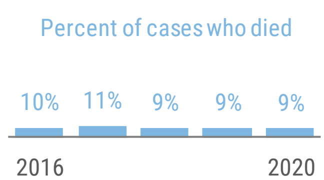


Rates are by county of residence for infections acquired in Florida (428 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

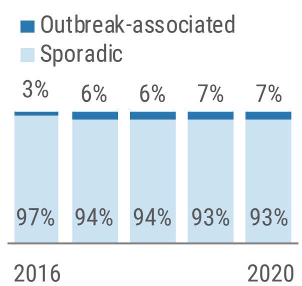
More Disease Trends

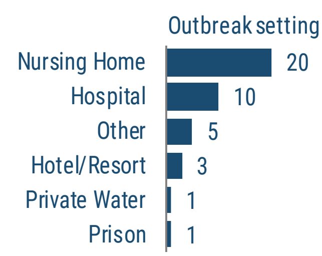
Most legionellosis cases are hospitalized and deaths do occur. Those primarily affected are older adults and people with underlying conditions. Pneumonia is commonly identified among cases.



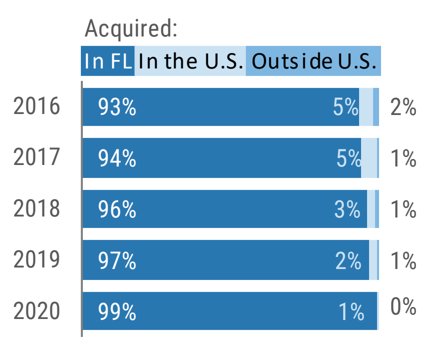


In 2020, 40 outbreaks were identified, some of which included non-Florida residents (who are not included in counts in this report). Nursing homes and hospitals were the most commonly identified outbreak settings.

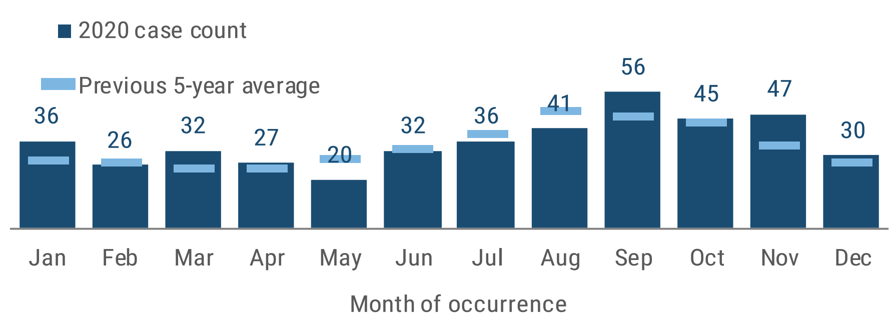




Between 93% and 99% of *Legionella* infections are acquired in Florida; some infections are imported from other states and countries.



Legionellosis cases increased slightly in the summer and early fall months with 41 to 56 cases reported each month from August to November 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Listeriosis

Key Points

Listeriosis primarily affects adults ≥75 years old, people with weakened immune systems, pregnant women and infants born to infected mothers. Listeriosis is of particular concern for pregnant women because infection during pregnancy can cause fetal loss, preterm labor, stillbirths and illness or death in newborn infants.

Historically, *Listeria* outbreaks have been linked to deli meats and hot dogs; however, new vehicles have been identified as sources of outbreaks including soft cheeses, frozen vegetables, sprouts, raw milk, melons, caramel apples, smoked seafood and ice cream.

Whole genome sequencing (WGS) is now used to determine whether *Listeria* isolates are related, indicating the illnesses may have come from the same source. The Centers for Disease Control and Prevention monitors WGS data from across the country to identify clusters of possibly related cases. In 2020, Florida identified 3 cases associated with 3 different multistate outbreaks and 2 cases associated with a local Florida cluster.

Disease Facts

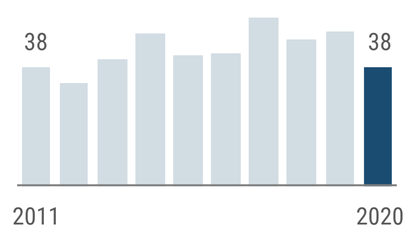
Caused by *Listeria monocytogenes* bacteria

Illness is usually invasive when bacteria have spread beyond the gastrointestinal tract; initial illness is often characterized by fever and diarrhea

Transmission is foodborne; can be transmitted to fetus during pregnancy

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness, reduce stillbirths

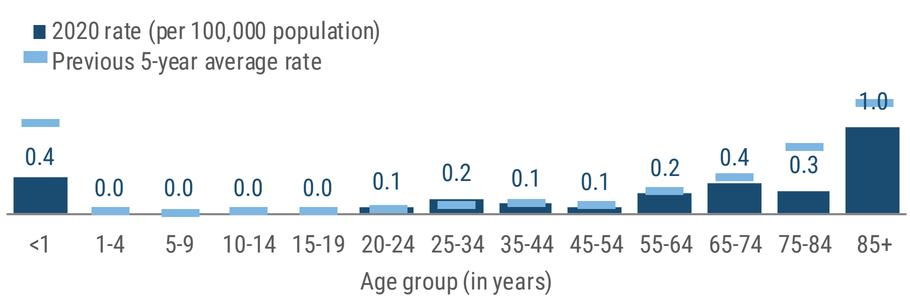
The number of listeriosis cases reported in 2020 decreased from 2019.



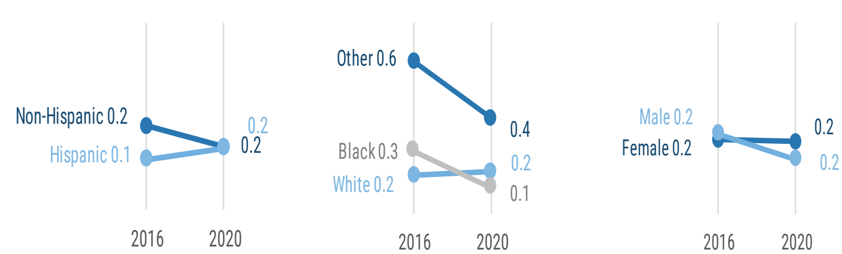
Disease Trends

Summary			
Number of cases			38
Rate (per 100,000 population)			0.2
Change from 5-year average rate			-23.4%
Age (in Years)			
Mean			60
Median			65
Min-max			0 - 94
Gender	**Number**	**(Percent)**	**Rate**
Female	22	(57.9)	0.2
Male	16	(42.1)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	29	(76.3)	0.2
Black	4	(10.5)	NA
Other	5	(13.2)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	28	(73.7)	0.2
Hispanic	10	(26.3)	NA
Unknown ethnicity	0		

The listeriosis rate (per 100,000 population) is highest in infants (who can acquire infection from their mothers during pregnancy) and adults 85+ years old.



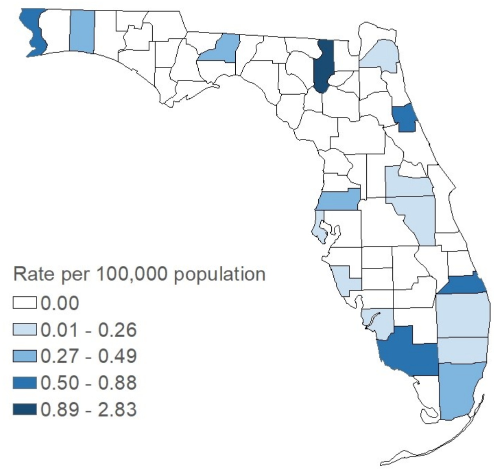
The listeriosis rate (per 100,000 population) was similar by gender, race and ethnicity in 2020. Most demographics remained stable from 2016 to 2020 except for other races and blacks who decreased slightly and Hispanics who increased slightly.



Listeriosis

Summary	Number
Number of cases	38
Outcome	**Number (Percent)**
Hospitalized	30 (78.9)
Died	9 (23.7)
Imported Status	**Number (Percent)**
Acquired in Florida	35 (100.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	3
Outbreak Status	**Number (Percent)**
Sporadic	36 (94.7)
Outbreak-associated	2 (5.3)
Outbreak status unknown	0

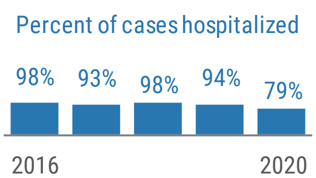
Listeriosis did not have a geographic pattern in 2020. Rates (per 100,000 population) were highest in small, rural counties in different parts of the state.

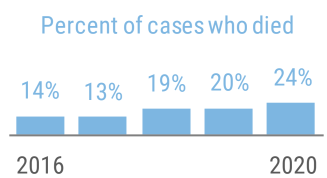


Rates are by county of residence for infections acquired in Florida (38 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

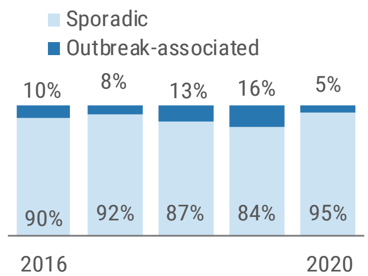
More Disease Trends

Most listeriosis cases are hospitalized; deaths do occur. Those primarily affected are older adults who likely have underlying conditions.

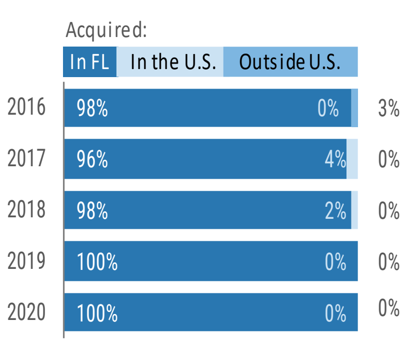




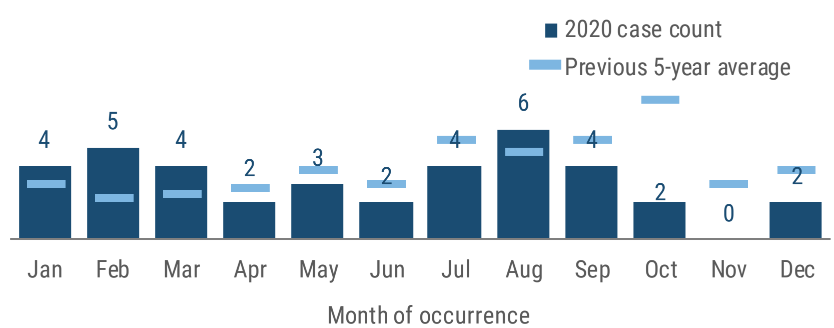
Each year, a few cases are linked to multistate outbreaks through whole genome sequencing. Three cases reported in 2020 matched multistate outbreaks.



All *Listeria* infections were acquired in Florida in 2020.



Listeriosis cases occur all year and do not exhibit a strong seasonality; however, low case counts make it difficult to interpret trends. Between zero and 6 cases occurred each month in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Lyme Disease

Key Points

Lyme disease is the most common tick-borne disease in the U.S. The Centers for Disease Control and Prevention estimates that about 476,000 Lyme disease cases are reported each year. Nationally, Lyme disease cases are concentrated in the Northeast and upper Midwest, with 14 states accounting for most reported cases each year.

Lyme disease incidence in Florida has generally increased over the past decade. This increase may be due to increases in animal host and reservoir populations and the slowly expanding geographic range of the vector tick due to ecological factors. In 2020, incidence of Lyme disease decreased slightly from 2019, falling below the previous five-year average incidence. COVID-19 travel restrictions may have contributed to this decrease.

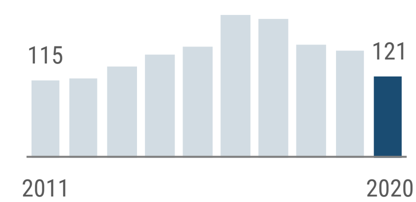
Disease Facts

- **Caused** by *Borrelia burgdorferi* bacteria
- **Illness** can be acute or late manifestation; both can include fever, headache, fatigue, joint pain, muscle pain, bone pain and erythema migrans (characteristic bull's-eye rash); late manifestation can also include Bell's palsy, severe joint pain with swelling, shooting pain, tingling in hands and feet, irregular heartbeat, dizziness, shortness of breath and short-term memory loss
- **Transmitted** via bite of infective *Ixodes scapularis* tick
- **Under surveillance** to monitor incidence over time, estimate burden of illness and degree of endemicity, target areas of high incidence for prevention education

The majority of Florida cases were acquired during travel to other U.S. states in 2020. However, one case was acquired in Germany.

There were 53 acute and 63 late-manifestation Lyme disease cases reported in 2020. One Lyme disease case was co-infected with *Anaplasma*. Case counts and rates from this report may differ from those found in other tick-borne disease reports as different criteria are used to assemble the data.

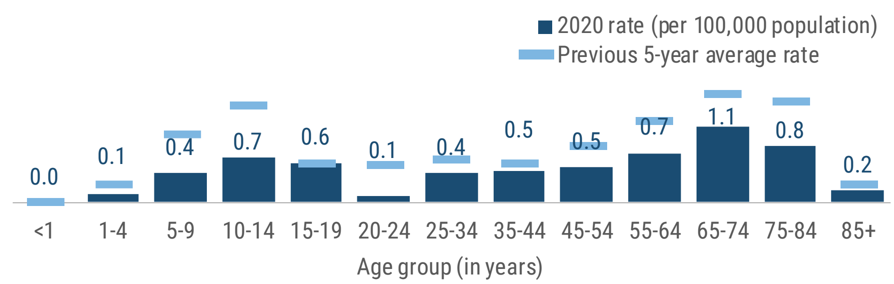
Lyme disease incidence in 2020 decreased from 2019.



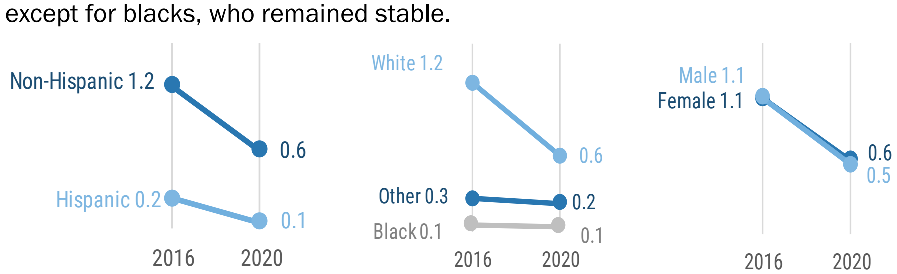
Disease Trends

Summary			
Number of cases			121
Rate (per 100,000 population)			0.6
Change from 5-year average rate			-37.8%
Age (in Years)			
Mean			49
Median			55
Min-max			4 - 87
Gender	**Number**	**(Percent)**	**Rate**
Female	64	(52.9)	0.6
Male	57	(47.1)	0.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	102	(84.3)	0.6
Black	2	(1.6)	NA
Other	3	(2.5)	NA
Unknown race	14		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	101	(97.1)	0.6
Hispanic	3	(2.9)	NA
Unknown ethnicity	17		

In 2020, the Lyme disease rate (per 100,000 population) was highest in adults 65 to 74 years old, followed by adults 74 to 84 years old. The rate in 2020 was notably lower than the previous five-year average rate for most age groups or remained relatively stable. No age group had an increased rate.



In 2020, the Lyme disease rate (per 100,000 population) was similar by gender but higher in non-Hispanics. The rate was highest in whites, followed by other races, then blacks. The rate decreased from 2016 to 2020 in all demographics except for blacks, who remained stable.

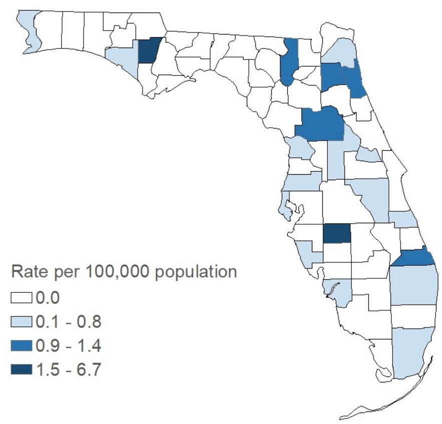


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lyme disease cases were missing 13.0% of ethnicity data in 2016, 11.1% of race data in 2016, 14.0% of ethnicity data in 2020 and 11.6% of race data in 2020.

Lyme Disease

Summary	Number
Number of cases	121
Case Classification	**Number (Percent)**
Confirmed	65 (53.7)
Probable	56 (46.3)
Outcome	**Number (Percent)**
Hospitalized	5 (4.1)
Died	0 (0)
Imported Status	**Number (Percent)**
Acquired in Florida	39 (43.3)
Acquired in the U.S., not Florida	50 (55.6)
Acquired outside the U.S.	1 (1.1)
Acquired location unknown	31
Outbreak Status	**Number (Percent)**
Sporadic	121 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0

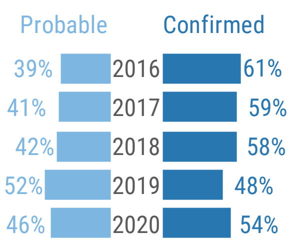
Lyme disease is primarily imported from other U.S. states where it is highly endemic; however, 39 infections were acquired in Florida in 2020. Twenty-two of these cases had late manifestations requiring more time-consuming and in-depth history taking. It is not clear what impacts COVID-19 might have had on case investigations.



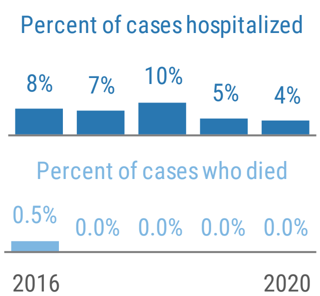
Rates are by county of residence for infections acquired in Florida (121 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

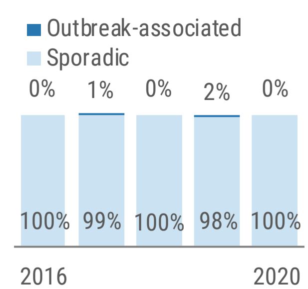
Between 48% and 61% of cases are confirmed annually; 54% of 2020 cases were confirmed.



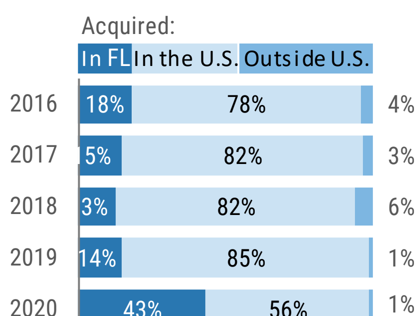
The hospitalization rate for people with Lyme disease is low; deaths are rare.



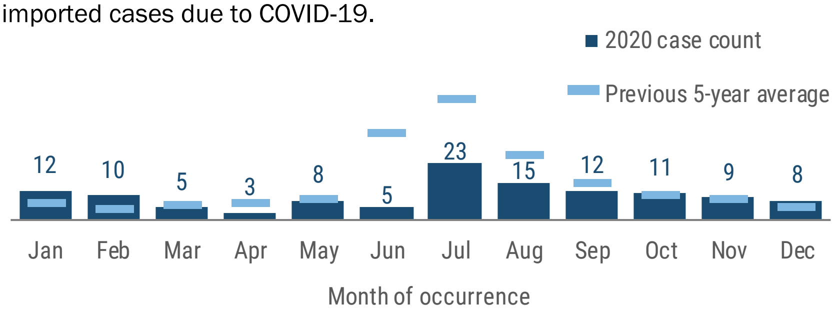
All Lyme disease cases were sporadic in 2020.



Lyme disease is primarily imported from other U.S. states where it is highly endemic. One case in 2020 was imported from another country.



Lyme disease cases are reported year-round, but there is a strong seasonal peak in the summer. In 2020, 45% of cases occurred from June to September, which is lower than usual and may reflect significantly less imported cases due to COVID-19.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Mumps

Key Points

Despite routine vaccination, mumps has been increasing in the U.S., mainly due to outbreaks in young adults in settings with close contact like college campuses. Nationally, 2,515 mumps cases were reported in 2018, with over half in people 15 to 39 years old. Well over one-third of the cases were reported from the Pacific and Middle Atlantic regions of the country, with several college outbreaks driving the increased incidence in those states. Waning immunity is thought to play a role in these outbreaks.

Mumps incidence in Florida increased dramatically in 2017 and remained elevated in 2018. The elevated incidence over these 2 years was partly due to efforts by state and county health department staff to maintain awareness of mumps disease in the medical community by educating providers on reporting guidance and appropriate testing. In 2017 and 2018, staff also increased surveillance efforts to obtain specimens for testing at the state public health laboratory for both sporadic and outbreak-associated cases.

Disease Facts

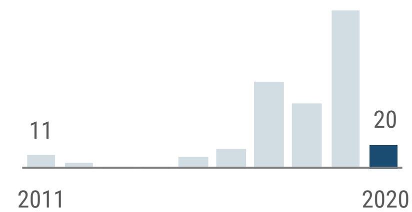
Caused by mumps virus

Illness includes fever, headache, muscle aches, tiredness and loss of appetite, followed by swelling of salivary glands, and in some cases orchitis and oophoritis

Transmitted person to person via droplets of saliva or mucus from the mouth, nose or throat of an infected person, usually when they cough, sneeze or talk

Under surveillance to prevent further transmission through isolation during infectious period. A third dose of vaccine is recommend to control outbreaks.

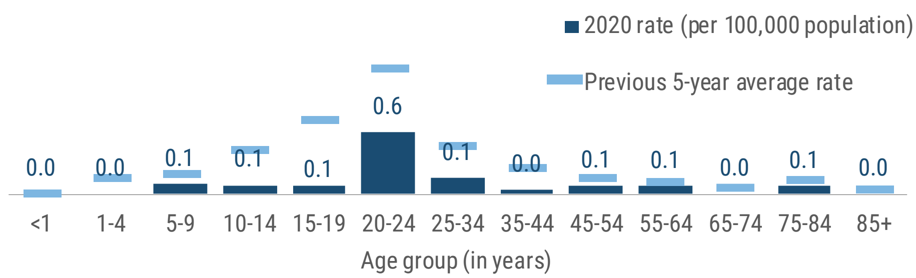
Mumps incidence decreased drastically in 2020 compared to 2019.



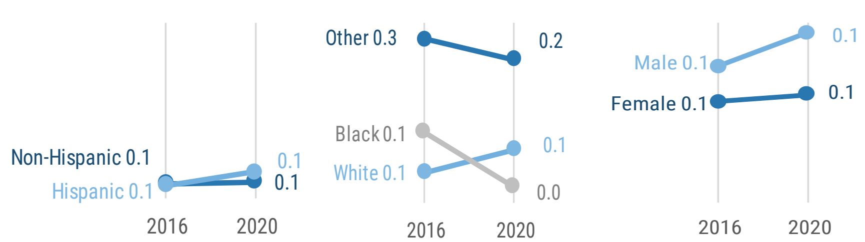
Disease Trends

Summary			
Number of cases			20
Rate (per 100,000 population)			0.1
Change from 5-year average rate			-66.6%
Age (in Years)			
Mean			32
Median			24
Min-max			9 - 78
Gender	**Number**	**(Percent)**	**Rate**
Female	8	(40.0)	NA
Male	12	(60.0)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	15	(78.9)	NA
Black	1	(5.3)	NA
Other	3	(15.8)	NA
Unknown race	1		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	12	(63.2)	NA
Hispanic	7	(36.8)	NA
Unknown ethnicity	1		

In 2020, the mumps rate (per 100,000 population) was highest in adults 20 to 24 years old.



Mumps rates (per 100,000 population) have decreased or remained stable across all demographic groups from 2016 to 2020.

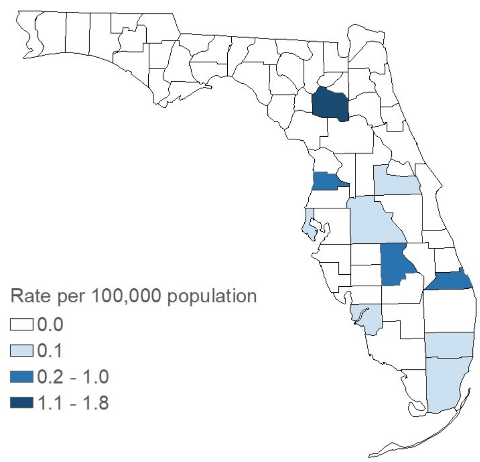


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Mumps cases were missing 12.5% of ethnicity data in 2016 and 6.3% of race data in 2016.

Mumps

Summary	Number
Number of cases	20
Case Classification	**Number (Percent)**
Confirmed	8 (40.0)
Probable	12 (60.0)
Outcome	**Number (Percent)**
Hospitalized	3 (15.0)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	16 (84.2)
Acquired in the U.S., not Florida	2 (10.5)
Acquired outside the U.S.	1 (5.3)
Acquired location unknown	1
Outbreak Status	**Number (Percent)**
Sporadic	13 (65.0)
Outbreak-associated	7 (35.0)
Outbreak status unknown	0

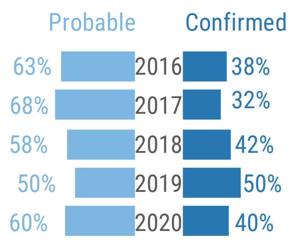
In 2020, most mumps cases were acquired in Florida. Cases occurred in residents of 12 counties, with the highest rates (per 100,000 population) in Alachua County.



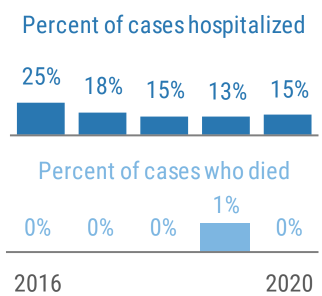
Rates are by county of residence for infections acquired in Florida (20 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2019 by county.

More Disease Trends

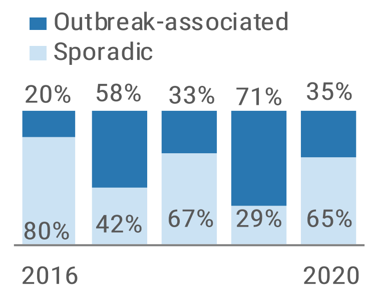
Generally between 32% and 50% of cases are confirmed each year.



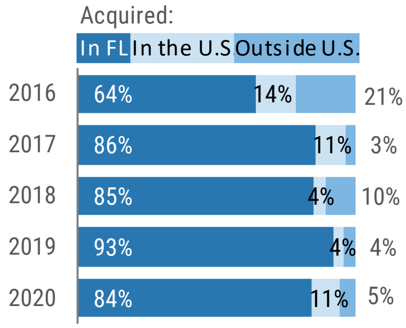
Some mumps cases are hospitalized. No deaths were reported in 2020.



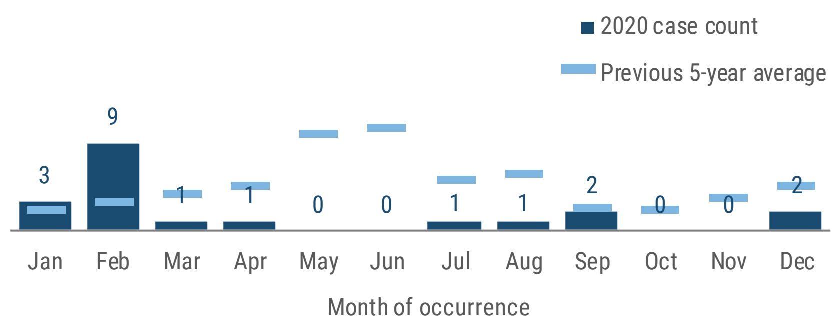
In 2020, just over one-third of cases were associated with an outbreak.



Most mumps infections were acquired in Florida in 2020; 3 infections were imported from other states or countries.



Mumps cases occurred throughout the year in Florida in 2020. More cases were reported in January and February.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Pertussis

Key Points

Nationally, the number of pertussis cases reported increased starting in the 1980s, peaked in 2012, and has gradually decreased since. Pertussis is cyclical in nature with peaks in disease every three to five years. In Florida, pertussis cases last peaked in 2013. Pertussis incidence in 2020 decreased from rates seen in previous non-peak years. There were no pertussis outbreaks reported in 2020.

Older adults often have milder infections and serve as the reservoirs and sources of infection for infants and young children. Infants have the greatest burden of pertussis infections, both in number of cases and severity. Infants <2 months old are too young to be vaccinated, underscoring the importance of vaccinating pregnant women and family members of infants to protect infants from infection. The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices recommends that all pregnant women receive a dose of Tdap (tetanus, diphtheria, pertussis) vaccine during the third trimester of each pregnancy to help protect their babies. In addition, all children and adults who plan to have close contact with infants should receive a dose of Tdap if they have not previously received one.

Disease Facts

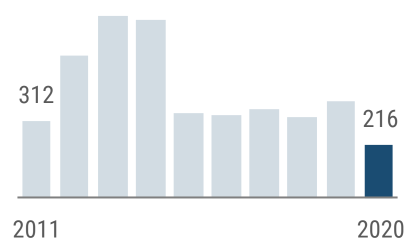
Caused by *Bordetella pertussis* bacteria

Illness includes runny nose, low-grade fever, mild cough and apnea that progresses to paroxysmal cough, or "whoop," with posttussive vomiting and exhaustion

Transmitted person to person via inhalation of infective aerosolized respiratory tract droplets

Under surveillance to identify cases for treatment to prevent death, identify and prevent outbreaks, limit transmission in settings with infants or others who may transmit to infants, monitor effectiveness of immunization programs and vaccines

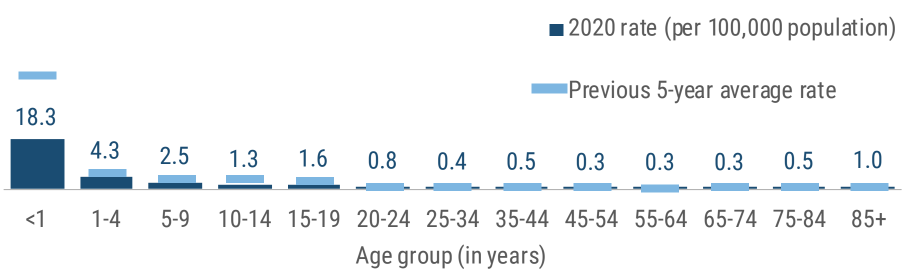
Pertussis incidence in 2020 decreased compared to previous non-peak years.



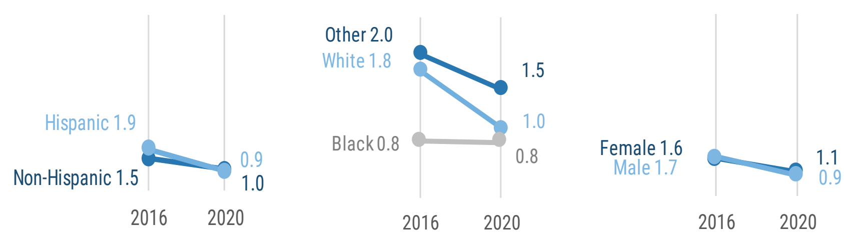
Disease Trends

Summary		
Number of cases		216
Rate (per 100,000 population)		1.0
Change from 5-year average rate		-41.2%
Age (in Years)		
Mean		20
Median		9
Min-max		0 - 95
Gender	**Number (Percent)**	**Rate**
Female	119 (55.1)	1.1
Male	97 (44.9)	0.9
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	162 (77.1)	1.0
Black	29 (13.8)	0.8
Other	19 (9.0)	NA
Unknown race	6	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	154 (75.1)	1.0
Hispanic	51 (24.9)	0.9
Unknown ethnicity	11	

The pertussis rate (per 100,000 population) is highest in infants <1 year old.



Pertussis rates (per 100,000 population) have decreased in all genders, races and ethnicity groups since 2016. This is expected given the cyclical nature of pertussis, which last peaked in 2013.

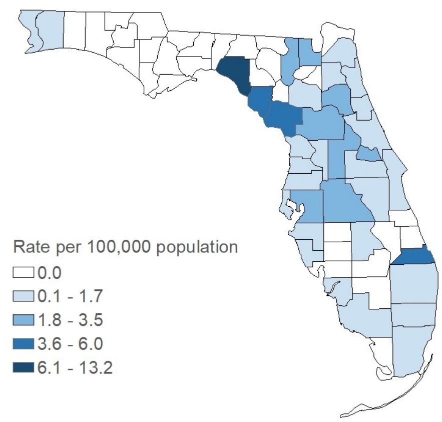


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Pertussis cases were missing 5.1% of ethnicity data in 2020.

Pertussis

Summary	Number
Number of cases	216
Case Classification	**Number (Percent)**
Confirmed	162 (75.0)
Probable	54 (25.0)
Outcome	**Number (Percent)**
Hospitalized	51 (23.6)
Died	0 (0.0)
Imported Status	**Number (Percent)**
Acquired in Florida	205 (98.1)
Acquired in the U.S., not Florida	3 (1.4)
Acquired outside the U.S.	1 (0.5)
Acquired location unknown	7
Outbreak Status	**Number (Percent)**
Sporadic	160 (74.8)
Outbreak-associated	54 (25.2)
Outbreak status unknown	2

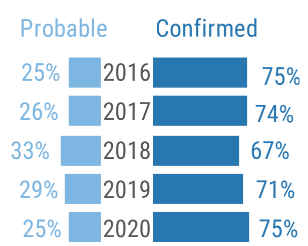
In 2020, pertussis cases primarily occurred in south and central Florida and were absent from most of the Panhandle.



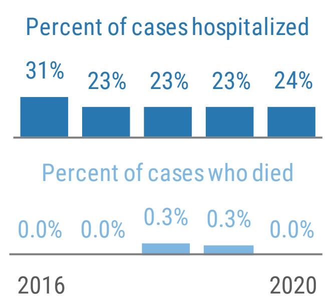
Rates are by county of residence for infections acquired in Florida (216 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

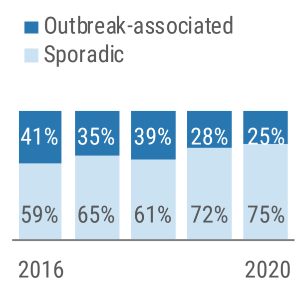
In 2020, 75% of pertussis cases were confirmed. Probable cases are clinically compatible but lack confirmatory testing.



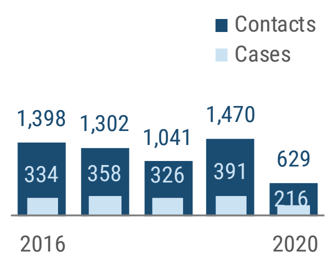
Between 23% to 31% of pertussis cases are hospitalized. Deaths from pertussis are rare.



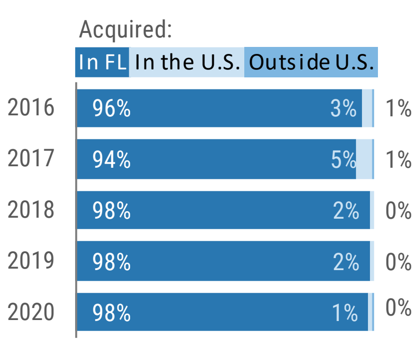
The percentage of cases that were outbreak-associated decreased slightly in 2020.



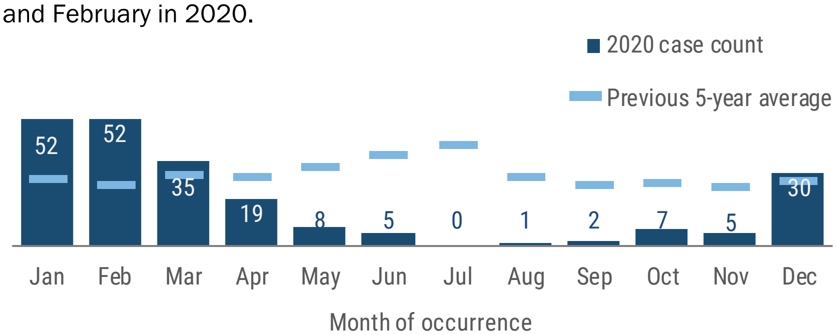
For each pertussis case, an average of 3 exposed contacts are recommended antibiotics to prevent illness.



Most pertussis cases were acquired in Florida; a small number of cases are imported from other states and countries.



Pertussis cases were highest in winter months in 2020. In general, pertussis does not have a seasonal pattern, although most cases were seen in January and February in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Rabies, Animal and Possible Exposure

Key Points for Humans

The first case of human rabies acquired in Florida since 1948 was reported in 2017; exposure was attributed to a bite from a rabid bat. In 2018, another human rabies case was reported in a 6-year-old male from Lake County. The child developed a fatal rabies infection after being bitten by a sick bat found near the family's home about 2 weeks prior to symptom onset. No medical attention was sought at the time of the bite. The rabies virus strain involved was associated with *Tadarida brasiliensis* (Brazilian free-tailed) bats.

The animals most frequently diagnosed with rabies in Florida are raccoons, bats, unvaccinated cats and foxes. Rabies is endemic in the raccoon and bat populations of Florida. Rabies frequently spreads from raccoons, and occasionally bats, to other animal species such as foxes and cats.

Incidence of human exposures to suspected rabid animals for which PEP is recommended has increased since case reporting was initiated, primarily due to PEP recommendations related to dog bites. Contributing factors may include more animal bites, lack of rabies PEP training and fewer local resources to find and confine or test biting animals. Case counts and rates from this report may differ from those found in other rabies reports as different criteria are used to assemble the data.

Disease Facts

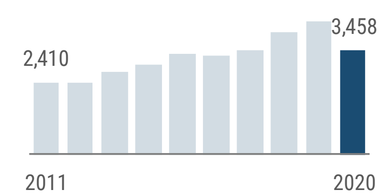
Caused by rabies virus

Illness in humans includes fever, headache, insomnia, confusion, hallucinations, increase in saliva, difficulty swallowing and fear of water; near 100% fatality rate; death usually occurs within days of symptom onset

Transmitted when infectious saliva or nervous tissue comes in contact with open wound or mucous membrane via bite

Under surveillance to identify and mitigate sources of exposure, evaluate adherence to guidance on rabies post-exposure prophylaxis (PEP)

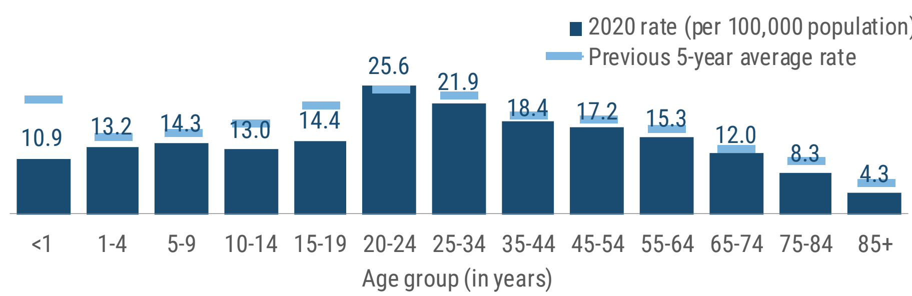
Possible human exposures to rabies decreased in 2020.



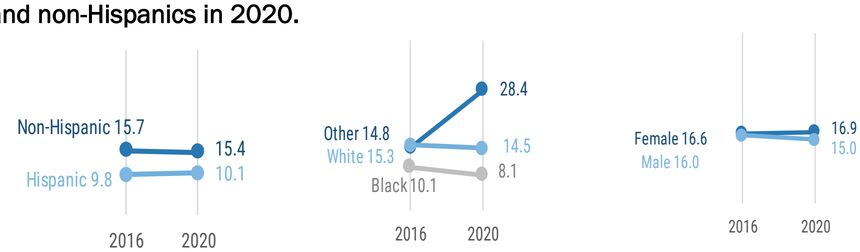
Human Trends

Summary		
Number of cases		3,458
Rate (per 100,000 population)		16.0
Change from 5-year average rate		-11.5%
Age (in Years)		
Mean		39
Median		37
Min-max		0 - 93
Gender	**Number (Percent)**	**Rate**
Female	1,870 (54.1)	16.9
Male	1,588 (45.9)	15.0
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	2,431 (78.8)	14.5
Black	297 (9.6)	8.1
Other	357 (11.6)	28.4
Unknown race	373	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	2,436 (80.7)	15.4
Hispanic	581 (19.3)	10.1
Unknown ethnicity	441	

Human exposures to suspected rabid animals for which PEP is recommended occurs in all age groups, but the rate (per 100,000 population) tends to be highest in people 15 to 34 years old.



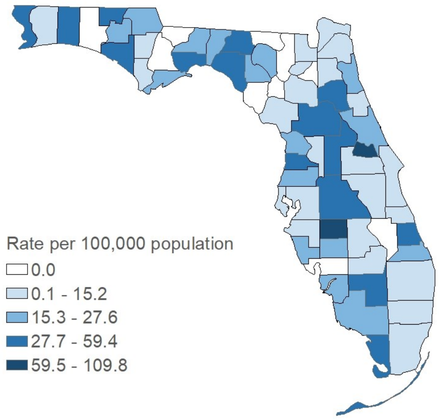
The rate (per 100,000 population) of human exposures to suspected rabid animals for which PEP is recommended is highest in females, other races, whites and non-Hispanics in 2020.



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Possible human exposure to rabies cases were missing 12.7% of ethnicity data in 2016, 12.0% of race data in 2016, 12.8% of ethnicity data in 2020 and 10.8% of race data in 2020.

Rabies, Animal and Possible Exposure

Human exposures to suspected rabid animals for which PEP is recommended occur throughout the state. The rate (per 100,000 population) was high in both rural and urban counties in 2020.



Rates are by county of residence for cases exposed in Florida (3,458 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

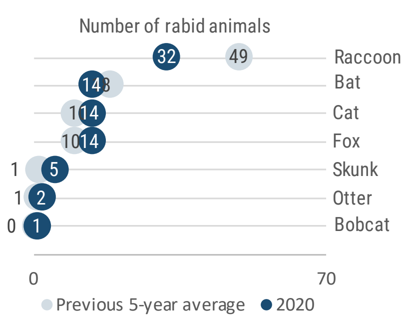
Animal Trends

Key Points for Animals

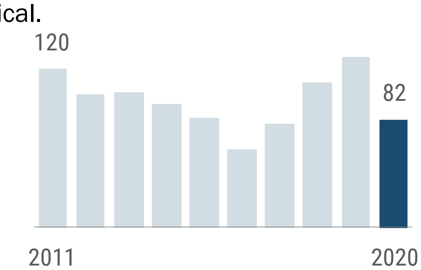
Laboratory testing for animal rabies is only done when animals potentially expose (e.g., bite) humans or domestic (owned) animals; thus, these data do not necessarily correlate with the true prevalence of rabies by animal species in Florida.

There is generally a much greater risk for rabies exposure to people when domestic animals are infected versus wildlife. Properly administered rabies vaccines are highly effective in protecting domestic animals like cats, dogs and ferrets against rabies infection, and rabies vaccination is required for these animals per section 828.30, *Florida Statues*.

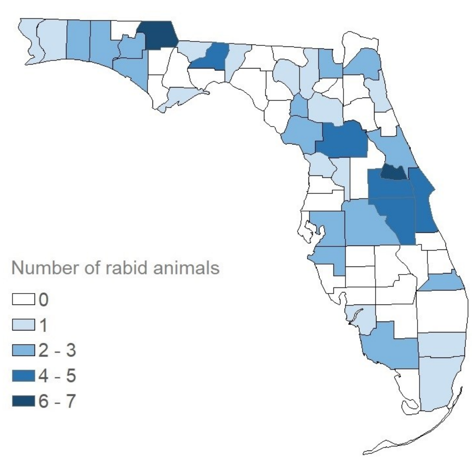
In 2020, raccoons remained the most commonly identified rabid animal, followed by bats, cats and foxes.



The number of rabid animals identified has generally decreased over the past decade and decreased in 2020 from 2019. Rabies activity is cyclical.



Rabid animals were identified throughout the state in 2020.



Salmonellosis

Key Points

Salmonellosis is one of the most common bacterial causes of diarrheal illness in the U.S. The Centers for Disease Control and Prevention estimates that *Salmonella* bacteria cause about 1.35 million infections, 26,500 hospitalizations and 420 deaths in the U.S. each year. Florida frequently has the highest number and one of the highest incidence rates of salmonellosis cases in the U.S. The seasonal pattern is very strong, with cases peaking in late summer to early fall. Incidence is highest in infants <1 year old and decreases dramatically with age.

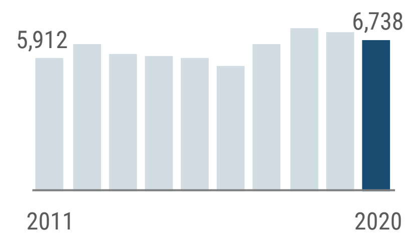
Disease Facts

- **Caused** by *Salmonella* bacteria (excluding *Salmonella* serotype Typhi)
- **Illness** is gastroenteritis (diarrhea, vomiting)
- **Transmitted** via fecal-oral route, including person to person, animal to person, foodborne and waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

The use of culture-independent diagnostic testing (CIDT) to identify *Salmonella* has increased in recent years. Florida changed the salmonellosis surveillance case definition in January 2017 to include CIDT in the criteria for probable cases, contributing to the increase in cases reported in 2017.

Most outbreak-associated cases are reflective of household clusters; however, some cases are part of in-state or multistate outbreaks. In 2020, Florida identified 83 cases associated with 10 different multistate outbreaks. A variety of vehicles were identified for 7 of these multistate outbreaks, including bearded dragons, small/baby turtles, live poultry, oysters, onions and mangos. One in-state outbreak was identified in 2020.

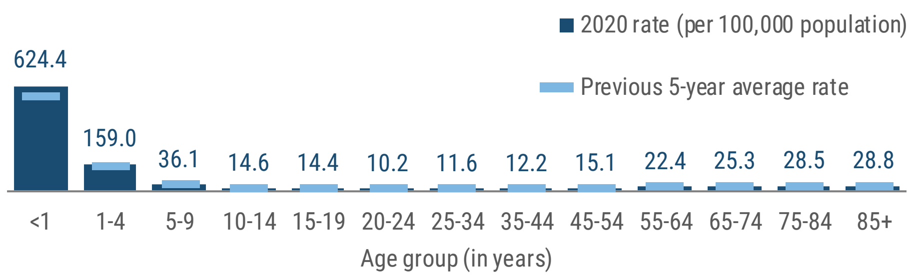
Salmonellosis incidence has remained relatively stable over the past 10 years but decreased slightly in 2020.



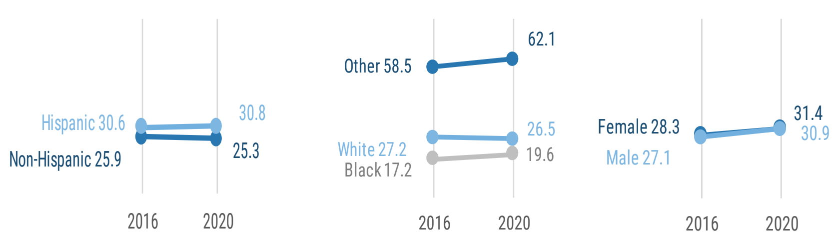
Disease Trends

Summary		
Number of cases		6,738
Rate (per 100,000 population)		31.1
Change from 5-year average rate		-1.0%
Age (in Years)		
Mean		28
Median		11
Min-max		0 - 104
Gender	**Number (Percent)**	**Rate**
Female	3,469 (51.5)	31.4
Male	3,269 (48.5)	30.9
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	4,423 (74.7)	26.5
Black	721 (12.2)	19.6
Other	780 (13.2)	62.1
Unknown race	814	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	4,019 (69.4)	25.3
Hispanic	1,775 (30.6)	30.8
Unknown ethnicity	944	

The salmonellosis rate (per 100,000 population) is highest in infants <1 year old and children 1 to 4 years old, then decreases dramatically with age.



The salmonellosis rate (per 100,000 population) remained relatively stable in all demographics from 2016 to 2020. The rates were similar across gender and ethnicity groups in 2020. The rate was notably higher in other races compared to whites and blacks in 2020.

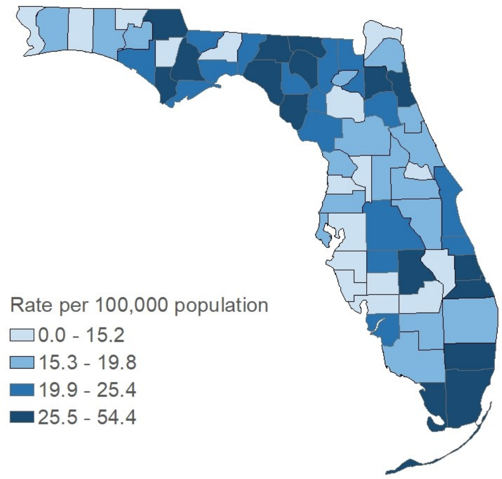


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Salmonellosis cases were missing 14.0% of ethnicity data in 2020 and 12.1% of race data in 2020.

Salmonellosis

Summary	Number
Number of cases	6,738
Case Classification	**Number (Percent)**
Confirmed	6,038 (89.6)
Probable	700 (10.4)
Outcome	**Number (Percent)**
Hospitalized	1,321 (19.6)
Died	65 (1.0)
Sensitive Situation	**Number (Percent)**
Daycare	207 (3.1)
Health care	40 (0.6)
Food handler	20 (0.3)
Imported Status	**Number (Percent)**
Acquired in Florida	4,355 (99.0)
Acquired in the U.S., not Florida	22 (0.5)
Acquired outside the U.S.	24 (0.5)
Acquired location unknown	2,337
Outbreak Status	**Number (Percent)**
Sporadic	4,282 (93.5)
Outbreak-associated	297 (6.5)
Outbreak status unknown	2,159

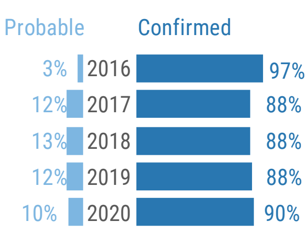
Salmonellosis occurs throughout the state. In 2020, the highest rates (per 100,000 population) were in small, rural counties as well as counties with larger populations.



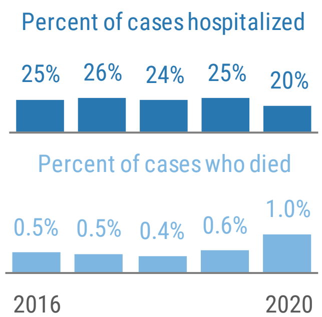
Rates are by county of residence for infections acquired in Florida (6,738 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

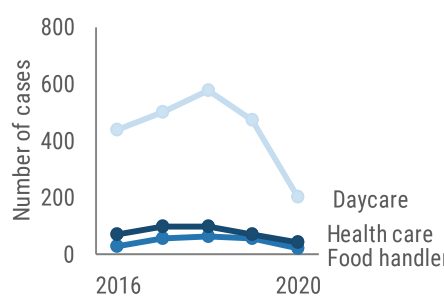
The case definition changed in 2017 to include CIDT in the probable case classification, resulting in more probable cases.



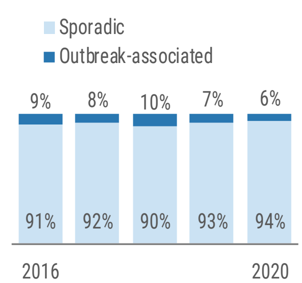
Approximately 25% of cases are hospitalized each year. Very few cases die.



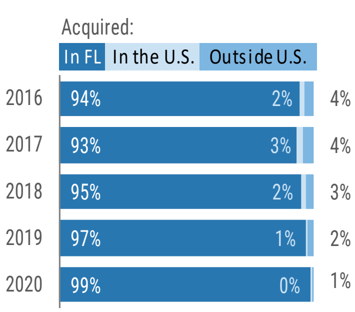
Cases in sensitive situations are monitored. The large number of cases in daycares reflects the age distribution of cases.



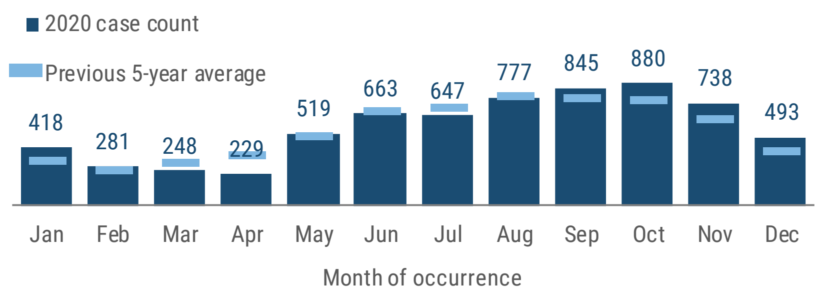
Most cases are sporadic; less than 10% are outbreak-associated and often reflect household clusters.



***Salmonella* infections are primarily acquired in Florida;** a small number of infections are imported from other states and countries.



Salmonellosis occurred throughout 2020 but has a strong seasonal pattern with cases peaking late summer to early fall, which is consistent with past years. The largest number of cases was reported in October in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection

Key Points

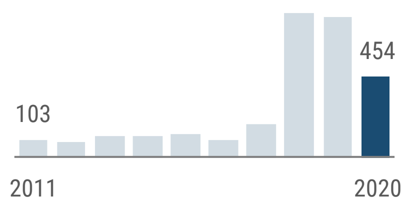
STEC infection is a common cause of diarrheal illness in the U.S., resulting in an estimated 265,000 illnesses each year. STEC infection incidence in Florida has generally increased over the past 10 years, likely due to advancements in laboratory techniques resulting in improved identification of STEC infection. The dramatic increase in 2018 was due to a surveillance case definition change in January 2018 that expanded the probable case classification to include culture-independent diagnostic testing (CIDT).

Most outbreak-associated cases are reflective of household clusters; however, some cases are part of in-state or multistate outbreaks. In 2020, Florida identified 3 cases associated with 3 different multistate outbreaks. Of the 3 multistate outbreaks, 1 outbreak was linked to consumption of clover sprouts. In 2020, Florida identified 5 cases associated with 1 in-state outbreak. The outbreak was associated with a school.

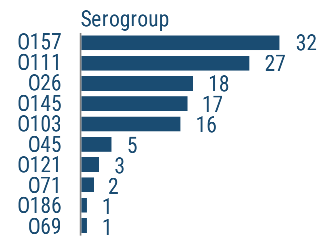
Disease Facts

- **Caused** by Shiga toxin-producing *Escherichia coli* (STEC) bacteria
- **Illness** is gastroenteritis (diarrhea, vomiting); less frequently, infection can lead to hemolytic uremic syndrome (HUS)
- **Transmitted** via fecal-oral route; including person to person, animal to person, foodborne and waterborne
- **Under surveillance** to identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

STEC infection incidence increased dramatically in 2018 due to a case definition change.



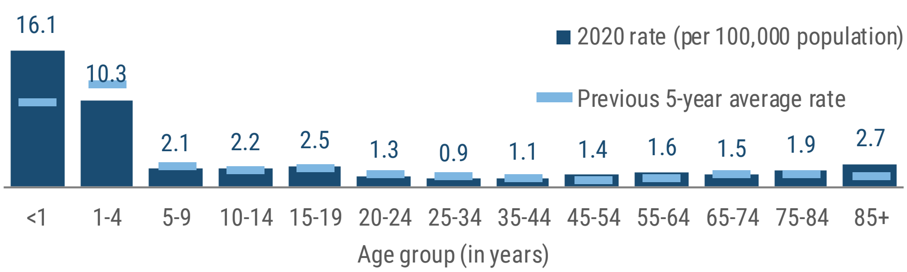
Serogroup O157 and the top six non-O157 serogroups were the cause of 73% of all confirmed STEC infections in 2020.



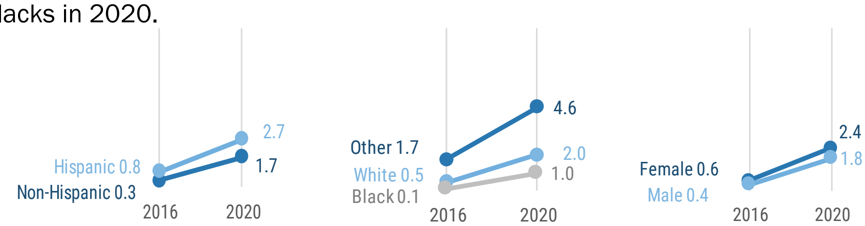
Disease Trends

Summary		
Number of cases		454
Rate (per 100,000 population)		2.1
Change from 5-year average rate		+8.8%
Age (in Years)		
Mean		32
Median		22
Min-max		0 - 99
Gender	**Number (Percent)**	**Rate**
Female	262 (57.7)	2.4
Male	192 (42.3)	1.8
Unknown gender	0	
Race	**Number (Percent)**	**Rate**
White	331 (77.7)	2.0
Black	37 (8.7)	1.0
Other	58 (13.6)	4.6
Unknown race	28	
Ethnicity	**Number (Percent)**	**Rate**
Non-Hispanic	272 (63.7)	1.7
Hispanic	155 (36.3)	2.7
Unknown ethnicity	27	

The STEC infection rate (per 100,000 population) is highest in infants <1 year old followed by children 1 to 4 years old. Children <5 years old are particularly vulnerable to STEC infection and are at highest risk of developing HUS. Two (50%) of the 4 HUS cases reported in 2020 were in children ≤5 years old.



The STEC infection rate (per 100,000 population) increased in all demographics from 2016 to 2020, driven primarily by the dramatic increase in cases in 2018. The rates were similar by gender in 2020 but higher in Hispanics than non-Hispanics. The rate was notably higher in other races compared to whites and blacks in 2020.

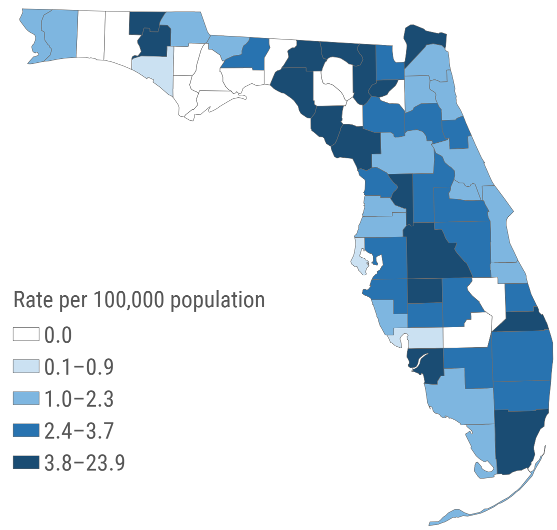


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. STEC infection cases were missing 5.1% of race data in 2016, 5.9% of ethnicity data in 2020 and 6.2% of race data in 2020.

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection

Summary	Number
Number of cases	454
Case Classification	**Number (Percent)**
Confirmed	162 (35.7)
Probable	292 (64.3)
Outcome	**Number (Percent)**
Hospitalized	129 (28.4)
Died	8 (1.8)
Sensitive Situation	**Number (Percent)**
Daycare	27 (5.9)
Health care	11 (2.4)
Food handler	5 (1.1)
Imported Status	**Number (Percent)**
Acquired in Florida	338 (94.2)
Acquired in the U.S., not Florida	4 (1.1)
Acquired outside the U.S.	17 (4.7)
Acquired location unknown	95
Outbreak Status	**Number (Percent)**
Sporadic	336 (84.8)
Outbreak-associated	60 (15.2)
Outbreak status unknown	58

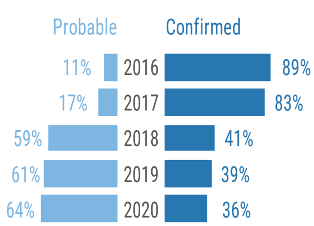
STEC infection cases occurred in most areas of the state, though less commonly in the Florida Panhandle in 2020. The highest rates (per 100,000 population) were found in counties with varying population sizes.



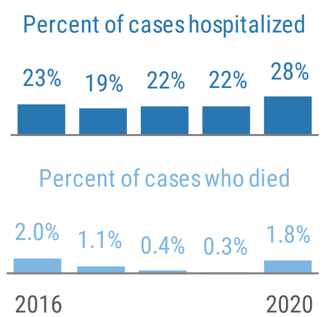
Rates are by county of residence for infections acquired in Florida (454 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

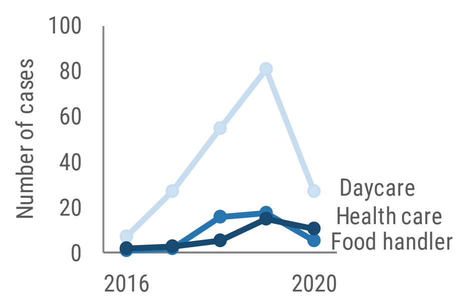
The case definition changed in 2018 to include CIDT in the probable case classification, resulting in more probable cases.



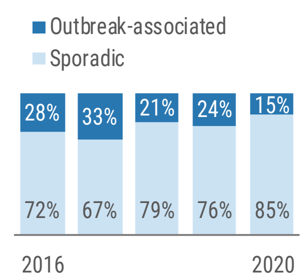
Between 19% and 28% of cases are hospitalized each year. Very few cases die (more likely in cases that develop HUS).



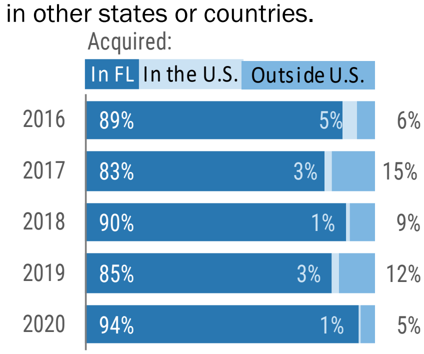
Outbreaks in daycares have contributed to higher numbers of cases in that setting.



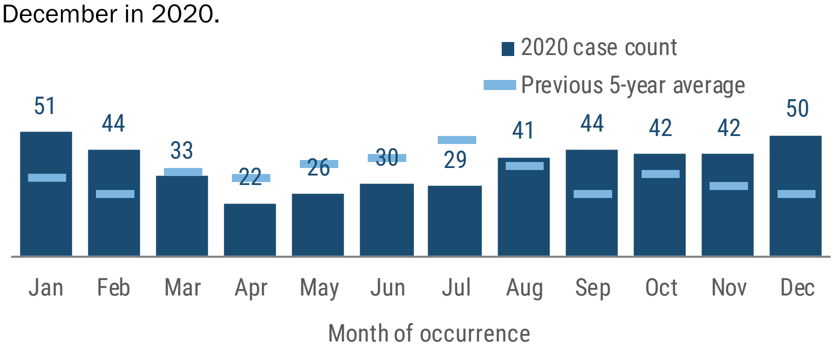
Less than 35% of cases are outbreak-associated each year.



Most STEC infections are acquired in Florida; some infections are acquired in other states or countries.



There is no distinct seasonality to STEC infection cases in Florida. Cases occur at moderate levels year-round. More cases occurred in January and December in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Shigellosis

Key Points

Shigellosis is a common cause of diarrheal illness in the U.S., resulting in an estimated 450,000 illnesses each year. Shigellosis has a cyclic temporal pattern with large community-wide outbreaks, frequently involving daycare centers, occurring every 3 to 5 years. Incidence is consistently highest in children <10 years old.

The use of culture-independent diagnostic testing (CIDT) to identify *Shigella* has increased in recent years. Florida changed the shigellosis surveillance case definition in January 2017 to include CIDT in the criteria for probable cases, contributing to the increase in cases reported in 2017.

Antimicrobial resistance in *Shigella* is a growing concern. In the U.S., most *Shigella* is already resistant to ampicillin and trimethoprim/sulfamethoxazole. Health care providers rely on alternative drugs such as ciprofloxacin and azithromycin to treat *Shigella* infections when needed, though treatment of shigellosis with antibiotics is not routinely recommended.

Disease Facts

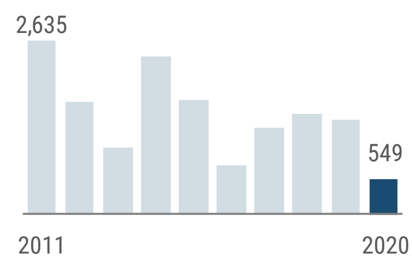
Caused by *Shigella* bacteria

Illness is gastroenteritis (diarrhea, vomiting)

Transmitted via fecal-oral route, including person to person, foodborne and waterborne

Under surveillance to identify and control outbreaks, identify and mitigate common sources (e.g., ill daycare attendee), monitor incidence over time, estimate burden of illness

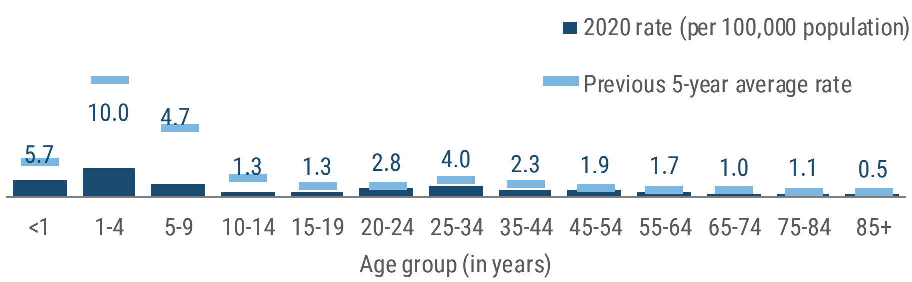
Shigellosis incidence decreased in 2020, consistent with historic cyclical patterns; recent peaks occurred in 2011 and 2014.



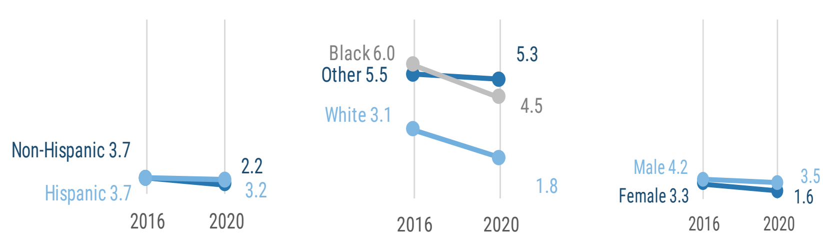
Disease Trends

Summary			
Number of cases			549
Rate (per 100,000 population)			2.5
Change from 5-year average rate			-61.2%
Age (in Years)			
Mean			30
Median			29
Min-max			0 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	178	(32.4)	1.6
Male	371	(67.6)	3.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	305	(56.9)	1.8
Black	164	(30.6)	4.5
Other	67	(12.5)	5.3
Unknown race	13		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	347	(65.0)	2.2
Hispanic	187	(35.0)	3.2
Unknown ethnicity	15		

The shigellosis rate (per 100,000 population) is highest in children 1 to 4 years old, followed by infants <1 year old then children 5 to 9 years old.



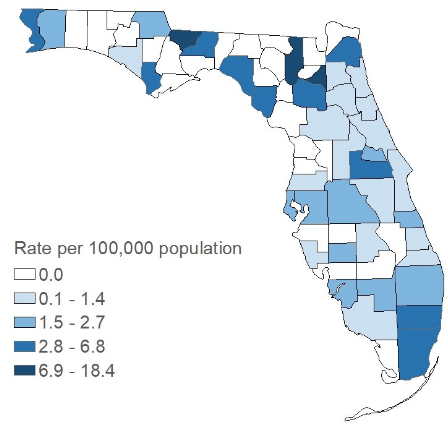
The shigellosis rate (per 100,000 population) decreased in all demographics from 2016 to 2020. The rates were slightly higher in males and Hispanics compared to females and non-Hispanics in 2020. The rate was highest in other races, followed by blacks, then whites in 2020.



Shigellosis

Summary	Number
Number of cases	549
Case Classification	**Number (Percent)**
Confirmed	286 (52.1)
Probable	263 (47.9)
Outcome	**Number (Percent)**
Hospitalized	148 (27.0)
Died	6 -110%
Sensitive Situation	**Number (Percent)**
Daycare	46 (8.4)
Health care	10 (1.8)
Food handler	14 (2.6)
Imported Status	**Number (Percent)**
Acquired in Florida	470 (95.7)
Acquired in the U.S., not Florida	4 (0.8)
Acquired outside the U.S.	17 (3.5)
Acquired location unknown	58
Outbreak Status	**Number (Percent)**
Sporadic	472 (88.4)
Outbreak-associated	62 (11.6)
Outbreak status unknown	15

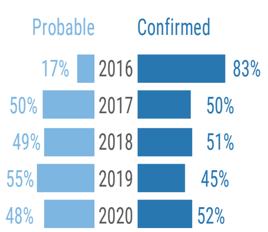
Shigellosis cases occurred in most areas of the state, though less commonly in the Florida Panhandle in 2020. The highest rates (per 100,000 population) were in northern and southeast Florida. Geographic distribution varies by year, often driven by clusters of counties experiencing large outbreaks.



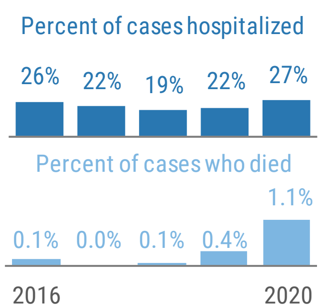
Rates are by county of residence for infections acquired in Florida (549 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

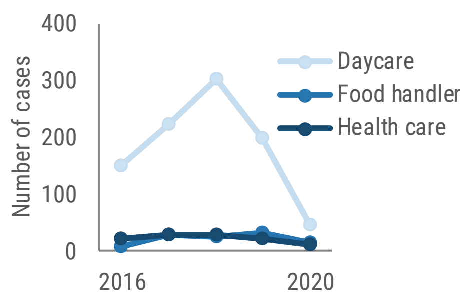
The case definition changed in 2017 to include CIDT in the probable case classification, resulting in more probable cases.



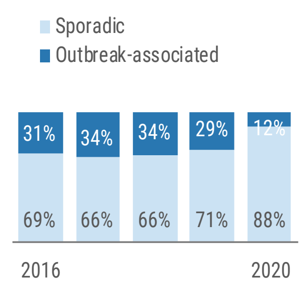
Between 19% and 27% of cases are hospitalized each year. Deaths are rare.



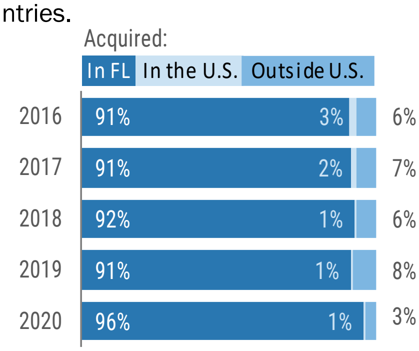
Person-to-person outbreaks are common in daycare settings. In 2020, 24% of outbreak-associated cases occurred in daycare settings.



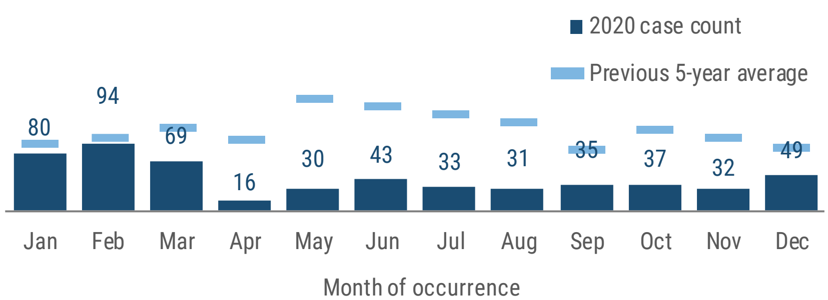
Outbreaks are common; as few as 10 *Shigella* bacteria can result in illness, making it easy to spread from person to person.



Most *Shigella* infections are acquired in Florida; a small number of infections are acquired from other states and countries.



Shigellosis occurred throughout 2020 with activity peaking during the winter months. Activity in 2020 was not consistent with the previous five-year average.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Syphilis (Excluding Congenital)

Key Points

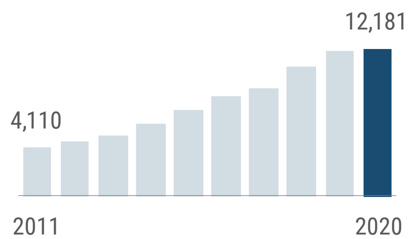
Syphilis is separated into early syphilis (i.e., syphilis of less than one year duration, which includes latent and infectious stages) and late or late latent syphilis (i.e., syphilis diagnosed more than one year after infection). Syphilis creates an open sore at the point of infection, called a primary lesion, during the infectious stage. A primary lesion can work as a conduit for HIV transmission and puts either the person displaying the lesion or their sexual partners at risk of HIV infection if either partner is living with HIV.

Disease Facts

- **Caused** by *Treponema pallidum* bacteria
- **Illness** includes sores on genitals, anus or mouth; rash on the body
- **Transmitted** sexually via anal, vaginal or oral sex and sometimes from mother to infant during pregnancy or delivery
- **Under surveillance** to implement interventions immediately for every case, monitor incidence over time, estimate burden of illness, target prevention education programs, evaluate treatment and prevention programs

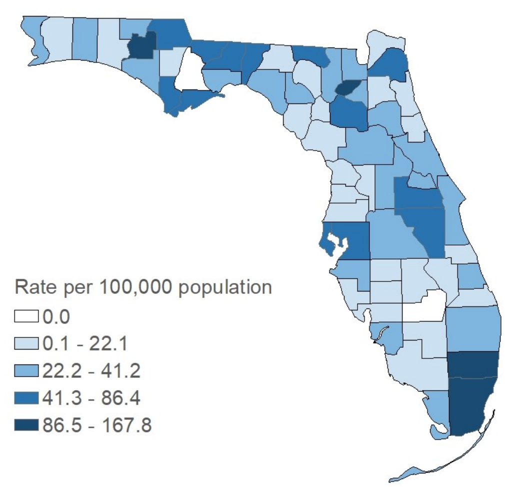
Disease Trends

In 2020, syphilis incidence continued to increase, both in Florida and nationally.



Summary			
Number of cases			12,181
Rate (per 100,000 population)			56.3
Change from 5-year average rate			+24.0%
Age (in Years)			
Mean			37
Median			34
Min-max			13 - 93
Gender	**Number**	**(Percent)**	**Rate**
Female	2,178	(17.9)	19.7
Male	10,002	(82.1)	94.6
Unknown gender	1		
Race	**Number**	**(Percent)**	**Rate**
White	5,868	(51.7)	35.1
Black	4,120	(36.3)	112.2
Other	1,367	(12.0)	108.9
Unknown race	826		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	7,355	(67.0)	46.3
Hispanic	3,630	(33.0)	62.9
Unknown ethnicity	1,196		

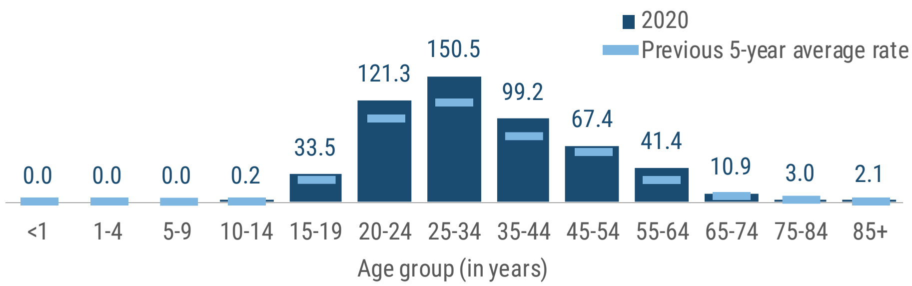
Syphilis occurs throughout the state. The highest rates (per 100,000 population) in 2020 were in large counties, including Broward (109.1), Miami-Dade (107.9) and Orange (86.4) as well as in small rural counties, including Union (167.8) and Washington (146.5).



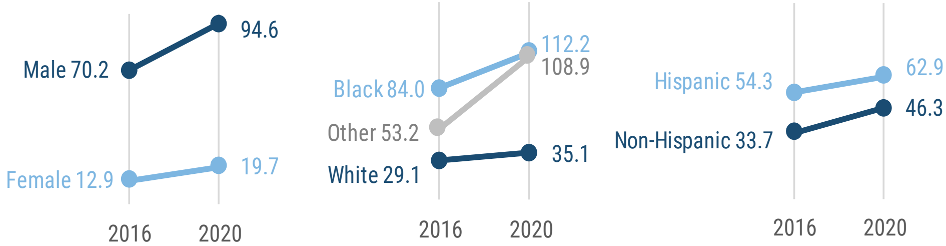
Rates are by county of residence, regardless of where infection was acquired (12,181 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

Syphilis (Excluding Congenital)

The syphilis rate (per 100,000 population) was highest in adults 20 to 54 years old and peaked in adults 25 to 34 years old.

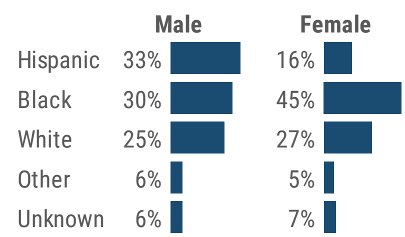


The syphilis rate (per 100,000 population) increased in all genders, races and ethnic groups from 2016 to 2020. The increase was most notable in males and in other races. The rates are highest in men, blacks and Hispanics.



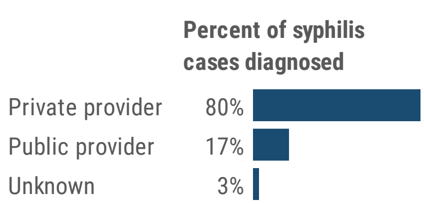
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Syphilis cases (excluding congenital) were missing 5.2% of ethnicity data in 2016.

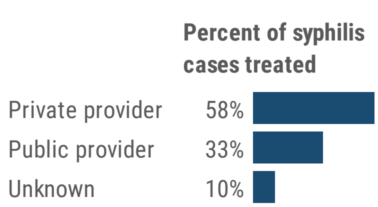
Race and ethnicity differed between genders. Black females and Hispanic males were at increased risk for syphilis.



In 2020, most people (80%) went to their own private providers for sexually transmitted disease testing. However, the recommended treatment for syphilis, per the Centers for Disease Control and Prevention, is parenterally administered penicillin G benzathine. As many providers do not keep the standard benzathine penicillin product Bicillin on hand, they often refer their patients to county health departments for treatment.

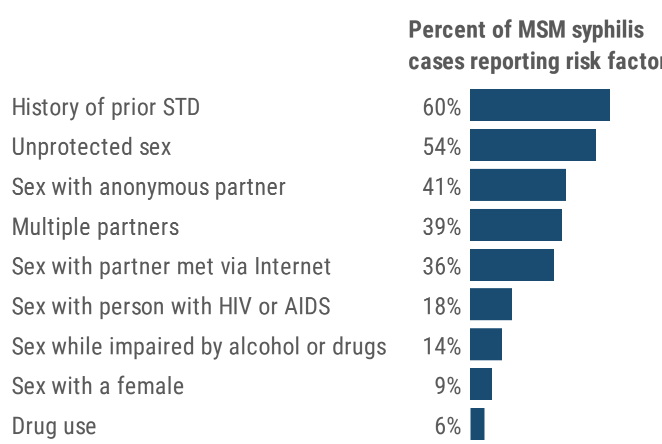
In 2020, 58% of syphilis cases were treated by public providers.





Men who have sex with men (MSM) are identified through risk behavior information collected during case investigations. The true incidence of the MSM risk is difficult to estimate due to many factors. In 2020, most (68%) syphilis cases in males were in men who reported having sex with other men.

MSM with syphilis who were interviewed in 2020 (6,661 men) disclosed an array of risk behaviors, which included sex with anonymous partners and sex with females.



Tuberculosis

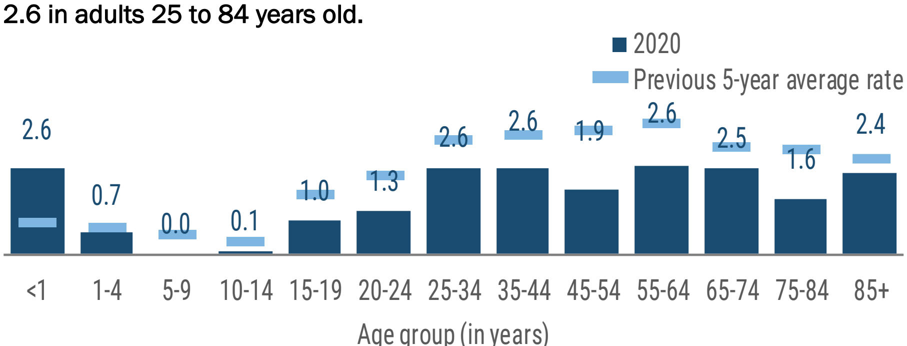
Key Points

Tuberculosis (TB) continues to be a public health threat in Florida. Incidence has generally declined over the past decade, though small fluctuations can occur year to year. Slight increases in 2015, 2016 and 2018 were observed after historic lows in 2014 and 2017. In 2020, Florida experienced a new historic low in reported TB cases. Medically underserved and low-income populations, including racial and ethnic minorities, have high rates of TB. In Florida, TB incidence is much higher in men than women. The rate per 100,000 population in blacks in Florida was almost 3 times as high as the rate in whites in 2020.

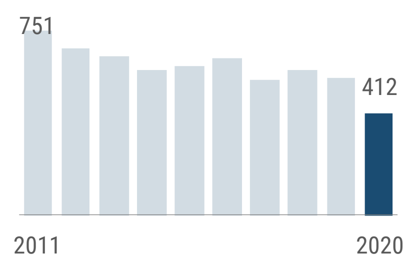
Disease Facts

- **Caused** by *Mycobacterium tuberculosis* bacteria
- **Illness** is usually respiratory (severe cough, pain in chest), but can affect all parts of the body including kidneys, spine or brain
- **Transmitted** via inhalation of aerosolized droplets from people with active tuberculosis
- **Under surveillance** to implement effective interventions immediately for every case to prevent further transmission, monitor directly observed therapy prevention programs, evaluate trends

The TB rate (per 100,000 population) is low in children and ranged from 1.6 to 2.6 in adults 25 to 84 years old.



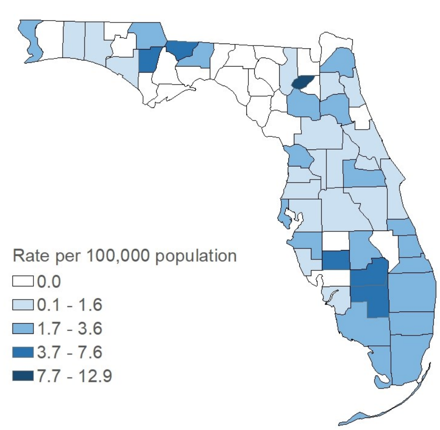
Despite a few slight increases, TB incidence has generally decreased over the past decade.



Disease Trends

Summary			
Number of cases			412
Rate (per 100,000 population)			1.9
Change from 5-year average rate			-33.4%
Age (in Years)			
Mean			49
Median			50
Min-max			0 - 99
Gender	**Number**	**(Percent)**	**Rate**
Female	150	(36.4)	1.4
Male	262	(63.6)	2.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	214	(51.9)	1.3
Black	121	(29.4)	3.3
Other	77	(18.7)	6.1
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	264	(64.1)	1.7
Hispanic	148	(35.9)	2.6
Unknown ethnicity	0		

TB occurred in most parts of the state in 2020 though was less common in the Panhandle. While the highest rates (per 100,000 population) tended to be in small, rural counties, 28% of all TB cases were in Miami-Dade (73 cases) and Broward (41 cases) counties.

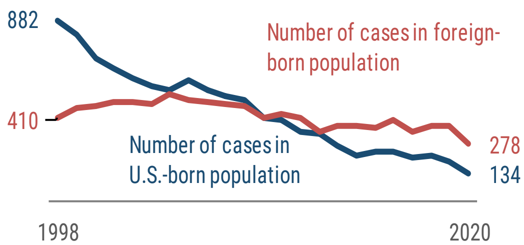


Rates are by county of residence, regardless of where infection was acquired (412 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

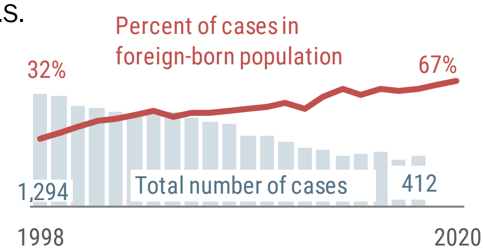
Tuberculosis

The rate of TB in the U.S.-born population in Florida has been decreasing faster than the rate among the foreign-born population. Being born in a country where TB is prevalent is one of the most significant risk factors for developing TB and is a focus for TB prevention and control efforts in Florida. In 2020, 67% of all TB cases in Florida were in the foreign-born population. The most common countries of origin in 2020 included Haiti, Mexico, the Philippines, Vietnam, Guatemala, Colombia and Cuba, accounting for 176 (63%) of 278 cases identified in the foreign-born population.

In 1998, there were twice as many TB cases in the U.S.-born population than the foreign-born population. In 2020, more than twice as many cases were in foreign-born people than U.S.-born.

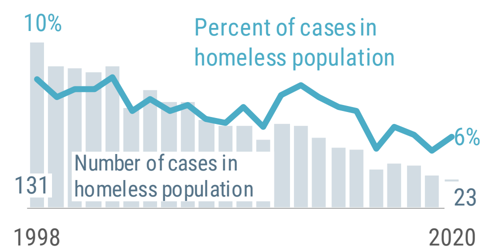


As the number of TB cases has declined in Florida, the percent of those cases in the foreign-born population has increased. In 2020, 67% of cases were in people born outside the U.S.

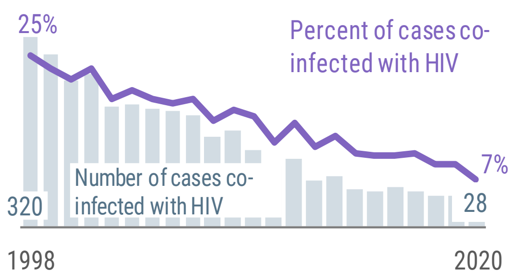


People experiencing homelessness are at increased risk for disease and are a focus for TB prevention and control efforts in Florida. Since 1998, the total number of TB cases among the homeless population in Florida has decreased by over 50%; however, in the same time period, the percent of people with TB who are homeless remained relatively stable (8% to 10%). Since 2012, the percent of people with TB who are homeless decreased from 9.6% to 4% in 2019, with a slight increase to 6% in 2020.

Despite slight increases in 2017 and 2020, the number and percent of cases among the homeless population has steadily decreased since 2012.



In 2020, 7% of TB cases were co-infected with HIV. This is a decrease from 2019 and is consistent with the overall decreasing trend.



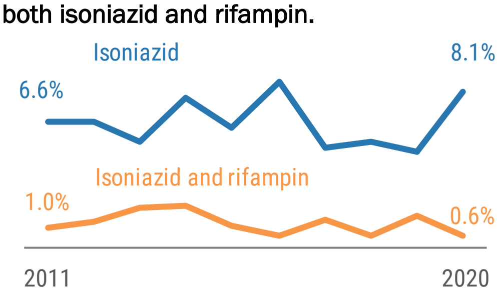
Untreated HIV infection remains the biggest risk factor for developing active TB disease following infection with TB and is a focus for TB prevention and control efforts in Florida. TB and HIV co-infection has been declining modestly but steadily over time in Florida. In the last 3 years the decline has leveled off at less than 10%.

Drug resistance arises due to improper use of antibiotics in the chemotherapy of drug-susceptible TB patients. Multidrug-resistant TB is caused by *M. tuberculosis* bacteria that are resistant to at least isoniazid and rifampin, the two most potent TB drugs. In 2020, 346 TB cases were tested in Florida for resistance to isoniazid and rifampin. Over the past 10 years:

- Resistance to isoniazid alone ranged from 5% to 9%.
- Resistance to isoniazid and rifampin ranged from 0.6% to 2.2%.

In 2020, resistance to isoniazid alone increased and resistance to isoniazid and rifampin decreased but were within the 10-year ranges.

In 2020, 8% of tested cases were resistant to isoniazid alone and 0.6% were resistant to both isoniazid and rifampin.



Varicella (Chickenpox)

Key Points

Varicella is a childhood disease that became reportable in Florida in late 2006. A vaccine was first released in the U.S. in 1995, and a 2-dose schedule was recommended in 2008 by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices. Beginning with the 2008 to 2009 school year, children entering kindergarten in Florida were required to receive 2 doses of varicella vaccine per Florida Administrative Code Rule 64D-3.046 . Due to effective vaccination programs, there was a steady decrease in incidence in Florida from 2008 to 2014. Incidence increased slightly in 2015 and has remained elevated prior to 2020.

The rate of varicella remained highest among infants <1 year old, who are too young to be vaccinated. As a result, vaccination of siblings and caregivers is particularly important to protect this group.

The number of outbreak-associated cases decreased from 235 (24%) in 2019 to 54 (15.7%) in 2020. Of the 54 outbreak-associated cases identified, most were small household clusters. No outbreaks (defined as 5 or more cases linked in a single setting) were identified in 2020. The only county with ≥10 outbreak-associated cases was Broward (14).

Disease Facts

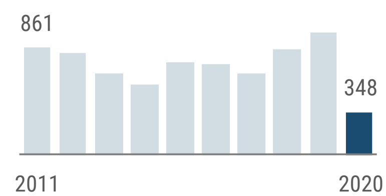
Caused by varicella-zoster virus (VZV)

Illness commonly includes vesicular rash, itching, tiredness and fever

Transmitted person to person by contact with or inhalation of aerosolized infective respiratory tract droplets or secretions, or direct contact with VZV vesicular lesions

Under surveillance to identify and control outbreaks, monitor effectiveness of immunization programs and vaccines, monitor trends and severe outcomes

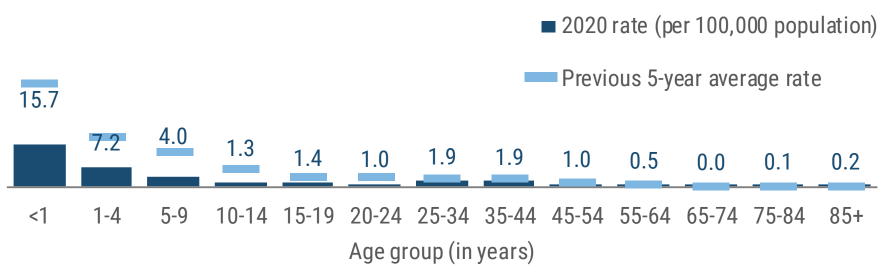
Varicella incidence increased in 2020.



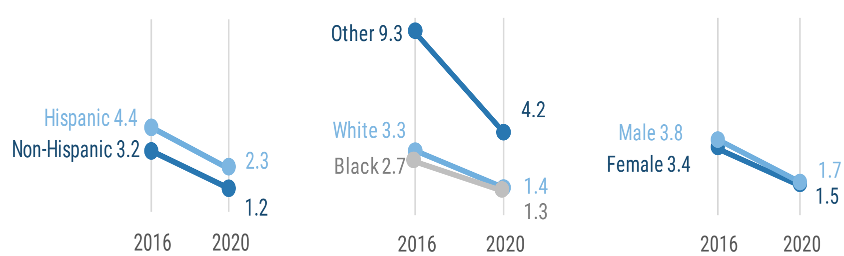
Disease Trends

Summary			
Number of cases			348
Rate (per 100,000 population)			1.6
Change from 5-year average rate			-58.2%
Age (in Years)			
Mean			21
Median			16
Min-max			0 - 88
Gender	**Number**	**(Percent)**	**Rate**
Female	169	(48.6)	1.5
Male	179	(51.4)	1.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	234	(70.3)	1.4
Black	46	(13.8)	1.3
Other	53	(15.9)	4.2
Unknown race	15		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	196	(59.8)	1.2
Hispanic	132	(40.2)	2.3
Unknown ethnicity	20		

The varicella rate (per 100,000 population) remained highest in infants <1 year old in 2020, though the rate was lower than the previous five-year average.



The varicella rate (per 100,000 population) is similar among males and females. It is also similar among whites and blacks, and since 2016, the rate in other races has decreased notably. The rate in Hispanics and non-Hispanics has also decreased since 2016.

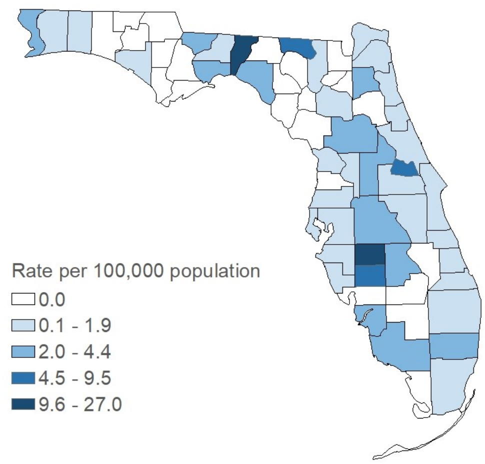


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Varicella cases were missing 5.7% of ethnicity data in 2020.

Varicella (Chickenpox)

Summary	Number
Number of cases	348
Case Classification	**Number (Percent)**
Confirmed	101 (29.0)
Probable	247 (71.0)
Outcome	**Number (Percent)**
Hospitalized	31 (8.9)
Died	1 (0.3)
Imported Status	**Number (Percent)**
Acquired in Florida	320 (97.6)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	8 (2.4)
Acquired location unknown	20
Outbreak Status	**Number (Percent)**
Sporadic	289 (84.3)
Outbreak-associated	54 (15.7)
Outbreak status unknown	5

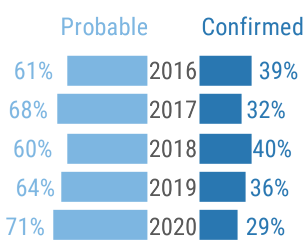
Varicella occurred throughout the state in 2020. Rates (per 100,000 population) varied regardless of county population. Rates ranged from 0 to 27 per 100,000.



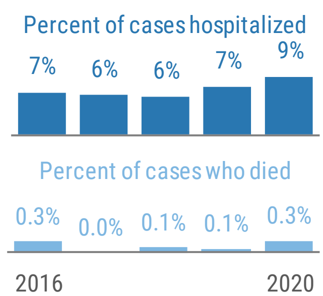
Rates are by county of residence for infections acquired in Florida (348 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

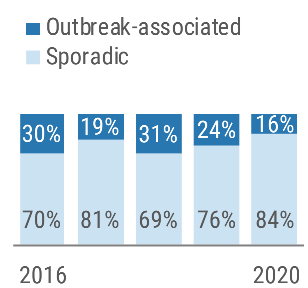
Less than one-third of cases were confirmed. Most varicella cases are classified as probable based on symptoms only.



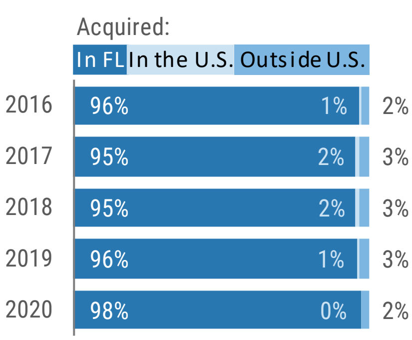
Most varicella cases do not require hospitalization; deaths are very rare.



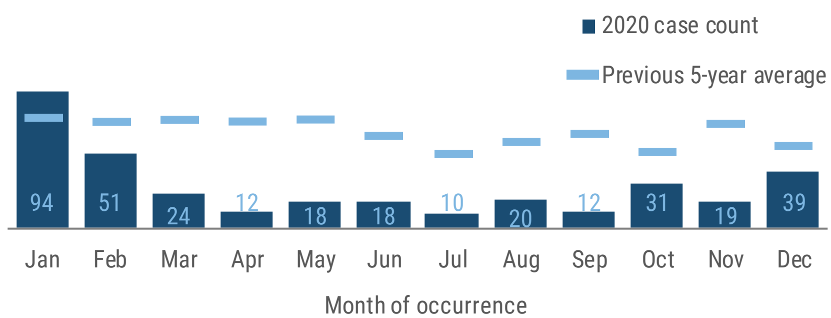
Less than one-fourth of cases are outbreak-associated. In 2020, 16% of cases were outbreak-associated.



Most VZV infections are acquired in Florida. Each year, a few cases are imported from other states and countries.



Due to robust vaccination programs, there is no longer discernable seasonality for varicella in Florida. Between 51 and 94 cases occurred each month in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, sensitive situation, imported status, outbreak status and month of occurrence.

Vibriosis (Excluding Cholera)

Key Points

Vibrio species are endemic in Florida's seawater. Incidence is typically higher in the summer when exposure to seawater is more common and warmer water is conducive to bacterial growth. Incidence increased notably in 2017, largely due to a change in the probable case definition, which expanded in 2017 to include culture-independent diagnostic testing (CIDT).

Vibrio vulnificus infections typically occur in people who have chronic kidney or liver disease, a history of alcoholism or are immunocompromised. Of the 36 *V. vulnificus* cases in 2020, 20 (55.6%) had underlying medical conditions. *V. vulnificus* can cause particularly severe disease, with about 50% of bloodstream infections being fatal.

Of the 36 cases due to *V. vulnificus* in 2020, 31 (86.1%) were hospitalized and seven (19.4%) died, accounting for 7 of the 11 total vibriosis deaths. The remaining 4 deaths were associated with infections with *V. cholerae* type non-O1 (1 case), *V. alginolyticus* (1 case), *V. parahaemolyticus* (1 case) and *V. fluvialis* (1 case). Of the 11 people who died from vibriosis, 2 reported having a wound with seawater/brackish water exposure, 1 had multiple exposures and 8 had other or unknown exposures.

Disease Facts

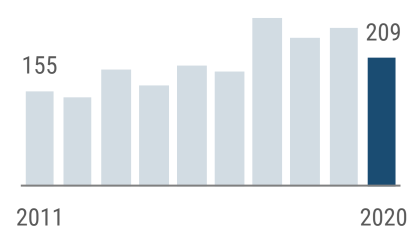
Caused by bacteria in the family Vibrionaceae

Illness can be gastroenteritis (diarrhea, vomiting), bacteremia, septicemia, wound infection, cellulitis; other common symptoms include low-grade fever, headache and chills

Transmitted via food, water, wound infections from direct contact with brackish water or salt water where the bacteria naturally live or direct contact with marine wildlife

Under surveillance to identify sources of transmission (e.g., shellfish collection area) and mitigate source, monitor incidence over time, estimate burden of illness

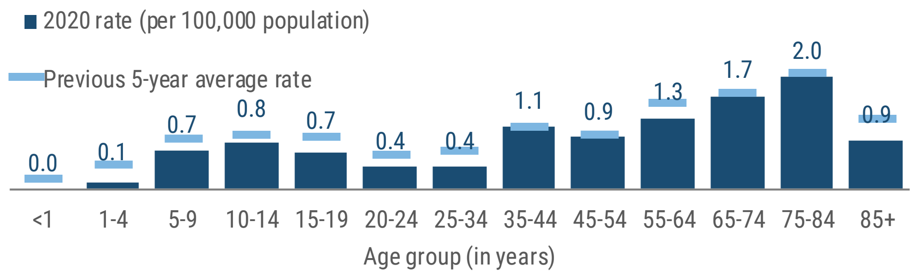
Vibriosis incidence decreased in 2020.



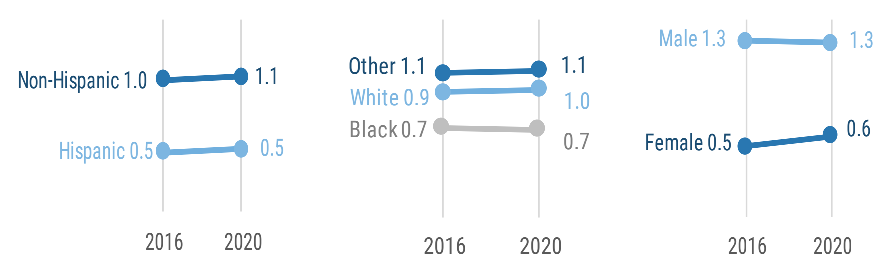
Disease Trends

Summary			
Number of cases			209
Rate (per 100,000 population)			1.0
Change from 5-year average rate			-13.9%
Age (in Years)			
Mean			53
Median			59
Min-max			3 - 95
Gender	**Number**	**(Percent)**	**Rate**
Female	68	(32.7)	0.6
Male	140	(67.3)	1.3
Unknown gender	1		
Race	**Number**	**(Percent)**	**Rate**
White	162	(81.0)	1.0
Black	24	(12.0)	0.7
Other	14	(7.0)	NA
Unknown race	9		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	168	(85.7)	1.1
Hispanic	28	(14.3)	0.5
Unknown ethnicity	13		

The vibriosis rate (per 100,000 population) is usually highest in adults 55 to 84 years old. In 2020, the rate was highest in adults 75 to 84 years old.



Vibriosis rates (per 100,000 population) remained stable in all genders, races and ethnicity groups from 2016 to 2020. The rate was higher in males, other races and non-Hispanics in 2020.

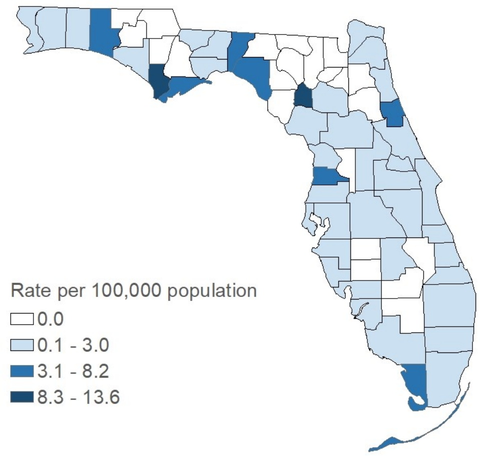


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Vibriosis cases (excluding cholera) were missing 6.2% of ethnicity data in 2020.

Vibriosis (Excluding Cholera)

Summary	Number
Number of cases	209
Case Classification	**Number (Percent)**
Confirmed	180 (86.1)
Probable	29 (13.9)
Outcome	**Number (Percent)**
Hospitalized	81 (38.8)
Died	11 (5.3)
Imported Status	**Number (Percent)**
Acquired in Florida	185 (95.4)
Acquired in the U.S., not Florida	4 (2.1)
Acquired outside the U.S.	5 (2.6)
Acquired location unknown	15
Outbreak Status	**Number (Percent)**
Sporadic	203 (99.0)
Outbreak-associated	2 (1.0)
Outbreak status unknown	4

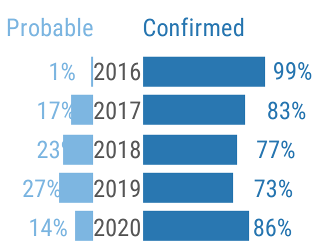
Vibriosis occurred in most parts of the state in 2020. The rates (per 100,000 population) varied across the state with some of the highest rates in low-population counties.



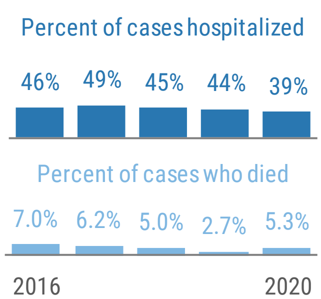
Rates are by county of residence for infections acquired in Florida (209 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

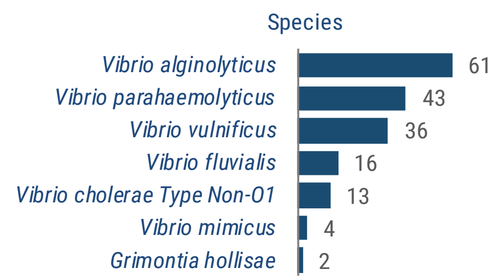
The case definition changed in 2017 to include CIDT in the probable case classification, resulting in more probable cases.



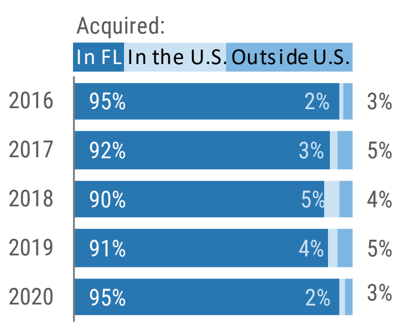
Between 39% and 49% of cases are hospitalized; deaths do occur. Eleven people infected with *Vibrio* died in 2020.



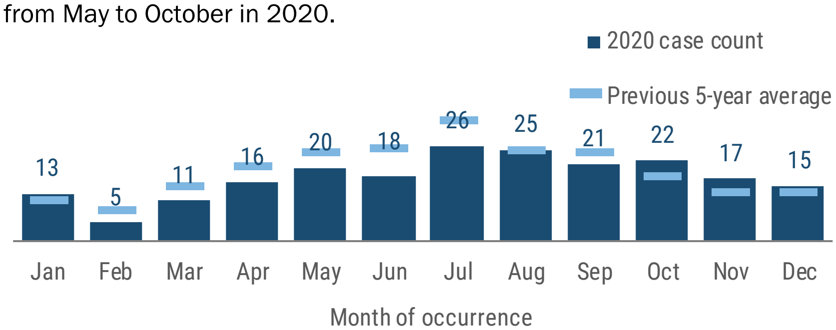
In 2020, the most commonly reported *Vibrio* species were *V. alginolyticus*, *V. parahaemolyticus* and *V. vulnificus*. The number of other *Vibrio* infections was largely due to CIDT, which cannot differentiate between species.



Most *Vibrio* infections are acquired in Florida. In 2020, 9 infections were acquired in other states or countries.



Vibriosis occurs throughout the year in Florida, with activity typically peaking during the summer months. Between 18 to 26 cases occurred each month from May to October in 2020.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

West Nile Virus Disease

Key Points

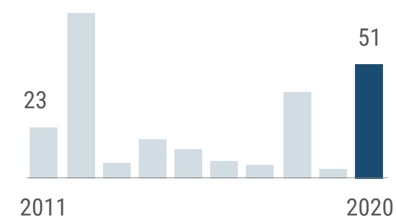
West Nile virus (WNV) is a mosquito-borne *Flavivirus* that was first introduced to the northeastern U.S. in 1999 and first detected in Florida in 2001. Since its initial detection, WNV activity has been reported in all 67 Florida counties. Approximately 80% of people infected with WNV show no clinical symptoms, 20% have mild non-neuroinvasive illness and less than 1% suffer from the neuroinvasive form of illness. *Culex* species (mosquitoes) and wild birds are the natural hosts. Humans and horses can become infected when bitten by a mosquito infected with WNV.

WNV can also be transmitted to humans via contaminated blood transfusion or organ transplantation. Since 2003, all blood donations are screened for WNV prior to transfusion. In 2020, four WNV disease cases were identified through blood donor screening, testing positive prior to developing symptoms, and an additional 37 asymptomatic WNV-positive blood donors were identified. People spending large amounts of time outside (due to occupation, hobbies or homelessness) or not using insect repellant or other forms of prevention are at higher risk of becoming infected. In 2020, 20 asymptomatic WNV-positive blood donors and 1 WNV disease case were experiencing homelessness. This represented the most individuals experiencing homelessness identified since Florida began tracking in 2005. The year 2020 had the second-highest number of WNV infections and the third-highest number of WNV illness on state record.

Disease Facts

- **Caused** by West Nile virus
- **Illness** can be asymptomatic, mild non-neuroinvasive (e.g., headache, fever, pain, fatigue), or neuroinvasive (e.g., meningitis and encephalitis with possible irreversible neurological damage, paralysis, coma or death)
- **Transmitted** via bite of infective mosquito or by blood transfusion or organ transplant
- **Under surveillance** to identify areas where WNV is being transmitted to target prevention education for the public, monitor incidence over time, estimate burden of illness

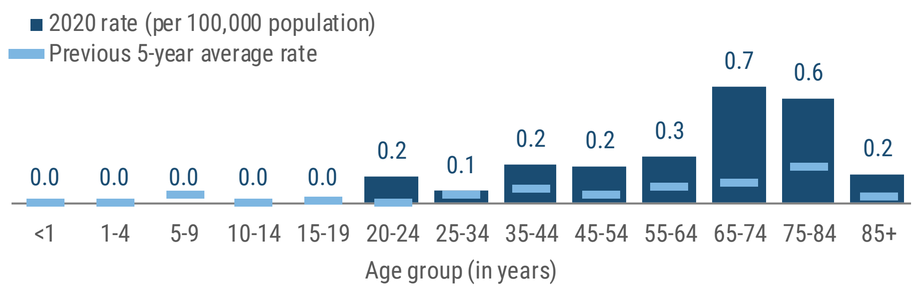
The incidence of West Nile virus disease increased sharply in 2020. Dry environmental conditions during the winter months and into the beginning of avian nesting season followed by increased precipitation in late spring may have contributed to increased WNV risk in south Florida.



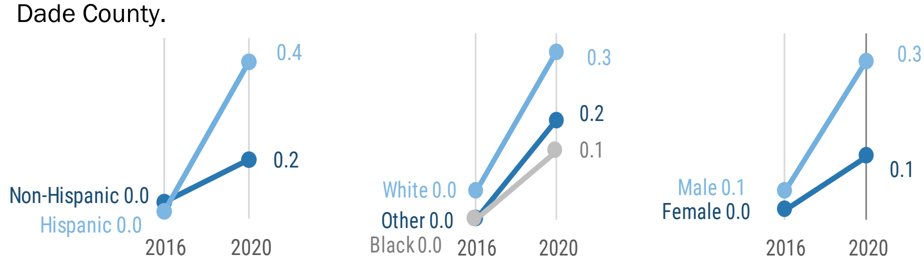
Disease Trends

Summary			
Number of cases			51
Rate (per 100,000 population)			0.2
Change from 5-year average rate			+247.6%
Age (in Years)			
Mean			61
Median			66
Min-max			24 - 85
Gender	**Number**	**(Percent)**	**Rate**
Female	15	(29.4)	NA
Male	36	(70.6)	0.3
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	45	(88.2)	0.3
Black	4	(7.8)	NA
Other	2	(3.9)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	26	(51.0)	0.2
Hispanic	25	(49.0)	0.4
Unknown ethnicity	0		

The rate of West Nile virus disease (per 100,000 population) was highest in adults 65 to 74 years old in 2020. People >60 years old are at greater risk of severe illness. In 2020, 63% of cases were among people >60 years old; all but 2 had neuroinvasive illness. All 3 deaths were in people >60 years old.



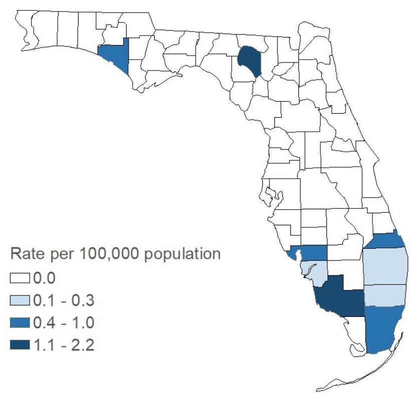
The rate of West Nile virus disease (per 100,000 population) increased slightly in all demographics from 2016 to 2020. In 2020, rates in Hispanics were double those in non-Hispanics, which is reflective of population demographics in Miami-Dade County.



West Nile Virus Disease

Summary	Number
Number of cases	51
Case Classification	**Number (Percent)**
Confirmed	50 (98.0)
Probable	1 (2.0)
Clinical Type	**Number (Percent)**
Neuroinvasive	34 (87.2)
Non-neuroinvasive	5 (12.8)
Outcome	**Number (Percent)**
Hospitalized	43 (84.3)
Died	3 (5.9)
Imported Status	**Number (Percent)**
Acquired in Florida	51 (100.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	0
Outbreak Status	**Number (Percent)**
Sporadic	51 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0

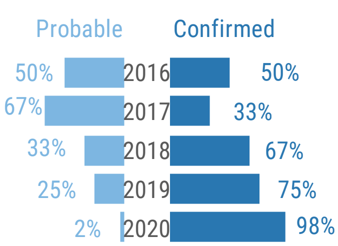
Locally acquired WNV disease cases occurred in nine Florida counties in 2020, primarily in south Florida. Cases were most commonly reported in Miami-Dade (28), Collier (7), Broward (6) and Palm Beach (5) counties. The remaining counties had one case each. Asymptomatic WNV-positive blood donors were identified in Broward (1), Hillsborough (1), Manatee (1) and Miami-Dade (34) counties. Environmental conditions supported increased transmission in south Florida.



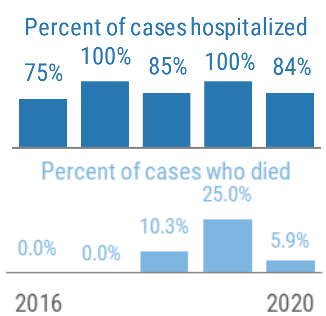
Rates are by county of residence for infections acquired in Florida (51 cases). Rates based on <20 cases are not reliable and should be interpreted with caution. See Tables 8 and 9 in Appendix I: Summary Data Tables for the number and rate of cases in 2020 by county.

More Disease Trends

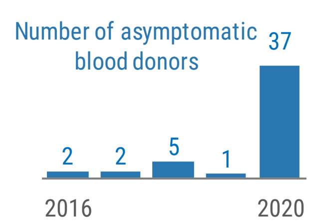
The percentage of confirmed cases increased in 2020, though it can vary by year.



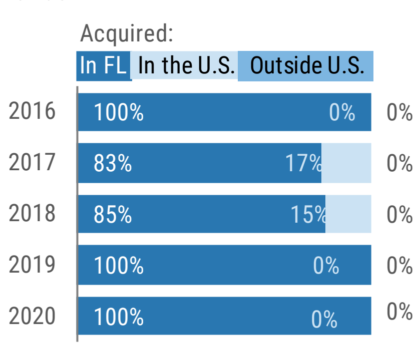
The majority of cases are hospitalized; deaths do occur. Three cases died in 2020.



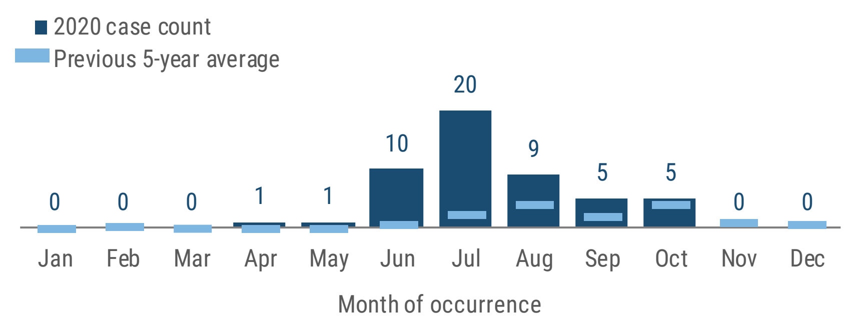
Thirty-seven asymptomatic WNV-positive blood donors were identified in 2020, primarily in Miami-Dade County. Twenty of these donors were experiencing homelessness. While blood donors do not meet case criteria if no symptoms are reported, they are still indicative of WNV activity occurring in the area and can be used to meet criteria for issuing mosquito-borne illness advisories and alerts if the county of exposure is known.



In 2020, all cases were acquired in Florida.



West Nile virus disease has a strong seasonal pattern with cases primarily occurring July to November. During 2020, early season activity was identified in Miami-Dade County. Overall, the largest number of cases were reported from June to August. WNV -positive blood donations were identified from May to October, peaking during June and July.



See Appendix III: Report Terminology for explanations of case classification, outcome, imported status, outbreak status and month of occurrence.

Section 3

Narratives for Uncommon Diseases and Conditions—2019

Section 2: Narratives for Uncommon Diseases/Conditions

Arsenic Poisoning

Arsenic poisoning became a reportable condition in Florida in November 2008. Arsenic is a naturally occurring element that is widely distributed in the environment. It is usually found in conjunction with other elements like oxygen, chlorine and sulfur (inorganic arsenic). Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Most arsenic-induced toxicity in humans is due to exposure to inorganic arsenic. Common sources of potential inorganic arsenic exposure are chromated copper arsenate (CCA)-treated wood, tobacco smoke, certain agricultural pesticides and some homeopathic and naturopathic preparations and folk remedies. In addition, inorganic arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting private drinking wells (which are not regulated).

Disease Facts

- **Caused** by inorganic arsenic
- **Illness** can include severe gastrointestinal signs and symptoms (e.g., vomiting, abdominal pain, and diarrhea) which may lead rapidly to dehydration and shock, dysrhythmias (prolonged QT, T-wave changes), altered mental status, and multisystem organ failure may follow, which can ultimately result in death
- **Transmitted** via ingestion of arsenic or inhalation of air containing arsenic
- **Under surveillance** to identify sources of arsenic exposure that are of public health concern (e.g., water source, workplace exposure, homeopathic medicines), prevent further exposure

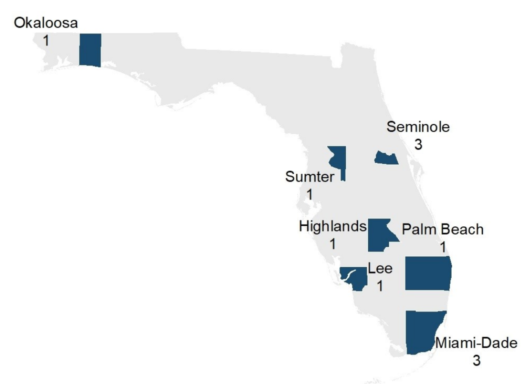
Arsenic poisoning incidence decreased slightly in 2019 (11 cases) compared to 2018 (14 cases). Most cases occurred in adults in their 60s. Arsenic poisoning cases occur year-round at low levels. All cases reported in 2019 were sporadic.

Between 2 and 21 arsenic poisoning cases have been identified each year from 2015 to 2019. Cases occurred in adults and more commonly in males. Most 2019 cases were in non-Hispanic whites. All cases were sporadic and most were acquired in Florida.

Summary	
Number of cases in 2019	11
5-year trend (2015 to 2019)	
Age (in Years)	
Mean	58
Median	64
Min-max	34 - 77
Gender	**Number**
Female	4
Male	7
Unknown gender	0
Race	**Number**
White	7
Black	3
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	11
Hispanic	0
Unknown ethnicity	0

Case Classification	Number
Confirmed	10
Probable	1
Outcome	**Number**
Interviewed	10
Hospitalized	0
Died	0
Outbreak Status	**Number**
Sporadic	11
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	9
Florida, Indonesia, or Thailand	1
Unknown	1

Arsenic poisoning cases occurred in residents of 7 Florida counties in 2019. Only 2 counties identified more than 1 case (Miami-Dade [3 cases] and Seminole [3 cases]).



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Brucellosis

Human infections in Florida are most commonly associated with exposure to feral swine infected with *B. suis*. Dogs and domestic livestock may also be infected with *B. suis*. Although dogs and other animals, such as dolphins, may be infected with their own *Brucella* species, human illness is not commonly associated with those species. Outside the U.S., unpasteurized milk products from goats, sheep, and cattle infected with *B. melitensis* and *B. abortus* are important sources of human infections. *Brucella* cattle vaccine RB51 infections have also been associated with consumption of raw milk. Laboratorians can be at risk for exposure to *Brucella* species while working with human or animal cultures.

Disease Facts

Caused by *Brucella* bacteria

Illness includes fever, sweats, headaches, back pain, weight loss, and weakness; long-lasting or chronic symptoms can include recurrent fevers, joint pain, and fatigue; relapses can occur

Transmitted primarily via ingestion of raw milk products or less commonly undercooked meat, inhalation of bacteria, or skin/mucous membrane contact with infected animals

Under surveillance to target areas of high risk for prevention education, identify potentially contaminated products (e.g., food, transfusion, organ transplant products), provide prophylaxis to prevent laboratory exposure-related infections, identify and respond to a bioterrorism incident

The number of brucellosis cases reported varies by year with no clear trend. Cases occurred in adults and more commonly in males, whites, and non-Hispanics. Seven cases were hospitalized; no deaths occurred.

Summary	
Number of cases in 2019	8
5-year trend (2015 to 2019)	

Age (in Years)	
Mean	51
Median	51
Min-max	35 - 75

Gender	Number
Female	1
Male	7
Unknown gender	0

Race	Number
White	4
Black	1
Other	3
Unknown race	0

Ethnicity	Number
Non-Hispanic	7
Hispanic	1
Unknown ethnicity	0

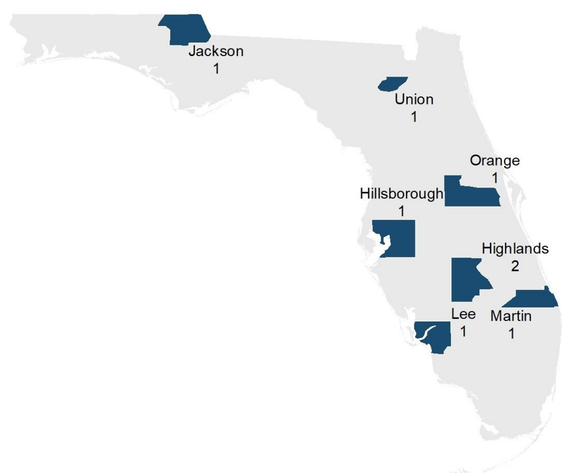
Case Classification	Number
Confirmed	6
Probable	2

Outcome	Number
Interviewed	7
Hospitalized	7
Died	0

Outbreak Status	Number
Sporadic	7
Outbreak-associated	1
Outbreak status unknown	0

Location Where Exposed	Number
Florida	4
Georgia	2
Florida or Cuba	1
Lebanon or Syria	1

Brucellosis cases occurred in residents of seven Florida counties in 2019. Highlands County was the only one to have 2 cases identified in residents. Most infections were acquired in Florida; contact with feral swine was the most commonly reported exposure risk.



See Appendix III: Report Terminology for explanations of case classification, outcome, and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Chikungunya Fever

Chikungunya virus is most often spread to people in endemic areas by *Aedes aegypti* and *Aedes albopictus* mosquitoes (the same mosquitoes that transmit dengue and Zika viruses). The first autochthonous transmission of chikungunya virus in the Americas was reported on the island of St. Martin in December 2013. Since then, local transmission has been identified in countries throughout the Caribbean and the Americas. In 2014, 442 cases were identified in Florida residents. Florida was the only continental U.S. state to report local cases of chikungunya fever, with 12 cases reported. No locally acquired cases have been identified since 2014.

Disease Facts

Caused by chikungunya virus

Illness is acute febrile with joint and muscle pain, headache, joint swelling, and rash; joint pain can persist for months to years and relapse can occur

Transmitted via bite of infective mosquito, rarely by blood transfusion or organ transplant

Under surveillance to identify individual cases and implement control measures to prevent endemicity, monitor incidence over time, estimate burden of illness

Extensive spread in Central and South America and the Caribbean in 2014 resulted in immunity for many people in those areas. Infection with chikungunya virus is believed to lead to lifetime immunity, which is considered to be the primary reason for the substantial decrease in incidence in endemic countries and subsequent decreased risk for introduction in non-endemic areas such as Florida. Overall incidence in Florida decreased dramatically in 2015 (121 cases) and 2016 (10 cases), but has remained relatively stable since (2017: 4 cases; 2018: 6 cases; 2019: 6 cases).

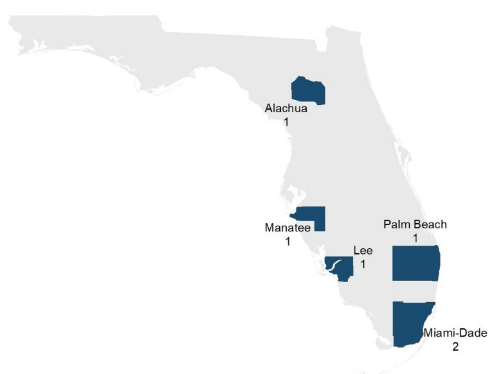
Infected residents and non-residents who are infectious and bitten by mosquitoes while in Florida could pose a potential risk for introduction of chikungunya fever; however, cases in non-Florida residents are not included in counts in this report. Two chikungunya fever cases were identified in non-Florida residents visiting Florida in 2019.

Over 400 chikungunya fever cases were identified in 2014; activity has decreased dramatically since. Six cases occurred in 2019 in adults who were infected in Thailand (4 cases) and India (2 cases). Two of the cases were confirmed.

Imported chikungunya cases occurred in residents of 5 Florida counties in 2019. All infections were acquired outside the U.S.

Summary	
Number of cases in 2019	6
5-year trend (2015 to 2019)	
Age (in Years)	
Mean	48
Median	50
Min-max	17 - 76
Gender	**Number**
Female	4
Male	2
Unknown gender	0
Race	**Number**
White	3
Black	0
Other	3
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	6
Hispanic	0
Unknown ethnicity	0

Case Classification	Number
Confirmed	2
Probable	4
Outcome	**Number**
Interviewed	5
Hospitalized	1
Died	0
Outbreak Status	**Number**
Sporadic	6
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Thailand	4
India	2



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Hepatitis D

The hepatitis D virus, also known as hepatitis delta, is an incomplete virus and cannot replicate in the absence of the hepatitis B virus. Infection with hepatitis D can only occur in people experiencing hepatitis B infection. Hepatitis D can be acquired at the same time as hepatitis B (co-infection) or be acquired by people already living with chronic hepatitis B (superinfection). Hepatitis D co-infection is usually indistinguishable from hepatitis B alone, but a superinfection can convert an asymptomatic or otherwise mild chronic hepatitis B infection into a more severe infection. Like hepatitis B, hepatitis D can occur as an acute infection or persist as a chronic infection. Although there is no vaccine for hepatitis D, the hepatitis B vaccine can help protect against hepatitis D infection.

Disease Facts

- **Caused** by hepatitis D virus (HDV) in the presence of hepatitis B virus
- **Illness** includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)
- **Transmitted** via blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks)
- **Under surveillance** to prevent HDV transmission, identify and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions, monitor effectiveness of hepatitis B immunization programs

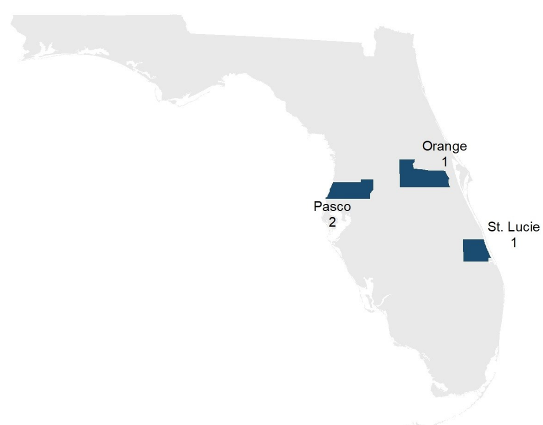
Hepatitis D is uncommon in the U.S. and national case counts may be an underestimation as not all states and territories report hepatitis D infections to the Centers for Disease Control and Prevention.

The number of hepatitis D cases reported each year has increased slightly, but remained low in 2019, with only 4 cases reported. Cases occurred in adults and more commonly in males. All 2019 cases were in non-Hispanics. All cases were sporadic. Most cases were hospitalized; no deaths occurred.

Hepatitis D cases occurred in residents of three Florida counties in 2019. Pasco County had 2 cases; the other 2 counties had 1 case each.

Summary	
Number of cases in 2019	4
5-year trend (2015 to 2019)	
Age (in Years)	
Mean	67
Median	74
Min-max	39 - 81
Gender	**Number**
Female	2
Male	2
Unknown gender	0
Race	**Number**
White	3
Black	0
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	4
Hispanic	0
Unknown ethnicity	0

Case Classification	Number
Confirmed	4
Probable	0
Outcome	**Number**
Interviewed	3
Hospitalized	3
Died	0
Outbreak Status	**Number**
Sporadic	4
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	3
Florida or New York	1



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Hepatitis E

Hepatitis E is usually self-limiting, but some cases may develop into acute liver failure, particularly among pregnant woman and persons with preexisting liver disease. HEV may also cause chronic infection, primarily in immunocompromised persons. Although rare in developed countries, individual cases and outbreaks have been linked to exposure to pigs, consumption of undercooked pork, wild game, or shellfish and blood transfusions. Most locally acquired infections report no specific risk factors. Surveillance for hepatitis E worldwide is important because it is a significant cause of morbidity and mortality with an estimated 20 million HEV infections and tens of thousands of deaths each year. Pregnant women with hepatitis E, particularly those in the second or third trimester, are at an increased risk of acute liver failure, fetal loss and death.

Disease Facts

- **Caused** by hepatitis E virus (HEV)
- **Illness** includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort and jaundice (can be asymptomatic)
- **Transmitted** via fecal-oral route, including foodborne and waterborne
- **Under surveillance** to monitor incidence and trends

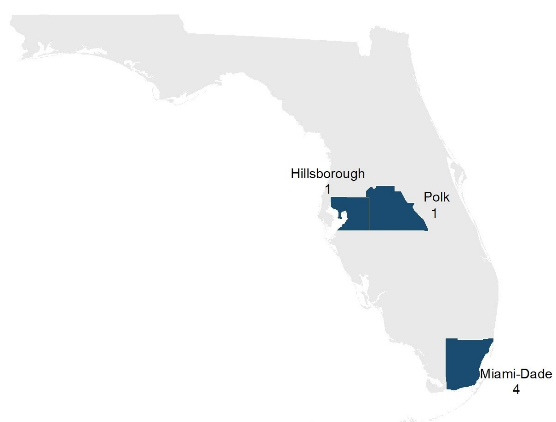
In 2019, 2 (33%) cases reported travel outside the U.S. during their exposure period. No common risk factors for infection were identified among the 2019 cases.

Less than 10 hepatitis E cases are reported each year; 6 cases were reported in 2019. All cases occurred in adults and most commonly in females. Most cases were in whites and non-Hispanics. All cases were sporadic. All 2019 cases were hospitalized; no deaths occurred.

Summary	
Number of cases in 2019	6
5-year trend (2015 to 2019)	
Age (in Years)	
Mean	32
Median	27
Min-max	17 - 73
Gender	**Number**
Female	5
Male	1
Unknown gender	0
Race	**Number**
White	3
Black	2
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	4
Hispanic	2
Unknown ethnicity	0

Case Classification	Number
Confirmed	6
Probable	0
Outcome	**Number**
Interviewed	5
Hospitalized	6
Died	0
Outbreak Status	**Number**
Sporadic	6
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	4
Florida or Colombia	1
India	1

Hepatitis E cases occurred in residents of 3 Florida counties in 2019. Miami-Dade had 4 cases and Hillsborough and Polk each had 1 case. A definitive exposure location was not able to be determined for two of the infections.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Leptospirosis

Leptospirosis is cased by spirochete bacteria in the genus *Leptospira*. The bacteria can be present in the urine of infected animals such as rodents, dogs, livestock, pigs, horses, and wildlife. Most human exposures are thought to occur through ingestion of urine-contaminated water or food as well as by direct contact of urine-contaminated water with mucous membranes or wounds. Activities that can result in swallowing of untreated freshwater, or that can lead to water or soil contamination of wounds, can significantly increase risk of exposure. Adventure races have resulted in cases of leptospirosis in Florida in the past.

Disease Facts

Caused by *Leptospira* bacteria

Illness includes abrupt onset of fever, headache, muscle aches, vomiting, or diarrhea; severe presentations may include kidney failure, liver failure, pulmonary hemorrhage, or meningitis; may be asymptomatic

Transmitted indirectly through ingestion or contact with contaminated water, soil, or food; less frequently, animal to person by direct contact with urine or other body fluids from an infected animal; rarely by animal bites and breastfeeding

Under surveillance to monitor incidence over time, estimate burden of illness, identify activities and groups at increased risk for exposure to target prevention education

Two of the 2019 leptospirosis cases were imported from Costa Rica following exposure to untreated fresh water. Two imported cases from Illinois and Puerto Rico also reported exposure to untreated fresh water.
The case imported from Puerto Rico also had livestock exposure and reported that other family members who shared these exposure had similar symptom. Of the 3 Florida-acquired cases, 2 reported exposures at a mud race in December 2019 in Polk County and the third had occupational exposures to livestock in Broward County. In addition, a resident of Puerto Rico who became ill while visiting Miami-Dade and who was not included in the 2019 case count, met confirmed leptospirosis case criteria. This non-resident case reported occupational livestock exposure in Puerto Rico.

Less than 10 leptospirosis cases are reported each year. Cases occurred in adolescents and adults <55 years with most being male (87%). All cases were white. Hispanics were over-represented compared to state demographics (43% case vs. 27% state). Two outbreaks were linked to a mud race or Costa Rica exposures. Most cases (86%) were hospitalized; no deaths occurred.

Leptospirosis cases were reported in residents of 5 Florida counties. Only 3 exposures occurred in Florida, 2 in Polk County and 1 in southeast Florida.

Summary	
Number of cases in 2019	7
5-year trend (2015 to 2019)	

Age (in Years)	
Mean	34
Median	32
Min-max	16 - 51

Gender	Number
Female	1
Male	6
Unknown gender	0

Race	Number
White	7
Black	0
Other	0
Unknown race	0

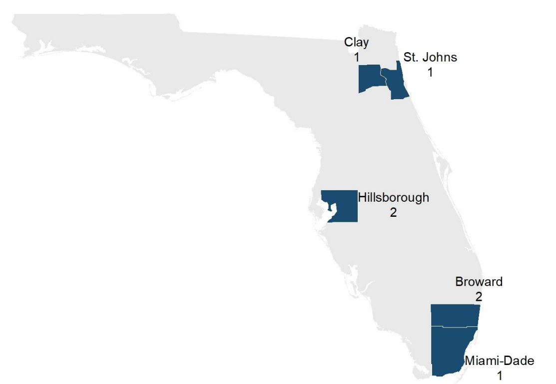
Ethnicity	Number
Non-Hispanic	4
Hispanic	3
Unknown ethnicity	0

Case Classification	Number
Confirmed	3
Probable	4

Outcome	Number
Interviewed	6
Hospitalized	6
Died	0

Outbreak Status	Number
Sporadic	3
Outbreak-associated	4
Outbreak status unknown	0

Location Where Exposed	Number
Florida	3
Costa Rica	2
Illinois	1
Puerto Rico	1



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Mercury Poisoning

In August 2008, the case definition was updated to require clinically compatible illness, leading to a decrease in cases in subsequent years. The number of cases increased dramatically in 2017 and 2018 with more cases than any year since the 2008 case definition change but decreased in 2019.

Forms of mercury most likely encountered by the general public include elemental mercury vapor (found in some thermometers and dental amalgam), methylmercury (associated with fish consumption), ethylmercury (found in some medical preservatives) and inorganic mercury (mercuric salts). Eating fish is healthy and can reduce the risk of heart attack and stroke, but eating too much of certain fish can increase exposure to mercury.

Disease Facts

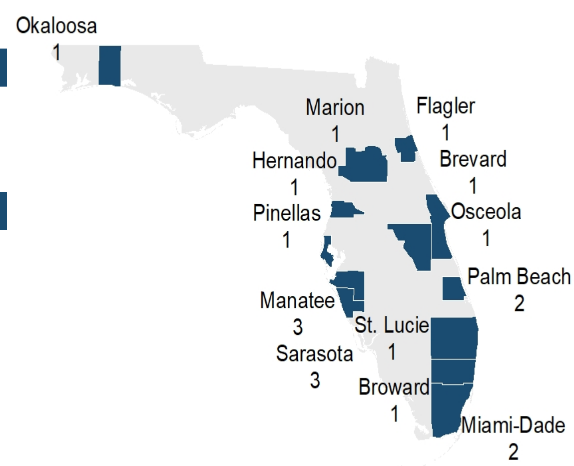
- **Caused** by mercury (elemental or metallic mercury, organic mercury compounds, inorganic mercury compounds)
- **Illness** includes impaired neurological development, impaired peripheral vision; disturbed sensations (e.g., "pins and needles feelings"), lack of coordinated movements, muscle weakness, or impaired speech, hearing and walking
- **Exposure** is through ingestion of mercury or inhalation of mercury vapors
- **Under surveillance** to identify and mitigate persistent sources of exposure, prevent further or continued exposure through remediation or elimination of sources when possible, identify populations at risk

Developing fetuses and young children are more sensitive to the effects of mercury, which can impact brain development. The U.S. Food and Drug Administration and the U.S. Environmental Protection Agency recommend that women of childbearing age and young children should eat fish with low mercury levels. The Florida Department of Health guidelines for fish consumption are available at Seafood Consumption | Florida Department of Health (floridahealth.gov).

Summary	
Number of cases in 2019	19
5-year trend (2015 to 2019)	
Age (in Years)	
Mean	56
Median	60
Min-max	16 - 78
Gender	**Number**
Female	9
Male	10
Unknown gender	0
Race	**Number**
White	14
Black	1
Other	1
Unknown race	3
Ethnicity	**Number**
Non-Hispanic	15
Hispanic	3
Unknown ethnicity	1

Case Classification	Number
Confirmed	19
Probable	0
Outcome	**Number**
Interviewed	15
Hospitalized	0
Died	0
Outbreak Status	**Number**
Sporadic	16
Outbreak-associated	1
Outbreak status unknown	2
Location Where Exposed	**Number**
Florida	13
Unknown	2
Florida or Maine	1
Florida or New York	1
Florida or Ohio	1

Mercury poisoning cases occurred throughout Florida in 2019. The highest number of cases were in Manatee and Sarasota (3 cases each) and Palm Beach and Miami-Dade (2 cases each).



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

West Nile Virus

West Nile virus is a mosquito-borne flavivirus that was first introduced to the northeastern U.S. in 1999 and first detected in Florida in 2001. Since its initial detection, WNV activity has been reported in all 67 Florida counties. WNV activity can vary greatly from year to year depending on environmental conditions. Approximately 80% of people infected with WNV show no clinical symptoms, 20% have mild non-neuroinvasive illness and less than 1% suffer from the neuroinvasive form of illness. *Culex* species (mosquitoes) and wild birds are the natural hosts. Humans and horses can become infected when bitten by a mosquito infected with WNV.

Disease Facts

- **Caused** by West Nile virus (WNV)
- **Illness** can be asymptomatic, mild non-neuroinvasive (e.g., headache, fever, pain, fatigue) or neuroinvasive (e.g., meningitis and encephalitis with possible irreversible neurological damage, paralysis, coma or death)
- **Transmitted** via bite of infective mosquito or by blood transfusion or organ transplant
- **Under surveillance** to identify areas where WNV is being transmitted to target prevention education for the public, monitor incidence over time, estimate burden of illness

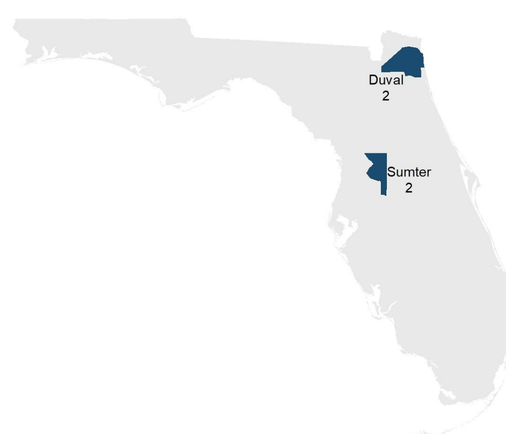
WNV can also be transmitted to humans via contaminated blood transfusion or organ transplantation. Since 2003, all blood donations are screened for WNV prior to transfusion. People spending large amounts of time outside (due to occupation, hobbies or homelessness) or not using insect repellant or other forms of prevention are at higher risk of becoming infected. In 2019, 1 asymptomatic WNV-positive blood donor was identified in Bay County. While blood donors do not meet case criteria if no symptoms are reported, they are still indicative of WNV activity occurring in the area and can be used to meet criteria for issuing mosquito-borne illness advisories and alerts if the county of exposure is known.

During 2019, 2 locally acquired WNV disease cases occurred in Duval and Sumter counties. Activity in 2019 was particularly low compared to previous years. Two additional WNV disease cases included in this report, including on death, were identified in 2018 but not reported until 2019. These cases were identified in Duval and Sumter counties. All 4 cases were neuroinvasive. Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data.

Summary	
Number of cases in 2019	4
5-year trend (2015 to 2019)	
Age (in Years)	
Mean	62
Median	65
Min-max	43 - 74
Gender	**Number**
Female	2
Male	2
Unknown gender	0
Race	**Number**
White	4
Black	0
Other	0
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	4
Hispanic	0
Unknown ethnicity	0

Case Classification	Number
Confirmed	3
Probable	1
Outcome	**Number**
Interviewed	4
Hospitalized	4
Died	1
Outbreak Status	**Number**
Sporadic	4
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	4

WNV cases occurred in Duval and Sumter counties in 2019. All cases were acquired in Florida.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 3

Narratives for Uncommon Diseases and Conditions—2020

Section 2: Narratives for Uncommon Diseases/Conditions

Anaplasmosis

Anaplasmosis was previously known as human granulocytic ehrlichiosis (HGE), but was later renamed human granulocytic anaplasmosis (HGA) when the bacterium genus was changed from *Ehrlichia* to *Anaplasma*. Anaplasmosis is transmitted to humans by tick bites primarily from *Ixodes scapularis*, the black-legged tick, and *Ixodes pacificus*, the western black-legged tick. Co-infection with other pathogens found in these vectors is possible. Unlike ehrlichiosis, most anaplasmosis cases reported in Florida are exposed in the northeastern and midwestern U.S. Although uncommon, *Anaplasma* infections can be acquired in Florida.

Disease Facts

Caused by *Anaplasma phagocytophilum* bacteria

Illness includes fever, headache, chills, malaise, and muscle aches; more severe infections can occur in elderly and immunocompromised people

Transmitted via bite of infective tick

Under surveillance to monitor incidence over time, estimate burden of illness, and target areas of high incidence for prevention education

Anaplasmosis incidence in Florida decreased in 2020 (7 cases) compared to 2019 (21 cases), Exposure location was known for all cases and all were acquired in the United States. Nationally, cases are most common in males and adults >40 years old. In Florida, males represented 57% of all cases in 2020. All cases were >40 years old with the median age being 66. All cases were hospitalized but none died.

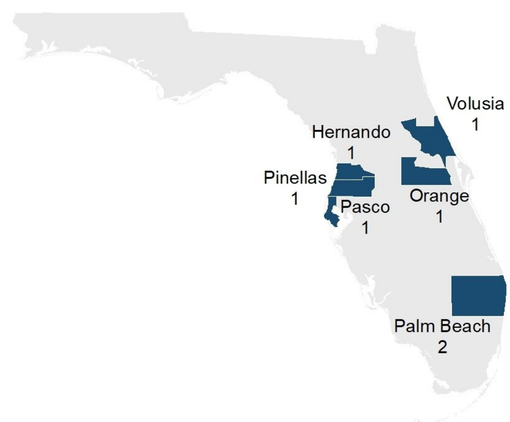
Case counts from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data.

With the exception of 2018 and 2019, less than 10 anaplasmosis cases are reported each year; 7 cases were reported in 2020. Cases occurred in adults and more commonly in males. Most 2020 cases were in whites and non-Hispanics. All cases were sporadic.

Summary	
Number of cases in 2020	7
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	64
Median	66
Min-max	45 - 83
Gender	**Number**
Female	3
Male	4
Unknown gender	0
Race	**Number**
White	5
Black	0
Other	2
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	7
Hispanic	0
Unknown ethnicity	0

Case Classification	Number
Confirmed	6
Probable	1
Outcome	**Number**
Interviewed	5
Hospitalized	5
Died	0
Outbreak Status	**Number**
Sporadic	7
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Massachusetts	2
Connecticut	1
Florida	1
Maine	1
Pennsylvania	1
Rhode Island	1

Imported anaplasmosis cases were identified in residents of 6 Florida counties in 2020. Palm Beach County was the only one to have 2 cases identified in residents. All infections except 1 were acquired in other U.S. states.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Arsenic Poisoning

Arsenic poisoning became a reportable condition in Florida in November 2008. Arsenic is a naturally occurring element that is widely distributed in the environment. It is usually found in conjunction with other elements like oxygen, chlorine, and sulfur (inorganic arsenic). Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Most arsenic-induced toxicity in humans is due to exposure to inorganic arsenic. Common sources of potential inorganic arsenic exposure are chromated copper arsenate (CCA)-treated wood, tobacco smoke, certain agricultural pesticides, and some homeopathic and naturopathic preparations and folk remedies. In addition, inorganic arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting private drinking wells (which are not regulated).

Disease Facts

Caused by inorganic arsenic

Illness can include severe gastrointestinal signs and symptoms (e.g., vomiting, abdominal pain, and diarrhea) which may lead rapidly to dehydration and shock, dysrhythmias (prolonged QT, T-wave changes), altered mental status, and multisystem organ failure may follow, which can ultimately result in death

Transmitted via ingestion of arsenic or inhalation of air containing arsenic

Under surveillance to identify sources of arsenic exposure that are of public health concern (e.g., water source, workplace exposure, homeopathic medicines), prevent further exposure

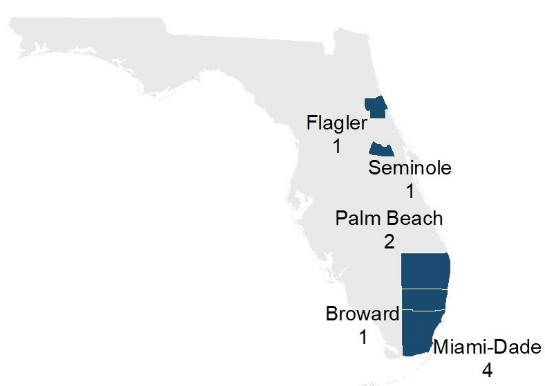
Arsenic poisoning incidence decreased slightly in 2020 (9 cases) compared to 2019 (11 cases). Most cases occurred in adults in their 50s. Arsenic poisoning cases occur year-round at low levels. All cases reported in 2020 were sporadic. Nine cases had known exposures, including consumption of fish or shellfish (5 cases), consumption of well/cistern water (1 case), consumption of homeopathic medicines (1 case), contact with CCA-treated wood (1 case), and occupational contact (1 case). For the remaining 5 cases, the source of exposure was unknown.

Between 9 and 21 arsenic poisoning cases have been identified each year from 2016 to 2020. Cases occurred adults and more commonly in females in 2020. Most 2020 cases were in Hispanic whites. All cases were sporadic and most were acquired in Florida.

Summary	
Number of cases in 2020	9
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	52
Median	57
Min-max	18 - 71
Gender	**Number**
Female	5
Male	4
Unknown gender	0
Race	**Number**
White	6
Black	1
Other	1
Unknown race	1
Ethnicity	**Number**
Non-Hispanic	3
Hispanic	4
Unknown ethnicity	2

Case Classification	Number
Confirmed	8
Probable	1
Outcome	**Number**
Interviewed	5
Hospitalized	1
Died	0
Outbreak Status	**Number**
Sporadic	9
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	7
Unknown	2

Arsenic poisoning cases occurred in residents of 5 Florida counties in 2020. Only 2 counties identified more than 1 case (Miami-Dade [4 cases] and Palm Beach [2 cases]).



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Brucellosis

Human infections in Florida are most commonly associated with exposure to feral swine infected with *B. suis*. Dogs and domestic livestock may also be infected with *B. suis*. Although dogs and other animals, such as dolphins, may be infected with their own *Brucella* species, human illness is not commonly associated with those species. Outside the U.S., unpasteurized milk products from goats, sheep, and cattle infected with *B. melitensis* and *B. abortus* are important sources of human infections. *Brucella* cattle vaccine RB51 infections have also been associated with consumption of raw milk. Laboratorians can be at risk for exposure to *Brucella* species while working with human or animal cultures.

Disease Facts

Caused by *Brucella* bacteria

Illness includes fever, sweats, headaches, back pain, weight loss, and weakness; long-lasting or chronic symptoms can include recurrent fevers, joint pain, and fatigue; relapses can occur

Transmitted primarily via ingestion of raw milk products or less commonly undercooked meat, inhalation of bacteria, or skin/mucous membrane contact with infected animals

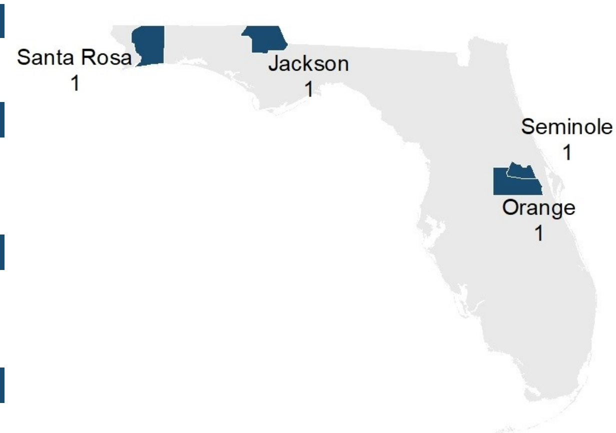
Under surveillance to target areas of high risk for prevention education, identify potentially contaminated products (e.g., food, transfusion, organ transplant products), provide prophylaxis to prevent laboratory exposure-related infections, identify and respond to a bioterrorism incident

The number of brucellosis cases reported varies by year with no clear trend. Cases occurred in adults and more commonly in males, whites, and non-Hispanics. Two cases were hospitalized; no deaths occurred.

Summary	
Number of cases in 2020	4
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	47
Median	47
Min-max	20 - 76
Gender	**Number**
Female	1
Male	3
Unknown gender	0
Race	**Number**
White	3
Black	0
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	3
Hispanic	0
Unknown ethnicity	1

Case Classification	Number
Confirmed	3
Probable	1
Outcome	**Number**
Interviewed	2
Hospitalized	2
Died	0
Outbreak Status	**Number**
Sporadic	2
Outbreak-associated	1
Outbreak status unknown	1
Location Where Exposed	**Number**
Florida	3
Mexico	1

Brucellosis cases occurred in residents of 4 Florida counties in 2020. Three infections were acquired in Florida and 1 was acquired in Mexico.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Ehrlichiosis

Ehrlichiosis is a broad term used to describe illnesses caused by a group of bacterial pathogens. At least 3 different *Ehrlichia* species are known to cause human illness in the U.S. Both *Ehrlichia chaffeensis*, also known as human monocytic ehrlichiosis (HME), and *Ehrlichia ewingii* are transmitted by the lone star tick (*Amblyomma americanum*), one of the most commonly encountered ticks in the southeastern U.S. A third *Ehrlichia* species, called *Ehrlichia muris eauclairensis*, has been reported in a small number of cases in Minnesota and Wisconsin; it is transmitted by the black-legged tick (*Ixodes scapularis*).

Disease Facts

- **Caused** by *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, *Ehrlichia muris eauclairensis* bacteria
- **Illness** includes fever, headache, fatigue and muscle aches
- **Transmitted** via bite of infective tick; rarely through blood transfusion and organ transplant
- **Under surveillance** to monitor incidence over time, estimate burden of illness, understand epidemiology of each species, target areas of high incidence for prevention education

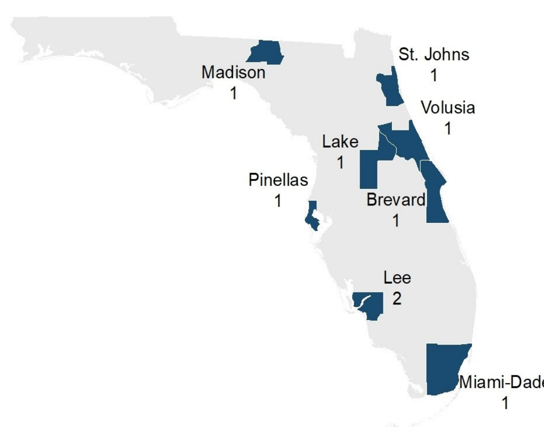
Ehrlichiosis cases present with similar symptoms regardless of species causing infection and are indistinguishable by serologic testing. *E. ewingii* and *E. muris eauclairensis* are most frequently identified in immunocompromised patients. Severe illness is most frequent in adults ≥70 years old, children <10 years old and those who are immunocompromised. Delays in treatment can increase risk for severe outcomes across all age groups. At least 44% of cases had to seek medical care more than once before rickettsial illness was suspected.
Erhlichiosis incidence in Florida decreased notably in 2020 and may be due to clinician focus on COVID-19. The majority of cases were in males. In 2020, most cases were also in whites and non-Hispanics, which may in part be due to more homogenous population demographics in northern and central Florida where most exposures occur.

Between 9 and 40 ehrlichiosis cases have been identified each year from 2016 to 2020. Cases occurred in children and adults and more commonly in males. Most 2020 cases were in non-Hispanic whites. All cases were sporadic and most were acquired in Florida.

Cases occurred in residents of eight Florida counties in 2020. Only 1 county identified more than 1 case (Lee [2 cases]).

Summary	
Number of cases in 2020	9
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	64
Median	68
Min-max	46 - 75
Gender	**Number**
Female	3
Male	6
Unknown gender	0
Race	**Number**
White	8
Black	0
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	7
Hispanic	2
Unknown ethnicity	0

Case Classification	Number
Confirmed	6
Probable	3
Outcome	**Number**
Interviewed	5
Hospitalized	6
Died	0
Outbreak Status	**Number**
Sporadic	9
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	5
U.S., non-Florida	3
Unknown	1



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Haemophilus influenzae Invasive Disease in Children <5 Years Old

There are 6 identifiable serotypes of *H. influenzae*, named "a" through "f." Only *H. influenzae* serotype b (Hib) is vaccine-preventable. Meningitis and septicemia due to invasive Hib in children <5 years old have almost been eliminated since the introduction of effective Hib conjugate vaccines in the late 1980s. There were no cases of invasive Hib reported from 2018 to 2020. Prior to that there were 2 cases reported in 2017. *H. influenzae* invasive disease can sometimes result in serious complications and even death. There were no deaths among cases in 2020.

Disease Facts

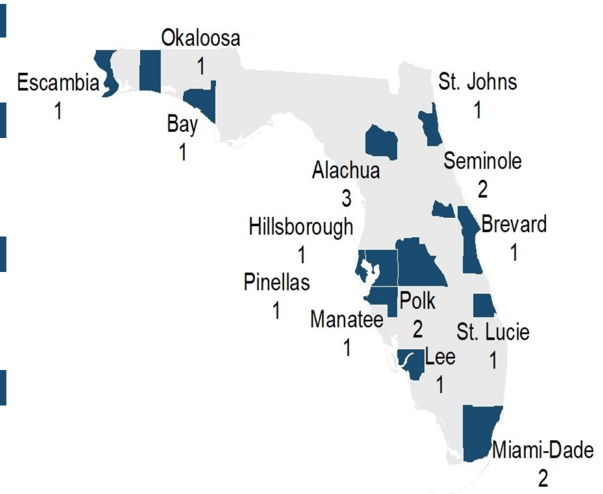
- **Caused** by *Haemophilus influenzae* bacteria
- **Illness** can present as pneumonia, bacteremia, septicemia, meningitis, epiglottitis, septic arthritis, cellulitis or purulent pericarditis; less frequently endocarditis and osteomyelitis
- **Transmitted** person to person by inhalation of infective respiratory tract droplets or direct contact with infective respiratory tract secretions
- **Under surveillance** to identify and control outbreaks, monitor incidence over time, monitor effectiveness of immunization programs and vaccines

Between 19 and 48 Hib cases in children <5 years have been identified each year from 2016 to 2020. Most 2020 cases were in non-Hispanic whites. Of those with known outbreak status, all cases were sporadic and most were acquired in Florida.

Summary	
Number of cases in 2020	19
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	1
Median	0
Min-max	0 - 4
Gender	**Number**
Female	9
Male	10
Unknown gender	0
Race	**Number**
White	11
Black	7
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	15
Hispanic	4
Unknown ethnicity	0

Case Classification	Number
Confirmed	19
Probable	0
Outcome	**Number**
Interviewed	4
Hospitalized	15
Died	0
Outbreak Status	**Number**
Sporadic	15
Outbreak-associated	0
Outbreak status unknown	4
Location Where Exposed	**Number**
Florida	13
Location Where Exposed	5
Florida or Georgia	1

Cases occurred in residents of 14 Florida counties in 2020. Several counties identified more than 1 case (Alachua [3 cases], Seminole [2 cases], Polk [2 cases] and Miami-Dade [2 cases]).



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Hepatitis E

Hepatitis E is usually self-limiting, but some cases may develop into acute liver failure, particularly among pregnant woman and persons with preexisting liver disease. HEV may also cause chronic infection, primarily in immunocompromised persons. Although rare in developed countries, individual cases and outbreaks have been linked to exposure to pigs, consumption of undercooked pork, wild game, or shellfish and blood transfusions. Most locally acquired infections report no specific risk factors. Surveillance for hepatitis E worldwide is important because it is a significant cause of morbidity and mortality with an estimated 20 million HEV infections and tens of thousands of deaths each year. Pregnant women with hepatitis E, particularly those in the second or third trimester, are at an increased risk of acute liver failure, fetal loss and death.

Disease Facts

- **Caused** by hepatitis E virus (HEV)
- **Illness** includes inflammation of the liver, fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort, and jaundice (can be asymptomatic)
- **Transmitted** via fecal-oral route, including foodborne and waterborne
- **Under surveillance** to monitor incidence and trends

In 2020, 2 (40%) cases reported travel outside the U.S. during their exposure period. No common risk factors for infection were identified among the 2020 cases.

Less than 10 hepatitis E cases are reported each year; 5 cases were reported in 2020. All cases occurred in adults and most commonly in females. Most cases were in whites and non-Hispanics. All cases were sporadic. Three cases in 2020 were hospitalized; no deaths occurred.

Summary	
Number of cases in 2020	5
5-year trend (2016 to 2020)	

Age (in Years)	
Mean	46
Median	40
Min-max	24 - 71

Gender	Number
Female	4
Male	1
Unknown gender	0

Race	Number
White	2
Black	1
Other	2
Unknown race	0

Ethnicity	Number
Non-Hispanic	5
Hispanic	0
Unknown ethnicity	0

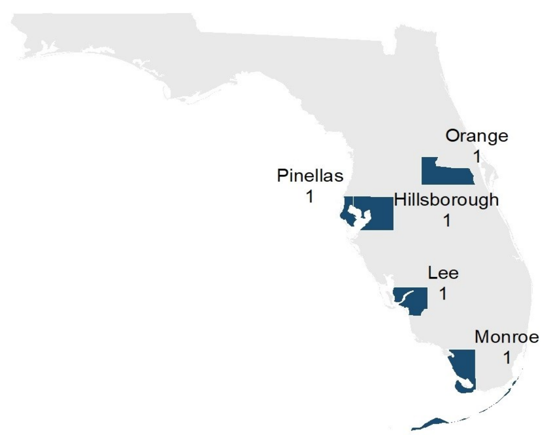
Case Classification	Number
Confirmed	5
Probable	0

Outcome	Number
Interviewed	3
Hospitalized	3
Died	0

Outbreak Status	Number
Sporadic	5
Outbreak-associated	0
Outbreak status unknown	0

Location Where Exposed	Number
Florida	2
Florida or Haiti	1
Florida or India	1
Unknown	1

Hepatitis E cases occurred in residents of 5 Florida counties in 2020. Each county reported 1 case. A definitive exposure location was not able to be determined for 3 of the infections.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Malaria

The number of cases imported from Central America and the Caribbean has increased in recent years, though most cases are still infected in Africa. All cases in 2020 were among people traveling to countries with endemic transmission (primarily African countries) with many travelling to visit friends and relatives (61%). Eleven of the cases were diagnosed with *P. falciparum*, 4 with *P. vivax* and 2 with P. ovale infections. The infecting species was unable to be identified for 1 case.

Four of the 18 cases had illness onset in late December 2019 and were not identified and reported until 2020.

Disease Facts

- **Caused** by *Plasmodium falciparum, P. malariae, P. ovale, P. vivax* parasites; a zoonotic malaria in non-human primates, *P. knowlesi,* can also infect people
- **Illness** can be uncomplicated or severe; common symptoms include high fever with chills, rigor, sweats, headache, nausea and vomiting
- **Transmitted** via bite of infective mosquito; rarely by blood transfusion or organ transplant
- **Under surveillance to** identify individual cases and implement control measures to prevent introduction and active transmission, monitor incidence over time, estimate burden of illness

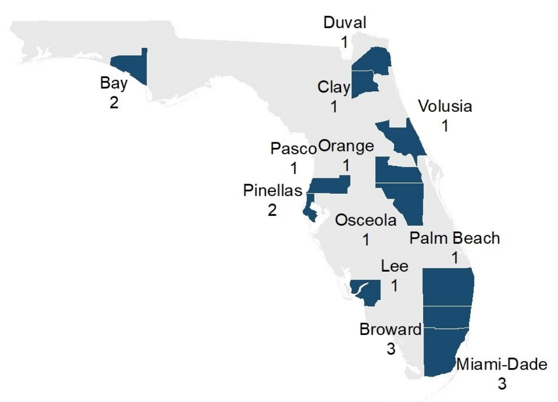
One additional case was identified in 2020 but was not reported until 2021 and will therefore not be included in the 2020 report. Malaria incidence was abnormally low in 2020 compared to previous years, likely due to travel restrictions related to the COVID-19 pandemic.

It is important to note that infected residents and non-residents pose a potential malaria introduction risk since the malaria vector *Anopheles quadrimaculatus* is common in Florida; however, cases in non-Florida residents are not included in counts in this report. In 2020, 4 non-Florida residents were diagnosed with malaria while traveling in Florida. Non-residents were from Africa (Kenya), Asia (India), the Caribbean (Dominican Republic) and Central America (Venezuela). Two were infected with *P. falciparum* (Kenya and Dominican Republic residents) and 2 with *P. vivax* (India and Venezuela residents).

Summary	
Number of cases in 2020	18
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	49
Median	52
Min-max	5 - 74
Gender	**Number**
Female	3
Male	15
Unknown gender	0
Race	**Number**
White	5
Black	10
Other	3
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	17
Hispanic	1
Unknown ethnicity	0

Case Classification	Number
Confirmed	18
Probable	0
Outcome	**Number**
Interviewed	16
Hospitalized	14
Died	0
Outbreak Status	**Number**
Sporadic	18
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Acquired outside the U.S.	18

Imported malaria cases occurred in residents of 12 Florida counties in 2020. All infections were acquired outside the U.S.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Mercury Poisoning

In August 2008, the case definition was updated to require clinically compatible illness, leading to a decrease in cases in subsequent years. The number of cases increased dramatically in 2017 and 2018 with more cases than any year since the 2008 case definition change. In 2019, the number of cases dropped to average level and again dropped in 2020. This increase and decrease in number of cases is not well understood due to the small number.

Forms of mercury most likely encountered by the general public include elemental mercury vapor (found in some thermometers and dental amalgam), methylmercury (associated with fish consumption), ethylmercury (found in some medical preservatives) and inorganic mercury (mercuric salts). Eating fish is healthy and can reduce the risk of heart attack and stroke, but eating too much of certain fish can increase exposure to mercury.

Developing fetuses and young children are more sensitive to the effects of mercury, which can impact brain development. The U.S. Food and Drug Administration and the U.S. Environmental Protection Agency recommend that women of childbearing age and young children should eat fish with low mercury levels. The Florida Department of Health guidelines for fish consumption are available at Seafood Consumption | Florida Department of Health (floridahealth.gov).

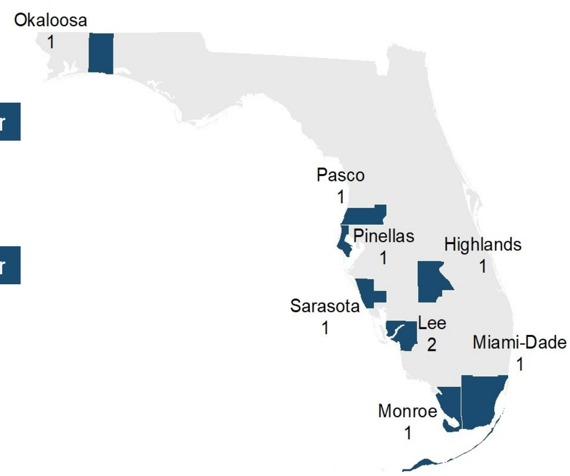
Disease Facts

- **Caused** by mercury (elemental or metallic mercury, organic mercury compounds, inorganic mercury compounds)
- **Illness** includes impaired neurological development, impaired peripheral vision; disturbed sensations (e.g., “pins and needles feelings”), lack of coordinated movements, muscle weakness, or impaired speech, hearing and walking
- **Exposure** is through ingestion of mercury or inhalation of mercury vapors
- **Under surveillance** to identify and mitigate persistent sources of exposure, prevent further or continued exposure through remediation or elimination of sources when possible, identify populations at risk

Summary	
Number of cases in 2020	9
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	65
Median	70
Min-max	37 - 94
Gender	**Number**
Female	5
Male	4
Unknown gender	0
Race	**Number**
White	8
Black	0
Other	1
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	8
Hispanic	1
Unknown ethnicity	0

Case Classification	Number
Confirmed	9
Probable	0
Outcome	**Number**
Interviewed	9
Hospitalized	1
Died	0
Outbreak Status	**Number**
Sporadic	9
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	9

Mercury poisoning cases occurred mostly in southern Florida with the exception of Okaloosa. Only 1 county reported more than 1 case (Lee [2 cases]).



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Meningococcal Disease

Five *Neisseria meningitidis* serogroups cause almost all invasive disease (A, B, C, Y, and W). Vaccines are available to provide protection against these serogroups. In 2020, the incidence of meningococcal disease reached a historic low in Florida. Prior to 2020, the lowest reported number was 18 cases in 2016. The number of cases reported each year since has remained relatively stable.

The most commonly identified serogroup causing meningococcal disease can vary year to year. In 2020, serogroup B was the most frequently identified serogroup in Florida, which aligns with national trends.

Disease Facts

Caused by *Neisseria meningitidis* bacteria

Illness is most commonly neurological (meningitis) or bloodstream infections (septicemia)

Transmitted person to person by direct contact with respiratory droplets from nose or throat of colonized or infected person

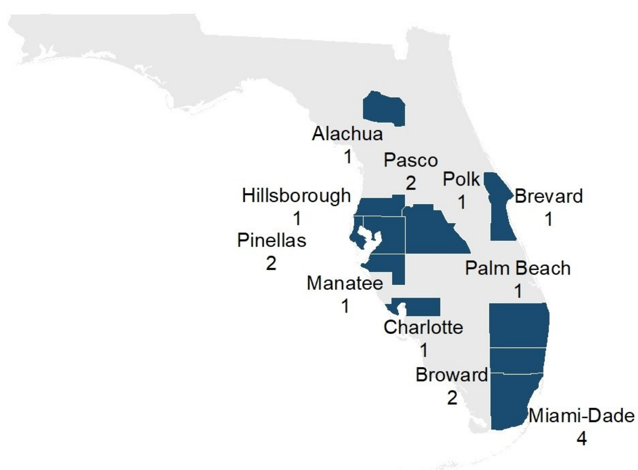
Under surveillance to take immediate public health actions in response to every suspected meningococcal disease case to prevent secondary transmission, monitor effectiveness of immunization programs and vaccines

The number of meningococcal disease cases reported decreased notably in 2015. Less than 20 cases were reported each year since. Cases were mostly in females, whites and non-Hispanics. Most cases were sporadic. Most cases were hospitalized; 2 deaths occurred.

Summary	
Number of cases in 2020	17
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	47
Median	34
Min-max	19 - 89
Gender	**Number**
Female	10
Male	7
Unknown gender	0
Race	**Number**
White	12
Black	1
Other	4
Unknown race	0
Ethnicity	**Number**
Non-Hispanic	10
Hispanic	7
Unknown ethnicity	0

Case Classification	Number
Confirmed	17
Probable	0
Outcome	**Number**
Interviewed	16
Hospitalized	13
Died	2
Outbreak Status	**Number**
Sporadic	16
Outbreak-associated	0
Outbreak status unknown	1
Location Where Exposed	**Number**
Florida	15
Florida or Maine	1
Unknown	1

Meningococcal disease cases occurred in residents of 11 Florida counties in 2020. Each of the 11 counties had 1 or 2 cases identified, except for Dade County which had 4 cases. Most infections were acquired in Florida.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Pesticide-Related Illness and Injury, Acute

Pesticides are used in agricultural, residential, recreational and other various settings throughout the state. Exposures resulting in illness or injury can occur from pesticide drift, consumption of contaminated food or water, or improper use, storage or application of household pesticides such as insect repellents, foggers, rodent poisons, weed killers and mosquito, flea and tick control products.

Prior to January 2012, suspect sporadic cases (i.e., not part of a cluster) and suspect cases associated with non-occupational exposures (typically limited household exposures) met the surveillance case definition. The case definition was changed in January 2012 to exclude these cases, substantially decreasing the number of cases reported. Incidence since 2012 has remained relatively stable with a slight decrease in 2016.

Disease Facts

- **Caused** by pesticides
- **Illness** can be respiratory, gastrointestinal, neurological, dermal, etc., depending on the agent
- **Exposure** depends on several factors (e.g., agent, application method, environmental conditions); dermal, inhalation and ingestion are most common routes of exposure
- **Under surveillance** to identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions and occupational exposure, improve administration and proper use of pesticides to reduce exposure

In 2020, the decline in number of cases may be related to factors related to the COVID-19 pandemic. People may not have visited health care providers or reported their illness after pesticide exposure resulting in underreporting of the cases. Of the 15 total cases, 11 cases (73.3%) had a low severity of illness and 3 cases (20%) had moderate severity of illness. One case had severe illness and no deaths were reported. The 5 outbreak-associated cases in 2020 were associated with 2 in-state outbreaks. One outbreak was associated with residential roach treatment (Leon: 2 cases) and another 1 was associated with a bug bomb used in an apartment complex (Pinellas: 3 cases).

Summary	
Number of cases in 2020	15
5-year trend (2016 to 2020)	

Age (in Years)	
Mean	5
Median	10
Min-max	0

Gender	Number
Female	5
Male	10
Unknown gender	0

Race	Number
White	8
Black	7
Other	0
Unknown race	0

Ethnicity	Number
Non-Hispanic	13
Hispanic	2
Unknown ethnicity	0

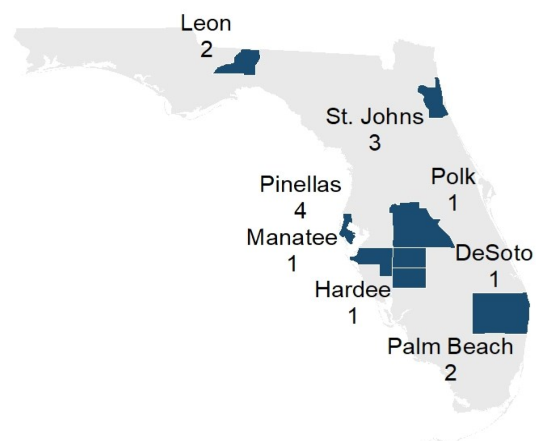
Case Classification	Number
Confirmed	3
Probable	3
Suspect	9

Outcome	Number
Interviewed	12
Hospitalized	2
Died	0

Outbreak Status	Number
Sporadic	10
Outbreak-associated	5
Outbreak status unknown	0

Location Where Exposed	Number
Florida	15

Cases occurred in 8 counties in Florida in 2020. Pinellas County reported the most cases (4 cases). The majority of cases were sporadic.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 2: Narratives for Uncommon Diseases/Conditions

Rocky Mountain Spotted Fever

Spotted fever rickettsioses (SFRs) are a group of tick-borne diseases caused by closely related *Rickettsia* bacteria. The most serious and commonly reported spotted fever group rickettsiosis in the U.S. is Rocky Mountain spotted fever (RMSF) caused by *R. rickettsii*. Other causes of SFR include *R. parkeri* and 2 that circulate outside the U.S. (*R. africae* and *R. conorii*). The principal tick vectors in Florida are the American dog tick (*Dermacentor variabilis*) and the Gulf Coast tick (*Amblyomma maculatum*).

Human antibodies to spotted fever rickettsial species such as *R. parkeri*, *R. amblyommii*, *R. africae* and *R. conorii* cross-react with serologic tests for the RMSF organism *R. rickettsii*. Antibody-based testing for RMSF is strongly cross-reactive with other SFR.

More than 78% of cases in 2020 were probable because eschar swabs or convalescent serology samples were either not available or not obtained. A fatal illness in a confirmed case involving a 33-year-old male who experienced intra-cranial bleeding was reported. It was unclear if the cause of death was due to RMSF and whether exposure occurred in Florida or another state. A probable *R. parkeri* case was reported in a Lafayette resident. Two RMSF and SFR cases reported in 2020 had symptom onset in 2019.

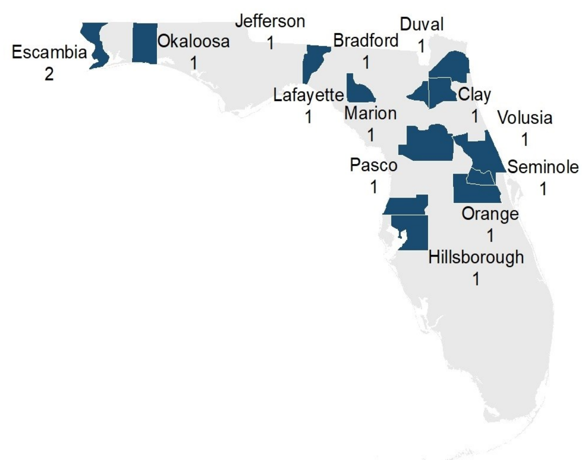
Disease Facts

- **Caused** by certain *Rickettsia* bacteria; most commonly *Rickettsia rickettsii*, *R. parkeri*, *R. africae*, *R. conorii*
- **Illness** includes fever, headache, abdominal pain, vomiting and muscle pain; rash develops in 80% of cases; eschar is commonly seen in SFR other than RMSF
- **Transmitted** via bite of infective tick
- **Under surveillance** to monitor incidence over time, estimate burden of illness, monitor geographical and temporal occurrence, target areas of high incidence for prevention education

Summary	
Number of cases in 2020	14
5-year trend (2016 to 2020)	
Age (in Years)	
Mean	55
Median	58
Min-max	28 - 76
Gender	**Number**
Female	4
Male	10
Unknown gender	0
Race	**Number**
White	12
Black	1
Other	0
Unknown race	1
Ethnicity	**Number**
Non-Hispanic	13
Hispanic	0
Unknown ethnicity	1

Case Classification	Number
Confirmed	3
Probable	11
Outcome	**Number**
Interviewed	10
Hospitalized	6
Died	1
Outbreak Status	**Number**
Sporadic	14
Outbreak-associated	0
Outbreak status unknown	0
Location Where Exposed	**Number**
Florida	9
U.S., non-Florida	3
Unknown	2

RMSF cases occurred in residents of 13 Florida counties in 2020. Twelve counties had 1 case identified and Escambia was the only county to identify 2 cases. Most infections were acquired in Florida.



See Appendix III: Report Terminology for explanations of case classification, outcome and outbreak status.

Section 4

Healthcare-Associated Infections and Antimicrobial Resistance

Section 4: HAIs and Antimicrobial Resistance

Health care-associated infections background

The Centers for Disease Control and Prevention (CDC) estimates that on any given day, 1 in 31 hospital patients has a Health Care-Associated Infection (HAI). Florida has a large system of health care facilities providing care to residents and visitors. There are 309 licensed inpatient hospitals with 213 having emergency departments. There are 481 ambulatory surgery centers, 704 nursing homes and 3150 licensed assisted living facilities in Florida. To assess a facility's capability to identify, isolate, inform, prepare for transport, and provide care for persons with highly infectious diseases, the CDC designed the Infection Control Assessment Response (ICAR). An ICAR program was started in Florida in 2017 to conduct non-regulatory infection control assessments in collaboration with all health care facilities. Assessments review infection control policies and conduct direct observations of infection prevention practices (e.g., hand hygiene, personal protective equipment, environmental cleaning, patient care, device reprocessing, etc.).

Antimicrobial resistance background

Antimicrobial resistance is the ability of a microorganism to evade antimicrobial treatment. One reason microorganisms have become resistant to antibiotics is that they are often inappropriately used to treat infections with the wrong dose, duration, or drug choice. Giving antibiotics to food animals can also foster resistance in bacteria. Infections caused by drug-resistant organisms are difficult to treat and often require extended hospital stays, treatment with more toxic drugs and increased medical costs. Surveillance data are used to identify occurrences of novel resistant organisms, analyze trends over time, target facilities for interventions to improve antibiotic prescribing and guide empiric therapy.

Antibiotic resistance is an urgent public health problem that is responsible for over 2.8 million infections and more than 35,000 deaths annually in the United States. The misuse of antibiotics has contributed to the growing problem of resistance and improving the use of antibiotics in healthcare to protect patients and reduce the threat of antibiotic resistance is a national priority. Because antibiotics are a shared resource, the potential for spread of resistant organisms means that the misuse of antibiotics can adversely impact the health of patients, even those who are not directly exposed to them. Further, like all medications, antibiotics can have unintended consequences, including adverse drug reactions and *Clostridioides difficile* infection (CDI).

Antibiotic stewardship refers to coordinated interventions designed to improve the use of antibiotics. Antibiotic stewardship programs have been shown to increase optimal prescribing for therapy and prophylaxis, improve the quality of patient care, reduce adverse events associated with antibiotic use such as CDI and resistance, and offer cost savings to hospitals. CDC recommends that antibiotic stewardship programs be implemented in all health care settings.

State and local health departments play critical roles as partner and convener across the health care continuum and are positioned to promote appropriate antibiotic use and prevention strategies to limit the development of antimicrobial resistance. Activities that our state and local health departments do to implement antibiotic stewardship include:

1. Incorporate stewardship activities into HAI program through identifying leaders to secure expertise knowledgeable on antibiotic stewardship activities and tools and identify staff available to evaluate antibiotic stewardship programs and antibiotic resistance patterns and trends
2. Conduct surveillance to understand current stewardship practices/needs across facilities
3. Coordinate and integrate stewardship activities with ongoing quality improvement efforts both within own agency and by reaching out to quality improvement organizations to synergize activities.
4. Provide and develop education and tools on appropriate antibiotic prescribing for facilities and healthcare professionals and community members
5. Enforce a communications plan to reach and maintain relationships with facilities and organizations with similar goals and guide partners to appropriate stewardship resources

Laboratory Testing

To further improve surveillance and awareness of *Candida auris (C.auris*), carbapenem-resistant *Acinetobacter baumannii* (CRAB), carbapenem-resistant *Pseudomonas aeruginosa* (CRPA), and carbapenem-resistant Enterobacterales (CRE), FDOH's BPHL expanded CRAB, CRPA, and CRE testing capabilities to identify types of resistance mechanisms used by these organisms. Carbapenemase-producing bacteria are pathogens of public health concern. Carbapenemases are enzymes that breaks down carbapenem antibiotics and can be transferred between organisms. A variety of carbapenemases have been reported in the U.S. and in Florida including *Klebsiella pneumoniae* carbapenemase (KPC), Verona integron-encoded metallo-β-lactamase (VIM), New Delhi metallo-β-lactamase (NDM) and oxacillinase (OXA)-48-like.

C. auris, on the other hand, is a fungal disease that is often multi-drug resistant and recent surveillance in other states have identified isolates resistant to all classes of antifungal medication. *C. auris* can be misidentified with standard laboratory methods requiring additional workup. Health care facilities with a suspected *Candida auris* isolate should work with the HAI Program to obtained confirmatory testing through the Antibiotic Resistance Laboratory Network (ARLN) in Tennessee for identification and antifungal susceptibility testing. The HAI Program is also working with health care laboratories across the state to leverage existing technology to improve identification and surveillance efforts for *C. auris*.

Electronic Laboratory Reporting (ELR) Surveillance

All laboratories participating in ELR must report antimicrobial resistance testing results for all *Acinetobacter baumannii*, *Citrobacter* species, *Enterococcus* species, *Enterobacter* species, *Escherichia coli*, *Klebsiella* species, *Pseudomonas aeruginosa*, *Serratia* species and *S. aureus* isolates from normally sterile sites. Resistance results are processed electronically in the state's reportable disease surveillance system.

Antimicrobial Resistance Key Points

Acinetobacter species in 2020

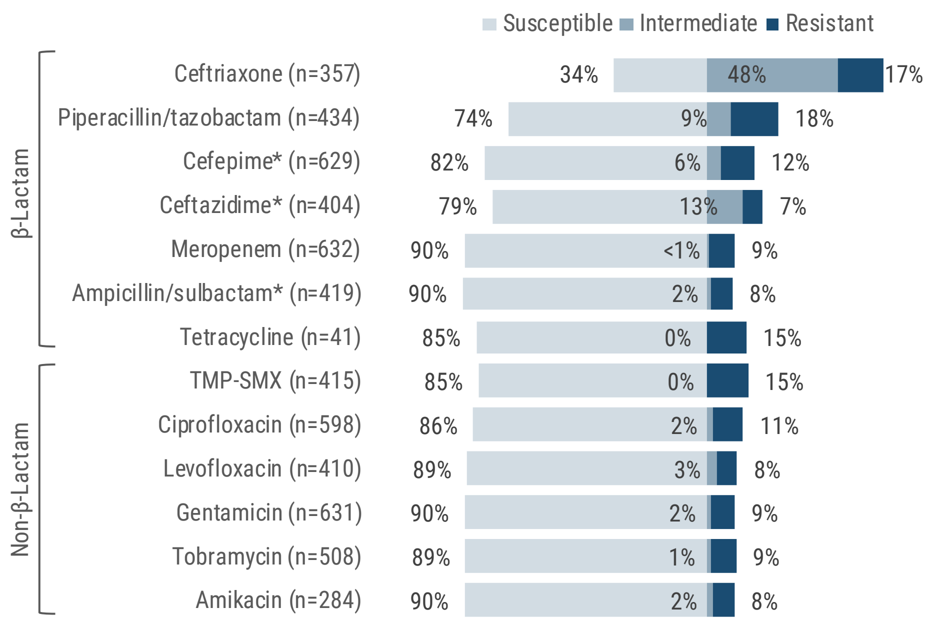
522 isolates reported

11% resistant to one or more carbapenems (doripenem, ertapenem, imipenem, meropenem)

10–13% resistant to recommended antibiotics (cefepime, ceftazidime, ampicillin/sulbactam)

Organism Facts

- Gram-negative bacteria, frequently found in soil and water; *A. baumannii* is most common species causing disease in humans
- Causes pneumonia, blood infections, meningitis, urinary tract infections, skin or wound infections
- Transmitted via direct contact



TMP-SMX=trimethoprim/sulfamethoxazole
* Recommended first-line antibiotics, according to *The Sanford Guide to Antimicrobial Therapy 2018*
Note: indeterminate results not included in this figure

Section 4: HAIs and Antimicrobial Resistance

Streptococcus pnuemoniae in 2020

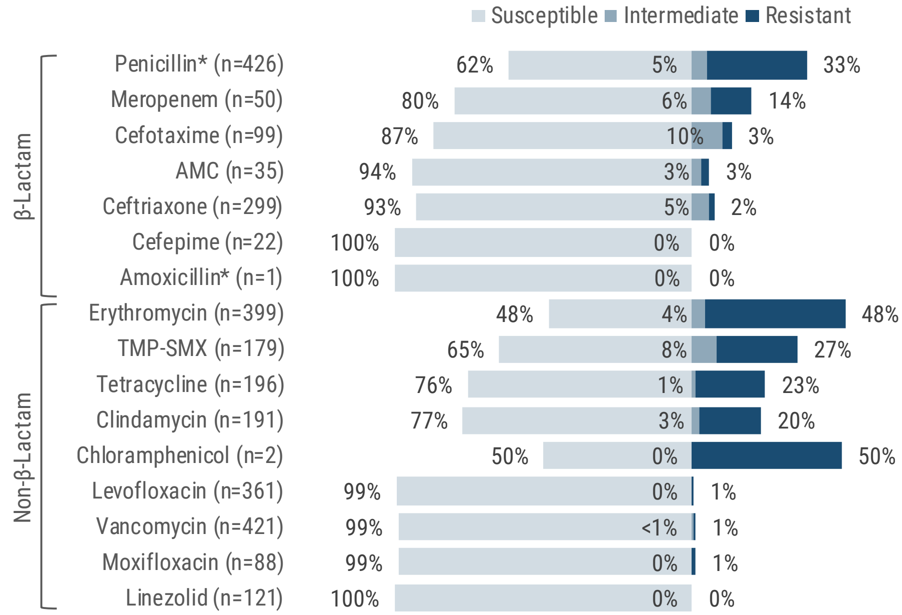
774 *S.* pneumoniae invasive disease cases reported

40% had isolates resistant to at least one antibiotic

20% resistant to penicillin and **0%** resistant to amoxicillin (recommended first-line antibiotics)

Organism Facts

- Gram-positive, facultative anaerobic bacterium
- Major cause of pneumonia and meningitis
- Transmitted via direct contact



AMC=amoxicillin/clavulanate
TMP-SMX=trimethoprim/sulfamethoxazole
* Recommended first-line antibiotics, according to *The Sanford Guide to Antimicrobial Therapy 2018*

Escherichia coli in 2020

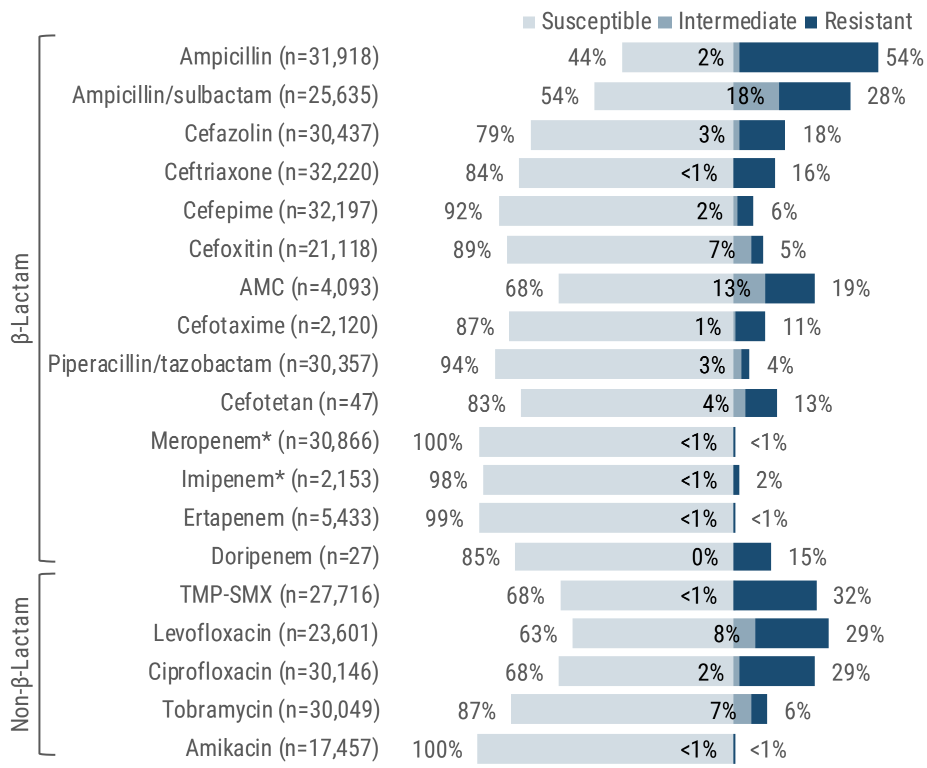
21,055 isolates reported

0.2% resistant to one or more carbapenems (i.e., CRE)

<1% resistant to imipenem or meropenem (recommended first-line antibiotics)

Organism Facts

- Gram-negative, facultative aerobic bacterium, frequently found in lower intestine
- Cause of food poisoning, pneumonia, breathing problems, and urinary tract infections
- Transmitted via fecal-oral route



AMC=amoxicillin/clavulanate
TMP-SMX=trimethoprim/sulfamethoxazole
* Recommended first-line antibiotics, according to *The Sanford Guide to Antimicrobial Therapy 2018*
Note: indeterminate results not included in this figure

Antimicrobial Resistance Key Points (Continued)

Klebsiella species in 2020

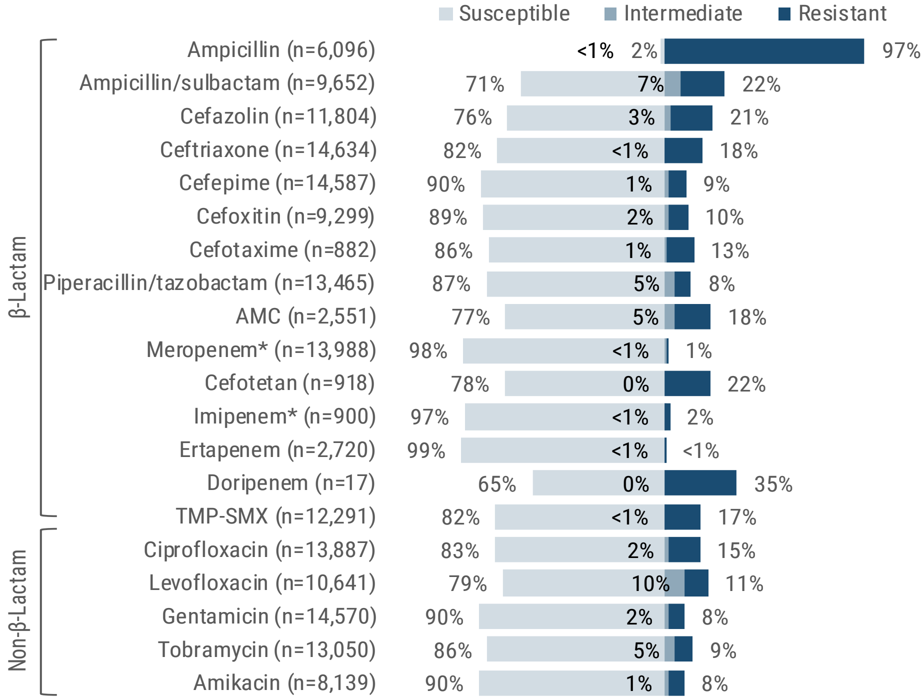
6,243 isolates reported

0.8% resistant to one or more carbapenems (i.e., CRE)

<1% resistant to imipenem or meropenem (recommended first-line antibiotics)

Organism Facts

- Ubiquitous, gram-negative bacteria; *K. oxytoca* and *K. pneumoniae* are most common species causing disease
- Causes food poisoning, pneumonia, breathing problems, urinary tract infections
- Transmitted via direct contact



AMC=amoxicillin/clavulanate
TMP-SMX=trimethoprim/sulfamethoxazole
* Recommended first-line antibiotics, according to *The Sanford Guide to Antimicrobial Therapy 2018* Note: indeterminate results not included in this figure

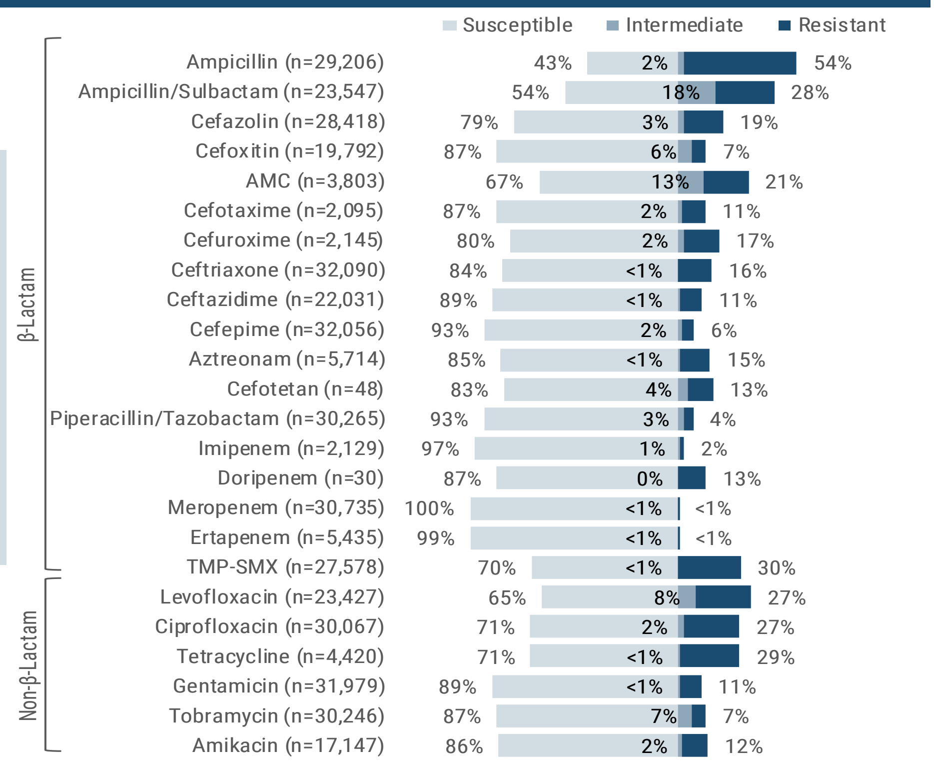
Enterobacteriaceae in 2020

30,122 isolates reported

0.6% resistant to carbapenem (i.e., CRE)

Organism Facts

- Family of bacteria that includes *Escherichia coli*, *Klebsiella pneumoniae*, *Salmonella* species and *Shigella* species
- Often occur in health care settings in patients who require devices or antibiotic therapy
- Transmission depends on organism



AMC=amoxicillin/clavulanate
TMP-SMX=trimethoprim/sulfamethoxazole
* Recommended first-line antibiotics, according to *The Sanford Guide to Antimicrobial Therapy 2018*
Note: indeterminate results not included in this figure

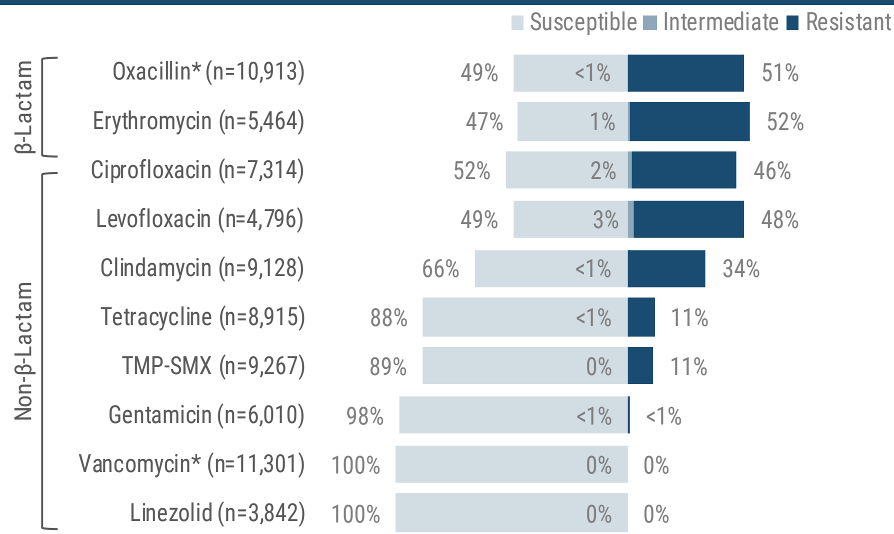
Antimicrobial Resistance Key Points (Continued)

Staphylococcus aureus in 2020

58,441 isolates reported

36% resistant to oxacillin (i.e., MRSA) (susceptibility testing now done on oxacillin rather than methicillin)

0% resistant to vancomycin (recommended first-line antibiotic when resistant to oxacillin)



TMP-SMX=trimethoprim/sulfamethoxazole

* Recommended first-line antibiotics, according to *The Sanford Guide to Antimicrobial Therapy 2018*

Organism Facts

- Gram-positive bacterium, often part of the body's normal flora, frequently found in nose, respiratory tract, and on skin
- Leading cause of skin and soft tissue infections
- Transmitted via direct contact

Section 5

Non-Reportable Diseases and Conditions of Significance

Acute Flaccid Myelitis

Background

Acute flaccid myelitis (AFM) is characterized by rapid onset of flaccid weakness in one or more limbs and distinct abnormalities of the spinal cord gray matter on magnetic resonance imaging. AFM is a subtype of acute flaccid paralysis (AFP), which includes paralytic poliomyelitis, acute transverse myelitis, Guillain-Barré syndrome and muscle disorders. More than 90% of AFM cases classified at the national level by the Centers for Disease Control and Prevention (CDC) had a mild respiratory illness or fever consistent with a viral infection before the onset of limb weakness.

Disease Facts

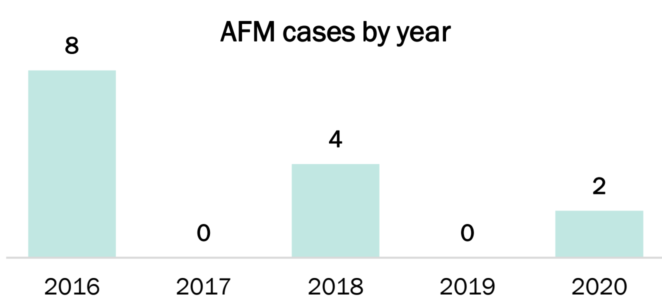
- **Causes** remain largely unknown although it is thought to be caused by infections with different types of viruses, including enteroviruses
- **Neurologic syndrome** with sudden onset of arm or leg weakness, loss of muscle tone and loss of reflexes
- **Transmission** can be viral and more than 90% of patients have mild respiratory symptoms or fever prior to AFM
- **Under surveillance** to detect increases in this condition, better define the etiologic agent(s) and pathogenesis and improve tracking of local and national trends

Surveillance

Florida has conducted enhanced surveillance for AFM since 2014 when an increase in cases was noted. Surveillance was established in 2015 to monitor this syndrome after the Council of State and Territorial Epidemiologists adopted a standardized case definition. Hospitals report potential persons under investigation (PUIs) to their county health departments, who notify the state health department. Medical records are reviewed at the state health department by a physician and forwarded to the CDC for classification if there is no alternate diagnosis and if disease presentation is consistent with AFM. Due to the complexity of the syndrome, AFM PUIs are reviewed and classified by an expert panel of neurologists at the CDC.

Summary	2016–2020
Number of cases	14
5-year trend	
Case Classification	
Confirmed	12
Probable*	2
Sex	
Male	7
Female	7
Unknown	0
Race	
White	9
Black	4
Other	1
Ethnicity	
Non-Hispanic	10
Hispanic	3
Unknown	1

*Probable case classification first implemented in 2017



Laboratory Testing

When specimens are available, enterovirus testing is performed for AFM PUIs at the Florida Department of Health's Bureau of Public Health Laboratories, the CDC and through the individual's provider. Of the 14 AFM cases from 2016–2020, enterovirus testing was completed on 12 cases. Of the 12 cases tested, 3 were positive for enteroviruses. Although AFM PUI specimens are tested for enteroviruses, to date there are no confirmed causal links between enteroviruses and AFM.

For more information on AFM, visit the CDC's AFM Web page at cdc.gov/acute-flaccid-myelitis/index.html. For national case data, visit cdc.gov/acute-flaccid-myelitis/cases-in-us.html.

Multisystem Inflammatory Syndrome In Children

Background

Multisystem inflammatory syndrome in children (MIS-C) is a rare and serious condition temporally associated with COVID-19 in persons <21 years old. MIS-C can cause inflammation of multiple body parts including heart, lungs, kidneys, brain, skin, eyes and gastrointestinal organs. Some of the most common symptoms of MIS-C include fever, rash, diarrhea, vomiting, bloodshot eyes, stomach pain and dizziness.

MIS-C was first described in 2020 and represents a severe or mild complication of COVID-19 in children and adolescents. The exact cause of MIS-C is currently unknown, but children who develop MIS-C have had an exposure to COVID-19 within the four weeks prior to the onset of symptoms. MIS-C is not transmissible, but preventive measures must be taken in order to prevent the spread of the virus that causes COVID-19 if the child is currently infected with the virus.

Disease Facts

Cause unknown, but possible linked to previous exposure to COVID-19

Illness is an inflammatory syndrome, including fever, rash, diarrhea, vomiting, bloodshot eyes, stomach pain, dizziness

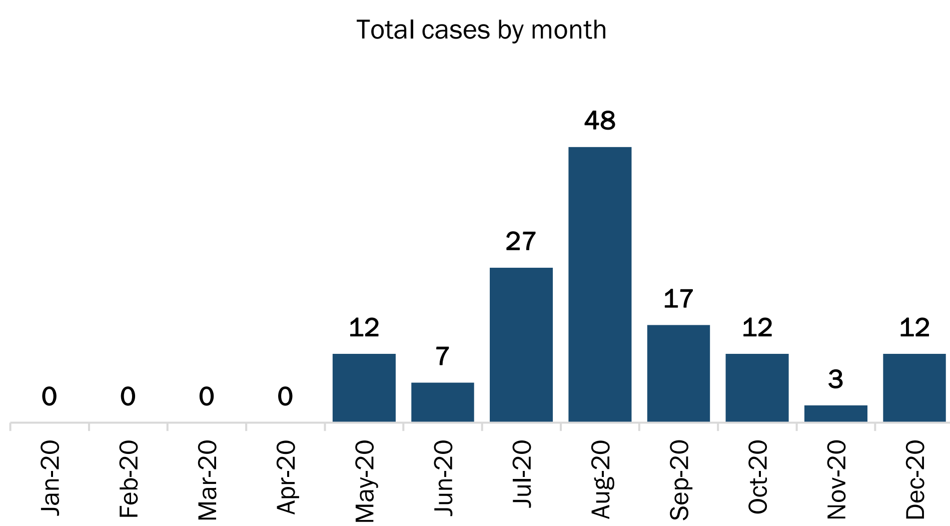
Transmitted MIS-C is not transmissible

Under surveillance to detect confirmed and presumptive cases of MIS-C, detect deaths, understand disease trends related to seasonal patterns and specified populations; determine the onset, peak, and wane of MIS-C cases, assist with MIS-C prevention

Surveillance

The Florida Department of Health has been conducting regular surveillance of MIS-C cases as of May 2020. Since then, health care providers have been reporting MIS-C cases to the county health departments along with medical records to document each element of the case definition. Medical records are reviewed at the state health department to determine if the case meets this definition. Once MIS-C case status is determined, a note is entered in the case to document the findings. During May 2020—September 2021, **138 MIS-C cases** were reported to the Florida Department of Health.

Gender	Cases
Male	78
Female	60
Race	**Cases**
White	59
Black	59
Other	15
Unknown	5
Ethnicity	**Cases**
Non-Hispanic	78
Hispanic	58
Unknown	2



Section 5: Non-Reportable Diseases and Conditions

Influenza and Influenza-Like Illness

Background

Influenza activity can vary widely from season to season, underscoring the importance of robust influenza surveillance. Influenza causes an estimated 9.3–49 million illnesses annually in the U.S., with 140,00–960,000 of those resulting in hospitalization and 12,000–79,000 resulting in death.

Disease Facts

- **Caused** by influenza viruses
- **Illness** is respiratory, including fever, cough, sore throat, runny or stuffy nose, muscle/body aches, headache, fatigue
- **Transmitted** person-to-person by direct contact with respiratory droplets from nose or throat of infected person
- **Monitored** to detect changes in influenza virus to inform vaccine composition, identify unusually severe presentations of influenza, detect outbreaks, and determine the onset, peak and wane of the influenza season to assist with influenza prevention

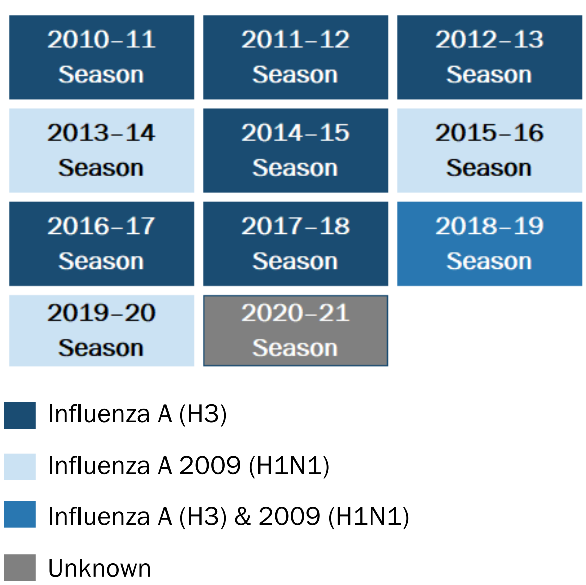
Surveillance

The Florida Department of Health conducts regular surveillance of influenza and influenza-like illness (ILI) using a variety of surveillance systems, including laboratory-based surveillance and syndromic surveillance. Florida's syndromic surveillance system, ESSENCE-FL, collects chief complaint and discharge diagnosis data from emergency departments, free-standing emergency departments and urgent care centers. Individual cases of influenza are not reportable in Florida, except for novel influenza (a new subtype of influenza) and influenza-associated pediatric deaths. All outbreaks, including those due to influenza or ILI, are reportable in Florida.

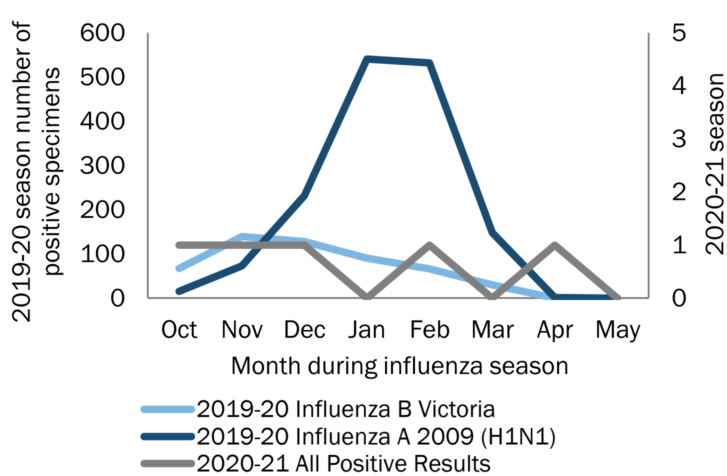
The COVID-19 pandemic affected health care-seeking behavior for the latter part of the 2019–20 influenza season and during the entire 2020–21 season, which may have impacted ILI and influenza activity trends used to conduct surveillance for influenza/ILI during the season. An overall reduction in the number of emergency department and urgent care center visits was observed beginning in March 2020, along with changes in the reasons for seeking care at these facilities. Due to this fact, surveillance methods for influenza and ILI were updated in an effort to distinguish between influenza and ILI and COVID-19.

Data

During the 2019–20 season, early influenza circulation was predominantly influenza B Victoria lineage, but a switch was observed in December 2020 to influenza A 2009 (H1N1), which became the predominant strain circulating for the rest of the season. During the 2020–21 season, influenza activity remained low throughout, and no predominant strain was determined.



Two notable waves in influenza activity were observed in Florida during the 2019–20 season: influenza B Victoria circulated October to January and influenza A 2009 (H1N1) circulated from December through the start of the COVID-19 pandemic in March 2020. During the 2020–21 season, there were minimal influenza positive specimens overall.

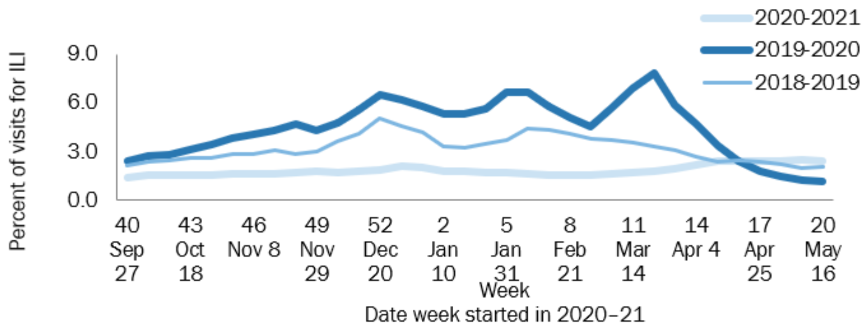


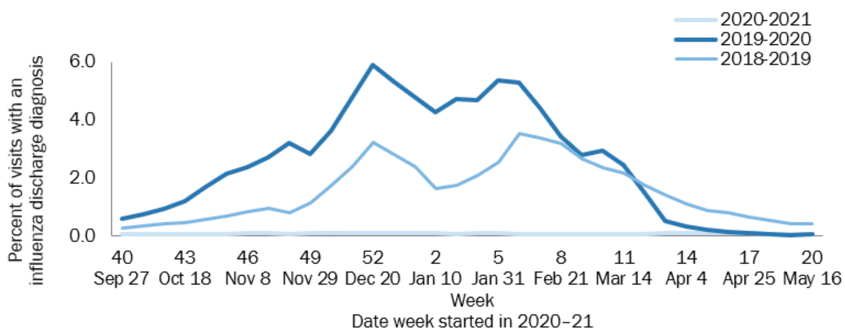
Section 5: Non-Reportable Diseases and Conditions

A predominant strain is typically identified during most influenza seasons; during the 2019–20 season in Florida, influenza A 2009 (H1N1) virus circulated predominantly. The COVID-19 pandemic impacted circulation of influenza viruses and no predominant strain was determined for the 2020–21 season. Below, these seasons are compared to the 2018–19 season, which had nearly equal circulation of influenza A (H3) and influenza A 2009 (H1N1) viruses.

Influenza activity is typically monitored using ILI, which is predominantly symptom-based and the most timely data available in ESSENCE-FL. In March 2020, surveillance was updated to include discharge diagnoses data for influenza. These data lag in the system for up to 10 days but are more indicative of an influenza infection.

ILI activity was greatly impacted by the COVID-19 pandemic beginning in week 10, 2020 (starting March 1, 2020). Activity increased at the end of the 2019–20 season, and was minimal with no defined seasonality through the 2020–21 season.

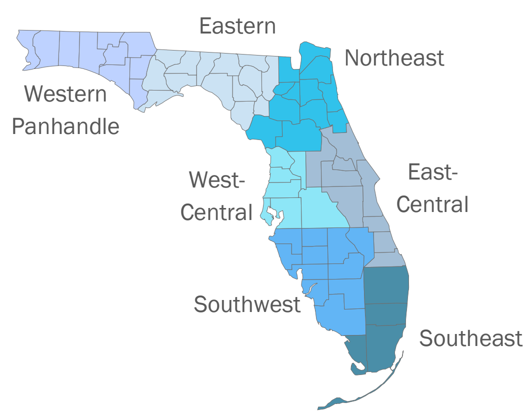




Health care-seeking behavior also impacted visits for all respiratory diseases. Activity was minimal throughout the 2020–21 season.

Minimal differences within Florida's 7 surveillance regions were observed during both the 2019–20 and 2020–21 influenza seasons. Influenza A 2009 (H1N1) viruses predominated in 6 regions and an even split in influenza A 2009 (H1N1) and influenza B Victoria circulation was observed in the southeast region during the 2019–20 season. Due to low circulation of influenza viruses during the 2020–21 season, no predominant circulating strain or peak activity was observed in any region.

Region	2019–20 Predominant strain	2019–20 Peak week	2020–21 Predominant strain	2020–21 Peak week
Western Panhandle	A 2009 (H1N1)	52	Unknown	None
Eastern Panhandle	A 2009 (H1N1)	52	Unknown	None
Northeast	A 2009 (H1N1)	52	Unknown	None
West-Central	A 2009 (H1N1)	52	Unknown	None
East-Central	A 2009 (H1N1)	52	Unknown	None
Southwest	A 2009 (H1N1)	5	Unknown	None
Southeast	A 2009 (H1N1) and B Victoria	52	Unknown	None



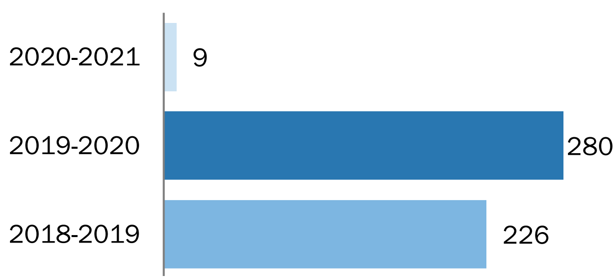
The influenza reporting year is defined by standard weeks outlined by the Centers for Disease Control and Prevention (CDC), where every year has 52 or 53 weeks; there were 52 weeks in the 2018–19 and 2019–20 seasons, and 53 weeks in the 2020–21 season. In Florida, the influenza season begins in week 40 and ends in week 20 of the following year. The 2019–20 season began on September 29, 2019 and ended on May 16, 2020. The 2020–21 season began on September 27, 2020 and ended on May 22, 2021.

Section 5: Non-Reportable Diseases and Conditions

Outbreaks

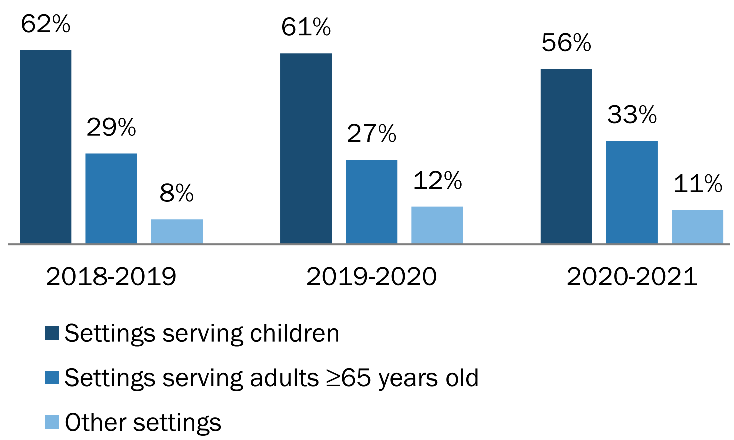
More outbreaks were reported during the 2019–20 season (280) compared to the previous season. Fewer outbreaks were reported during the 2020–21 season, as influenza activity was impacted by the COVID-19 pandemic. Outbreaks are counted if an influenza etiology is identified or the symptoms of the ill individuals within the setting include fever and cough or sore throat. The number of outbreaks reported and the types of outbreak settings vary each season and often serve as indicators of disease severity and population affected. During the previous two seasons, the majority of outbreaks were reported in facilities serving people at higher risk for complications from influenza infection (children and adults ≥65 years old), which is consistent with past seasons. Settings that serve these groups include child day cares, school/camps, assisted living facilities, nursing facilities and other long-term care facilities.

Number of Outbreaks



The largest proportion of the influenza or ILI outbreaks reported during the 2019–20 and 2020–21 seasons occurred in facilities serving children (61% and 56%, respectively). This is consistent with the previous season where most outbreaks were also reported in facilities serving children. Four respiratory disease outbreaks with an etiology besides influenza, COVID-19 or respiratory syncytial virus were also reported during the 2019–20 season and one during the 2020–21 season.

Percentage of outbreaks by type of setting



Influenza-associated intensive care unit admissions

In response to sharp increases in influenza activity in February 2018 during the 2017–18 influenza season, the Florida Department of Health requested that hospitals report all influenza-associated intensive care unit (ICU) admissions in Florida residents aged <65 years to identify unusually severe presentations of influenza. This enhanced surveillance was continued during the 2019–20 and 2020–21 influenza seasons on an optional basis for county health departments.

Influenza season	Number of counties reporting (%)	Number influenza-associated ICU admissions reported	Number admitted with underlying medical conditions (%)	Number admitted who did not receive the current influenza vaccine, or status was unknown
2019–20	35 (52%)	302	252 (83%)	265 (88%)
2020–21	3 (4%)	4	4 (100%)	4 (100%)

Deaths

Influenza-associated deaths in children <18 years old are reportable in Florida. In past seasons, the number of deaths reported ranged from 2 to 14. Influenza-positive specimens collected from children who die frequently go untyped, and given the small number of deaths each year, it is difficult to interpret how pediatric mortality might be affected by strain.

Influenza season	Number of deaths reported	Number with known underlying medical conditions (%)	Number who did not receive the current influenza vaccine (%)
2019–20	14	7 (50%)	11 (79%)
2020–21	0	N/A	N/A

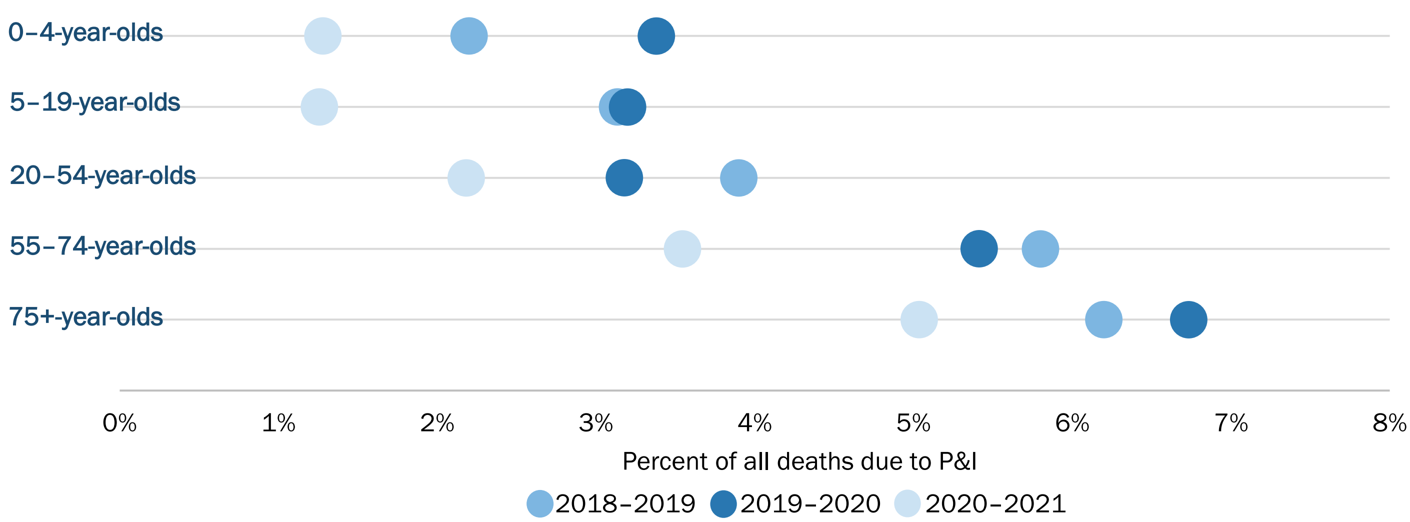
Section 5: Non-Reportable Diseases and Conditions

Although not individually reportable, pneumonia and influenza (P&I) deaths in people of all ages are monitored by reviewing death certificate data. Estimating the number of deaths due to influenza is challenging because:

- Influenza is not frequently listed on the death certificates of persons who die from influenza-related complications.
- Many influenza-related deaths occur 1–2 weeks after a person's initial infection, often due to development of secondary bacterial infection (e.g., pneumonia) or because infection aggravated an existing chronic illness (e.g., congestive heart failure, chronic obstructive pulmonary disease).
- Many people who die from influenza are never tested.

For these reasons, influenza deaths are estimated using P&I deaths. Beginning in March 2020, COVID-19 deaths impacted surveillance for P&I deaths. Deaths with COVID-19 mentioned on the death certificate are removed from P&I death counts.

During the 2019–20 influenza season, deaths due to P&I were higher than previous seasons in children and young adults (≤19 years old). During the 2020–21 influenza season, deaths due to P&I were lower in all age groups compared to previous seasons.



References:

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Section 5: Non-Reportable Diseases and Conditions

Respiratory Syncytial Virus

Background

Respiratory syncytial virus (RSV) is a common respiratory virus that primarily infects young children. Children <5 years old and older adults are at increased risk of hospitalization for complications due to RSV infection. An estimated 58,000 children in the U.S. will be hospitalized within their first 5 years of life due to RSV infection. RSV infection is the most common cause of bronchiolitis (inflammation of small airways in the lungs) and pneumonia in infants <1 year old.

Disease Facts

Caused by respiratory syncytial virus

Illness is respiratory, including fever, cough and runny nose; can cause severe symptoms like wheezing or difficulty breathing, especially in children with underlying health conditions

Transmitted person-to-person by direct contact with respiratory droplets from nose or throat of infected person

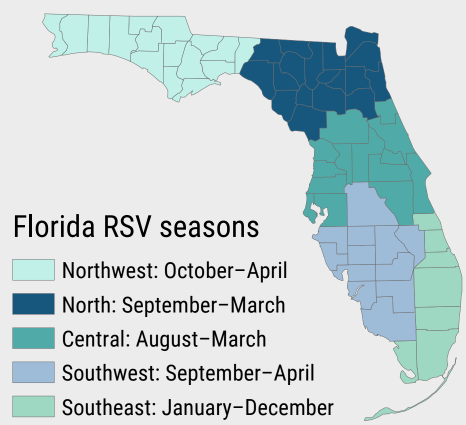
Monitored to support clinical decision-making for prophylaxis of at-risk children

In the U.S., RSV activity is most common during the fall, winter and spring months, though activity varies in timing and duration regionally. RSV activity in Florida typically peaks between November and January, with an overall decrease in activity during the summer months. Although summer months typically have less RSV activity overall, RSV season in southeast Florida is considered year-round based on laboratory data.

Surveillance

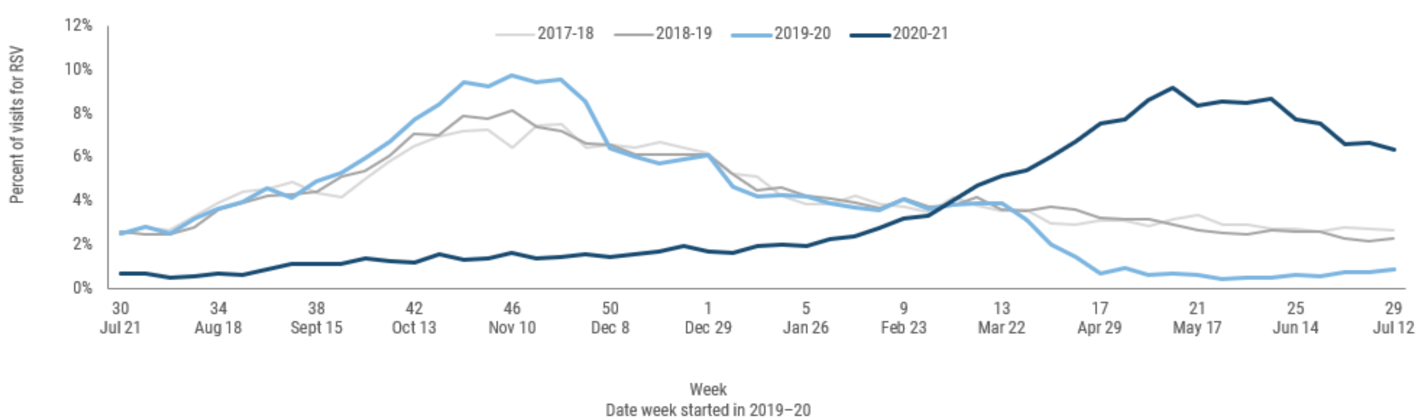
Florida's syndromic surveillance system, ESSENCE-FL, collects chief complaint and discharge diagnosis data from nearly all of Florida's emergency departments (EDs) and some urgent care centers (UCCs). These data are used to monitor trends in visits to EDs and UCCs where RSV or RSV-associated illness are included in the discharge diagnosis. The National Respiratory and Enteric Virus Surveillance System (NREVSS) is a voluntary, laboratory-based surveillance system through which participating laboratories report RSV test results. Data from NREVSS and validated electronic laboratory reporting data are also used to monitor temporal patterns of RSV.

The Florida Department of Health established regular RSV seasons based on the first 2 consecutive weeks during which the average percent of specimens that test positive for RSV at hospital laboratories is 10% or higher. Southeast Florida's season is year-round.

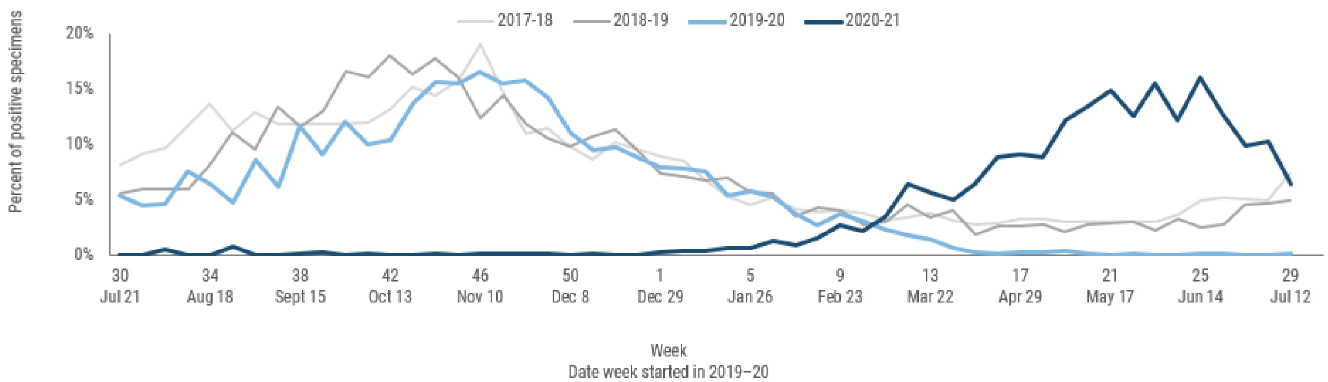


General Trends

During the 2019–20 season, the percent of children <5 years old diagnosed with RSV in ESSENCE-FL increased steadily starting in September, peaked in November and remained elevated through March. The COVID-19 pandemic affected health care-seeking behavior during the early part of the 2020–21 season, which may have impacted RSV activity trends. Activity remained unseasonably low throughout 2020, increased steadily starting in January, peaked in May and remained elevated through July.

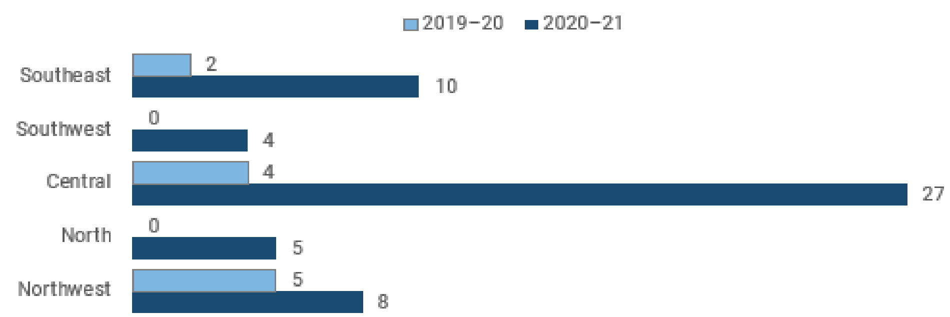


During the 2019–20 season, laboratory surveillance data for RSV (percent of specimens testing positive for RSV) peaked in mid-November and began to decrease steadily in December. During the 2020–21 season, laboratory surveillance data remained low throughout 2020. Data began increasing in January, peaked in May and June, and began to decrease in late June. Laboratory data include results for people of all ages, whereas the ED and UCC RSV diagnosis data are limited to children <5 years old. This likely accounts for the difference in patterns observed between these two data sources.



Outbreaks

During the 2019–20 season, no RSV-associated outbreaks were reported in Florida's southwest and north regions. More outbreaks were reported during the 2020–21 season compared to the 2019–20 season, with the greatest increase occurring in the central region. During both the 2019—20 and 2020–21 seasons, all RSV-associated outbreaks occurred in either child day care or school settings. These data include outbreaks with RSV identified in the etiology and may not match data presented in the Florida Flu Review or previous reports.



The RSV year is defined by standard reporting weeks as outlined by the Centers for Disease Control and Prevention, where every season has either 52 or 53 weeks; there were 52 weeks in 2019 and 53 weeks in 2020. In Florida, surveillance for RSV is conducted year-round, beginning in week 30 and ending in week 29 of the following year. The 2019–20 season began on July 21, 2019 and ended on July 18, 2020. The 2020–21 season began on July 19, 2020, and ended on July 24, 2021.

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Section 6

Cancer

Section 6: Cancer

Cancer

Background

The term cancer covers many diseases that share the common feature of abnormal cell growth. It can occur in almost any part of the body. Early detection through routine health and cancer screenings and timely quality treatment and care may improve prognosis and survival. Each type of cancer develops differently and has different risk factors. For example, the main risk factor for lung cancer is cigarette smoking, but for skin cancer it is sun exposure. The causes of some common cancers, such as breast cancer, remain unknown; however, age is the number one risk factor for all cancer types.

2018 Key Points

- **132,408** Primary cancers diagnosed in Florida in 2018
- Cancer rate per 100,000 population increased from 432.2 to **452.5** from 2009–2018
- **62%** of newly diagnosed cancers in 2018 in Florida were in adults ≥65 years old

Reporting and Surveillance

Section 385.202, Florida Statutes requires all hospitals and outpatient facilities licensed in Florida to report to the Florida Department of Health each patient diagnosed or treated for cancer. Cancer incidence data are collected, verified and maintained by the Florida Cancer Data System (FCDS), Florida's statewide cancer registry. The FCDS is administered by the Florida Department of Health's Public Health Research Section and operated by the Sylvester Comprehensive Cancer Center at the University of Miami Leonard M. Miller School of Medicine. The FCDS is used by the state and its partners to monitor the occurrence of cancer incidence, aid in research studies to reduce cancer morbidity and mortality, focus cancer control activities and address public questions and concerns regarding cancer.

The FCDS now collects incidence data from hospitals, freestanding ambulatory surgical centers, radiation therapy facilities, pathology laboratories and private physician offices. Each facility, laboratory and practitioner is required to report to the FCDS within six months of each diagnosis and within six months of the date of each treatment. Consequently, there is an inherent time lag of 1–2 years in the release of cancer registry data for surveillance activities and publications. At the time this report was published, the most recent FCDS data available were from 2018.

General Trends for 2018

During 2018, physicians diagnosed 132,408 primary cancers (i.e., the site or organ where the cancer starts) among Floridians, an average of 362 new diagnoses per day. The overall rate of occurrence for all cancers combined in the state has increased from 407.8 new diagnoses per 100,000 in 1981 to 452.5 new diagnoses per 100,000 in 2018. However, this has not been a steady increase as cancer patterns vary year to year. Cancer occurs predominantly among older people as age is the top risk factor. Among the newly diagnosed cancers in 2018, 62% occurred in people ≥65 years old; this age group accounted for 20% of Florida's 2018 population.

Characteristic	All cancer diagnoses	All cancer deaths
Florida	**132,408**	**44,649**
Sex		
Female	65,516	20,596
Male	66,855	24,053
Race		
Black	13,379	4,830
White	111,960	38,574
Sex and race		
Black female	7,033	2,374
White female	54,897	17,690
Black male	6,342	2,456
White male	57,035	21,064

New cancer diagnoses and deaths in Florida in 2018

The most common cancers in Floridians were lung and bronchus (13.2%), female breast (13.5%), prostate (9.9%) and colorectal (7.7%). These accounted for 49.5% of all new cases in blacks and 44% of all new cases in whites.

Collectively, the number of new cancer cases and deaths that occurred in Miami-Dade, Broward, Palm Beach, Hillsborough and Pinellas counties accounted for approximately 36.4% of new cancer diagnoses and 35.8% of cancer deaths in Florida during 2018.

Section 6: Cancer

For all cancers combined, the Florida age-adjusted rate of occurrence for new cancer cases was 452.5 per 100,000 population and 143.8 per 100,000 population for cancer-related deaths.

Cancer remains the second leading cause of death in Florida with over 44,000 cancer deaths occurring in 2018. In years of potential life lost up to age 75, cancer ranks first, surpassing heart disease and stroke combined and unintentional injuries.

Characteristic	Diagnoses	Deaths
Cervix	998	343
Ovary	1,580	1,007
Non-Hodgkin's lymphoma	6,485	1,520
Head and neck	5,070	1,133
Bladder	5,601	1,374
Melanoma	6,937	632
Colorectal	10,194	3,901
Prostate	13,072	2,411
Female breast	17,923	2,904
Lung and bronchus	17,532	11,054
Total	**85,392**	**26,279**

Cancer Appendix – 2018 Data

Age-adjusted incidence and mortality rates in Florida in 2018

Cancer types	Age-adjusted incidence rate	Age-adjusted mortality rate
All cancers	**452.5**	**143.8**
Female breast	122.1	18.1
Prostate	88.5	16.9
Lung and bronchus	55.6	34.8
Colorectal	34.9	12.8
Melanoma	28.8	2.4
Bladder	17.7	4.3
Head and neck	17.6	4.0
Non-Hodgkin's lymphoma	21.3	5.0
Ovary	10.9	6.2
Cervix	11.4	2.8

Number of new cancer diagnoses by sex and race in Florida in 2018

Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Florida	132,408	17,532	17,923	13,072	10,194	6,937	5,601	5,070	6,485	1,580	998
Sex											
Female	65,516	8,414	17,923	NA	4,783	2,573	1,330	1,277	3,027	1,580	998
Male	66,855	9,118	NA	13,072	5,408	4,364	4,269	3,790	3,454	NA	NA
Race											
Black	13,379	1,341	2,040	2,014	1,224	-	266	381	529	137	209
White	111,960	15,620	14,900	10,269	8,501	6,937	5,090	4,477	5,530	1,332	731
Sex and race											
Black female	7,033	555	2,040	NA	606	-	99	112	262	137	209
White female	54,897	7,632	14,900	NA	3,948	2,573	1,181	1,115	2,564	1,332	731
Black male	6,342	786	NA	2,014	618	-	167	269	264	NA	NA
White male	57,035	7,988	NA	10,269	4,550	4,364	3,908	3,359	2,965	NA	NA

Cancer Appendix – 2018 Data

Number of new cancer diagnoses by sex and race in Florida in 2018

Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Florida	132,408	17,532	17,923	13,072	10,194	6,937	5,601	5,070	6,485	1,580	998
Sex											
Female	65,516	8,414	17,923	NA	4,783	2,573	1,330	1,277	3,027	1,580	998
Male	66,855	9,118	NA	13,072	5,408	4,364	4,269	3,790	3,454	NA	NA
Race											
Black	13,379	1,341	2,040	2,014	1,224	-	266	381	529	137	209
White	111,960	15,620	14,900	10,269	8,501	6,937	5,090	4,477	5,530	1,332	731
Sex and race											
Black female	7,033	555	2,040	NA	606	-	99	112	262	137	209
White female	54,897	7,632	14,900	NA	3,948	2,573	1,181	1,115	2,564	1,332	731
Black male	6,342	786	NA	2,014	618	-	167	269	264	NA	NA
White male	57,035	7,988	NA	10,269	4,550	4,364	3,908	3,359	2,965	NA	NA

Number of new cancer deaths by sex and race in Florida in 2018

Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Florida	44,649	11,054	2,904	2,411	3,901	632	1,374	1,133	1,520	1,007	343
Sex											
Female	20,596	4,996	2,904	NA	1,765	199	392	296	628	1,007	343
Male	24,053	6,058	NA	2,411	2,136	433	982	837	892	NA	NA
Race											
Black	4,830	910	406	411	502	-	80	121	149	101	78
White	38,754	9,935	2,400	1,950	3,318	632	1,270	985	1,333	867	252
Sex and race											
Black female	2,374	383	406	NA	236	-	39	30	67	101	78
White female	17,690	4,520	2,400	NA	1,493	199	347	259	541	867	252
Black male	2,456	527	NA	411	266	-	41	91	82	NA	NA
White male	21,064	5,415	NA	1,950	1,825	433	923	726	792	NA	NA

Section 6: Cancer

Number of new cancer diagnoses by county in Florida in 2018

Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Florida	132,408	17,532	17,923	13,072	10,194	6,937	5,601	5,070	6,485	1,580	998
Alachua	1,317	182	189	143	104	48	42	49	70	10	13
Baker	140	23	15	10	10	12	--	10	--	--	--
Bay	1,001	137	84	79	87	80	36	52	50	17	--
Bradford	183	36	20	17	19	--	11	--	--	--	--
Brevard	4,542	656	544	420	321	273	183	186	233	48	36
Broward	9,801	1,084	1,402	907	824	422	379	373	497	106	82
Calhoun	85	14	--	--	--	--	--	--	--	--	--
Charlotte	2,047	314	214	157	139	172	96	79	109	20	--
Citrus	1,669	297	166	156	83	95	73	74	96	18	--
Clay	1,303	178	200	76	91	89	59	63	56	19	--
Collier	2,921	289	354	302	178	288	137	86	183	41	14
Columbia	479	75	58	58	48	16	22	27	22	--	--
Desoto	190	30	21	19	30	--	--	13	--	--	--
Dixie	122	27	14	--	13	--	--	13	--	--	--
Duval	5,350	739	838	478	446	237	218	223	247	73	58
Escambia	1,822	312	242	191	137	90	85	83	77	18	13
Flagler	1,050	129	120	93	73	105	41	36	55	--	--
Franklin	101	14	--	16	--	--	--	--	--	--	--
Gadsden	230	32	22	26	17	--	--	--	--	--	--
Gilchrist	127	32	13	10	10	--	--	--	--	--	--
Glades	63	--	--	--	--	13	--	--	--	--	--
Gulf	89	17	--	14	--	--	--	--	--	--	--
Hamilton	95	11	18	12	11	--	--	--	--	--	--
Hardee	139	18	14	10	12	--	--	--	--	--	--
Hendry	240	33	23	18	16	12	--	12	11	--	--
Hernando	1,697	268	194	156	130	83	72	66	76	17	10
Highlands	1,006	140	163	92	69	57	41	47	48	10	11
Hillsborough	8,023	992	1,186	786	644	413	278	321	385	102	70
Holmes	82	19	--	--	11	--	--	--	--	--	--
Indian River	1,558	239	167	183	109	152	87	57	63	11	--
Jackson	184	45	15	--	18	--	--	--	--	--	--
Jefferson	75	--	--	--	--	--	--	--	--	--	--
Lafayette	30	--	11	--	--	--	--	--	--	--	--

Section 6: Cancer

Number of new cancer diagnoses by county in Florida in 2018 continued

Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Lake	3,265	424	352	334	227	143	154	110	197	34	10
Lee	5,376	710	693	469	385	393	202	216	308	48	32
Leon	1,128	145	178	118	88	44	19	35	45	19	--
Levy	253	55	30	17	16	--	15	14	14	--	--
Liberty	35	--	--	--	--	--	--	--	--	--	--
Madison	72	12	10	14	--	--	--	--	--	--	--
Manatee	2,900	342	365	276	196	184	135	94	185	54	17
Marion	3,164	469	380	307	220	158	162	103	164	33	18
Martin	1,330	199	152	138	77	162	73	35	75	11	--
Miami-Dade	13,845	1,457	2,004	1,736	1,220	253	485	531	673	184	145
Monroe	410	62	46	23	42	45	21	24	12	--	--
Nassau	686	109	96	81	43	51	26	37	28	--	--
Okaloosa	1,018	163	127	76	73	66	56	38	47	17	--
Okeechobee	256	50	26	17	29	--	11	16	--	--	--
Orange	5,906	652	868	628	535	173	208	192	259	71	54
Osceola	2,103	205	281	225	184	62	82	66	72	21	21
Palm Beach	8,943	1,155	1,339	813	675	527	488	319	438	122	63
Pasco	3,801	572	491	355	273	211	179	156	183	38	24
Pinellas	7,569	1,044	1,062	725	535	454	335	313	362	94	48
Polk	4,326	603	550	549	358	258	171	161	187	42	50
Putnam	517	101	50	58	46	31	27	14	21	--	--
Santa Rosa	978	164	117	117	79	68	34	45	39	13	--
Sarasota	4,164	531	558	355	253	257	228	131	253	58	17
Seminole	2,322	248	367	209	176	110	102	79	127	26	24
St. Johns	1,522	178	241	170	94	125	82	66	69	20	--
St. Lucie	2,022	303	264	190	150	106	102	68	74	37	19
Sumter	1,488	251	227	170	88	56	86	49	60	16	--
Suwannee	283	53	30	37	27	--	17	17	11	--	--
Taylor	116	21	21	--	14	--	--	--	--	--	--
Union	208	40	11	40	23	--	--	13	--	--	--
Volusia	4,011	703	542	301	325	209	132	168	185	35	24
Wakulla	184	21	31	21	13	10	--	13	--	--	--
Walton	357	67	54	34	33	16	17	11	16	--	--
Washington	89	14	--	--	--	--	--	--	--	--	--

Section 6: Cancer

Number of new cancer deaths by county in Florida in 2018

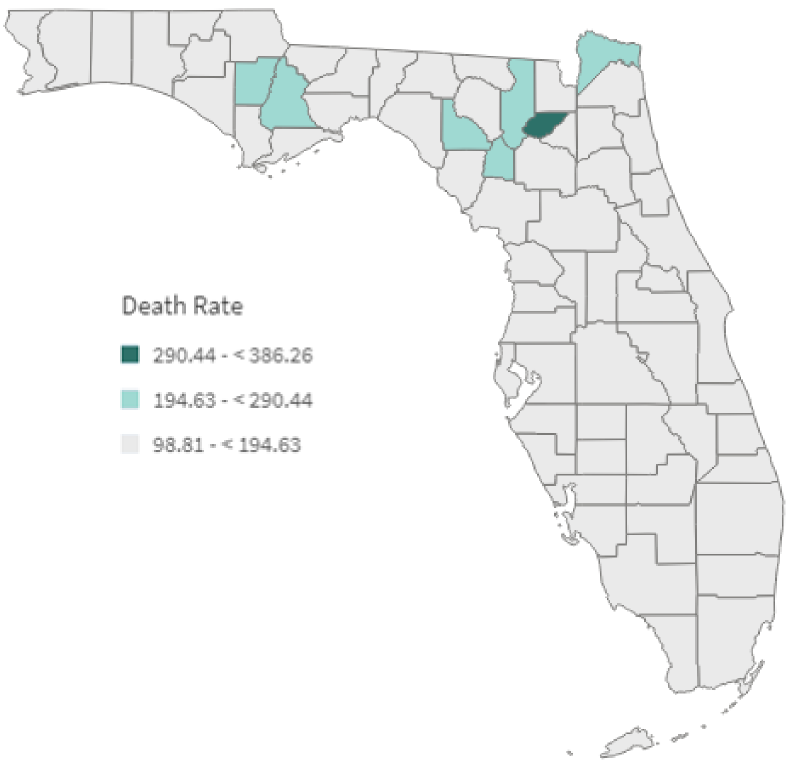
Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Florida	44,649	11,054	2,904	2,411	3,901	632	1,374	1,133	1,520	1,007	343
Alachua	446	104	24	27	27	--	--	19	25	--	--
Baker	54	18	--	--	--	--	--	--	--	--	--
Bay	381	99	22	20	33	--	--	--	10	--	--
Bradford	67	22	--	--	--	--	--	--	--	--	--
Brevard	1,537	414	110	90	112	36	37	42	55	27	--
Broward	3,472	732	261	187	369	30	116	67	114	94	34
Calhoun	43	17	--	--	--	--	--	--	--	--	--
Charlotte	620	157	41	41	52	--	19	19	29	--	--
Citrus	558	178	33	22	48	11	14	15	16	12	--
Clay	428	123	18	12	27	10	22	11	11	--	--
Collier	778	160	49	41	71	16	21	--	33	21	--
Columbia	205	67	11	10	30	--	--	--	--	--	--
Desoto	107	37	--	--	--	--	--	--	--	--	--
Dixie	53	21	--	--	--	--	--	--	--	--	--
Duval	1,838	472	120	93	164	23	52	44	68	46	21
Escambia	662	206	31	32	48	--	22	15	20	18	--
Flagler	302	73	12	13	23	--	15	--	--	--	--
Franklin	31	11	--	--	--	--	--	--	--	--	--
Gadsden	114	25	--	--	--	--	--	--	--	--	--
Gilchrist	53	15	--	--	--	--	--	--	--	--	--
Glades	35	--	--	--	--	--	--	--	--	--	--
Gulf	35	--	--	--	--	--	--	--	--	--	--
Hamilton	35	--	--	--	--	--	--	--	--	--	--
Hardee	46	14	--	--	--	--	--	--	--	--	--
Hendry	72	19	--	--	--	--	--	--	--	--	--
Hernando	576	175	32	29	42	--	18	10	21	14	--
Highlands	350	99	23	17	26	--	13	12	11	--	--
Hillsborough	2,410	653	160	100	221	24	67	60	70	52	28
Holmes	47	19	--	--	--	--	--	--	--	--	--
Indian River	496	116	36	31	38	--	20	13	25	10	--
Jackson	123	35	--	13	12	--	--	--	--	--	--
Jefferson	31	11	--	--	--	--	--	--	--	--	--
Lafayette	21	--	--	--	--	--	--	--	--	--	--
Lake	979	264	55	52	91	16	40	28	27	28	--

Number of new cancer deaths by county in Florida in 2018 continued

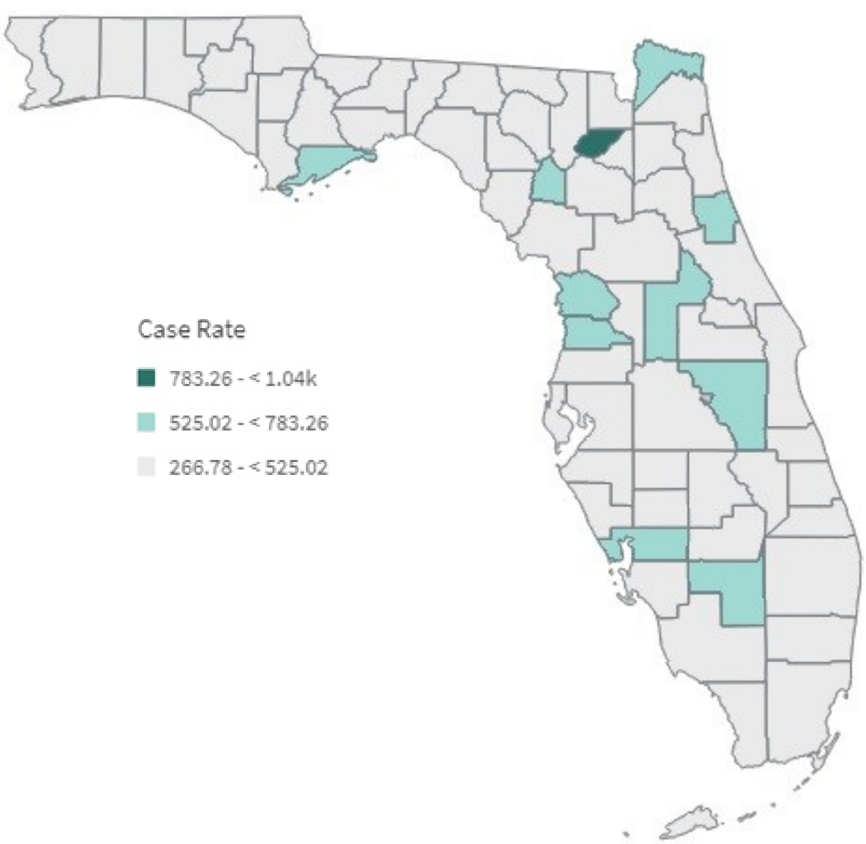
Characteristic	All cancers	Lung and bronchus	Female breast	Prostate	Colorectal	Melanoma	Bladder	Head and neck	Non-Hodgkin's lymphoma	Ovary	Cervix
Lee	1,751	448	120	90	139	23	67	43	52	28	16
Leon	382	81	30	36	31	--	10	11	15	13	--
Levy	121	39	--	--	12	--	--	--	--	--	--
Liberty	23	--	--	--	--	--	--	--	--	--	--
Madison	40	12	--	--	--	--	--	--	--	--	--
Manatee	931	220	61	43	82	15	43	27	27	23	--
Marion	1,081	271	68	50	83	18	28	26	27	22	--
Martin	461	104	23	30	45	11	12	24	12	12	--
Miami-Dade	4,390	775	322	287	474	35	131	111	163	97	45
Monroe	145	42	--	--	14	--	--	--	--	--	--
Nassau	255	65	18	10	23	--	--	--	--	--	--
Okaloosa	377	109	18	21	24	--	17	--	13	--	--
Okeechobee	93	28	--	--	--	--	--	--	--	--	--
Orange	1,959	410	145	123	171	27	49	49	58	52	14
Osceola	545	110	41	33	50	--	18	14	17	15	--
Palm Beach	3,143	727	207	178	264	49	104	63	130	87	24
Pasco	1,392	397	90	60	111	24	47	40	42	36	--
Pinellas	2,569	696	177	127	196	43	64	81	87	52	14
Polk	1,515	410	104	79	131	26	34	34	52	32	13
Putnam	221	70	--	10	21	--	14	--	--	--	--
Santa Rosa	302	90	21	21	16	--	11	--	--	--	--
Sarasota	1,328	319	74	84	108	22	45	34	50	24	--
Seminole	815	203	55	34	76	19	22	25	35	17	--
St. Johns	508	126	31	25	42	--	16	14	20	16	--
St. Lucie	757	212	33	45	58	17	14	22	25	17	--
Sumter	503	142	27	26	33	12	13	11	17	17	--
Suwannee	112	33	--	--	11	--	--	--	10	--	--
Taylor	52	10	--	--	--	--	--	--	--	--	--
Union	73	30	--	--	--	--	--	--	--	--	--
Volusia	1,505	392	91	79	126	27	59	31	54	30	16
Wakulla	54	14	--	--	--	--	--	--	--	--	--
Walton	181	55	20	--	19	--	--	--	--	--	--
Washington	60	18	--	--	--	--	--	--	--	--	--

Section 6: Cancer

Cancer death rates by county in Florida in 2018



Cancer case rates by county in Florida in 2018



Section 7

Congenital and Perinatal Conditions

Section 7: Congenital and Perinatal Conditions

Birth Defects

Every 4½ minutes, a baby is born with a birth defect in the U.S. Major birth defects are conditions present at birth that cause structural changes in one or more parts of the body. They can have a serious adverse effect on health, development or functional ability. Birth defects are one of the leading causes of infant mortality, causing one in five infant deaths. In Florida, there are approximately 220,000 live births annually and 1 out of every 28 babies is born with a major birth defect. Despite their substantial impact, only 35% of birth defects have a known cause and research suggests a complex interaction between genetic and environmental factors. In 1997, the Florida Legislature provided funding to the Florida Department of Health (FDOH) to operate and manage a statewide population-based birth defects registry, the Florida Birth Defects Registry (FBDR). Birth defects are reportable to the FBDR.

FBDR surveillance data are used for:

- Tracking and detecting trends in birth defects.
- Identifying when and where birth defects can possibly be prevented.
- Providing the basis for studies on the genetic and environmental causes of birth defects.
- Planning and evaluating the impact of efforts to prevent birth defects.
- Helping Florida's families whose infants and children need appropriate medical, educational and social services.

The FBDR collects information on more than 100,000 infants born with serious birth defects. Data are collected on live infants born to mothers residing in Florida who are diagnosed with one or more structural, genetic or other specified birth outcomes in the first year of life. The FBDR links secondary source datasets, including the Florida Division of Public Health Statistics and Performance Management birth records and the Agency for Health Care Administration hospital inpatient and ambulatory discharge databases. There is an inherent delay in FBDR data since they include all outcomes through the first year of life. At the time this report was published, the most recent FBDR data available were from 2018.

In 2018, Down syndrome was the most commonly identified birth defect among those listed. The number and rate per 10,000 live births of each type of birth defect reported in 2017 and 2018 were similar to the number reported in 2016.

For more information, please visit FloridaHealth.gov/diseases-and-conditions/birth-defects/index.html.

	2010–2014 average		2011–2015 average		2012–2016 average		2013–2017 average		2014–2018 average	
Central nervous system defects	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Spina bifida without anencephalus	59	2.8	56	2.6	54	2.5	54	2.4	54	2.4
Anencephalus	17	0.8	18	0.9	19	0.9	20	0.9	19	0.9
Cardiovascular defects										
Tetralogy of Fallot	105	4.9	104	4.8	105	4.8	106	4.8	112	5.1
Atrioventricular septal defect	88	4.1	86	4.0	80	3.7	78	3.5	83	3.7
Hypoplastic left heart syndrome	69	3.2	68	3.2	74	3.4	77	3.5	77	3.5
Transposition of the great arteries	51	2.4	53	2.5	54	2.5	55	2.5	58	2.6
Orofacial defects										
Cleft palate without cleft lip	110	5.1	107	5.0	112	5.1	110	5.0	108	4.9
Cleft palate with cleft lip	106	5.0	110	5.1	113	5.2	109	4.9	112	5.1
Musculoskeletal defects										
Gastroschisis	100	4.7	96	4.4	92	4.2	86	3.9	83	3.8
All limb deficiencies (reduction deformities)	81	3.8	76	3.5	76	3.5	76	3.5	76	3.5
Chromosomal defects										
Trisomy 21 (Down syndrome)	289	13.5	283	13.1	277	12.7	283	12.9	281	12.7

Section 7: Congenital and Perinatal Conditions

Neonatal Abstinence Syndrome

Neonatal abstinence syndrome (NAS) occurs in a newborn who was exposed to addictive opiate drugs while in their mother's womb. The most common opiate drugs that are associated with NAS are heroin, codeine, oxycodone (Oxycontin), methadone and buprenorphine. Symptoms of withdrawal depend on the drug involved.

Symptoms can begin within one to three days after birth, or may take up to 10 days to appear and may include:

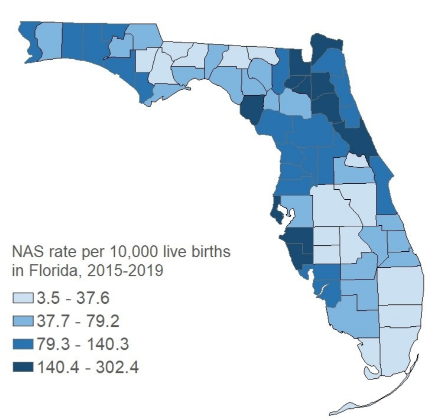
- Blotchy skin coloring (mottling)
- Diarrhea
- Excessive or high-pitched crying
- Excessive sucking
- Fever
- Hyperactive reflexes
- Increased muscle tone
- Irritability
- Jitteriness
- Poor feeding
- Rapid breathing
- Seizures
- Sleep problems
- Slow weight gain
- Stuffy nose
- Sneezing
- Sweating
- Trembling (tremors)
- Vomiting

NAS became a reportable condition in Florida in June 2014. FBDR conducts enhanced surveillance for NAS. Surveillance incorporates multi-source passive case finding efforts and trained abstractor review of maternal and infant hospital medical records to obtain all relevant clinical information to classify potential NAS cases, determine specific agents the mother and infant were exposed to and develop a more complete understanding of the public health issue. Currently, there is substantial variation in the diagnosis and reporting of NAS across institutions, providers and surveillance systems. There is an inherent delay in FBDR data since the case definition includes all outcomes through the first year of life. At the time this report was published, the most recent NAS data available were from 2019.

Each year, the most cases are identified in males, whites and non-Hispanics.

	2015	2016	2017	2018	2019	3-year trend
Gender						
Female	715	696	687	640	596	
Male	795	784	816	735	642	
Race						
White	1,327	1,289	1,252	1,115	1,006	
Black	86	103	89	104	86	
Other	97	88	162	156	146	
Ethnicity						
Hispanic	67	47	97	93	66	
Non-Hispanic	1,443	1,433	1,406	1,282	1,172	
Total	**1,510**	**1,480**	**1,503**	**1,375**	**1,238**	

NAS rates per 10,000 live births in Florida for 2015–2019 were highest in low-population counties, particularly in northeast Florida.



Section 7: Congenital and Perinatal Conditions

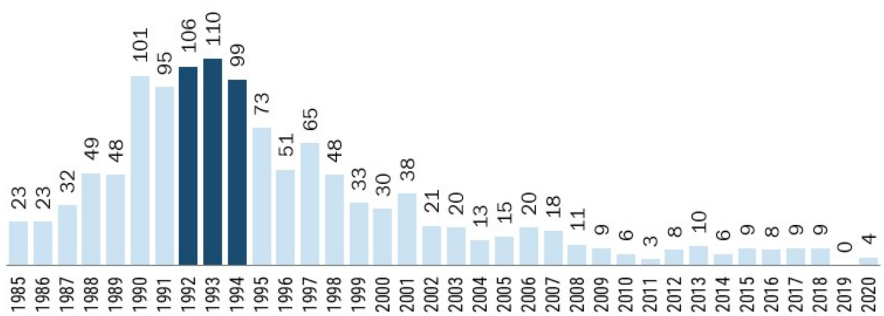
Perinatally Acquired HIV

Perinatal HIV transmission, also known as vertical HIV transmission, can occur at any point during pregnancy, labor, delivery or ingestion of breast milk. The Centers for Disease Control and Prevention (CDC) recommends that all women who are pregnant or planning to become pregnant be tested for HIV before pregnancy and as early as possible during every pregnancy. Per Florida Administrative Code Rule 64D-3.042, all pregnant women must be tested for HIV and other sexually transmitted infections at their initial prenatal care visit, at 28–32 weeks and at labor and delivery. This testing requirement allows Florida's providers to address any potential missed opportunities for HIV prevention during the prenatal period. If a pregnant mother living with HIV is aware of her HIV status, takes HIV antiretroviral medications as prescribed throughout pregnancy, labor and delivery and gives antiretroviral medications to her infant for 4–6 weeks after delivery, there is less than a 1% chance of perinatal HIV transmission.

Florida's strategic goal aims to reduce the annual number of infants born in Florida with perinatally acquired HIV to less than five. Prevention of perinatally acquired HIV in Florida is focused on:

- Prevention services for women of childbearing age (15–44 years old).
- Ensuring women of childbearing age living with HIV are virally suppressed.
- Ensuring medical and social services for pregnant women living with HIV and their infants.
- Education and technical assistance for providers who treat pregnant women.

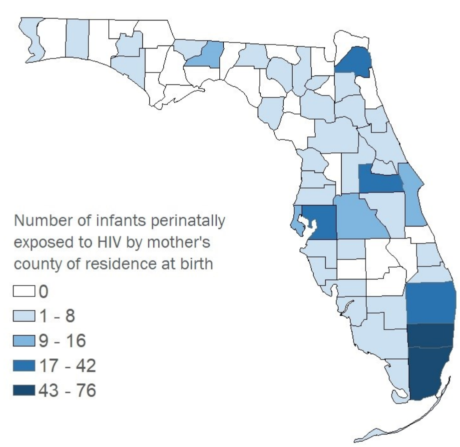
Perinatal HIV transmission has decreased substantially in Florida over the past few decades. This decrease is largely thanks to the initiation of antiretroviral therapy (ART) between 1992 and 1994. When pregnant women living with HIV are using ART, they can achieve viral suppression (<200 copies/mL), which greatly reduces HIV transmission to infants.



The most common missed opportunity for HIV prevention among the 61 infants with perinatally acquired HIV from 2011–2020 was inadequate prenatal care; 91% of mothers whose infants acquired HIV did not receive adequate prenatal care. Inadequate prenatal care is defined as prenatal care occurring after the fourth month of pregnancy and less than five prenatal visits during pregnancy.

In 2020, 439 Infants were perinatally exposed to HIV throughout the state (including the four infants who acquired HIV). South Florida, particularly Miami-Dade and Broward counties, has more perinatal exposures (Broward n=76, Miami-Dade n=66), likely due to the high burden of HIV in this area.

Opportunity	2011–2020
Breast fed	3%
Mother's HIV status unknown until after birth	12%
No neonatal antiretroviral therapy	25%
No antiretroviral medications during labor and delivery	22%
No prenatal antiretroviral medications	37%
Inadequate prenatal care	91%



For additional information on HIV/AIDS, see Section 1: Data Summaries for Common Reportable Diseases/Conditions. For more information about perinatal prevention services, see FloridaHealth.gov/diseases-and-conditions/aids/prevention/topwa1.html.

Section 7: Congenital and Perinatal Conditions

Congenital Syphilis

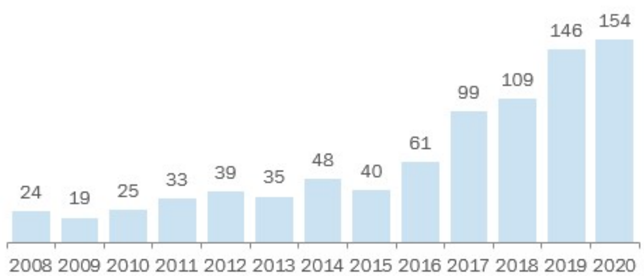
Congenital syphilis can occur when a fetus is exposed during pregnancy. The exposure can be due to a new or previous untreated infection in a pregnant woman. While previous untreated infections can result in congenital syphilis, infant outcomes are typically worse if women are newly infected during pregnancy, as the bacterial count is higher. An infant born with congenital syphilis can develop an array of symptoms, including failure to thrive, skeletal and facial deformities, watery fluid from the nose, rash, blindness, joint swelling and death. Per Florida Administrative Code Rule 64D-3.042 and section 384.31, Florida Statutes all pregnant women must be tested for HIV and other sexually transmitted infections, including syphilis, at their initial prenatal care visit, at 28–32 weeks gestation and at delivery if not tested at 28–32 weeks.

Congenital syphilis prevention in Florida is focused on:

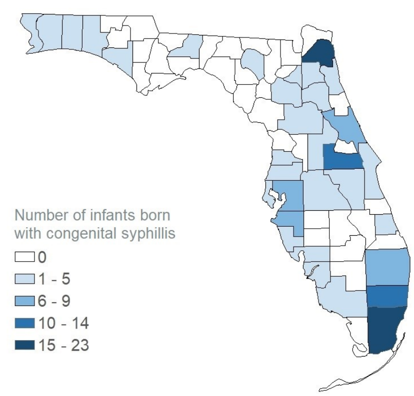
- Ensuring pregnant women have access to prenatal care and sexually transmitted disease prevention services.
- Increased testing during the first and last trimesters and at delivery for pregnant women without prenatal testing or who had reactive tests during pregnancy.
- Educating and training providers on the importance of testing and the recommended treatment for pregnant women.
- Partnering with local organizations, e.g. Healthy Start, to collaborate and work with patients and providers to ensure appropriate follow-up for testing and treatment.

To prevent congenital syphilis, a pregnant woman who has an infection must begin adequate treatment more than 30 days prior to delivery. In 2020, 39% of the 154 infants in Florida with congenital syphilis were born to women who were not tested for syphilis 30 days prior to delivery and therefore could not begin timely treatment.

Over the past 10 years, congenital syphilis cases have increased by 367% in Florida. In 2020, 478 pregnant women were diagnosed with syphilis. A total of 154 infants with delivery dates in 2020 were diagnosed with congenital syphilis, including 15 stillbirths.



In 2020, congenital syphilis cases occurred primarily in central and south Florida. The highest-burdened counties were Miami-Dade (23), Duval (20), Broward (14) and Orange (13).



Most women (60.1%) who gave birth to infants with congenital syphilis were <30 years old, which is approximately 10% more than the statewide age total for all women who gave birth (50.2% <30 years old).

Compared to the race distribution of all women who gave birth in Florida, **black women were disproportionately more likely to have an infant with congenital syphilis than white women** in 2020.

	Mothers of congenital syphilis cases	
Race	2019	2020
White	60	57
Black	72	83
Other/Unknown	14	14
Total	146	154

	All mothers in Florida	
Race	2019	2020
White	155,825	147,715
Black	48,155	45,917
Other/Unknown	16030	16,013
Total	220,010	209,645

Section 7: Congenital and Perinatal Conditions

Perinatal Hepatitis B

Hepatitis B virus (HBV) infection during pregnancy poses a serious risk to the infant at birth. Without post-exposure prophylaxis (PEP), approximately 40% of infants born to mothers with HBV in the U.S. will develop chronic HBV infection, approximately one-fourth of whom will eventually die from chronic liver disease. Perinatal HBV transmission can be prevented by identifying pregnant women with HBV and providing hepatitis B immune globulin and hepatitis B vaccine to their infants within 12 hours of birth. Preventing perinatal HBV transmission is an integral part of the national strategy to eliminate hepatitis B in the U.S.

National guidelines call for:

- Universal screening of pregnant women for HBV surface antigen during each pregnancy.
- Case management of mothers and their infants with HBV.
- Provision of immunoprophylaxis for infants born to mothers with HBV, including hepatitis B vaccine and hepatitis B immune globulin.
- Routine hepatitis B vaccination for all infants, with the first dose administered at birth.

The 2017 National Immunization Survey estimates that HBV vaccination coverage for birth dose administered from birth through 3 days of age was 73.6% in the U.S. and 66% in Florida. Birthing hospitals have a standing order to administer the birth dose of hepatitis B vaccine; however, pediatricians sometimes choose to wait to give the first dose in their private offices. With lower-than-expected vaccination rates, Florida is currently working with the Florida Chapter of the American Academy of Pediatrics to provide education reminding health care providers that the recommendation is now to provide the vaccine birth dose within 24 hours to help decrease HBV infections in newborns. Despite low compliance with administering the birth dose of HBV vaccine, fewer than 10 perinatal hepatitis B cases have been reported over the past 10 years, with one case reported in 2019.

Please see Hepatitis B, Pregnant Women in Section 1: Data Summaries for Common Reportable Diseases/Conditions for additional information on HBV surveillance in pregnant women.

Centers for Disease Control and Prevention. 2017 Childhood Hepatitis B (HepB) Vaccination Coverage Report. www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/data-reports/hepb/reports/2017.html. Accessed November 18, 2019.

Hill HA, Elam-Evans LD, Yankey D, Singleton JA, Kang Y. 2017. Vaccination coverage among children aged 19–35 months — United States, 2016. Morbidity and Mortality Weekly Report. 2017; 66(43):1171–1177. doi: 10.15585/mmwr.mm6539a4. Available at www.cdc.gov/mmwr/volumes/66/wr/mm6643a3.htm.

Perinatal Hepatitis C

Hepatitis C virus (HCV) infection is a leading cause of liver-related morbidity and mortality. Transmission of HCV is primarily via parenteral blood exposure and HCV can be transmitted vertically from mother to child. Compared to vertical transmission for infants born to mothers with HBV, the rate of vertical transmission for HCV is much lower. Vertical transmission occurs in approximately 6% of infants born to mothers with HCV, although that rate can double for women who are also living with HIV or who have high HCV viral loads. According to the CDC, the rate of acute hepatitis C increased by 43% among women across the U.S. from 2013 to 2017 and women of childbearing age testing positive for HCV increased by 22% from 2011 to 2014. The CDC recommends that health care providers assess all pregnant women for risk factors associated with hepatitis C and test those who may be at risk. The CDC also recommends testing for all infants born to mothers with HCV. Having a pediatric specialist can assist in monitoring disease progression in babies and aid in intervention when needed. These children should be vaccinated against hepatitis A and B, and specialists should monitor any medication that could potentially harm the already fragile liver. More research is needed to better understand if treatment for hepatitis C is safe for pregnant women and children.

Section 7: Congenital and Perinatal Conditions

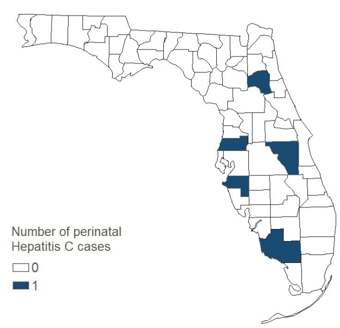
Florida enhanced its efforts to identify and perform outreach to those mothers and infants at highest risk for HCV transmission. Infants born to mothers with HCV should be tested for HCV at the first well-baby visit, again at 2 months and followed up to identify any adverse health outcomes.

Changes in treatment options for HCV have led to an increased focus on identifying HCV infections. Given the large number of chronic hepatitis C cases reported and limited county health department resources, there have been concerns regarding data completeness and case ascertainment in the past. Earlier data are less reliable. Over the past few years, improvements in electronic laboratory reporting and increased focus on surveillance are believed to have improved case ascertainment. To improve case ascertainment of perinatal infections, Florida developed and implemented a surveillance case definition for perinatal hepatitis C in 2016. Previously, these cases were captured within the chronic hepatitis C case definition. In 2018, Florida added a suspect case classification for perinatal hepatitis C to include cases that did not have any confirmatory testing reported.

The number of people with acute or chronic hepatitis C decreased by 16% from 2011 to 2020. The number of women of childbearing age with acute or chronic hepatitis C increased 5% in that same period. Despite this increase among women, the number of children <3 years old identified with acute, chronic or perinatal hepatitis C has not increased over the past 10 years.

The number of perinatal hepatitis C cases decreased from 40 in 2018 to 22 in 2019. In 2019, more cases were in males, whites and non-Hispanics. Race was unknown in 14% of cases. Most cases were confirmed. In 2020, five perinatal hepatitis C cases were reported. More cases were in females, whites and non-Hispanics. Race was unknown in 40% of cases. The COVID-19 pandemic has had an impact on health care-seeking behavior and may have led to underreporting of cases in 2020. Note that perinatal hepatitis C has only been reportable in Florida since 2016. Acute and chronic hepatitis C cases can still be reported in children <3 years old if the infections are determined not to be perinatal (not included in this table or map).

Perinatal hepatitis C cases occurred in counties throughout the state in 2019. Broward (3), Manatee (3), Palm Beach (3) and Volusia (3) counties had the most cases in 2019. In 2020, cases were reported in Collier (1), Manatee (1), Osceola (1), Pasco (1) and Putnam (1) counties.



Summary	Number
Cases in 2019	22
Cases in 2020	5

Gender	2019	2020
Female	10	3
Male	12	2
Unknown	0	0

Race	2019	2020
White	16	3
Black	2	0
Asian	1	0
Unknown race	3	2

Case Classification	2019	2020
Confirmed	20	5
Probable	2	0

Ethnicity	2019	2020
Non-Hispanic	17	2
Hispanic	2	0
Unknown ethnicity	3	0

Centers for Disease Control and Prevention. Increases in Hepatitis C Threaten Young Women and Babies. www.cdc.gov/nchhstp/newsroom/2016/hcv-perinatal-press-release.html. Accessed November 15, 2018.

Centers for Disease Control and Prevention. Surveillance for Viral Hepatitis – United States, 2017.
Available at www.cdc.gov/hepatitis/statistics/2017surveillance/index.htm. Accessed September 10, 2019.

Koneru A, Nelson N, Hariri S, Canary L, Sanders KJ, Maxwell JF, et al. Increased hepatitis C virus (HCV) detection in women of childbearing age and potential risk for vertical transmission — United States and Kentucky, 2011–2014. Morbidity and Mortality Weekly Report. 2016; 65(28):705-710. doi: 10.15585/mmwr.mm652.

Section 8

Publications and Reports

Section 8: Publications and Reports

Publications With Florida Department of Health Authors

Below is the list of articles with Florida Department of Health authors that were published in peer-reviewed journals in 2019–2020. Note that Florida Department of Health authors appear in bold font.

Algarin, A. B, Sheehan, D.M., Varas-Diaz, N., Fennie, K.P., **Zhou, Z., Spencer, E.C., Cook, R.L.**, Morano, J.P., & Ibanez, G.E. (2020) Health Care-Specific Enacted HIV-Related Stigma's Association with Antiretroviral Therapy Adherence and Viral Suppression Among People Living with HIV in Florida. *AIDS Patient Care and STDs* Volume 34, Number 7, pp 316-326. https://doi.org/10.1089/apc.2020.0031

Algarin, A. B, Sheehan, D.M., Varas-Diaz, N., Fennie, K., **Zhou, Z., Spencer, E.C.**, Cook, C. L., **Cook, R.L.**, & Ibanez, G.E. (2020) Enacted HIV-Related Stigma's Association with Anxiety & Depression Among People Living with HIV (PLWH) in Florida. *AIDS Behavior* 25, 93–103. https://doi.org/10.1007/s10461-020-02948-5

Atrubin, D., Wiese, M., & **Bohinc, B.** (2020). An Outbreak of COVID-19 Associated with a Recreational Hockey Game — Florida, June 2020. *MMWR*, 69 (41), 1492–1493. http://dx.doi.org/10.15585/mmwr.mm6941a4

Atrubin, D., & Hamilton, J. J. (2019). Increased Seizure Activity in Florida Associated with Hurricane Irma, September 2017. *Online Journal of Public Health Informatics*, Vol 11, No. 1. https://doi.org/10.5210/ojphi.v11i1.9796

Baker, K. M., Laureano-Rosario, A. E., & Edwards, S. (2020). Notes from the field: Travel-associated measles in a person born before 1957 – Pinellas County, Florida, 2019. *MMWR*, 69(38), 1378–1379. http://dx.doi.org/10.15585/mmwr.mm6938a6

Bixler, D., Miller, A. D., Mattison, C. P., Taylor, B., Komatsu, K., Peterson Pompa, X., Moon, S., Karmarkar, E., Liu, C. Y., Openshaw, J. J., Plotzker, R. E., Rosen, H. E., Alden, N., Kawasaki, B., Siniscalchi, A., **Leapley, A.**, Drenzek, C., Tobin-D'Angelo, M., Kauerauf, J., Reid, H., ... Pediatric Mortality Investigation Team. (2020). SARS-CoV-2-Associated Deaths Among Persons Aged <21 Years - United States, February 12-July 31, 2020. *MMWR*, 69 (37), 1324–1329. https://doi.org/10.15585/mmwr.mm6937e4

Bryant, A. S., Riley, L. E., Neale, D., **Hill, W.**, Jones, T.B., Jeffers, N.K., Loftman, P.O., Clare, C.A., & Gudeman, J. (2020) Communicating with African-American Women Who Have Had a Preterm Birth About Risks for Future Preterm Births. *Journal of Racial and Ethnic Health Disparities* Volume 7, pp 671–677. https://doi.org/10.1007/s40615-020-00697-8

Caban-Martinez, A., Santiago, K., **Baniak, M., Jordan, M.**, Menger-Ogle, L. (2019). Musculoskeletal pain is impacted by job tasks in temporary construction workers hired through construction staffing agencies. *Journal of Occupational and Environmental Medicine,* 61(3):p e100-e103. https://doi.org/10.1097/JOM.0000000000001533

Cha, S., Mingjing, X., Finlayson, T., Sionean, C., Teplinskaya, A., Morris, E., Haeger, K., Kanny, D., Wejnert, C., Wortley, P., Todd, J., Melton, D., Flynn, C., German, D., Klevens, M., Doherty, R., **Spencer, E. C.**, **Nixon, W.**, **Forrest, D.**, ... Kuo, I. (2019). HIV infection risk, prevention, and testing behaviors among men who have sex with men, national HIV behavioral surveillance 23 U.S. cities, 2017. *CDC HIV Surveillance Special Report* 22. https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-22.pdf

Chatham-Stephens, K. MD, Roguski, K. MPH, Jang, Y. PhD, Cho, P. MD, Jatlaoui, T.C. MD Kabbani, S. MD, Glidden, E. MPH, Ussery, E.N. PhD, Trivers, K.F. PhD, Evans, M.E. MD, King, B.A. PhD, Rose, D.A. PhD, Jones, C.M. PharmD, DrPH, Baldwin, G. PhD, Delaney, L.J. MS, Briss, P. MD, Ritchey, M.D. DPT, Lung Injury Response Epidemiology/Surveillance Task Force, Lung Injury Response Clinical Task Force. (2019) Characteristics of Hospitalized and Non-hospitalized Patients in a Nationwide Outbreak of E-cigarette, or Vaping, Product Use–Associated Lung Injury- United States, Nov 2019. *MMWR*, 68(46);1076-1080. https://dx.doi.org/10.15585/mmwr.mm6846e1
Acknowledgements for FDOH: **Heather Rubino, **Thomas Troelstrup****

Cogle, C.R., Levin, G., Lee, D.J., Peace, S., Herna, M.C., MacKinnon, J., Gwede, C.K., **Philip, C.,** & **Hylton, T.** (2021) Finding incident cancer cases through outpatient oncology clinic claims data and integration into a state cancer registry. *Cancer Causes Control* 32, 199–202. https://doi.org/10.1007/s10552-020-01368-z

Cope, A. B., Bernstein, K., **Matthias, J.,** Rahman, M., Diesel, J., Pugsley, R., Schillinger, J. A., Chew Ng, R. A., Sachdev, D., Shaw, R., Nguyen, T. Q., Klingler, E. J., Mobley, V. L., Samoff, E., & Peterman, T. A. (2020). Unnamed partners from syphilis partner services interviews, 7 jurisdictions. *Sexually Transmitted Diseases*, 47(12), 819–824. https://doi.org/10.1097/OLQ.0000000000001269

Crowther, V.B., Suther, S.G., Weaver, J.A., Gwede, C.K., Dutton, M., **Cui, D., &** Lopez, I.A. (2020) An Exploratory Study of the Likelihood of Adopting Genetic Counseling and Testing for Lynch Syndrome-related Colorectal Cancer Among Primary Care Physicians in Florida. *Journal of Health Disparities Research and Practice*: Volume 13, Issue 3, Article 6. https://digitalscholarship.unlv.edu/jhdrp/vol13/iss3/6

Dawit, R., Sheehan, D. M., Gbadamosi, S. O., Fennie, K. P., Li, T., **Curatolo, D., Maddox, L. M., Spencer, E. C.** & Trepka, M. J. (2020). Identifying patterns of retention in care and viral suppression using latent class analysis among women living with HIV in Florida 2015-2017. *AIDS Care, Volume 33, Issue 1, pp 131 – 135.* https://doi.org/10.1080/09540121.2020.1771264

Publications with Florida Department of Health authors, continued

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Section 8: Publications and Reports

Additional reports available online

Vaccine-Preventable Disease Surveillance Report

FloridaHealth.gov/VPD

Florida Flu Review

FloridaHealth.gov/FloridaFlu

Respiratory Syncytial Virus Surveillance Activity Report

FloridaHealth.gov/RSV

Mosquito-Borne Disease Surveillance

FloridaHealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.html

Florida Behavioral Risk Factor Surveillance System (BRFSS) Reports

FloridaHealth.gov/statistics-and-data/survey-data/behavioral-risk-factor-surveillance-system/index.html

Florida Youth Tobacco Survey (FYTS) Reports

FloridaHealth.gov/statistics-and-data/survey-data/florida-youth-survey/florida-youth-tobacco-survey/index.html

Florida Youth Risk Behavior Survey (YRBS) Reports

FloridaHealth.gov/statistics-and-data/survey-data/florida-youth-survey/youth-risk-behavior-survey/index.html

Florida Middle School Health Behavior Survey (MSHBS) Reports

FloridaHealth.gov/statistics-and-data/survey-data/florida-youth-survey/middle-school-health-behavior-survey/index.html

Florida Pregnancy Risk Assessment Monitoring System (PRAMS) Reports

FloridaHealth.gov/statistics-and-data/survey-data/pregnancy-risk-assessment-monitoring-system/index.html

Section 9

Appendices

Appendices

Appendix I: Summary Data Tables

Table 1: Number of Common Reportable Diseases/Conditions, Florida, 2011–2020

Reportable disease/condition	10-year trend	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Campylobacteriosis		2,039	1,964	2,027	2,195	3,351	3,262	4,318	4,729	4,525	3,403
Carbon monoxide poisoning		85	69	161	157	227	224	573	168	142	130
Chlamydia (Excluding Neonatal Conjunctivitis)		72,911	77,871	76,050	77,871	80,787	83,127	90,633	94,719	100,002	105,058
Ciguatera fish poisoning		48	30	49	63	56	33	27	69	68	27
Cryptosporidiosis		437	470	409	1,905	856	582	556	586	662	291
Cyclosporiasis		58	25	47	33	32	37	113	76	543	153
Dengue fever		71	124	160	92	79	62	26	87	403	116
Giardiasis, acute		1,255	1,095	1,114	1,165	1,038	1,128	997	1,105	1,088	656
Gonorrhea (Excluding Neonatal Conjunctivitis)		20,878	20,169	19,704	19,554	21,006	20,597	24,186	28,153	31,680	32,747
HIV[2]		4,657	4,476	4,355	4,566	4,690	4,802	4,746	4,740	4,558	3,504
Hansen's Disease (Leprosy)		11	10	10	10	29	18	17	18	26	27
Hepatitis A		110	118	133	107	122	122	276	548	3,392	1,021
Hepatitis B, acute		235	292	375	408	519	709	745	783	760	549
Hepatitis B, chronic		4,279	4,180	4,271	4,914	4,827	4,970	4,929	4,764	4,812	4,061
Hepatitis B, pregnant women[1]		481	413	482	510	476	447	464	395	423	325
Hepatitis C, acute		100	168	221	183	210	301	405	485	806	1,688
Hepatitis C, chronic (including perinatal)		18,363	19,018	19,759	22,413	23,014	29,457	26,411	22,216	19,940	13,642
Lead Poisoning Cases in Children <6 Years Old[1,2]		179	151	172	153	146	166	827	713	390	334
Lead Poisoning Cases in People >=6 Years Old[1,2]		556	696	435	514	572	501	1,312	1,293	858	712
Legionellosis		185	213	250	280	306	328	435	496	448	428
Listeriosis		38	33	41	49	42	43	54	47	50	38
Lyme disease		115	118	138	156	166	216	210	169	162	121
Meningitis, bacterial or mycotic		192	191	153	132	122	112	110	113	96	81
Mumps		11	5	1	1	10	16	74	55	134	20
Pertussis		312	575	732	719	339	334	358	326	391	216
Rabies, animal		120	102	103	94	83	60	79	110	130	82
Rabies, possible exposure		2,410	2,371	2,721	2,995	3,364	3,302	3,478	4,083	4,398	3,458
Salmonellosis		5,912	6,517	6,126	6,014	5,915	5,608	6,553	7,224	7,099	6,738
Shiga toxin-producing *E. coli* (STEC) infection		103	93	121	117	135	99	187	808	788	454
Shigellosis		2,635	1,702	1,018	2,396	1,737	753	1,308	1,510	1,420	549
Streptococcus pneumoniae Invasive Disease, Drug-Resistant		645	457	537	391	167	207	251	201	285	22
Syphilis (Excluding Congenital)		4,110	4,472	5,015	5,973	7,118	8,273	8,855	10,612	12,050	12,181
Syphilis, Congenital[1]		19	25	33	39	35	48	38	60	93	108
Tuberculosis		751	675	646	590	601	639	549	591	558	412
Varicella (chickenpox)		861	815	659	570	740	733	656	853	983	348
Vibriosis (excluding cholera)		155	147	191	166	196	187	274	242	258	209
Vibriosis (Vibrio vulnificus)		36	26	41	32	45	48	51	42	27	36
West Nile virus disease		23	74	7	17	13	8	6	39	4	51

NR Not reportable.

1 For *Haemophilus influenzae*, the rate is per 100,000 children <5 years old. For hepatitis B surface antigen in pregnant women, the rate is per 100,000 women aged 15–44 years old. For lead poisoning in children <6 years old, the rate is per 100,000 children <6 years old. For lead poisoning in people ≥6 years old, the rate is per 100,000 people ≥6 years old. For congenital syphilis, the rate is per 100,000 live births and fetal deaths.

2 The number of cases reported in past years should not change for most reportable diseases. Different reconciliation processes are in place for HIV. As a result, case numbers for prior years in the above tables may vary from previous reports. In 2017, lead poisoning cases were reviewed and re-evaluated, resulting in small changes in the number of cases reported in previous reports.

3 Acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

Table 2: Rate Per 100,000 Population of Common Reportable Diseases/Conditions, Florida, 2011–2020

Reportable disease/condition	10-year trend	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Campylobacteriosis;		10.8	10.3	10.5	11.2	16.8	16.1	21.0	22.6	21.3	15.7
Carbon monoxide poisoning;		0.4	0.4	0.8	0.8	1.1	1.1	2.8	0.8	0.7	0.6
Chlamydia (Excluding Neonatal Conjunctivitis);		384.9	390.9	393.7	397.7	406.0	410.9	440.9	452.0	470.2	485.5
Ciguatera fish poisoning;		0.3	0.2	0.3	0.3	0.3	0.2	0.1	0.3	0.3	0.1
Cryptosporidiosis;		2.3	2.5	2.1	9.7	4.3	2.9	2.7	2.8	3.1	1.3
Cyclosporiasis;		0.3	0.1	0.2	0.2	0.2	0.2	0.5	0.4	2.6	0.7
Dengue fever;		1.5	2.7	3.4	2.0	1.7	1.3	0.5	1.8	8.3	2.4
Giardiasis, acute;		6.6	5.7	5.8	5.9	5.2	5.6	4.9	5.3	5.1	3.0
Gonorrhea (Excluding Neonatal Conjunctivitis);		110.2	105.5	102.0	99.9	105.6	101.8	117.7	134.3	149.0	151.3
HIV[2];		24.6	23.4	22.5	23.3	23.6	23.7	23.1	22.6	21.4	16.2
Hansen's Disease (Leprosy);		--	--	--	--	0.1	--	--	--	0.1	0.1
Hepatitis A;		0.6	0.6	0.7	0.5	0.6	0.6	1.3	2.6	15.9	4.7
Hepatitis B, acute;		1.2	1.5	1.9	2.1	2.6	3.5	3.6	3.7	3.6	2.5
Hepatitis B, chronic;		22.6	21.9	22.1	25.1	24.3	24.6	24.0	22.7	22.6	18.8
Hepatitis B, pregnant women;1		13.4	11.5	13.3	14.0	12.9	12.0	12.3	10.3	10.9	8.3
Hepatitis C, acute;		0.5	0.9	1.1	0.9	1.1	1.5	2.0	2.3	3.8	7.8
Hepatitis C, chronic (including perinatal);		96.9	99.5	102.3	114.5	115.7	145.6	128.5	106.0	93.8	63.0
Lead Poisoning Cases in Children <6 Years Old;1,2		13.8	11.7	13.3	11.8	11.1	12.4	61.2	52.1	28.4	24.1
Lead Poisoning Cases in People >=6 Years Old;1,2		3.2	3.9	2.4	2.8	3.1	2.7	6.8	6.6	4.3	3.5
Legionellosis;		1.0	1.1	1.3	1.4	1.5	1.6	2.1	2.4	2.1	2.0
Listeriosis;		0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2
Lyme disease;		0.6	0.6	0.7	0.8	0.8	1.1	1.0	0.8	0.8	0.6
Meningitis, bacterial or mycotic;		1.0	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.4
Mumps;		--	--	--	--	--	--	0.4	0.3	0.6	0.1
Pertussis;		1.6	3.0	3.8	3.7	1.7	1.7	1.7	1.6	1.8	1.0
Rabies, animal;		--	--	--	--	--	--	--	--	--	--
Rabies, possible exposure;		12.7	12.4	14.1	15.3	16.9	16.3	16.9	19.5	20.7	16.0
Salmonellosis;		31.2	34.1	31.7	30.7	29.7	27.7	31.9	34.5	33.4	31.1
Shiga toxin-producing *E. coli* (STEC) infection;		0.5	0.5	0.6	0.6	0.7	0.5	0.9	3.9	3.7	2.1
Shigellosis;		13.9	8.9	5.3	12.2	8.7	3.7	6.4	7.2	6.7	2.5
Streptococcus pneumoniae Invasive Disease, Drug-Resistant;		3.4	2.4	2.8	2.0	0.8	1.0	1.2	1.0	1.3	0.1
Syphilis (Excluding Congenital);		21.7	23.4	26.0	30.5	35.8	40.9	43.1	50.6	56.7	56.3
Syphilis, Congenital;1		0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5
Tuberculosis;		4.0	3.5	3.3	3.0	3.0	3.2	2.7	2.8	2.6	1.9
Varicella (chickenpox);		4.5	4.3	3.4	2.9	3.7	3.6	3.2	4.1	4.6	1.6
Vibriosis (excluding cholera);		0.8	0.8	1.0	0.8	1.0	0.9	1.3	1.2	1.2	1.0
Vibriosis (Vibrio vulnificus)		3.0	2.1	3.3	2.6	3.6	3.8	4.0	3.3	2.1	2.7
West Nile virus disease;		0.1	0.4	--	--	--	--	--	0.2	--	0.2

NR Not reportable.

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table. Animal rabies is only expressed as the number of cases because no reliable denominators exist for animal populations. Prior to 2010, lead poisoning case data were primarily stored outside of the state's reportable disease surveillance system and are not included in this table.

1 For *Haemophilus influenzae*, the rate is per 100,000 children <5 years old. For hepatitis B surface antigen in pregnant women, the rate is per 100,000 women aged 15–44 years old. For lead poisoning in children <6 years old, the rate is per 100,000 children <6 years old. For lead poisoning in people ≥6 years old, the rate is per 100,000 people ≥6 years old. For congenital syphilis, the rate is per 100,000 live births and fetal deaths.

2 The number of cases reported in past years should not change for most reportable diseases. Different reconciliation processes are in place for HIV. As a result, case numbers for prior years in the above tables may vary from previous reports. In 2017, lead poisoning cases were reviewed and re-evaluated, resulting in small changes in the number of cases reported in previous reports.

3 Acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

Appendices

Table 3: Number of Uncommon Reportable Diseases/Conditions, Florida, 2011–2020

Reportable disease/condition	10-year trend	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Amebic infections		1	0	1	1	1	1	0	4	0	2
Anaplasmosis		11	5	2	7	5	6	9	19	21	7
Anthrax		1	0	0	0	0	0	0	0	0	0
Arboviral disease, other		NR	NR	NR	0	0	0	0	1	0	0
Arsenic poisoning		7	5	13	2	16	21	14	14	11	9
Babesiosis		NR	NR	NR	NR	NR	0	9	19	30	2
Botulism, foodborne		0	0	0	0	0	0	0	0	1	0
Botulism, infant		0	1	0	0	0	0	1	1	0	2
Botulism, other		0	0	0	0	1	1	0	0	0	0
Botulism, wound		0	0	0	0	0	0	0	0	0	0
Brucellosis		6	17	9	3	8	2	11	13	8	4
Chancroid		1	0	0	0	0	0	0	0	0	0
Chikungunya fever		NR	NR	NR	442	121	10	4	6	6	0
Cholera (V. cholerae type O1)		11	7	4	2	3	1	1	0	0	0
Conjunctivitis in Neonates <14 Days Old, Chlamydia[1]		32	26	19	12	13	16	21	26	24	0
Conjunctivitis in Neonates <14 Days Old, Gonorrhea[1]		2	0	0	3	2	1	9	7	3	0
Coronavirus, severe acute respiratory syndrome (SARS)		0	0	0	0	0	0	0	0	0	0
Creutzfeldt-Jakob disease (CJD)		16	23	20	24	28	20	33	24	42	10
Diphtheria		0	0	0	0	0	0	0	0	0	0
Ehrlichiosis		15	23	21	29	18	28	16	40	34	9
Glanders (B. mallei)		0	0	0	0	0	0	0	0	0	0
Granuloma Inguinale		0	0	0	0	0	0	0	0	0	0
H. influenzae invasive disease		23	24	22	32	37	34	36	45	48	19
Hemolytic uremic syndrome (HUS)		4	1	14	7	5	8	11	8	4	4
Hepatitis B, perinatal		0	1	2	1	0	0	1	2	1	0
Hepatitis D		0	0	1	1	1	1	2	4	4	1
Hepatitis E		7	1	0	3	6	5	8	7	6	5
Hepatitis G		2	0	0	0	0	0	0	0	0	0
Herpes Simplex Virus in Infants <60 Days Old[1]		72	63	49	51	38	30	14	33	26	0
Human Papillomavirus in Children <=12 Years Old		0	0	0	0	0	0	0	0	0	0
Leptospirosis		4	1	1	0	4	2	3	7	7	1
Lymphogranuloma Venereum		0	0	0	0	0	0	0	1	0	0
Malaria		99	59	54	52	40	62	58	58	52	18
Measles (rubeola)		8	0	7	0	5	5	3	15	3	1
Melioidosis (B. pseudomallei)		0	1	0	0	0	0	0	0	0	0
Meningococcal disease		51	45	58	50	23	18	21	18	23	17
Mercury poisoning		7	10	5	15	26	19	47	36	19	9
Middle East respiratory syndrome (MERS)		NR	NR	NR	1	0	0	0	0	0	0
Neurotoxic shellfish poisoning		0	0	0	0	0	0	2	1	0	0
Pesticide-related illness and injury, acute		451	71	68	75	58	30	61	50	35	15
Poliomyelitis		0	0	0	0	0	0	0	0	0	0
Psittacosis (ornithosis)		0	0	0	1	1	0	0	0	0	1
Q fever (C. burnetii)		3	1	2	1	1	0	3	2	2	1
Rabies, human		0	0	0	0	0	0	1	1	0	0
Ricin toxin poisoning		0	0	1	0	4	1	0	4	2	1
Rocky Mountain spotted fever and spotted fever rickettsiosis		12	31	24	29	21	12	25	22	27	14
Rubella		0	0	0	0	0	1	0	0	0	0
S. aureus infection, intermediate resistance to vancomycin (VISA)		3	7	5	4	4	4	5	2	0	2
S. aureus infection, resistant to vancomycin (VRSA)		0	0	0	0	0	0	0	0	0	0
Salmonella Paratyphi infection		11	6	6	5	9	13	4	0	6	1
Salmonella Typhi infection		8	11	11	13	6	12	20	13	28	2

NR Not reportable.

1 Age in days is determined by the age of the child on the specimen collection date.

Table 3: Number of Uncommon Reportable Diseases/Conditions, Florida, 2011–2020

Reportable disease/condition	10-year trend	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Saxitoxin poisoning (paralytic shellfish poisoning)		0	0	3	0	0	1	0	4	0	0
Smallpox		0	0	0	0	0	0	0	0	0	0
Staphylococcal enterotoxin B poisoning		0	0	0	0	0	0	0	0	0	0
Streptococcus pneumoniae Invasive Disease, Drug-Susceptible		679	531	552	401	264	412	373	367	599	6
Tetanus		3	4	5	2	4	5	2	1	4	4
Trichinellosis (trichinosis)		0	0	0	0	0	0	0	0	0	0
Tularemia (F. tularensis)		0	0	1	1	0	0	0	2	0	0
Typhus fever		2	0	0	0	0	0	0	0	0	0
Vaccinia disease		1	0	0	0	1	0	0	0	0	0
Viral hemorrhagic fever		0	0	0	0	0	0	0	0	0	0
Yellow fever		0	0	0	0	0	0	0	0	0	0

NR Not reportable.

1 Age in days is determined by the age of the child on the specimen collection date.

Appendices

Table 4: Number of Common Reportable Diseases/Conditions by Age Group (in Years), Florida, 2020

Reportable disease/condition	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+
Campylobacteriosis	124	343	105	136	131	291	283	368	168	492	493	328	141
Carbon monoxide poisoning	-	2	6	4	8	19	19	17	5	13	14	17	6
Ciguatera fish poisoning	-	-	-	2	-	3	6	7	2	5	2	-	-
Cryptosporidiosis	3	32	14	10	5	44	31	40	6	38	32	22	14
Cyclosporiasis	-	-	1	2	4	17	25	27	-	44	22	11	-
Dengue fever	-	-	5	7	3	11	18	22	4	22	21	2	1
Giardiasis, acute	13	59	21	19	38	98	80	90	37	92	65	36	8
HIV	4	1	2	121	425	1,141	742	549	1	380	117	21	-
Hansen's Disease (Leprosy)	-	-	-	-	-	-	2	1	-	11	6	6	1
Hepatitis A	-	2	2	7	45	271	316	206	4	113	40	9	6
Hepatitis B, acute	-	-	2	7	11	80	118	145	-	104	53	24	5
Hepatitis B, chronic[2]	1	3	3	44	163	595	780	832	4	798	545	213	66
Hepatitis B, pregnant women[1]	-	-	-	4	24	192	103	2	-	-	-	-	-
Hepatitis C, acute	-	-	-	13	110	445	403	267	-	255	145	33	14
Hepatitis C, chronic (including perinatal)[2]	2	19	1	87	539	3,104	2,888	2,086	4	2,851	1,579	297	93
Lead Poisoning Cases in Children <6 Years Old[1]	19	301	-	-	-	-	-	-	14	-	-	-	-
Lead Poisoning Cases in People >=6 Years Old[1]	-	-	10	19	87	165	114	107	13	90	61	35	11
Legionellosis	-	-	-	-	1	14	33	55	-	115	112	67	31
Listeriosis	1	-	-	-	1	5	3	2	-	7	9	4	6
Lyme disease	-	1	8	7	1	12	12	14	5	21	27	12	1
Meningitis, bacterial or mycotic	29	2	-	-	2	4	6	10	-	11	8	8	1
Mumps	-	-	1	1	7	4	1	2	1	2	-	1	-
Pertussis	42	40	16	19	10	11	12	7	29	9	7	8	6
Rabies, possible exposure[2]	25	121	158	174	325	620	482	469	168	446	298	121	25
S. pneumoniae invasive disease	8	26	3	3	4	34	51	74	9	132	111	54	37
Salmonellosis[2]	1,436	1,463	177	174	129	327	320	414	425	655	626	415	168
Shiga toxin-producing *E. coli* (STEC) infection	37	95	27	30	17	26	29	37	25	48	37	28	16
Shigellosis	13	92	16	16	36	114	61	52	55	50	25	16	3
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	-	-	-	-	-	2	1	2	1	9	1	5	1
Syphilis (Excluding Congenital)	-	-	2	406	1,540	4,253	2,603	1,843	-	1,208	271	43	12
Syphilis, Congenital[1]	108	-	-	-	-	-	-	-	-	-	-	-	-
Tuberculosis	6	6	1	12	16	73	68	52	-	77	63	24	14
Varicella (chickenpox)	36	66	16	17	13	55	50	28	47	16	1	2	1
Vibriosis (excluding cholera)	-	1	10	8	5	11	29	25	8	37	41	29	5
West Nile virus disease	-	-	-	-	2	2	6	6	-	8	17	9	1

1 For *Haemophilus influenzae*, the rate is per 100,000 children <5 years old. For hepatitis B surface antigen in pregnant women, the rate is per 100,000 women aged 15–44 years old. For lead poisoning in children <6 years old, the rate is per 100,000 children <6 years old. For lead poisoning in people ≥6 years old, the rate is per 100,000 people ≥6 years old. For congenital syphilis, the rate is per 100,000 live births and fetal deaths.

2 Age is unknown for 14 chronic hepatitis B cases, 3 acute hepatitis C case, 92 chronic hepatitis C cases, 26 possible rabies exposure cases, 9 salmonellosis cases, and 2 Shiga toxin-producing *E. coli* infection cases.

3 Acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

Table 5: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by Age Group (in Years), Florida, 2020

Reportable disease/condition	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+
Campylobacteriosis;	54	37	9	11	10	10	11	13	14	17	20	23	24
Carbon monoxide poisoning;	-	-	-	-	-	-	-	-	-	-	-	-	-
Ciguatera fish poisoning;	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptosporidiosis;	-	3	-	-	-	2	1	1	-	1	1	2	-
Cyclosporiasis;	-	-	-	-	-	-	1	1	-	2	1	-	-
Dengue fever;	-	-	-	-	-	-	-	1	-	1	1	-	-
Giardiasis, acute;	-	6	2	-	3	3	3	3	3	3	3	2	-
HIV;	-	-	-	10	33	40	28	20	-	13	5	1	-
Hansen's Disease (Leprosy);	-	-	-	-	-	-	-	-	-	-	-	-	-
Hepatitis A;	-	-	-	-	4	10	12	8	-	4	2	-	-
Hepatitis B, acute;	-	-	-	-	-	3	4	5	-	4	2	2	-
Hepatitis B, chronic;2	-	-	-	4	13	21	30	30	-	27	22	15	11
Hepatitis B, pregnant women;1	-	-	-	-	4	14	8	-	-	-	-	-	-
Hepatitis C, acute;	-	-	-	-	9	16	15	10	-	9	6	2	-
Hepatitis C, chronic (including perinatal);2	-	-	-	7	42	110	110	76	-	98	64	20	16
Lead Poisoning Cases in Children <6 Years Old;1	-	33	-	-	-	-	-	-	-	-	-	-	-
Lead Poisoning Cases in People >=6 Years Old;1	-	-	-	-	7	6	4	4	-	3	2	2	-
Legionellosis;	-	-	-	-	-	-	1	2	-	4	5	5	5
Listeriosis;	-	-	-	-	-	-	-	-	-	-	-	-	-
Lyme disease;	-	-	-	-	-	-	-	-	-	1	1	-	-
Meningitis, bacterial or mycotic;	13	-	-	-	-	-	-	-	-	-	-	-	-
Mumps;	-	-	-	-	-	-	-	-	-	-	-	-	-
Pertussis;	18	4	-	-	-	-	-	-	2	-	-	-	-
Rabies, possible exposure;2	11	13	13	14	26	22	18	17	14	15	12	8	4
S. pneumoniae invasive disease;	-	3	-	-	-	1	2	3	-	5	4	4	6
Salmonellosis;2	624	159	15	14	10	12	12	15	36	22	25	29	29
Shiga toxin-producing *E. coli* (STEC) infection;	16	10	2	2	-	1	1	1	2	2	1	2	-
Shigellosis;	-	10	-	-	3	4	2	2	5	2	1	-	-
Streptococcus pneumoniae Invasive Disease, Drug-Resistant;	-	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis (Excluding Congenital);	-	-	-	33	121	150	99	67	-	41	11	3	-
Syphilis, Congenital;1	47	-	-	-	-	-	-	-	-	-	-	-	-
Tuberculosis;	-	-	-	-	-	3	3	2	-	3	3	2	-
Varicella (chickenpox);	16	7	-	-	-	2	2	1	4	-	-	-	-
Vibriosis (excluding cholera);	-	-	-	-	-	-	1	1	-	1	2	2	-
West Nile virus disease;	-	-	-	-	-	-	-	-	-	-	-	-	-

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 For *Haemophilus influenzae*, the rate is per 100,000 children <5 years old. For hepatitis B surface antigen in pregnant women, the rate is per 100,000 women aged 15–44 years old. For lead poisoning in children <6 years old, the rate is per 100,000 children <6 years old. For lead poisoning in people ≥6 years old, the rate is per 100,000 people ≥6 years old. For congenital syphilis, the rate is per 100,000 live births and fetal deaths.

2 Age is unknown for 14 chronic hepatitis B cases, 3 acute hepatitis C case, 92 chronic hepatitis C cases, 26 possible rabies exposure cases, 9 salmonellosis cases, and 2 Shiga toxin-producing *E. coli* infection cases.

3 Acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

Table 6: Top 10 Reportable Diseases/Conditions by Age Group (in Years), Florida, 2020

Rank	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+
	Age group (in years)												
1	Salmonellosis (Count: 1,436) (Rate: 624.4)	Salmonellosis (Count: 1,463) (Rate: 159.0)	Salmonellosis (Count: 425) (Rate: 36.1)	Salmonellosis (Count: 177) (Rate: 14.6)	Syphilis (Count: 406) (Rate: 33.5)	Syphilis (Count: 1,540) (Rate: 121.3)	Syphilis (Count: 4,253) (Rate: 150.5)	Hepatitis C, Chronic (Count: 2,888) (Rate: 110.0)	Hepatitis C, Chronic (Count: 2,086) (Rate: 76.3)	Hepatitis C, Chronic (Count: 2,851) (Rate: 97.7)	Hepatitis C, Chronic (Count: 1,579) (Rate: 63.8)	Salmonellosis (Count: 415) (Rate: 28.5)	Salmonellosis (Count: 168) (Rate: 28.8)
2	Campylobacteriosis (Count: 124) (Rate: 53.9)	Campylobacteriosis (Count: 343) (Rate: 37.3)	Campylobacteriosis (Count: 168) (Rate: 14.3)	Rabies, possible exposure (Count: 158) (Rate: 13.0)	Rabies, possible exposure (Count: 174) (Rate: 14.4)	Hepatitis C, Chronic (Count: 539) (Rate: 42.4)	Hepatitis C, Chronic (Count: 3,104) (Rate: 109.8)	Syphilis (Count: 2,603) (Rate: 99.2)	Syphilis (Count: 1,843) (Rate: 67.4)	Syphilis (Count: 1,208) (Rate: 41.4)	Salmonellosis (Count: 626) (Rate: 25.3)	Campylobacteriosis (Count: 328) (Rate: 22.5)	Campylobacteriosis (Count: 141) (Rate: 24.2)
3	Syphilis, Congenital (Count: 108) (Rate: 47.0)	Lead Poisoning (Count: 301) (Rate: 32.7)	Rabies, possible exposure (Count: 168) (Rate: 14.3)	Campylobacteriosis (Count: 105) (Rate: 8.6)	Salmonellosis (Count: 174) (Rate: 14.4)	HIV (Count: 425) (Rate: 33.5)	HIV (Count: 1,141) (Rate: 40.4)	Hepatitis B, chronic (Count: 780) (Rate: 29.7)	Hepatitis B, chronic (Count: 832) (Rate: 30.4)	Hepatitis B, chronic (Count: 798) (Rate: 27.4)	Hepatitis B, chronic (Count: 545) (Rate: 22.0)	Hepatitis C, Chronic (Count: 297) (Rate: 20.4)	Hepatitis C, Chronic (Count: 93) (Rate: 15.9)
4	Pertussis (Count: 42) (Rate: 18.3)	Rabies, possible exposure (Count: 121) (Rate: 13.2)	Shigellosis (Count: 55) (Rate: 4.7)	Shiga Toxin-Producing E. coli (Count: 27) (Rate: 2.2)	Campylobacteriosis (Count: 136) (Rate: 11.2)	Rabies, possible exposure (Count: 325) (Rate: 25.6)	Rabies, possible exposure (Count: 620) (Rate: 21.9)	HIV (Count: 742) (Rate: 28.3)	HIV (Count: 549) (Rate: 20.1)	Salmonellosis (Count: 655) (Rate: 22.4)	Campylobacteriosis (Count: 493) (Rate: 19.9)	Hepatitis B, chronic (Count: 213) (Rate: 14.6)	Hepatitis B, chronic (Count: 66) (Rate: 11.3)
5	Shiga Toxin-Producing E. coli (Count: 37) (Rate: 16.1)	Shiga Toxin-Producing E. coli (Count: 95) (Rate: 10.3)	Varicella (chickenpox) (Count: 47) (Rate: 4.0)	Giardiasis, acute (Count: 21) (Rate: 1.7)	HIV (Count: 121) (Rate: 10.0)	Hepatitis B, chronic (Count: 163) (Rate: 12.8)	Hepatitis B, chronic (Count: 595) (Rate: 21.1)	Rabies, possible exposure (Count: 482) (Rate: 18.4)	Rabies, possible exposure (Count: 469) (Rate: 17.2)	Campylobacteriosis (Count: 492) (Rate: 16.9)	Rabies, possible exposure (Count: 298) (Rate: 12.0)	Rabies, possible exposure (Count: 121) (Rate: 8.3)	*S. pneumoniae invasive disease* (Count: 37) (Rate: 6.3)
6	Varicella (chickenpox) (Count: 36) (Rate: 15.7)	Shigellosis (Count: 92) (Rate: 10.0)	Giardiasis, acute (Count: 37) (Rate: 3.1)	Pertussis (Count: 16) --	Hepatitis C, Chronic (Count: 87) (Rate: 7.2)	Campylobacteriosis (Count: 131) (Rate: 10.3)	Hepatitis C, acute (Count: 445) (Rate: 15.7)	Hepatitis C, acute (Count: 403) (Rate: 15.4)	Salmonellosis (Count: 414) (Rate: 15.1)	Rabies, possible exposure (Count: 446) (Rate: 15.3)	Syphilis (Count: 271) (Rate: 10.9)	Legionellosis (Count: 67) (Rate: 4.6)	Legionellosis (Count: 31) (Rate: 5.3)
7	Meningitis, Bacterial/Mycotic (Count: 29) (Rate: 12.6)	Varicella (chickenpox) (Count: 66) (Rate: 7.2)	Pertussis (Count: 29) (Rate: 2.5)	Shigellosis (Count: 16) --	Hepatitis B, chronic (Count: 44) (Rate: 3.6)	Salmonellosis (Count: 129) (Rate: 10.2)	Salmonellosis (Count: 327) (Rate: 11.6)	Salmonellosis (Count: 320) (Rate: 12.2)	Campylobacteriosis (Count: 368) (Rate: 13.5)	HIV (Count: 380) (Rate: 13.0)	Hepatitis C, acute (Count: 145) (Rate: 5.9)	*S. pneumoniae invasive disease* (Count: 54) (Rate: 3.7)	Rabies, possible exposure (Count: 25) (Rate: 4.3)
8	Rabies, possible exposure (Count: 25) (Rate: 10.9)	Giardiasis, acute (Count: 59) (Rate: 6.4)	Shiga Toxin-Producing E. coli (Count: 25) (Rate: 2.1)	Varicella (chickenpox) (Count: 16) --	Shiga Toxin-Producing E. coli (Count: 30) (Rate: 2.5)	Hepatitis C, acute (Count: 110) (Rate: 8.7)	Campylobacteriosis (Count: 291) (Rate: 10.3)	Hepatitis A (Count: 316) (Rate: 12.0)	Hepatitis C, acute (Count: 267) (Rate: 9.8)	Hepatitis C, acute (Count: 255) (Rate: 8.7)	HIV (Count: 117) (Rate: 4.7)	Syphilis (Count: 43) (Rate: 3.0)	Shiga Toxin-Producing E. coli (Count: 16) --
9	Lead Poisoning (Count: 19) --	Pertussis (Count: 40) (Rate: 4.3)	Lead Poisoning (Count: 14) --	Cryptosporidiosis (Count: 14) --	Giardiasis, acute (Count: 19) --	Lead Poisoning (Count: 87) (Rate: 6.9)	Hepatitis A (Count: 271) (Rate: 9.6)	Campylobacteriosis (Count: 283) (Rate: 10.8)	Hepatitis A (Count: 206) (Rate: 7.5)	*S. pneumoniae invasive disease* (Count: 132) (Rate: 4.5)	Legionellosis (Count: 112) (Rate: 4.5)	Giardiasis, acute (Count: 36) (Rate: 2.5)	Cryptosporidiosis (Count: 14) --
10	*H. influenzae Invasive Disease* (Count: 14) --	Cryptosporidiosis (Count: 32) (Rate: 3.5)	Lead Poisoning (Count: 13) --	Lead Poisoning (Count: 10) --	Lead Poisoning (Count: 19) --	Hepatitis A (Count: 45) (Rate: 3.5)	Hepatitis B, pregnant women (Count: 192) (Rate: 13.8)	Hepatitis B, acute (Count: 118) (Rate: 4.5)	Hepatitis B, acute (Count: 145) (Rate: 5.3)	Legionellosis (Count: 115) (Rate: 3.9)	*S. pneumoniae invasive disease* (Count: 111) (Rate: 4.5)	Lead Poisoning (Count: 35) (Rate: 2.4)	Hepatitis C, acute (Count: 14) --

Enteric Diseases	Tuberculosis	Vector-Borne Diseases	Sexually Transmitted Diseases	Viral Hepatitis
Vaccine-Preventable Diseases	Invasive Bacterial Diseases	Environmental Poisonings	HIV Infection/AIDS	

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

Appendices

Table 7: Number of Common Reportable Diseases/Conditions by Month of Occurrence,[1] Florida, 2020

Selected reportable disease/condition	12-month trend	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Campylobacteriosis		355	310	233	190	312	323	262	312	275	307	227	297
Carbon monoxide poisoning		33	8	9	5	8	11	6	9	18	4	8	11
Ciguatera fish poisoning		2	5	0	2	1	0	1	6	4	1	0	5
Cryptosporidiosis		41	29	16	17	25	16	24	25	27	23	17	31
Cyclosporiasis		2	0	1	1	9	7	54	60	14	4	1	0
Dengue fever		15	6	6	2	6	37	22	6	3	1	6	6
Giardiasis, acute		81	61	75	42	41	47	55	54	53	48	37	62
Hansen's Disease (Leprosy)		5	4	4	1	1	4	1	4	0	1	1	1
Hepatitis A		178	139	100	92	79	64	40	54	60	57	67	91
Hepatitis B, acute		60	42	50	42	45	56	28	49	47	36	36	58
Hepatitis B, chronic		413	432	359	220	260	333	281	306	333	363	335	426
Hepatitis B, pregnant women		23	29	32	24	29	19	33	24	33	30	19	30
Hepatitis C, acute		160	151	133	113	103	150	130	148	163	148	135	154
Hepatitis C, chronic (including perinatal)		1,577	1,390	1,081	940	910	1,159	1,038	1,121	1,086	1,196	1,040	1,104
Lead Poisoning Cases in Children <6 Years Old		32	19	34	9	17	14	35	27	31	33	35	48
Lead Poisoning Cases in People >=6 Years Old		65	75	53	20	44	45	51	92	88	51	57	71
Legionellosis		36	26	32	27	20	32	36	41	56	45	47	30
Listeriosis		4	5	4	2	3	2	4	6	4	2	0	2
Lyme disease		12	10	5	3	8	5	23	15	12	11	9	8
Meningitis, bacterial or mycotic		10	4	8	2	7	7	11	3	3	6	7	13
Mumps		3	9	1	1	0	0	1	1	2	0	0	2
Pertussis		52	52	35	19	8	5	0	1	2	7	5	30
Rabies, animal[3]		0	0	0	0	0	0	3	8	7	7	7	9
Rabies, possible exposure[4]		373	309	261	180	299	296	275	260	293	320	277	315
S. pneumoniae invasive disease		129	106	76	33	18	23	29	14	18	23	22	55
Salmonellosis		418	281	248	229	519	663	647	777	845	880	738	493
Shiga toxin-producing E. coli (STEC) infection		51	44	33	22	26	30	29	41	44	42	42	50
Shigellosis		80	94	69	16	30	43	33	31	35	37	32	49
Streptococcus pneumoniae Invasive Disease, Drug-Resistant		0	6	7	1	2	0	1	0	0	1	2	2
Varicella (chickenpox)		94	51	24	12	18	18	10	20	12	31	19	39
Vibriosis (excluding cholera)		13	5	11	16	20	18	26	25	21	22	17	15
West Nile virus disease		0	0	0	1	1	10	20	9	5	5	0	0

1 The earliest date associated with the case was used to determine month of occurrence, unless otherwise noted. Dates associated with cases include illness onset date, diagnosis date, laboratory report date and the date the county health department was notified.

2 Acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

3 Month of occurrence is based on the month of laboratory report.

4 Month of occurrence is based on the month of exposure.

Note that this table includes all common reportable diseases/conditions except chlamydia, gonorrhea, HIV, syphilis, congenital syphilis and tuberculosis.

Appendices

Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay
Campylobacteriosis	35	3	35	5	44	203	4	12	49	36
Carbon monoxide poisoning	1	0	1	0	2	8	0	0	2	0
Ciguatera fish poisoning	0	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	6	0	1	1	8	19	0	0	2	2
Cyclosporiasis	1	0	0	0	12	2	0	0	0	2
Dengue fever	1	0	0	0	2	8	0	0	0	1
Giardiasis, acute	11	1	1	0	13	45	0	0	1	4
HIV[1]	29	4	11	3	74	467	0	10	6	14
Hansen's Disease (Leprosy)	0	0	1	0	20	0	0	0	0	0
Hepatitis A	18	0	4	0	50	25	7	19	15	32
Hepatitis B, acute	6	1	3	2	12	23	0	5	5	7
Hepatitis B, chronic	35	6	20	0	87	519	1	34	19	33
Hepatitis B, pregnant women	2	1	0	0	2	114	0	0	0	0
Hepatitis C, acute	28	1	7	2	30	115	1	21	13	21
Hepatitis C, chronic (including perinatal)	222	20	204	20	468	1,158	13	125	153	118
Lead Poisoning Cases in Children <6 Years Old	3	0	4	0	7	26	1	3	0	0
Lead Poisoning Cases in People >=6 Years Old	4	0	6	0	46	37	0	14	9	5
Legionellosis	2	3	2	1	4	47	0	1	3	2
Listeriosis	0	0	0	0	0	2	0	1	0	0
Lyme disease	0	0	1	0	3	1	1	0	4	2
Meningitis, bacterial or mycotic	0	1	3	0	0	8	0	0	0	1
Mumps	5	0	0	0	0	2	0	0	0	0
Pertussis	1	1	0	0	5	14	0	0	2	3
Rabies, animal	1	2	2	0	5	1	0	0	1	0
Rabies, possible exposure	25	4	54	0	82	181	1	0	25	1
S. pneumoniae invasive disease	13	2	7	2	1	44	0	0	4	8
Salmonellosis	59	9	58	12	230	759	5	38	37	72
Shiga toxin-producing E. coli (STEC) infection	6	2	4	0	9	42	1	2	4	3
Shigellosis	10	0	1	3	2	77	0	0	0	2
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	0	0	0	0	0	2	0	0	3	0
Syphilis (Excluding Congenital)	153	9	47	8	216	2,123	1	21	16	35
Syphilis, Congenital	2	0	2	0	3	5	0	0	0	0
Tuberculosis	6	0	1	0	9	41	1	0	3	2
Varicella (chickenpox)	4	0	2	0	3	40	1	0	3	7
Vibriosis (excluding cholera)	7	0	2	0	6	12	0	1	2	0
West Nile virus disease	0	0	1	0	0	6	0	1	0	0

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020 (Continued)

Reportable disease/condition	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin	Gadsden
Campylobacteriosis	57	17	0	8	114	56	9	1	6
Carbon monoxide poisoning	3	0	0	0	9	9	1	0	0
Ciguatera fish poisoning	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	4	2	0	2	6	1	0	0	0
Cyclosporiasis	0	0	0	0	4	1	5	0	0
Dengue fever	0	0	0	0	2	0	0	0	0
Giardiasis, acute	17	4	0	2	14	3	2	0	1
HIV[1]	15	2	1	0	238	40	11	0	13
Hansen's Disease (Leprosy)	0	0	0	0	0	0	0	0	0
Hepatitis A	8	8	0	6	212	126	1	0	0
Hepatitis B, acute	6	1	0	0	34	7	2	0	2
Hepatitis B, chronic	46	10	0	4	233	52	18	3	10
Hepatitis B, pregnant women	3	0	0	0	15	5	0	0	0
Hepatitis C, acute	22	0	0	4	107	34	9	0	2
Hepatitis C, chronic (including perinatal)	132	74	0	21	718	310	44	7	22
Lead Poisoning Cases in Children <6 Years Old	4	1	0	0	27	6	2	1	3
Lead Poisoning Cases in People >=6 Years Old	10	0	0	0	62	0	1	0	2
Legionellosis	11	1	0	0	38	7	0	0	0
Listeriosis	3	2	0	0	1	2	1	0	0
Lyme disease	0	1	0	0	5	4	0	0	0
Meningitis, bacterial or mycotic	2	0	0	0	10	2	0	0	0
Mumps	0	0	0	0	0	0	0	0	0
Pertussis	4	2	0	1	2	5	1	0	0
Rabies, animal	2	1	0	0	2	1	0	1	1
Rabies, possible exposure	71	0	0	0	1	143	12	3	0
S. pneumoniae invasive disease	10	7	0	2	51	29	1	0	3
Salmonellosis	131	24	0	12	318	64	38	4	15
Shiga toxin-producing E. coli (STEC) infection	4	7	0	1	19	6	5	0	0
Shigellosis	3	13	0	1	39	15	1	0	5
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	0	0	0	0	0	0	0	0	0
Syphilis (Excluding Congenital)	63	21	3	1	687	100	18	8	27
Syphilis, Congenital	2	0	0	0	11	3	0	0	0
Tuberculosis	14	1	2	0	24	9	0	0	3
Varicella (chickenpox)	15	1	0	0	3	8	2	0	1
Vibriosis (excluding cholera)	3	0	0	0	11	6	6	1	1
West Nile virus disease	7	0	0	0	0	0	0	0	0

1 County totals exclude 49 Florida Department of Corrections cases.

Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020 (Continued)

Reportable disease/condition	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough
Campylobacteriosis	8	0	2	3	4	9	14	14	274
Carbon monoxide poisoning	0	0	0	0	0	9	0	0	4
Ciguatera fish poisoning	0	0	0	0	0	0	0	0	1
Cryptosporidiosis	0	0	0	0	1	0	2	0	32
Cyclosporiasis	0	0	0	0	0	0	1	0	16
Dengue fever	0	0	0	0	0	0	0	0	3
Giardiasis, acute	0	0	0	0	2	1	1	2	61
HIV[1]	0	1	1	5	3	0	11	10	252
Hansen's Disease (Leprosy)	0	0	0	0	0	0	0	0	0
Hepatitis A	2	0	0	2	2	0	1	5	23
Hepatitis B, acute	1	0	1	0	0	0	8	8	39
Hepatitis B, chronic	2	2	1	5	3	3	32	18	271
Hepatitis B, pregnant women	0	0	0	0	0	0	1	0	9
Hepatitis C, acute	1	0	0	1	2	5	20	7	148
Hepatitis C, chronic (including perinatal)	11	8	12	17	14	17	122	50	863
Lead Poisoning Cases in Children <6 Years Old	0	0	0	0	2	1	3	8	41
Lead Poisoning Cases in People >=6 Years Old	0	0	0	0	2	0	5	27	145
Legionellosis	0	0	0	0	2	1	3	1	18
Listeriosis	0	0	0	0	0	0	0	0	0
Lyme disease	0	0	0	0	1	0	0	0	2
Meningitis, bacterial or mycotic	0	0	0	0	0	0	1	0	1
Mumps	0	0	0	0	0	0	1	1	1
Pertussis	0	0	0	0	0	1	1	2	34
Rabies, animal	2	0	0	0	0	0	0	0	2
Rabies, possible exposure	0	1	1	0	30	13	94	3	121
S. pneumoniae invasive disease	2	0	1	1	3	0	5	6	31
Salmonellosis	5	4	12	6	11	16	33	34	281
Shiga toxin-producing E. coli (STEC) infection	1	0	0	0	1	1	1	1	28
Shigellosis	0	0	1	0	0	1	0	1	28
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	0	0	0	0	0	0	0	0	1
Syphilis (Excluding Congenital)	3	0	8	8	3	7	41	19	922
Syphilis, Congenital	0	0	0	0	0	0	0	0	13
Tuberculosis	0	1	0	0	0	2	2	2	22
Varicella (chickenpox)	0	0	0	1	5	1	0	3	15
Vibriosis (excluding cholera)	2	0	2	0	0	0	7	1	12
West Nile virus disease	0	0	0	0	0	0	0	0	0

1 County totals exclude 49 Florida Department of Corrections cases.

Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020 (Continued)

Reportable disease/condition	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon	Levy	Liberty
Campylobacteriosis	2	.	7	1	2	32	103	31	19	0
Carbon monoxide poisoning	0	.	0	1	0	1	2	0	0	0
Ciguatera fish poisoning	0	.	0	0	0	0	1	0	0	0
Cryptosporidiosis	0	.	0	0	0	4	9	2	1	1
Cyclosporiasis	0	.	0	0	0	2	4	0	0	0
Dengue fever	0	.	0	0	0	0	0	0	0	0
Giardiasis, acute	0	.	1	0	0	13	23	9	3	0
HIV[1]	0	.	5	2	0	26	58	54	3	0
Hansen's Disease (Leprosy)	0	.	0	0	0	0	0	0	1	0
Hepatitis A	0	.	11	3	1	7	17	15	0	5
Hepatitis B, acute	0	.	0	0	0	7	13	4	0	0
Hepatitis B, chronic	2	.	5	2	1	47	105	39	3	1
Hepatitis B, pregnant women	0	.	0	0	0	5	14	3	0	0
Hepatitis C, acute	0	.	1	0	0	30	37	13	3	0
Hepatitis C, chronic (including perinatal)	9	.	46	11	4	233	486	110	30	9
Lead Poisoning Cases in Children <6 Years Old	0	.	1	0	1	4	9	7	0	0
Lead Poisoning Cases in People >=6 Years Old	0	.	1	0	0	5	18	4	0	0
Legionellosis	1	.	0	0	0	12	19	1	1	0
Listeriosis	0	.	0	0	0	0	1	1	0	0
Lyme disease	0	.	0	0	0	3	4	1	0	0
Meningitis, bacterial or mycotic	0	.	0	0	0	1	2	0	0	0
Mumps	0	.	0	0	0	0	2	0	0	0
Pertussis	0	.	0	0	0	12	7	0	2	0
Rabies, animal	0	.	6	1	0	0	1	5	3	0
Rabies, possible exposure	7	.	9	3	2	190	162	64	1	0
S. pneumoniae invasive disease	0	.	0	0	0	10	3	15	3	0
Salmonellosis	1	.	16	4	3	168	242	53	19	4
Shiga toxin-producing E. coli (STEC) infection	2	.	2	2	1	10	9	7	2	0
Shigellosis	0	.	1	0	0	3	14	18	0	0
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	0	.	0	0	0	1	1	0	0	0
Syphilis (Excluding Congenital)	6	.	27	8	3	94	207	220	7	0
Syphilis, Congenital	0	.	0	0	0	0	4	4	0	0
Tuberculosis	0	.	1	0	0	2	12	6	0	0
Varicella (chickenpox)	0	.	0	4	0	11	17	3	0	0
Vibriosis (excluding cholera)	0	.	0	1	0	5	5	6	1	0
West Nile virus disease	0	.	0	0	0	0	1	0	0	0

1 County totals exclude 49 Florida Department of Corrections cases.

Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020 (Continued)

Reportable disease/condition	Madison	Manatee	Marion	Martin	Miami Dade	Monroe	Nassau	Okaloosa	Okeechobee
Campylobacteriosis	4	40	56	15	.	30	12	41	8
Carbon monoxide poisoning	0	0	5	0	.	0	1	4	0
Ciguatera fish poisoning	0	0	0	1	.	1	0	0	0
Cryptosporidiosis	1	6	4	4	.	2	1	0	0
Cyclosporiasis	0	5	3	5	.	0	2	1	0
Dengue fever	0	0	0	0	.	63	0	0	0
Giardiasis, acute	0	5	14	2	.	6	2	4	2
HIV[1]	3	40	24	11	.	16	2	11	4
Hansen's Disease (Leprosy)	0	0	0	0	.	0	0	0	0
Hepatitis A	0	4	8	3	.	1	22	4	5
Hepatitis B, acute	1	12	15	3	.	0	1	2	3
Hepatitis B, chronic	4	59	51	13	.	12	6	30	5
Hepatitis B, pregnant women	0	3	3	0	.	3	0	3	0
Hepatitis C, acute	1	36	26	12	.	3	6	4	16
Hepatitis C, chronic (including perinatal)	12	219	420	109	.	58	62	151	38
Lead Poisoning Cases in Children <6 Years Old	1	4	1	0	.	0	1	1	4
Lead Poisoning Cases in People >=6 Years Old	0	6	3	6	.	5	1	6	1
Legionellosis	1	11	2	3	.	5	3	0	0
Listeriosis	0	0	0	1	.	0	0	1	1
Lyme disease	0	0	11	8	.	1	0	1	1
Meningitis, bacterial or mycotic	0	2	1	0	.	1	1	0	0
Mumps	0	0	0	1	.	0	0	0	0
Pertussis	0	1	9	7	.	0	0	0	0
Rabies, animal	0	3	4	2	.	0	0	2	0
Rabies, possible exposure	6	38	213	25	.	24	12	65	0
S. pneumoniae invasive disease	2	15	18	1	.	1	4	11	3
Salmonellosis	7	77	95	119	.	34	33	57	19
Shiga toxin-producing E. coli (STEC) infection	2	10	15	5	.	0	1	5	1
Shigellosis	0	0	3	1	.	2	0	1	0
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	0	2	0	1	.	0	0	0	0
Syphilis (Excluding Congenital)	3	156	109	26	.	19	11	55	9
Syphilis, Congenital	0	2	0	0	.	0	0	0	0
Tuberculosis	0	8	2	3	.	2	0	1	0
Varicella (chickenpox)	0	2	9	3	.	0	1	2	0
Vibriosis (excluding cholera)	0	2	2	6	.	4	1	2	0
West Nile virus disease	0	0	0	1	.	0	0	0	0

1 County totals exclude 49 Florida Department of Corrections cases.

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Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020 (Continued)

Reportable disease/condition	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam	Santa Rosa	Sarasota
Campylobacteriosis	110	58	.	124	247	176	17	.	50
Carbon monoxide poisoning	1	5	.	1	2	6	0	.	0
Ciguatera fish poisoning	0	0	.	0	0	0	0	.	0
Cryptosporidiosis	14	8	.	11	38	14	0	.	1
Cyclosporiasis	17	3	.	5	9	3	1	.	11
Dengue fever	2	0	.	0	1	0	0	.	1
Giardiasis, acute	57	10	.	25	28	41	1	.	6
HIV[1]	374	67	.	40	159	78	9	.	32
Hansen's Disease (Leprosy)	0	0	.	0	0	1	0	.	1
Hepatitis A	10	10	.	20	3	31	14	.	24
Hepatitis B, acute	30	17	.	36	40	22	8	.	8
Hepatitis B, chronic	352	58	.	82	202	82	14	.	63
Hepatitis B, pregnant women	18	1	.	4	18	14	0	.	0
Hepatitis C, acute	103	21	.	84	117	49	18	.	17
Hepatitis C, chronic (including perinatal)	983	205	.	457	800	274	87	.	308
Lead Poisoning Cases in Children <6 Years Old	23	5	.	9	9	21	1	.	3
Lead Poisoning Cases in People >=6 Years Old	34	7	.	22	40	19	1	.	14
Legionellosis	40	4	.	18	33	14	1	.	9
Listeriosis	2	1	.	2	2	0	0	.	1
Lyme disease	2	4	.	4	11	0	0	.	10
Meningitis, bacterial or mycotic	0	2	.	3	5	11	0	.	1
Mumps	1	0	.	0	1	1	0	.	0
Pertussis	16	1	.	9	8	17	2	.	2
Rabies, animal	5	4	.	0	0	2	0	.	0
Rabies, possible exposure	104	18	.	144	118	313	20	.	50
S. pneumoniae invasive disease	12	5	.	19	34	12	8	.	5
Salmonellosis	344	94	.	113	200	186	23	.	97
Shiga toxin-producing E. coli (STEC) infection	33	7	.	9	10	17	0	.	5
Shigellosis	74	3	.	2	19	12	1	.	2
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	1	0	.	0	0	1	1	.	0
Syphilis (Excluding Congenital)	1,232	191	.	113	469	240	24	.	94
Syphilis, Congenital	9	1	.	0	3	2	0	.	3
Tuberculosis	45	5	.	6	24	9	2	.	1
Varicella (chickenpox)	17	5	.	4	18	16	0	.	5
Vibriosis (excluding cholera)	2	2	.	5	12	3	0	.	5
West Nile virus disease	0	0	.	0	0	0	0	.	0

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 8: Number of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020 (Continued)

Reportable disease/condition	Seminole	St. Johns	St. Lucie	Sumter	Suwannee	Taylor	Union	Volusia	Wakulla	Walton	Washington
Campylobacteriosis	38	.	.	11	13	7	1	55	2	11	2
Carbon monoxide poisoning	6	.	.	3	0	0	0	1	0	0	0
Ciguatera fish poisoning	0	.	.	0	0	0	0	0	0	0	0
Cryptosporidiosis	4	.	.	1	4	1	0	7	0	0	0
Cyclosporiasis	6	.	.	0	0	0	0	1	1	0	0
Dengue fever	1	.	.	0	0	0	0	0	0	0	0
Giardiasis, acute	16	.	.	2	3	0	1	8	1	0	0
HIV[1]	51	.	.	2	1	2	0	57	1	5	0
Hansen's Disease (Leprosy)	1	.	.	0	0	1	0	0	0	0	0
Hepatitis A	10	.	.	1	9	0	0	63	3	8	1
Hepatitis B, acute	7	.	.	0	0	3	1	15	0	3	2
Hepatitis B, chronic	55	.	.	19	10	4	5	155	4	6	24
Hepatitis B, pregnant women	2	.	.	0	0	0	0	0	2	0	0
Hepatitis C, acute	27	.	.	8	2	1	4	53	1	4	14
Hepatitis C, chronic (including perinatal)	190	.	.	124	24	12	122	453	21	35	148
Lead Poisoning Cases in Children <6 Years Old	2	.	.	1	0	2	0	6	0	0	1
Lead Poisoning Cases in People >=6 Years Old	3	.	.	4	0	5	0	10	1	0	0
Legionellosis	13	.	.	6	2	0	0	4	0	0	1
Listeriosis	0	.	.	0	0	0	0	0	0	0	0
Lyme disease	3	.	.	1	0	0	0	0	0	0	0
Meningitis, bacterial or mycotic	1	.	.	0	0	0	0	0	1	1	0
Mumps	0	.	.	0	0	0	0	0	0	0	0
Pertussis	10	.	.	2	0	3	0	1	0	0	0
Rabies, animal	7	.	.	1	1	0	0	3	0	2	3
Rabies, possible exposure	134	.	.	15	11	11	2	86	11	0	7
S. pneumoniae invasive disease	7	.	.	0	2	1	0	14	1	2	0
Salmonellosis	75	.	.	24	21	12	3	170	7	20	10
Shiga toxin-producing E. coli (STEC) infection	6	.	.	3	5	1	0	6	1	0	1
Shigellosis	12	.	.	0	0	1	0	7	0	0	0
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	0	.	.	1	1	0	0	0	0	0	0
Syphilis (Excluding Congenital)	150	.	.	20	6	6	26	225	10	11	37
Syphilis, Congenital	2	.	.	0	0	0	0	3	0	0	0
Tuberculosis	7	.	.	1	0	0	2	6	0	1	0
Varicella (chickenpox)	18	.	.	2	0	1	0	6	1	0	0
Vibriosis (excluding cholera)	5	.	.	0	0	1	0	4	1	3	0
West Nile virus disease	0	.	.	0	1	0	0	0	0	0	0

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay
Campylobacteriosis	12.9	--	19.9	--	7.3	10.4	--	--	32.7	16.4
Carbon monoxide poisoning	--	--	--	--	--	--	--	--	--	--
Ciguatera fish poisoning	--	--	--	--	--	--	--	--	--	--
Cryptosporidiosis	--	--	--	--	--	--	--	--	--	--
Cyclosporiasis	--	--	--	--	--	--	--	--	--	--
Dengue fever	--	--	--	--	--	--	--	--	--	--
Giardiasis, acute	--	--	--	--	--	2.3	--	--	--	--
HIV[1]	10.7	--	--	--	12.2	24.0	--	--	--	--
Hansen's Disease (Leprosy)	--	--	--	--	3.3	--	--	--	--	--
Hepatitis A	--	--	--	--	8.3	1.3	--	--	--	14.6
Hepatitis B, acute	--	--	--	--	--	1.2	--	--	--	--
Hepatitis B, chronic	12.9	--	11.4	--	14.4	26.7	--	18.3	--	15.0
Hepatitis B, pregnant women	--	--	--	--	--	30.7	--	--	--	--
Hepatitis C, acute	10.4	--	--	--	5.0	5.9	--	11.3	--	9.5
Hepatitis C, chronic (including perinatal)	82.1	70.0	116.1	69.4	77.5	59.5	--	67.4	102.1	53.7
Lead Poisoning Cases in Children <6 Years Old	--	--	--	--	--	19.4	--	--	--	--
Lead Poisoning Cases in People >=6 Years Old	--	--	--	--	8.1	2.0	--	--	--	--
Legionellosis	--	--	--	--	--	2.4	--	--	--	--
Listeriosis	--	--	--	--	--	--	--	--	--	--
Lyme disease	--	--	--	--	--	--	--	--	--	--
Meningitis, bacterial or mycotic	--	--	--	--	--	--	--	--	--	--
Mumps	--	--	--	--	--	--	--	--	--	--
Pertussis	--	--	--	--	--	--	--	--	--	--
Rabies, animal	--	--	--	--	--	--	--	--	--	--
Rabies, possible exposure	9.2	--	30.7	--	13.6	9.3	--	--	16.7	--
S. pneumoniae invasive disease	--	--	--	--	--	2.3	--	--	--	--
Salmonellosis	21.8	--	33.0	--	38.1	39.0	--	20.5	24.7	32.7
Shiga toxin-producing E. coli (STEC) infection	--	--	--	--	--	2.2	--	--	--	--
Shigellosis	--	--	--	--	--	4.0	--	--	--	--
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	--	--	--	--	--	--	--	--	--
Syphilis (Excluding Congenital)	56.6	--	26.7	--	35.8	109.1	--	11.3	--	15.9
Syphilis, Congenital	--	--	--	--	--	--	--	--	--	--
Tuberculosis	--	--	--	--	--	2.1	--	--	--	--
Varicella (chickenpox)	--	--	--	--	--	2.1	--	--	--	--
Vibriosis (excluding cholera)	--	--	--	--	--	--	--	--	--	--
West Nile virus disease	--	--	--	--	--	--	--	--	--	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin	Gadsden
Campylobacteriosis	14.7	--	--	--	11.5	17.3	--	--	--
Carbon monoxide poisoning	--	--	--	--	--	--	--	--	--
Ciguatera fish poisoning	--	--	--	--	--	--	--	--	--
Cryptosporidiosis	--	--	--	--	--	--	--	--	--
Cyclosporiasis	--	--	--	--	--	--	--	--	--
Dengue fever	--	--	--	--	--	--	--	--	--
Giardiasis, acute	--	--	--	--	--	--	--	--	--
HIV[1]	--	--	--	--	24.1	12.3	--	--	--
Hansen's Disease (Leprosy)	--	--	--	--	--	--	--	--	--
Hepatitis A	--	--	--	--	21.4	38.8	--	--	--
Hepatitis B, acute	--	--	--	--	3.4	--	--	--	--
Hepatitis B, chronic	11.9	--	--	--	23.6	16.0	--	--	--
Hepatitis B, pregnant women	--	--	--	--	--	--	--	--	--
Hepatitis C, acute	5.7	--	--	--	10.8	10.5	--	--	--
Hepatitis C, chronic (including perinatal)	34.2	104.7	--	125.7	72.6	95.5	38.6	--	47.5
Lead Poisoning Cases in Children <6 Years Old	--	--	--	--	34.1	--	--	--	--
Lead Poisoning Cases in People >=6 Years Old	--	--	--	--	6.8	--	--	--	--
Legionellosis	--	--	--	--	3.8	--	--	--	--
Listeriosis	--	--	--	--	--	--	--	--	--
Lyme disease	--	--	--	--	--	--	--	--	--
Meningitis, bacterial or mycotic	--	--	--	--	--	--	--	--	--
Mumps	--	--	--	--	--	--	--	--	--
Pertussis	--	--	--	--	--	--	--	--	--
Rabies, animal	--	--	--	--	--	--	--	--	--
Rabies, possible exposure	18.4	--	--	--	--	44.1	--	--	--
S. pneumoniae invasive disease	--	--	--	--	5.2	8.9	--	--	--
Salmonellosis	33.9	33.9	--	--	32.2	19.7	33.3	--	--
Shiga toxin-producing E. coli (STEC) infection	--	--	--	--	--	--	--	--	--
Shigellosis	--	--	--	--	3.9	--	--	--	--
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	--	--	--	--	--	--	--	--
Syphilis (Excluding Congenital)	16.3	29.7	--	--	69.5	30.8	--	--	58.3
Syphilis, Congenital	--	--	--	--	--	--	--	--	--
Tuberculosis	--	--	--	--	2.4	--	--	--	--
Varicella (chickenpox)	--	--	--	--	--	--	--	--	--
Vibriosis (excluding cholera)	--	--	--	--	--	--	--	--	--
West Nile virus disease	--	--	--	--	--	--	--	--	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough
Campylobacteriosis	--	--	--	--	--	--	--	--	18.5
Carbon monoxide poisoning	--	--	--	--	--	--	--	--	--
Ciguatera fish poisoning	--	--	--	--	--	--	--	--	--
Cryptosporidiosis	--	--	--	--	--	--	--	--	2.2
Cyclosporiasis	--	--	--	--	--	--	--	--	--
Dengue fever	--	--	--	--	--	--	--	--	--
Giardiasis, acute	--	--	--	--	--	--	--	--	4.1
HIV[1]	--	--	--	--	--	--	--	--	17.0
Hansen's Disease (Leprosy)	--	--	--	--	--	--	--	--	--
Hepatitis A	--	--	--	--	--	--	--	--	1.6
Hepatitis B, acute	--	--	--	--	--	--	--	--	2.6
Hepatitis B, chronic	--	--	--	--	--	--	16.7	--	18.3
Hepatitis B, pregnant women	--	--	--	--	--	--	--	--	--
Hepatitis C, acute	--	--	--	--	--	--	10.4	--	10.0
Hepatitis C, chronic (including perinatal)	--	--	--	--	--	--	63.5	47.9	58.3
Lead Poisoning Cases in Children <6 Years Old	--	--	--	--	--	--	--	--	38.0
Lead Poisoning Cases in People >=6 Years Old	--	--	--	--	--	--	--	27.3	10.6
Legionellosis	--	--	--	--	--	--	--	--	--
Listeriosis	--	--	--	--	--	--	--	--	--
Lyme disease	--	--	--	--	--	--	--	--	--
Meningitis, bacterial or mycotic	--	--	--	--	--	--	--	--	--
Mumps	--	--	--	--	--	--	--	--	--
Pertussis	--	--	--	--	--	--	--	--	2.3
Rabies, animal	--	--	--	--	--	--	--	--	--
Rabies, possible exposure	--	--	--	--	108.8	--	48.9	--	8.2
S. pneumoniae invasive disease	--	--	--	--	--	--	--	--	2.1
Salmonellosis	--	--	--	--	--	--	17.2	32.6	19.0
Shiga toxin-producing E. coli (STEC) infection	--	--	--	--	--	--	--	--	1.9
Shigellosis	--	--	--	--	--	--	--	--	1.9
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	--	--	--	--	--	--	--	--
Syphilis (Excluding Congenital)	--	--	--	--	--	--	21.3	--	62.2
Syphilis, Congenital	--	--	--	--	--	--	--	--	--
Tuberculosis	--	--	--	--	--	--	--	--	1.5
Varicella (chickenpox)	--	--	--	--	--	--	--	--	--
Vibriosis (excluding cholera)	--	--	--	--	--	--	--	--	--
West Nile virus disease	--	--	--	--	--	--	--	--	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon	Levy	Liberty
Campylobacteriosis	--	.	--	--	--	8.7	13.6	10.3	--	--
Carbon monoxide poisoning	--	.	--	--	--	--	--	--	--	--
Ciguatera fish poisoning	--	.	--	--	--	--	--	--	--	--
Cryptosporidiosis	--	.	--	--	--	--	--	--	--	--
Cyclosporiasis	--	.	--	--	--	--	--	--	--	--
Dengue fever	--	.	--	--	--	--	--	--	--	--
Giardiasis, acute	--	.	--	--	--	--	3.0	--	--	--
HIV[1]	--	.	--	--	--	7.0	7.7	18.0	--	--
Hansen's Disease (Leprosy)	--	.	--	--	--	--	--	--	--	--
Hepatitis A	--	.	--	--	--	--	--	--	--	--
Hepatitis B, acute	--	.	--	--	--	--	--	--	--	--
Hepatitis B, chronic	--	.	--	--	--	12.7	13.9	13.0	--	--
Hepatitis B, pregnant women	--	.	--	--	--	--	--	--	--	--
Hepatitis C, acute	--	.	--	--	--	8.1	4.9	--	--	--
Hepatitis C, chronic (including perinatal)	--	.	97.5	--	--	63.2	64.2	36.6	72.1	--
Lead Poisoning Cases in Children <6 Years Old	--	.	--	--	--	--	--	--	--	--
Lead Poisoning Cases in People >=6 Years Old	--	.	--	--	--	--	--	--	--	--
Legionellosis	--	.	--	--	--	--	--	--	--	--
Listeriosis	--	.	--	--	--	--	--	--	--	--
Lyme disease	--	.	--	--	--	--	--	--	--	--
Meningitis, bacterial or mycotic	--	.	--	--	--	--	--	--	--	--
Mumps	--	.	--	--	--	--	--	--	--	--
Pertussis	--	.	--	--	--	--	--	--	--	--
Rabies, animal	--	.	--	--	--	--	--	--	--	--
Rabies, possible exposure	--	.	--	--	--	51.5	21.4	21.3	--	--
S. pneumoniae invasive disease	--	.	--	--	--	--	--	--	--	--
Salmonellosis	--	.	--	--	--	45.5	32.0	17.6	--	--
Shiga toxin-producing E. coli (STEC) infection	--	.	--	--	--	--	--	--	--	--
Shigellosis	--	.	--	--	--	--	--	--	--	--
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	.	--	--	--	--	--	--	--	--
Syphilis (Excluding Congenital)	--	.	57.2	--	--	25.5	27.3	73.2	--	--
Syphilis, Congenital	--	.	--	--	--	--	--	--	--	--
Tuberculosis	--	.	--	--	--	--	--	--	--	--
Varicella (chickenpox)	--	.	--	--	--	--	--	--	--	--
Vibriosis (excluding cholera)	--	.	--	--	--	--	--	--	--	--
West Nile virus disease	--	.	--	--	--	--	--	--	--	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Madison	Manatee	Marion	Martin	Miami Dade	Monroe	Nassau	Okaloosa	Okeechobee
Campylobacteriosis	--	10.1	15.2	--	.	39.3	--	20.1	--
Carbon monoxide poisoning	--	--	--	--	.	--	--	--	--
Ciguatera fish poisoning	--	--	--	--	.	--	--	--	--
Cryptosporidiosis	--	--	--	--	.	--	--	--	--
Cyclosporiasis	--	--	--	--	.	--	--	--	--
Dengue fever	--	--	--	--	.	82.6	--	--	--
Giardiasis, acute	--	--	--	--	.	--	--	--	--
HIV[1]	--	10.1	6.5	--	.	--	--	--	--
Hansen's Disease (Leprosy)	--	--	--	--	.	--	--	--	--
Hepatitis A	--	--	--	--	.	--	25.2	--	--
Hepatitis B, acute	--	--	--	--	.	--	--	--	--
Hepatitis B, chronic	--	14.8	13.9	--	.	--	--	14.7	--
Hepatitis B, pregnant women	--	--	--	--	.	--	--	--	--
Hepatitis C, acute	--	9.1	7.1	--	.	--	--	--	--
Hepatitis C, chronic (including perinatal)	--	55.1	114.4	67.7	.	76.0	70.9	73.9	90.1
Lead Poisoning Cases in Children <6 Years Old	--	--	--	--	.	--	--	--	--
Lead Poisoning Cases in People >=6 Years Old	--	--	--	--	.	--	--	--	--
Legionellosis	--	--	--	--	.	--	--	--	--
Listeriosis	--	--	--	--	.	--	--	--	--
Lyme disease	--	--	--	--	.	--	--	--	--
Meningitis, bacterial or mycotic	--	--	--	--	.	--	--	--	--
Mumps	--	--	--	--	.	--	--	--	--
Pertussis	--	--	--	--	.	--	--	--	--
Rabies, animal	--	--	--	--	.	--	--	--	--
Rabies, possible exposure	--	9.6	58.0	15.5	.	31.5	--	31.8	--
S. pneumoniae invasive disease	--	--	--	--	.	--	--	--	--
Salmonellosis	--	19.4	25.9	73.9	.	44.6	37.8	27.9	--
Shiga toxin-producing E. coli (STEC) infection	--	--	--	--	.	--	--	--	--
Shigellosis	--	--	--	--	.	--	--	--	--
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	--	--	--	.	--	--	--	--
Syphilis (Excluding Congenital)	--	39.2	29.7	16.1	.	--	--	26.9	--
Syphilis, Congenital	--	--	--	--	.	--	--	--	--
Tuberculosis	--	--	--	--	.	--	--	--	--
Varicella (chickenpox)	--	--	--	--	.	--	--	--	--
Vibriosis (excluding cholera)	--	--	--	--	.	--	--	--	--
West Nile virus disease	--	--	--	--	.	--	--	--	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam	Santa Rosa	Sarasota
Campylobacteriosis	7.7	14.9	.	23.0	25.0	24.9	--	.	11.5
Carbon monoxide poisoning	--	--	.	--	--	--	--	.	--
Ciguatera fish poisoning	--	--	.	--	--	--	--	.	--
Cryptosporidiosis	--	--	.	--	3.9	--	--	.	--
Cyclosporiasis	--	--	.	--	--	--	--	.	--
Dengue fever	--	--	.	--	--	--	--	.	--
Giardiasis, acute	4.0	--	.	4.6	2.8	5.8	--	.	--
HIV[1]	26.2	17.3	.	7.4	16.1	11.0	--	.	7.4
Hansen's Disease (Leprosy)	--	--	.	--	--	--	--	.	--
Hepatitis A	--	--	.	3.7	--	4.4	--	.	5.5
Hepatitis B, acute	2.1	--	.	6.7	4.1	3.1	--	.	--
Hepatitis B, chronic	24.7	14.9	.	15.2	20.5	11.6	--	.	14.5
Hepatitis B, pregnant women	--	--	.	--	--	--	--	.	--
Hepatitis C, acute	7.2	5.4	.	15.6	11.9	6.9	--	.	--
Hepatitis C, chronic (including perinatal)	68.9	52.8	.	84.7	81.1	38.7	118.6	.	70.8
Lead Poisoning Cases in Children <6 Years Old	22.2	--	.	--	--	42.8	--	.	--
Lead Poisoning Cases in People >=6 Years Old	2.6	--	.	4.3	4.3	--	--	.	--
Legionellosis	2.8	--	.	--	3.3	--	--	.	--
Listeriosis	--	--	.	--	--	--	--	.	--
Lyme disease	--	--	.	--	--	--	--	.	--
Meningitis, bacterial or mycotic	--	--	.	--	--	--	--	.	--
Mumps	--	--	.	--	--	--	--	.	--
Pertussis	--	--	.	--	--	--	--	.	--
Rabies, animal	--	--	.	--	--	--	--	.	--
Rabies, possible exposure	7.3	--	.	26.7	12.0	44.3	27.3	.	11.5
S. pneumoniae invasive disease	--	--	.	--	3.4	--	--	.	--
Salmonellosis	24.1	24.2	.	20.9	20.3	26.3	31.4	.	22.3
Shiga toxin-producing E. coli (STEC) infection	2.3	--	.	--	--	--	--	.	--
Shigellosis	5.2	--	.	--	--	--	--	.	--
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	--	.	--	--	--	--	.	--
Syphilis (Excluding Congenital)	86.4	49.2	.	20.9	47.5	33.9	32.7	.	21.6
Syphilis, Congenital	--	--	.	--	--	--	--	.	--
Tuberculosis	3.2	--	.	--	2.4	--	--	.	--
Varicella (chickenpox)	--	--	.	--	--	--	--	.	--
Vibriosis (excluding cholera)	--	--	.	--	--	--	--	.	--
West Nile virus disease	--	--	.	--	--	--	--	.	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Table 9: Rate Per 100,000 Population of Common Reportable Diseases/Conditions by County of Residence, Florida, 2020

Reportable disease/condition	Seminole	St. Johns	St. Lucie	Sumter	Suwannee	Taylor	Union	Volusia	Wakulla	Walton	Washington
Campylobacteriosis	7.9	.	.	--	--	--	--	10.1	--	--	--
Carbon monoxide poisoning	--	.	.	--	--	--	--	--	--	--	--
Ciguatera fish poisoning	--	.	.	--	--	--	--	--	--	--	--
Cryptosporidiosis	--	.	.	--	--	--	--	--	--	--	--
Cyclosporiasis	--	.	.	--	--	--	--	--	--	--	--
Dengue fever	--	.	.	--	--	--	--	--	--	--	--
Giardiasis, acute	--	.	.	--	--	--	--	--	--	--	--
HIV[1]	10.6	.	.	--	--	--	--	10.4	--	--	--
Hansen's Disease (Leprosy)	--	.	.	--	--	--	--	--	--	--	--
Hepatitis A	--	.	.	--	--	--	--	11.5	--	--	--
Hepatitis B, acute	--	.	.	--	--	--	--	--	--	--	--
Hepatitis B, chronic	11.4	.	.	--	--	--	--	28.4	--	--	95.0
Hepatitis B, pregnant women	--	.	.	--	--	--	--	--	--	--	--
Hepatitis C, acute	5.6	.	.	--	--	--	--	9.7	--	--	--
Hepatitis C, chronic (including perinatal)	39.5	.	.	93.0	52.1	--	787.5	82.9	62.9	48.3	586.1
Lead Poisoning Cases in Children <6 Years Old	--	.	.	--	--	--	--	--	--	--	--
Lead Poisoning Cases in People >=6 Years Old	--	.	.	--	--	--	--	--	--	--	--
Legionellosis	--	.	.	--	--	--	--	--	--	--	--
Listeriosis	--	.	.	--	--	--	--	--	--	--	--
Lyme disease	--	.	.	--	--	--	--	--	--	--	--
Meningitis, bacterial or mycotic	--	.	.	--	--	--	--	--	--	--	--
Mumps	--	.	.	--	--	--	--	--	--	--	--
Pertussis	--	.	.	--	--	--	--	--	--	--	--
Rabies, animal	--	.	.	--	--	--	--	--	--	--	--
Rabies, possible exposure	27.9	.	.	--	--	--	--	15.7	--	--	--
S. pneumoniae invasive disease	--	.	.	--	--	--	--	--	--	--	--
Salmonellosis	15.6	.	.	18.0	45.6	--	--	31.1	--	27.6	--
Shiga toxin-producing E. coli (STEC) infection	--	.	.	--	--	--	--	--	--	--	--
Shigellosis	--	.	.	--	--	--	--	--	--	--	--
Streptococcus pneumoniae Invasive Disease, Drug-Resistant	--	.	.	--	--	--	--	--	--	--	--
Syphilis (Excluding Congenital)	31.2	.	.	15.0	--	--	167.8	41.2	--	--	146.5
Syphilis, Congenital	--	.	.	--	--	--	--	--	--	--	--
Tuberculosis	--	.	.	--	--	--	--	--	--	--	--
Varicella (chickenpox)	--	.	.	--	--	--	--	--	--	--	--
Vibriosis (excluding cholera)	--	.	.	--	--	--	--	--	--	--	--
West Nile virus disease	--	.	.	--	--	--	--	--	--	--	--

-- Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

1 County totals exclude 49 Florida Department of Corrections cases.

Appendices

Appendix II: Data Sources

Data presented in this report are based on reportable disease information received by county and state health department staff from physicians, hospitals and laboratories throughout the state obtained through passive and active surveillance. Notifying the Department of cases of reportable diseases and conditions in the state of Florida is mandated under section 381.0031, Florida Statutes and Florida Administrative Code Chapter 64D-3. Laboratories, hospitals, medical facilities or other facilities providing health services (which can include schools, nursing homes and state institutions) are required to report certain diseases and conditions and the associated laboratory test results as listed in the Table of Notifiable Diseases or Conditions to Be Reported, Florida Administrative Code Chapter 64D-3. Reporting of test results by a laboratory does not nullify a practitioner's obligation to report the disease or condition. These data are the basis for providing useful information on reportable diseases and conditions in Florida to health care workers and policymakers and would not be possible without the cooperation of the extensive network involving both private and public sector participants. Data in this report are collected by a variety of means described on the following page.

Case-based passive surveillance is the most common surveillance approach for reportable diseases. Passive surveillance relies on physicians, laboratories and other health care providers to report diseases to the Department confidentially in 1 of 3 forms: electronically, by telephone or by facsimile. Increasingly, information about cases of reportable diseases and conditions is passed from providers, especially laboratories, to the Department as electronic records. This occurs automatically, without the involvement of a person once the electronic transmission process has been established between the Department and the reporting partner. Case-based reporting implies that some action is taken for every case, such as interviewing the case to identify risk factors or detect outbreaks.

Laboratory-based surveillance is when laboratory data are used to assess trends. In Florida, laboratory-based surveillance is used to monitor antimicrobial resistance patterns in the community and is the primary means of monitoring diseases such as chronic hepatitis. Laboratories participating in electronic laboratory reporting (ELR) are required to submit antimicrobial resistance testing for a variety of bacteria. These laboratories are also required to submit all positive and negative results to the Department for hepatitis viruses, human papillomavirus, influenza virus, respiratory syncytial virus (RSV) and *Staphylococcus aureus*. Individual cases of these diseases are not investigated (except for acute hepatitis infections); surveillance relies entirely on laboratory results. Additionally, the CDC's National Respiratory and Enteric Virus Surveillance System (NREVSS) is a laboratory-based system used to monitor temporal and geographic circulation patterns of RSV and other respiratory viruses in Florida.

Sentinel surveillance is when a sample of providers or laboratories are used to represent a wider population. ILINet is a nationwide surveillance system of sentinel providers, predominately outpatient health care providers, to monitor influenza and influenza-like illness (ILI) in the community.

Syndromic surveillance uses existing health-related data that precede diagnosis to identify cases of reportable diseases that would have otherwise gone unreported, identify outbreaks, monitor health trends in the community and provide situational awareness during public health responses. Florida uses the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE-FL) to monitor influenza, ILI and RSV trends across the state through chief complaints and discharge diagnoses from participating emergency departments and urgent care centers.

Registries are another passive surveillance approach. The Florida Cancer Data System (FCDS) is Florida's legislatively mandated population-based statewide cancer registry. All hospital and outpatient facilities licensed in Florida must report each patient admitted for treatment of cancer to the Department. The Florida Birth Defects Registry (FBDR) is a passive statewide population-based surveillance system. FBDR utilizes and links multiple datasets, including vital statistics and hospital records, to identify infants with birth defects.

Active surveillance entails Department staff regularly contacting hospitals, laboratories and physicians in an effort to identify all cases of a given disease or condition. This approach can be used in outbreak situations or to support an event or case investigation of urgent public health importance.

Appendices

Appendix III: Interpreting the Data

Information in this report should be interpreted in light of the limitations below.

1: Under-Reporting

The data presented in this report are primarily based on passive reporting by health care providers and laboratories across Florida. Case reporting is most often dependent upon a person becoming ill, seeking medical attention, the health care provider ordering laboratory testing and finally the health care provider or laboratory reporting the case. Frequently, not all steps in this process occur, so the number of reported cases represents a fraction of the true number of cases of reportable illnesses occurring in Florida each year. Evaluations of infectious disease reporting systems have indicated that the completeness of reporting varies by disease. The less common but more severe reportable diseases such as bacterial meningitis, diphtheria, polio, botulism, anthrax, tuberculosis and congenital syphilis are more completely reported than the more common diseases with less severe symptoms such as hepatitis A or campylobacteriosis. Variation in identified disease incidence at the local level probably reflects, to varying degrees, both differences in the true incidence of disease and differences in the vigor with which surveillance is performed.

2: Reliability of Rates

All incidence rates in this report are expressed as the number of reported cases of a disease or condition per 100,000 population unless otherwise specified. All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS), a Florida Department of Health Web-based data query system with community tools, health indicators and data queries for public consumption (www.FLHealthCHARTS.com). Population estimates within CHARTS are provided by the Florida Department of Health Division of Public Health Statistics and Performance Management in consultation with the Florida Legislature's Office of Economic and Demographic Research. Estimates in CHARTS are updated at least once per year, and population data were extracted from CHARTS for this report on November 18, 2022. Note that previous editions of this report may show somewhat different populations for a given year than the ones shown here, as these estimates are revised periodically. Revisions to population estimates can also impact disease rates.

Animal rabies is not expressed as a rate; it is only expressed as the number of cases because no reliable denominators exist for animal populations.

Rates for diseases with only a few cases reported per year can be unstable and should be interpreted with caution. The observation of zero events is especially difficult to interpret. Rates were not generally calculated in this report when there were less than 20 cases, except as part of graphs and maps. In some cases, even though maps and graphs (e.g., by year, gender, race) may have small individual counts, rates were calculated. These maps include footnotes as a reminder that rates based on less than 20 cases are not reliable.

3: Determining How Cases Are Counted: Reporting Period and Cases Included

Unless otherwise noted, confirmed and probable cases reported in Florida residents are included in this report. There are important differences by disease that determine how cases are counted and summarized in this report. The date of illness onset or the date of diagnosis may not be available for all cases. Cases reported early in 2019 or 2020 may have actually had onset or diagnosis in the previous year, respectively; rarely, cases reported in 2019 or 2020 may have onset or diagnosis dates prior to 2018. Additionally, cases with illness onset or diagnosis late in 2018 or 2019 may not have been reported to public health by the end of the report year and thus would not be included in this report for most diseases. Information by disease is listed on the following page.

Appendices

AIDS and HIV diagnoses

Year: Data are aggregated by calendar year.

Diagnoses included: HIV diagnoses are based on the date, county of residence and state of residence of the first confirmed HIV test. AIDS diagnoses are based on the date, county of residence and state of residence of the first CD4 count below 200 cells/mm^3 or AIDS-defining opportunistic infection in a person with HIV. The 2018 HIV and AIDS diagnosis dataset was frozen on June 30, 2019. Changes occurring after that point that affect the number of cases in 2018 or earlier will be updated in the following year's dataset.

Please note that prior to 2014, HIV and AIDS diagnoses were assigned to a report year based on the date the case was entered into the surveillance system. For more information about how AIDS and HIV diagnoses are counted, please see the HIV Data Center website (FloridaHealth.gov/diseases-and-conditions/aids/surveillance/index.html).

Sexually transmitted diseases (STDs)

Year: Data are aggregated by calendar year.

Cases included: Cases are assigned to a report year based on the date the case was entered into the surveillance system. Occasionally, STD reports are received after the end of the reporting year that should have been included based on the laboratory result date. For these cases, the laboratory result date is used for the report date.

Tuberculosis

Year: Data are aggregated by calendar year.

Cases included: Cases are assigned to a report year based on the date when the suspected diagnosis is confirmed by clinical, radiographic and laboratory testing (often referred to as "date counted").

Zika virus disease and infection (including congenital)

Year: Data are aggregated by the standard reporting year as outlined by the Centers for Disease Control and Prevention (CDC), where every year has 52 or 53 weeks (there were 52 weeks in 2018). This is referred to as the Morbidity and Mortality Weekly Report (MMWR) year.

Cases included: Cases are assigned to a report year based on the earliest date associated with the case (onset date, diagnosis date, laboratory report date or date the Department was notified of the case). In the surveillance application, Merlin, this is referred to as "event date."

All other diseases

Year: Data are aggregated by MMWR year (see above for explanation of MMWR year).

Cases included: Cases are assigned to a report year based on the date the case was determined to have enough information to be submitted by county health department epidemiology staff to the Florida Department of Health Bureau of Epidemiology (BOE) for state-level review. In the surveillance application, Merlin, this is referred to as "date reported to BOE."

Disease-specific reports describing data by other dates, such as disease onset and diagnosis dates, may also be published and available on the Department's website; numbers may vary from this report based on different inclusion criteria.

4: Case Definitions
Cases of most diseases are classified as confirmed, probable or suspect at the state level using a published set of surveillance case definitions consistent with national case definitions where appropriate (Surveillance Case Definitions for Selected Reportable Diseases in Florida, available at FloridaHealth.gov/DiseaseCaseDefinitions). Case classifications are reviewed at the state level for most diseases. Following CDC MMWR print criteria (available at www.cdc.gov/nndss/script/downloads.aspx), only confirmed and probable cases have been included in this report unless otherwise specified (i.e., suspect cases are excluded).

Changes to case definitions can affect the number of cases reported, which can impact calculated incidence rates, but ultimately case definition changes do not change the true incidence of a disease. Each year case definitions are evaluated for necessary revisions. A number of changes were made to reportable disease case definitions in 2019 and 2020 as a result of position statements approved by the Council of State and Territorial Epidemiologists (CSTE) in 2018 and 2019.

Summary of case definition changes effective report year 2019 (beginning December 30, 2018 [with the exception of anaplasmosis/ehrlichiosis, arboviruses, chikungunya fever, dengue and severe dengue fever, hepatitis A, Lyme disease, and Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis which were retroactively applied to cases with event dates in 2018—beginning December 31, 2017]):

a. Anaplasmosis/ehrlichiosis: Suspect case classification was expanded to include confirmatory and presumptive laboratory criteria.

b. Arboviral diseases: Added cerebrospinal fluid as a valid specimen type for IgM in confirmatory laboratory testing criteria and added a suspect case classification for asymptomatic people with laboratory evidence of infection.

c. Carbon monoxide poisoning: Updated laboratory criteria based on age and smoking status, revised exposure criteria, and revised case classifications based on laboratory, exposure, and epidemiological criteria.

d. Campylobacteriosis: Added a suspect case classification to capture non-isolate based sequencing, detection of antibodies (no longer considered culture-independent diagnostic testing), and new laboratory methodologies.

e. Chikungunya fever: Added suspect case classification to capture asymptomatic people with laboratory evidence of infection.

f. Creutzfeldt-Jakob disease: Updated laboratory criteria to include RT-QuIC assay/MRI findings and remove the Tau assay and removed fatal outcome from clinical criteria.

g. Dengue and sever dengue fever: Expanded suspect case classification to include asymptomatic people with laboratory evidence of infection.

h. Diphtheria: Added toxin production to confirmed classification, moved histopathologic diagnosis to suspect classification, and eliminated probable classification.

i. Hepatitis A: Added nucleic acid amplification as a confirmatory laboratory test type regardless of clinical signs or symptoms.

j. Listeriosis: Expanded confirmed classification to capture isolation of Listeria monocytogenes from products of conception at time of delivery and non-sterile sites from neonates, added a probable classification to capture culture-independent diagnostic testing, added epidemiological criteria for mothers and neonates, and updated suspect classification to capture isolation of *Listeria monocytogenes* from non-invasive clinical specimens.

k. Lyme disease: Laboratory criteria for late manifestation Lyme disease were updated to include only IgG Western blot and culture.

l. Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis: Suspect case classification was expanded to include confirmatory and presumptive laboratory criteria.

m. *Salmonella* Paratyphi infection: Revised to only exclude infection with Salmonella Paratyphi B (tartrate positive), moved culture-independent diagnostic testing from suspect classification to probable classification when clinical criteria are met, revised suspect classification to capture detection of antibodies (no longer considered culture-independent diagnostic testing), and removed clinical criteria for confirmed cases.

n. *Salmonella* Typhi infection: Moved culture-independent diagnostic testing from suspect classification to probable classification when clinical criteria are met, revised suspect classification to capture detection of antibodies (no longer considered culture-independent diagnostic testing), and removed clinical criteria for confirmed cases.

o. Salmonellosis: Added a suspect case classification to capture non-isolate based sequencing, detection of antibodies (no longer considered culture-independent diagnostic testing), and new laboratory methodologies.

p. Shigellosis: Added a suspect case classification to capture non-isolate based sequencing, detection of antibodies (no longer considered culture-independent diagnostic testing), and new laboratory methodologies.

q. Yellow fever: Updated laboratory to address changes in diagnostic testing and the possible occurrence of yellow fever vaccine-associated viscerotropic disease.

Summary of case definition changes effective for cases with event dates in 2020 (beginning December 29, 2019):

a. Acute flaccid myelitis: Added standard case definition to Merlin and case definition document.

b. Anaplasmosis/ehrlichiosis: Clarified laboratory criteria related to fourfold IgG titer changes for *Anaplasma phagocytophilum* and *Ehrlichia chaffeensis* infections, added microscopic evidence to presumptive laboratory criteria for *Anaplasma phagocytophilum* and *Ehrlichia chaffeensis* infections, and expanded presumptive laboratory criteria for undetermined anaplasmosis/ehrlichiosis.

c. Hepatitis C: Updated clinical criteria to include bilirubin ≥3.0 mg/dL or alanine aminotransferase level >200 IU/L in place of symptoms for acute and chronic hepatitis C and clarified laboratory conversion criteria for acute hepatitis C.

d. Legionellosis: Separated clinical criteria into Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis; clarified laboratory criteria related to equivocal antibody titers; moved PCR from supportive to confirmatory laboratory criteria; added epidemiological criteria; and added a probable case classification based on clinical and epidemiological criteria.

e. Pertussis: Updated case classification to be consistent across all age groups and removed symptom criteria by test type.

f. Plague: Clarified and expanded laboratory criteria and added epidemiological criteria.

g. Rocky Mountain spotter fever and spotted fever rickettsiosis: Clarified laboratory criteria and updated case classification to include epidemiological criteria.

h. *Salmonella* Paratyphi infection: Updated supportive laboratory criteria to exclude negative *Salmonella* culture.

i. *Salmonella* Typhi infection: Updated supportive laboratory criteria to exclude negative *Salmonella* culture.

j. Zika virus disease and infection, non-congenital: Updated epidemiological criteria to be specific to symptomatic cases, asymptomatic cases in pregnant women, and possibly locally acquired asymptomatic cases.

5: Assigning Cases to Counties
Cases are assigned to Florida counties following national guidance and based on the county of residence at the time of the disease identification, regardless of where they became ill or were hospitalized, diagnosed or exposed. Cases who reside outside of Florida are not counted as Florida cases regardless of whether they became ill or were hospitalized, diagnosed or exposed in Florida. Zika virus disease and infection cases do include residents of other states; however cases of other diseases in out-of-state residents are not included in this report unless specifically noted. These cases are referred through an interstate reciprocal notification system to the state where the person resides.

6: Population Estimates
All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS), a Florida Department of Health Web-based data query system with community tools, health indicators and data queries for public consumption (FLHealthCHARTS.com). Population estimates within CHARTS are provided by the Florida Department of Health Division of Public Health Statistics and Performance Management in consultation with the Florida Legislature's Office of Economic and Demographic Research. Estimates in CHARTS are updated at least once per year, and population data were extracted from CHARTS for this report on November 18, 2022. Note that previous editions of this report may show somewhat different populations for a given year than the ones shown here, as these estimates are revised periodically. Revisions to population estimates can also impact disease rates.

7: Florida Disease Codes in Merlin
Reported case data for most reportable diseases (excluding HIV/AIDS, STDs and tuberculosis) are stored in Merlin, Florida's Web-based reportable disease surveillance system. When entering case data into Merlin, users assign a Florida Disease Code based on the disease. Due to changes in case definitions over time, new codes have been added and outdated codes have expired. In addition, some diseases have multiple disease codes that represent different clinical manifestations.

Appendices

Diseases that include cases from multiple or expired Florida Disease Codes in this report:

a. Amebic Infections
   Amebic Infections (*Acanthamoeba*) - 13621
   Amebic Infections (*Balamuthia mandrillaris*) - 13625
   Amebic Infections (*Naegleria fowleri*) - 13629
   Amebic Encephalitis - 13620 (EXPIRED)

b. California Serogroup Virus Disease
   California Serogroup Virus Neuroinvasive Disease - 06250
   California Serogroup Virus Non-Neuroinvasive Disease - 06251

c. Dengue Fever
   Dengue Fever - 06100
   Dengue Fever, Severe - 06101

d. Eastern Equine Encephalitis
   Eastern Equine Encephalitis Neuroinvasive Disease - 06220
   Eastern Equine Encephalitis Non-Neuroinvasive Disease - 06221

e. Ehrlichiosis
   Ehrlichiosis (*Ehrlichia ewingii*) - 08383
   Ehrlichiosis, HME (*Ehrlichia chaffeensis*) - 08382

f. Hantavirus Infection
   Hantavirus Infection, Non-Pulmonary Syndrome - 07870
   Hantavirus Pulmonary Syndrome - 07869

g. Plague
   Plague, Bubonic - 02000
   Plague, Pneumonic - 02050

h. Poliomyelitis
   Poliomyelitis, Nonparalytic - 04520
   Poliomyelitis, Paralytic - 04590

i. Q Fever (*Coxiella burnetii*)
   Q Fever, Acute (*Coxiella burnetii*) - 08301
   Q Fever, Chronic (*Coxiella burnetii*) - 08302

j. Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis
   Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis - 08309
   Rocky Mountain Spotted Fever - 08200 (EXPIRED)

k. Rubella
   Rubella - 05690
   Rubella, Congenital Syndrome - 77100

l. Salmonellosis
   Salmonella Paratyphi infection (*Salmonella* Serotypes Paratyphi A, B, C) - 00210
   Salmonella Typhi infection—00200
   Salmonellosis - 00300

m. St. Louis Encephalitis
St. Louis Encephalitis Neuroinvasive Disease - 06230
St. Louis Encephalitis Non-Neuroinvasive Disease - 06231

n. Typhus Fever
Typhus Fever, Epidemic (*Rickettsia prowazekii*) - 08000
Typhus Fever, Endemic (*Rickettsia typhi*) - 08100 (EXPIRED)

o. Venezuelan Equine Encephalitis
Venezuelan Equine Encephalitis Neuroinvasive Disease - 06620
Venezuelan Equine Encephalitis Non-Neuroinvasive Disease - 06621

p. Vibriosis (Excluding Cholera)
Vibriosis (*Grimontia hollisae*) - 00196
Vibriosis (*Vibrio algino*lyticus) - 00195
Vibriosis (*Vibrio cholerae* Type Non-01) - 00198
Vibriosis (*Vibrio fluvialis*) - 00194
Vibriosis (*Vibrio mimicus*) - 00197
Vibriosis (*Vibrio parahaemolyticus*) - 00540
Vibriosis (*Vibrio vulnificus*) - 00199
Vibriosis (Other *Vibrio* Species) - 00193

q. Viral Hemorrhagic Fever
Crimean-Congo Hemorrhagic Fever - 06591
Ebola Hemorrhagic Fever - 06592
Guanarito Hemorrhagic Fever - 06593
Junin Hemorrhagic Fever - 06594
Lassa Fever - 06595
Lujo Virus - 06596
Machupo Hemorrhagic Fever - 06597
Marburg Fever - 06598
Sabia-Associated Hemorrhagic Fever - 06599
Viral Hemorrhagic Fever - 06590 (EXPIRED)

r. West Nile Virus Disease
West Nile Virus Neuroinvasive Disease - 06630
West Nile Virus Non-Neuroinvasive Disease - 06631

s. Western Equine Encephalitis
Western Equine Encephalitis Neuroinvasive Disease - 06210
Western Equine Encephalitis Non-Neuroinvasive Disease - 06211

Appendices

Appendix IV: Report Terminology

Section 1: Data Summaries for Common Reportable Diseases/Conditions and Section 2: Narratives for Uncommon Reportable Diseases/Conditions each include tables and figures that summarize characteristics of cases. Those characteristics are defined below.

Case classification: all cases are classified as confirmed or probable according to the surveillance case definition based on clinical, laboratory and epidemiologic information. Current and historical case definitions can be found here: FloridaHealth.gov/DiseaseCaseDefinitions.

Hospitalized: a person with a reportable disease was hospitalized, though the hospitalization may not necessarily have been due to the reportable disease or condition.

Died: A person with a reportable disease or condition died, though the death may not necessarily have been due to the illness and may have occurred after the illness.

Sensitive situation: settings where people with certain diseases may be more likely to infect others. For example, a food handler with an enteric illness like salmonellosis may contaminate food and infect people who eat the food. In this report, sensitive situations include daycare staff and attendees, health care workers and food handlers.

Imported status: where a person was most likely exposed to the organism or environment that caused the reportable disease or condition. Note that Puerto Rico and the U.S. Virgin Islands are U.S. territories and are included in the category “acquired in the U.S., not Florida.”

Outbreak status: two or more cases that are epidemiologically linked are considered outbreak-associated, unless otherwise noted.

Month of occurrence: determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date or the date the county health department was notified of the case.

Appendix V: List of Reportable Diseases/Conditions in Florida, 2020

Subsection 381.0031(2), Florida Statutes, provides that "Any practitioner licensed in this state to practice medicine, osteopathic medicine, chiropractic medicine, naturopathy, or veterinary medicine; any hospital licensed under part I of Chapter 395, Florida Statutes; or any laboratory licensed under Chapter 483, Florida Statutes that diagnoses or suspects the existence of a disease of public health significance shall immediately report the fact to the Department of Health." This list of reportable diseases and conditions is maintained in Florida Administrative Code Rule 64D-3.029. The Rule was last revised in October 2016. The list below reflects the diseases and conditions that were reportable in 2020.

Any disease outbreak
Any grouping or clustering of disease
Acquired immune deficiency syndrome (AIDS)
Amebic encephalitis
Anthrax
Arsenic poisoning
Arboviral diseases not otherwise listed
Babesiosis
Botulism
Brucellosis
California serogroup virus disease
Campylobacteriosis
Cancer (excluding non-melanoma skin cancer and including benign and borderline intracranial and CNS tumors)
Carbon monoxide poisoning
Chancroid
Chikungunya fever
Chlamydia
Cholera (*Vibrio cholerae* type O1)
Ciguatera fish poisoning
Congenital anomalies
Conjunctivitis in neonates <14 days old
Coronavirus disease (COVID-19)
Creutzfeldt-Jakob disease (CJD)
Cryptosporidiosis
Cyclosporiasis
Dengue fever
Diphtheria
Eastern equine encephalitis
Ehrlichiosis/anaplasmosis
Giardiasis, acute
Glanders
Gonorrhea
Granuloma inguinale
Haemophilus influenzae invasive disease in children <5 years old (all ages for electronic laboratory reporting laboratories)
Hansen's disease (leprosy)
Hantavirus infection
Hemolytic uremic syndrome (HUS)
Hepatitis A
Hepatitis B, C, D, E, and G
Hepatitis B surface antigen in pregnant women or children <2 years old
Herpes B virus, possible exposure
Herpes simplex virus (HSV) in infants <60 days old with disseminated infection and liver involvement; encephalitis; and infections limited to skin, eyes, and mouth; anogenital HSV in children <12 years old
Human immunodeficiency virus (HIV) infection
HIV, exposed infants <18 months old born to an HIV-infected woman
Human papillomavirus (HPV), associated laryngeal papillomas or recurrent respiratory papillomatosis in children <6 years old; anogenital papillomas in children <12 years old (all HPV DNA for electronic laboratory reporting laboratories)
Influenza A, novel or pandemic strains
Influenza-associated pediatric mortality in children <18 years old
Lead poisoning
Legionellosis
Leptospirosis
Listeriosis
Lyme disease
Lymphogranuloma venereum (LGV)
Measles (rubeola)
Melioidosis
Meningitis, bacterial or mycotic
Meningococcal disease
Mercury poisoning
Mumps
Neonatal abstinence syndrome (NAS)
Neurotoxic shellfish poisoning
Paratyphoid fever (*Salmonella* serotypes Paratyphi A, B, C)
Pertussis
Pesticide-related illness and injury, acute
Plague
Poliomyelitis
Psittacosis (ornithosis)
Q Fever
Rabies (human, animal, possible exposure)
Ricin toxin poisoning
Rocky Mountain spotted fever and other spotted fever rickettsioses
Rubella
St. Louis encephalitis
Salmonellosis
Saxitoxin poisoning (paralytic shellfish poisoning)
Severe acute respiratory disease syndrome associated with coronavirus infection
Shiga toxin-producing *Escherichia coli* (STEC) infection
Shigellosis
Smallpox
Staphylococcal enterotoxin B poisoning
Staphylococcus aureus infection, intermediate or full resistance to vancomycin (VISA, VRSA)
Streptococcus pneumoniae invasive disease in children <6 years old (all ages for electronic laboratory reporting laboratories)
Syphilis
Tetanus
Trichinellosis (trichinosis)
Tuberculosis (TB)
Tularemia
Typhoid fever (*Salmonella* serotype Typhi)
Typhus fever, epidemic
Vaccinia disease
Varicella (chickenpox)
Venezuelan equine encephalitis
Vibriosis (infections of *Vibrio* species and closely related organisms, excluding *Vibrio cholerae* type O1)
Viral hemorrhagic fevers
West Nile virus disease
Yellow fever
Zika fever

Electronic laboratory reporting laboratories only:

Antimicrobial resistance results for isolates from a normally sterile site for *Acinetobacter baumannii*, *Citrobacter* species, *Enterococcus* species, *Enterobacter* species, *Escherichia coli*, *Klebsiella* species, *Pseudomonas aeruginosa*, and *Serratia* species
Hepatitis B, C, D, E, and G viruses, all test results (positive and negative) and all liver function tests
Influenza virus, all test results (positive and negative)
Respiratory syncytial virus, all test results (positive and negative)
Staphylococcus aureus isolated from a normally sterile site

Appendix VI: Florida County Boundaries

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Appendix VII: Florida Population Estimates

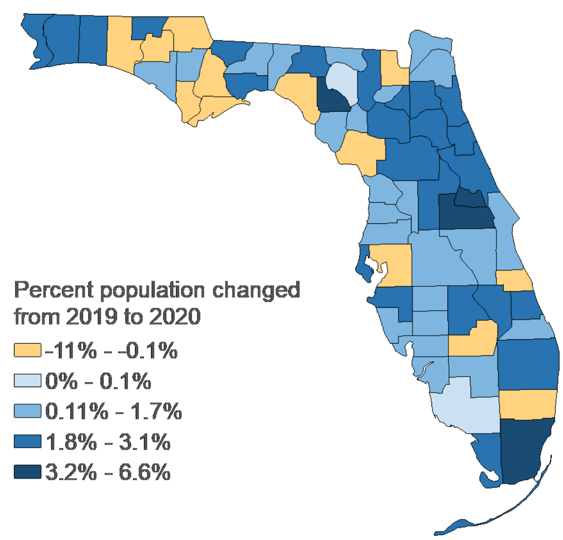
The estimated population in 2020 increased 1.8% from 2019. Note that increases are not uniform across all demographic groups, though increases occurred in most demographic groups. The increase was very similar between males and females, but was notably higher for Hispanics and other races. The largest increases were in older age groups, particularly adults 65 to 84 years old as well as in infants <1 year old. Population decreased for children 1 to 4 years old and adults 45 to 54 years old. Population decreases from 2019 to 2020 were observed in 12 counties, ranging from –0.2% to –10.8%. Increases in the remaining 55 counties varied from 0.1% to 6.6%.

All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS), a Florida Department of Health Web-based data query system with community tools, health indicators and data queries for public consumption (www.FLHealthCHARTS.com). Population estimates within CHARTS are provided by the Florida Department of Health Division of Public Health Statistics and Performance Management in consultation with the Florida Legislature's Office of Economic and Demographic Research. Estimates in CHARTS are updated at least once per year, and population data were extracted from CHARTS for this report on November 18, 2022. Note that previous editions of this report may show somewhat different populations for a given year than the ones shown here, as these estimates are revised periodically. Revisions to population estimates can also impact disease rates.

Year	Population
2011	18,941,742
2012	19,118,938
2013	19,314,396
2014	19,579,871
2015	19,897,762
2016	20,231,092
2017	20,555,733
2018	20,957,705
2019	21,268,553
2020	21,640,766

Gender	2019 Population	2020 Population	Percent Change
Female	10,871,777	11,064,444	+1.8%
Male	10,396,776	10,576,322	+1.7%
Race	**2019 Population**	**2020 Population**	**Percent Change**
White	16,439,624	16,713,931	+1.7%
Black	3,603,599	3,671,185	+1.9%
Other	1,225,330	1,255,650	+2.5%
Ethnicity	**2019 Population**	**2020 Population**	**Percent Change**
Non-Hispanic	15,682,754	15,869,672	+1.2%
Hispanic	5,585,799	5,771,094	+3.3%
Age	**2019 Population**	**2020 Population**	**Percent Change**
<1	216,577	229,994	+6.2%
1-4	925,920	919,989	-0.6%
5-9	1,156,349	1,175,975	+1.7%
10-14	1,204,599	1,215,526	+0.9%
15-19	1,205,135	1,212,470	+0.6%
20-24	1,269,574	1,270,031	+0.0%
25-34	2,788,268	2,826,346	+1.4%
35-44	2,567,662	2,624,553	+2.2%
45-54	2,744,016	2,733,174	-0.4%
55-64	2,848,838	2,917,687	+2.4%
65-74	2,389,620	2,475,985	+3.6%
75-84	1,382,943	1,455,459	+5.2%
85+	569,052	583,577	+2.6%
Total	**21,268,553**	**21,640,766**	**+1.8%**

Larger population decreased were clustered in the Panhandle as well as a few counties in central and south Florida. Population increases were primarily clustered in the central and eastern parts of the state.



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County	2019 Population	2020 Population	Percent Change
Alachua	266,649	270,405	+1.4%
Baker	28,089	28,588	+1.8%
Bay	179,900	175,776	-2.3%
Bradford	28,455	28,818	+1.3%
Brevard	593,372	604,154	+1.8%
Broward	1,927,014	1,946,104	+1.0%
Calhoun	14,982	14,894	-0.6%
Charlotte	182,298	185,392	+1.7%
Citrus	147,735	149,781	+1.4%
Clay	217,109	219,925	+1.3%
Collier	377,700	386,478	+2.3%
Columbia	70,614	70,694	+0.1%
DeSoto	35,718	36,388	+1.9%
Dixie	16,516	16,704	+1.1%
Duval	971,842	988,783	+1.7%
Escambia	322901	324620	+0.5%
Flagler	110636	114053	+3.1%
Franklin	12,017	12,229	+1.8%
Gadsden	47,926	46,345	-3.3%
Gilchrist	17,682	18,027	+2.0%
Glades	13,098	13,230	+1.0%
Gulf	16,507	14,716	-10.8%
Hamilton	14,787	14,618	-1.1%
Hardee	27,311	27,571	+1.0%
Hendry	40,089	40,594	+1.3%
Hernando	189,661	192,189	+1.3%
Highlands	103,391	104,384	+1.0%
Hillsborough	1,445,243	1,481,163	+2.5%
Holmes	20,218	20,184	-0.2%
Indian River	155,308	158,238	+1.9%
Jackson	50,325	47,171	-6.3%
Jefferson	14,842	14,831	-0.1%
Lafayette	8,613	8,721	+1.3%
Lake	354,537	368,828	+4.0%
State total	21,268,553	21,640,766	+1.8%

County	2019 Population	2020 Population	Percent Change
Lee	734,630	756,912	+3.0%
Leon	296,717	300,519	+1.3%
Levy	41,354	41,634	+0.7%
Liberty	9,167	8,774	-4.3%
Madison	19,533	19,254	-1.4%
Manatee	388,729	397,727	+2.3%
Marion	360,053	367,247	+2.0%
Martin	158,006	161,017	+1.9%
Miami-Dade	2,830,500	2,864,600	+1.2%
Monroe	73,253	76,280	+4.1%
Nassau	85,135	87,389	+2.6%
Okaloosa	201,104	204,326	+1.6%
Okeechobee	41,347	42,187	+2.0%
Orange	1,389,297	1,426,631	+2.7%
Osceola	368,678	388,132	+5.3%
Palm Beach	1,458,576	1,469,904	+0.8%
Pasco	527,174	539,769	+2.4%
Pinellas	979,558	986,400	+0.7%
Polk	688,770	707,191	+2.7%
Putnam	73,012	73,355	+0.5%
Santa Rosa	179,875	183,633	+2.1%
Sarasota	426,977	434,853	+1.8%
Seminole	472,775	480,417	+1.6%
St. Johns	249,734	266,128	+6.6%
St. Lucie	309,073	316,620	+2.4%
Sumter	130,642	133,310	+2.0%
Suwannee	45,482	46,028	+1.2%
Taylor	22,652	22,654	+0.0%
Union	15,985	15,493	-3.1%
Volusia	539,563	546,612	+1.3%
Wakulla	32,418	33,394	+3.0%
Walton	70,352	72,528	+3.1%
Washington	25,347	25,252	-0.4%
State total	29,291,638	29,785,362	+1.7%

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Appendix VIII: References

The following references were used throughout this report.

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850-245-4342

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