

Section 2

Data Summaries for Selected Reportable Diseases/Conditions of Frequent Occurrence

Disease Facts

Cause: HIV with low CD4 count (<200 cells/ μ L) or occurrence of AIDS-defining illness in an HIV-infected person

Type of illness: Decreased immune system function allows opportunistic infections and tumors to develop that do not usually affect people who have healthy immune systems

Transmission: Anal or vaginal sex; blood exposure (e.g., sharing drug needles, receiving infected blood transfusion [rare due to donor screening]); or from mother to child during pregnancy, delivery or breastfeeding

Reason for surveillance: Enhance efforts to prevent HIV transmission, improve allocation of resources for treatment services, and assist in evaluating the impact of public health interventions

Comments: Artificial incidence peaks in 2008 and 2013 were due to expansion of electronic laboratory reporting. Incidence has decreased in 2014 and has subsequently remained relatively stable. Expanded efforts to link and retain people in care may have contributed to the decrease.

Summary of Case Demographics

Summary

Number of cases	2,119
Incidence rate (per 100,000 population)	10.5
Change from 5-year average incidence	-22.4%

Age (in Years)

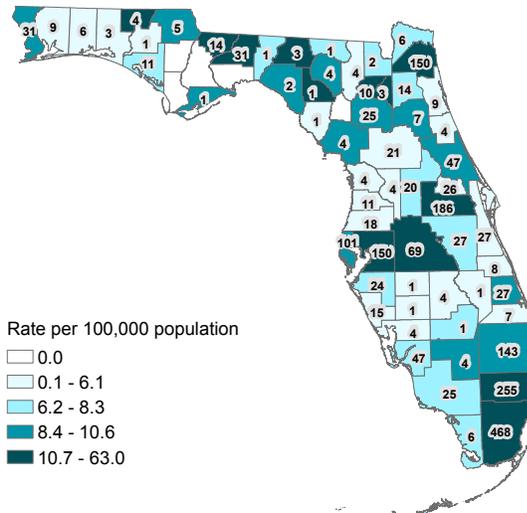
Mean	43
Median	42
Min-max	8 - 88

Gender	Number (Percent)	Rate
Female	580 (27.4)	5.6
Male	1,539 (72.6)	15.6
Unknown gender	0	

Race	Number (Percent)	Rate
White	950 (45.1)	6.0
Black	1,123 (53.3)	32.9
Other	33 (1.6)	3.0
Unknown race	13	

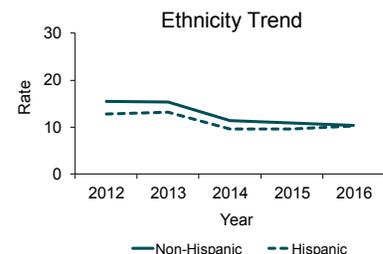
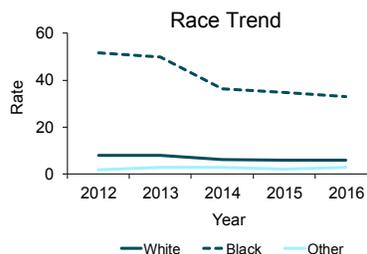
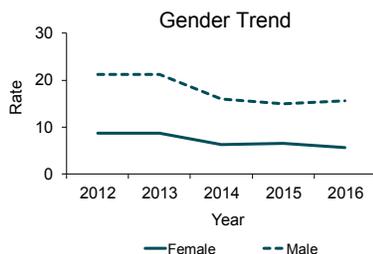
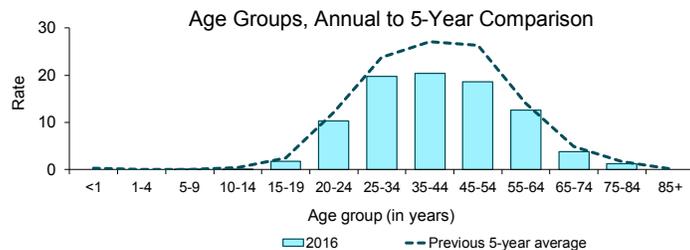
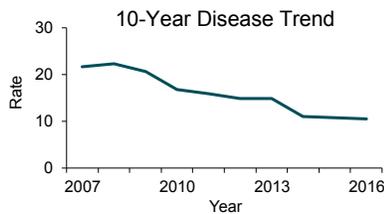
Ethnicity	Number (Percent)	Rate
Non-Hispanic	1,595 (75.8)	10.4
Hispanic	510 (24.2)	10.3
Unknown ethnicity	14	

Diagnosed AIDS Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=2,119)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Diagnosed AIDS Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Additional Information

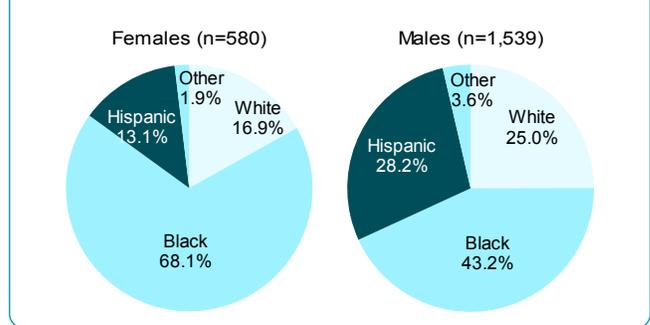
For AIDS cases, men are disproportionately impacted compared to women. In cases reported in adult men in 2016, male-to-male sexual contact was the most common risk factor (64.0%), followed by heterosexual contact (26.3%).

In 2012, the rate of AIDS cases was lower in Hispanics compared to non-Hispanics. AIDS rates have generally decreased among all races and ethnicities over the past five years, and AIDS cases among Hispanics and non-Hispanics are now similar. This is in contrast to the increases observed in the rate of HIV cases among Hispanics over this same time period. Blacks were over-represented among AIDS cases in 2016, particularly for women, accounting for 43.2% of adult cases among men and 68.1% of the adult cases among women.

Diagnosed AIDS Cases by Sex and Mode of Exposure, Florida, 2016

Mode of Exposure	Female Cases (n=580)		Male Cases (n=1,539)	
	Number	(Percent)	Number	(Percent)
Men who have sex with men (MSM)	NA		985	(64.0)
Heterosexual	495	(85.4)	405	(26.3)
Injection drug user (IDU)	67	(11.5)	70	(4.5)
MSM and IDU	NA		72	(4.7)
Other	18	(3.1)	8	(0.5)
Total	580		1,539	

Diagnosed AIDS Cases by Sex and Race/Ethnicity, Florida, 2016



The number of AIDS deaths and the time from AIDS diagnosis to death (median survival time) varies by gender, race, and ethnicity. The gender difference among whites and Hispanics is much larger than the difference between genders for Asians, American Indians, and blacks. Among Asians and American Indians, women live longer than men, whereas men live longer than women in blacks, whites, and Hispanics. Following a diagnosis of AIDS, the life expectancy is shortest for Asians compared to other race and ethnic groups, though the number of cases and deaths in Asians is very small. Other explanations for the short life expectancy in this population continue to be explored. The life expectancy for white men is the longest.

For information on HIV, please see the HIV chapter within this section (page 47).

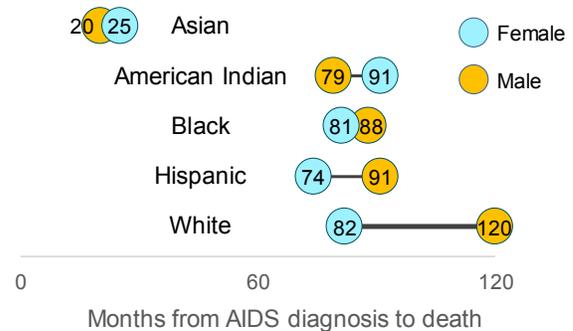
Please visit the AIDS surveillance website to access additional information at www.FloridaHealth.gov/diseases-and-conditions/aids/surveillance/index.html.

To locate services across the state please visit www.FloridaHealth.gov/diseases-and-conditions/aids/index.html.

AIDS Deaths for Cases Diagnosed in Florida by Sex, Race, and Ethnicity, 2010-2016

Race or Ethnicity	Male	Female	Total
Black	3,752	2,485	6,237
White	2,684	608	3,292
Hispanic	1,365	377	1,742
Asian	35	17	52
American Indian	20	14	37

Median Survival Time (in Months) From AIDS Diagnosis to Death for Cases Diagnosed in Florida by Sex, Race, and Ethnicity, 2010-2016



Arsenic Poisoning

Disease Facts

Cause: Inorganic arsenic

Type of illness: 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

Transmission: Ingestion of arsenic or inhalation of air containing arsenic

Reason for surveillance: Identify sources of arsenic exposure that are of public health concern (e.g., water source, workplace exposure, homeopathic medicines), prevent further exposure

Comments: Arsenic poisoning became a reportable condition in Florida in November 2008. The number of cases increased in 2016 compared to 2015 due to improved detection and reporting of cases. Incidence is concentrated in adults 25 to 74 years old.

Summary of Case Demographics

Summary

Number of cases	21
Incidence rate (per 100,000 population)	0.1
Change from 5-year average incidence	+134.8%

Age (in Years)

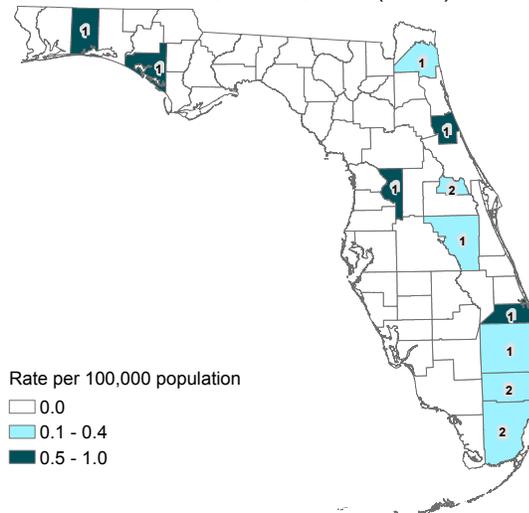
Mean	57
Median	58
Min-max	28 - 74

Gender	Number (Percent)	Rate
Female	9 (42.9)	NA
Male	12 (57.1)	NA
Unknown gender	0	

Race	Number (Percent)	Rate
White	12 (66.7)	NA
Black	3 (16.7)	NA
Other	3 (16.7)	NA
Unknown race	3	

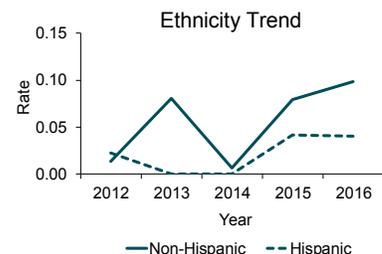
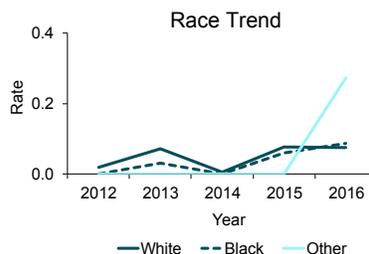
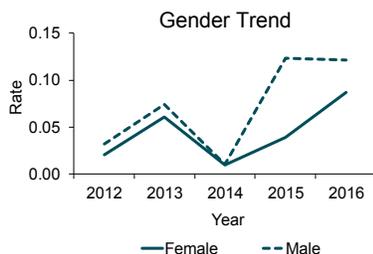
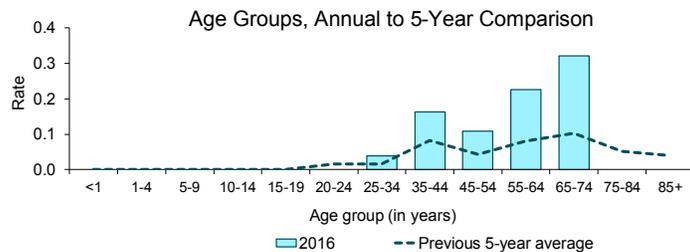
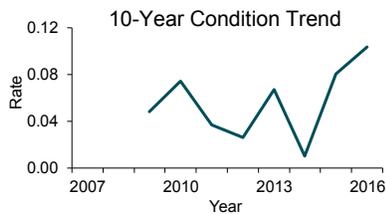
Ethnicity	Number (Percent)	Rate
Non-Hispanic	15 (88.2)	NA
Hispanic	2 (11.8)	NA
Unknown ethnicity	4	

Reported Arsenic Poisoning Cases and Incidence Rates Per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2016 (N=14)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Arsenic Poisoning Cases by Year, Age, Gender, Race, and Ethnicity, Florida



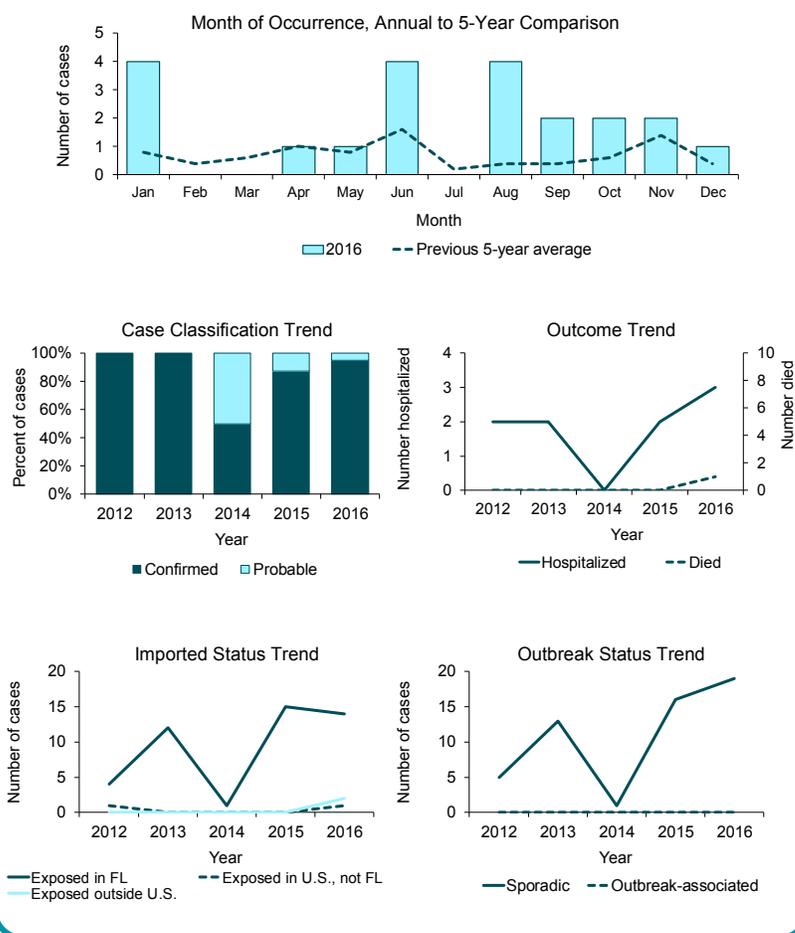
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Arsenic poisoning cases were missing 40.0% of ethnicity data in 2012, 40.0% of race data in 2012, 7.7% of ethnicity data in 2013, 7.7% of race data in 2013, 50.0% of ethnicity data in 2014, 50.0% of race data in 2014, 12.5% of ethnicity data in 2015, 12.5% of race data in 2015, 19.0% of ethnicity data in 2016, and 14.3% of race data in 2016.

Arsenic Poisoning

Summary of Case Factors

Summary	Number
Number of cases	21
Case Classification	Number (Percent)
Confirmed	20 (95.2)
Probable	1 (4.8)
Outcome	Number (Percent)
Hospitalized	3 (14.3)
Died	1 (4.8)
Imported Status	Number (Percent)
Exposed in Florida	14 (66.7)
Exposed in the U.S., not Florida	1 (4.8)
Exposed outside the U.S.	2 (9.5)
Exposed location unknown	4 (19.0)
Outbreak Status	Number (Percent)
Sporadic	19 (90.5)
Outbreak-associated	0 (0.0)
Outbreak status unknown	2 (9.5)

Reported Arsenic Poisoning Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

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). Small peaks in activity consistently occur in June and November based on the previous five years. In 2016, a peak did occur in June, but did not occur in November. All cases reported in 2016 were sporadic and sources of exposure were not identified for most cases, making it difficult to interpret this trend. After the close of the 2016 morbidity dataset, two cases initially reported with an unknown outbreak status were determined to be sporadic cases.

Campylobacteriosis

Disease Facts

Cause: *Campylobacter* bacteria

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; including person-to-person, animal-to-person, foodborne, and waterborne

Reason for surveillance: 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

Comments: The use of culture-independent diagnostic testing for *Campylobacter* has increased dramatically in recent years. Florida changed the campylobacteriosis surveillance case definition in January and July 2011 and January 2015, increasing the number of reported cases in both years. Incidence is highest in children <4 years old, followed by adults 75 years and older. The rate in other races increased disproportionately in 2015 compared to whites and blacks and remained high in 2016; this trend is not well understood.

Summary of Case Demographics

Summary

Number of cases	3,262
Incidence rate (per 100,000 population)	16.1
Change from 5-year average incidence	+35.3%

Age (in Years)

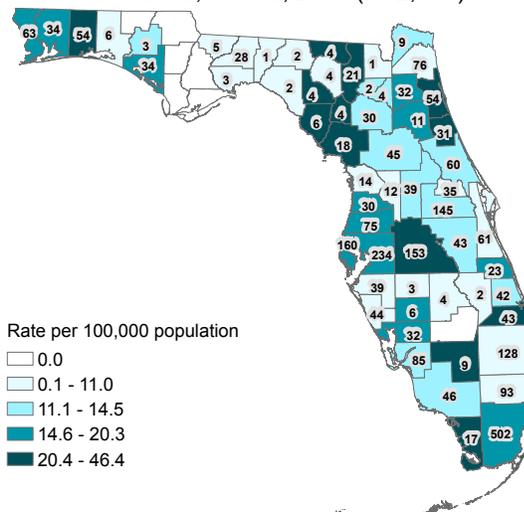
Mean	42
Median	46
Min-max	0 - 98

Gender	Number (Percent)	Rate
Female	1,641 (50.3)	15.9
Male	1,621 (49.7)	16.4
Unknown gender	0	

Race	Number (Percent)	Rate
White	2,449 (77.8)	15.6
Black	284 (9.0)	8.3
Other	416 (13.2)	37.8
Unknown race	113	

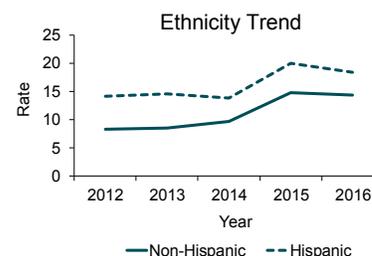
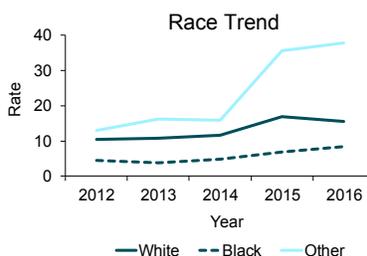
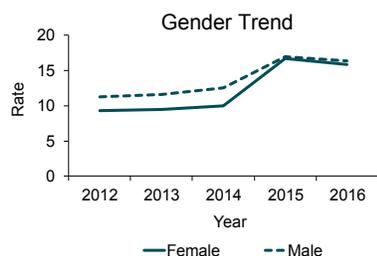
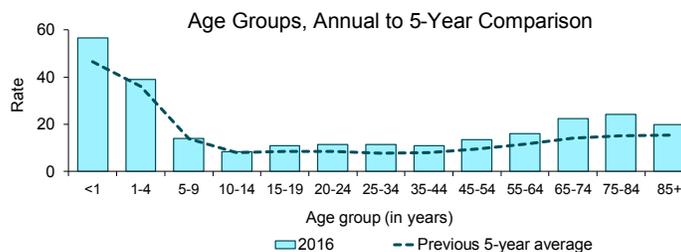
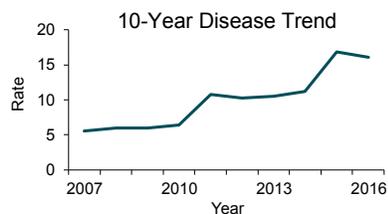
Ethnicity	Number (Percent)	Rate
Non-Hispanic	2,198 (70.5)	14.4
Hispanic	918 (29.5)	18.5
Unknown ethnicity	146	

Reported Campylobacteriosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=2,770)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Campylobacteriosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida



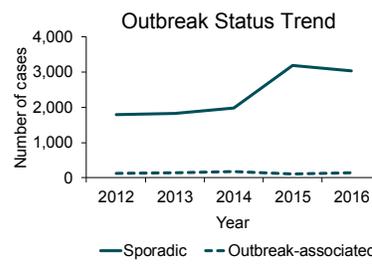
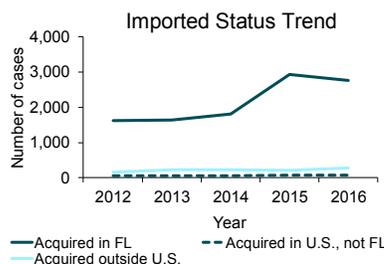
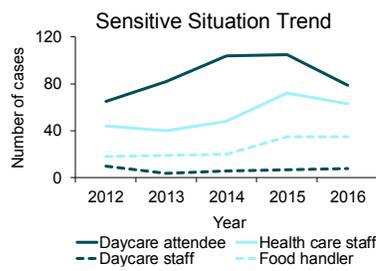
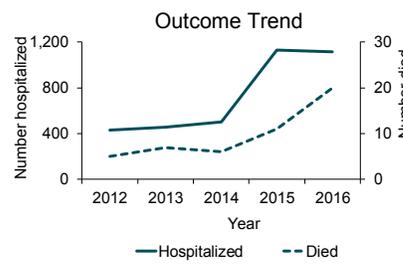
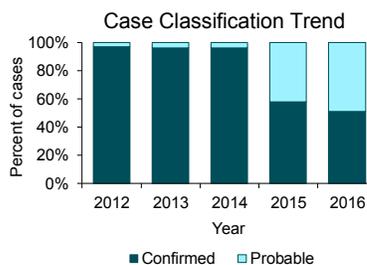
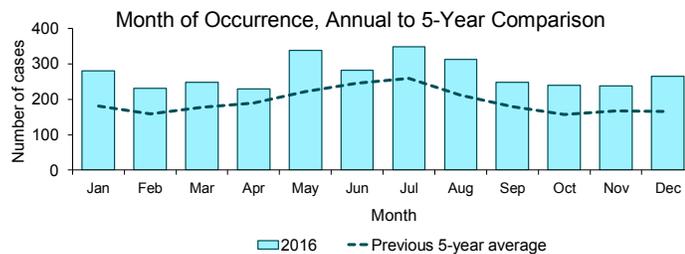
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Campylobacteriosis cases were missing 6.2% of ethnicity data in 2012, 6.3% of race data in 2012, 5.2% of ethnicity data in 2013, and 5.0% of race data in 2013.

Campylobacteriosis

Summary of Case Factors

Summary	Number
Number of cases	3,262
Case Classification	Number (Percent)
Confirmed	1,677 (51.4)
Probable	1,585 (48.6)
Outcome	Number (Percent)
Hospitalized	1,114 (34.2)
Died	20 (0.6)
Sensitive Situation	Number (Percent)
Daycare attendee	79 (2.4)
Daycare staff	8 (0.2)
Health care staff	63 (1.9)
Food handler	35 (1.1)
Imported Status	Number (Percent)
Acquired in Florida	2,770 (84.9)
Acquired in the U.S., not Florida	74 (2.3)
Acquired outside the U.S.	280 (8.6)
Acquired location unknown	138 (4.2)
Outbreak Status	Number (Percent)
Sporadic	3,039 (93.2)
Outbreak-associated	146 (4.5)
Outbreak status unknown	77 (2.4)

Reported Campylobacteriosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

The number of people hospitalized with campylobacteriosis increased dramatically in 2015, primarily driven by an increase in the number of overall cases reported. However, the percentage of cases hospitalized has risen each year from 22.0% in 2012 to 34.2% in 2016. Hospitalization rates are highest in children <1 and adults ≥80 years old. The percentage of campylobacteriosis cases reported in daycare attendees increased from 3.3% in 2012 to 4.7% in 2014 and subsequently decreased to 2.4% in 2016. Note that this percentage is much lower than other reportable enteric bacterial diseases, including salmonellosis (8.1%), Shiga toxin-producing *Escherichia coli* (17.0%), and shigellosis (22.8%). No campylobacteriosis outbreaks were reported in daycares from 2013 to 2016; outbreak-associated cases were reflective of household clusters.

Carbon Monoxide Poisoning

Disease Facts

Cause: Carbon monoxide (CO) gas

Type of illness: Common symptoms include headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion; high levels of CO inhalation can cause loss of consciousness and death

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

Reason for surveillance: Identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions, measure impact of public health interventions

Comments: CO poisoning became a reportable condition in Florida in late 2008, so only cases from 2009 to 2016 are presented in this report. CO poisonings tend to increase during cold winter months and during large power outages (e.g., after a hurricane) when generator use increases.

Summary of Case Demographics

Summary

Number of cases	224
Incidence rate (per 100,000 population)	1.1
Change from 5-year average incidence	+54.4%

Age (in Years)

Mean	45
Median	47
Min-max	0 - 91

Gender

Gender	Number (Percent)	Rate
Female	98 (43.8)	0.9
Male	126 (56.3)	1.3
Unknown gender	0	

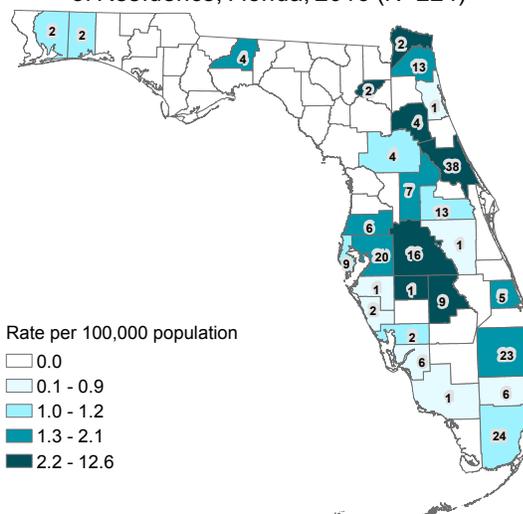
Race

Race	Number (Percent)	Rate
White	164 (73.5)	1.0
Black	26 (11.7)	0.8
Other	33 (14.8)	3.0
Unknown race	1	

Ethnicity

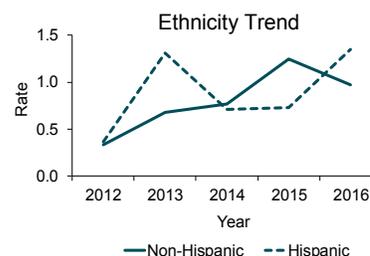
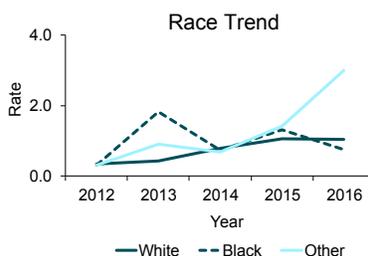
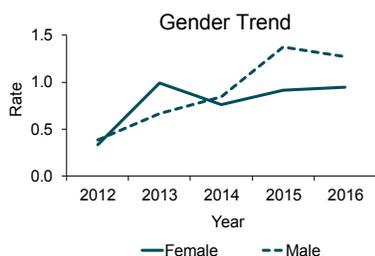
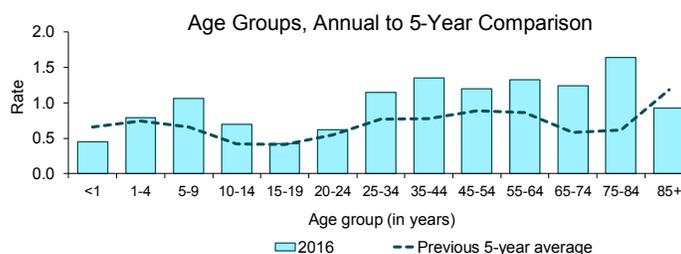
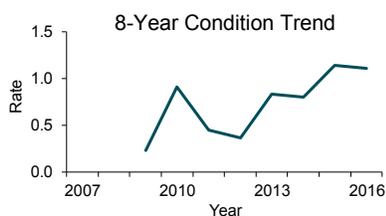
Ethnicity	Number (Percent)	Rate
Non-Hispanic	149 (69.0)	1.0
Hispanic	67 (31.0)	1.3
Unknown ethnicity	8	

Reported Carbon Monoxide Poisoning Cases and Incidence Rates Per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2016 (N=224)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Carbon Monoxide Poisoning Cases by Year, Age, Gender, Race, and Ethnicity, Florida



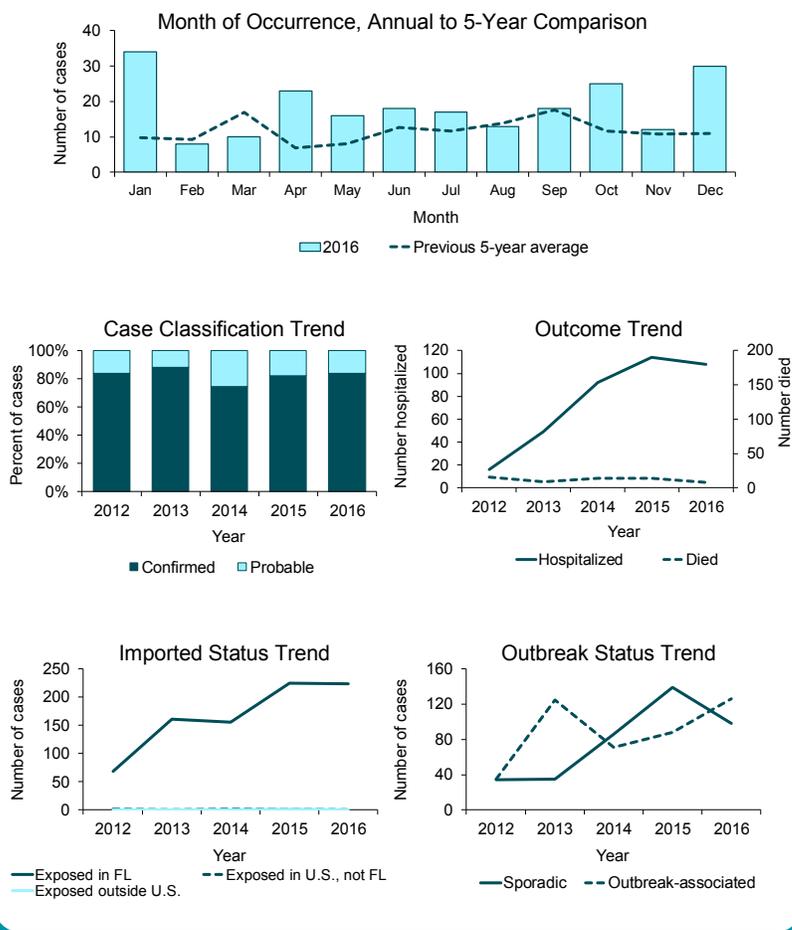
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Carbon monoxide poisoning cases were missing 5.8% of ethnicity data in 2012, 16.8% of race data in 2013, and 5.7% of ethnicity data in 2014.

Carbon Monoxide Poisoning

Summary of Case Factors

Summary	Number
Number of cases	224
Case Classification	Number (Percent)
Confirmed	188 (83.9)
Probable	36 (16.1)
Outcome	Number (Percent)
Hospitalized	108 (48.2)
Died	8 (3.6)
Imported Status	Number (Percent)
Exposed in Florida	224 (100.0)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	0 (0.0)
Exposed location unknown	0 (0.0)
Outbreak Status	Number (Percent)
Sporadic	98 (43.8)
Outbreak-associated	126 (56.3)
Outbreak status unknown	0 (0.0)
Exposure Type	Number (Percent)
Generator	49 (21.9)
Smoking	38 (17.0)
Automobile/RV	37 (16.5)
Fuel-burning appliances	24 (10.7)
Other	18 (8.0)
Portable-fuel burning grill/stove	18 (8.0)
Power tools (including mower)	9 (4.0)
Fire	8 (3.6)
Kerosene/gas space heater	1 (0.4)
Unknown	22 (9.8)

Reported Carbon Monoxide Poisoning Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

CO poisoning cases have generally increased since reporting began in 2009 due to improved outbreak detection and reporting. CO poisoning cases were more common in men in 2016, which is consistent with national data. In 2016, cases in Florida peaked in January, October, and December, which is consistent with U.S. trends. The most common exposures causing CO poisoning vary by season. For the 64 cases that occurred in December and January, the most common exposures were generators (22 [34.4%]) and fuel-burning appliances (15 [23.4%]). Hurricane Matthew, a category 3 storm, moved parallel to the eastern coast of Florida in early October, causing widespread power outages in eastern parts of the state. In October, 18 (72.0%) of the 25 CO poisoning cases were due to generator use likely associated with power outages.

Many CO exposures affect more than one person, resulting in a high percentage of outbreak-associated cases. In 2016, there were 36 cluster investigations involving 126 outbreak-associated cases. Cluster size averaged three people and ranged from two to nine people. Of the 126 outbreak-associated cases, 41 (32.5%) were caused by exposure to generators, 22 (17.0%) to automobile/RV, 22 (17.5%) to fuel-burning appliances, 17 (13.5%) to portable-fuel burning grill/stove, 2 (1.6%) to power tools, 17 (13.5%) to other sources, and 5 (4.0%) had unknown exposures.

Chlamydia (Excluding Neonatal Conjunctivitis)

Disease Facts

Cause: *Chlamydia trachomatis* bacteria

Type of illness: Frequently asymptomatic; abnormal discharge from vagina or penis, burning sensation when urinating; severe complications can include pelvic inflammatory disease, infertility, and ectopic pregnancies

Transmission: Sexually transmitted disease (STD) spread by anal, vaginal, or oral sex and sometimes from mother to child during pregnancy or delivery

Reason for surveillance: Implement interventions immediately for every case, monitor incidence over time, estimate burden of illness, target prevention education programs, evaluate treatment and prevention programs

Comments: Chlamydia is the most commonly reported STD in Florida and the U.S; incidence rates have been slowly increasing in the past decade. Incidence is highest among 15- to 24-year-old women and non-Hispanic blacks. Because chlamydia is frequently asymptomatic, screening is necessary to identify most infections.

Summary of Case Demographics

Summary

Number of cases	94,720
Incidence rate (per 100,000 population)	468.2
Change from 5-year average incidence	+11.1%

Age (in Years)

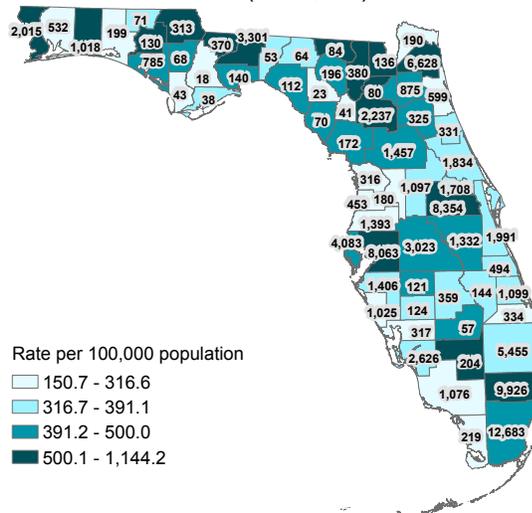
Mean	23
Median	22
Min-max	1 - 94

Gender	Number (Percent)	Rate
Female	63,404 (67.0)	613.0
Male	31,264 (33.0)	316.2
Unknown gender	52	

Race	Number (Percent)	Rate
White	33,906 (48.1)	215.7
Black	35,681 (50.7)	1,046.8
Other	837 (1.2)	76.1
Unknown race	24,296	

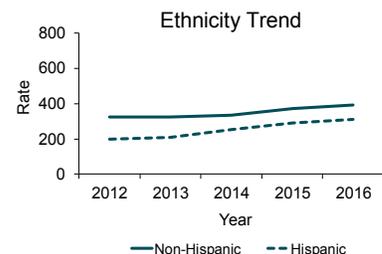
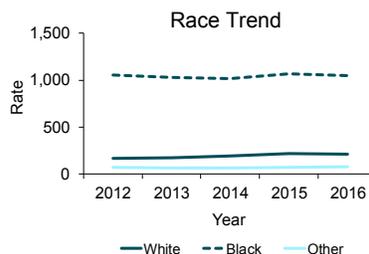
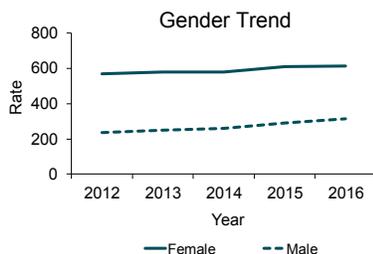
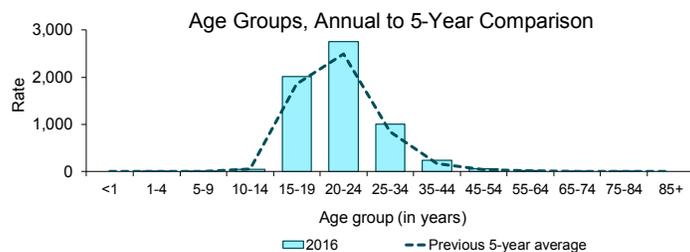
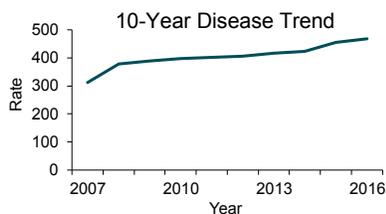
Ethnicity	Number (Percent)	Rate
Non-Hispanic	59,768 (79.5)	391.5
Hispanic	15,403 (20.5)	310.4
Unknown ethnicity	19,549	

Reported Chlamydia Cases (Excluding Neonatal Conjunctivitis) and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=94,720)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Chlamydia Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chlamydia cases (excluding neonatal conjunctivitis) were missing 27.7% of ethnicity data in 2012, 23.8% of race data in 2012, 28.5% of ethnicity data in 2013, 25.1% of race data in 2013, 25.3% of ethnicity data in 2014, 23.3% of race data in 2014, 22.7% of ethnicity data in 2015, 21.7% of race data in 2015, 20.6% of ethnicity data in 2016, and 25.7% of race data in 2016.

Ciguatera Fish Poisoning

Disease Facts

Cause: Ciguatoxins produced by marine dinoflagellates associated with tropical/subtropical reef fish

Type of illness: Nausea, vomiting, and neurologic symptoms (e.g., tingling fingers or toes, temperature reversal); anecdotal evidence of long-term periodic recurring symptoms

Exposure: Foodborne; consuming fish contaminated with ciguatoxins

Reason for surveillance: Identify and control outbreaks, identify high-risk products (e.g., barracuda, grouper)

Comments: Outbreaks are usually associated with multiple people sharing an implicated fish. 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. 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.

Summary of Case Demographics

Summary

Number of cases	33
Incidence rate (per 100,000 population)	0.2
Change from 5-year average incidence	-35.6%

Age (in Years)

Mean	54
Median	52
Min-max	19 - 82

Gender

Gender	Number (Percent)	Rate
Female	18 (54.5)	NA
Male	15 (45.5)	NA
Unknown gender	0	

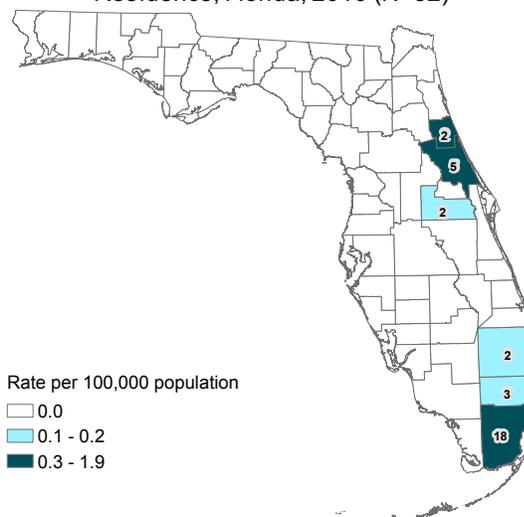
Race

Race	Number (Percent)	Rate
White	29 (90.6)	0.2
Black	0 (0.0)	NA
Other	3 (9.4)	NA
Unknown race	1	

Ethnicity

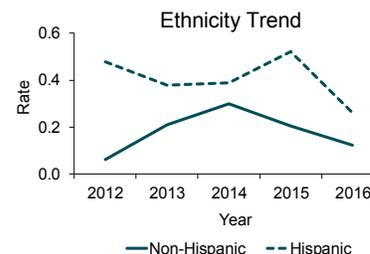
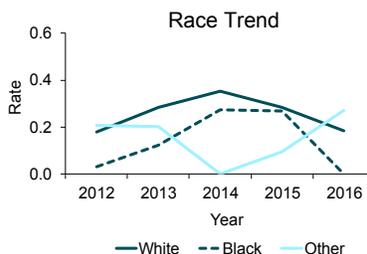
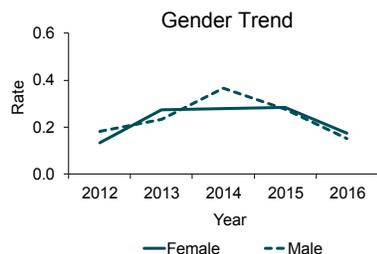
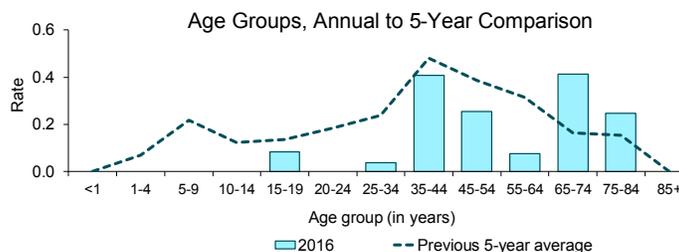
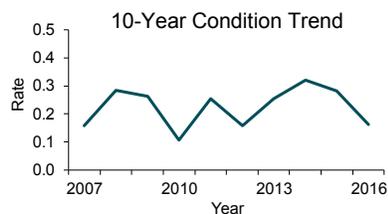
Ethnicity	Number (Percent)	Rate
Non-Hispanic	19 (59.4)	NA
Hispanic	13 (40.6)	NA
Unknown ethnicity	1	

Reported Ciguatera Fish Poisoning Cases and Incidence Rates Per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2016 (N=32)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

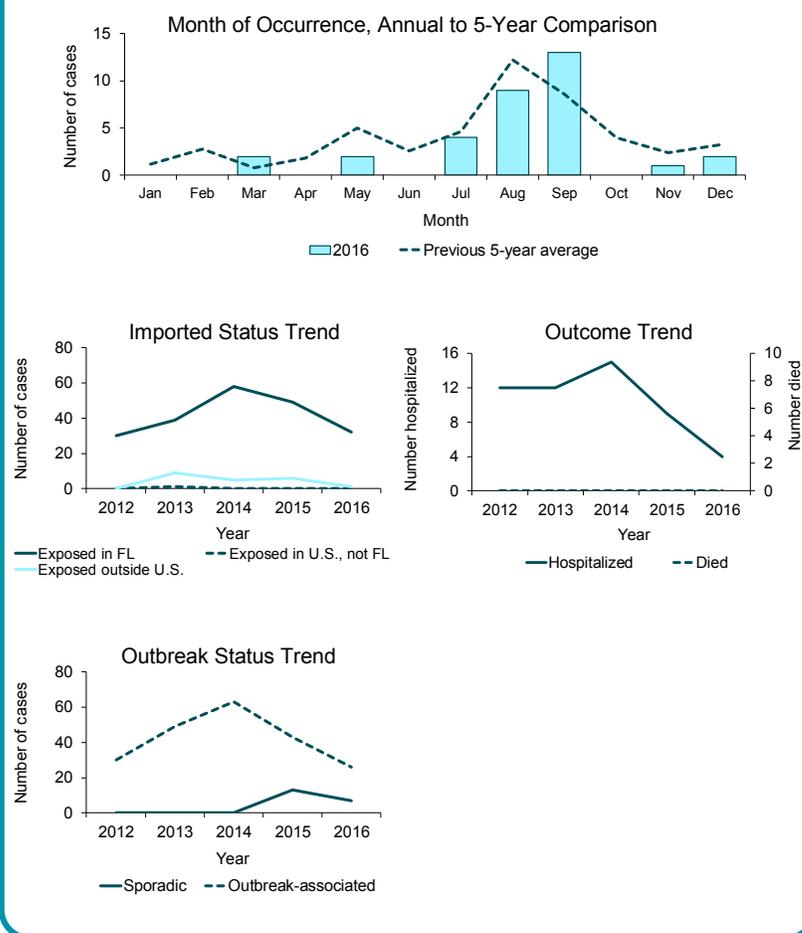
Incidence Rates Per 100,000 Population of Reported Ciguatera Fish Poisoning Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Summary of Case Factors

Summary	Number
Number of cases	33
Outcome	Number (Percent)
Hospitalized	4 (12.1)
Died	0 (0.0)
Imported Status	Number (Percent)
Exposed in Florida	32 (97.0)
Exposed in the U.S., not Florida	0 (0.0)
Exposed outside the U.S.	1 (3.0)
Exposed location unknown	0 (0.0)
Outbreak Status	Number (Percent)
Sporadic	7 (21.2)
Outbreak-associated	26 (78.8)
Outbreak status unknown	0 (0.0)

Reported Ciguatera Fish Poisoning Cases by Month of Occurrence, Imported Status, Outcome, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Single cases of ciguatera fish poisoning warrant a full investigation and are generally characterized as outbreaks for public health purposes. However, for surveillance purposes in this report, cases are classified outbreak-associated when at least two or more people have a common exposure. Sixteen investigations occurred in 2016 involving 34 cases (33 Florida residents one non-Florida resident).

Investigations involved an average of two cases with a range of one to six cases. Investigations identified eating barracuda (6), hogfish (3), snapper (2), amberjack (1), and mackerel (1) as the sources. The fish was unknown in one investigation. Two investigations identified consumption of multiple fish known to carry ciguatoxin, hogfish and mahi-mahi in one and amberjack (kingfish) and snapper in the other. Cases were more commonly associated with recreationally harvested fish. Nine (56%) investigations occurred in August and September, which is consistent with trends seen in previous years.

Cryptosporidiosis

Disease Facts

Cause: *Cryptosporidium* parasites

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; including person-to-person, animal-to-person, waterborne, and foodborne

Reason for surveillance: 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

Comments: 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 cyclic trend. Cases increased starting in 2006 and declined in 2008. Following a sharp increase in cases in 2014 in all genders, races, and ethnicities, cases decreased in 2015, and continued decreasing in 2016. Incidence is consistently highest in 1- to 4-year-olds.

Summary of Case Demographics

Summary

Number of cases	582
Incidence rate (per 100,000 population)	2.9
Change from 5-year average incidence	-31.2%

Age (in Years)

Mean	37
Median	35
Min-max	0 - 97

Gender

Gender	Number (Percent)	Rate
Female	283 (48.6)	2.7
Male	299 (51.4)	3.0
Unknown gender	0	

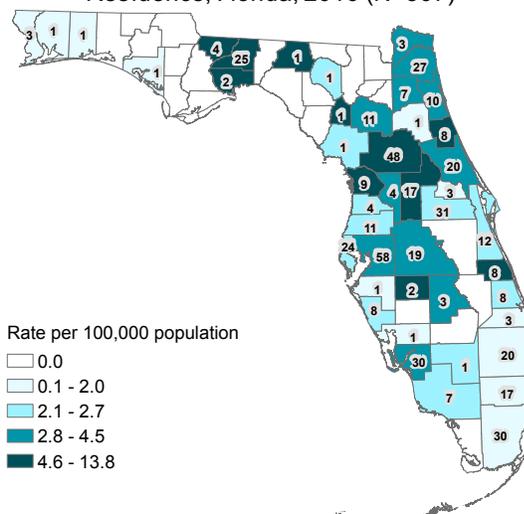
Race

Race	Number (Percent)	Rate
White	430 (77.3)	2.7
Black	95 (17.1)	2.8
Other	31 (5.6)	2.8
Unknown race	26	

Ethnicity

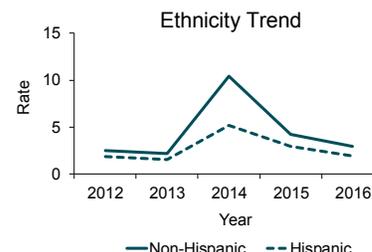
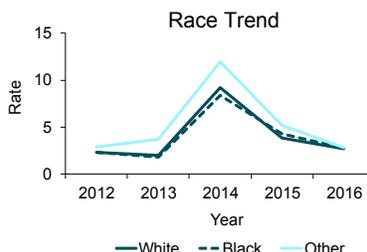
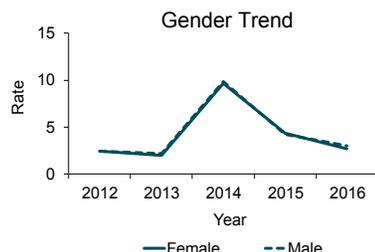
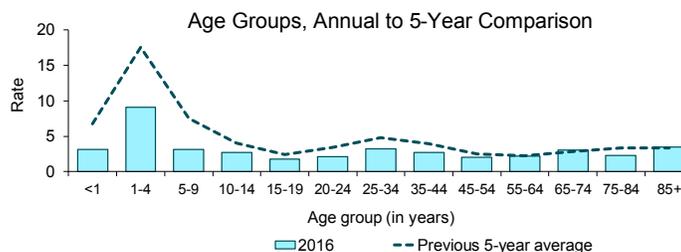
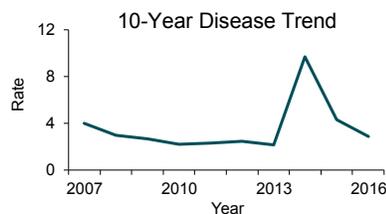
Ethnicity	Number (Percent)	Rate
Non-Hispanic	454 (82.7)	3.0
Hispanic	95 (17.3)	1.9
Unknown ethnicity	33	

Reported Cryptosporidiosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=507)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Cryptosporidiosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida

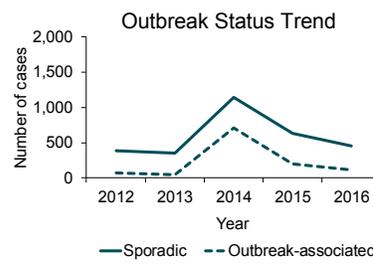
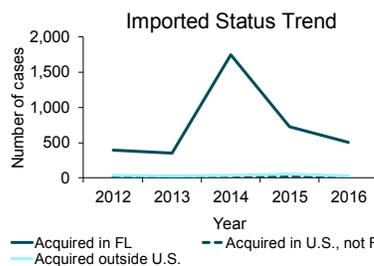
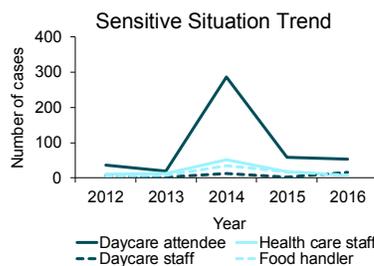
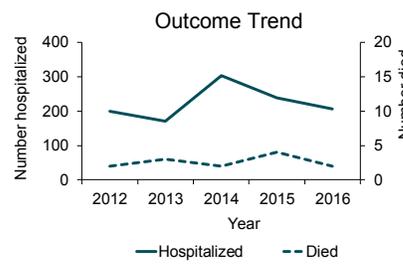
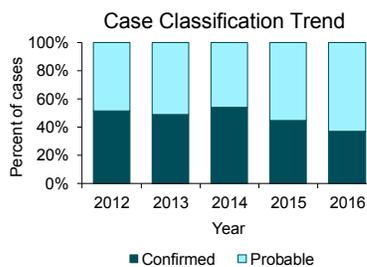


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Cryptosporidiosis cases were missing 5.8% of ethnicity data in 2014, 5.1% of race data in 2014, 8.2% of ethnicity data in 2015, 6.5% of race data in 2015, and 5.7% of ethnicity data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	582
Case Classification	Number (Percent)
Confirmed	217 (37.3)
Probable	365 (62.7)
Outcome	Number (Percent)
Hospitalized	206 (35.4)
Died	2 (0.3)
Sensitive Situation	Number (Percent)
Daycare attendee	54 (9.3)
Daycare staff	16 (2.7)
Health care staff	8 (1.4)
Food handler	8 (1.4)
Imported Status	Number (Percent)
Acquired in Florida	507 (87.1)
Acquired in the U.S., not Florida	17 (2.9)
Acquired outside the U.S.	27 (4.6)
Acquired location unknown	31 (5.3)
Outbreak Status	Number (Percent)
Sporadic	455 (78.2)
Outbreak-associated	113 (19.4)
Outbreak status unknown	14 (2.4)

Reported Cryptosporidiosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2016, one foodborne cryptosporidiosis outbreak was investigated. This outbreak included three cases and was associated with consumption of raw milk. There were no waterborne outbreaks identified in 2016, which is a decrease from 2015. Additional clusters of illness were associated with person-to-person transmission and daycares. Cryptosporidiosis incidence peaked in 2014 when there were six 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.

Cyclosporiasis

Disease Facts

Cause: *Cyclospora* parasites

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; foodborne and less commonly waterborne

Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness

Comments: Incidence is strongly seasonal, peaking annually in June and July. Large multistate outbreaks of cyclosporiasis were identified in 2013, 2014, and 2015. In the U.S., foodborne cyclosporiasis outbreaks have been linked to various types of imported fresh produce, including raspberries, basil, cilantro, snow peas, and mesclun lettuce.

Summary of Case Demographics

Summary

Number of cases	37
Incidence rate (per 100,000 population)	0.2
Change from 5-year average incidence	-9.4%

Age (in Years)

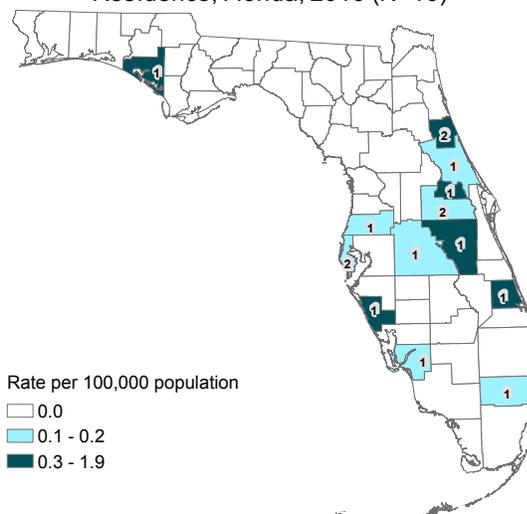
Mean	49
Median	51
Min-max	5 - 79

Gender	Number (Percent)	Rate
Female	24 (64.9)	0.2
Male	13 (35.1)	NA
Unknown gender	0	

Race	Number (Percent)	Rate
White	28 (87.5)	0.2
Black	1 (3.1)	NA
Other	3 (9.4)	NA
Unknown race	5	

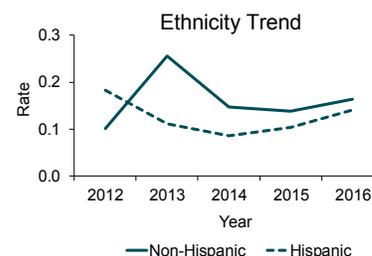
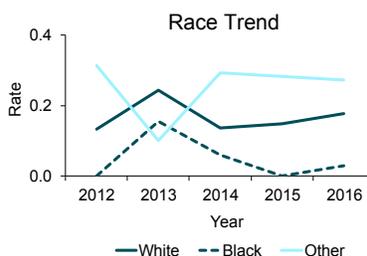
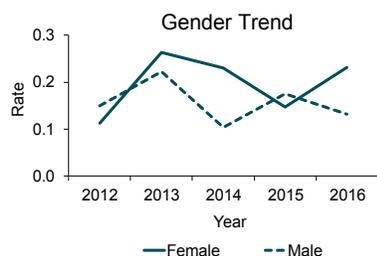
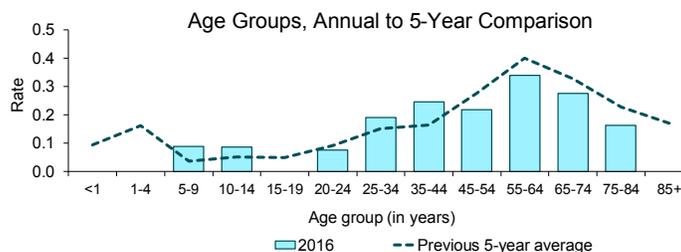
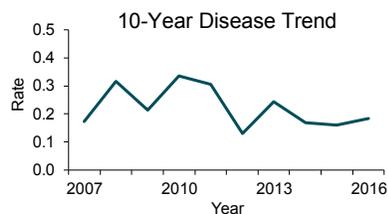
Ethnicity	Number (Percent)	Rate
Non-Hispanic	25 (78.1)	0.2
Hispanic	7 (21.9)	NA
Unknown ethnicity	5	

Reported Cyclosporiasis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=16)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Cyclosporiasis Cases by Year, Age, Gender, Race, and Ethnicity, Florida

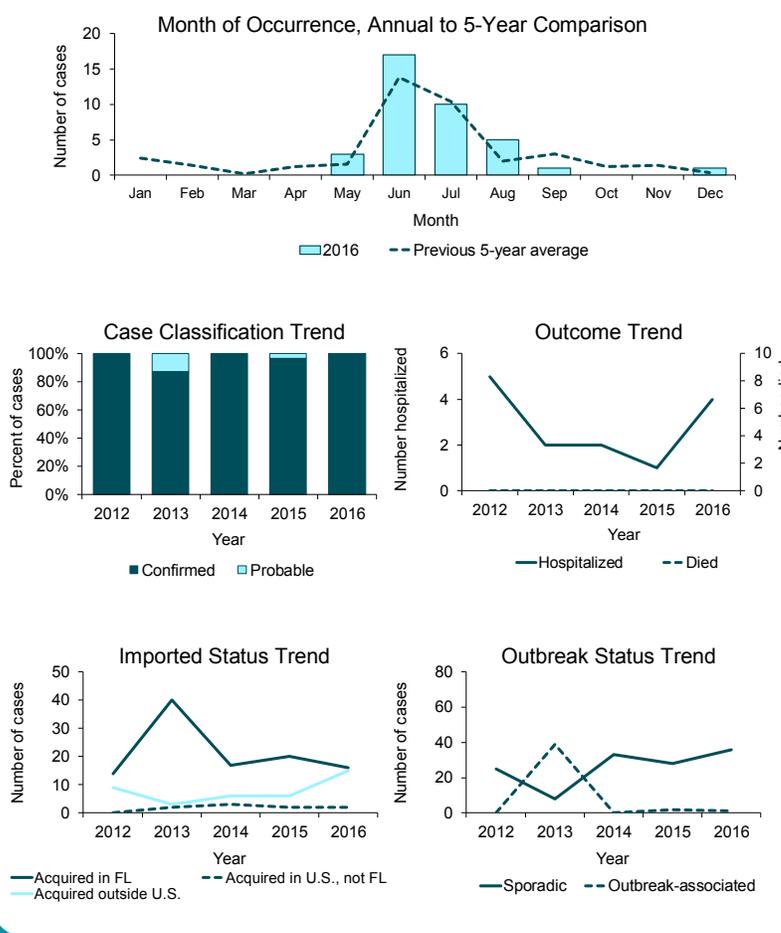


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Cyclosporiasis cases were missing 8.0% of ethnicity data in 2012, 8.0% of race data in 2012, 8.5% of ethnicity data in 2013, 8.5% of race data in 2013, 21.2% of ethnicity data in 2014, 21.2% of race data in 2014, 18.8% of ethnicity data in 2015, 18.8% of race data in 2015, 13.5% of ethnicity data in 2016, and 13.5% of race data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	37
Case Classification	Number (Percent)
Confirmed	37 (100.0)
Probable	0 (0.0)
Outcome	Number (Percent)
Hospitalized	4 (10.8)
Died	0 (0.0)
Imported Status	Number (Percent)
Acquired in Florida	16 (43.2)
Acquired in the U.S., not Florida	2 (5.4)
Acquired outside the U.S.	15 (40.5)
Acquired location unknown	4 (10.8)
Outbreak Status	Number (Percent)
Sporadic	36 (97.3)
Outbreak-associated	1 (2.7)
Outbreak status unknown	0 (0.0)

Reported Cyclosporiasis Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Cyclosporiasis has a strong seasonal trend peaking in the summer months. In 2016, 384 laboratory-confirmed cases of cyclosporiasis were reported nationally as of September 16, 2016 (the most recent date for which national data were available). Of the 384 cases, 134 cases from 25 different states had illness onset on or after May 1. Sixteen cases were acquired in Florida. One Florida case was reported as outbreak-associated. This person traveled to Mexico with other family members who experienced similar symptoms, however no laboratory testing was available to confirm whether the family members' illnesses were caused by *Cyclospora* and no common vehicle was identified as the source of their illness.

Dengue Fever

Disease Facts

Cause: Dengue viruses (DENV-1, DENV-2, DENV-3, DENV-4)

Type of illness: Acute febrile illness with headache, joint and muscle pain, rash, and eye pain; dengue hemorrhagic fever or dengue shock syndrome symptoms include severe abdominal pain, vomiting, and mucosal bleeding

Transmission: Bite of infective mosquito, rarely by blood transfusion or organ transplant

Reason for surveillance: Identify individual cases and implement control measures to prevent introduction and active transmission, monitor incidence over time, estimate burden of illness

Comments: An outbreak of locally acquired dengue fever occurred in Monroe County in 2009 and 2010 and in Martin County in 2013. At least one locally acquired case has been identified every year since 2009, primarily in south Florida.

Summary of Case Demographics

Summary	
Number of cases	62
Incidence rate (per 100,000 population)	0.3
Change from 5-year average incidence	-43.6%

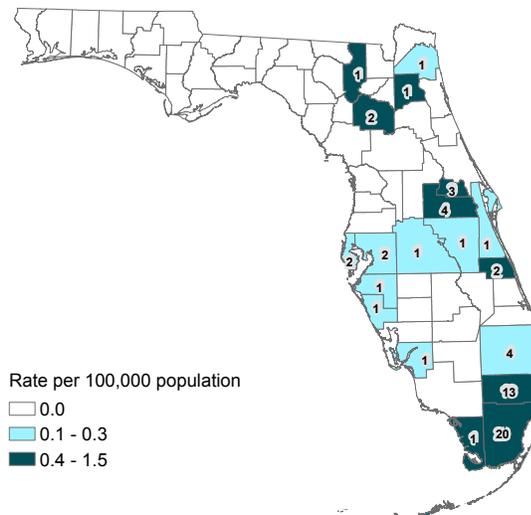
Age (in Years)	
Mean	43
Median	43
Min-max	2 - 81

Gender	Number (Percent)	Rate
Female	30 (48.4)	0.3
Male	32 (51.6)	0.3
Unknown gender	0	

Race	Number (Percent)	Rate
White	38 (65.5)	0.2
Black	8 (13.8)	NA
Other	12 (20.7)	NA
Unknown race	4	

Ethnicity	Number (Percent)	Rate
Non-Hispanic	27 (49.1)	0.2
Hispanic	28 (50.9)	0.6
Unknown ethnicity	7	

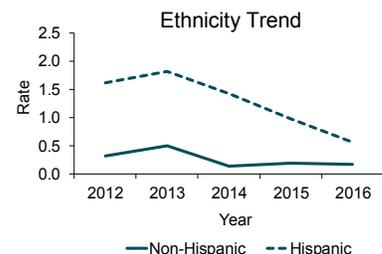
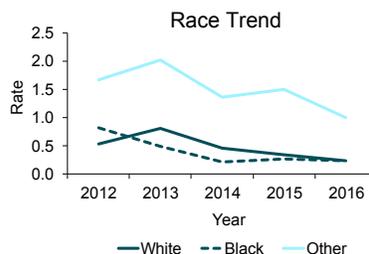
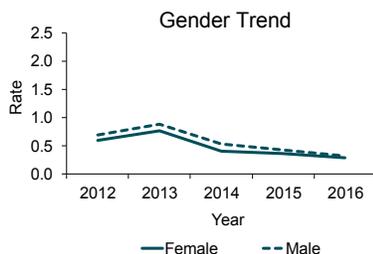
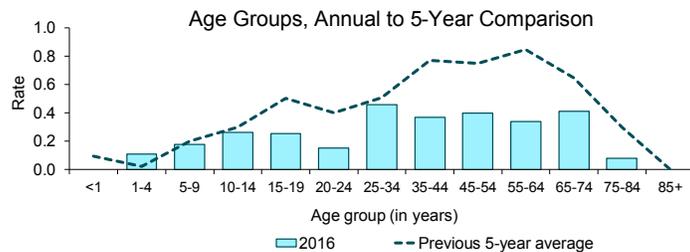
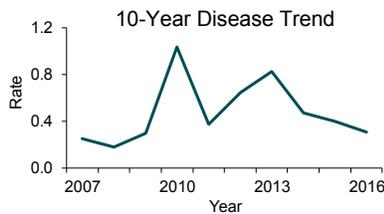
Reported Dengue Fever Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=62)



Rate per 100,000 population
 0.0
 0.1 - 0.3
 0.4 - 1.5

Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Dengue Fever Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Dengue fever cases were missing 11.3% of ethnicity data in 2016 and 8.1% of race data in 2016.

Note that the majority of dengue fever cases are acquired outside of Florida.

Summary of Case Factors

Summary	Number
Number of cases	62
Case Classification	Number (Percent)
Confirmed	37 (59.7)
Probable	25 (40.3)
Outcome	Number (Percent)
Hospitalized	21 (33.9)
Died	0 (0.0)
Imported Status	Number (Percent)
Acquired in Florida	3 (4.8)
Acquired in the U.S., not Florida	2 (3.2)
Acquired outside the U.S.	57 (91.9)
Acquired location unknown	0 (0.0)
Outbreak Status	Number (Percent)
Sporadic	57 (91.9)
Outbreak-associated	4 (6.5)
Outbreak status unknown	1 (1.6)
Region Where Infection Acquired	Number (Percent)
Central America/Caribbean	38 (64.4)
South America	10 (16.9)
Asia	8 (13.6)
Puerto Rico (U.S.)	2 (3.4)
Africa	1 (1.7)
Reason for Travel*	Number (Percent)
Visiting friends/relatives	18 (30.5)
Tourism	8 (13.6)
Missionary or dependent	2 (3.4)
Other	1 (1.7)
Unknown	30 (1.7)

* Data collection for travel reason was not implemented until late in 2016.

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. Other reports may use illness onset date instead of report date, or county of exposure instead of county of residence.

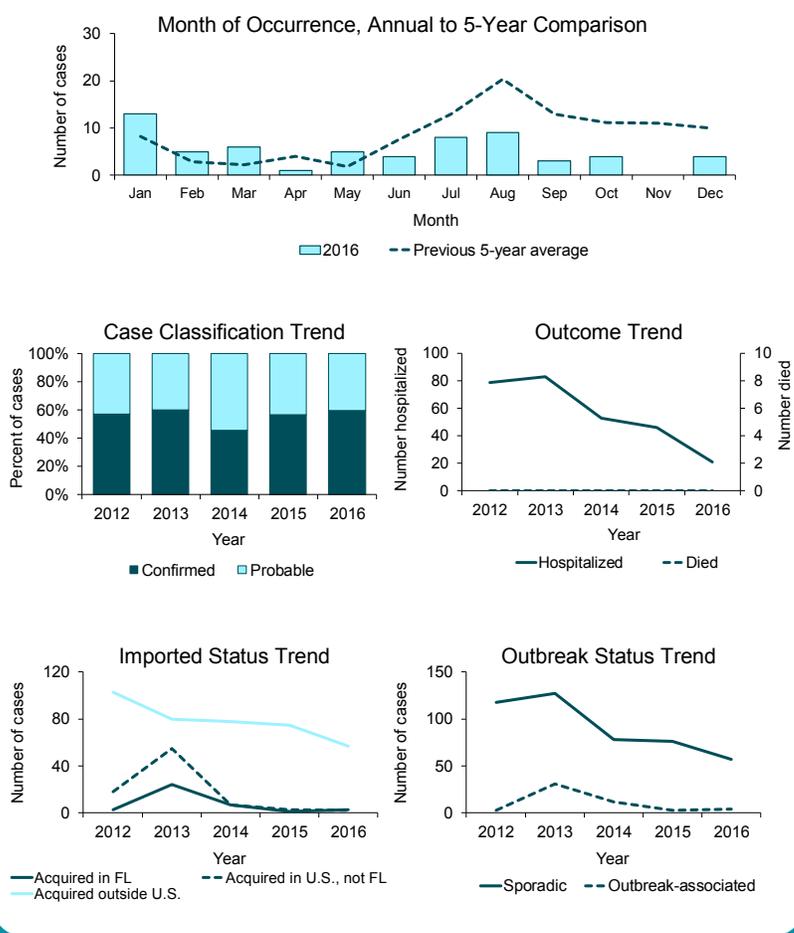
Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Some dengue fever or Zika virus disease cases may have been misclassified due to potential cross-reactivity on antibody testing. 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. **Locally acquired cases in Florida residents:** A single DENV-2 introduction in Miami-Dade County resulted in three locally acquired cases in Florida residents. Another DENV-2 infection acquired in Miami-Dade County was identified in 2016 but was reported in 2017 and will be included in next year's report. **Locally acquired case in non-Florida resident:** A non-Florida resident acquired DENV-4 infection in Monroe County while vacationing in Florida, which was the first locally acquired case reported there since the dengue outbreak in Key West in 2009 and 2010. No ongoing transmission was identified related to these local introductions. The first case identified in the Miami-Dade cluster and other local introductions in Miami-Dade and Monroe counties were initially reported as suspected local Zika virus infections until additional testing determined they were exposed to dengue virus. **Imported cases in non-Florida residents:** Five dengue fever cases were identified in non-Florida residents while traveling in Florida in 2016. One case initially reported with unknown outbreak status was later determined to be sporadic after the close of the 2016 morbidity dataset.

Reported Dengue Fever Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Ehrlichiosis

Disease Facts

Cause: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, *Ehrlichia muris*-like bacteria

Type of illness: Common symptoms include fever, headache, fatigue, and muscle aches

Transmission: Tick-borne; bite of infective tick

Reason for surveillance: Monitor incidence over time, estimate burden of illness, understand epidemiology of each species, target areas of high incidence for prevention education

Comments: Ehrlichiosis is the most common rickettsia infection acquired in Florida. Incidence was above average in 2016. Factors that may have contributed to this increase include weather patterns, host and animal reservoir population dynamics, and increased health care provider awareness. Most cases were acquired in Florida, particularly in the north central and northeast part of the state. Cases are most common in men and adults >50 years old. Immunosuppression and delays in treatment can result in severe outcome.

Summary of Case Demographics

Summary	
Number of cases	28
Incidence rate (per 100,000 population)	0.1
Change from 5-year average incidence	+26.6%

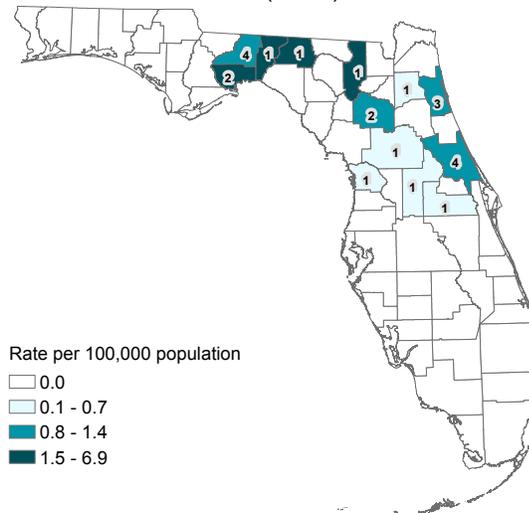
Age (in Years)	
Mean	54
Median	58
Min-max	18 - 80

Gender	Number (Percent)	Rate
Female	10 (35.7)	NA
Male	18 (64.3)	NA
Unknown gender	0	

Race	Number (Percent)	Rate
White	25 (96.2)	0.2
Black	1 (3.8)	NA
Other	0 (0.0)	NA
Unknown race	2	

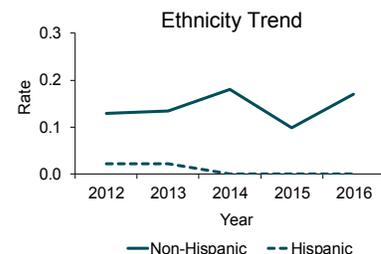
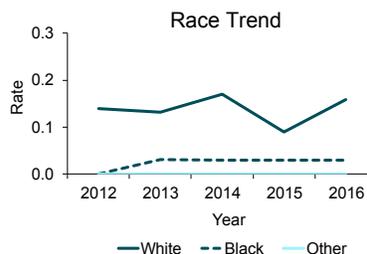
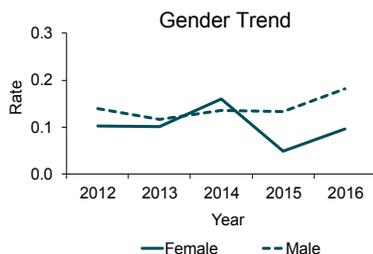
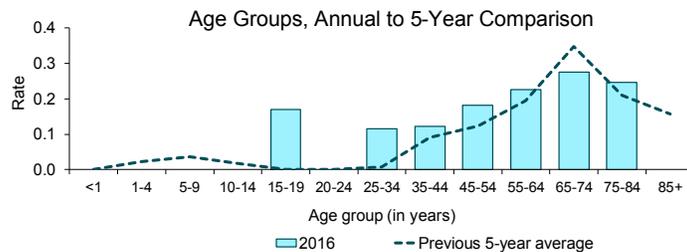
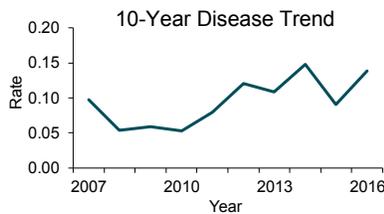
Ethnicity	Number (Percent)	Rate
Non-Hispanic	26 (100.0)	0.2
Hispanic	0 (0.0)	NA
Unknown ethnicity	2	

Reported Ehrlichiosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=23)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

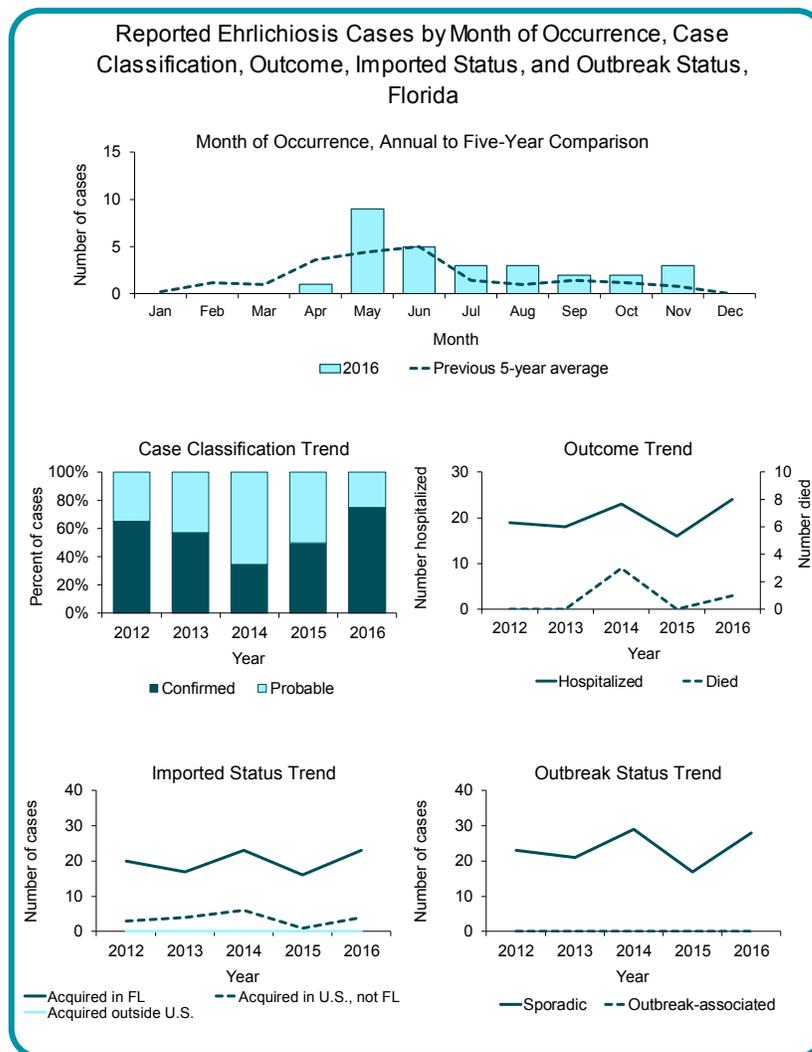
Incidence Rates Per 100,000 Population of Reported Ehrlichiosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Ehrlichiosis cases were missing 13.0% of ethnicity data in 2012, 8.7% of race data in 2012, 6.9% of ethnicity data in 2014, 6.9% of race data in 2014, 16.7% of ethnicity data in 2015, 16.7% of race data in 2015, 7.1% of ethnicity data in 2016, and 7.1% of race data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	28
Case Classification	Number (Percent)
Confirmed	21 (75.0)
Probable	7 (25.0)
Outcome	Number (Percent)
Hospitalized	24 (85.7)
Died	1 (3.6)
Imported Status	Number (Percent)
Acquired in Florida	23 (82.1)
Acquired in the U.S., not Florida	4 (14.3)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	1 (3.6)
Outbreak Status	Number (Percent)
Sporadic	28 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0 (0.0)



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Ehrlichiosis is a broad term used to describe a group of bacterial diseases. At least three different *Ehrlichia* species are known to cause human illness in the U.S. Both *E. chaffeensis*, also known as human monocytic ehrlichiosis (HME), and *E. 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, provisionally called *E. muris-like* (EML), has been reported in a small number of cases in Minnesota and Wisconsin, but no tick vector has been identified. Ehrlichiosis cases present with similar symptoms no matter which species is involved, and are indistinguishable by serologic testing. *E. ewingii* and EML are most frequently identified in immunocompromised patients.

Case characteristics in 2016 were consistent with national patterns, with most cases occurring in adults >50 years old and men. The high rate of hospitalization (85.7%) highlights the seriousness of this disease. One death occurred involving a 78-year-old woman who was taking immunosuppressive medication; there was also some delay in initiation of doxycycline treatment.

Disease Facts

Cause: *Giardia* parasites

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; including person-to-person, animal-to-person, waterborne, and foodborne

Reason for surveillance: 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

Comments: 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. Incidence is highest in children 1 to 4 years old and is slightly higher in males. Incidence is dispersed geographically throughout the state. The percentage of cases reported in people in sensitive situations (i.e., food handlers, daycare staff and attendees, and health care workers) has decreased since 2012.

Summary of Case Demographics

Summary

Number of cases	1,128
Incidence rate (per 100,000 population)	5.6
Change from 5-year average incidence	-4.8%

Age (in Years)

Mean	36
Median	35
Min-max	0 - 93

Gender

Gender	Number (Percent)	Rate
Female	422 (37.4)	4.1
Male	706 (62.6)	7.1
Unknown gender	0	

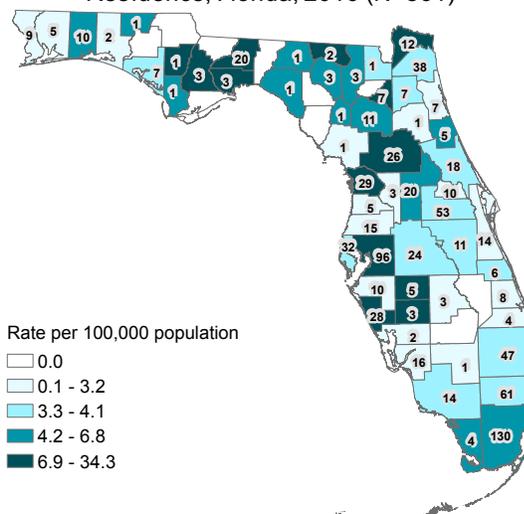
Race

Race	Number (Percent)	Rate
White	740 (80.8)	4.7
Black	93 (10.2)	2.7
Other	83 (9.1)	7.5
Unknown race	212	

Ethnicity

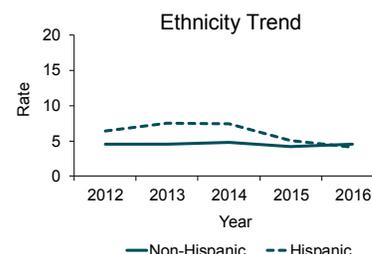
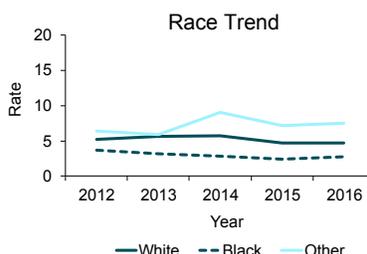
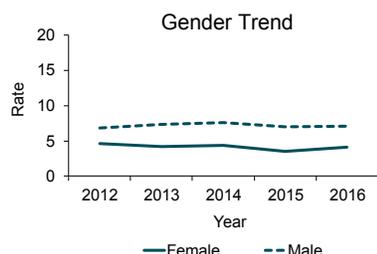
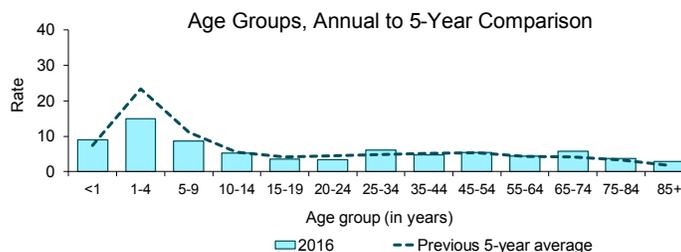
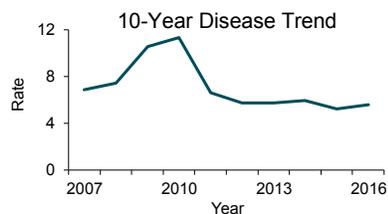
Ethnicity	Number (Percent)	Rate
Non-Hispanic	693 (77.3)	4.5
Hispanic	204 (22.7)	4.1
Unknown ethnicity	231	

Reported Acute Giardiasis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=861)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Acute Giardiasis Cases by Year, Age, Gender, Race, and Ethnicity, Florida



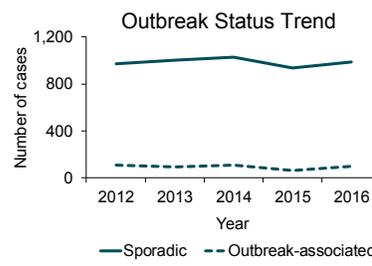
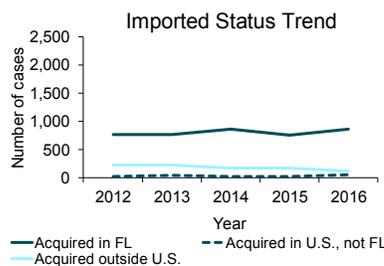
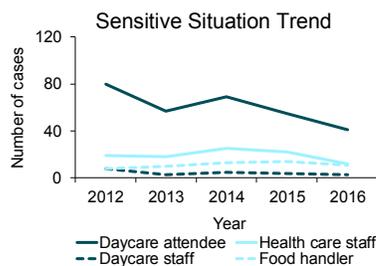
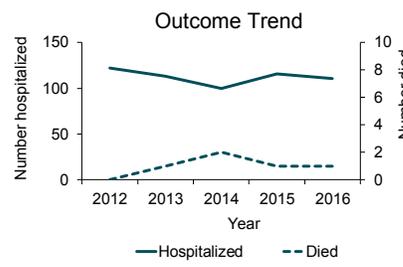
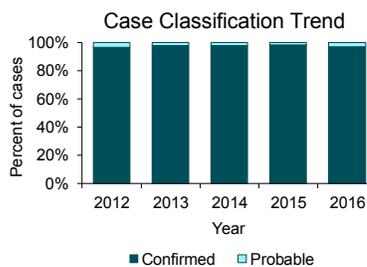
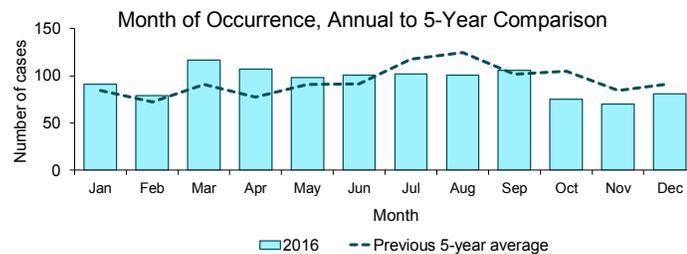
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute giardiasis cases were missing 13.3% of ethnicity data in 2012, 12.4% of race data in 2012, 9.0% of ethnicity data in 2013, 9.3% of race data in 2013, 8.8% of ethnicity data in 2014, 8.8% of race data in 2014, 15.8% of ethnicity data in 2015, 14.2% of race data in 2015, 20.5% of ethnicity data in 2016, and 18.8% of race data in 2016.

Giardiasis, Acute

Summary of Case Factors

Summary	Number
Number of cases	1,128
Case Classification	Number (Percent)
Confirmed	1,097 (97.3)
Probable	31 (2.7)
Outcome	Number (Percent)
Hospitalized	111 (9.8)
Died	1 (0.1)
Sensitive Situation	Number (Percent)
Daycare attendee	41 (3.6)
Daycare staff	3 (0.3)
Health care staff	12 (1.1)
Food handler	11 (1.0)
Imported Status	Number (Percent)
Acquired in Florida	861 (76.3)
Acquired in the U.S., not Florida	56 (5.0)
Acquired outside the U.S.	126 (11.2)
Acquired location unknown	85 (7.5)
Outbreak Status	Number (Percent)
Sporadic	990 (87.8)
Outbreak-associated	99 (8.8)
Outbreak status unknown	39 (3.5)

Reported Acute Giardiasis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Gonorrhea (Excluding Neonatal Conjunctivitis)

Disease Facts

Cause: *Neisseria gonorrhoeae* bacteria

Type of illness: Frequently asymptomatic; sometimes abnormal discharge from vagina or penis or burning sensation when urinating

Transmission: Sexually transmitted disease (STD) spread by anal, vaginal, or oral sex and sometimes from mother to child during pregnancy or delivery

Reason for surveillance: Implement effective interventions immediately for every case, monitor incidence over time, estimate burden of illness, evaluate treatment and prevention programs

Comments: Incidence decreased from 2007 to 2012, but has subsequently increased. Incidence in 2016 was the highest it has been since 2000. Rates are highest among men, blacks, and 20- to 24-year-olds; however the relative rate increase from 2012 to 2016 was highest in whites, Hispanics, and 35- to 44-year-olds.

Summary of Case Demographics

Summary	
Number of cases	28,153
Incidence rate (per 100,000 population)	139.2
Change from 5-year average incidence	+28.4%

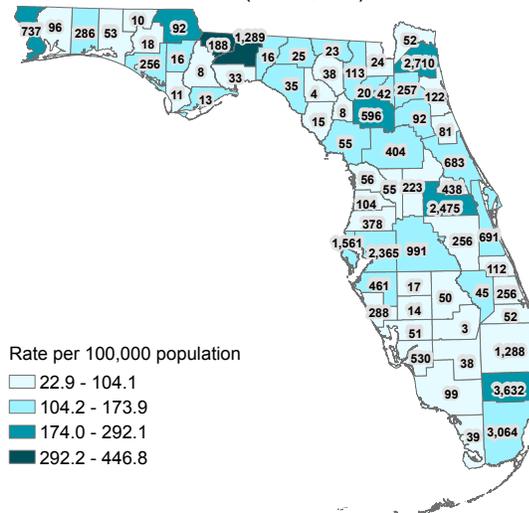
Age (in Years)	
Mean	28
Median	25
Min-max	2 - 81

Gender	Number (Percent)	Rate
Female	11,484 (40.8)	111.0
Male	16,656 (59.2)	168.5
Unknown gender	13	

Race	Number (Percent)	Rate
White	9,008 (38.1)	57.3
Black	14,486 (61.2)	425.0
Other	168 (0.7)	15.3
Unknown race	4,491	

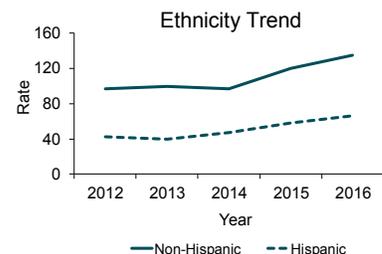
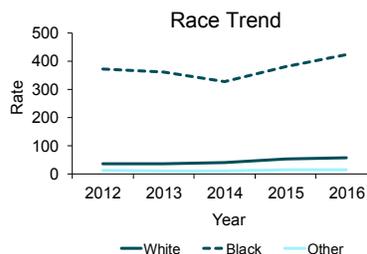
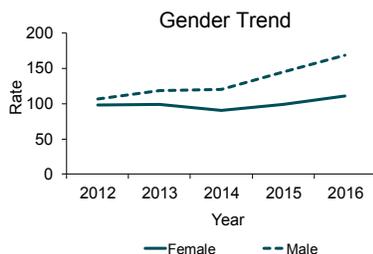
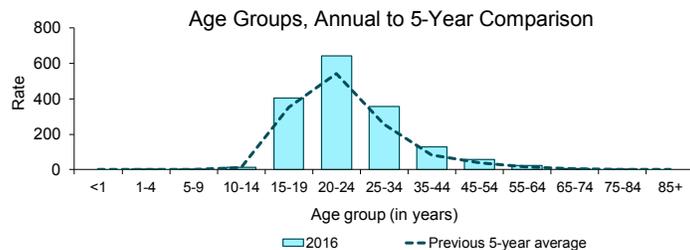
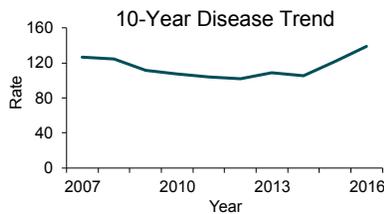
Ethnicity	Number (Percent)	Rate
Non-Hispanic	20,640 (86.3)	135.2
Hispanic	3,288 (13.7)	66.3
Unknown ethnicity	4,225	

Reported Gonorrhea Cases (Excluding Neonatal Conjunctivitis) and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=28,153)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Gonorrhea Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Gonorrhea cases (excluding neonatal conjunctivitis) were missing 17.3% of ethnicity data in 2012, 10.2% of race data in 2012, 20.9% of ethnicity data in 2013, 17.0% of race data in 2013, 18.9% of ethnicity data in 2014, 16.9% of race data in 2014, 13.2% of ethnicity data in 2015, 11.9% of race data in 2015, 15.0% of ethnicity data in 2016, and 16.0% of race data in 2016.

Haemophilus influenzae Invasive Disease in Children <5 Years Old

Disease Facts

Cause: *Haemophilus influenzae* bacteria

Type of illness: Can present as pneumonia, bacteremia, septicemia, meningitis, epiglottitis, septic arthritis, cellulitis, or purulent pericarditis; less frequently endocarditis and osteomyelitis

Transmission: Person-to-person; inhalation of infective respiratory tract droplets or direct contact with infective respiratory tract secretions

Reason for surveillance: Identify and control outbreaks, monitor incidence over time, monitor effectiveness of immunization programs and vaccines

Comments: *H. influenzae* serotype b (Hib) is a vaccine-preventable disease. Meningitis and septicemia due to Hib in children <5 years old have almost been eliminated since the introduction of effective Hib conjugate vaccines. No Hib cases in children <5 years old have been reported since 2014, when there were four cases.

Summary of Case Demographics

Summary		
Number of cases		34
Incidence rate (per 100,000 population)		3.1
Change from 5-year average incidence		+19.6%

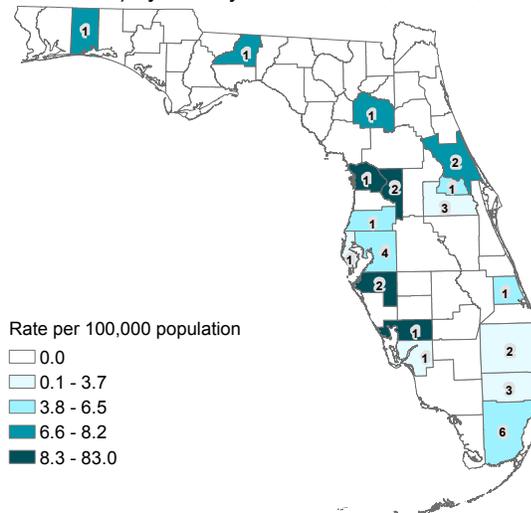
Age (in Years)		
Mean		1
Median		1
Min-max		0 - 4

Gender	Number (Percent)	Rate
Female	13 (38.2)	NA
Male	21 (61.8)	3.7
Unknown gender	0	

Race	Number (Percent)	Rate
White	18 (52.9)	NA
Black	15 (44.1)	NA
Other	1 (2.9)	NA
Unknown race	0	

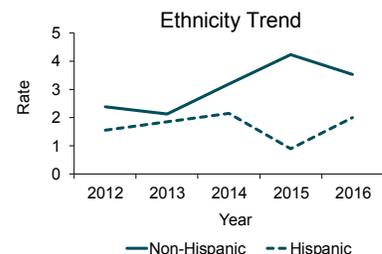
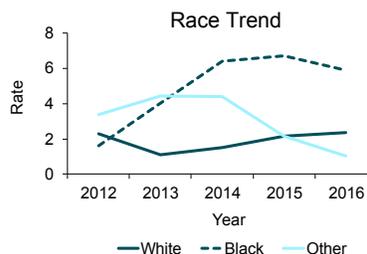
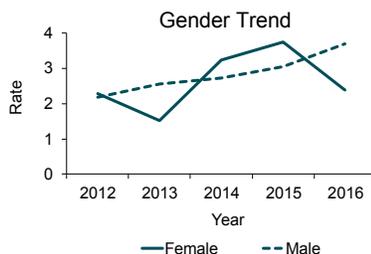
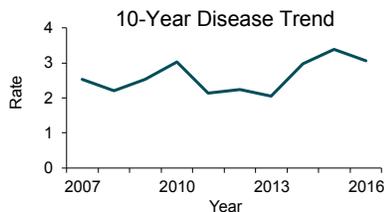
Ethnicity	Number (Percent)	Rate
Non-Hispanic	27 (79.4)	3.5
Hispanic	7 (20.6)	NA
Unknown ethnicity	0	

Reported *H. influenzae* Invasive Disease Cases in Children <5 Years Old and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=34)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported *H. influenzae* Invasive Disease Cases in Children <5 Years Old by Year, Age, Gender, Race, and Ethnicity, Florida



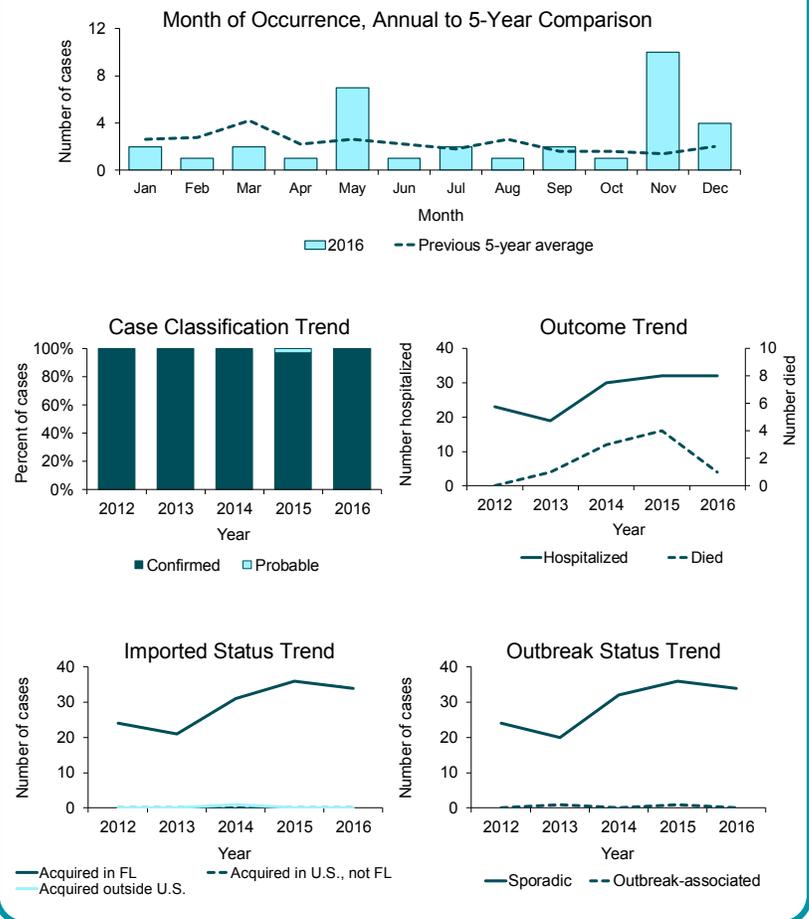
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. *H. influenzae* invasive disease cases in children less than 5 years old were missing 5.4% of ethnicity data in 2015 and 5.4% of race data in 2015.

Haemophilus influenzae Invasive Disease in Children <5 Years Old

Summary of Case Factors

Summary	Number
Number of cases	34
Case Classification	Number (Percent)
Confirmed	34 (100.0)
Probable	0 (0.0)
Outcome	Number (Percent)
Hospitalized	32 (94.1)
Died	1 (2.9)
Imported Status	Number (Percent)
Acquired in Florida	34 (100.0)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	0 (0.0)
Acquired location unknown	0 (0.0)
Outbreak Status	Number (Percent)
Sporadic	34 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0 (0.0)
Serotype	Number (Percent)
Type A	6 (17.6)
Type B	0 (0.0)
Type C	0 (0.0)
Type D	0 (0.0)
Type E	0 (0.0)
Type F	3 (8.8)
Not Type B	2 (5.9)
Unknown	5 (14.7)
Nontypeable	18 (52.9)

Reported *H. influenzae* Invasive Disease Cases in Children <5 Years Old by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Nationally, between 54 and 60% of cases were in males each year from 2012 to 2015. In Florida, more cases were in females than males in 2014 (53.1%) and 2015 (54.1%). In 2016, the trend reversed and more cases were in males (61.8%), which is more in line with national data. Activity peaked in May and November in 2016 in Florida, with much higher peaks than seen in previous seasons where there was little seasonality. The cases reported in May and November were in residents of different counties and there were no known epidemiological linkages between these cases. There was one death in 2016, but the primary cause of death was not related to *H. influenzae* invasive disease.

Hepatitis A

Disease Facts

Cause: Hepatitis A virus (HAV)

Type of illness: Inflammation of the liver; sometimes asymptomatic; symptoms can include fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort, and jaundice

Transmission: Fecal-oral; including person-to-person, foodborne, and waterborne

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

Comments: Hepatitis A is a vaccine-preventable disease. A large portion of infections are acquired internationally (42.6% in 2016), primarily among unvaccinated people traveling internationally to countries that lack routine immunization programs and, as a result, have a high incidence of hepatitis A. Incidence in Florida has remained relatively stable since 2011. Incidence in the elderly in 2016 was lower than previous years.

Summary of Case Demographics

Summary

Number of cases	122
Incidence rate (per 100,000 population)	0.6
Change from 5-year average incidence	-1.0%

Age (in Years)

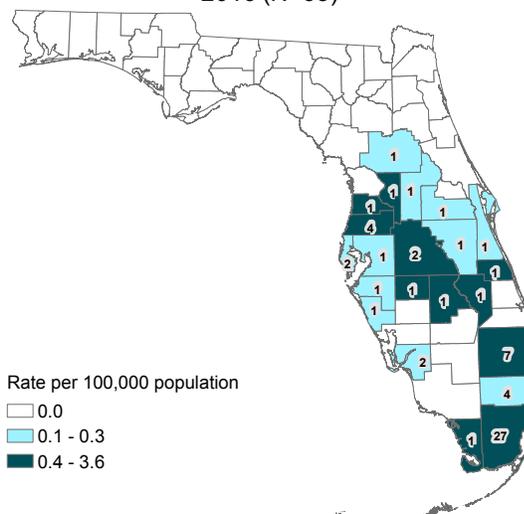
Mean	45
Median	43
Min-max	3 - 90

Gender	Number (Percent)	Rate
Female	43 (35.2)	0.4
Male	79 (64.8)	0.8
Unknown gender	0	

Race	Number (Percent)	Rate
White	86 (74.8)	0.5
Black	10 (8.7)	NA
Other	19 (16.5)	NA
Unknown race	7	

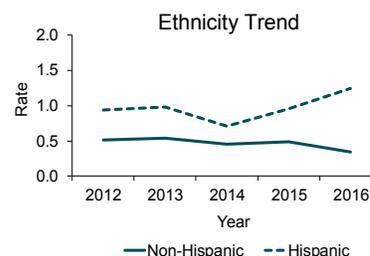
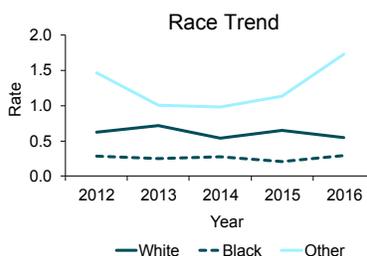
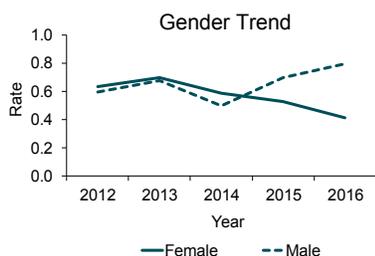
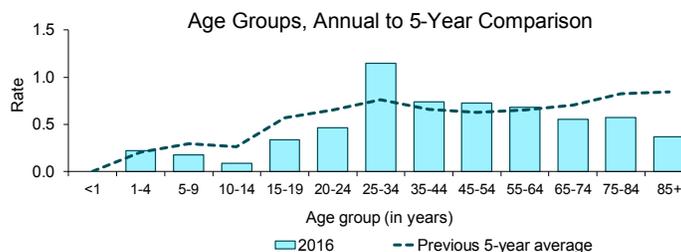
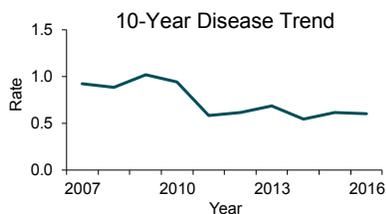
Ethnicity	Number (Percent)	Rate
Non-Hispanic	52 (45.6)	0.3
Hispanic	62 (54.4)	1.2
Unknown ethnicity	8	

Reported Hepatitis A Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=63)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Hepatitis A Cases by Year, Age, Gender, Race, and Ethnicity, Florida

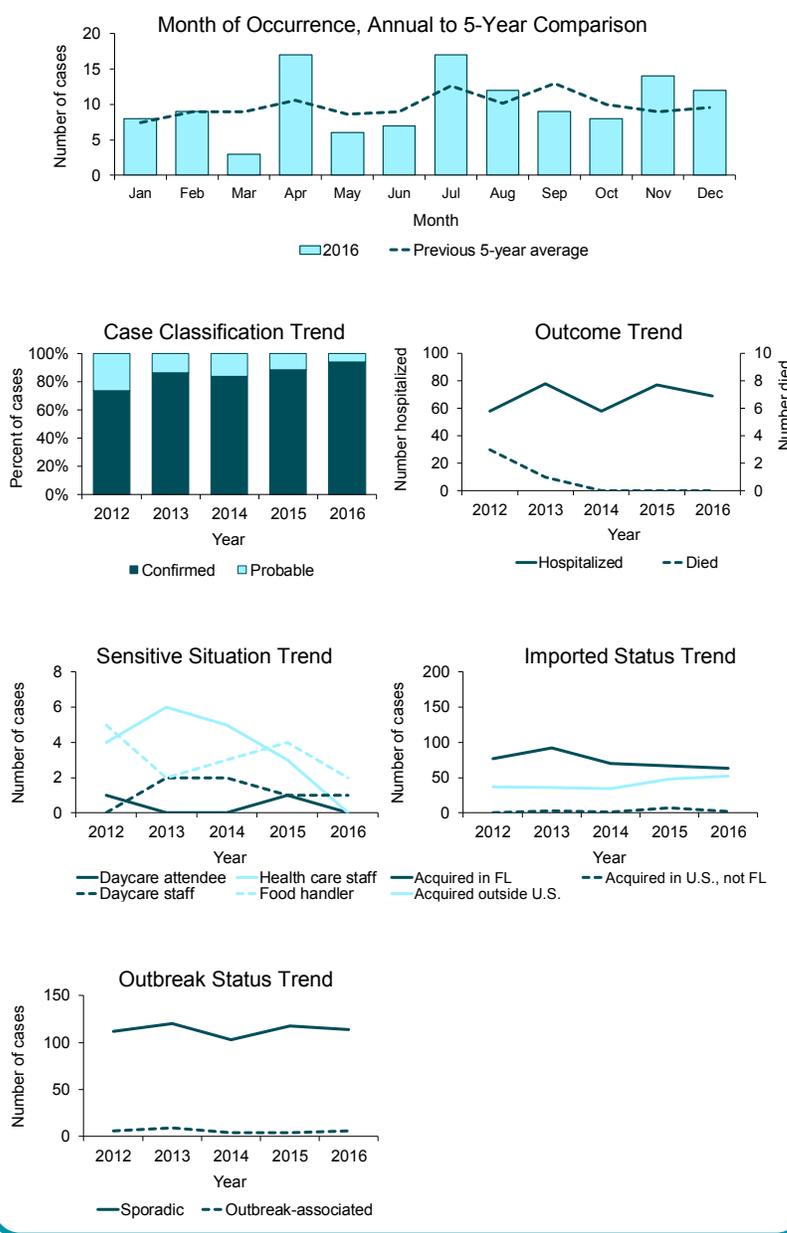


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hepatitis A cases were missing 6.8% of ethnicity data in 2013, 5.3% of race data in 2013, 5.6% of ethnicity data in 2014, 5.6% of race data in 2014, 6.6% of ethnicity data in 2016, and 5.7% of race data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	122
Case Classification	Number (Percent)
Confirmed	115 (94.3)
Probable	7 (5.7)
Outcome	Number (Percent)
Hospitalized	69 (56.6)
Died	0 (0.0)
Sensitive Situation	Number (Percent)
Daycare attendee	0 (0.0)
Daycare staff	1 (0.8)
Health care staff	0 (0.0)
Food handler	2 (1.6)
Imported Status	Number (Percent)
Acquired in Florida	63 (51.6)
Acquired in the U.S., not Florida	2 (1.6)
Acquired outside the U.S.	52 (42.6)
Acquired location unknown	5 (4.1)
Outbreak Status	Number (Percent)
Sporadic	114 (93.4)
Outbreak-associated	6 (4.9)
Outbreak status unknown	2 (1.6)
Region Where Infection Acquired	Number (Percent)
Central America/Caribbean	27 (45.8)
South America	11 (18.6)
Asia	4 (6.8)
Europe	3 (5.1)
Multiple Regions	3 (5.1)
Puerto Rico (U.S.)	2 (3.4)
Africa	1 (1.7)
Unknown	8 (13.6)

Reported Hepatitis A Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

After the close of the 2016 morbidity dataset, two cases initially reported with an unknown outbreak status were determined to be sporadic cases and two persons not included in this report were found to meet the surveillance case definition based on epidemiological linkages to confirmed cases. A total of eight people were associated with four outbreaks in 2016, each involving two people. In each outbreak, an international traveler returned to Florida and likely infected another household member through close personal contact.

Hepatitis B, Acute

Disease Facts

Cause: Hepatitis B virus (HBV)

Type of illness: Inflammation of the liver; sometimes asymptomatic; symptoms can include malaise, loss of appetite, nausea, vomiting, abdominal discomfort, and jaundice; 2-6% of infections in adults become chronic

Transmission: Blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks), or from mother to child during pregnancy or delivery

Reason for surveillance: Enhance efforts 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

Comments: Hepatitis B is a vaccine-preventable disease. Incidence is highest in white, non-Hispanic men and in counties in the central and northern part of the state.

Summary of Case Demographics

Summary

Number of cases	709
Incidence rate (per 100,000 population)	3.5
Change from 5-year average incidence	+86.4%

Age (in Years)

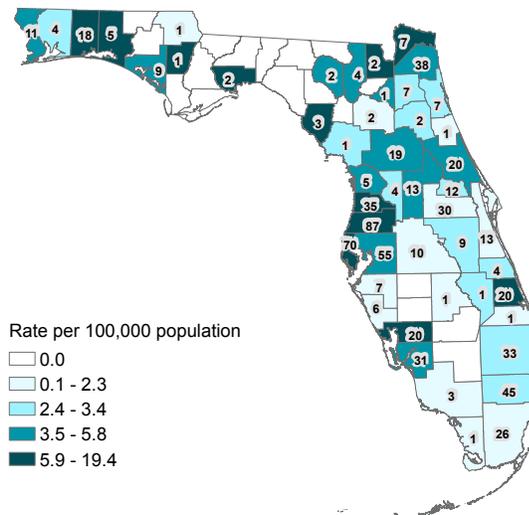
Mean	46
Median	45
Min-max	16 - 93

Gender	Number (Percent)	Rate
Female	268 (37.8)	2.6
Male	441 (62.2)	4.5
Unknown gender	0	

Race	Number (Percent)	Rate
White	531 (83.2)	3.4
Black	76 (11.9)	2.2
Other	31 (4.9)	2.8
Unknown race	71	

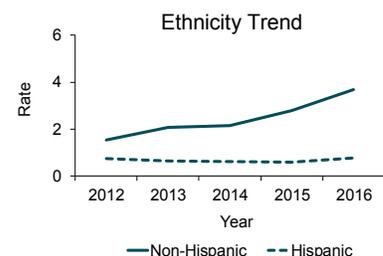
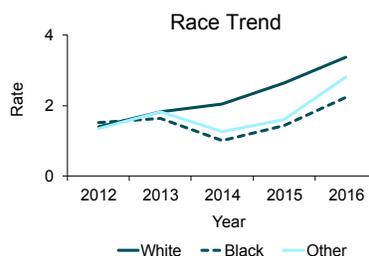
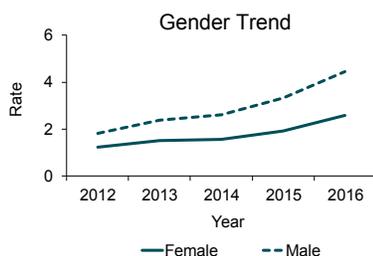
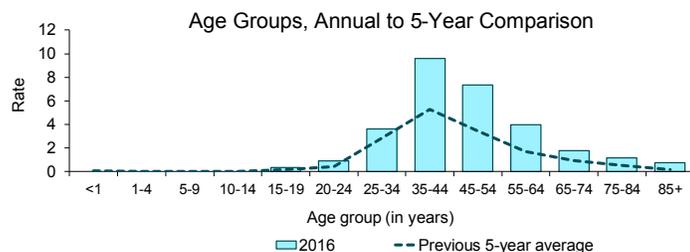
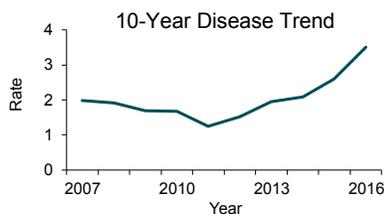
Ethnicity	Number (Percent)	Rate
Non-Hispanic	563 (93.5)	3.7
Hispanic	39 (6.5)	0.8
Unknown ethnicity	107	

Reported Acute Hepatitis B Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=709)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Acute Hepatitis B Cases by Year, Age, Gender, Race, and Ethnicity, Florida



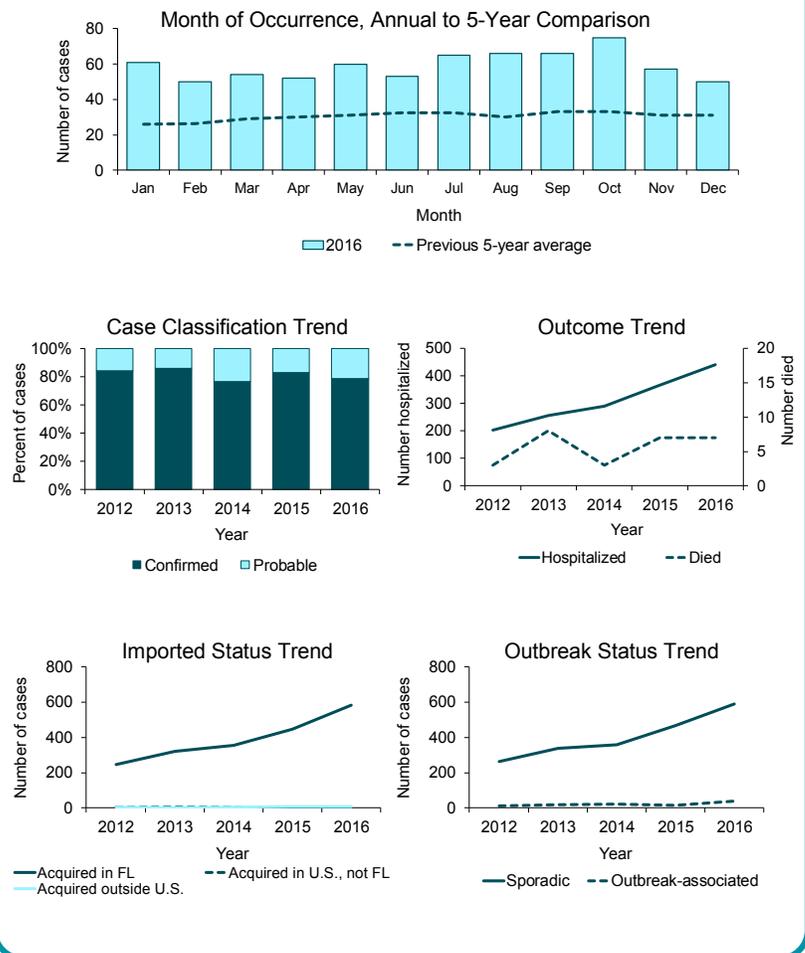
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis B cases were missing 10.3% of ethnicity data in 2012, 6.8% of race data in 2012, 10.1% of ethnicity data in 2013, 7.5% of race data in 2013, 14.2% of ethnicity data in 2014, 11.8% of race data in 2014, 13.3% of ethnicity data in 2015, 8.7% of race data in 2015, 15.1% of ethnicity data in 2016, and 10.0% of race data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	709
Case Classification	Number (Percent)
Confirmed	558 (78.7)
Probable	151 (21.3)
Outcome	Number (Percent)
Hospitalized	441 (62.2)
Died	7 (1.0)
Imported Status	Number (Percent)
Acquired in Florida	584 (82.4)
Acquired in the U.S., not Florida	5 (0.7)
Acquired outside the U.S.	9 (1.3)
Acquired location unknown	111 (15.7)
Outbreak Status	Number (Percent)
Sporadic	590 (83.2)
Outbreak-associated	38 (5.4)
Outbreak status unknown	81 (11.4)

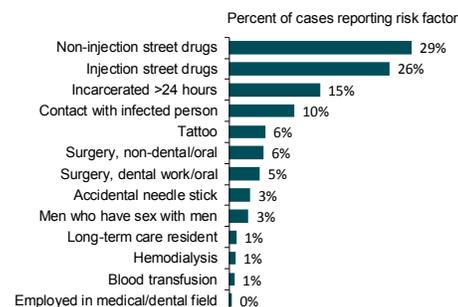
Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis B from chronic, making surveillance challenging. Incidence declined over the last decade due to increased vaccination, but started increasing in 2011 and continued to increase in 2016. The identified increase is likely due to an enhanced surveillance project focusing on hepatitis infections in young adults initiated in 2012, changes in risk behaviors in young adults, and updated laboratory reporting guidance in June 2014 requiring laboratories participating in electronic laboratory reporting to submit all negative hepatitis results. In 2016, 55 cases (7.8%) were determined to be acute based on negative results preceding positive results.

Reported Acute Hepatitis B Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



In 2016, 683 cases (96.3%) were investigated and 437 cases (61.6%) were interviewed to determine risk factor information. Risk factors reported are shown to the right. Note that a person can report multiple risk factors. Acute viral hepatitis B infections are frequently associated with drug use and sharing injection equipment. Similar to past years, the top three risk factors include non-injection drug use, injection drug use, and incarceration. Twenty-eight clusters were identified among the 38 outbreak-associated cases, each of which involved 2 cases. Twelve cases were epidemiologically linked to chronic hepatitis B cases and four cases were epidemiologically linked to acute hepatitis B cases reported in previous years. Two cases were epidemiologically linked to people who had positive HBV laboratory results, but did not meet the Florida surveillance case definition for chronic or acute hepatitis B. Twenty-two of the 28 clusters (78.6%) were sexual contacts and six (21.4%) were household contacts.

Risk Factors for Reported Acute Hepatitis B Cases, Florida, 2016



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Hepatitis B, Chronic

Disease Facts

Cause: Hepatitis B virus (HBV)

Type of illness: Most often asymptomatic; many people have chronic liver disease including cirrhosis and liver cancer; 2-6% of infections in adults become chronic

Transmission: Blood exposure, anal or vaginal sex, percutaneous exposure (e.g., tattooing, needle sticks), or from mother to child during pregnancy or delivery

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

Comments: Hepatitis B is a vaccine-preventable disease. Incidence is highest in adults 35 to 64 years old. Incidence remained relatively stable from 2009 to 2013, increased slightly in 2014, and remained high in 2016.

Summary of Case Demographics

Summary

Number of cases	4,972
Incidence rate (per 100,000 population)	24.6
Change from 5-year average incidence	+6.0%

Age (in Years)

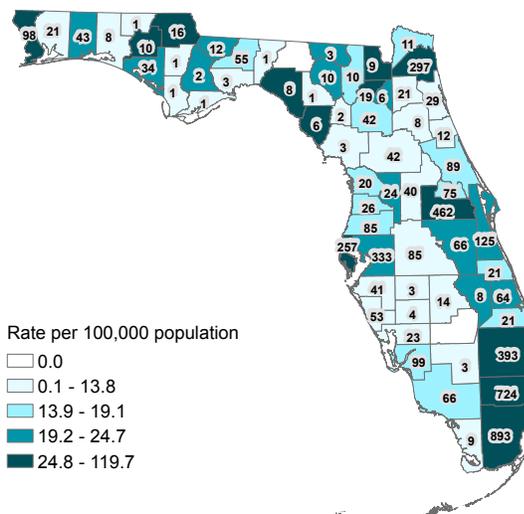
Mean	47
Median	46
Min-max	0 - 100

Gender	Number (Percent)	Rate
Female	2,165 (43.7)	20.9
Male	2,791 (56.3)	28.2
Unknown gender	16	

Race	Number (Percent)	Rate
White	1,033 (48.3)	6.6
Black	672 (31.4)	19.7
Other	434 (20.3)	39.5
Unknown race	2,833	

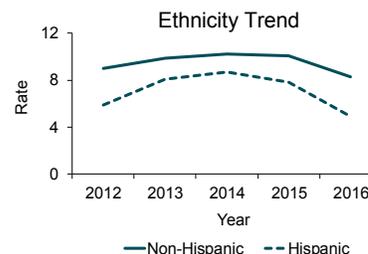
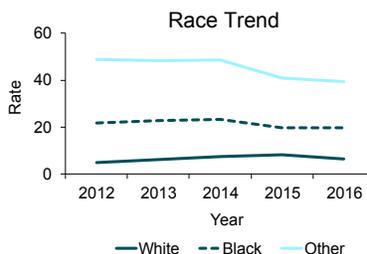
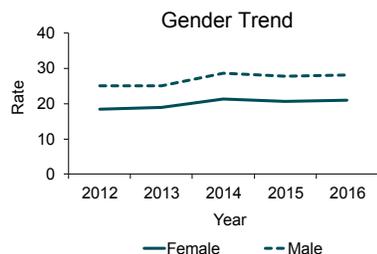
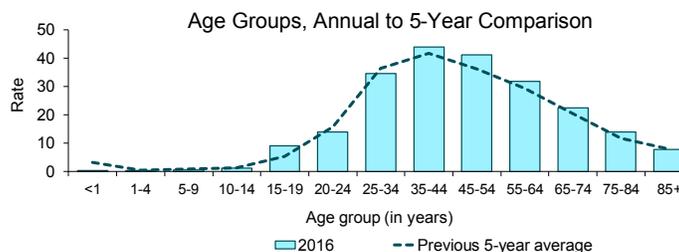
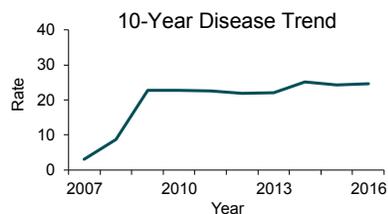
Ethnicity	Number (Percent)	Rate
Non-Hispanic	1,265 (83.8)	8.3
Hispanic	245 (16.2)	4.9
Unknown ethnicity	3,462	

Reported Chronic Hepatitis B Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=4,972)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Chronic Hepatitis B Cases by Year, Age, Gender, Race, and Ethnicity, Florida



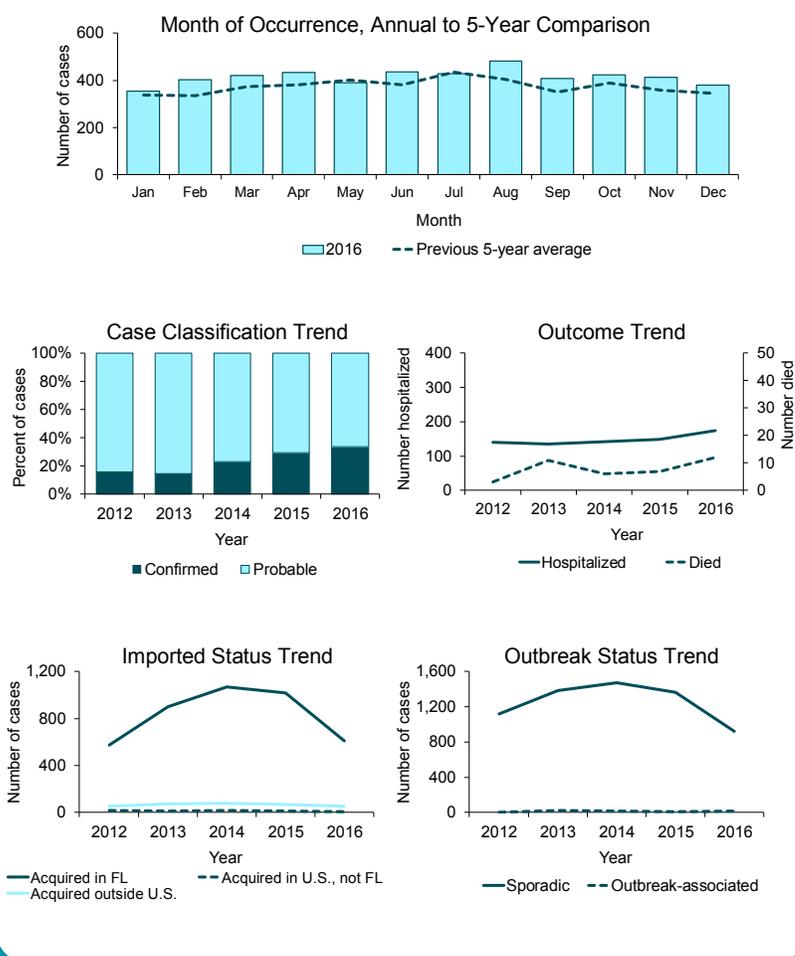
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chronic hepatitis B cases were missing 62.0% of ethnicity data in 2012, 54.6% of race data in 2012, 57.2% of ethnicity data in 2013, 49.9% of race data in 2013, 60.7% of ethnicity data in 2014, 50.6% of race data in 2014, 60.7% of ethnicity data in 2015, 50.7% of race data in 2015, 69.6% of ethnicity data in 2016, and 57.0% of race data in 2016.

Hepatitis B, Chronic

Summary of Case Factors

Summary	Number
Number of cases	4,972
Case Classification	Number (Percent)
Confirmed	1,684 (33.9)
Probable	3,288 (66.1)
Outcome	Number (Percent)
Hospitalized	175 (3.5)
Died	12 (0.2)
Imported Status	Number (Percent)
Acquired in Florida	610 (12.3)
Acquired in the U.S., not Florida	6 (0.1)
Acquired outside the U.S.	54 (1.1)
Acquired location unknown	4,302 (86.5)
Outbreak Status	Number (Percent)
Sporadic	923 (18.6)
Outbreak-associated	15 (0.3)
Outbreak status unknown	4,034 (81.1)

Reported Chronic Hepatitis B Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Given the large burden of chronic hepatitis and limited county resources, there have been concerns regarding data completeness and case ascertainment in the past. Earlier data are less reliable, particularly prior to 2009. Since 2009, improvements in electronic laboratory reporting (ELR) and increased focus on surveillance have improved case ascertainment. Automated case classification and reporting logic in the surveillance application have improved data quality and sensitivity. 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 and in 2016, 97.7% of all chronic HBV laboratory results were received by the Department electronically. Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis B from chronic. Given the volume of laboratory results received electronically for which no clinical information is available, it is likely that acute HBV infections are misclassified as chronic.

Hepatitis B, Surface Antigen in Pregnant Women

Disease Facts

Cause: Hepatitis B virus (HBV)

Type of illness: Acute or chronic illness; infection is identified when a woman tests positive for hepatitis B surface antigen (HBsAg) during pregnancy, regardless of symptoms; up to 90% of perinatal infections become chronic

Transmission: Anal or vaginal sex, blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), or from mother to child during pregnancy or delivery

Reason for surveillance: Identify individual cases and implement control measures to prevent HBV transmission from mother to baby; evaluate effectiveness of screening programs

Comments: 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 Hepatitis B surface antigen in pregnant women are per 100,000 women aged 15 to 44 years old.

Summary of Case Demographics

Summary

Number of cases	447
Incidence rate (per 100,000 population)	12.0
Change from 5-year average incidence	-8.0%

Age (in Years)

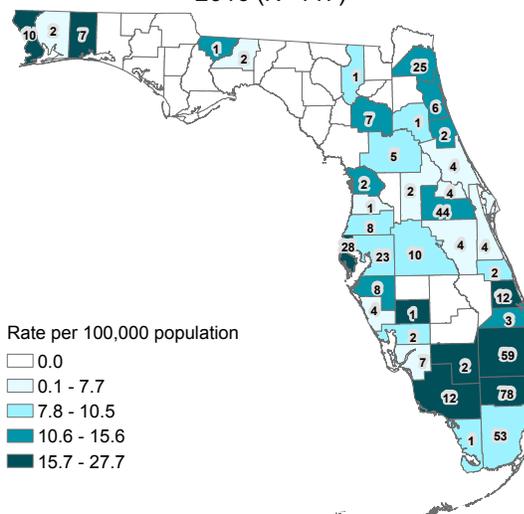
Mean	31
Median	31
Min-max	17 - 45

Gender	Number (Percent)	Rate
Female	447 (100.0)	12.0
Male	0 (0.0)	NA
Unknown gender	0	

Race	Number (Percent)	Rate
White	92 (22.3)	3.4
Black	193 (46.8)	25.0
Other	127 (30.8)	51.6
Unknown race	35	

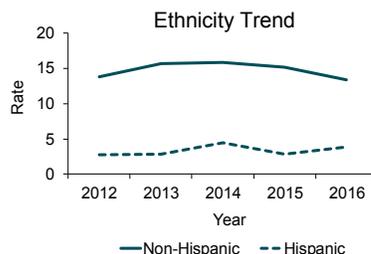
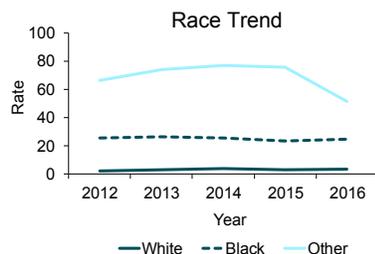
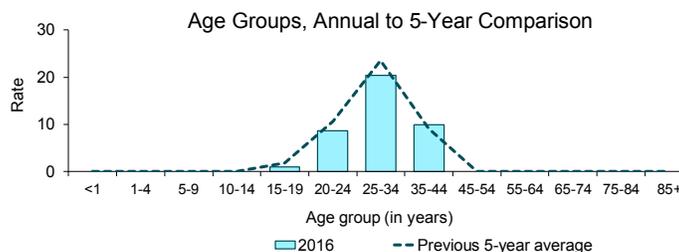
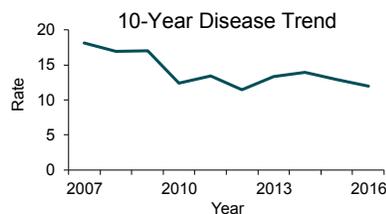
Ethnicity	Number (Percent)	Rate
Non-Hispanic	356 (89.7)	13.4
Hispanic	41 (10.3)	3.8
Unknown ethnicity	50	

Reported Hepatitis B Surface Antigen Cases in Pregnant Women and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=447)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Hepatitis B Surface Antigen Cases in Pregnant Women by Year, Age, Race, and Ethnicity, Florida



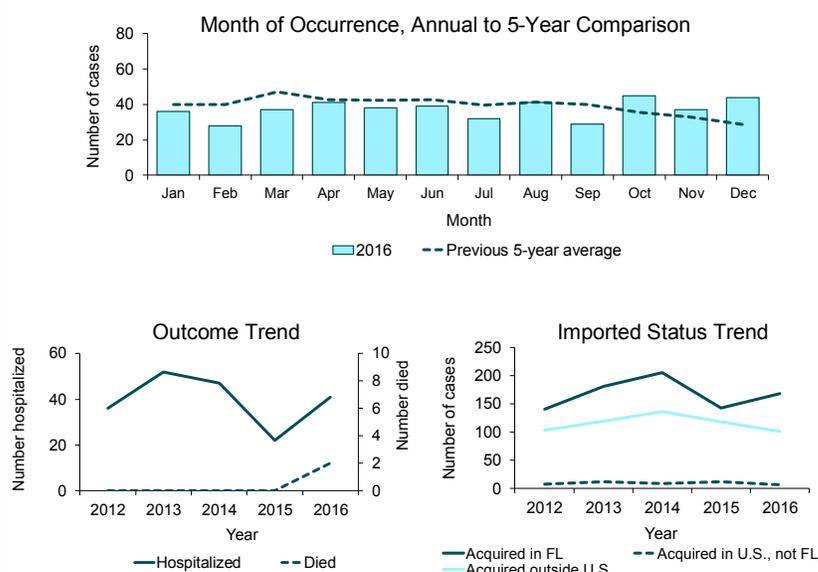
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hepatitis B surface antigen cases in pregnant women were missing 5.8% of ethnicity data in 2012, 8.9% of ethnicity data in 2013, 7.1% of race data in 2013, 9.4% of ethnicity data in 2014, 6.9% of race data in 2014, 9.5% of ethnicity data in 2015, 6.3% of race data in 2015, 11.6% of ethnicity data in 2016, and 8.1% of race data in 2016.

Hepatitis B, Surface Antigen in Pregnant Women

Summary of Case Factors

Summary	Number
Number of cases	447
Outcome	Number (Percent)
Hospitalized	41 (9.2)
Died	2 (0.4)
Imported Status	Number (Percent)
Acquired in Florida	168 (37.6)
Acquired in the U.S., not Florida	7 (1.6)
Acquired outside the U.S.	101 (22.6)
Acquired location unknown	171 (38.3)

Reported Hepatitis B Surface Antigen Cases in Pregnant Women by Month of Occurrence, Outcome, and Imported Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired.

Additional Information

The 2015 National Immunization Survey estimates that HBV vaccination coverage for birth dose administered from birth through 3 days of age was 72.4% in the U.S. and 53.2% in Florida. Birthing hospitals have a standing order to administer the birth dose; 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 American Academy of Pediatrics to provide education reminding health care providers that the recommendation is to provide the birth dose 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 infections in the other race category. In 2016, there were two deaths reported in women infected with HBV. One death was due to cardiac arrest and the cause of death in the second case was unknown; neither death was due to hepatitis B disease.

Hill HA, Elam-Evans LD, Yankey D, Singleton JA, Dietz V. 2016. Vaccination Coverage Among Children Aged 19–35 Months — United States, 2015. *Morbidity and Mortality Weekly Report*, 65(39):1065-1071. Available at www.cdc.gov/mmwr/volumes/65/wr/mm6539a4.htm.

Hepatitis C, Acute

Disease Facts

Cause: Hepatitis C virus (HCV)

Type of illness: Inflammation of the liver; sometimes asymptomatic; symptoms can include fever, malaise, loss of appetite, nausea, vomiting, abdominal discomfort, and jaundice; ~70-85% of acute infections become chronic

Transmission: Blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), from mother to child during pregnancy or delivery, or rarely anal or vaginal sex.

Reason for surveillance: Enhance efforts to prevent HCV transmission, identify and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions and screening programs

Comments: Similar to past years, incidence was highest in non-Hispanic whites and was distributed throughout Florida. Pasco County increased outreach and testing in 2016, likely increasing cases identified in that area.

Summary of Case Demographics

Summary

Number of cases	301
Incidence rate (per 100,000 population)	1.5
Change from 5-year average incidence	+64.0%

Age (in Years)

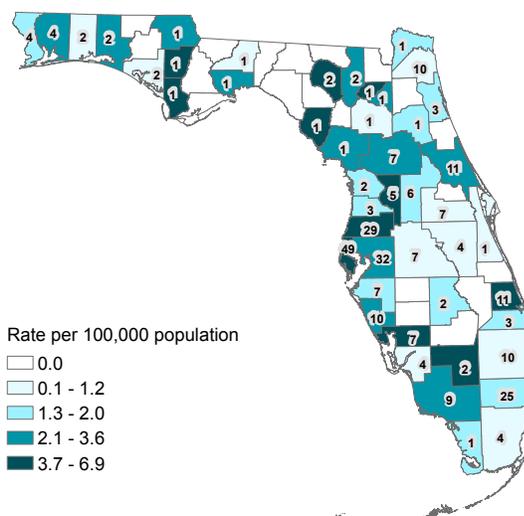
Mean	37
Median	35
Min-max	1 - 81

Gender	Number (Percent)	Rate
Female	138 (45.8)	1.3
Male	163 (54.2)	1.6
Unknown gender	0	

Race	Number (Percent)	Rate
White	252 (89.0)	1.6
Black	16 (5.7)	NA
Other	15 (5.3)	NA
Unknown race	18	

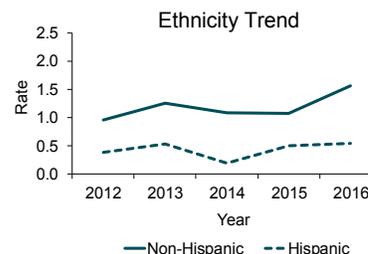
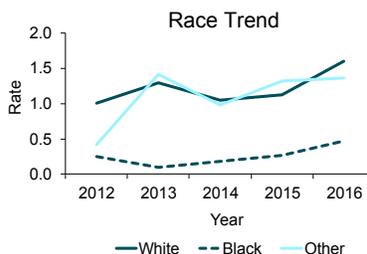
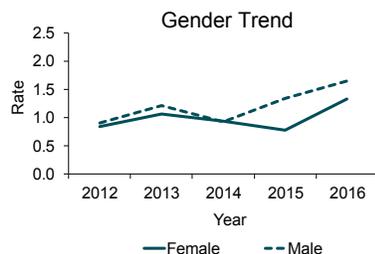
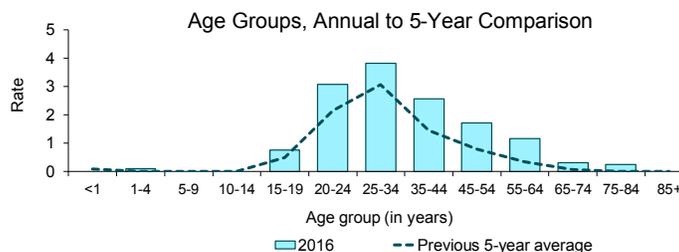
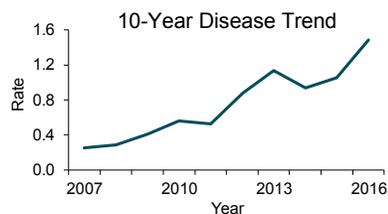
Ethnicity	Number (Percent)	Rate
Non-Hispanic	239 (89.8)	1.6
Hispanic	27 (10.2)	0.5
Unknown ethnicity	35	

Reported Acute Hepatitis C Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=301)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Acute Hepatitis C Cases by Year, Age, Gender, Race, and Ethnicity, Florida



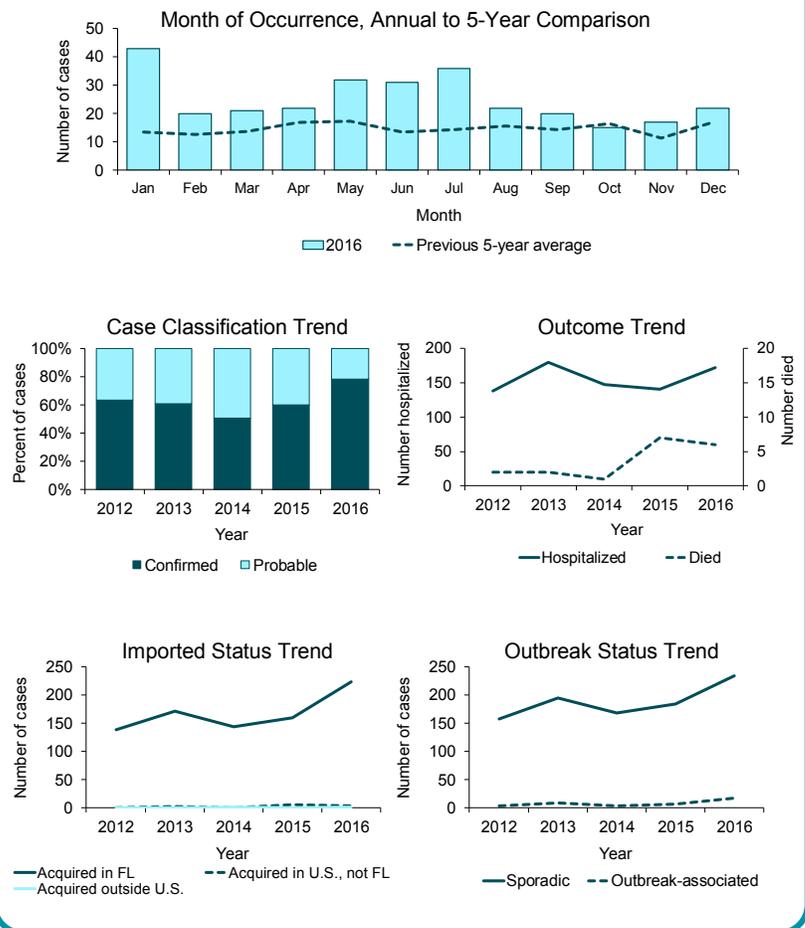
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis C cases were missing 6.0% of ethnicity data in 2012, 6.0% of ethnicity data in 2014, 11.0% of ethnicity data in 2015, 5.7% of race data in 2015, 11.6% of ethnicity data in 2016, and 6.6% of race data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	301
Case Classification	Number (Percent)
Confirmed	236 (78.4)
Probable	65 (21.6)
Outcome	Number (Percent)
Hospitalized	172 (57.1)
Died	6 (2.0)
Imported Status	Number (Percent)
Acquired in Florida	224 (74.4)
Acquired in the U.S., not Florida	4 (1.3)
Acquired outside the U.S.	2 (0.7)
Acquired location unknown	71 (23.6)
Outbreak Status	Number (Percent)
Sporadic	234 (77.7)
Outbreak-associated	17 (5.6)
Outbreak status unknown	50 (16.6)

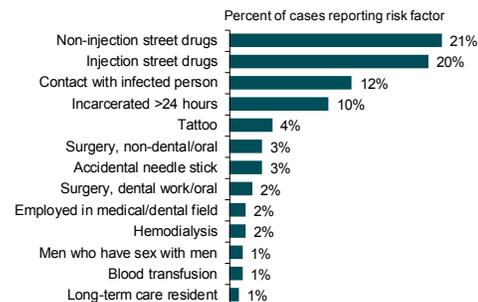
Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis C from chronic, making surveillance challenging. Incidence has increased since 2007, likely due to a change in case definition in 2008, an enhanced surveillance project focusing on hepatitis infections in young adults initiated in 2012, changes in risk behaviors in young adults, and updated laboratory reporting guidance in June 2014 requiring some laboratories participating in electronic laboratory reporting to submit all negative hepatitis results. In 2016, 107 cases (35.5%) were determined to be acute based on negative results preceding positive results.

Reported Acute Hepatitis C Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Six deaths were reported; one was due to cardiac complications, one was due to complications of dementia, one due to alcoholic cirrhosis, and the causes for the other three were unknown. In 2016, 282 cases (93.7%) were investigated and 175 cases (58.1%) were interviewed to determine possible risk factors. Risk factors reported are shown to the right. Note that a person can report multiple risk factors. New infections of viral hepatitis are frequently associated with drug use and sharing of injection equipment. Sixteen clusters were identified among the 17 outbreak-associated cases; one cluster involved four cases and the other 16 clusters each involved two cases. Fourteen cases were epidemiologically linked to chronic hepatitis C cases and one case was epidemiologically linked to an acute hepatitis C case reported in 2017. The four-person cluster was two acute hepatitis C cases and two chronic hepatitis C cases in people who lived together. Of the 16 clusters, 10 clusters (62.5%) were sexual contacts, 3 (18.8%) were personal contacts, 2 (12.5%) were household contacts, and 1 (6.2%) included sexual and household contacts.

Risk Factors for Reported Acute Hepatitis C Cases, Florida, 2016



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Hepatitis C, Chronic (Including Perinatal)

Disease Facts

Cause: Hepatitis C virus (HCV)

Type of illness: Inflammation of the liver; most often asymptomatic; many people have chronic liver disease including cirrhosis and liver cancer; ~70-85% of acute infections become chronic

Transmission: Blood exposure, percutaneous exposure (e.g., tattooing, needle sticks), from mother to child during pregnancy or delivery, or rarely anal or vaginal sex.

Reason for surveillance: Enhance efforts to prevent HCV transmission, identify acute infections and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions and screening programs

Comments: Chronic hepatitis C is one of the most common reportable diseases in Florida. Incidence increased sharply in 2016, primarily due to a case definition change that expanded the probable classification criteria.

Summary of Case Demographics

Summary

Number of cases	29,456
Incidence rate (per 100,000 population)	145.6
Change from 5-year average incidence	+37.7%

Age (in Years)

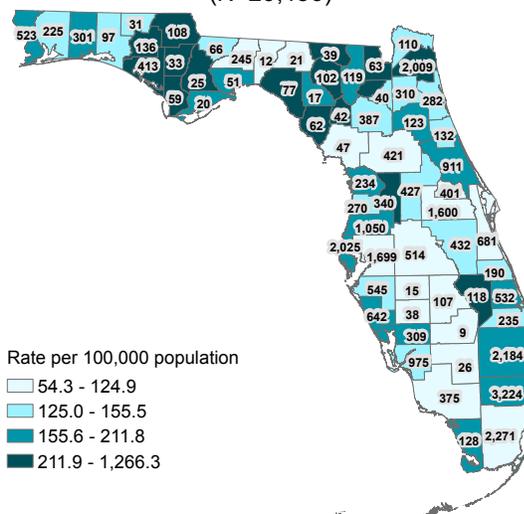
Mean	46
Median	48
Min-max	0 - 100

Gender	Number (Percent)	Rate
Female	12,083 (41.1)	116.8
Male	17,301 (58.9)	175.0
Unknown gender	72	

Race	Number (Percent)	Rate
White	11,158 (80.6)	71.0
Black	1,614 (11.7)	47.3
Other	1,072 (7.7)	97.5
Unknown race	15,612	

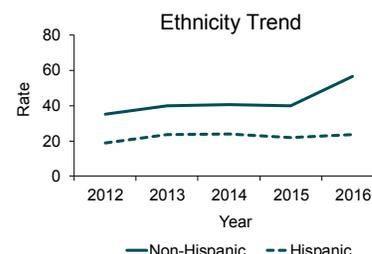
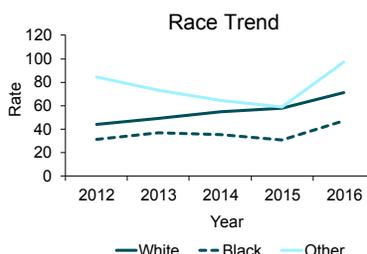
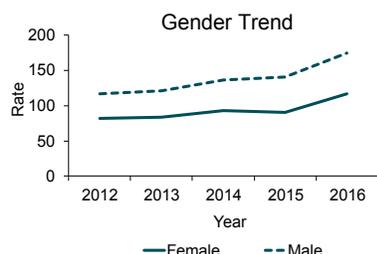
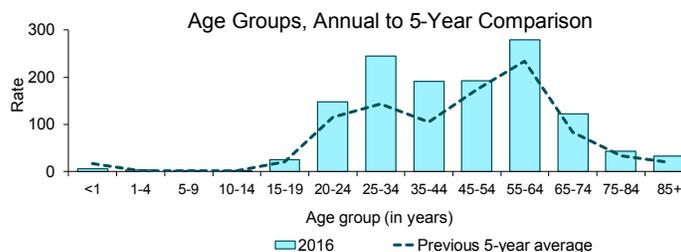
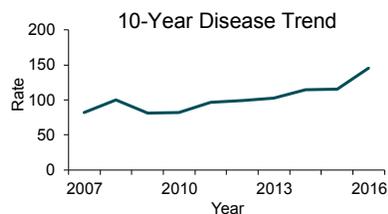
Ethnicity	Number (Percent)	Rate
Non-Hispanic	8,662 (88.1)	56.7
Hispanic	1,172 (11.9)	23.6
Unknown ethnicity	19,622	

Reported Chronic Hepatitis C Cases (Including Perinatal) and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=29,456)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Chronic Hepatitis C Cases by Year, Age, Gender, Race, and Ethnicity, Florida



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 68.3% of ethnicity data in 2012, 55.8% of race data in 2012, 64.7% of ethnicity data in 2013, 52.7% of race data in 2013, 68.0% of ethnicity data in 2014, 54.4% of race data in 2014, 69.1% of ethnicity data in 2015, 53.9% of race data in 2015, 66.6% of ethnicity data in 2016, and 53.0% of race data in 2016.

Hepatitis C, Chronic (Including Perinatal)

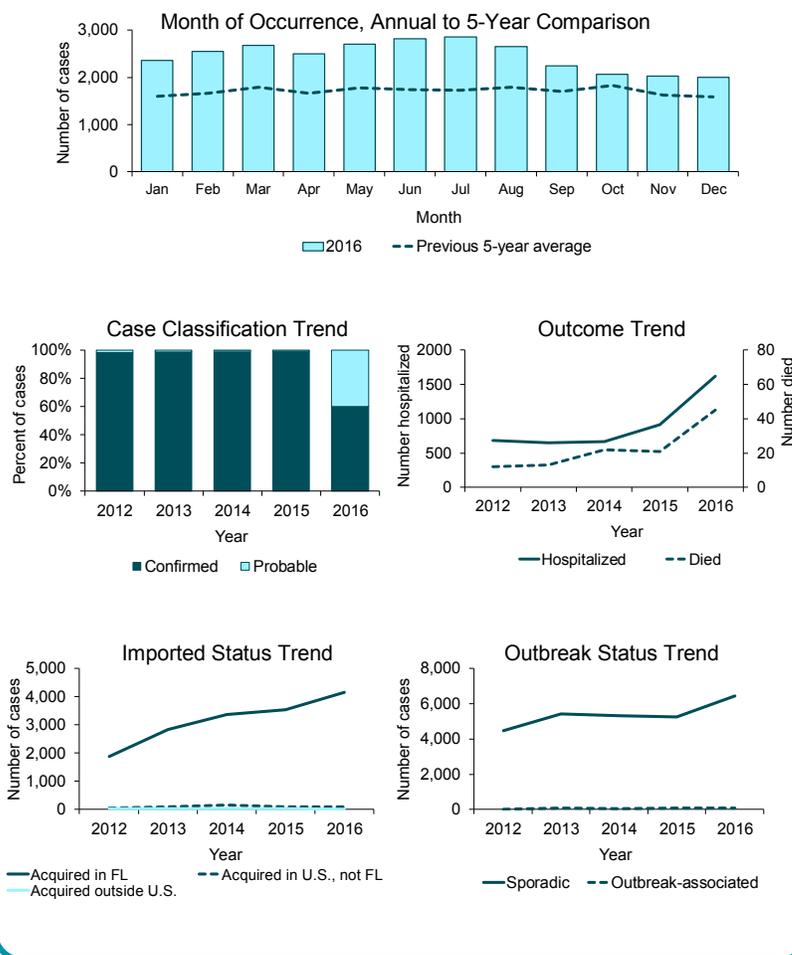
Summary of Case Factors

Summary	Number
Number of cases	29,456
Case Classification	Number (Percent)
Confirmed	17,757 (60.3)
Probable	11,699 (39.7)
Outcome	Number (Percent)
Hospitalized	1,617 (5.5)
Died	45 (0.2)
Imported Status	Number (Percent)
Acquired in Florida	4,155 (14.1)
Acquired in the U.S., not Florida	84 (0.3)
Acquired outside the U.S.	19 (0.1)
Acquired location unknown	25,198 (85.5)
Outbreak Status	Number (Percent)
Sporadic	6,444 (21.9)
Outbreak-associated	97 (0.3)
Outbreak status unknown	22,915 (77.8)

Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Reported Chronic Hepatitis C Cases (Including Perinatal) by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Additional Information

HCV was not discovered until 1989. Lower infection control standards in the 1970s and 80s and use of blood products prior to the availability of diagnostic testing and the implementation of blood screening programs in 1992 is recognized as contributing to higher rates in adults. Incidence of hepatitis C is highest in the “baby boomers,” adults born between 1946 and 1965 who would be 51 to 70 years old in 2016. Most baby boomers were likely infected in the 1960s, 70s, and 80s when transmission of hepatitis C was highest. The high rate of chronic infections in young adults (an age group who should not be chronically infected yet) also supports the theory that acute infections are not initially identified. An enhanced surveillance project focusing on chronic infections in young adults was initiated in 2012 to help identify risk factors and acute infections.

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 in the past. Earlier data are less reliable. Over the past few years, improvements in electronic laboratory reporting (ELR) and increased focus on surveillance are believed to have improved case ascertainment. Automated case classification and reporting logic in the surveillance application have improved data quality and sensitivity. 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 C cases. ELR has continued to expand and in 2016, 96.1% of all chronic HCV laboratory results were received by the Department electronically. Acute clinical symptoms or prior negative laboratory results are required to differentiate acute hepatitis C from chronic. 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 increase in deaths may be partially due to more complete data; the percent of cases with death data increased from 3% in 2014, to 8% in 2015, to 12% in 2016. The completeness of hospital data has not improved; the increase in hospitalized cases is most likely associated with the increase in total cases identified. Consistent with 2015, high incidence rates are focused in the panhandle of Florida.

HIV (Including Perinatal)

Disease Facts

Cause: Human immunodeficiency virus (HIV)

Type of illness: Flu-like illness at primary infection; causes severe damage to immune system leading to AIDS

Transmission: Anal or vaginal sex; blood exposure (e.g., sharing drug needles, receiving infected blood transfusion [rare due to donor screening]); or from mother to child during pregnancy, delivery, or breastfeeding

Reason for surveillance: Enhance efforts to prevent HIV transmission, improve allocation of resources for treatment services, and assist in evaluating the impact of public health interventions

Comments: HIV incidence has been gradually increasing since 2013. Incidence rates have been 3.8 times higher in men than women since 2014, and 3.8 to 4.1 times higher in blacks than whites. Rates are consistently highest in adults 20 to 34 years old. Increases in infected men who have sex with men contributed to the statewide increase in 2016.

Summary of Case Demographics

Summary

Number of cases	4,972
Incidence rate (per 100,000 population)	24.6
Change from 5-year average incidence	+4.1%

Age (in Years)

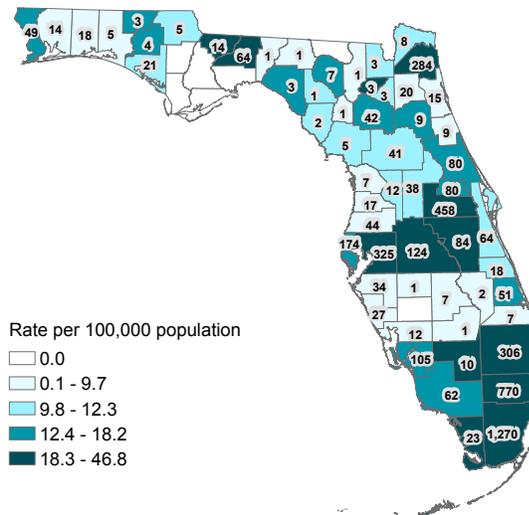
Mean	37
Median	35
Min-max	0 - 87

Gender	Number (Percent)	Rate
Female	1,081 (21.7)	10.5
Male	3,891 (78.3)	39.4
Unknown gender	0	

Race	Number (Percent)	Rate
White	2,675 (54.2)	17.0
Black	2,186 (44.3)	64.1
Other	74 (1.5)	6.7
Unknown race	37	

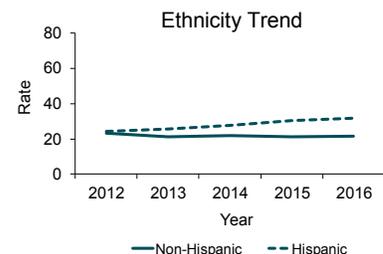
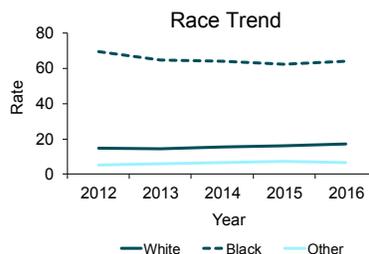
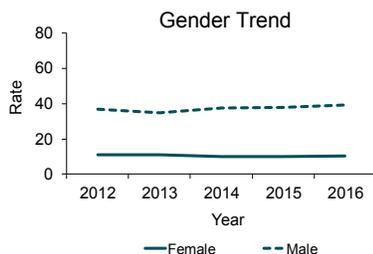
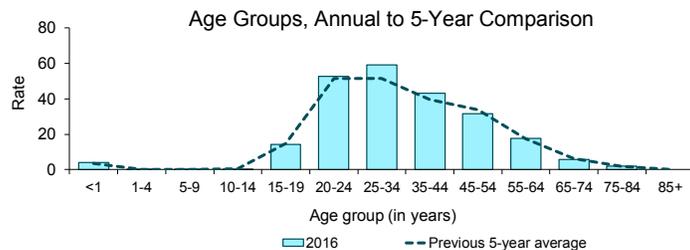
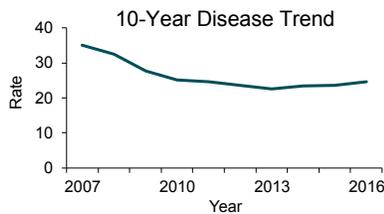
Ethnicity	Number (Percent)	Rate
Non-Hispanic	3,319 (67.7)	21.7
Hispanic	1,585 (32.3)	31.9
Unknown ethnicity	68	

Diagnosed HIV Cases (Including Perinatal) and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=4,869)



County totals exclude Florida Department of Corrections cases (n=103). Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Diagnosed HIV Cases (Including Perinatal) by Year, Age, Gender, Race, and Ethnicity, Florida



Additional Information

HIV cases tend to represent a more current picture of the AIDS epidemic as they are indicative of recent exposure. For HIV cases in men reported in 2016, male-to-male sexual contact was the most common risk factor (76.9%), followed by heterosexual contact (17.6%).

In 2012, the rate of HIV in Hispanics and non-Hispanics was very similar, but has diverged over the past five years and is now higher in Hispanics. Although the proportion of new cases among Hispanics has increased compared to non-Hispanic whites and blacks, the numbers of cases has increased among all races and ethnicities in the past few years. High-incidence counties are clustered in the central and southeast part of the state. In 2016, 64.5% of infected adult women were black compared to 35.7% of infected adult men.

Diagnosed HIV Cases by Sex and Mode of Exposure, Florida, 2016

Mode of Exposure	Female Cases (n=1,081)		Male Cases (n=3,891)	
	Number	Percent	Number	Percent
Men who have sex with men (MSM)	NA		2,991	(76.9)
Heterosexual	979	(90.5)	686	(17.6)
Injection drug user (IDU)	92	(8.5)	102	(2.6)
MSM and IDU	NA		98	(2.5)
Other	10	(0.9)	13	(0.3)
Total	1,081		3,891	

The HIV care continuum reflects stages of HIV medical care beginning with an initial diagnosis with the intent of achieving a very low level of HIV in the body (viral suppression). A person living with HIV (PLWH) with a suppressed viral load has a less than 1% chance of transmitting the virus. In 2016, there were 114,772 PLWHs in Florida, 66% of whom were retained in care and 60% of whom had a suppressed viral load.

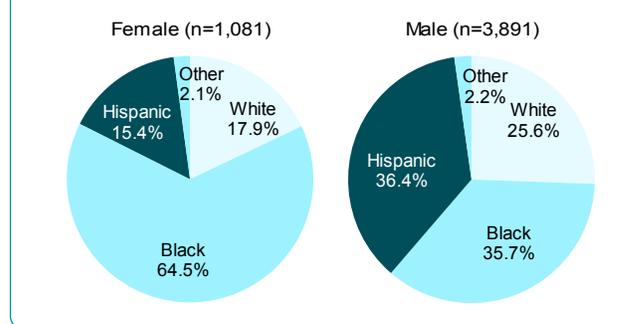
HIV was the seventh leading cause of death for people aged 24 to 44 years in Florida in 2016. Following the advent of highly active anti-retroviral therapy, there has been an 80% decline in HIV deaths from 1995 to 2016 and a 43% decrease in deaths in the last 10 years.

For information on AIDS, please see the AIDS chapter within this section (page 11).

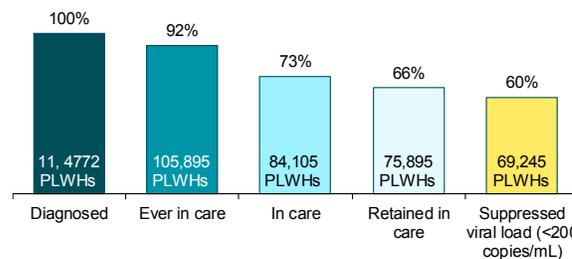
Please visit the AIDS surveillance website to access additional information at www.FloridaHealth.gov/diseases-and-conditions/aids/surveillance/index.html.

To locate services across the state please visit www.FloridaHealth.gov/diseases-and-conditions/aids/index.html.

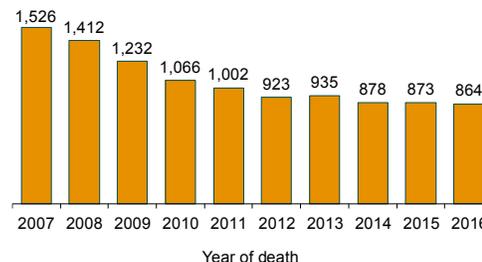
Diagnosed HIV Cases by Sex and Race/Ethnicity, Florida, 2016



Care Continuum for Persons Living With HIV (PLWHs) in Florida, 2016



HIV Deaths in Florida Residents by Year of Death, 2007-2016



Lead Poisoning in Children <6 Years Old

Disease Facts

Cause: Lead

Type of illness: Wide range of adverse health effects, from difficulty learning, sluggishness, and fatigue to seizures, coma, and death

Exposure: Most commonly ingestion of paint dust in houses built prior to elimination of lead in paints in 1978

Reason for surveillance: 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

Comments: Prior to 2010, lead poisoning case data were primarily stored outside the state's reportable disease surveillance system; therefore, only cases from 2010 to 2016 are presented in this report. Lead poisoning is most often identified in children as part of routine screening.

Summary of Case Demographics

Summary

Number of cases	166
Incidence rate (per 100,000 population)	12.4
Change from 5-year average incidence	+0.3%

Age (in Years)

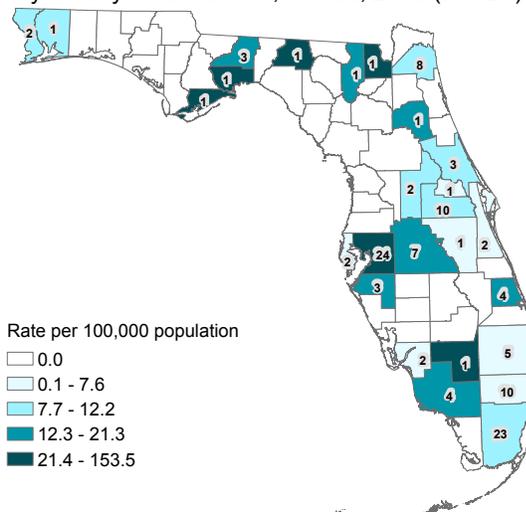
Mean	2
Median	1
Min-max	0 - 5

Gender	Number (Percent)	Rate
Female	69 (41.6)	10.6
Male	97 (58.4)	14.2
Unknown gender	0	

Race	Number (Percent)	Rate
White	69 (45.7)	7.5
Black	32 (21.2)	10.5
Other	50 (33.1)	43.5
Unknown race	15	

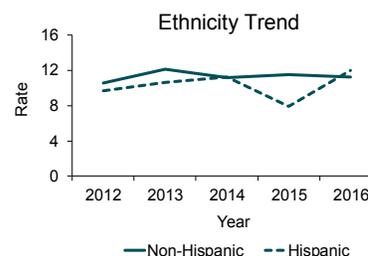
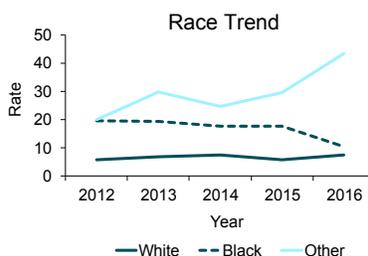
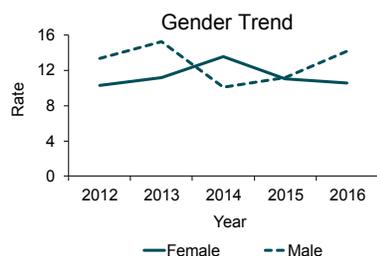
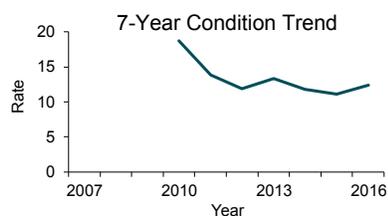
Ethnicity	Number (Percent)	Rate
Non-Hispanic	104 (67.5)	11.3
Hispanic	50 (32.5)	12.0
Unknown ethnicity	12	

Reported Lead Poisoning Cases in Children <6 Years Old and Incidence Rates Per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2016 (N=124)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Lead Poisoning Cases in Children <6 Years Old by Year, Gender, Race, and Ethnicity, Florida



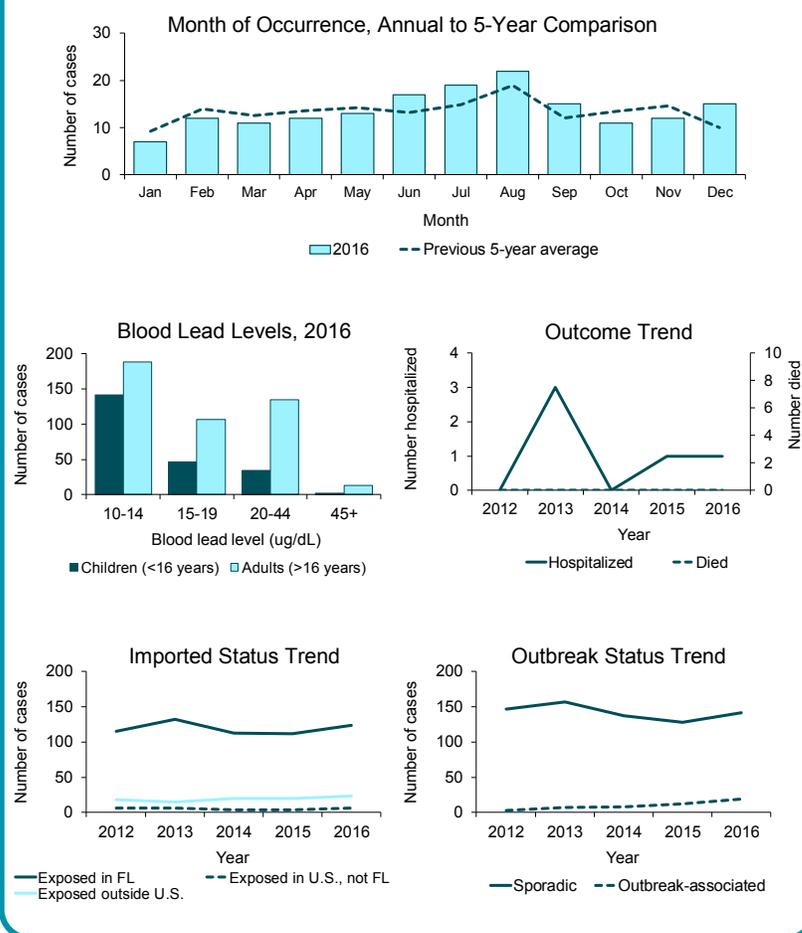
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases in children <6 years old were missing 13.1% of ethnicity data in 2012, 14.4% of race data in 2012, 12.2% of ethnicity data in 2013, 12.2% of race data in 2013, 5.2% of ethnicity data in 2014, 6.2% of ethnicity data in 2015, 7.2% of ethnicity data in 2016, and 9.0% of race data in 2016.

Lead Poisoning in Children <6 Years Old

Summary of Case Factors

Summary	Number
Number of cases	166
Outcome	Number (Percent)
Hospitalized	1 (0.6)
Died	0 (0.0)
Imported Status	Number (Percent)
Exposed in Florida	124 (74.7)
Exposed in the U.S., not Florida	6 (3.6)
Exposed outside the U.S.	23 (13.9)
Exposed location unknown	13 (7.8)
Outbreak Status	Number (Percent)
Sporadic	142 (85.5)
Outbreak-associated	19 (11.4)
Outbreak status unknown	5 (3.0)

Reported Lead Poisoning Cases in Children <6 Years Old by Month of Occurrence, Blood Lead Level, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Lead screening is required for children <6 years old who are Medicaid-enrolled or eligible, and recommended for children who are foreign-born or otherwise identified as high-risk. 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 elimination of lead in paints in 1978. Less common sources include glazed ceramic dishes, children's toys or jewelry, parental occupations or hobbies involving lead, and folk medicines or cosmetics from other countries. Compared to lead poisoning in adults where occupational exposure results in much higher incidence rates in men than women, cases in children are more evenly distributed between boys and girls (though the incidence rate in 2016 was higher in boys than girls). Most children with lead poisoning have blood lead levels in the 10-14 $\mu\text{g}/\text{dL}$ range. More lead poisoning cases consistently occur in July and August. Compared to the rest of the year, a larger proportion of cases occur in older children aged 3 to 5 years old in August (~50-55% in August compared to ~25-30% in other months). This pattern may be due to increased testing in preschool-aged children, such as Head Start enrollees.

Lead Poisoning in People ≥6 Years Old

Disease Facts

Cause: Lead

Type of illness: Often asymptomatic; can cause arthralgia, headache, cognitive dysfunction, adverse reproductive outcomes, gastrointestinal difficulties, renal failure, hypertension, and encephalopathy

Exposure: Inhalation or ingestion of lead, most often dust or fumes that occur when lead is melted

Reason for surveillance: 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

Comments: Prior to 2010, lead poisoning case data were primarily stored outside the state's reportable disease surveillance system; therefore only cases from 2010 to 2016 are presented in this report. Lead poisoning in adults is much more common in men than women due to the types of occupations/hobbies with lead exposure.

Summary of Case Demographics

Summary

Number of cases	501
Incidence rate (per 100,000 population)	2.7
Change from 5-year average incidence	-14.0%

Age (in Years)

Mean	37
Median	35
Min-max	6 - 83

Gender

Gender	Number (Percent)	Rate
Female	46 (9.2)	0.5
Male	455 (90.8)	4.9
Unknown gender	0	

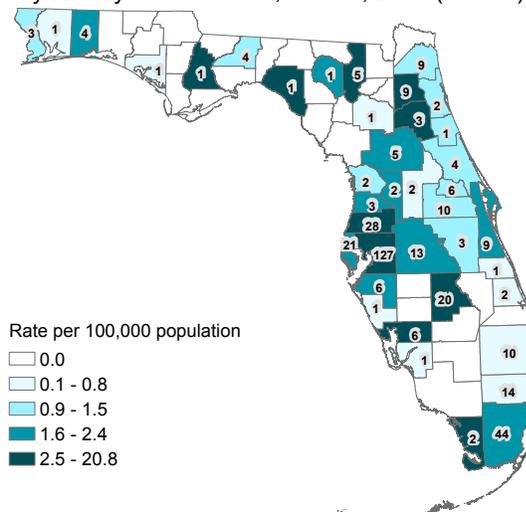
Race

Race	Number (Percent)	Rate
White	304 (69.9)	2.1
Black	71 (16.3)	2.3
Other	60 (13.8)	6.1
Unknown race	66	

Ethnicity

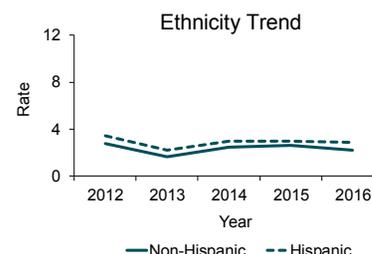
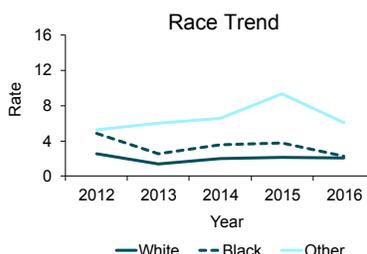
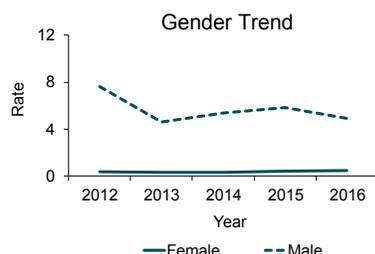
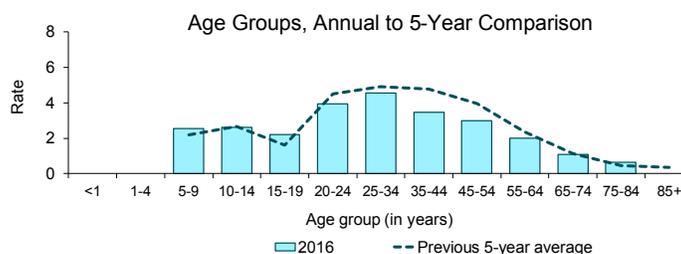
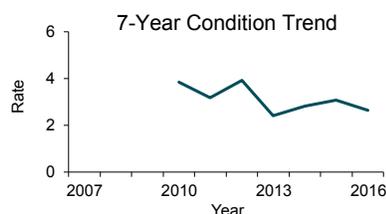
Ethnicity	Number (Percent)	Rate
Non-Hispanic	316 (70.9)	2.2
Hispanic	130 (29.1)	2.9
Unknown ethnicity	55	

Reported Lead Poisoning Cases in People ≥6 Years Old and Incidence Rates Per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2016 (N=388)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Lead Poisoning Cases in People ≥6 Years Old by Year, Age, Gender, Race, and Ethnicity, Florida



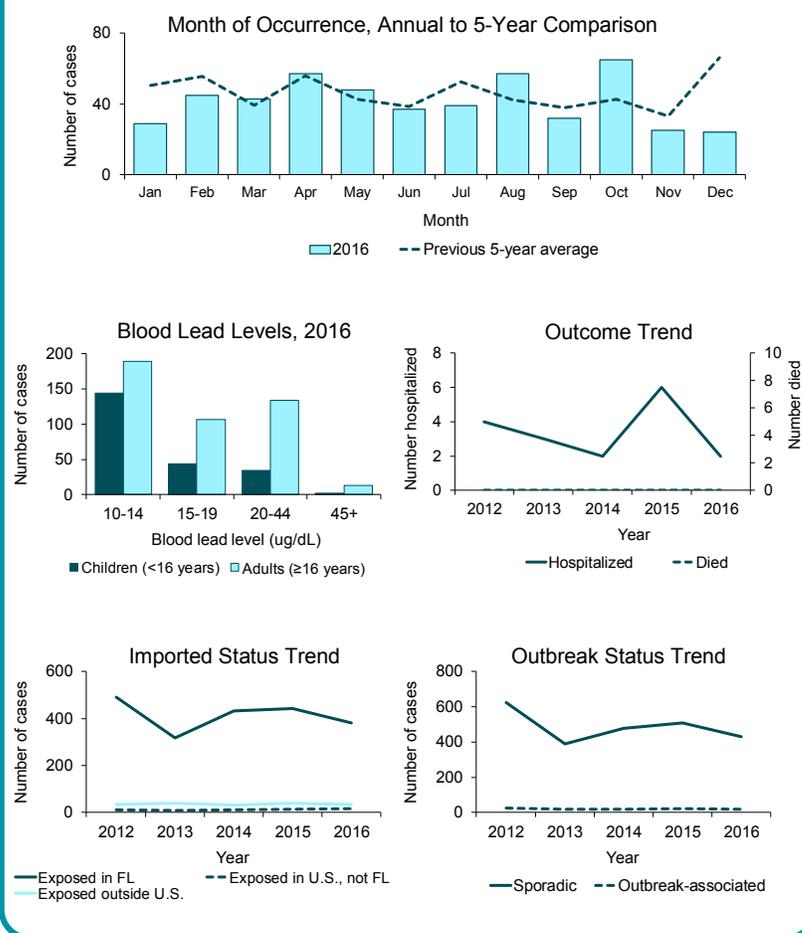
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases in people ≥6 years old were missing 25.6% of ethnicity data in 2012, 22.2% of race data in 2012, 25.9% of ethnicity data in 2013, 26.1% of race data in 2013, 8.4% of ethnicity data in 2014, 10.9% of race data in 2014, 11.9% of ethnicity data in 2015, 10.3% of race data in 2015, 11.0% of ethnicity data in 2016, and 13.2% of race data in 2016.

Lead Poisoning in People ≥6 Years Old

Summary of Case Factors

Summary	Number
Number of cases	501
Outcome	Number (Percent)
Hospitalized	2 (0.4)
Died	0 (0.0)
Imported Status	Number (Percent)
Exposed in Florida	388 (77.4)
Exposed in the U.S., not Florida	17 (3.4)
Exposed outside the U.S.	36 (7.2)
Exposed location unknown	60 (12.0)
Outbreak Status	Number (Percent)
Sporadic	441 (88.0)
Outbreak-associated	18 (3.6)
Outbreak status unknown	42 (8.4)

Reported Lead Poisoning Cases in People ≥6 Years Old by Month of Occurrence, Blood Lead Level, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

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, stained glass making, 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. Compared to adults, the incidence of lead poisoning is lower in children ≥6 years old as they are screened less frequently. Screening is only recommended for children ≥6 years old if the child is foreign-born or otherwise identified as high-risk. Most cases (60-75%) in recent years have been identified through occupational screening. Similar to children, the largest number of cases in people ≥6 years old had blood lead levels between 10 and 14 µg/dL. However, compared to children, more cases had blood lead levels ≥15 µg/dL. Lead poisoning cases are reported all year with little seasonality. Each year, peaks occur in different months with no pattern year-to-year. The large peak in the previous five-year average in December is due to 119 cases reported in March and April 2012 that occurred in December 2011. The reason for the late reporting is unknown and the dramatic peak was not observed in other years. Hillsborough County has the largest number of reported cases due to occupational screening at a large battery and a metal recycling plant located there.

Legionellosis

Disease Facts

Cause: *Legionella* bacteria

Type of illness: Symptoms include fever, muscle pain, cough, shortness of breath; pneumonia can occur

Transmission: Inhalation of aerosolized water containing the bacteria

Reason for surveillance: Identify and control outbreaks, identify and mitigate common reservoirs, monitor incidence over time, estimate burden of illness

Comments: Recently identified sources in Florida and the U.S. include decorative fountains, hot tubs, cooling towers (air conditioning units for large buildings), and potable water systems. Increasing incidence in Florida is consistent with the increase observed nationally over the past decade. This increase is likely due to a number of factors, including aging infrastructure and a greater percentage of the population aged ≥64 years. The elderly and those with weakened immune systems are at highest risk for developing disease.

Summary of Case Demographics

Summary

Number of cases	328
Incidence rate (per 100,000 population)	1.6
Change from 5-year average incidence	+27.6%

Age (in Years)

Mean	64
Median	64
Min-max	16 - 96

Gender

Gender	Number (Percent)	Rate
Female	131 (39.9)	1.3
Male	197 (60.1)	2.0
Unknown gender	0	

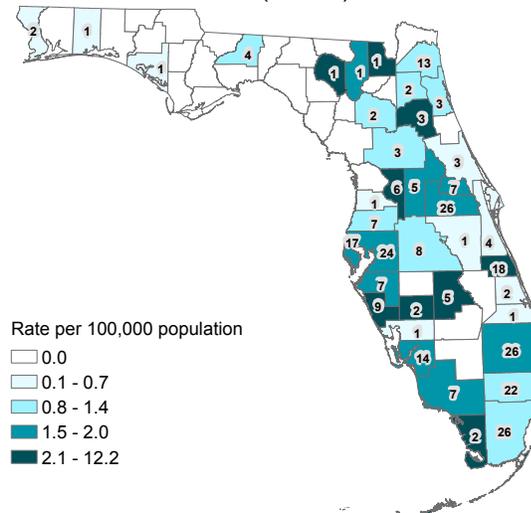
Race

Race	Number (Percent)	Rate
White	255 (79.4)	1.6
Black	48 (15.0)	1.4
Other	18 (5.6)	NA
Unknown race	7	

Ethnicity

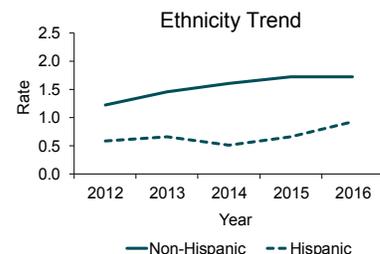
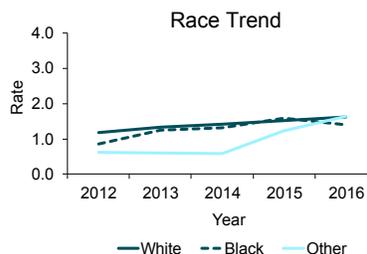
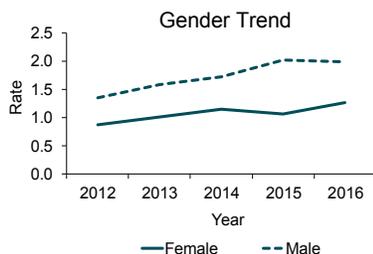
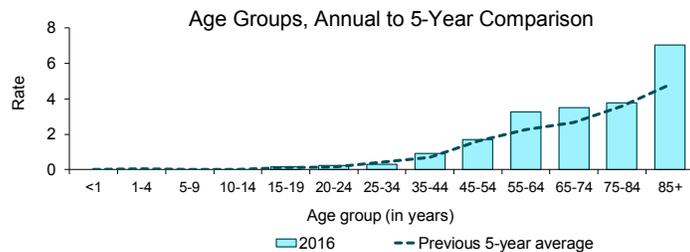
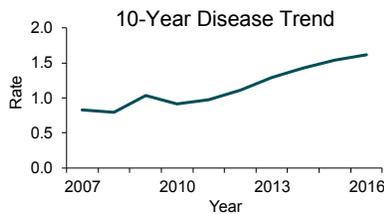
Ethnicity	Number (Percent)	Rate
Non-Hispanic	264 (85.2)	1.7
Hispanic	46 (14.8)	0.9
Unknown ethnicity	18	

Reported Legionellosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=288)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Legionellosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida

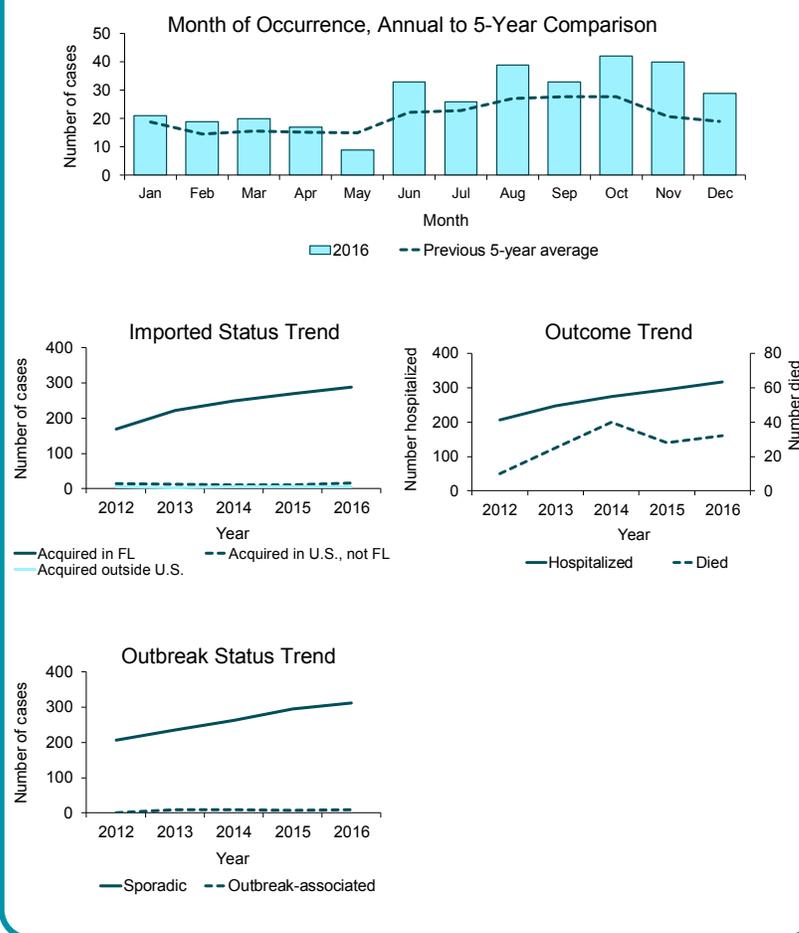


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Legionellosis cases were missing 5.7% of ethnicity data in 2014 and 5.5% of ethnicity data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	328
Outcome	Number (Percent)
Hospitalized	318 (97.0)
Died	32 (9.8)
Imported Status	Number (Percent)
Acquired in Florida	288 (87.8)
Acquired in the U.S., not Florida	16 (4.9)
Acquired outside the U.S.	6 (1.8)
Acquired location unknown	18 (5.5)
Outbreak Status	Number (Percent)
Sporadic	312 (95.1)
Outbreak-associated	10 (3.0)
Outbreak status unknown	6 (1.8)

Reported Legionellosis Cases by Month of Occurrence, Imported Status, Outcome, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

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 incubation 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 above. Fifteen outbreaks involving 31 cases were identified in Florida in 2016 (six cases were in non-Florida residents and therefore are not included in counts in this report). Outbreaks were associated with nursing homes, hotels, hospitals, a camp, an independent living facility, and an assisted living facility.

Disease Facts

Cause: *Listeria monocytogenes* bacteria

Type of illness: Most people infected with *Listeria* have invasive infection, in which the bacteria has spread beyond the gastrointestinal tract; initial illness is often characterized by fever and diarrhea

Transmission: Foodborne; can be transmitted to fetus during pregnancy

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

Comments: Listeriosis primarily affects older adults, 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. Incidence is highest in infants and people ≥ 75 years old.

Summary of Case Demographics

Summary		
Number of cases		43
Incidence rate (per 100,000 population)		0.2
Change from 5-year average incidence		+1.5%

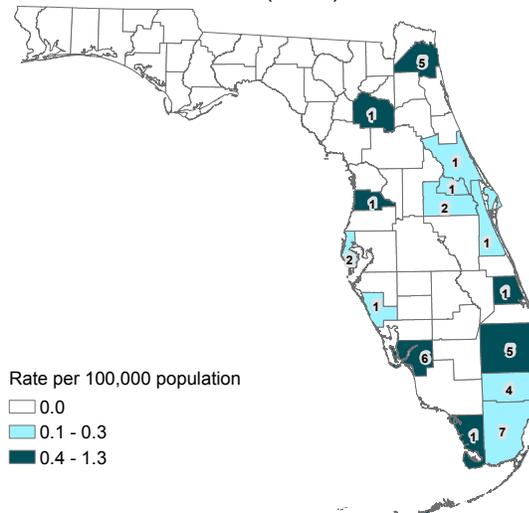
Age (in Years)		
Mean		62
Median		70
Min-max		0 - 95

Gender	Number (Percent)	Rate
Female	21 (48.8)	0.2
Male	22 (51.2)	0.2
Unknown gender	0	

Race	Number (Percent)	Rate
White	27 (65.9)	0.2
Black	10 (24.4)	NA
Other	4 (9.8)	NA
Unknown race	2	

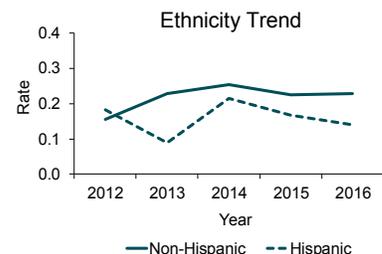
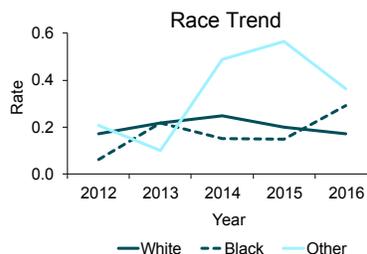
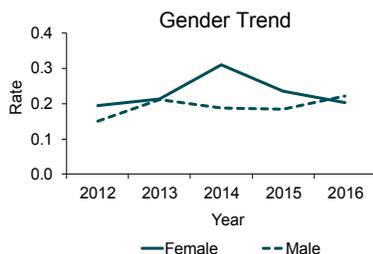
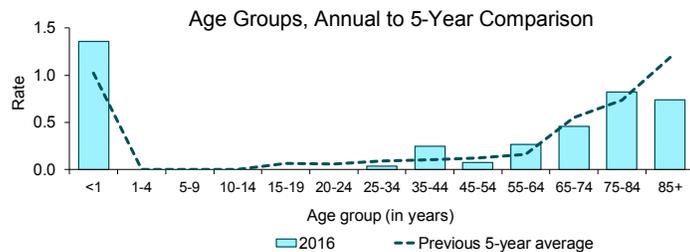
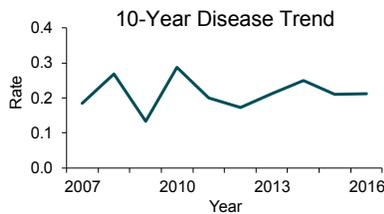
Ethnicity	Number (Percent)	Rate
Non-Hispanic	35 (83.3)	0.2
Hispanic	7 (16.7)	NA
Unknown ethnicity	1	

Reported Listeriosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=39)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Listeriosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida

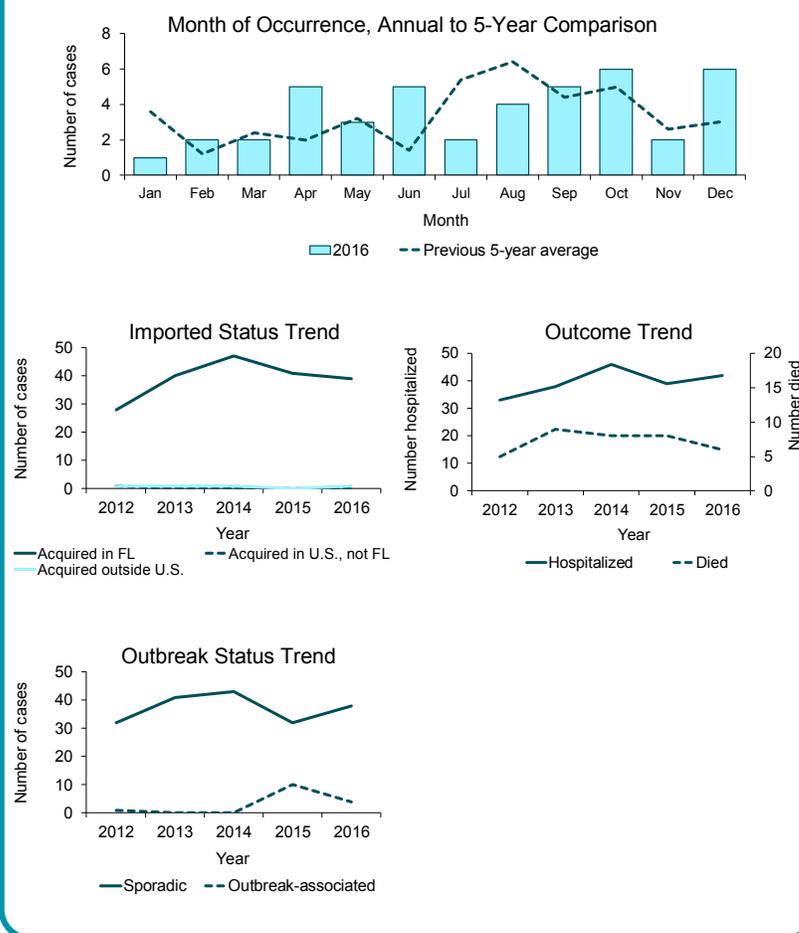


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Listeriosis cases were missing 6.1% of ethnicity data in 2012, 9.1% of race data in 2012, and 7.3% of ethnicity data in 2013.

Summary of Case Factors

Summary	Number
Number of cases	43
Outcome	Number (Percent)
Hospitalized	42 (97.7)
Died	6 (14.0)
Imported Status	Number (Percent)
Acquired in Florida	39 (90.7)
Acquired in the U.S., not Florida	0 (0.0)
Acquired outside the U.S.	1 (2.3)
Acquired location unknown	3 (7.0)
Outbreak Status	Number (Percent)
Sporadic	38 (88.4)
Outbreak-associated	4 (9.3)
Outbreak status unknown	1 (2.3)

Reported Listeriosis Cases by Month of Occurrence, Imported Status, Outcome, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Listeriosis cases occur all year and do not exhibit a strong seasonality, and low numbers make it difficult to interpret trends. When averaged over several years, slightly more cases occur in the summer months. Compared to previous years, more cases occurred in April, June, and December in 2016. In 2016, six cases, including two cases reported in previous years, were linked to five different multistate clusters. Whole-genome sequencing conducted on a 2014 Florida isolate linked the case to a raw chocolate milk product from a Pennsylvania farm. One 2015 case and four 2016 cases were linked to other four multistate clusters (sources for those clusters were not identified).

Lyme Disease

Disease Facts

Cause: *Borrelia burgdorferi* bacteria

Type of illness: Acute illness or late manifestation: fever, headache, fatigue, joint pain, muscle pain, bone pain, and erythema migrans (characteristic bull's-eye rash); late manifestation: 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

Transmission: Tick-borne; bite of infective *Ixodes scapularis* tick

Reason for surveillance: Monitor incidence over time, estimate burden of illness and degree of endemicity, target areas of high incidence for prevention education

Comments: Lyme disease is the most common tick-borne disease in the U.S. The case definition changed in 2008; expanding the acceptable laboratory criteria contributed to an increase in cases starting in 2008.

Summary of Case Demographics

Summary

Number of cases	216
Incidence rate (per 100,000 population)	1.1
Change from 5-year average incidence	+49.8%

Age (in Years)

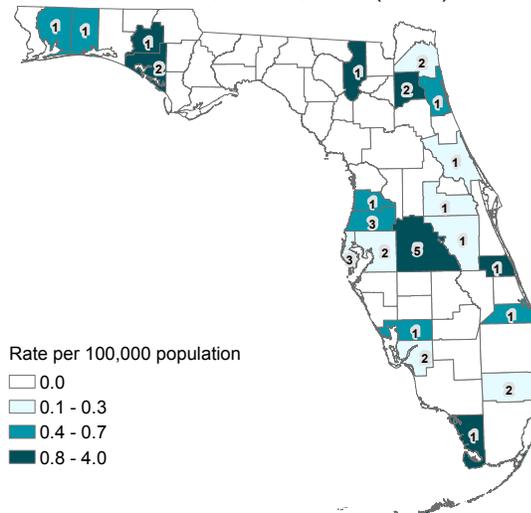
Mean	49
Median	54
Min-max	1 - 93

Gender	Number (Percent)	Rate
Female	109 (50.5)	1.1
Male	107 (49.5)	1.1
Unknown gender	0	

Race	Number (Percent)	Rate
White	162 (98.2)	1.0
Black	1 (0.6)	NA
Other	2 (1.2)	NA
Unknown race	51	

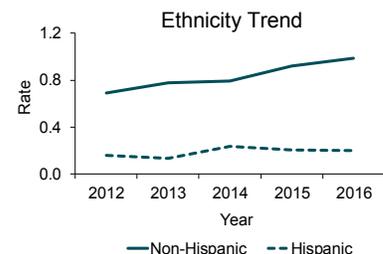
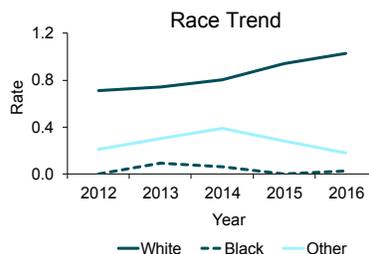
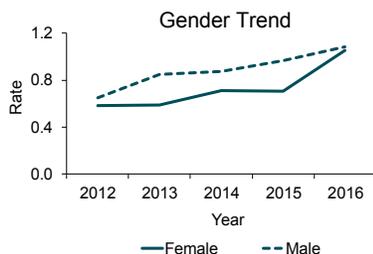
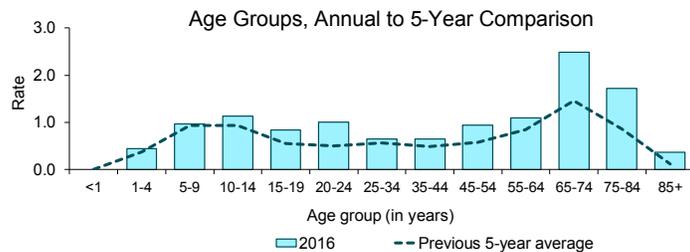
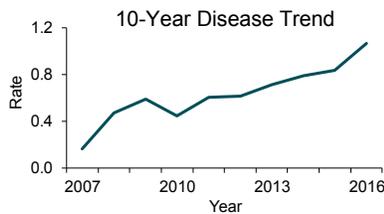
Ethnicity	Number (Percent)	Rate
Non-Hispanic	151 (93.8)	1.0
Hispanic	10 (6.2)	NA
Unknown ethnicity	55	

Reported Lyme Disease Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=36)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Lyme Disease Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lyme disease cases were missing 7.6% of ethnicity data in 2012, 7.6% of race data in 2012, 12.3% of ethnicity data in 2013, 14.5% of race data in 2013, 16.1% of ethnicity data in 2014, 16.8% of race data in 2014, 10.2% of ethnicity data in 2015, 10.2% of race data in 2015, 25.5% of ethnicity data in 2016, and 23.6% of race data in 2016.

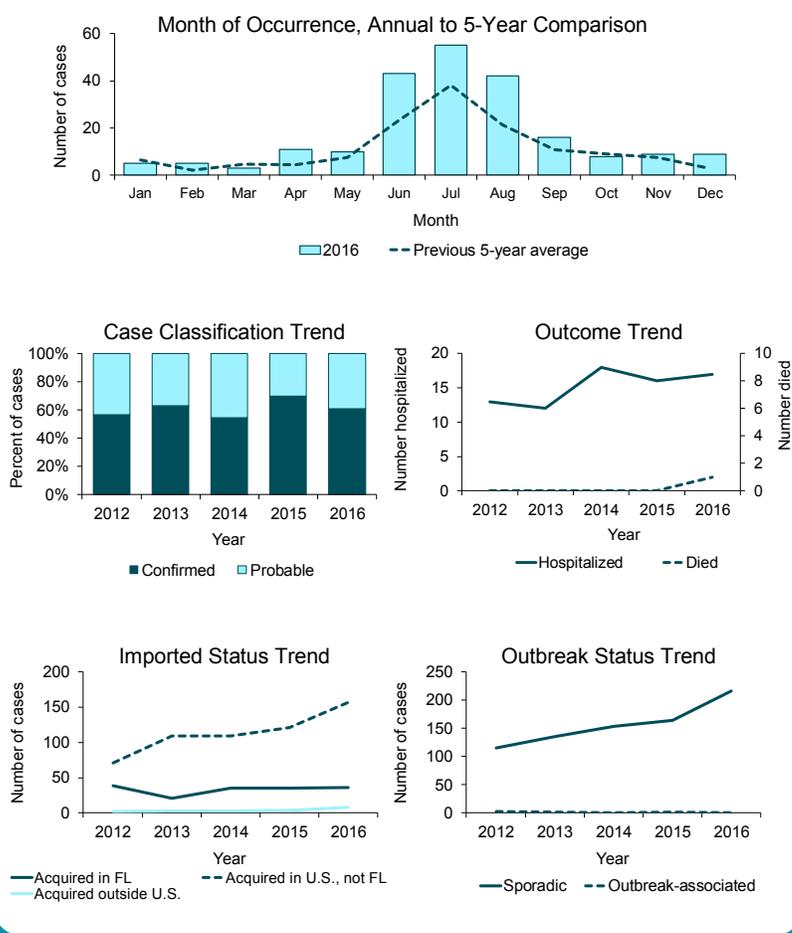
Note that the majority of Lyme disease cases are acquired outside of Florida.

Summary of Case Factors

Summary	Number
Number of cases	216
Case Classification	Number (Percent)
Confirmed	132 (61.1)
Probable	84 (38.9)
Outcome	Number (Percent)
Hospitalized	17 (7.9)
Died	1 (0.5)
Imported Status	Number (Percent)
Acquired in Florida	36 (16.7)
Acquired in the U.S., not Florida	157 (72.7)
Acquired outside the U.S.	8 (3.7)
Acquired location unknown	15 (6.9)
Outbreak Status	Number (Percent)
Sporadic	216 (100.0)
Outbreak-associated	0 (0.0)
Outbreak status unknown	0 (0.0)

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. Other reports may use illness onset date instead of report date, or county of exposure instead of county of residence.

Reported Lyme Disease Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Erythema migrans rash associated with acute Lyme disease may also be seen with southern tick-associated rash illness (STARI), although chronic symptoms are not reported with STARI. There is also increased recognition of post-treatment Lyme disease syndrome, which is managed symptomatically and with lifestyle modifications.

The incidence of Lyme disease increased noticeably in 2016, primarily due to an increase in imported cases from 14 highly endemic states in the northeast and upper midwestern U.S. The increase in cases over the past decade 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. There were also five infections associated with travel to Europe, two with travel to Canada, and one possibly associated with travel to Afghanistan. The largest increase in cases was in adults ≥ 65 years old.

Disease Facts

Cause: *Plasmodium vivax*, *P. falciparum*, *P. malariae*, *P. ovale* parasites

Type of illness: Uncomplicated or severe illness; common symptoms include high fever with chills, rigor, sweats, headache, nausea, and vomiting

Transmission: Bite of infective mosquito; rarely by blood transfusion or organ transplant

Reason for surveillance: Identify individual cases and implement control measures to prevent introduction and active transmission, monitor incidence over time, estimate burden of illness

Comments: All infections were among people traveling to countries with endemic transmission (primarily visiting friends and family in African countries). Imported malaria cases peaked in 2010 after the January 2010 earthquake in Haiti resulted in an influx of Haitians in Florida. The number of cases imported from Central America and the Caribbean has increased in recent years, though more cases are still infected in Africa.

Summary of Case Demographics

Summary

Number of cases	62
Incidence rate (per 100,000 population)	0.3
Change from 5-year average incidence	-2.9%

Age (in Years)

Mean	41
Median	43
Min-max	1 - 73

Gender

Gender	Number (Percent)	Rate
Female	16 (25.8)	NA
Male	46 (74.2)	0.5
Unknown gender	0	

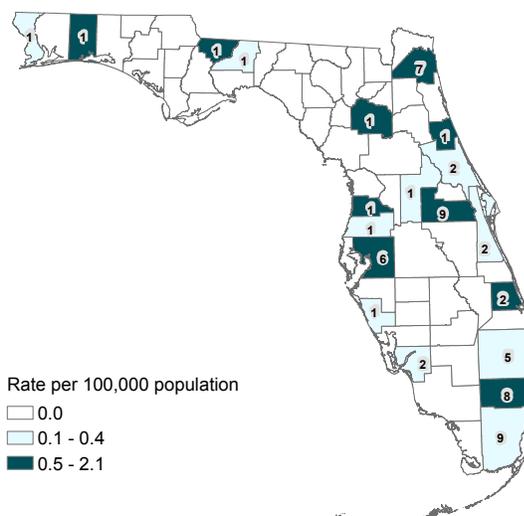
Race

Race	Number (Percent)	Rate
White	15 (25.0)	NA
Black	35 (58.3)	1.0
Other	10 (16.7)	NA
Unknown race	2	

Ethnicity

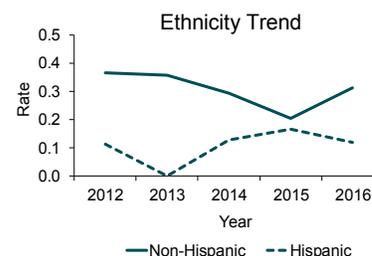
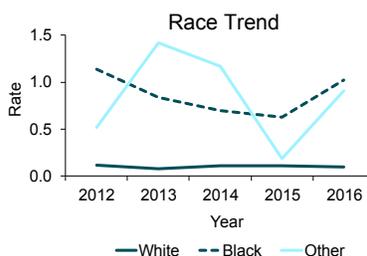
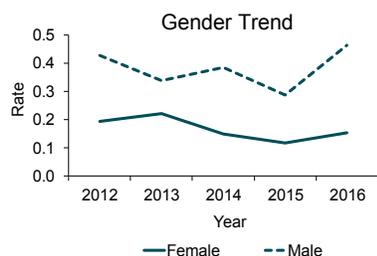
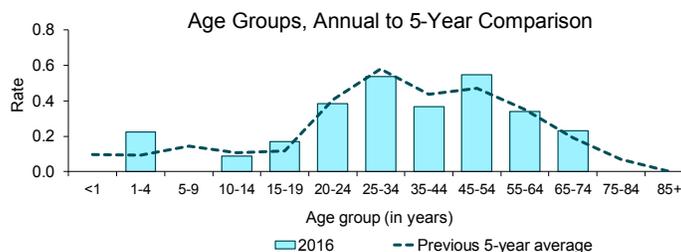
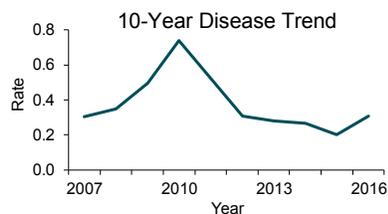
Ethnicity	Number (Percent)	Rate
Non-Hispanic	48 (88.9)	0.3
Hispanic	6 (11.1)	NA
Unknown ethnicity	8	

Reported Malaria Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=62)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Malaria Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Malaria cases were missing 16.1% of ethnicity data in 2016.

Note that the majority of malaria cases are acquired outside of Florida.

Summary of Case Factors

Summary	Number
Number of cases	62
Outcome	Number (Percent)
Hospitalized	46 (74.2)
Died	2 (3.2)
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.	62 (100.0)
Acquired location unknown	0 (0.0)
Outbreak Status	Number (Percent)
Sporadic	58 (93.5)
Outbreak-associated	2 (3.2)
Outbreak status unknown	2 (3.2)
Region Where Infection Acquired	Number (Percent)
Africa	41 (66.1)
Central America/Caribbean	14 (22.6)
Asia	5 (8.1)
South America	2 (3.2)
Reason for Travel	Number (Percent)
Visiting friends/relatives	35 (56.5)
Tourism	8 (12.9)
Refugee/immigrant	6 (9.7)
Business	5 (8.1)
Missionary or dependent	4 (6.5)
Student/teacher	3 (4.8)
Unknown	1 (1.6)

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. Other reports may use illness onset date instead of report date, or county of exposure instead of county of residence.

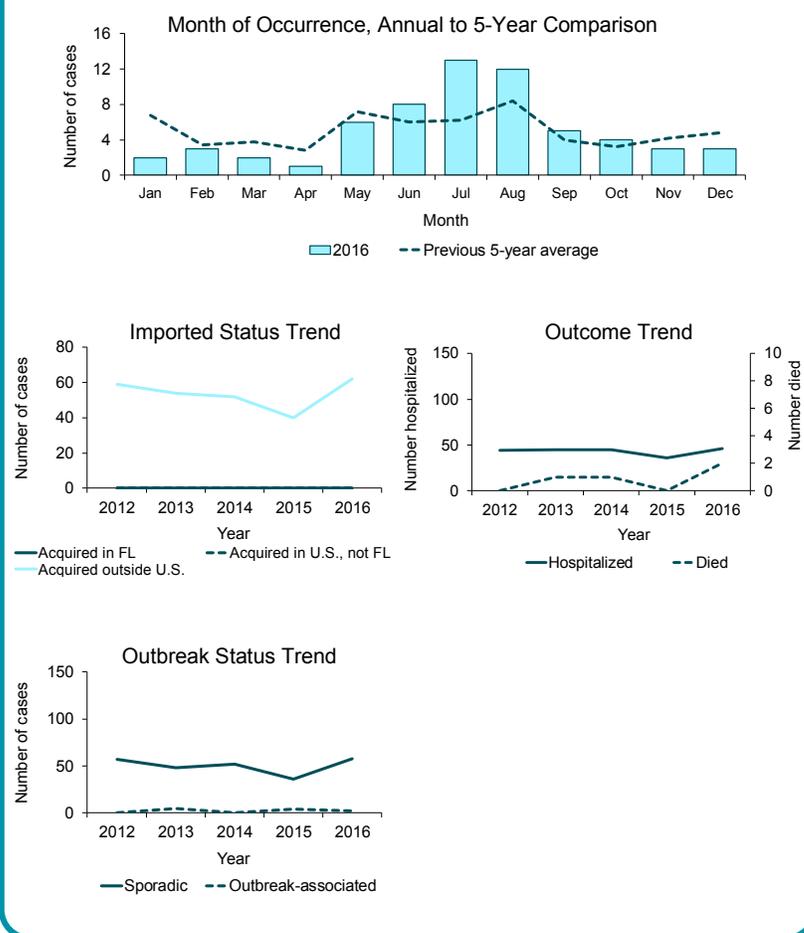
Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2016, there were two deaths associated with *Plasmodium falciparum* infection; both people had traveled to West Africa. One death was associated with cerebral malaria while the other person had a high parasitemia level (>50%) and suffered from respiratory distress. 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. In 2016, 18 non-Florida residents were diagnosed with malaria while traveling in Florida (note that this report only includes Florida residents in case counts). The majority of these cases had traveled to Africa (13), followed by South America (3) and Asia (2). Two outbreak-associated cases were reported in 2016 involving a husband and wife who went to Nigeria to visit family and friends. The last malaria case possibly acquired in Florida was in 2010 in a Duval County resident. Two cases initially reported with unknown outbreak status were later determined to be sporadic after the close of the 2016 morbidity dataset.

Reported Malaria Cases by Month of Occurrence, Imported Status, Outcome, and Outbreak Status, Florida



Pertussis

Disease Facts

Cause: *Bordetella pertussis* bacteria

Type of illness: Respiratory infection; early symptoms last 1-2 weeks and include runny nose, low-grade fever, mild cough, and apnea; progresses to paroxysmal cough or “whoop” with posttussive vomiting and exhaustion

Transmission: Person-to-person; inhalation of infective, aerosolized respiratory tract droplets

Reason for surveillance: 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

Comments: Pertussis incidence has increased nationwide since the 1980s. There was sharp increase in incidence in Florida in 2012 and 2013. Cases decreased dramatically in 2015 and stayed level in 2016; factors contributing to the decrease are not well understood. Incidence remained highest in infants <1 year old.

Summary of Case Demographics

Summary

Number of cases	334
Incidence rate (per 100,000 population)	1.7
Change from 5-year average incidence	-40.3%

Age (in Years)

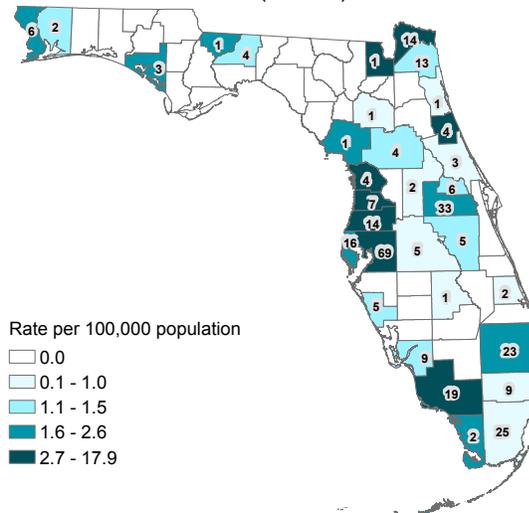
Mean	18
Median	8
Min-max	0 - 94

Gender	Number (Percent)	Rate
Female	168 (50.3)	1.6
Male	166 (49.7)	1.7
Unknown gender	0	

Race	Number (Percent)	Rate
White	274 (86.7)	1.7
Black	23 (7.3)	0.7
Other	19 (6.0)	NA
Unknown race	18	

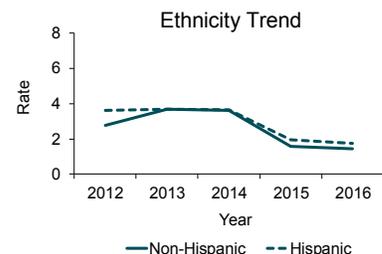
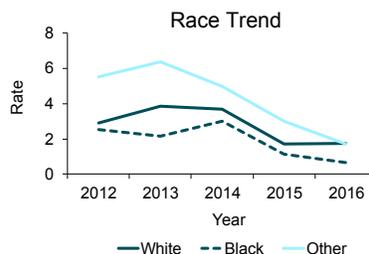
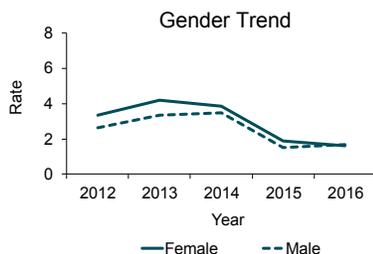
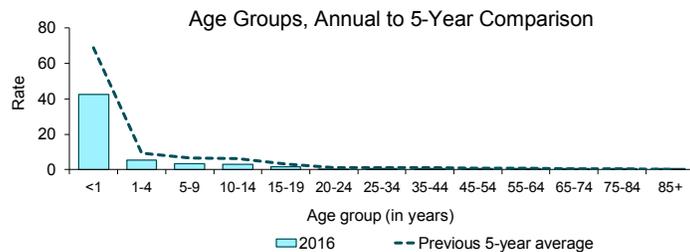
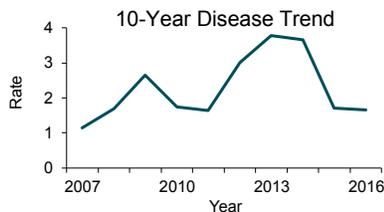
Ethnicity	Number (Percent)	Rate
Non-Hispanic	219 (71.6)	1.4
Hispanic	87 (28.4)	1.8
Unknown ethnicity	28	

Reported Pertussis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=314)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Pertussis Cases by Year, Age, Gender, Race, and Ethnicity, Florida

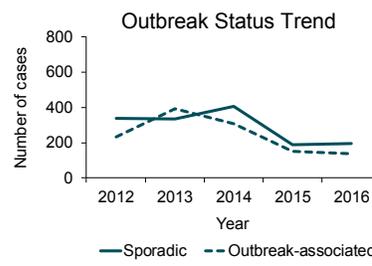
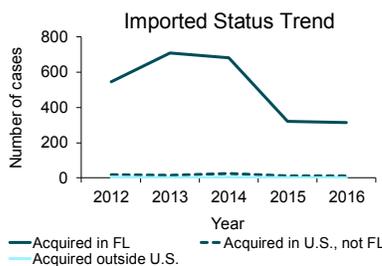
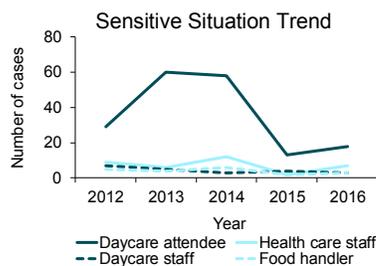
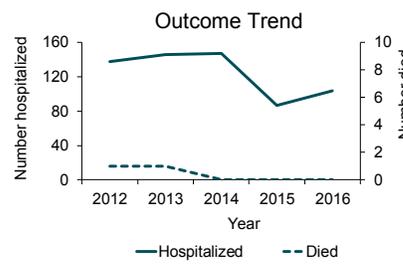
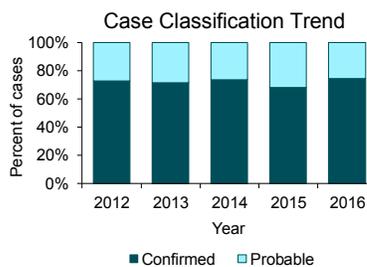
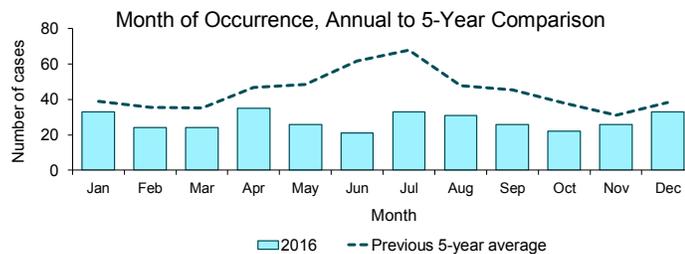


Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Pertussis cases were missing 8.4% of ethnicity data in 2016 and 5.4% of race data in 2016.

Summary of Case Factors

Summary	Number
Number of cases	334
Case Classification	Number (Percent)
Confirmed	250 (74.9)
Probable	84 (25.1)
Outcome	Number (Percent)
Hospitalized	104 (31.1)
Died	0 (0.0)
Sensitive Situation	Number (Percent)
Daycare attendee	18 (5.4)
Daycare staff	3 (0.9)
Health care staff	7 (2.1)
Food handler	3 (0.9)
Imported Status	Number (Percent)
Acquired in Florida	314 (94.0)
Acquired in the U.S., not Florida	11 (3.3)
Acquired outside the U.S.	3 (0.9)
Acquired location unknown	6 (1.8)
Outbreak Status	Number (Percent)
Sporadic	196 (58.7)
Outbreak-associated	136 (40.7)
Outbreak status unknown	2 (0.6)

Reported Pertussis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Older adults often have milder infections and serve as the reservoirs and sources of infection for infants and young children. The highest rate and most severe outcomes from illness occur in infants <1 year old who are too young to be vaccinated, underscoring the importance of vaccinating pregnant women and family members of infants to protect infants from infection. It is recommended that all pregnant women receive a dose of Tdap (tetanus, diphtheria, pertussis) during their third trimester for each pregnancy to help protect their infants. One dose of Tdap vaccine became a requirement for children entering, attending, or transferring to the seventh grade during the 2009-2010 school year. Pertussis incidence remained steady after a sharp decrease in 2015. The decrease in cases is accompanied by a lack of seasonality, which may be due to small case numbers. Hospitalizations increased from 87 (25.7%) in 2015 to 104 (31.1%) in 2016. The number of pertussis cases that were outbreak-associated decreased slightly from 150 (44.2%) in 2015 to 136 (40.7%) in 2016. There were 16 pertussis outbreaks with ≥ 3 cases in 2016 with the majority (15) occurring in households and one occurring in an elementary school. Two cases initially reported with unknown outbreak status were later determined to be sporadic after the close of the 2016 morbidity dataset. Pertussis mortality is rare in Florida and though there were no deaths in 2016, one to two deaths in a year is not uncommon.

Pesticide-Related Illness and Injury, Acute

Disease Facts

Cause: Pesticides

Type of illness: Respiratory, gastrointestinal, neurological, dermal, etc., depending on the agent

Exposure: Depends on agent; dermal, inhalation, and ingestion are most common

Reason for surveillance: 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

Comments: 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 annually. All suspect cases meeting the definition are included here for all years.

Summary of Case Demographics

Summary

Number of cases	30
Incidence rate (per 100,000 population)	0.1
Change from 5-year average incidence	-80.4%

Age (in Years)

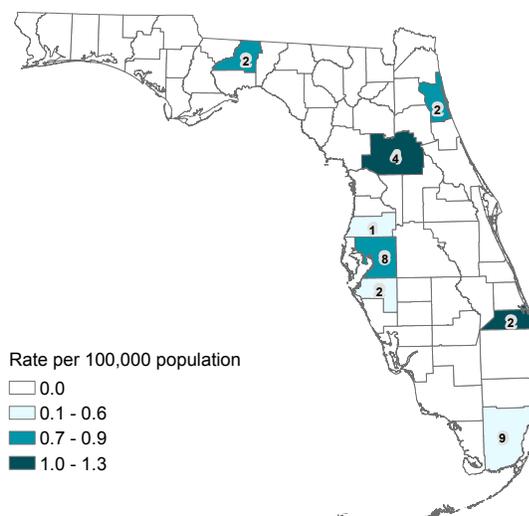
Mean	45
Median	40
Min-max	3 - 95

Gender	Number (Percent)	Rate
Female	17 (56.7)	NA
Male	13 (43.3)	NA
Unknown gender	0	

Race	Number (Percent)	Rate
White	25 (86.2)	0.2
Black	3 (10.3)	NA
Other	1 (3.4)	NA
Unknown race	1	

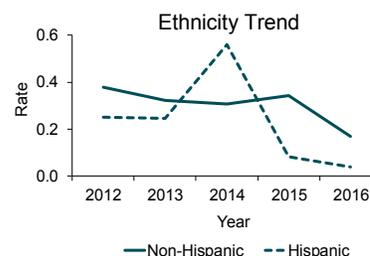
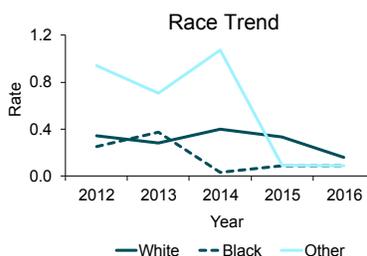
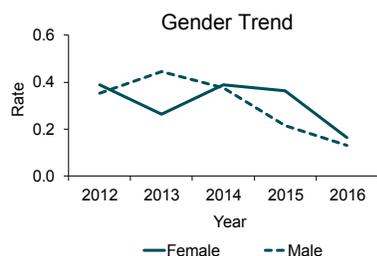
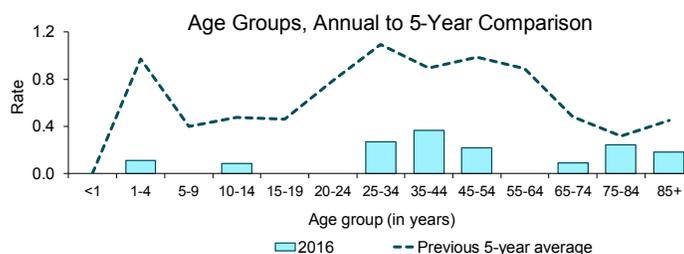
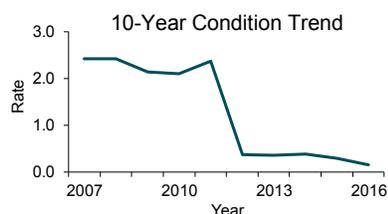
Ethnicity	Number (Percent)	Rate
Non-Hispanic	26 (92.9)	0.2
Hispanic	2 (7.1)	NA
Unknown ethnicity	2	

Reported Acute Pesticide-Related Illness and Injury Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=30)



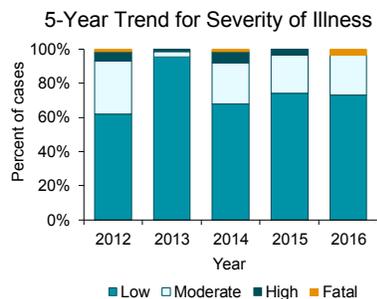
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Acute Pesticide-Related Illness and Injury Cases by Year, Age, Gender, and Month of Occurrence, Florida

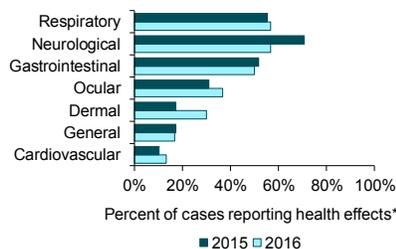


Additional Information

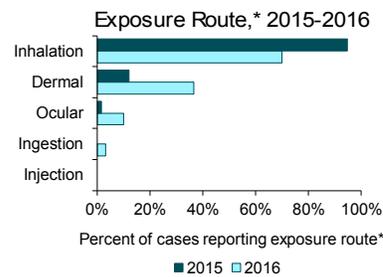
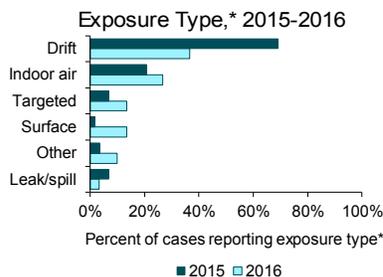
Reported Acute Pesticide-Related Illness and Injury Cases by Severity of Illness and Health Effects,* Florida



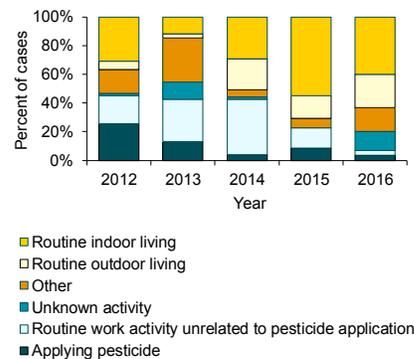
Health Effects,* 2015-2016



Reported Acute Pesticide-Related Illness and Injury Cases by Exposure Type,* Exposure Route,* Occupational Exposure, and Type of Activity at Time of Exposure, Florida



5-Year Trend for Activity at Time of Exposure



*Note that there may be multiple exposure types and routes for one case, and multiple categories of health effects may be reported for one case.

Definitions of exposure types:

- Drift: Person was exposed via the movement of pesticides away from the treatment site
- Targeted: Person was exposed to an application of a pesticide material released at the target site, and not carried from the target site by air
- Indoor air: Person was exposed via indoor air contamination (this includes residential, commercial and greenhouse indoor air)
- Surface: Person was exposed via contact with pesticide residues on a treated surface (e.g., plant material, carpets, a treated animal) or entry into an outdoor treated area
- Leak/spill: Person was exposed to a leak or spill of pesticide material (e.g., from a leaking container or equipment, flood waters, emergency response)

Additional Information

In 2016, most cases experienced neurological symptoms (e.g., headache, weakness, dizziness) and respiratory symptoms (e.g., cough, shortness of breath) and had low severity of illness following pesticide exposure. One woman died from acute hydrogen sulfide poisoning after inhaling gas produced by mixing a solution containing lime sulfur with other cleaning agents while cleaning a restroom at work.

In 2016, seven cases (64.4%) were related to Paladin odor, a soil fumigant with dimethyl disulfide as the active ingredient. Paladin was applied in Hillsborough County in August and September, accounting for the clustering of cases in that county and the increased case count during those months.

Rabies, Animal and Possible Human Exposure

Disease Facts

Cause: Rabies virus

Type of illness in humans: 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

Transmission: Infectious saliva or nervous tissue in contact with open wound or mucous membrane via bite

Reason for surveillance: Identify and mitigate sources of exposure, evaluate adherence to guidance on rabies post-exposure prophylaxis (PEP)

Comments: 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. Florida was impacted by two hurricanes in 2016; animal bites frequently increase after hurricanes.

Summary of Case Demographics

Possible Human Exposure to Rabies	
Number of cases with PEP recommended	3,302
Incidence rate (per 100,000 population)	16.3
Change from 5-year average incidence	+14.3%

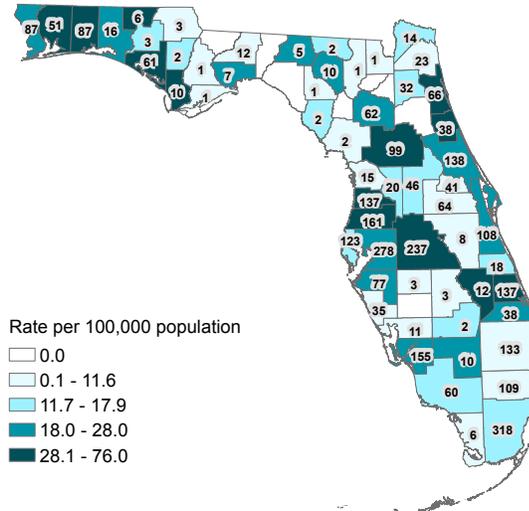
Age (in Years)	
Mean	37
Median	36
Min-max	0 - 96

Gender	Number (Percent)	Rate
Female	1,727 (52.3)	16.7
Male	1,575 (47.7)	15.9
Unknown gender	0	

Race	Number (Percent)	Rate
White	2,276 (85.1)	14.5
Black	304 (11.4)	8.9
Other	94 (3.5)	8.5
Unknown race	628	

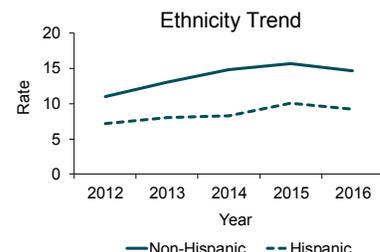
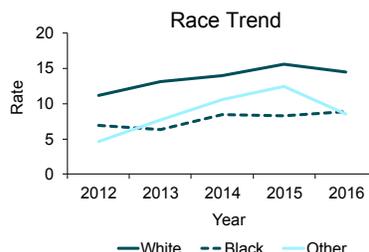
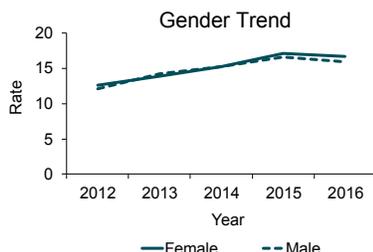
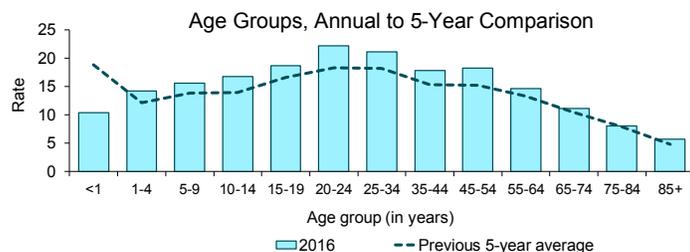
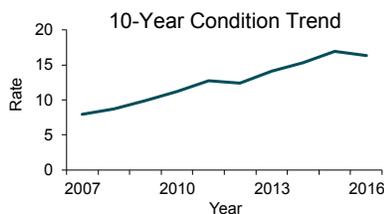
Ethnicity	Number (Percent)	Rate
Non-Hispanic	2,237 (83.0)	14.7
Hispanic	457 (17.0)	9.2
Unknown ethnicity	608	

Reported Possible Human Exposure to Rabies Cases and Incidence Rates Per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2016 (N=3,208)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Possible Human Exposure to Rabies Cases by Year, Age, Gender, Race, and Ethnicity, Florida



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 18.2% of ethnicity data in 2012, 18.2% of race data in 2012, 15.7% of ethnicity data in 2013, 16.6% of race data in 2013, 13.3% of ethnicity data in 2014, 15.6% of race data in 2014, 15.2% of ethnicity data in 2015, 15.8% of race data in 2015, 18.4% of ethnicity data in 2016, and 19.0% of race data in 2016.

Additional Information

The last case of human rabies acquired in Florida was in 1948. 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.

Laboratory testing for animal rabies is only done when animals potentially expose (e.g., bite) humans or domestic animals; thus, these data do not necessarily correlate with the true prevalence of rabies by animal species in Florida. A total of 59 laboratory-confirmed rabid animals were reported in 2016, which was a 41.2% decrease from the previous 5-year average.

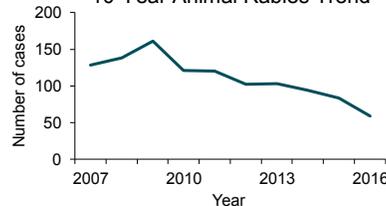
Case counts in this report may differ from those found in other rabies reports as different criteria are used to assemble the data. Other reports use the calendar year, while this report uses report year. For additional information on calendar year versus report year, please see the paragraph on Determining How Cases Are Counted: Reporting Period and Cases Included within Interpreting the Data in the Introduction.

In 2016, Sarasota County reported the first ever rabid deer in Florida. All mammals can be infected by rabies, although the primary reservoirs are meat-eating mammals and bats. The number of rabid animals remained low in 2016, which could be in part due to natural cycles in disease, strict use of testing criteria, or increased reliance on rabies PEP rather than animal testing or observation.

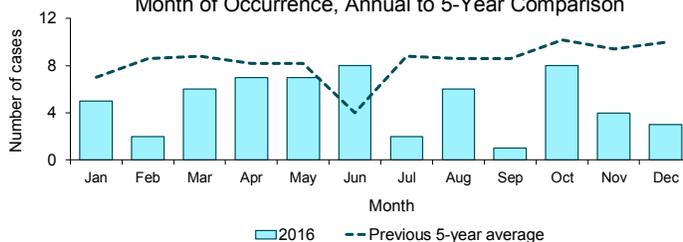
There is generally a much greater risk for rabies exposure to people when domestic animals are infected versus wildlife. Properly administered rabies vaccines are highly effective in protecting domestic animals like cats and dogs against rabies infection, and rabies vaccination is required by state law for these animals.

Reported Animal Rabies
by Year, Month of Occurrence, Animal, and County, Florida

10-Year Animal Rabies Trend



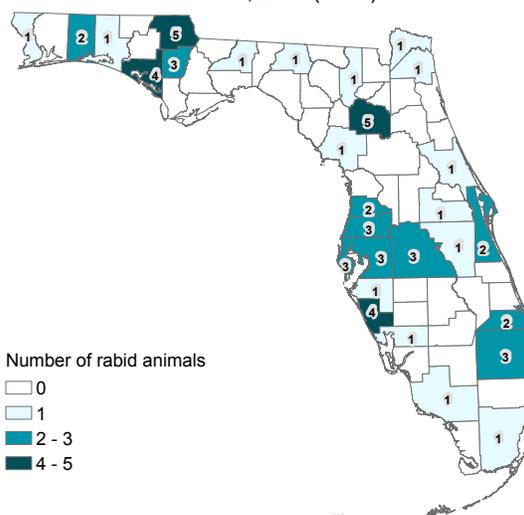
Animal Rabies
Month of Occurrence, Annual to 5-Year Comparison



Laboratory-Confirmed Rabid Animals by Type of Animal,
Florida, 2015 and 2016

Type of Animal	2015		2016	
	Number	(Percent)	Number	(Percent)
Raccoon	45	(54.2)	31	(52.5)
Bat	15	(18.1)	13	(22.0)
Fox	10	(12.0)	6	(10.2)
Cat	8	(9.6)	4	(6.8)
Horse	0	(0.0)	2	(3.4)
Bobcat	0	(0.0)	1	(1.7)
Deer	0	(0.0)	1	(1.7)
Otter	0	(0.0)	1	(1.7)
Skunk	1	(1.2)	0	(0.0)
Dog	2	(2.4)	0	(0.0)
Goat	2	(2.4)	0	(0.0)
Total	83		59	

Reported Animal Rabies Cases and Incidence Rates
Per 100,000 Population by County of Residence,
Florida, 2016 (N=59)



Disease Facts

Cause: *Salmonella* bacteria (excluding *Salmonella* serotype Typhi, which causes typhoid fever and is described in Section 3: Narratives for Selected Reportable Diseases/Conditions of Infrequent Occurrence)

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; including person-to-person, animal-to-person, foodborne, and waterborne

Reason for surveillance: 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

Comments: Florida frequently has the highest number and one of the highest rates of salmonellosis cases in the U.S. Rates are very high in <1-year-olds and decrease dramatically with age. The seasonal pattern is very strong, peaking in late summer. Geographic distribution is relatively consistent, though not well understood, with high rates clustered in northern Florida and the Panhandle (particularly in lower population counties).

Summary of Case Demographics

Summary

Number of cases	5,621
Incidence rate (per 100,000 population)	27.8
Change from 5-year average incidence	-11.9%

Age (in Years)

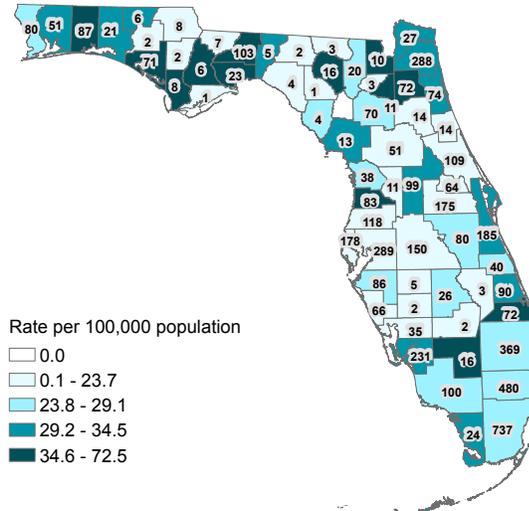
Mean	28
Median	16
Min-max	0 - 100

Gender	Number (Percent)	Rate
Female	2,932 (52.2)	28.3
Male	2,689 (47.8)	27.2
Unknown gender	0	

Race	Number (Percent)	Rate
White	4,317 (79.3)	27.5
Black	575 (10.6)	16.9
Other	551 (10.1)	50.1
Unknown race	178	

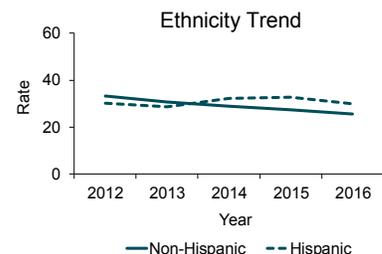
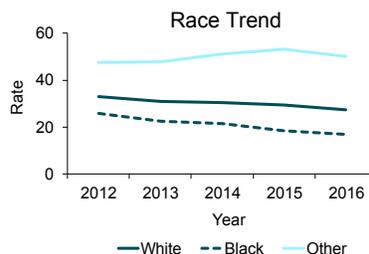
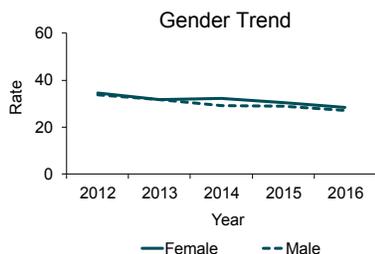
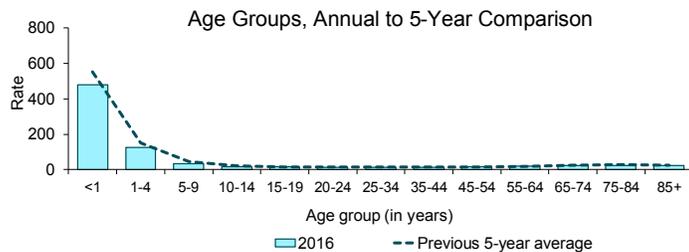
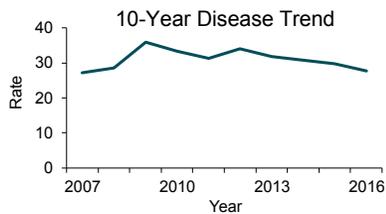
Ethnicity	Number (Percent)	Rate
Non-Hispanic	3,913 (72.4)	25.6
Hispanic	1,494 (27.6)	30.1
Unknown ethnicity	214	

Reported Salmonellosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=5,141)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

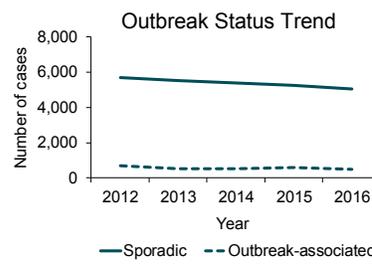
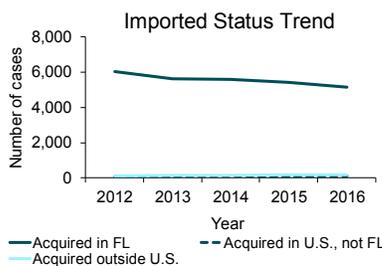
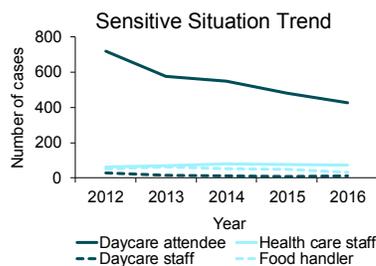
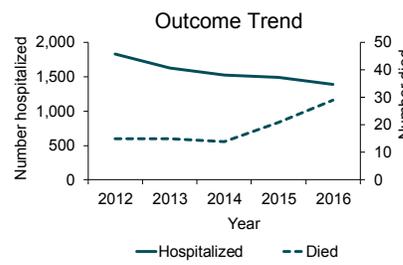
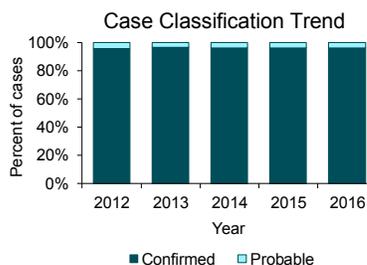
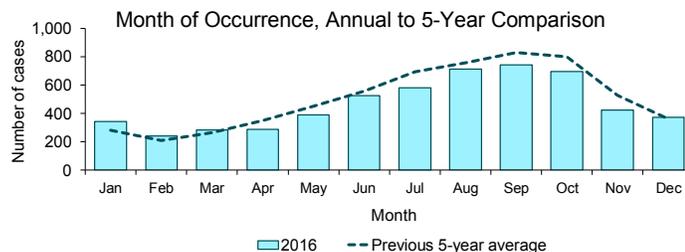
Incidence Rates Per 100,000 Population of Reported Salmonellosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Summary of Case Factors

Summary	Number
Number of cases	5,621
Case Classification	Number (Percent)
Confirmed	5,426 (96.5)
Probable	195 (3.5)
Outcome	Number (Percent)
Hospitalized	1,388 (24.7)
Died	29 (0.5)
Sensitive Situation	Number (Percent)
Daycare attendee	428 (7.6)
Daycare staff	13 (0.2)
Health care staff	72 (1.3)
Food handler	31 (0.6)
Imported Status	Number (Percent)
Acquired in Florida	5,141 (91.5)
Acquired in the U.S., not Florida	110 (2.0)
Acquired outside the U.S.	193 (3.4)
Acquired location unknown	177 (3.1)
Outbreak Status	Number (Percent)
Sporadic	5,037 (89.6)
Outbreak-associated	491 (8.7)
Outbreak status unknown	93 (1.7)

Reported Salmonellosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

The number of infected people who died increased in both 2015 and 2016, with deaths seen predominantly in white, non-Hispanic adults aged 55 years and older. While it is unknown if these deaths were a direct result of their *Salmonella* infection, the impacted age groups are more likely to have co-morbidities, which could increase their risk of serious complications and death.

Most outbreak-associated cases are due to household clusters; however, some outbreak-associated cases were part of national or multistate outbreaks linked to a particular source. In 2016, Florida had 64 outbreak-associated cases that were part of 25 different multistate outbreaks. An additional three cases were excluded from multistate outbreaks when whole-genome sequencing determined the isolates were not highly related to the outbreak isolates. A variety of vehicles were identified for multistate outbreaks, from animal exposures to organic powdered supplements. In 2016, 26 cases were investigated as part of five different in-state clusters. No common vehicles were identified for any in-state cluster.

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

Disease Facts

Cause: Shiga toxin-producing *Escherichia coli* (STEC) bacteria

Type of illness: Gastroenteritis (diarrhea, vomiting); less frequently hemolytic uremic syndrome (HUS)

Transmission: Fecal-oral; including person-to-person, animal-to-person, waterborne and foodborne

Reason for surveillance: 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

Comments: STEC incidence has generally increased over the past 10 years, likely due to advancements in laboratory techniques, resulting in improved identification of STEC infection. Incidence is highest in children <5 years old, a group particularly vulnerable to STEC infection. STEC incidence in women has remained steadily higher than men, except in 2014 when it decreased to a rate similar to men. Incidence is lowest in black people, and has been increasing in people of other races since 2013.

Summary of Case Demographics

Summary

Number of cases	99
Incidence rate (per 100,000 population)	0.5
Change from 5-year average incidence	-16.6%

Age (in Years)

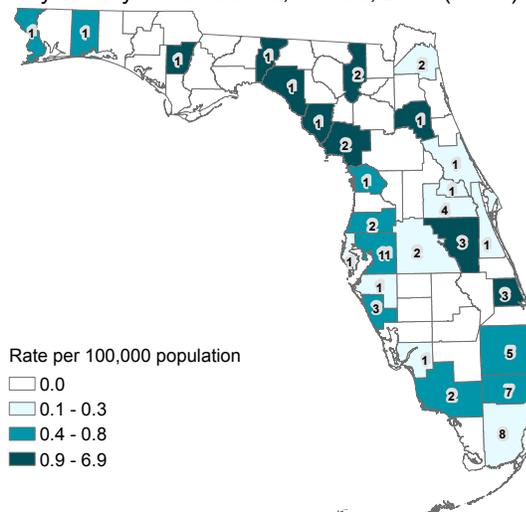
Mean	22
Median	7
Min-max	0 - 95

Gender	Number (Percent)	Rate
Female	61 (61.6)	0.6
Male	38 (38.4)	0.4
Unknown gender	0	

Race	Number (Percent)	Rate
White	70 (76.1)	0.4
Black	3 (3.3)	NA
Other	19 (20.7)	NA
Unknown race	7	

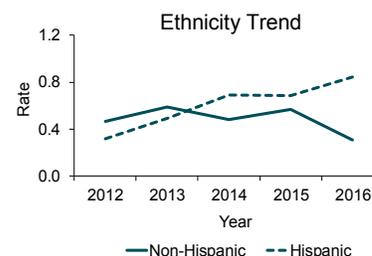
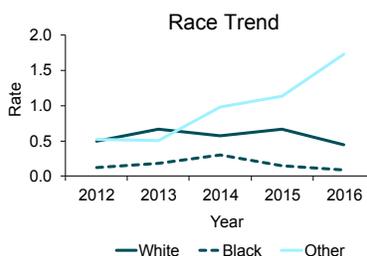
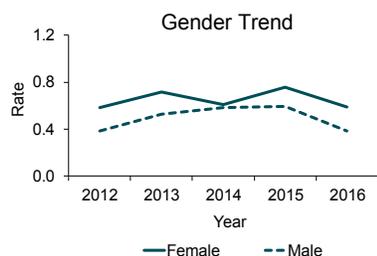
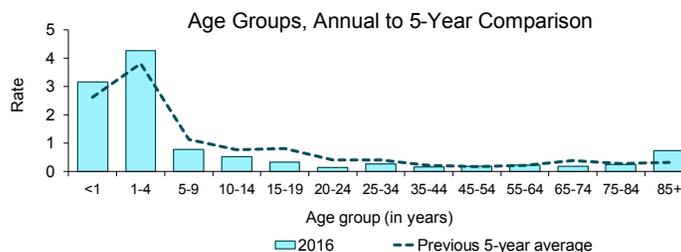
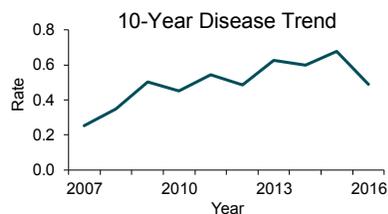
Ethnicity	Number (Percent)	Rate
Non-Hispanic	47 (52.8)	0.3
Hispanic	42 (47.2)	0.8
Unknown ethnicity	10	

Reported Shiga Toxin-Producing *E. coli* Infection Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=70)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Shiga Toxin-Producing *E. coli* Infection Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Shiga toxin-producing *E. coli* infection cases were missing 10.8% of ethnicity data in 2012, 9.7% of race data in 2012, 9.9% of ethnicity data in 2013, 7.4% of race data in 2013, 11.1% of ethnicity data in 2014, 7.7% of race data in 2014, 11.9% of ethnicity data in 2015, 10.4% of race data in 2015, 10.1% of ethnicity data in 2016, and 7.1% of race data in 2016.

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

Summary of Case Factors

Summary	Number
Number of cases	99
Case Classification	Number (Percent)
Confirmed	88 (88.9)
Probable	11 (11.1)
Outcome	Number (Percent)
Hospitalized	23 (23.2)
Died	2 (2.0)
Sensitive Situation	Number (Percent)
Daycare attendee	7 (7.1)
Daycare staff	0 (0.0)
Health care staff	2 (2.0)
Food handler	1 (1.0)
Imported Status	Number (Percent)
Acquired in Florida	70 (70.7)
Acquired in the U.S., not Florida	4 (4.0)
Acquired outside the U.S.	5 (5.1)
Acquired location unknown	20 (20.2)
Outbreak Status	Number (Percent)
Sporadic	68 (68.7)
Outbreak-associated	27 (27.3)
Outbreak status unknown	4 (4.0)
Serogroup	Number (Percent)
O157	40 (45.5)
O26	16 (18.2)
O111	15 (17.0)
O103	10 (11.4)
O45	3 (3.4)
O121	2 (2.3)
Other	2 (2.3)

While O157 remains the most common serogroup identified in STEC infections, the top six non-O157 serogroups (O26, O45, O103, O111, O121, O145) are being increasingly identified due to advances in laboratory testing techniques.

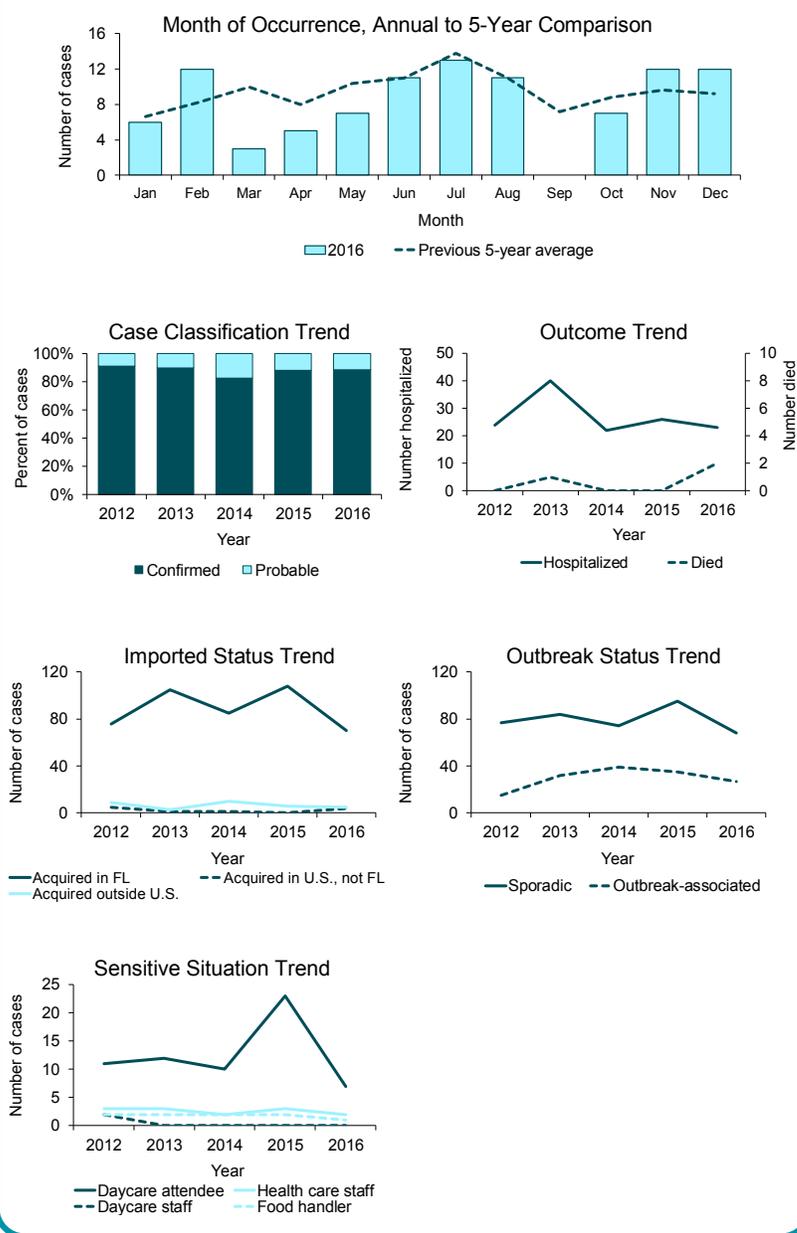
Most outbreak-associated cases are due to household clusters; however, some cases are part of larger clusters or outbreaks. In 2015, Florida identified an in-state outbreak of 10 cases caused by STEC serogroup O26 in a single daycare. This outbreak is the cause of

the notable increase in cases in daycare attendees and children 1 to 4 years old in 2015 compared to other years. In 2016, Florida identified two cases associated with two separate multistate outbreaks of STEC serogroup O157. The vehicle was not determined for either multistate outbreak.

Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Reported Shiga Toxin-Producing *E. coli* Infection Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Shigellosis

Disease Facts

Cause: *Shigella* bacteria

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; including person-to-person, foodborne, and waterborne

Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., ill daycare attendee), monitor incidence over time, estimate burden of illness

Comments: Shigellosis has a cyclic temporal pattern with large, community-wide outbreaks, frequently involving daycare centers, occurring every 3-5 years. Shigellosis incidence increased substantially in 2014, with a rate similar to the last large peak in 2011, followed by a decrease in 2015 and 2016. A large portion of cases are part of outbreaks, particularly in daycares; 36.6% of outbreak-associated cases were in daycare attendees in 2016. Shigellosis incidence is highest in children aged 1 to 9 years.

Summary of Case Demographics

Summary

Number of cases	753
Incidence rate (per 100,000 population)	3.7
Change from 5-year average incidence	-62.1%

Age (in Years)

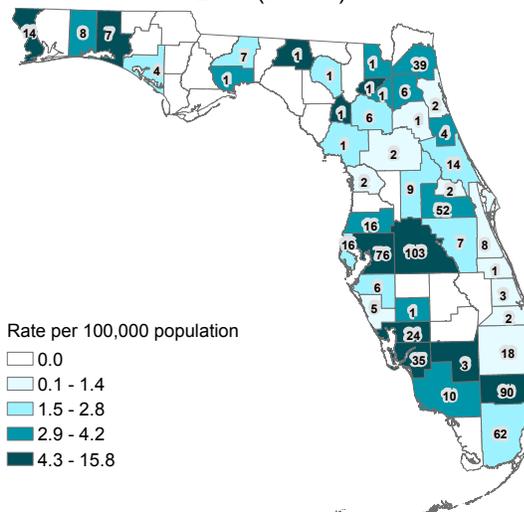
Mean	24
Median	13
Min-max	0 - 96

Gender	Number (Percent)	Rate
Female	338 (44.9)	3.3
Male	415 (55.1)	4.2
Unknown gender	0	

Race	Number (Percent)	Rate
White	481 (64.7)	3.1
Black	209 (28.1)	6.1
Other	53 (7.1)	4.8
Unknown race	10	

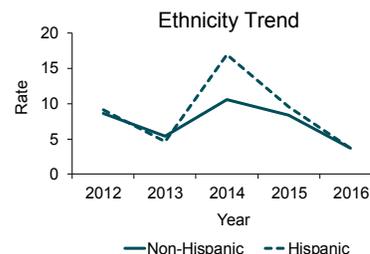
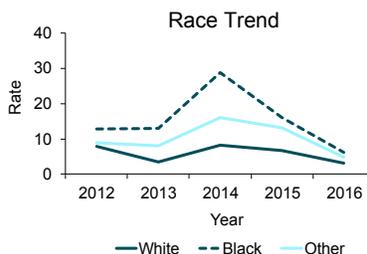
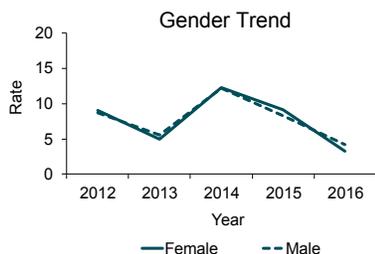
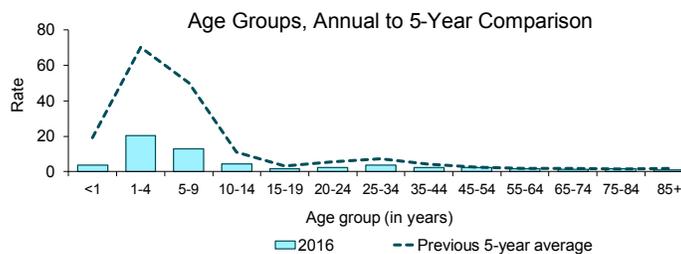
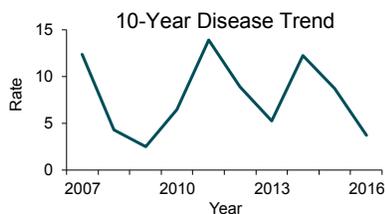
Ethnicity	Number (Percent)	Rate
Non-Hispanic	558 (75.3)	3.7
Hispanic	183 (24.7)	3.7
Unknown ethnicity	12	

Reported Shigellosis Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=673)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

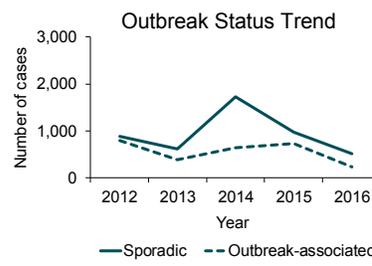
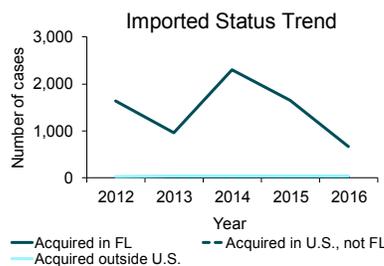
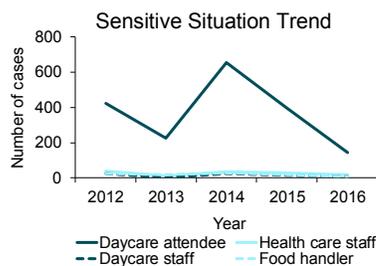
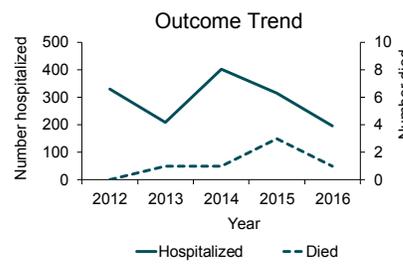
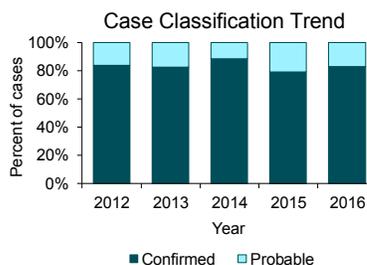
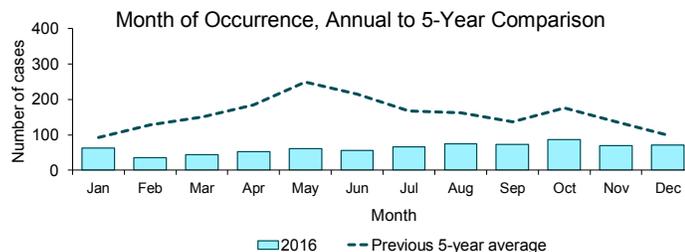
Incidence Rates Per 100,000 Population of Reported Shigellosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida



Summary of Case Factors

Summary	Number
Number of cases	753
Case Classification	Number (Percent)
Confirmed	625 (83.0)
Probable	128 (17.0)
Outcome	Number (Percent)
Hospitalized	196 (26.0)
Died	1 (0.1)
Sensitive Situation	Number (Percent)
Daycare attendee	144 (19.1)
Daycare staff	7 (0.9)
Health care staff	20 (2.7)
Food handler	8 (1.1)
Imported Status	Number (Percent)
Acquired in Florida	673 (89.4)
Acquired in the U.S., not Florida	20 (2.7)
Acquired outside the U.S.	47 (6.2)
Acquired location unknown	13 (1.7)
Outbreak Status	Number (Percent)
Sporadic	511 (67.9)
Outbreak-associated	232 (30.8)
Outbreak status unknown	10 (1.3)

Reported Shigellosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2016, shigellosis incidence was high in central western and southwestern counties compared to central Florida in 2015 and south Florida in 2014. In the U.S., most *Shigella* is already resistant to ampicillin and trimethoprim/sulfamethoxazole, causing health care providers to rely on alternative drugs such as ciprofloxacin and azithromycin to treat *Shigella* infections. While antimicrobial resistance testing is regularly conducted on clinical specimens, treatment of shigellosis with antibiotics is not routinely recommended. Antimicrobial resistance testing results were available for 246 confirmed cases (39.4%) reported in 2016. Of those, 140 (56.9%) had resistance to one or more of these antibiotics, compared to only 33.8% of 671 confirmed cases reported in 2015 with antimicrobial resistance testing results available.

Resistance to Antibiotics for 246 Shigellosis Cases, Florida, 2016

Antibiotic	Resistant	
	Number	(Percent)
Trimethoprim/sulfamethoxazole only	80	(32.5)
Ampicillin only	12	(4.9)
Ciprofloxacin only	2	(0.8)
Azithromycin only	0	(0.0)
Trimethoprim/sulfamethoxazole, ampicillin	37	(15.0)
Trimethoprim/sulfamethoxazole, ciprofloxacin	5	(2.0)
Trimethoprim/sulfamethoxazole, ampicillin, ciprofloxacin	4	(1.6)
Not resistant to these antibiotics	106	(43.1)

Syphilis (Excluding Congenital)

Disease Facts

Cause: *Treponema pallidum* bacteria

Type of illness: Sores on genitals, anus, or mouth, or a rash on the body

Transmission: Sexually transmitted disease (STD) spread by anal, vaginal, or oral sex and sometimes from mother to infant during pregnancy or delivery

Reason for surveillance: Implement interventions immediately for every case, monitor incidence over time, estimate burden of illness, target prevention education programs, evaluate treatment and prevention programs

Comments: Syphilis is separated into early syphilis (i.e., syphilis <1 year duration, which includes latent and infectious stages) and late or late latent syphilis (i.e., syphilis diagnosed >1 year after infection). Rates are higher in men and blacks. Men who have sex with men (MSM) have a higher incidence of early syphilis than non-MSM men and are more likely to be co-infected with HIV. Incidence has increased every year since 2009.

Summary of Case Demographics

Summary

Number of cases	8,275
Incidence rate (per 100,000 population)	40.9
Change from 5-year average incidence	+48.9%

Age (in Years)

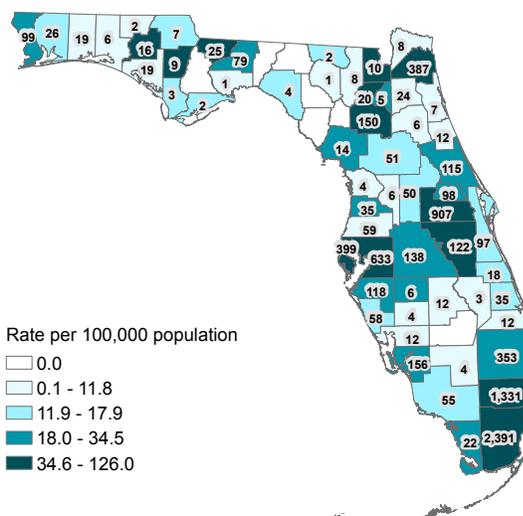
Mean	36
Median	34
Min-max	12 - 86

Gender	Number (Percent)	Rate
Female	1,332 (16.1)	12.9
Male	6,942 (83.9)	70.2
Unknown gender	1	

Race	Number (Percent)	Rate
White	4,562 (60.9)	29.0
Black	2,851 (38.1)	83.6
Other	79 (1.1)	7.2
Unknown race	783	

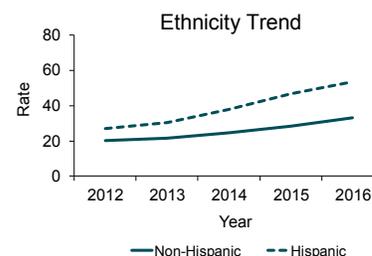
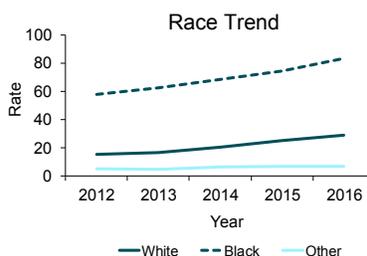
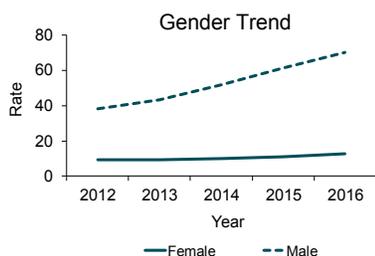
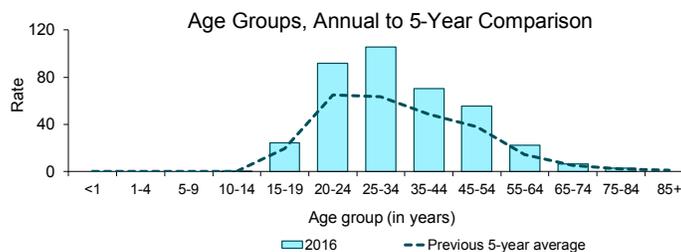
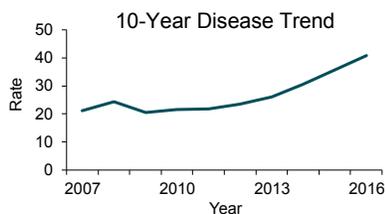
Ethnicity	Number (Percent)	Rate
Non-Hispanic	5,076 (65.6)	33.2
Hispanic	2,664 (34.4)	53.7
Unknown ethnicity	535	

Reported Syphilis Cases (Excluding Congenital) and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=8,275)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Syphilis Cases (Excluding Congenital) by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Syphilis cases (excluding congenital) were missing 6.6% of ethnicity data in 2012, 6.1% of race data in 2012, 8.7% of ethnicity data in 2013, 7.9% of race data in 2013, 9.1% of ethnicity data in 2014, 8.3% of race data in 2014, 8.3% of ethnicity data in 2015, 8.4% of race data in 2015, 6.5% of ethnicity data in 2016, and 9.5% of race data in 2016.

Disease Facts

Cause: *Mycobacterium tuberculosis* bacteria

Type of illness: Usually respiratory (severe cough, pain in chest), but can affect all parts of the body including kidneys, spine, or brain

Transmission: Airborne; inhalation of aerosolized droplets from people with active tuberculosis (TB)

Reason for surveillance: Implement effective interventions immediately for every case to prevent further transmission, monitor directly observed therapy prevention programs, evaluate trends

Comments: TB continues to be a public health threat in Florida. Incidence has declined over the past decade but increased slightly in 2015 and 2016. Medically underserved and low-income populations, including racial and ethnic minorities, have high rates of TB. In most countries and in Florida, TB incidence is much higher in men than women. Southeast Florida has the highest incidence and accounted for 36% of reported cases in 2016.

Summary of Case Demographics

Summary	
Number of cases	639
Incidence rate (per 100,000 population)	3.2
Change from 5-year average incidence	-6.9%

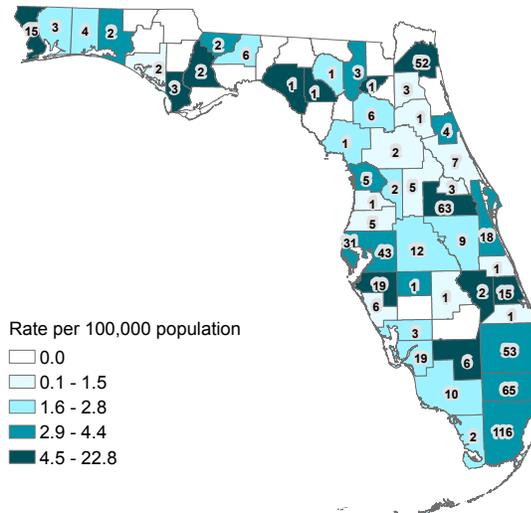
Age (in Years)	
Mean	49
Median	50
Min-max	0 - 94

Gender	Number (Percent)	Rate
Female	260 (40.7)	2.5
Male	379 (59.3)	3.8
Unknown gender	0	

Race	Number (Percent)	Rate
White	299 (46.8)	1.9
Black	229 (35.8)	6.7
Other	111 (17.4)	10.1
Unknown race	0	

Ethnicity	Number (Percent)	Rate
Non-Hispanic	472 (73.9)	3.1
Hispanic	167 (26.1)	3.4
Unknown ethnicity	0	

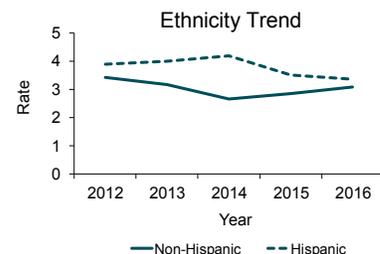
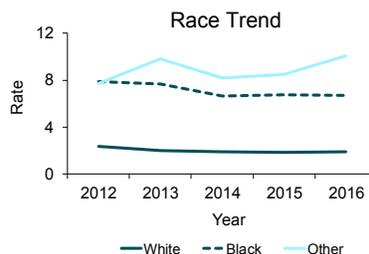
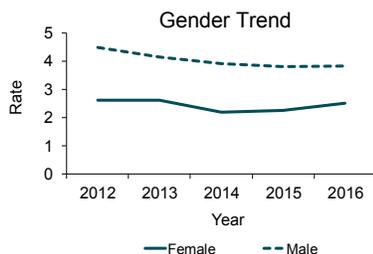
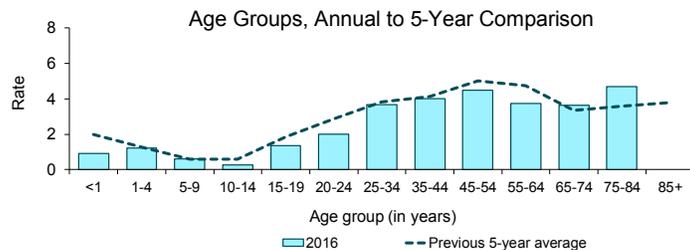
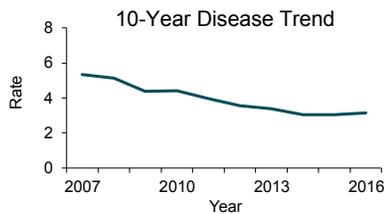
Counted Tuberculosis Cases and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=639)



Rate per 100,000 population
 0.0
 0.1 - 1.5
 1.6 - 2.8
 2.9 - 4.4
 4.5 - 22.8

Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Counted Tuberculosis Cases by Year, Age, Gender, Race, and Ethnicity, Florida



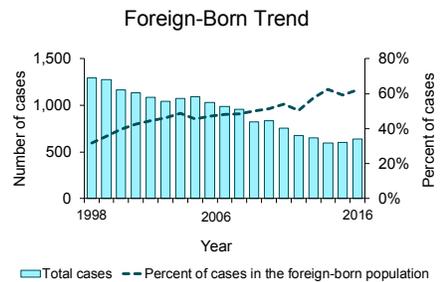
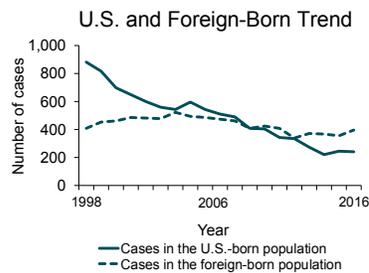
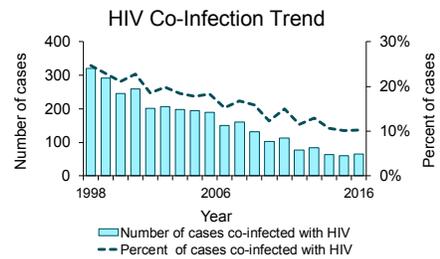
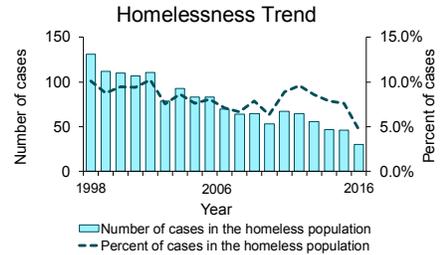
Additional Information

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 (8-10%) until 2012. Since 2012, the percent of people with TB who are homeless decreased from 9.6% to 4.7% in 2016.

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 around 10%. In 2015, 10.1% of TB cases were co-infected with HIV, and 10.3% were co-infected in 2016. 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.

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 2016, 62.1% of the total cases counted in Florida were in the foreign-born population. The most common countries of origin in 2016 included Haiti, Mexico, Vietnam, the Philippines, Guatemala, and Cuba, accounting for 237 of 397 (59.7%) cases identified in the foreign-born population.

Counted Tuberculosis Cases by Homeless Status, HIV Co-Infection, and Foreign-Born Status, Florida



Varicella (Chickenpox)

Disease Facts

Cause: Varicella-zoster virus (VZV)

Type of illness: Common symptoms include vesicular rash, itching, tiredness, and fever

Transmission: Person-to-person; contact with or inhalation of aerosolized, infective respiratory tract droplets or secretions, or direct contact with vesicular lesions of people infected with VZV

Reason for surveillance: Identify and control outbreaks, monitor effectiveness of immunization programs and vaccines, monitor trends and severe outcomes

Comments: Varicella is a classic childhood disease; a vaccine was released in the U.S. in 1995. It became reportable in Florida in late 2006 and has shown a steady decrease in incidence since 2008, due to effective vaccination programs. Incidence increased in 2015 for the first time since 2008. Beginning with the 2008-2009 school year, children entering kindergarten were required to receive two doses of varicella vaccine.

Summary of Case Demographics

Summary	
Number of cases	733
Incidence rate (per 100,000 population)	3.6
Change from 5-year average incidence	-3.9%

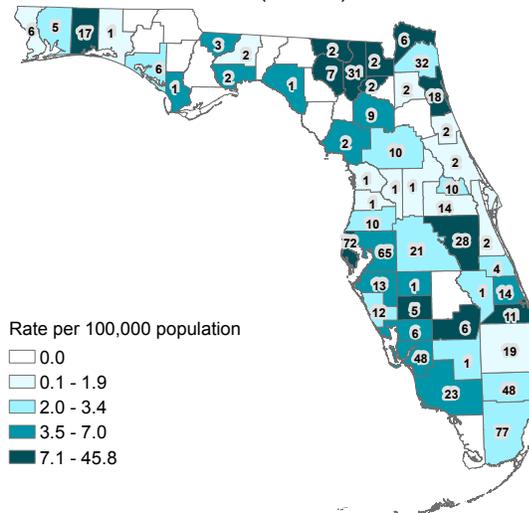
Age (in Years)	
Mean	16
Median	9
Min-max	0 - 88

Gender	Number (Percent)	Rate
Female	352 (48.0)	3.4
Male	381 (52.0)	3.9
Unknown gender	0	

Race	Number (Percent)	Rate
White	520 (74.2)	3.3
Black	80 (11.4)	2.3
Other	101 (14.4)	9.2
Unknown race	32	

Ethnicity	Number (Percent)	Rate
Non-Hispanic	474 (68.4)	3.1
Hispanic	219 (31.6)	4.4
Unknown ethnicity	40	

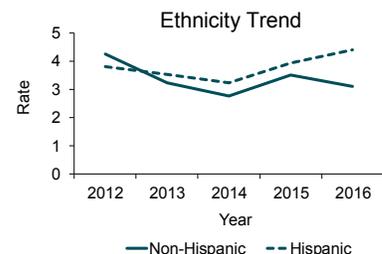
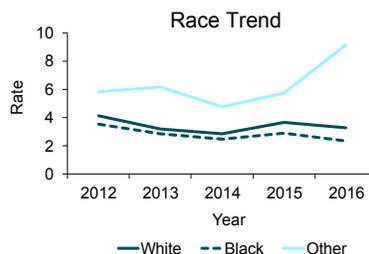
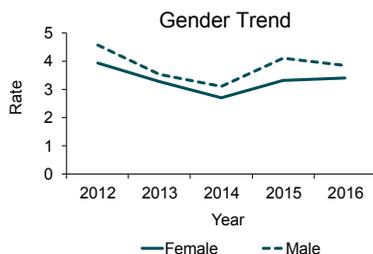
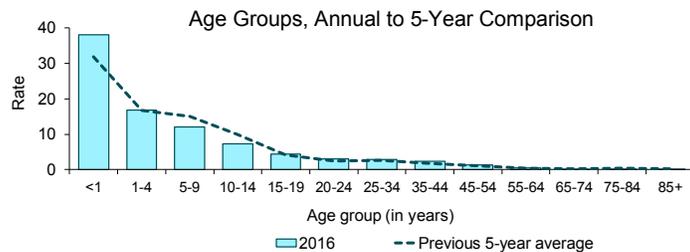
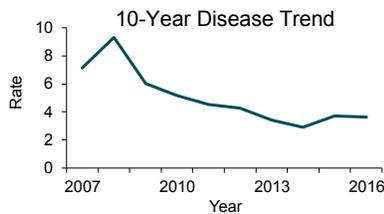
Reported Varicella Cases and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=686)



Rate per 100,000 population
 0.0
 0.1 - 1.9
 2.0 - 3.4
 3.5 - 7.0
 7.1 - 45.8

Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Varicella Cases by Year, Age, Gender, Race, and Ethnicity, Florida



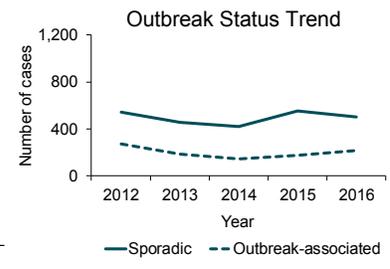
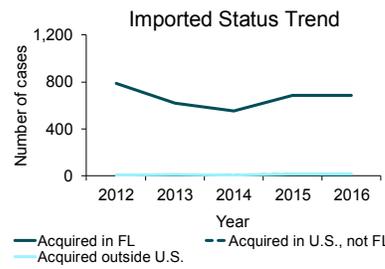
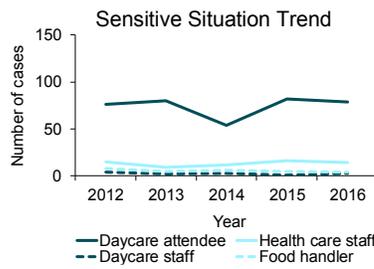
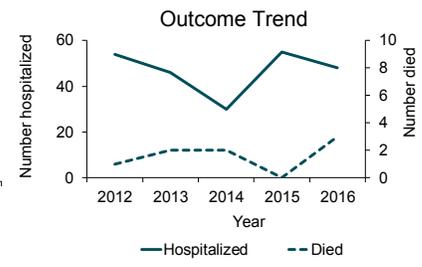
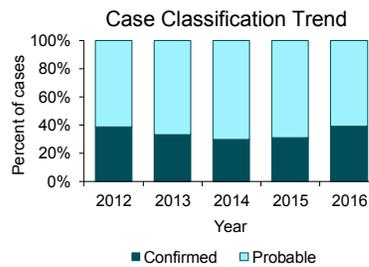
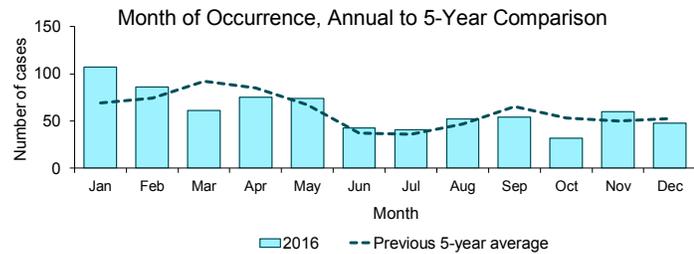
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Varicella cases were missing 5.5% of ethnicity data in 2016.

Varicella (Chickenpox)

Summary of Case Factors

Summary	Number
Number of cases	733
Case Classification	Number (Percent)
Confirmed	288 (39.3)
Probable	445 (60.7)
Outcome	Number (Percent)
Hospitalized	48 (6.5)
Died	2 (0.3)
Sensitive Situation	Number (Percent)
Daycare attendee	79 (10.8)
Daycare staff	3 (0.4)
Health care staff	14 (1.9)
Food handler	4 (0.5)
Imported Status	Number (Percent)
Acquired in Florida	686 (93.6)
Acquired in the U.S., not Florida	9 (1.2)
Acquired outside the U.S.	16 (2.2)
Acquired location unknown	22 (3.0)
Outbreak Status	Number (Percent)
Sporadic	503 (68.6)
Outbreak-associated	217 (29.6)
Outbreak status unknown	13 (1.8)

Reported Varicella Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Varicella incidence remained steady after a notable increase in 2015. Incidence among infants <1 year old remained high compared to the 5-year average. Infants <1 year old are too young to be vaccinated and as a result, vaccination of siblings and caregivers is particularly important to protect this group.

The number of infections acquired outside Florida increased from 12 in 2014 to 32 in 2015 and 25 in 2016. More varicella cases occur in winter and spring, particularly in school-aged children. There were two deaths, both in adults with underlying conditions. Neither death certificate identified varicella as the cause of death. The number of outbreak-associated cases increased from 174 (23.5%) in 2015 to 217 (29.6%) in 2016. Of the 217 outbreak-associated cases identified, most were small household clusters. Three outbreaks (defined as five or more cases linked in a single setting) were identified in schools, one outbreak was identified in a daycare, and one outbreak was identified in a correctional facility. Counties with 10 or more outbreak-associated cases included Broward (10), Collier (14), Columbia (30), Hillsborough (19), Lee (18), Pinellas (46), and St. Johns (10). Counties with the highest incidence rates were mostly low-population counties.

Vibriosis (Excluding Cholera)

Disease Facts

Cause: *Vibrio* species bacteria (see following page for list of species included)

Type of illness: Gastroenteritis (diarrhea, vomiting), bacteremia, septicemia, wound infection, cellulitis; other common symptoms include low-grade fever, headache, and chills

Transmission: Foodborne, waterborne, and wound infections from direct contact with brackish water or salt water where the bacteria naturally live, or direct contact with marine wildlife

Reason for surveillance: Identify sources of transmission (e.g., shellfish collection area) and mitigate source, monitor incidence over time, estimate burden of illness

Comments: *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 decreased slightly in 2016 compared to 2015. Incidence is consistently much higher in men than women.

Summary of Case Demographics

Summary

Number of cases	187
Incidence rate (per 100,000 population)	0.9
Change from 5-year average incidence	+4.8%

Age (in Years)

Mean	48
Median	54
Min-max	3 - 88

Gender

Gender	Number (Percent)	Rate
Female	55 (29.4)	0.5
Male	132 (70.6)	1.3
Unknown gender	0	

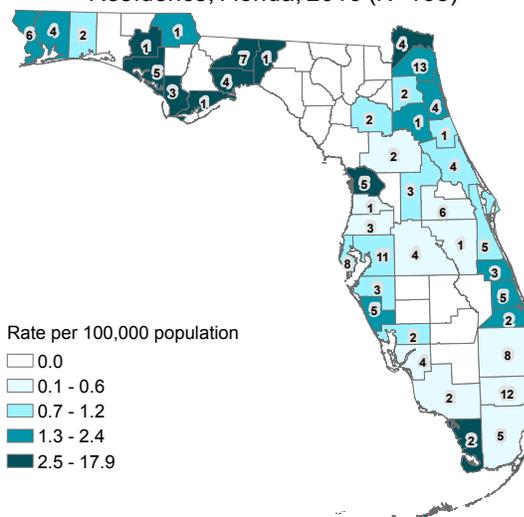
Race

Race	Number (Percent)	Rate
White	148 (83.6)	0.9
Black	22 (12.4)	0.6
Other	7 (4.0)	NA
Unknown race	10	

Ethnicity

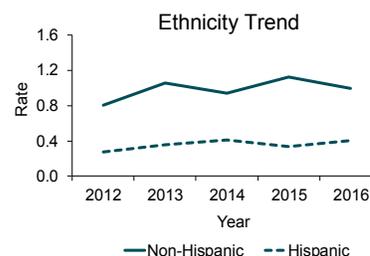
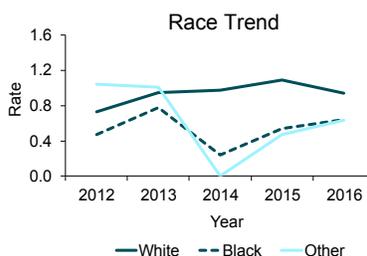
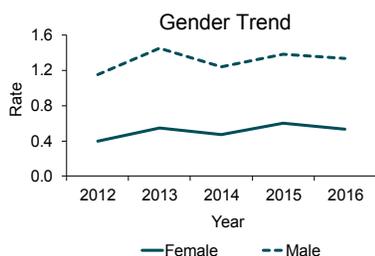
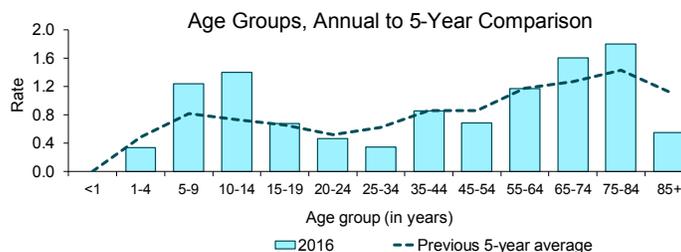
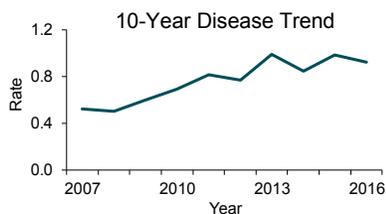
Ethnicity	Number (Percent)	Rate
Non-Hispanic	152 (88.4)	1.0
Hispanic	20 (11.6)	0.4
Unknown ethnicity	15	

Reported Vibriosis Cases (Excluding Cholera) and Incidence Rates Per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2016 (N=168)



Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Incidence Rates Per 100,000 Population of Reported Vibriosis Cases (Excluding Cholera) by Year, Age, Gender, Race, and Ethnicity, Florida



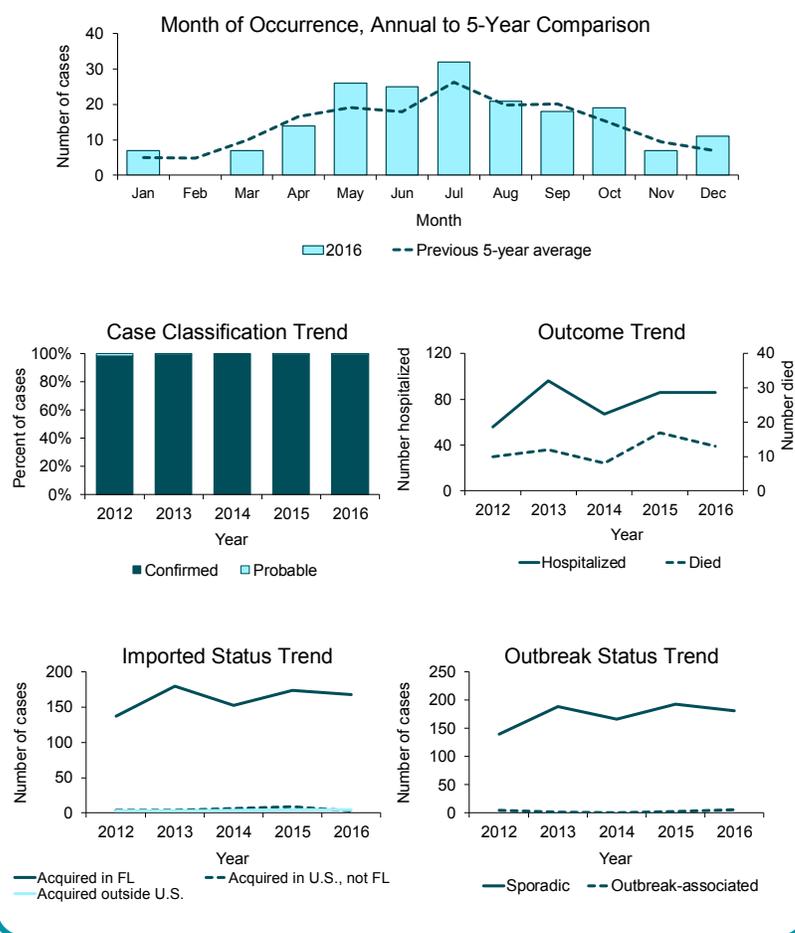
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Vibriosis cases (excluding cholera) were missing 10.9% of ethnicity data in 2012, 8.2% of race data in 2012, 9.4% of ethnicity data in 2013, 6.8% of race data in 2013, 5.4% of race data in 2014, 5.1% of ethnicity data in 2015, 8.0% of ethnicity data in 2016, and 5.3% of race data in 2016.

Vibriosis (Excluding Cholera)

Summary of Case Factors

Summary	Number
Number of cases	187
Case Classification	Number (Percent)
Confirmed	186 (99.5)
Probable	1 (0.5)
Outcome	Number (Percent)
Hospitalized	86 (46.0)
Died	13 (7.0)
Imported Status	Number (Percent)
Acquired in Florida	168 (89.8)
Acquired in the U.S., not Florida	3 (1.6)
Acquired outside the U.S.	5 (2.7)
Acquired location unknown	11 (5.9)
Outbreak Status	Number (Percent)
Sporadic	181 (96.8)
Outbreak-associated	6 (3.2)
Outbreak status unknown	0 (0.0)
Species	Number (Percent)
<i>Vibrio alginolyticus</i>	58 (31.0)
<i>Vibrio vulnificus</i>	48 (25.7)
<i>Vibrio parahaemolyticus</i>	46 (24.6)
<i>Vibrio cholerae</i> Type Non-O1	14 (7.5)
<i>Vibrio fluvialis</i>	5 (2.7)
<i>Vibrio mimicus</i>	4 (2.1)
<i>Grimontia hollisae</i>	3 (1.6)
Other <i>Vibrio</i> species	9 (4.8)

Reported Vibriosis Cases (Excluding Cholera) by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:

Occurrence is 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. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Vibriosis incidence is usually highest in older adults aged 55 to 84 years. In 2016, incidence was also high in 5- to 14-year-olds. In 2016, the most commonly reported *Vibrio* infection was *V. alginolyticus*, accounting for 31.0% of cases, which is very similar to 2015 when 29.6% of infections were caused by this species. The number of *V. vulnificus* infections increased in 2016 slightly (48 compared to 45 in 2015) while the number of *V. parahaemolyticus* infections remained the same compared to 2015 (46 both years). *V. vulnificus* can cause particularly severe disease, with about 50% of bloodstream infections being fatal. Of the 48 cases due to *V. vulnificus* in 2016, 45 (93.8%) were hospitalized and 10 (20.8%) died, accounting for 10 of the 13 total deaths reported for vibriosis in 2016. The remaining three deaths were due to *V. parahaemolyticus*, *V. cholerae* non-O1, and an unidentified *Vibrio* species. Of the 13 people who died with vibriosis, five reported consuming seafood and two reported having a wound with seawater exposure. One case had multiple exposures and five had other or unknown exposures. *V. vulnificus* infections typically occur in people who have chronic kidney or liver disease, a history of alcoholism, or are immunocompromised. Of the 48 cases of *V. vulnificus*, 34 (70.8%) had underlying medical conditions.

Zika Virus Disease and Infection (Including Congenital)

Disease Facts

Cause: Zika virus

Type of illness: Frequently asymptomatic; common symptoms include fever, rash, headache, joint pain, conjunctivitis, and muscle pain; even asymptomatic infections can cause microcephaly and other severe fetal brain defects when mother is infected during pregnancy; post-infection Guillain-Barré syndrome has occurred

Transmission: Bite of infective mosquito, blood transfusions, sex with infected partner, or from mother to child during pregnancy

Reason for surveillance: 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

Comments: Zika emerged in 2016 with over 1,400 cases reported in Florida, including 285 locally acquired cases and five congenital cases (for more information on congenital cases, see Section 9: Congenital and Perinatal Conditions). Florida residents and non-Florida residents are included here.

Summary of Case Demographics

Summary

Number of cases	1,456
Incidence rate (per 100,000 population)	7.2

Age (in Years)

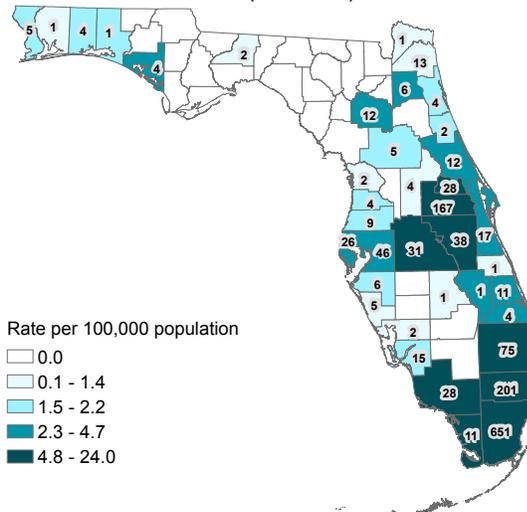
Mean	42
Median	43
Min-max	0 - 100

Gender	Number (Percent)	Rate
Female	907 (62.3)	8.8
Male	549 (37.7)	5.6
Unknown gender	0	

Race	Number (Percent)	Rate
White	994 (71.6)	6.3
Black	244 (17.6)	7.2
Other	151 (10.9)	13.7
Unknown race	67	

Ethnicity	Number (Percent)	Rate
Non-Hispanic	536 (38.7)	3.5
Hispanic	850 (61.3)	17.1
Unknown ethnicity	70	

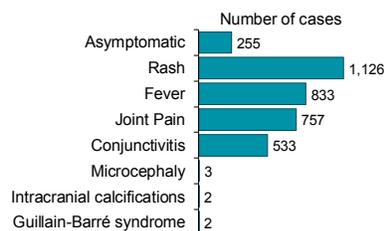
Reported Zika Virus Disease and Infection Cases (Including Congenital) and Incidence Rates Per 100,000 Population by County of Residence, Florida, 2016 (N=1,456)



Non-Florida residents (n=108) are included by the county where the case was reported. Note that rates based on <20 cases are not reliable and should be interpreted with caution.

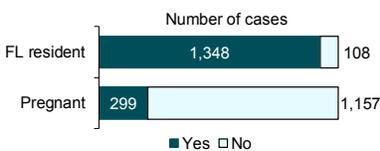
Characteristics of Zika Virus Disease and Infection Cases (Including Congenital) Florida, 2016

Symptoms

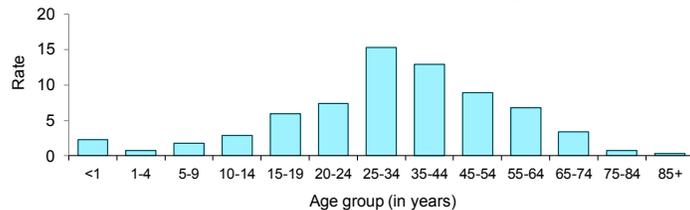


Note: One person can report more than one symptom.

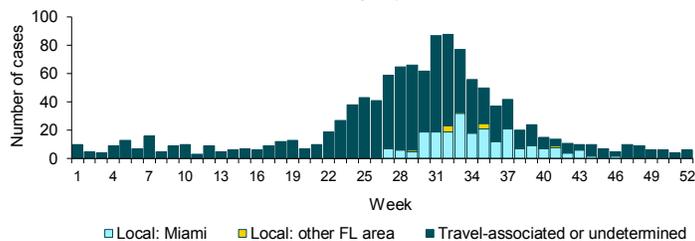
Residency and Pregnancy



Rate Per 100,000 Population by Age Group

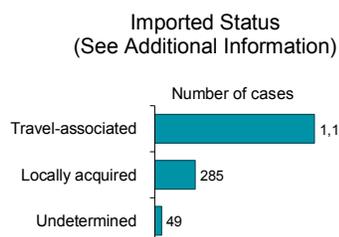


Week of Onset by Imported Status

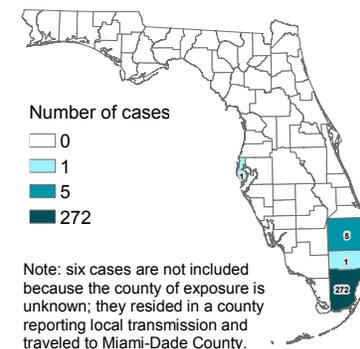


Note: 255 people were asymptomatic and onset was unknown for an additional 12 cases. These 267 cases are excluded here.

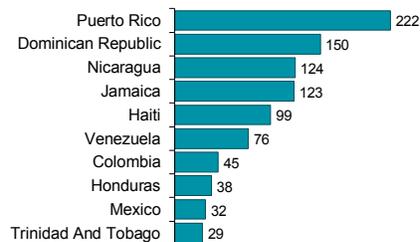
Summary of Case Factors



Counties Where Locally Acquired Cases Were Exposed (n=285)



Top 10 Locations Where Travel-Associated Infections Were Acquired
Number of cases

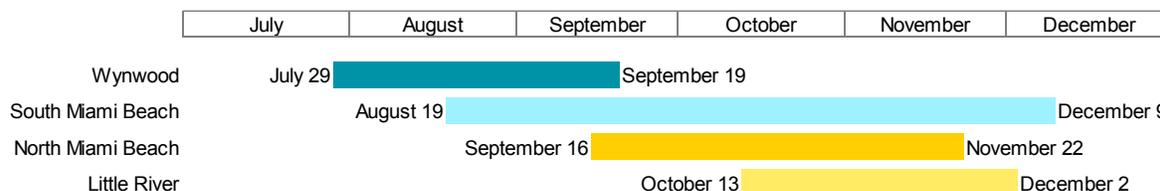


Florida and Texas were the only two states in the continental U.S. with local Zika transmission following introduction; 285 cases acquired in four Florida counties were identified in 2016. Active transmission of Zika virus was identified in four areas in Miami-Dade County in 2016 (Wynwood, North and South Miami Beach, and Little River communities). Active surveillance for locally acquired cases included household investigations, workplace investigations, and community urine collections (urosurveys). Door-to-door urosurvey methods were the first to identify that active ongoing transmission was occurring in Wynwood, with the identification of six asymptomatic individuals testing positive. Over 2,000 people were tested through active investigations, identifying 55 additional local cases. Workplaces were a common source of exposure (~33% of local cases).

Areas of Active Local Transmission in Miami-Dade County



Timeline of Active Local Transmission in Miami-Dade County



Additional Information

Due to the complexities of Zika testing, result interpretation, and high rate of asymptomatic individuals (referred to as Zika virus infection rather than disease), it can be challenging in some situations to definitively determine when an individual was exposed to the virus. Because of these challenges, a new undetermined category was developed to include individuals who spent time in Miami-Dade County and countries or territories with widespread Zika virus transmission during 2016 where the exact location of exposure was not able to be confirmed. Many of these undetermined exposure cases were tested months after they had traveled, making it hard to determine when and where they were exposed. Five travel-associated cases were congenital cases (four symptomatic, one asymptomatic) where the mother was exposed to Zika virus during pregnancy. Three travel-associated cases were the result of sexual transmission. Two of the cases had no recent international travel but their sexual partners reported travel to Nicaragua or Puerto Rico. One case had traveled to Jamaica with her sexual partner but developed symptoms more than two weeks after travel. All three cases involved male-to-female transmission. All three men had detectable viral RNA in their semen. Approximately 50% of people with imported infections indicated their reason for travel was to visit friends and family; this is important information to help direct targeted prevention messaging for Zika, dengue, chikungunya, and other emerging diseases in the Caribbean. About 15% of cases were in refugees or immigrants.

