Section 2

Selected Reportable Diseases/Conditions

Arsenic Poisoning

Arsenic Poisoning			
Number of cases			7
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) number of reported cases			-39.1%
Age			Years
Mean			51.1
Median			53.0
Min-Max			38 - 62
Race	Number	(Percent)	Rate
White	3	(42.9%)	NA
Black	2	(28.6%)	NA
Other	2	(28.6%)	NA
Unk	0		
Ethnicity	Number	(Percent)	Rate
Hispanic	2	(28.6%)	NA
Non-Hispanic	5	(71.4%)	NA
Unk	0		
Sex	Number	(Percent)	Rate
Male	4	(57.1%)	NA
Female	3	(42.9%)	NA
Unk	0		

Description

Arsenic poisoning became a reportable condition in Florida on November 24, 2008. Most arsenic-induced toxicity in humans is due to exposure to inorganic arsenic. Organic arsenic found in fish is not believed to be toxic. Total arsenic tests do not distinguish between organic and inorganic arsenic (the more toxic form). For this reason, positive total arsenic laboratory test results from specimens taken within 72 hours of consumption of seafood do not meet the laboratory criteria for confirmation. Elevated inorganic or total urinary arsenic levels (>50 micrograms per liter [µg/L] total for a 24 hour urine or >50 micrograms per gram [µg/g] creatinine) as determined by laboratory test are reportable in Florida.

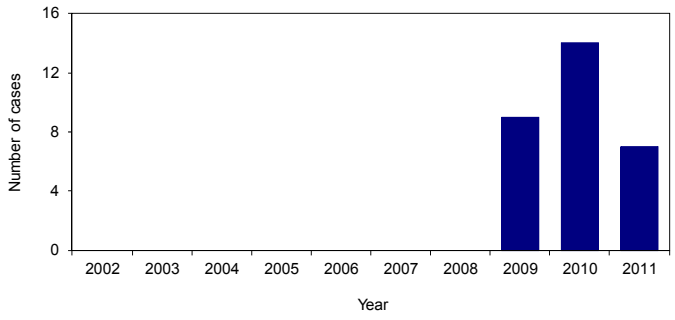
Acute ingestion of toxic amounts of arsenic typically causes severe gastrointestinal signs and symptoms, which can rapidly lead to dehydration and shock. Different clinical manifestations might follow, including dysrhythmias, altered mental status, and multisystem organ failure leading to death.

Common sources of potential 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, arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting (unregulated) private drinking wells.

Disease Abstract

From 2009 through 2011, 30 cases of human arsenic poisonings were reported in Florida, with the lowest number of cases reported in 2011 (Figure 1). There is no apparent seasonality to arsenic poisoning occurrences. In 2011, three (42.9%) cases occurred in November 2011 (Figure 2). All reported cases were among people within the 35-64 year old age groups (Figure 3). Arsenic poisoning cases were reported in five (7.5%) of 67 Florida counties, with Broward County reporting three (42.9%) cases (Figure 4).

Figure 1. Reported Arsenic Poisoning Cases by Year Reported, Florida, 2002-2011



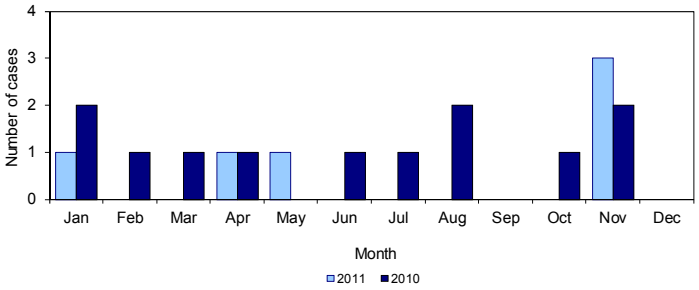
Note: Arsenic was not reportable prior to 2009.

Six (85.7%) cases had unintentional exposure and one (14.3%) was of unknown intent. Source of arsenic exposure was unknown for four (57.1%) cases. The sources reported for the remaining three cases were each different and included exposure to fish oil supplements, drinking well water, and taking homeopathic medicine. Among the seven cases, two (28.6%) were hospitalized.

Prevention

According to Florida statute, public water supplies must be tested for arsenic. Florida drinking water standards for arsenic set the minimum concentration level (MCL) at 10 µg/L. Drinking water from private wells, particularly in areas with known high arsenic in ground or well water, should be tested by the homeowner specifically for arsenic.

Figure 2. Reported Arsenic Poisoning Cases by Estimated Month of Onset*, Florida, 2010 and 2011



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: One case was reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Arsenic Poisoning Cases by Age Group, Florida, 2010 and 2011

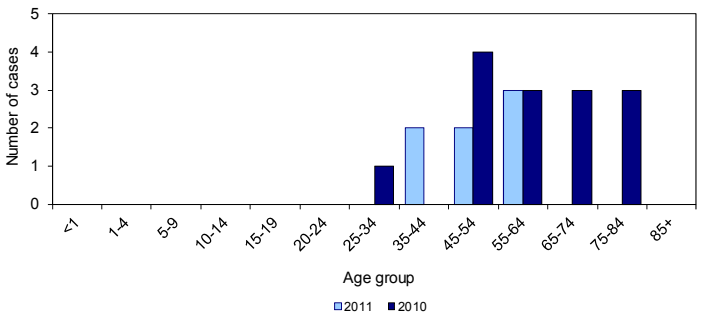
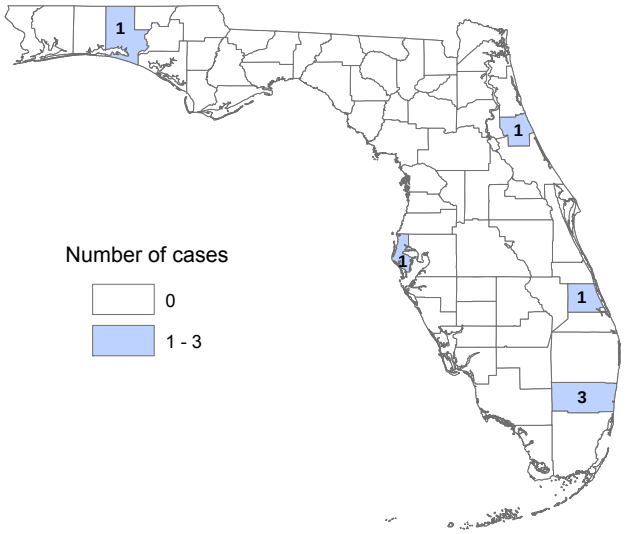


Figure 4. Reported Arsenic Poisoning Cases by County, Florida, 2011



The Florida Department of Health performs surveillance for arsenic poisoning and provides education regarding exposure prevention. Prevention tips for arsenic exposure:

- If high arsenic levels are suspected in a private well, well water should be tested and bottled water should be used for drinking until the well is shown to be safe or until appropriate water filtration systems are put in place to remove the arsenic.
- Do not smoke; cigarettes contain arsenic.
- Ensure a well-balanced diet rich in selenium, other antioxidants, and folate. There is evidence that undernourishment affects arsenic metabolism and that selenium is antagonistic to arsenic. Methyl donors, such as folate, may help in arsenic metabolism and excretion.
- When using CCA-treated lumber, follow warnings regarding the use of personal protective equipment such as gloves, eye protection, and respiratory protection.
- Children should wash their hands after playing on CCA-treated lumber play equipment.
- Apply sealant on any existing CCA-treated lumber surfaces annually.

- Limit sun exposure and use sunscreen to help decrease the risk of skin cancer. Exposure to arsenic and UVB radiation together may further increase the risk of developing skin cancer.
- Employers and workplace health and safety representatives should discuss concerns regarding arsenic and prevention of hazardous exposures at the workplace.

References

Agency for Toxic Substances & Disease Registry. Arsenic Toxicity.
Available at http://www.atsdr.cdc.gov/csem/csem.asp?csem=1&po=5.

Centers for Disease Control and Prevention. Arsenic.
Available at http://www.bt.cdc.gov/agent/arsenic/.

Additional Resources

Agency for Toxic Substances & Disease Registry. Toxicological Profile for Arsenic.
Available at http://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=22&tid=3.

Florida Department of Health. Arsenic Poisoning.
Available at http://doh.state.fl.us/Environment/medicine/arsenic.html.

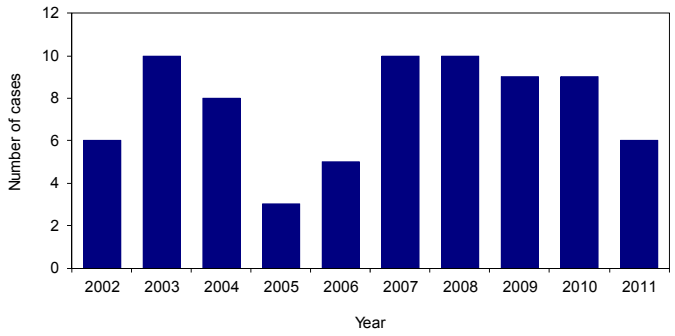
Brucellosis

Brucellosis		
Number of cases		6
2011 incidence rate per 100,000 population		NA
Percent change from 5-year average (2006-2010) number of reported cases		-30.2%
Age		Years
Mean		42.0
Median		45.0
Min-Max		18 - 60
Race	Number (Percent)	Rate
White	5 (100.0%)	NA
Black	0 (0.0%)	NA
Other	0 (0.0%)	NA
Unk	1	
Ethnicity	Number (Percent)	Rate
Hispanic	0 (0.0%)	NA
Non-Hispanic	5 (100.0%)	NA
Unk	1	
Sex	Number (Percent)	Rate
Male	6 (100.0%)	NA
Female	0 (0.0%)	NA
Unk	0	

Disease Abstract

Brucellosis is an infectious disease caused by *Brucella* bacteria. These bacteria are primarily passed among animals, but can cause a range of symptoms in humans that may include fever, sweats, headaches, back pain, and physical weakness. Brucellosis can also cause long lasting or chronic symptoms that include recurrent fevers, joint pain, and fatigue. From 2002 through 2011, 76 cases of human brucellosis were reported in Florida residents (Figure 1).

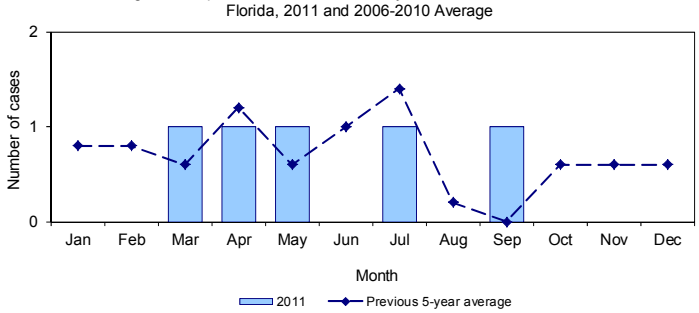
Figure 1. Reported Brucellosis Cases by Year Reported, Florida, 2002-2011



Brucellosis is reportable to public health authorities because there are a number of public health actions that can be taken to help reduce incidence of this infection. These actions include identifying populations at risk to allow for targeted prevention outreach; increasing health care provider awareness for earlier diagnosis and treatment of infected persons; early intervention and prophylaxis to prevent laboratory exposure-related infections; early detection of potentially contaminated products including food, transfusion, and organ transplant products; and early detection and response to a bioterrorist event.

Cases occurred throughout the year, as is expected for a disease with an extended incubation period (up to several months) and the capacity to cause chronic illness (Figure 2). Note that one case reported in 2011 had illness onset in December 2008. Historically, more cases have occurred in 45 to 54-year-olds, which was also true in 2011 (Figure 3). The six cases were reported from six (9.0%) of 67 Florida counties across the state (Figure 4). All 2011 reported brucellosis cases were sporadic and acquired within Florida. The five (83.3%) cases with known species were all *B. suis*. Five (83.3%) cases were hospitalized, but no deaths were reported.

Figure 2. Reported Brucellosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: One case was reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Brucellosis Cases by Age Group, Florida, 2011 and 2006-2010 Average

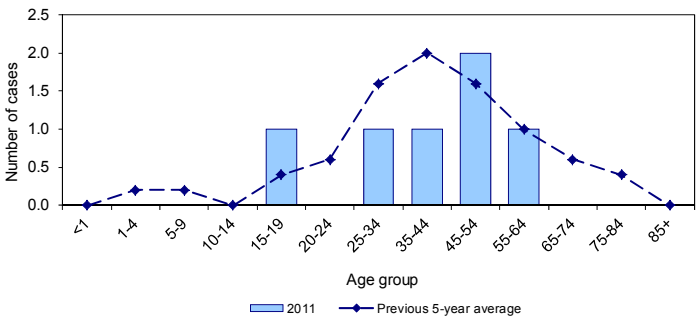
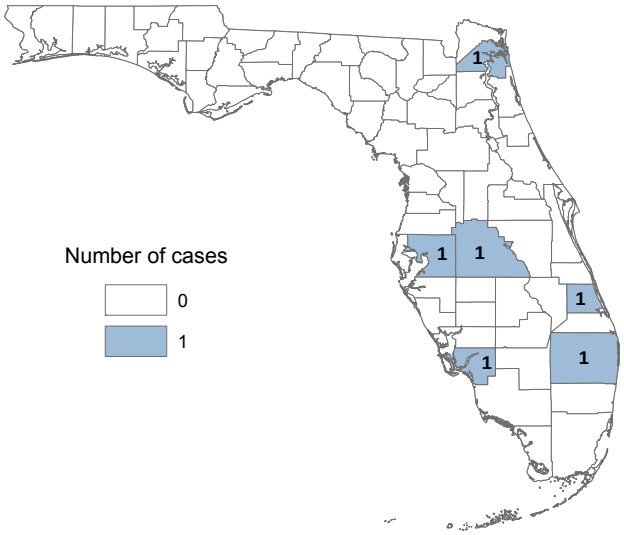


Figure 4. Reported Brucellosis Cases by County, Florida, 2011



Prevention

Prevention can best be accomplished through education of hunters, animal workers, and those handling raw meat from feral swine on proper use of personal protective equipment. Prevention measures are listed below.

- Wear gloves and other protective clothing.
- Work in properly ventilated areas.
- Dispose of animal carcasses and tissues properly.
- Disinfect contaminated areas.
- Handle modified live vaccines for animals properly.

Educate travelers and the general public about the risks of drinking or eating unpasteurized dairy products, especially products originating in countries where brucellosis is endemic in livestock.

Outreach is recommended for laboratory personnel and orthopedic surgeons to ensure knowledge of appropriate personal protective equipment for specimen handling and surgical procedures (aerosol protection), and clinicians should be reminded to forewarn laboratories working with patient culture samples if *Brucella* is included in the differential diagnosis or if they receive positive serologic results. Laboratories should be periodically reminded of state and federal confirmation and reporting requirements for this agent.

Continued surveillance and management programs for *Brucella* species in domestic livestock will reduce exposure risk from domestic animals in Florida.

References

Centers for Disease Control and Prevention. Brucellosis.
Available at http://www.cdc.gov/nczved/divisions/dfbmd/diseases/brucellosis/.

Additional Resources

Centers for Disease Control and Prevention. 2009. *Brucella suis* Infection Associated with Feral Swine Hunting---Three States, 2007--2008. *Morbidity and Mortality Weekly Report*, 58(22);618-621. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5822a3.htm.

Corbel MJ. 2006. *Brucellosis in Humans and Animals*. World Health Organization Press: Geneva, Switzerland. Available at http://www.who.int/csr/resources/publications/Brucellosis.pdf.

Florida Department of Health. Brucellosis. Available at http://doh.state.fl.us/Environment/medicine/arboviral/Zoonoses/Zoonotic-brucellosis.html.

United States Department of Agriculture, Animal and Plant Health Inspection Services. Brucellosis Disease Information. Available at http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/.

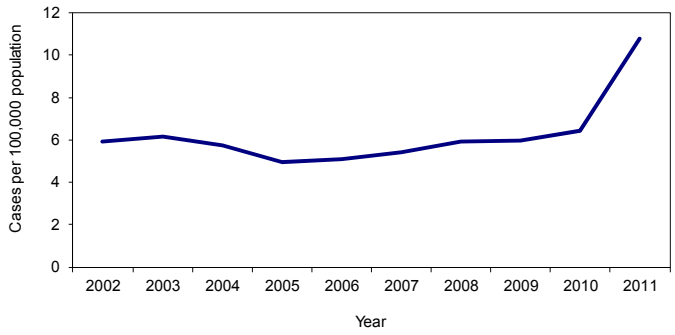
Campylobacteriosis

Campylobacteriosis		
Number of cases		2,039
2011 incidence rate per 100,000 population		10.8
Percent change from 5-year average (2006-2010) reported incidence rate		86.5%
Age		Years
Mean		39.2
Median		40.0
Min-Max		0 - 97
Race	Number (Percent)	Rate
White	1,703 (88.0%)	12.0
Black	118 (6.1%)	3.9
Other	114 (5.9%)	6.6
Unk	104	
Ethnicity	Number (Percent)	Rate
Hispanic	635 (33.2%)	14.7
Non-Hispanic	1,277 (66.8%)	8.7
Unk	127	
Sex	Number (Percent)	Rate
Male	1,063 (52.2%)	11.5
Female	975 (47.8%)	10.1
Unk	1	

Disease Abstract

Campylobacteriosis is an infectious disease caused by *Campylobacter* bacteria. Campylobacteriosis is transmitted when people ingest food, water, or other medium that has been contaminated with the stool of a person or animal infected with *Campylobacter*. Most people who become ill with campylobacteriosis develop diarrhea, cramping, abdominal pain, and fever.

Figure 1. Reported Campylobacteriosis Incidence Rate by Year Reported, Florida, 2002-2011



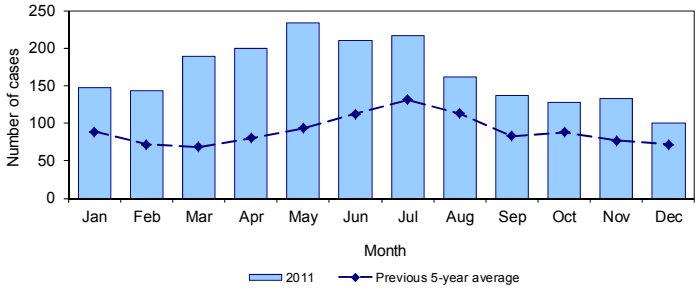
The incidence rate for campylobacteriosis has remained generally stable since 2001 but increased significantly in 2011 (Figure 1) due to a change in the surveillance case definition. Use of non-culture diagnostic testing for *Campylobacter* has increased significantly in recent years. To adapt to this change in testing practices, Florida changed the campylobacteriosis surveillance case definition in 2011. Prior to January 2011, culture confirmation was required to meet the laboratory criteria of the surveillance case definition. Starting in January 2011, the laboratory criteria expanded to allow a positive enzyme immunoassay (EIA) to meet the probable case definition in a clinically compatible case with no other enteric pathogens detected and no culture result for *Campylobacter*. In July 2011, the case definition was changed again to align with changes to other enteric disease case definitions. Starting July 27, 2011, detection of *Campylobacter* using any non-culture laboratory method (including EIA), met the suspect case definition, with or without presentation of symptoms. Due to the change in surveillance case definition, there were approximately seven months when positive EIA tests were included as part of the probable case definition.

In 2011, there were 438 probable cases (21.5%), compared to 55 (4.5%) probable cases in 2010. Note that suspect cases are not included in this report. The number of culture confirmed cases did increase from 1,156 in 2010 to 1,601 in 2011, which is not explained by the change in case definition.

The number of cases tends to increase in the summer months, with disease onsets peaking in July for the previous 5 years. In 2011, case onsets peaked in May, earlier than the previous 5-year trend (Figure 2). The highest incidence occurs among infants under one year old, followed by children aged one to four years (Figure 3). The incidence rate of campylobacteriosis in 2011 exceeded the average incidence rate for the previous five years in all age groups. Campylobacteriosis was reported in 58 (86.6%) of 67 counties in Florida (Figure 4).

Overall, 124 (6.1%) of the campylobacteriosis cases reported in 2011 were classified as outbreak-associated, compared to 90 (7.4%) in 2010. The majority of cases (1,723, 84.5%) were reported as acquired within Florida.

Figure 2. Reported Campylobacteriosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Forty-three cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Campylobacteriosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

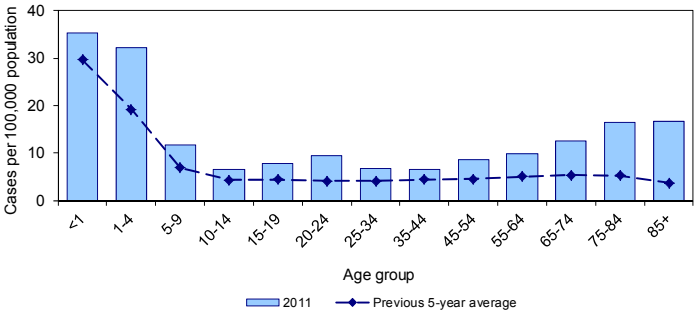
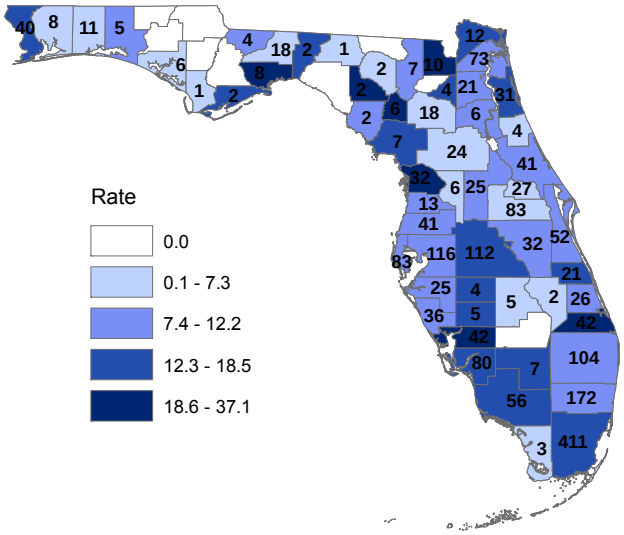


Figure 4. Reported Campylobacteriosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

The likelihood of contracting campylobacteriosis can be reduced by following these guidelines:

- Wash hands with soap before preparing food, after handling raw foods of animal origin, and after contact with pet feces.
- Cook all meat products thoroughly, particularly poultry.
- Avoid cross-contamination by making sure utensils, counter tops, cutting boards, and sponges are cleaned after preparing raw food of animal origin.
- Do not allow fluids from raw poultry or meat to drip on or touch other foods.
- Consume only pasteurized milk, milk products, or juices.

Additional Resources

Centers for Disease Control and Prevention. Campylobacter.
Available at http://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/.

Carbon Monoxide Poisoning

Carbon Monoxide Poisoning			
Number of cases			85
2011 incidence rate per 100,000 population			0.4
Percent change from 5-year average (2006-2010) reported incidence rate			-21.5%
Age			Years
Mean			44.0
Median			44.0
Min-Max			0 - 88
Race	Number	(Percent)	Rate
White	62	(74.7%)	0.4
Black	13	(15.7%)	NA
Other	8	(9.6%)	NA
Unk	2		
Ethnicity	Number	(Percent)	Rate
Hispanic	9	(11.0%)	NA
Non-Hispanic	73	(89.0%)	0.5
Unk	3		
Sex	Number	(Percent)	Rate
Male	56	(65.9%)	0.6
Female	29	(34.1%)	0.3
Unk	0		

Description

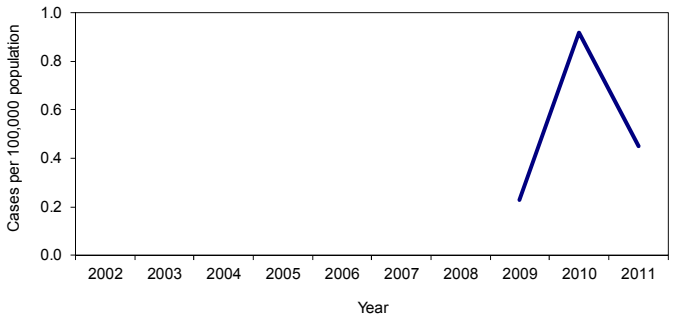
Carbon monoxide (CO) is an odorless, colorless gas that can cause headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO inhalation can cause loss of consciousness and death. CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, gas ranges and heating systems. CO can build up from these sources in enclosed or semi-enclosed spaces and poison people breathing in these areas.

CO poisoning became a reportable condition in Florida on November 24, 2008. All laboratory results from people with volume fractions ≥0.09 (9%) of carboxyhemoglobin (COHb) in blood are reportable in Florida. Exposure to CO and CO poisonings are routinely monitored in Florida using two main sources of data, the Florida Poison Information Center Network database and chief complaint data from hospital emergency departments participating in the Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE).

Disease Abstract

Approximately half as many CO poisoning cases were reported in 2011 (85 cases) as in 2010 (172 cases), though this was twice the number of cases reported in 2009 (42 cases (Figure 1). The decrease in CO poisoning cases from 2010 to 2011 was mainly seen during the winter months (Figure 2). Most 2010 cases occurred during cold winter months and were related to improper heating methods or due to improper use of equipment. Temperatures in January and December of 2010 were below normal, while these months were milder in 2011. In 2011, cases peaked in the summer months, with June, July, and August having the largest number of CO poisoning cases.

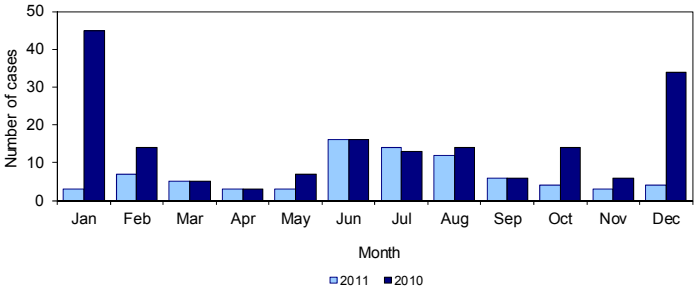
Figure 1. Reported Carbon Monoxide Poisoning Incidence Rate by Year Reported, Florida, 2002-2011



Note: Carbon monoxide poisoning was not reportable prior to 2009

In 2011, the majority of the CO poisoning cases (45 cases, 52.9%) were reported among those 25 to 54 years of age (Figure 3). The incidence rate of CO poisoning was highest among 15 to 24-year-olds. CO poisoning cases were reported in 24 (35.8%) of the 67 Florida counties (Figure 4). Palm Beach County had the most reported cases (17 cases, 20.0%). Exhaust from an automobile was the reported exposure type for 56 (65.9%) cases; other exposures were less common (Figure 5).

Figure 2. Reported Carbon Monoxide Poisoning Cases by Estimated Month of Onset*, Florida, 2010 and 2011



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Five cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Carbon Monoxide Poisoning Incidence Rate by Age Group, Florida, 2010 and 2011

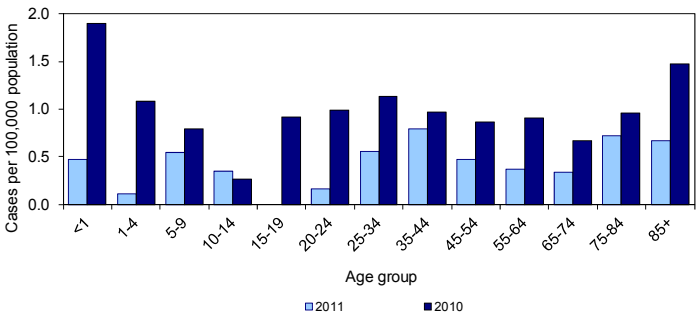


Figure 4. Reported Carbon Monoxide Poisoning Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

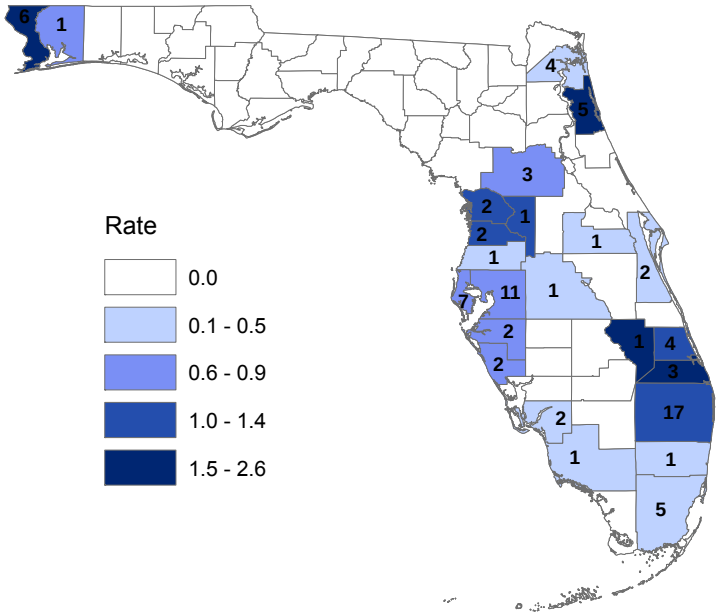
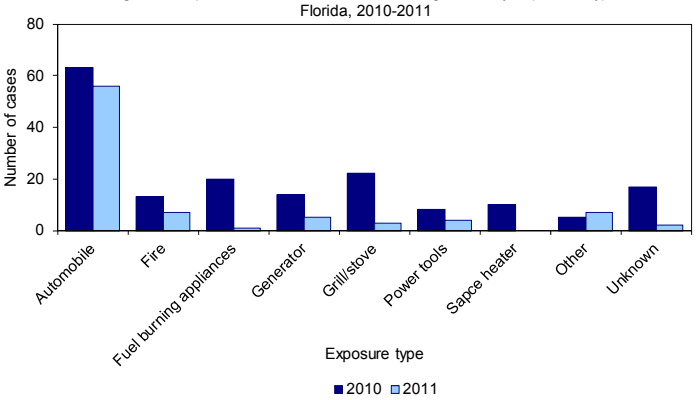


Figure 5. Reported Carbon Monoxide Poisoning Cases by Exposure Type, Florida, 2010-2011



Prevention

Prevention tips for CO poisoning are listed below.

- Have heating systems; water heaters; ventilation systems; and any other gas, oil, or coal burning appliances serviced by a qualified technician every year.
- Install battery-operated CO detectors in your home and garage and check or replace the battery when you change the time on your clocks each spring and fall.
- Be sure all appliances are properly installed and used according to the manufacturer's instructions.
- Do not use a generator, charcoal grill, camp stove, or other gasoline or charcoal-burning devise inside a house, basement, garage, vehicle, tent, or near a window.
- Do not use un-vented combustion heaters in enclosed spaces, especially sleeping areas.
- Never leave an automobile running in a closed garage or in a garage attached to the house, even with the garage door open.
- While driving, keep the rear window or tailgate of a vehicle closed, as carbon monoxide from the exhaust can be pulled inside.
- Only use properly vented stoves or fireplaces.

- Do not heat a house with a gas oven.
- If you suspect you are experiencing any symptoms of CO poisoning, open doors and windows, turn off gas appliances, and go outside. In cases of severe CO poisoning, call 911 emergency services or call the Florida Poison Information Center at 1-800-222-1222.

References

Centers for Disease Control and Prevention. Carbon Monoxide Poisoning.
Available at http://www.cdc.gov/co/default.htm.

Additional Resources

Florida Department of Health. Carbon Monoxide Information.
Available at http://doh.state.fl.us/Environment/community/indoor-air/carbon.htm.

Florida Department of Health. Carbon Monoxide Poisoning.
Available at
http://doh.state.fl.us/Environment/medicine/carbon_monoxide_poisoning.html.

Florida Environmental Public Health Tracking. Carbon Monoxide.
Available at http://www.floridatracking.com/HealthTrackFL/DealIndicator.aspx?PageId=11200.

Chlamydia

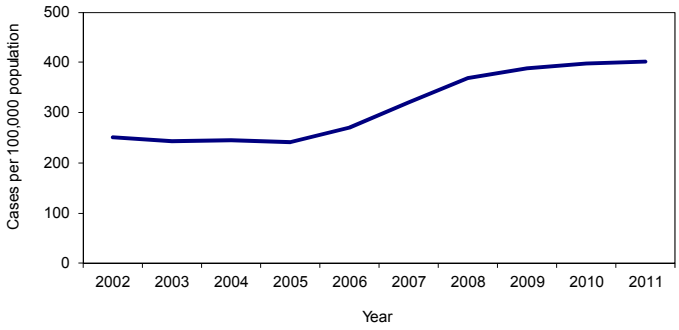
Chlamydia		
Number of cases		76,035
2011 incidence rate per 100,000 population		401.6
Percent change from 5-year average (2006-2010) reported incidence rate		15.1%
Age		Years
Mean		23.0
Median		21
Min-Max		0 - 88
Sex	Number (Percent)	Rate
Male	21,688 (28.6%)	234.2
Female	54,263 (71.4%)	560.9
Unk	84	

Note that race and ethnicity were not collected for cases reported from January to May of 2011 and therefore are not presented here.

Disease Abstract

Chlamydia, caused by *Chlamydia trachomatis* bacteria, is the most commonly reported sexually transmitted disease (STD) in Florida and the U.S. Chlamydia is known as a 'silent' infection because most infected people have no symptoms. If symptoms do occur, they may not appear until several weeks after exposure. Some infected women have an abnormal vaginal discharge or a burning sensation when urinating. Untreated infections can spread upward to the uterus and fallopian tubes, causing pelvic inflammatory disease. Some infected men have discharge from their penis or a burning sensation when urinating. Pain and swelling in one or both testicles may also occur, but is less common.

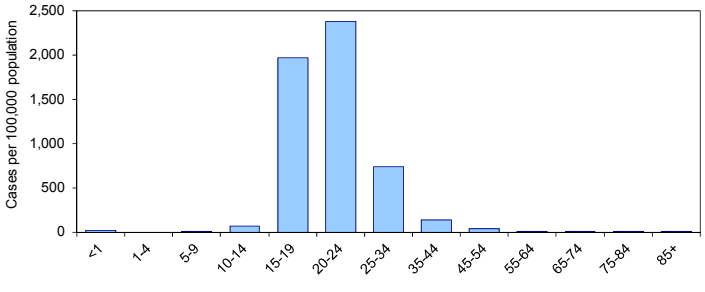
Figure 1. Reported Chlamydia Incidence Rate, Florida, 2002-2011



An estimated 2.8 million infections occur annually in the U.S. Chlamydial infections are widespread and continue to increase each year. In Florida, 76,035 chlamydia cases were reported in 2011, resulting in the highest case rate (401.6 per 100,000 population) in the past ten years (Figure 1).

The incidence of chlamydia is highest among 15 to 24 -year-olds; 70.3% of all cases reported in Florida in 2011 were in this age group (Figure 2). In 2011, 54,263 (71.4%) cases were in women. National trends indicate chlamydia infections are most prevalent in women under the age of 25, which was also true in Florida (Figure 3). Three out of every four female cases were reported in 15 to 24-year-olds. In pregnant women, untreated chlamydia has been associated with pre-term delivery, and can spread to the newborn, causing an eye infection or pneumonia. Approximately 8,808 (16.2%) women with chlamydia were pregnant at the time of disease diagnosis. This is a 16.8% decrease from cases in pregnant women from the previous year. Chlamydia rates in men were lower overall than in women, but similar distributions of the disease by age are seen in both genders. Chlamydia cases were reported in all 67 Florida counties (Figure 4). Nineteen (28.4%) counties had more than 1,000 cases reported. Counties with the highest number of cases included Broward, Hillsborough, Miami-Dade, and Orange; counties with the highest rates included Hamilton, Union, Gadsden, and Leon.

Figure 2. Reported Chlamydia Incidence Rate by Age Group, Florida, 2011



Note: 103 cases from 2011 were missing data on age and are not included.

Figure 3. Reported Chlamydia Case Incidence Rate by Age Group and Gender, Florida, 2011

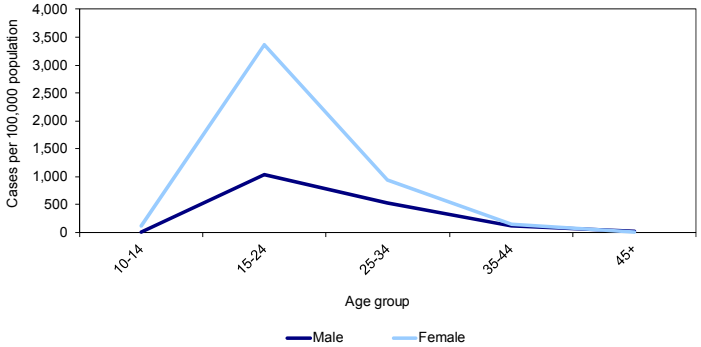
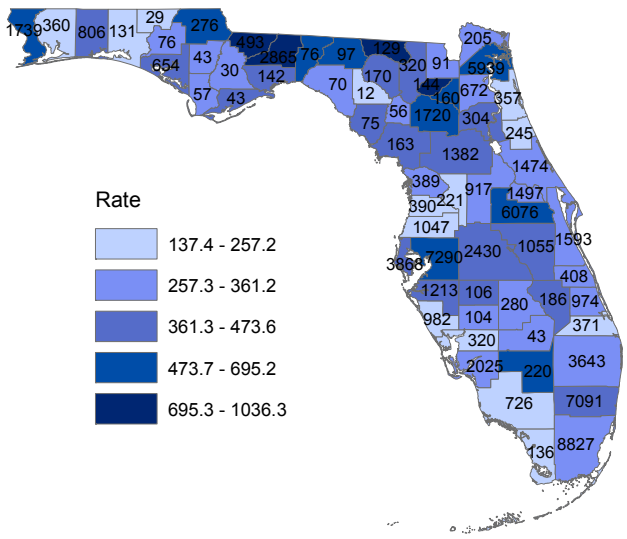


Figure 4. Reported Chlamydia Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



Subsequent Infections

Subsequent infections were defined as having a new chlamydial infection identified more than 30 days after the first diagnosis. In 2011, 4,099 (5.4%) chlamydia cases had a subsequent chlamydia infection the same year. People 15 to 24 years old accounted for 3,361 (82.0%) of subsequent infections. Women were five times more likely to have a subsequent infection compared to men, which was consistent with the previous year. The disparity of chlamydia infections and subsequent chlamydia infections seen in women may be due to existing screening policy to identify infection, which places stronger emphasis on screening and treatment of chlamydia in women than in men.

Prevention

The surest way to avoid transmission of any STD is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. Latex male condoms, when used consistently and correctly, can reduce the risk of chlamydia transmission.

The Centers for Disease Control and Prevention recommends yearly chlamydia testing of all sexually active women age 25 or younger; older women with risk factors for chlamydial infections, such as those who have a new sex partner or multiple sex partners; and all pregnant women. Early treatment of chlamydia in women can prevent pelvic inflammatory disease. Women and men who are told they have a chlamydial infection and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can seek evaluation by a health care provider. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated. Women are frequently re-infected if their partners are not treated.

Genital symptoms such as an unusual discharge, burning during urination, or bleeding between menstrual cycles may indicate a chlamydia infection is present. If a woman or man has any of these symptoms, they should stop having sex and consult a health care provider promptly.

References

American Congress of Obstetricians and Gynecologists. 2011. Committee Opinion No. 483: Primary and Preventive Care: Periodic Assessments. *Obstetrics & Gynecology*, 117(4);1,008-1,115.

Centers for Disease Control and Prevention. Chlamydia - CDC Fact Sheet. Available at http://www.cdc.gov/std/chlamydia/STDFact-Chlamydia.htm.

Cholera

Cholera		
Number of cases		11
2011 incidence rate per 100,000 population		NA
Percent change from 5-year average (2006-2010) number of reported cases		175.0%
Age		Years
Mean		49.5
Median		50.0
Min-Max		31 - 73
Race	Number (Percent)	Rate
White	0 (0.0%)	NA
Black	10 (90.9%)	NA
Other	1 (9.1%)	NA
Unk	0	
Ethnicity	Number (Percent)	Rate
Hispanic	0 (0.0%)	NA
Non-Hispanic	11 (100.0%)	NA
Unk	0	
Sex	Number (Percent)	Rate
Male	5 (45.5%)	NA
Female	6 (54.5%)	NA
Unk	0	

Description

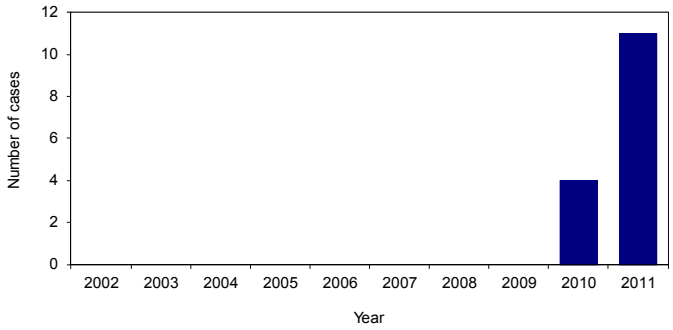
Cholera is an acute intestinal infection caused by toxigenic *Vibrio cholerae* serogroups O1 and O139. It is a major cause of epidemic diarrhea in developing countries and causes an estimated 3–5 million cases and 100,000–120,000 deaths annually. Clinically, cholera ranges from asymptomatic infection to severe diarrheal illness. Approximately 5-10% of infections cause severe disease characterized by acute, profuse, watery diarrhea that can lead to rapid fluid loss and hypovolemic shock. Additional symptoms of severe illness may include vomiting, tachycardia, loss of skin turgor, muscle cramps, dry mucous membranes, hypotension, and thirst. Without treatment, death can occur within hours.

Disease Abstract

Cholera in Florida is typically associated with a history of travel to an area with epidemic cholera. Imported cases were seen in the early 1990s following the onset of the Latin American cholera epidemic. No cases were reported for more than a decade in Florida prior to the onset of the Haiti cholera epidemic in October 2010. Florida has approximately 241,000 Haitian-born residents, representing almost half of the Haitian-born population residing in the U.S., so imported cases were anticipated. Four cases were reported in Florida in 2010 and eleven cases were reported in 2011 (Figure 1).

Illness onset dates ranged from December 24, 2010 to October 10, 2011, with a peak in early January and additional cases in June, July, September, and October (Figure 2). Holiday travel may have played a role in the increased number of imported cases with illness onset dates in late December and early January. The overall pattern roughly followed trends in Haiti where high peaks in case numbers were seen in January and June and lower peaks were observed in August and October-November. Increased cholera activity in Haiti was related to periods of heavy rainfall and flooding. All cases were in people aged 25-74 years (Figure 3).

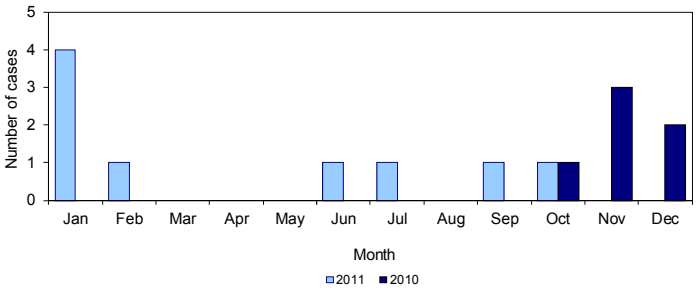
Figure 1. Reported Cholera Cases by Year Reported, Florida, 2002-2011



Four (36.4%) cases were reported in Miami-Dade County and two (18.2%) were reported in Broward County (Figure 4). The remaining cases were scattered around the state. Nine (81.8%) cases were acquired in Haiti, one (9.1%) case in the Philippines, and one case (9.1%) was acquired locally in Collier County. This case was linked to the consumption of conch that was brought back by a relative returning from Haiti. For additional information on the case, see Section 6: Notable Outbreaks and Case Investigations. No local transmission was identified among household contacts in Florida.

Ten (90.9%) cases were culture confirmed and one (9.1%) case was confirmed by serologic testing. Ten (90.9%) cases were linked to the ongoing cholera epidemic in Haiti, caused by toxigenic *V. cholerae*, serogroup O1, serotype Ogawa, biotype El Tor. The remaining case (9.1%) was caused by a toxigenic *V. cholerae*, serogroup O1, serotype Ogawa strain acquired in the Philippines. For additional information on U.S. cases associated with the epidemic in Hispaniola, see the article by Newton referenced at the end of this section.

Figure 2. Reported Cholera Cases by Estimated Month of Onset*, Florida, 2010 and 2011



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Two cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Cholera Cases by Age Group, Florida, 2010 and 2011

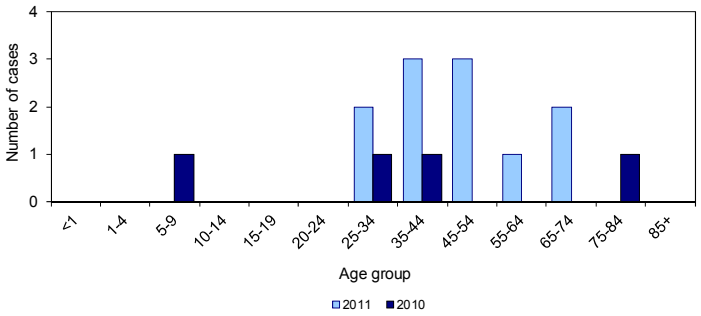
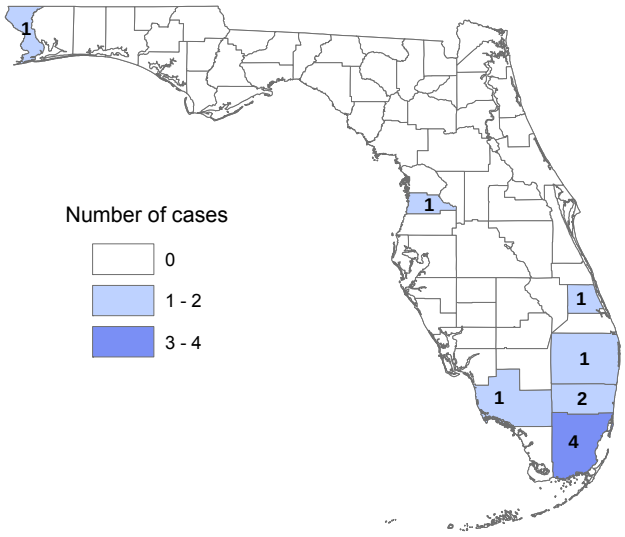


Figure 4. Reported Cholera Cases by County, Florida, 2011



Prevention

Travelers to cholera-affected countries can reduce the risk of cholera by following the five prevention messages listed below.

- Drink and use safe water.
- Wash your hands often with soap and safe water.
- Use latrines or bury your feces; do not defecate in any body of water.
- Cook food well (especially seafood), keep it covered, eat it hot, and peel fruits and vegetables.
- Clean up safely in the kitchen and in places where the family bathes and washes clothes.

Cholera vaccines are not currently available in the U.S. and the Centers for Disease Control and Prevention does not recommend cholera vaccines for most travelers.

References

Buchannan AB, Albert NG, Beaulieu D. 2010. *The Population with Haitian Ancestry in the United States: 2009*, U.S. Census Bureau, Washington, District of Columbia, 2010.

Newton AE, Heiman KE, Schmitz A, Török T, Apostolou A, Hanson H, et al. 2011. Cholera in United States Associated with Epidemic in Hispaniola. Emerging Infectious Diseases, 17(11); 2166-2168.

Additional Resources

Centers for Disease Control and Prevention. Cholera.
Available at http://www.cdc.gov/cholera/index.html.

Ministère de la Santé Publique et de la Population.
Available at http://www.mspp.gouv.ht/site/index.php.

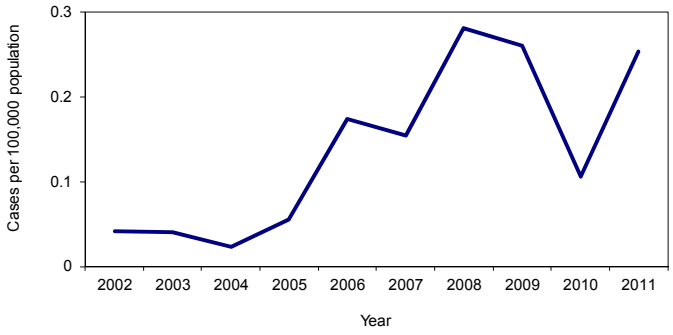
Ciguatera Fish Poisoning

Ciguatera		
Number of cases		48
2011 incidence rate per 100,000 population		0.3
Percent change from 5-year average (2006-2010) reported incidence rate		29.8%
Age		Years
Mean		39.9
Median		43.0
Min-Max		1 - 78
Race	Number (Percent)	Rate
White	37 (84.1%)	0.3
Black	4 (9.1%)	NA
Other	3 (6.8%)	NA
Unk	4	
Ethnicity	Number (Percent)	Rate
Hispanic	13 (28.3%)	NA
Non-Hispanic	33 (71.7%)	0.2
Unk	2	
Sex	Number (Percent)	Rate
Male	28 (58.3%)	0.3
Female	20 (41.7%)	0.2
Unk	0	

Disease Abstract

Ciguatera fish poisoning (CFP) is a foodborne illness caused by eating certain reef fish whose flesh contains toxins originally produced by dinoflagellates. These 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. People with CFP may experience nausea, vomiting, and neurologic symptoms such as tingling fingers or toes. They also may find that cold things feel hot and hot things feel cold. Little is known about the epidemiology of CFP in the U.S., partially because of a lack of disease recognition and reporting by medical practitioners. Although case finding in Florida is thought to be more complete than in other states, underreporting is still likely.

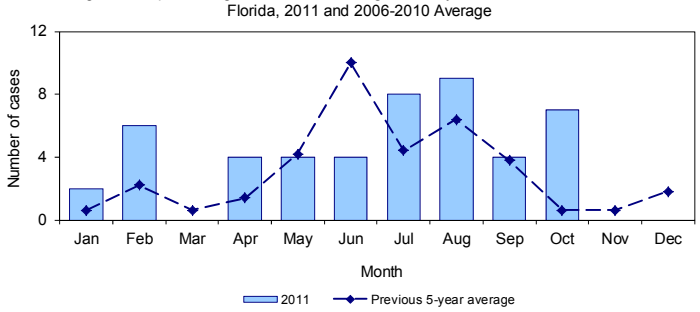
Figure 1. Reported Ciguatera Fish Poisoning Incidence Rate by Year Reported, Florida, 2002-2011



The incidence of CFP in 2011 was similar to the incidence in 2008 and 2009, but substantially higher than the 2010 incidence (Figure 1). In 2011, the age range of cases was fairly consistent with the range reported in the previous five years (2006-2010), with the exception of an increase in cases in the 5-9 and 55-64 age groups (Figure 2). Incidence peaked in August with nine cases (Figure 3). Miami-Dade County had the highest number of identified cases (19) and Monroe County had the highest incidence rate (Figure 4).

In total, 44 (91.7%) cases were classified as outbreak-associated due to multiple people sharing an implicated fish. Twenty-eight cases (58.3%) were acquired in Florida. The remaining 20 cases (41.7%) were acquired outside the U.S., with fish from the Bahamas listed as the origin for 11 cases (55.0%). Fish from Cuba was associated with two cases (10.0%) and fish from St. Thomas (USVI) was associated with one case (5.0%). Six cases (30.0%) acquired outside the U.S. were of an unknown origin.

Figure 2. Reported Ciguatera Fish Poisoning Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Missing cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Ciguatera Fish Poisoning Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

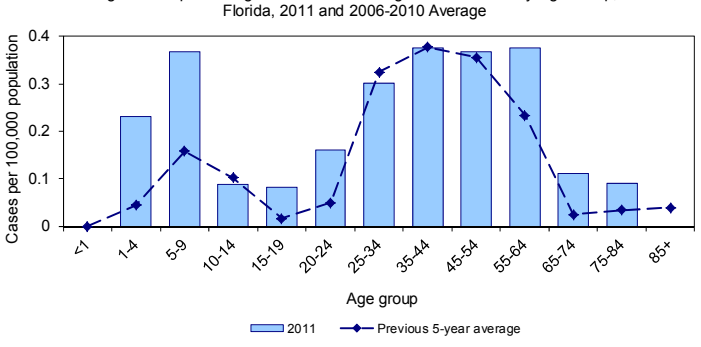
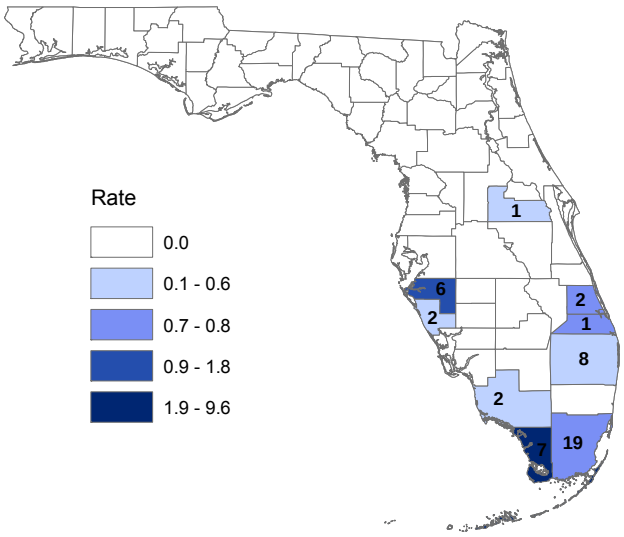


Figure 4. Reported Ciguatera Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



References

Granade HR. Ciguatoxin. *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook*. Lampel KA, Al-Khaldi S, Cahill SM, eds. 2nd edition. U.S. Food and Drug Administration. Available at http://www.fda.gov/downloads/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/UCM297627.pdf.

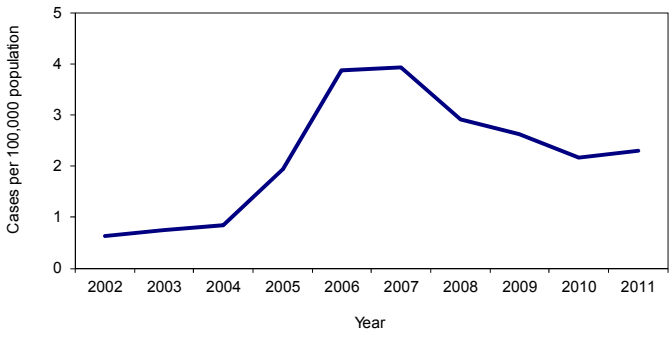
Cryptosporidiosis

Cryptosporidiosis		
Number of cases		437
2011 incidence rate per 100,000 population		2.3
Percent change from 5-year average (2006-2010) reported incidence rate		-25.8%
Age		Years
Mean		41.6
Median		42.0
Min-Max		0 - 95
Race	Number (Percent)	Rate
White	340 (79.6%)	2.4
Black	60 (14.1%)	2.0
Other	27 (6.3%)	1.6
Unk	10	
Ethnicity	Number (Percent)	Rate
Hispanic	64 (15.0%)	1.5
Non-Hispanic	362 (85.0%)	2.5
Unk	11	
Sex	Number (Percent)	Rate
Male	215 (49.2%)	2.3
Female	222 (50.8%)	2.3
Unk	0	

Disease Abstract

Cryptosporidiosis is a diarrheal disease caused by the parasite *Cryptosporidium*. The incidence rate for reported cryptosporidiosis increased sharply from 2004 to 2006, was stable through 2007, and then steadily decreased through 2010 (Figure 1). There was a slight increase in reported cases in 2011 (437 cases) compared to 2010 (408 cases).

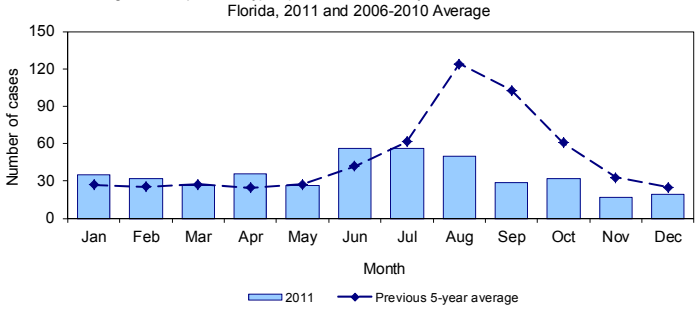
Figure 1. Reported Cryptosporidiosis Incidence Rate by Year Reported, Florida, 2002-2011



Increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water is more common with a peak in August and September (Figure 2). In 2011, the pattern was somewhat different with a much smaller peak in the early summer months. Historical rates are highest among children aged 1-4 years, who have more than double the incidence rate of older age groups (Figure 3). Incidence rates in 2011 were lower than the previous 5-year average for all age groups less than 45 years. Cases of cryptosporidiosis were reported in 44 (65.7%) of the 67 counties in Florida.

Once infected, people with decreased immunity are most at risk for severe disease. Six cryptosporidiosis cases died in 2011; five of those cases were age 70 years or older and the majority had underlying health issues. At least 213 (48.7%) of the reported cases were hospitalized.

Figure 2. Reported Cryptosporidiosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Twenty-three cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Cryptosporidiosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

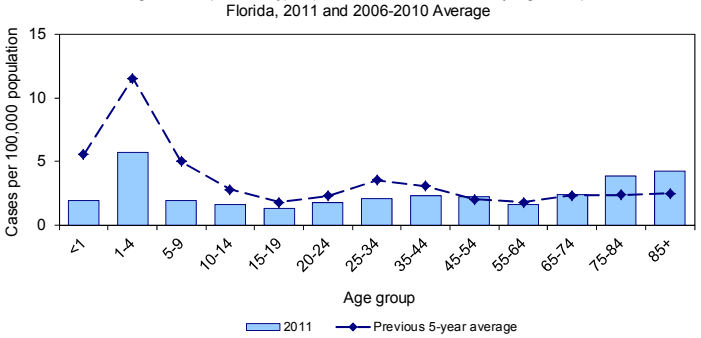
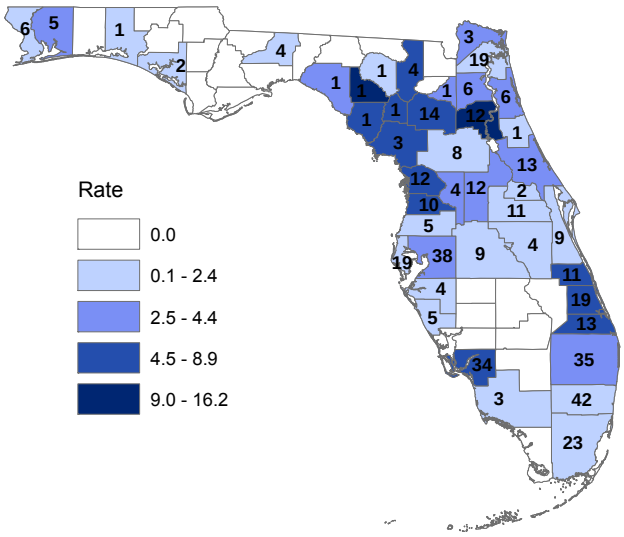


Figure 4. Reported Cryptosporidiosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

The likelihood of contracting cryptosporidiosis can be reduced by practicing good hand hygiene, such as washing hands before handling or eating food and after diaper changing. Water in recreational settings such as swimming pools or water parks should not be swallowed. Outbreaks associated with recreational water, especially water parks and interactive fountains, can be prevented if managers of those sites follow established guidelines for management of these facilities. Many of the guidelines are available through the Centers for Disease Control and Prevention's Healthy Swimming/Recreational Water Program at http://www.cdc.gov/healthywater/swimming/.

A swimmer's likelihood of contracting or spreading cryptosporidiosis in a recreational water setting can be reduced by practicing the following healthy swimming behaviors:

- Avoid swallowing recreational water or even getting it in your mouth.
- Shower before swimming and wash your hands after using the toilet or changing diapers.
- When swimming, take children on bathroom breaks or check diapers often.
- Change diapers in a bathroom and not at poolside and thoroughly clean the diaper changing area.
- Protect others by not swimming if you are experiencing diarrhea (this is essential for children in diapers) and for at least two weeks after diarrhea stops.

Additional Resources

Centers for Disease Control and Prevention. Parasites - *Cryptosporidium* (also known as "Crypto"). Available at http://www.cdc.gov/parasites/crypto/.

Centers for Disease Control and Prevention. Healthy Swimming/Recreational Water. Available at http://www.cdc.gov/healthywater/swimming/.

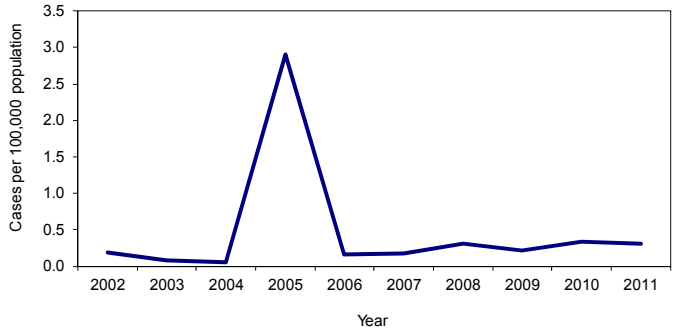
Cyclosporiasis

Cyclosporiasis			
Number of cases			58
2011 incidence rate per 100,000 population			0.3
Percent change from 5-year average (2006-2010) reported incidence rate			27.6%
Age			Years
Mean			48.9
Median			52.0
Min-Max			1 - 87
Race	Number	(Percent)	Rate
White	43	(89.6%)	0.3
Black	3	(6.3%)	NA
Other	2	(4.2%)	NA
Unk	10		
Ethnicity	Number	(Percent)	Rate
Hispanic	10	(19.6%)	NA
Non-Hispanic	41	(80.4%)	0.3
Unk	7		
Sex	Number	(Percent)	Rate
Male	20	(35.1%)	0.2
Female	37	(64.9%)	0.4
Unk	1		

Disease Abstract

Cyclosporiasis is a parasitic diarrheal disease caused by the protozoan *Cyclospora cayetanensis*. In 2005, there was a large statewide cyclosporiasis outbreak with 592 cases identified, of which 493 cases (83.3%) were Florida residents (see the Summary of Notable Outbreaks and Case Investigations section of the *Florida Morbidity Statistics Report 1997-2006* for more details). With the exception of that outbreak, the incidence rate for cyclosporiasis has remained stable in recent years (Figure 1). The number of cases reported decreased by 7.9% compared to the previous year (58 cases reported in 2011 compared to 63 cases in 2010).

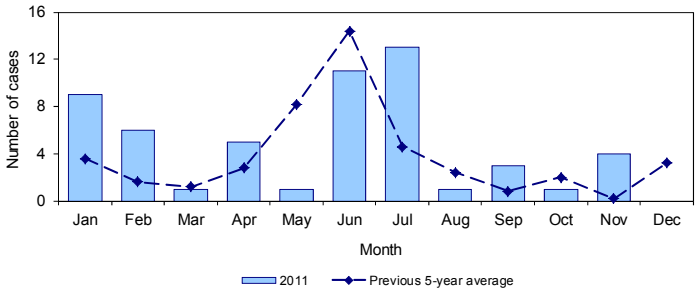
Figure 1. Reported Cyclosporiasis Incidence Rate by Year Reported, Florida, 2002-2011



In 2011, the number of cases by month of disease onset met or exceeded the previous 5-year average during all months except May, June, and August (Figure 2). The peak in late spring and early summer may reflect the seasonal variation of endemic cyclosporiasis in countries that export fruits and vegetables to the U.S. Over the previous five years, incidence of cyclosporiasis has generally increased with age (Figure 3). In 2011, there were only three cases in people less than 15 years old (those three cases were 1-4 years old). Cyclosporiasis was reported in 19 (28.4%) of the 67 counties in Florida, with the highest number of cases occurring in Collier, Dade and Palm Beach counties (Figure 4).

In 2011, 18 (31.0%) of the 58 cases reported were associated with six different clusters. Of the six clusters, one involved exposures outside of the U.S. (two cases with onset dates in January), two involved exposures in other U.S. states (three cases with onset dates in June and August), and three involved exposures in Florida (13 cases with onset dates in February, June, July, and November). Nine of these 13 Florida-acquired cases were epidemiologically linked to a restaurant in Collier County with onset dates in June and July. Of the 40 cases not known to be associated with a cluster, 20 cases (50.0%) were acquired in Florida, 12 (30.0%) were acquired outside of the U.S., one (2.5%) was acquired in the U.S. but not in Florida, and infection origin was unknown for 7 (17.5%) cases.

Figure 2. Reported Cyclosporiasis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Three cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Cyclosporiasis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

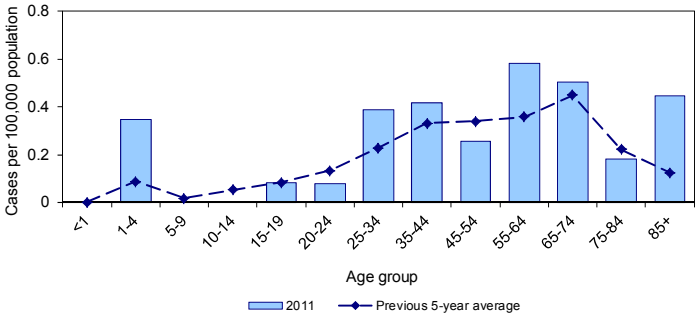
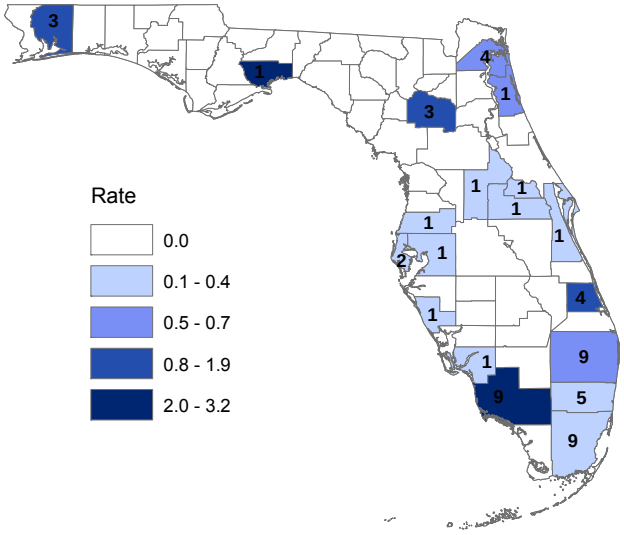


Figure 4. Reported Cyclosporiasis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

On the basis of the currently available information, avoiding food or water that may have been contaminated with feces is the best way to prevent cyclosporiasis. Treatment with chlorine or iodine is unlikely to kill *Cyclospora* oocysts.

Additional Resources

Centers for Disease Control and Prevention. Parasites – Cyclosporiasis (*Cyclospora* Infection). Available at http://www.cdc.gov/parasites/cyclosporiasis/index.html.

Dengue Fever

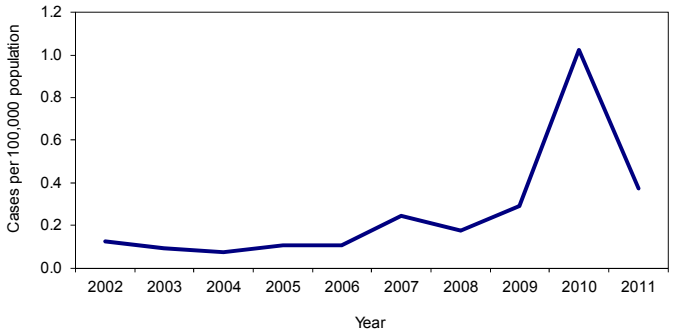
Dengue Fever			
Number of cases			71
2011 incidence rate per 100,000 population			0.4
Percent change from 5-year average (2006-2010) reported incidence rate			1.7%
Age			Years
Mean			42.5
Median			43.0
Min-Max			5 - 80
Race	Number	(Percent)	Rate
White	48	(69.6%)	0.3
Black	12	(17.4%)	NA
Other	9	(13.0%)	NA
Unk	2		
Ethnicity	Number	(Percent)	Rate
Hispanic	24	(34.8%)	0.6
Non-Hispanic	45	(65.2%)	0.3
Unk	2		
Sex	Number	(Percent)	Rate
Male	41	(58.6%)	0.4
Female	29	(41.4%)	0.3
Unk	1		

Disease Abstract

Dengue virus (DENV) is the most frequent cause of acute febrile illness among returning U.S. travelers from the Caribbean, South America, and Asia and is also the most common mosquito-borne viral infection in the world. The number of cases reported annually has increased over the past 10 years from 13 cases in 2004 to a peak of 192 cases in 2010 (Figure 1). Seventy-one cases were reported in 2011, which is a dramatic decrease from 2010, but still the second highest annual number since reporting began. The general increase over time is largely due to greater prevalence of dengue fever worldwide and epidemics in areas with high volume of U.S. travelers, such as Puerto Rico.

DENV activity is of concern because of the potential for introduction to Florida mosquitoes via infected symptomatic or asymptomatic travelers, which could lead to the re-establishment of the virus among mosquito populations in the state. Competent mosquito vectors are present in all parts of the state, though the *Aedes aegypti* species that predominates in the southernmost parts of the state is a more efficient vector than the *Aedes albopictus* species more common in the rest of the state. The establishment of endemic foci in Florida is hampered by the high proportion of residents with screens and air conditioning in their homes, schools, and workplaces. However, the potential for re-emergence was demonstrated in 2009 and 2010 when an outbreak of locally-acquired dengue fever occurred in Key West, Monroe County. Isolated cases of locally-acquired dengue fever were also identified in other south Florida counties in 2010 and 2011, as described in Section 6: Notable Outbreaks and Case Investigations.

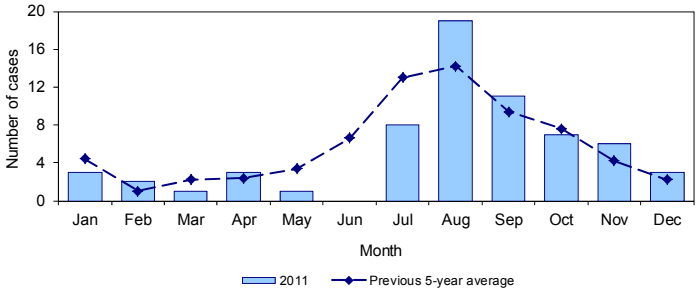
Figure 1. Reported Dengue Fever Incidence Rate by Year Reported, Florida, 2002-2011



Disease occurrence typically peaks during mid-summer and fall, though illness can occur year-round, as observed in 2011 (Figure 2). In the previous five years, the highest incidence was in adults 35-74 years old, with the lowest rates seen in 1 to 4-year-olds (Figure 3). In 2011, the highest rates were in 25 to 64 -year-olds. Dengue fever cases were reported in 21 (31.3%) of 67 Florida counties (Figure 4). The largest number of cases were reported in Miami-Dade (24 cases, 33.8%) and Palm Beach (10 cases, 14.1%) counties.

In 2011, 62 (87.3%) of the reported dengue fever cases acquired infections outside the U.S. (Table 1). Eleven (15.5%) cases were identified as outbreak-associated. Of the 2011 dengue fever cases, 37 (52.1%) were hospitalized, but no deaths were reported.

Figure 2. Reported Dengue Fever Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Seven cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Dengue Fever Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

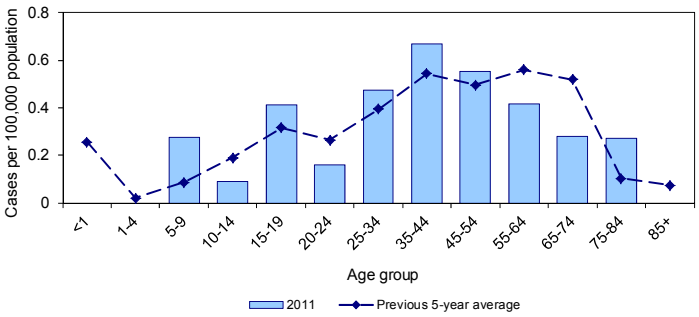


Figure 4. Reported Dengue Fever Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

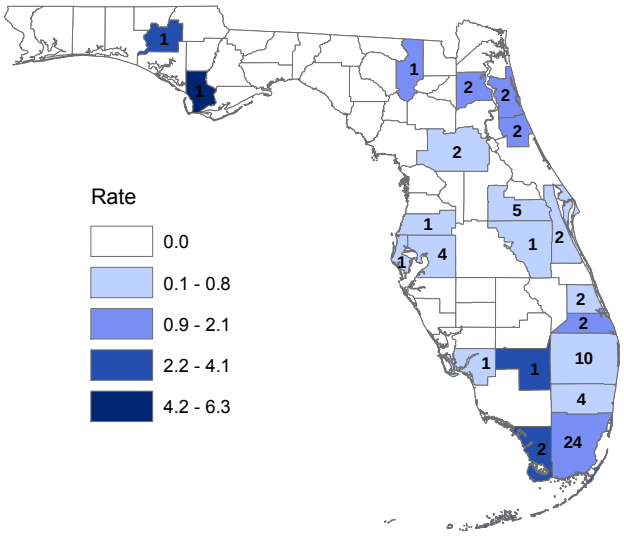


Table 1. Reported Dengue Fever Cases by Country/Region of Origin, Florida 2011

Country/Region	Number (percent)
Puerto Rico	12 (16.9)
Bahamas	10 (14.1)
Other Caribbean Country	20 (28.2)
Asia	7 (9.9)
South America	7 (9.9)
Central America	6 (8.5)
Acquired outside the U.S.	62 (87.3)
Florida	9 (12.7)
Total	**71 (100.0)**

Prevention

There is currently no vaccine available against DENV infection. Travelers to dengue-endemic countries should be warned of the risk of disease and instructed to take precautions to avoid being bitten by mosquitoes. Take the following precautions to reduce mosquito contact ("Drain and Cover").

Drain standing water to stop mosquitoes from multiplying

- Drain water from garbage cans, house gutters, buckets, pool covers, coolers, toys, flower pots, or any other containers where sprinkler or rain water has collected.
- Discard old tires, drums, bottles, cans, pots and pans, broken appliances and other items that are not being used.
- Empty and clean birdbaths and pet water bowls at least once or twice a week.
- Protect boats and vehicles from rain with tarps that do not accumulate water.
- Maintain swimming pools in good condition and chlorinate appropriately; empty plastic swimming pools when not in use.

Cover skin with clothing or repellent

- Clothing: wear shoes, socks, and long pants and long-sleeves; this type of protection may be necessary for people who must work in areas where mosquitoes are present.
- Repellent: apply mosquito repellent to bare skin and clothing.
    - Always use repellents according to the label. Repellents with DEET, picaridin, oil of lemon eucalyptus, and IR3535 are effective.
    - Use mosquito netting to protect children younger than 2-months-old.

Cover doors and windows with screens to keep mosquitoes out of your house

- Repair broken screening on windows, doors, porches, and patios.

Additional Resources

Centers for Disease Control and Prevention. 2012. CDC Health Information for International Travel 2012. New York: Oxford University Press.
Available at http://wwwn.cdc.gov/travel/contentYellowBook.aspx.

Gill J, Stark LM, Clark GG. 2000. Dengue Surveillance in Florida, 1997-1998. *Emerging Infectious Diseases*, 6(1);30-5.
Available at http://wwwnc.cdc.gov/eid/article/6/1/00-0105_article.htm.

Florida Department of Health. Surveillance and Control of Selected Mosquito-borne Diseases in Florida 2012 Guidebook.
Available at http://www.doh.state.fl.us/environment/medicine/arboviral/pdfs/2012/MosquitoGuide2012.pdf.

Radke EG, Gregory CJ, Kintziger KW, Sauber-Schatz EK, Hunsperger EA, Gallagher GR, et al. 2012. Dengue Outbreak in Key West, Florida, USA, 2009. *Emerging Infectious Diseases*, 18(1);135-137.
Available at http://wwwnc.cdc.gov/eid/article/18/1/11-0130_article.htm.

Ehrlichiosis/Anaplasmosis

Ehrlichiosis/Anaplasmosis			
Number of cases			26
2011 incidence rate per 100,000 population			0.1
Percent change from 5-year average (2006-2010) number of reported cases			94.0%
Age			Years
Mean			53.7
Median			57.0
Min-Max			7 - 82
Race	Number	(Percent)	Rate
White	23	(100.0%)	0.2
Black	0	(0.0%)	NA
Other	0	(0.0%)	NA
Unk	3		
Ethnicity	Number	(Percent)	Rate
Hispanic	3	(13.0%)	NA
Non-Hispanic	20	(87.0%)	0.1
Unk	3		
Sex	Number	(Percent)	Rate
Male	15	(57.7%)	NA
Female	11	(42.3%)	NA
Unk	0		

Description

Ehrlichiosis is the general name used to describe several tickborne bacterial diseases that affect animals and humans. Typical ehrlichiosis symptoms include fever, headache, fatigue, and muscle aches. Ehrlichiosis cases are reported most frequently in the southeastern and south central U.S. *Ehrlichia chaffeensis*, discovered in 1987, causes human monocytic ehrlichiosis (HME). White-tailed deer are an important reservoir species for *E. chaffeensis*.

Human ewingii ehrlichiosis cases, caused by an infection with *Ehrlichia ewingii* bacteria, present with similar clinical symptoms as HME. *E. ewingii* has been documented in Florida and is indistinguishable from *E. chaffeensis* using serologic testing; therefore, some cases classified as HME may actually be due to *E. ewingii*. Due to testing limitations, *E. ewingii* is not as well characterized as *E. chaffeensis*. *E. ewingii* has most frequently been identified in immunocompromised patients. The principal vector for both agents is the Lone Star tick, *Amblyomma americanum*.

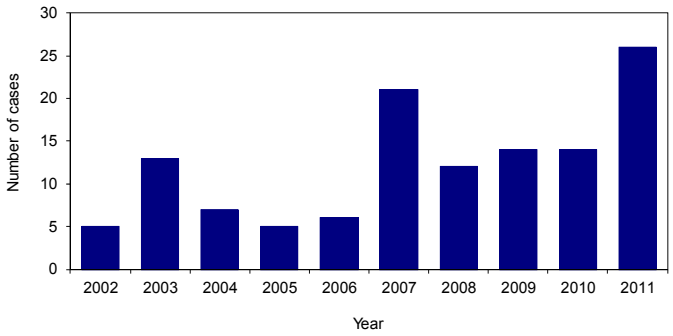
Anaplasmosis is a tickborne disease caused by *Anaplasma phagocytophilum*. It was previously known as human granulocytic ehrlichiosis (HGE) and thought to be caused by another species of *Ehrlichia*, but was later renamed human granulocytic anaplasmosis (HGA) when the bacterium was reclassified as *A. phagocytophilum*. The principal vector for *A. phagocytophilum* is *Ixodes scapularis* and most cases are reported from the Northeastern and upper Midwestern U.S. HGA became nationally notifiable in 1999.

There is no standardized surveillance program for identifying disease in ticks in Florida, making it difficult to ascertain why case numbers might fluctuate from year to year. Since HGA was recognized as a separate reportable disease in 1999, there have been consistently more cases of HME than HGA reported in Florida.

Disease Abstract

Between 2002 and 2010, the total number of ehrlichiosis and anaplasmosis cases reported annually ranged from five cases in 2002 (four HME and one HGA) to 21 cases in 2007 (18 HME and three HGA) with an overall increasing trend (Figure 1). From 2007 to 2010, Florida averaged just over 12 cases of HME per year and less than three cases of HGA per year. In 2011, 15 cases of HME and 11 cases of HGA were reported. Though cases of both ehrlichiosis and anaplasmosis are reported year-round, peak transmission occurs during the late spring and early summer months (Figure 2). Eleven (73.3%) ehrlichiosis cases occurred prior to June in 2011, compared to only four (36.4%) anaplasmosis cases, indicating an earlier peak in transmission.

Figure 1. Reported Ehrlichiosis/Anaplasmosis Cases by Year Reported, Florida, 2002-2011

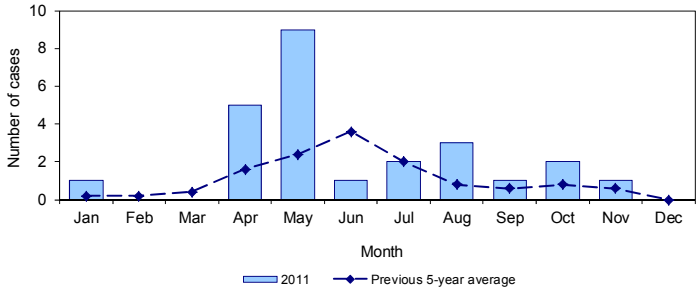


Ehrlichiosis and anaplasmosis are primarily seen among adults (Figure 3). The average age of ehrlichiosis cases in 2011 was 60 years, which is similar to historic trends, but higher than the average age of 45 for anaplasmosis cases. Ehrlichiosis and anaplasmosis cases were reported in 16 (23.8%) of 67 Florida counties, with the majority of the cases being reported in northern Florida (Figure 4).

Two (13.3%) of the 15 reported ehrlichiosis cases acquired infection outside Florida (Massachusetts and Tennessee). Anaplasmosis cases were more likely to be imported, with four (36.4%) of 11 cases acquiring infection in other states (Michigan, Minnesota, New York, and Washington). The number of anaplasmosis cases increased from three in 2010 to 11 in 2011; all three cases acquired infection in Florida in 2010 and six (54.5%) cases acquired infection in Florida in 2011. Although the cause is not clearly identifiable, the increase in locally-acquired anaplasmosis cases could result from a combination of factors, including HME antibody cross-reaction with HGA, increased clinician awareness and testing for HGA and HME, and true increased prevalence of *A. phagocytophilum*-infected ticks. Interestingly, HGA is transmitted by the same vector as Lyme disease and there were an increased number of locally acquired Lyme disease infections in 2011 as well.

Eight (53.3%) ehrlichiosis cases and six (54.5%) anaplasmosis cases were hospitalized in 2011 but no deaths were reported. Although no Florida cases of *E. ewingii* infections were reported in 2011, *E. ewingii* infection was suspected in a Florida blood donor after it was identified in a Georgia recipient. The Georgia recipient was an immunocompromised child who developed symptoms consistent with ehrlichiosis approximately two weeks after being transfused with platelets from the Florida donor. PCR testing at the Mayo Clinic and Centers for Disease Control and Prevention (CDC) confirmed *E. ewingii* as the causative agent in the recipient. The asymptomatic donor was identified through traceback investigation and reported recent tick exposure after he tested positive for ehrlichiosis on serologic assays. More detailed human tick-borne illness surveillance reports are available at: http://doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_surveillance_reports.html.

Figure 2. Reported Ehrlichiosis/Anaplasmosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: One case was reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Ehrlichiosis/Anaplasmosis Cases by Age Group, Florida, 2011 and 2006-2010 Average

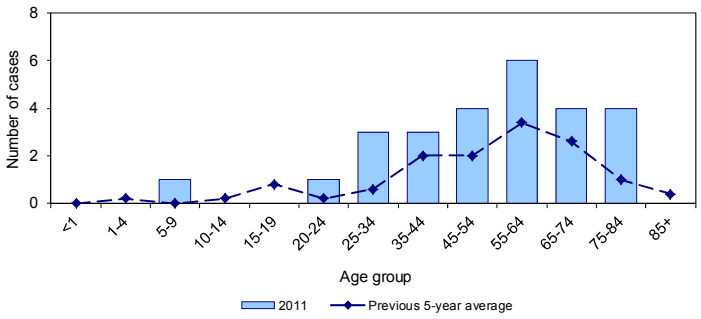
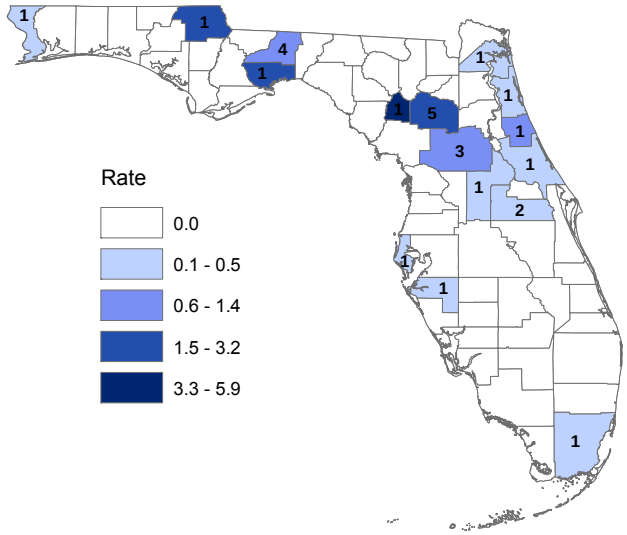


Figure 4. Reported Ehrlichiosis/Anaplasmosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

Both HME and HGA can be treated with doxycycline, though prevention of tick bites is the best way to avoid disease. Prevention measures include the following strategies:

- Wear light-colored clothing so that ticks crawling on clothing are visible.
- Tuck pant legs into socks so that ticks cannot crawl inside clothing.
- Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary.
- Search the body for ticks frequently when spending time in potentially tick-infested areas.
- If a tick is found, it should be removed as soon as possible.
  - Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting.
  - Do not use bare fingers to crush ticks.
  - Wash hands following tick removal.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

References

Centers for Disease Control and Prevention. Ehrlichiosis.
Available at http://www.cdc.gov/ehrlichiosis/.

Centers for Disease Control and Prevention. 2006. Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever, Ehrlichiosis, and Anaplasmosis—United States. *Morbidity and Mortality Weekly Report*, 55 (RR04);1-27.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5504a1.htm.

Additional Resources

Florida Department of Health. Tick-Borne Disease in Florida.
Available at http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

Florida Department of Health. Tick-Borne Disease Surveillance Summaries.
Available at http://doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_surveillance_reports.html.

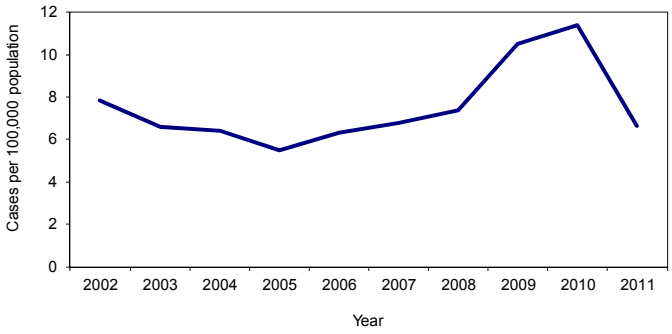
Giardiasis

Giardiasis			
Number of cases			1,255
2011 incidence rate per 100,000 population			6.6
Percent change from 5-year average (2006-2010) reported incidence rate			-21.8%
Age			Years
Mean			29.5
Median			27.0
Min-Max			0 - 99
Race	Number	(Percent)	Rate
White	926	(84.0%)	6.5
Black	93	(8.4%)	3.1
Other	83	(7.5%)	4.8
Unk	153		
Ethnicity	Number	(Percent)	Rate
Hispanic	353	(32.3%)	8.2
Non-Hispanic	740	(67.7%)	5.1
Unk	162		
Sex	Number	(Percent)	Rate
Male	696	(55.6%)	7.5
Female	556	(44.4%)	5.7
Unk	3		

Disease Abstract

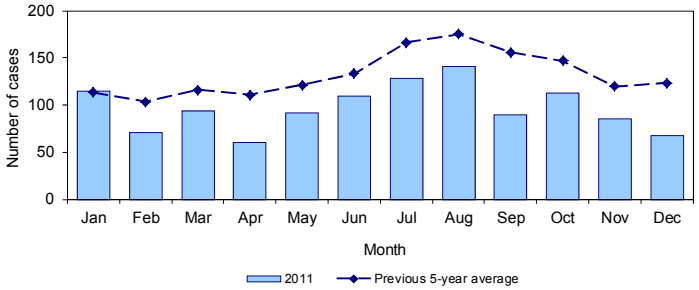
Giardiasis is a diarrheal illness caused by the parasite *Giardia*. The incidence rate for giardiasis remained relatively stable from 2002 to 2008 (Figure 1). Prior to August 2008, laboratory-confirmed cases had to be symptomatic to meet the case definition. Starting in August 2008, laboratory-confirmed cases did not have to be symptomatic to meet the case definition, which significantly increased the number of reported cases in 2009 and 2010. In January 2011, the case definition reverted back to requiring symptoms, and the number of cases reported dropped to 1,255 in 2011, which was comparable to the number of cases reported in 2008 (1,391).

Figure 1. Reported Giardiasis Incidence Rate by Year Reported, Florida, 2002-2011



Each year, the number of cases increases in the summer and early fall months (Figure 2). The month of August historically has the largest number of reported cases, which was also true in 2011. There was a winter peak in cases in January that was similar to the previous 5-year average, which was likely due to a lag in implementing the change in case definition. The highest reported incidence rates continue to occur in children aged 1-4 years and 5-9 years (Figure 3). There were 259 cases reported among children <5 years old, of whom 87 (33.6%) attended daycare. In 2011, giardiasis was reported in 59 (88.1%) of 67 counties in Florida (Figure 4).

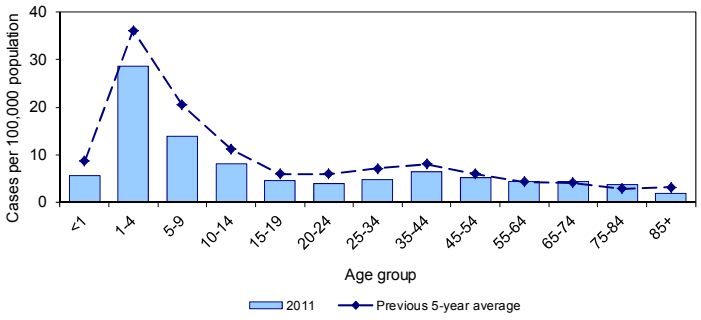
Figure 2. Reported Giardiasis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

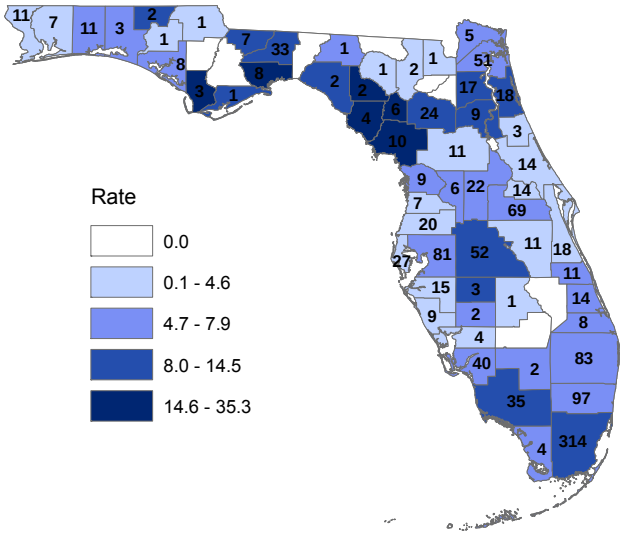
Note: Eighty-nine cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Giardiasis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average



Historically, approximately 96-99% of cases are confirmed; 1,230 (98.0%) reported cases were confirmed in 2011. There was in increase in the proportion of cases that were reportedly outbreak-associated. From 2007 to 2010, an average of 5.4% of cases was outbreak-associated; in 2011, 129 (10.3%) cases were outbreak-associated though no large outbreaks were identified. The proportion of cases that acquired infection outside of the U.S. increased significantly during 2009 and 2010 (33.8% of cases and 35.6% of cases respectively) primarily due to refugee screening identifying asymptomatic cases. In 2011, only 262 (20.9%) reported cases had acquired infection outside the U.S., which is comparable to 2008 when laboratory-confirmed cases had to be symptomatic to meet the case definition. Of giardiasis cases identified as acquiring illness from outside the U.S. in 2011, 117 (44.7%) infections were acquired in Cuba.

Figure 4. Reported Giardiasis Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



Prevention

Most *Giardia* infections can be avoided or reduced by practicing good hand hygiene. This is particularly important after toilet use, before handling food, and before eating. Children with diarrhea should be kept home from child care centers to reduce the chances of spreading infection to others. Other ways to prevent *Giardia* infection include the following strategies:

- Avoid eating food and swallowing recreational water (such as from ponds and lakes) that might be contaminated.
- Avoid drinking untreated water from shallow wells, lakes, rivers, springs, ponds, and streams.
- Avoid drinking tap water when traveling in countries where the water may not be adequately filtered and treated.
- Avoid consuming untreated ice.
- Boil water of unsafe or uncertain origin for the most reliable way to make water safe for drinking.
- Use filters and chemical disinfection (including chlorination) for surface water supplies; the effectiveness of chlorine is dependent on several factors, including pH, temperature, and organic content of the water.
- Avoid use of recreational water venues for two weeks after symptoms resolve if you have had *Giardia*-associated diarrhea.

Additional Resources

Centers for Disease Control and Prevention. Parasites - *Giardia*.
Available at http://www.cdc.gov/parasites/giardia/.

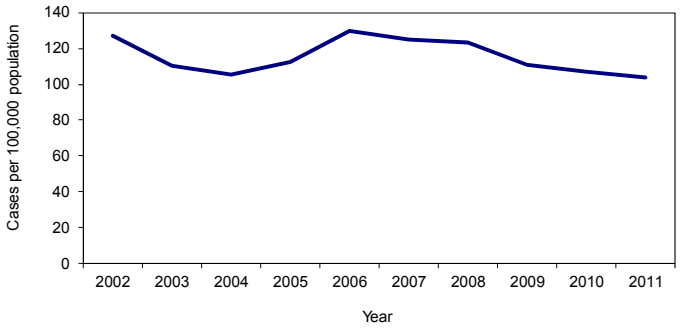
Gonorrhea

Gonorrhea			
Number of cases			19,694
2011 incidence rate per 100,000 population			104.0
Percent change from 5-year average (2006-2010) reported incidence rate			-12.8%
Age			Years
Mean			25.2
Median			23
Min-Max			2 - 87
Race	Number	(Percent)	Rate
White	4,733	(26.8%)	33.4
Black	12,068	(68.4%)	396.9
Other	833	(4.7%)	48.2
Unk	2,060		
Ethnicity	Number	(Percent)	Rate
Hispanic	1,655	(10.1%)	38.4
Non-Hispanic	14,717	(89.9%)	100.7
Unk	3,322		
Sex	Number	(Percent)	Rate
Male	9,678	(49.2%)	104.5
Female	10,001	(50.8%)	103.4
Unk	15		

Disease Abstract

Gonorrhea a sexually transmitted disease (STD) caused by *Neisseria gonorrhoeae* bacteria, which grows easily in the warm, moist areas of the reproductive tract, urethra, mouth, throat, eyes, and anus. Most women and some men with gonorrhea do not have any symptoms. Initial symptoms in women can include a painful or burning sensation when urinating, increased vaginal discharge, or vaginal bleeding between periods. Women with gonorrhea are at risk of developing serious complications from the infection, even if symptoms are not present or are mild. Common symptoms in men include a burning sensation when urinating, or a white, yellow, or green discharge from the penis that usually appears 1 to 14 days after infection. Sometimes men with gonorrhea get painful or swollen testicles.

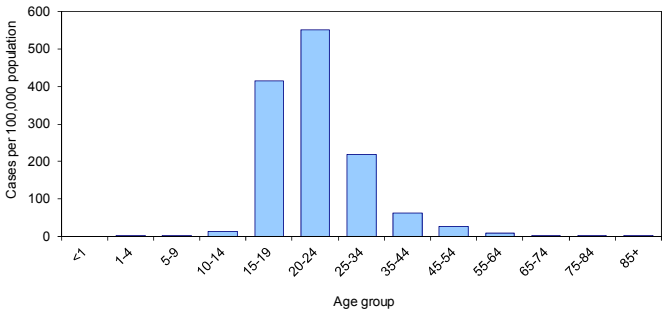
Figure 1. Reported Gonorrhea Incidence Rate, Florida, 2002-2011



The number of cases and rate of gonorrhea have declined nationally and in Florida in the past five years as other reportable STD infections have increased (Figure 1). A shift in treatment guidelines and recommendations for screening of women under the age of 25 contributed to the decrease in gonorrhea cases. The increases noted among certain racial or ethnic groups may be an artifact of improved reporting of core variables and do not necessarily indicate true increases in cases. In spite of successes, core areas of infection persist in pockets of the state and may correlate to socioeconomic indicators often unrecognized in data reporting. Gonorrhea prevalence continues to impact minority populations and continues to increase among men who have sex with men (MSM) and HIV positive populations. To better understand the factors contributing to the acquisition of the disease, accurate, timely, and comprehensive reporting in conjunction with disease investigation must continue. Additionally, core clusters of infection must be better understood.

The rate of gonorrhea is highest among 20 to 24-year-olds, followed by 15 to 19-year-olds. In 2011, 16,980 (86.2%) reported cases were in 15 to 34-year olds (Figure 2). Gender differences in prevalence are less apparent when compared to trends noted in other sexually transmitted diseases. Males and females each account for about half of cases reported. The number of cases in males decreased among 20 to 24-year olds, but increased among 25 to 34, 45 to 54, and 55-year-olds in 2011. The number of cases in females increased among

Figure 2. Reported Gonorrhea Incidence Rate by Age Group, Florida, 2011



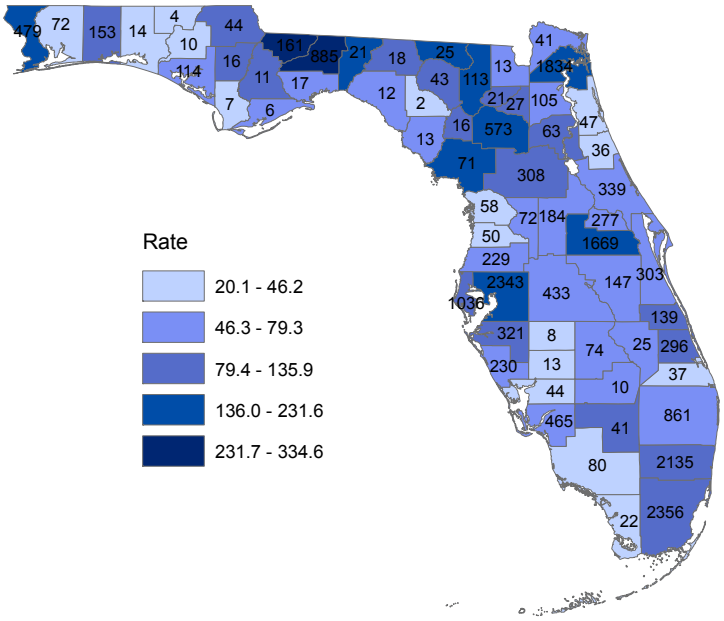
Note: 26 cases from 2011 were missing data on age and are not included.

25 to 29 and 35 to 39-year-olds in 2011. Approximately 7% of infected women were pregnant at time of the disease diagnosis. Non-Hispanic blacks account for approximately two-thirds of reported gonorrhea cases in Florida. The number of cases in non-Hispanic whites and Hispanics increased in 2011.

Gonorrhea was reported in all 67 Florida counties. Six of the most populous counties in the state accounted for 11,373 (57.7%) cases, with each county reporting over 1,000 cases (Figure 3). Thirty-two (47.8%) counties had an increase in cases from 2010, although Hillsborough County was the only urban area to show an increase. Several smaller, less populated counties had the highest rates per 100,000; Gadsden and Leon counties had the highest gonorrhea rates in 2011 (334.6 and 320.1 cases per 100,000 population, respectively).

The emerging threat of antimicrobial resistance has garnered national attention. A summary of gonococcal antimicrobial resistance surveillance trends are included in Section 4: Summary of Antimicrobial Resistance Surveillance.

Figure 3. Reported Gonorrhea Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Co-infection and Subsequent Infections

In 2011, 745 (3.8%) new cases of gonorrhea were co-infected with HIV. HIV co-infection rate varied greatly by sexual preference; 224 (1.2%) cases who reported being heterosexual were co-infected, while 541 (73.8%) cases who reported being MSM were co-infected. Chlamydia co-infection was reported in 1,752 (8.9%) gonorrhea cases; only 37 (0.2%) gonorrhea cases were co-infected with syphilis.

Subsequent infections were defined as a new infection reported more than 30 days after a reported gonorrhea infection; 442 (2.2%) cases had a subsequent gonorrhea infection, 370 (1.8%) had a subsequent chlamydia infection, and 29 (0.1%) had a subsequent syphilis infection. The mean time between a reported gonorrhea infection and diagnosis of a subsequent bacterial STD was 134.0 days.

Prevention

The American Congress of Obstetricians and Gynecologists and the Centers for Disease Control and Prevention recommend annual gonorrhea screening for all sexually active women under age 26 and for older women with risk factors such as new or multiple sex partners. Latex condoms, when used consistently and correctly, can reduce the risk of getting or giving gonorrhea. The most certain way to avoid gonorrhea is not to have sex or to be in a long-term, mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

References

Centers for Disease Control and Prevention. Gonorrhea - CDC Fact Sheet. Available at http://www.cdc.gov/std/Gonorrhea/STDFact-gonorrhea.htm.

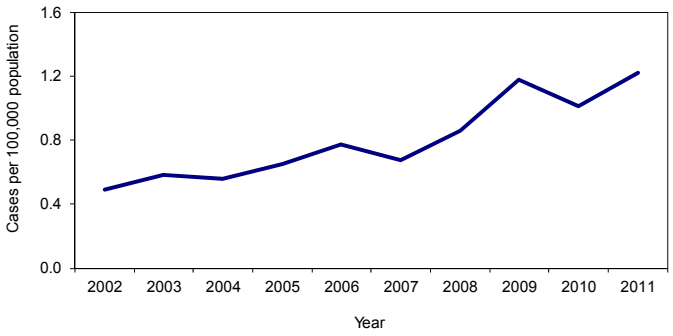
Haemophilus influenzae, Invasive Disease

Haemophilus influenzae, Invasive Disease		
Number of cases		232
2011 incidence rate per 100,000 population		1.2
Percent change from 5-year average (2006-2010) reported incidence rate		35.8%
Age		Years
Mean		59.3
Median		66.0
Min-Max		0 - 101
Race	Number (Percent)	Rate
White	184 (79.7%)	1.3
Black	40 (17.3%)	1.3
Other	7 (3.0%)	NA
Unk	1	
Ethnicity	Number (Percent)	Rate
Hispanic	35 (15.1%)	0.8
Non-Hispanic	197 (84.9%)	1.3
Unk	0	
Sex	Number (Percent)	Rate
Male	112 (48.3%)	1.2
Female	120 (51.7%)	1.2
Unk	0	

Disease Abstract

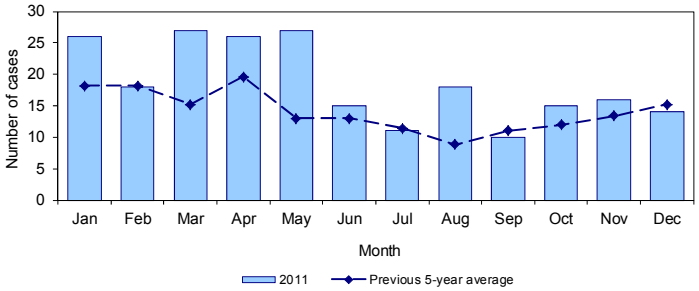
Invasive disease caused by *Haemophilus influenzae* bacteria can manifest as pneumonia, bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, or purulent pericarditis; less common infections include endocarditis and osteomyelitis. The incidence rate for all invasive diseases caused by *H. influenzae* has gradually increased over the past ten years (Figure 1).

Figure 1. Reported *Haemophilus influenzae*, Invasive Disease Incidence Rate by Year Reported, Florida, 2002-2011



In 2011, the incidence rate was 35.8% higher than the average incidence from 2006 to 2010. In 2011, all 232 reported cases were confirmed. The number of cases reported is typically lowest in the summer during the months of July through September (Figure 2). In 2011, there was a slightly different pattern with increased disease identified in both May and August. The number of cases in 2011 met or exceeded the previous 5-year average in most months. The highest reported incidence rates occurred in those aged under one year or in those over 85 years (Figure 3). In 2011, the incidence rates by age group were very close to the previous 5-year average, with the exception of those 85 years and older, where incidence approximately doubled in 2011. Invasive disease caused by *H. influenzae* was reported in 43 (64.2%) of the 67 counties in Florida. Counties with the highest incidence rates were distributed throughout the state (Figure 4). Nearly all cases of invasive disease caused by *H. influenzae* are sporadic; only two cases in 2011 were reported as outbreak-associated.

Figure 2. Reported *Haemophilus influenzae*, Invasive Disease Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Nine cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported *Haemophilus influenzae*, Invasive Disease Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

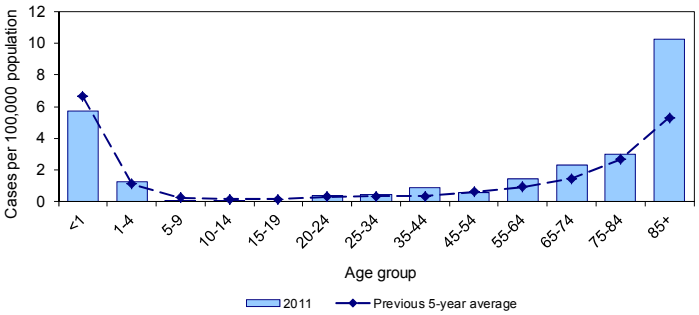
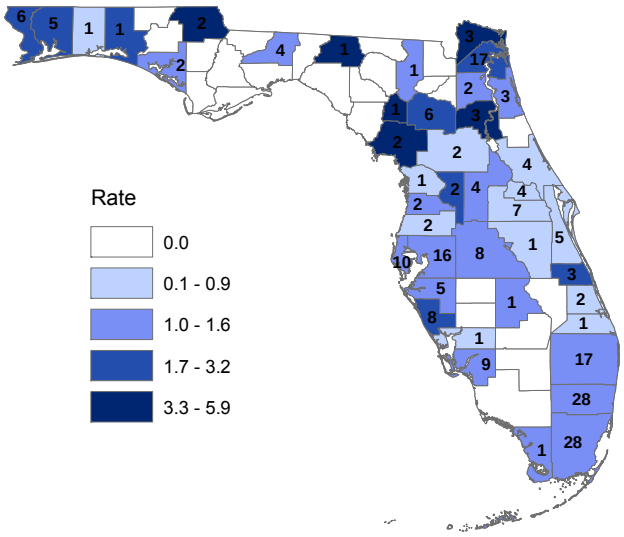


Figure 4. Reported *Haemophilus influenzae*, Invasive Disease Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Invasive Disease in Children Less than 5 Years Old

H. influenzae serotype b is vaccine preventable, so infections in children under age 5 continue to be carefully tracked to evaluate vaccination status and breakthrough infections. Meningitis and septicemia due to *H. influenzae* type b (Hib), formerly very common in preschool-age children, have almost been eliminated.

In 2011, there were zero cases of invasive disease caused by Hib in children less than 5-years-old. This represents a decrease from the previous year where there were four cases reported.

Prevention

Conjugate vaccines against Hib for infants and children are recommended by the Advisory Committee on Immunization Practices. See Additional Resources below for more information on vaccination against Hib.

Additional Resources

Centers for Disease Control and Prevention. 1999. Combination Vaccines for Childhood Immunization. *Morbidity and Mortality Weekly Report*, 48(RR05);1-15. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm.

Centers for Disease Control and Prevention. 1999. *Haemophilus* b Conjugate Vaccines for Prevention of *Haemophilus influenzae* Type b Disease Among Infants and Children Two Months of Age and Older Recommendations of the ACIP. *Morbidity and Mortality Weekly Report*, 40(RR01);1-7. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/00041736.htm.

Centers for Disease Control and Prevention. *Haemophilus influenzae* Disease (Including Hib). Available at http://www.cdc.gov/hi-disease/clinicians.html.

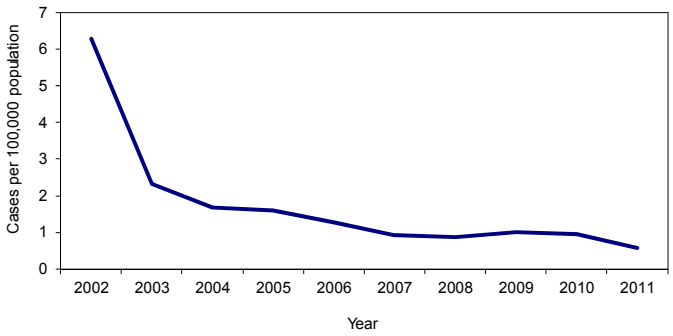
Hepatitis A

Hepatitis A			
Number of cases			110
2011 incidence rate per 100,000 population			0.6
Percent change from 5-year average (2006-2010) reported incidence rate			-42.1%
Age			Years
Mean			40.3
Median			35.0
Min-Max			5 - 96
Race	Number	(Percent)	Rate
White	85	(80.2%)	0.6
Black	8	(7.5%)	NA
Other	13	(12.3%)	NA
Unk	4		
Ethnicity	Number	(Percent)	Rate
Hispanic	41	(38.7%)	1.0
Non-Hispanic	65	(61.3%)	0.4
Unk	4		
Sex	Number	(Percent)	Rate
Male	50	(45.5%)	0.5
Female	60	(54.5%)	0.6
Unk	0		

Disease Abstract

Hepatitis A is a vaccine-preventable disease caused by infection with the hepatitis A virus that leads to inflammation of the liver. Infections may be asymptomatic or may include fever, malaise, nausea, and abdominal discomfort, followed within a few days by jaundice. In 2011, 110 cases of hepatitis A were reported in Florida, a decrease from the 178 cases reported in 2010. The incidence rate for hepatitis A in Florida has declined markedly since 2002, which mirrors a similar decline observed nationally (Figure 1). The decrease in Florida and nationally is likely due to increased use of the vaccine to protect against hepatitis A virus, which first became commercially available in 1995.

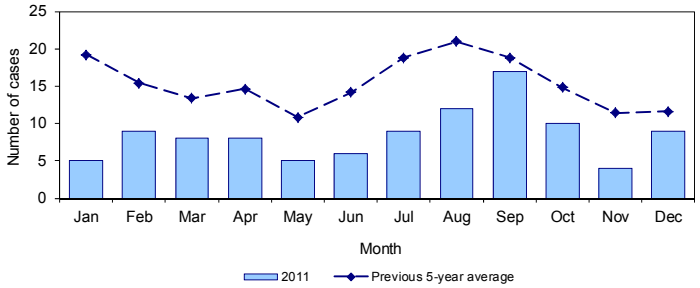
Figure 1. Reported Hepatitis A Incidence Rate by Year Reported, Florida, 2002-2011



The annual incidence in Florida for 2011 was 0.6 cases per 100,000 which is a decrease from the previous five years and a substantial decrease from the annual incidence of four to six cases per 100,000 observed between 1998 and 2002.

Hepatitis A occurs throughout the year, with slightly higher rates in late summer (Figure 2). In 2011, incidence rates were lower than the previous 5-year average in most age groups but the rate was increased among 15 to 24-year-olds and those 75 and over (Figure 3). The largest decrease in incidence was observed among children under 15 years old, which is consistent with an effect of wide use of the vaccine in children. During 2011, hepatitis A was reported in 32 (48.8%) of 67 counties in Florida (Figure 4).

Figure 2. Reported Hepatitis A Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Eight cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Hepatitis A Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

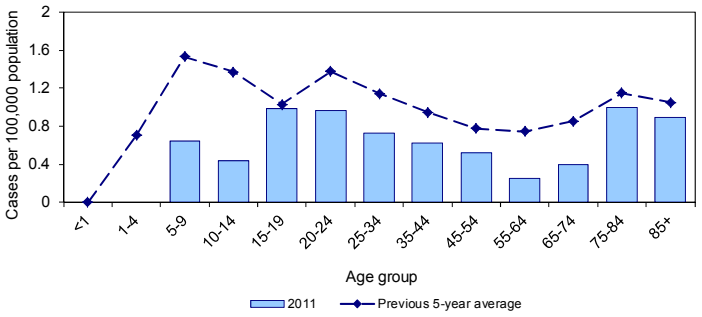
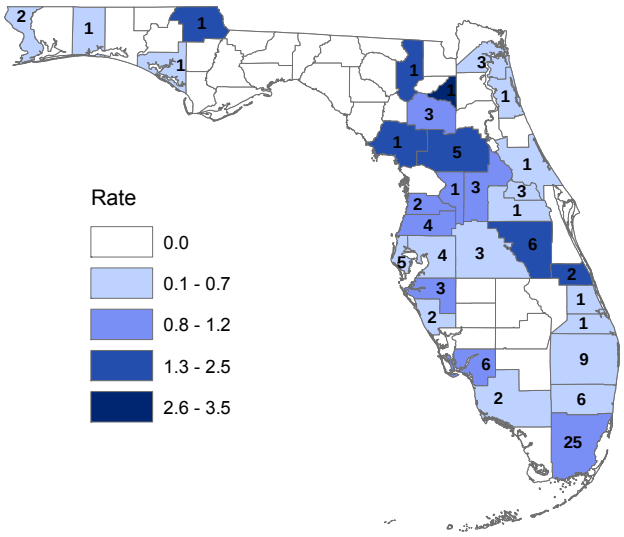


Figure 4. Reported Hepatitis A Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



In 2011, 87 (79.0%) hepatitis A cases were classified as confirmed. Most cases were apparently isolated events and only 12 (10.9%) cases reported contact with a person with confirmed or suspected hepatitis A infection in the two to six weeks prior to their illness. Approximately 38 (34.5%) cases reported a travel history outside the U.S. and Canada in the two to six weeks prior to illness. Additionally, 12 (10.9%) cases reported that a household member had traveled outside of the U.S. or Canada. No cases were children or employees in a daycare center, preschool, or nursery; three (2.7%) were employed as healthcare workers, and only two (1.8%) cases were employed as food handlers during the two weeks prior to symptom onset.

Prevention

Currently the single antigen, two-dose hepatitis A vaccine is recommended as part of the routine immunization schedule for all children, starting at one year of age. However, this is not a requirement for childcare or school entry in Florida. The doses should be spaced at least six months apart. A combined hepatitis A and hepatitis B vaccine is available for adults over 18 years old, and is administered in three doses.

In addition to routine childhood immunization, hepatitis A vaccine is also recommended for people without a documented history of vaccination or past disease who are at increased risk of infection, listed below.

- Those traveling to developing countries.
- Close contacts of adopted children newly arriving from developing countries.
- Men who have sex with men.
- Injection and non-injection drug users.
- People with a clotting-factor disorder.
- People with chronic liver disease (at risk for fulminant hepatitis A).
- People at occupational risk for infection.

Other efforts to prevent hepatitis A infection should focus on disrupting transmission through:

- Good sanitation and personal hygiene
- Hand washing after use of the toilet and before preparing food for others
- Washing fruits and vegetables before eating

Illness among food handlers or persons in childcare settings should be promptly identified and reported to allow action to be taken to prevent further spread of the disease in those settings. In outbreak situations, immune globulin may be administered to at-risk contacts of infected individuals, particularly children under one year and adults over age 40. Recently updated guidelines, based on results from a clinical trial, recommend using vaccine rather than immune globulin for post-exposure prophylaxis in healthy individuals aged 1-40 years. All post-exposure prophylaxis should be administered within two weeks of exposure.

References

Centers for Disease Control and Prevention. 2006. Prevention of Hepatitis A Through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity and Mortality Weekly Report*, 55(RR07);1-23. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5507a1.htm.

Centers for Disease Control and Prevention. 2007. Update: Prevention of Hepatitis A after Exposure to Hepatitis A Virus and in International Travelers. Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity and Mortality Weekly Report*, 56(41);1080-1084. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5641a3.htm.

Additional Resources

Centers for Disease Control and Prevention. Viral Hepatitis. Available at http://www.cdc.gov/NCIDOD/diseases/hepatitis/a/index.htm.

Centers for Disease Control and Prevention. 2012. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 5th ed. Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

Centers for Disease Control and Prevention. 2012. *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 12th ed. Available at http://www.cdc.gov/vaccines/pubs/pinkbook/index.html.

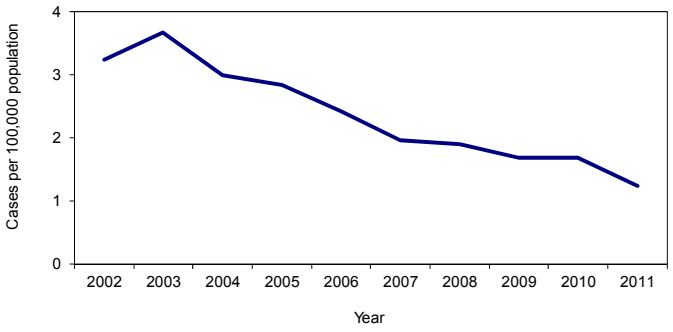
Hepatitis B, Acute

Acute Hepatitis B			
Number of cases			234
2011 incidence rate per 100,000 population			1.2
Percent change from 5-year average (2006-2010) reported incidence rate			-36.0%
Age			Years
Mean			44.8
Median			43.0
Min-Max			3 - 85
Race	Number	(Percent)	Rate
White	163	(74.8%)	1.2
Black	41	(18.8%)	1.3
Other	14	(6.4%)	NA
Unk	16		
Ethnicity	Number	(Percent)	Rate
Hispanic	31	(14.4%)	0.7
Non-Hispanic	184	(85.6%)	1.3
Unk	19		
Sex	Number	(Percent)	Rate
Male	142	(60.7%)	1.5
Female	92	(39.3%)	1.0
Unk	0		

Disease Abstract

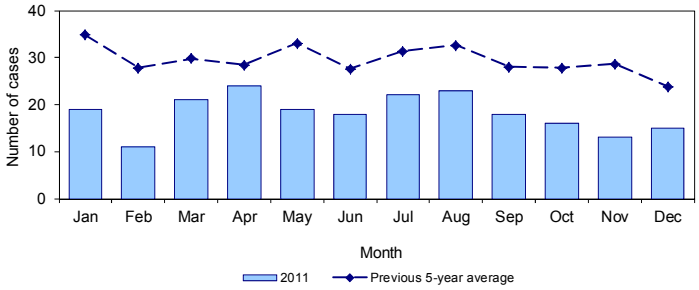
Hepatitis B is a vaccine-preventable disease caused by infection with the hepatitis B virus (HBV) that leads to inflammation of the liver. Symptoms may include loss of appetite, vague abdominal discomfort, nausea, and vomiting, often progressing to jaundice. The incidence rate for acute hepatitis B has declined gradually over the last ten years (Figure 1). There is no seasonal trend for acute hepatitis B (Figure 2). The highest historical incidence rates occurred in the 25 to 44-year-old age groups (Figure 3). The 2011 incidence rate in these age groups was still high, but the highest incidence was among those aged 35-44 years. In 2011, incidence rates were equal to or lower than the previous 5 -year average in all age groups, except among 1 to 4-year-olds and 15 to 19-year-olds. Historically, the incidence of hepatitis B is lowest in people aged ≤19 years. However, there were three reports of acute hepatitis B reported in those aged ≤19 in 2011. Rates have always been low in children, and are even lower with widespread immunization. Acute hepatitis B was reported in 40 (59.7%) of the 67 counties in Florida (Figure 4). Groupings of high-rate counties can be seen in the center of the state and along the northern border.

Figure 1. Reported Acute Hepatitis B Incidence Rate by Year Reported, Florida, 2002-2011



In 2011, 213 (91.0%) of the 234 reported cases were confirmed. The symptoms of acute viral hepatic illness may prompt individuals to seek immediate medical attention. Of 2011 cases, 146 (62.4%) were hospitalized and two (0.9%) deaths were reported. Only four (1.7%) cases were classified as outbreak-associated based on a confirmed exposure with someone known to be infected with hepatitis B. Twenty-six (11.1%) cases reported possible contact with someone with hepatitis B, and of these, 15 (57.7%) reported the ill person was a sexual partner. Drug use has also been associated with HBV infection. Of the 234 acute hepatitis B cases, 25 (10.7%) reported injection drug use and 42 (17.9%) reported using other street drugs. HBV infection has also been associated with improper sterilization or sharing of needles to create tattoos. In 2011, 18 (7.7%) of those with an acute HBV infection had recently received a tattoo. Sexual behavior may also place an individual at risk for HBV infection. However, individuals often decline to comment on the frequency of sexual partners and/or their sexual preference. For 2011, sexual preference and frequency of sexual partnerships are summarized in Table 1.

Figure 2. Reported Acute Hepatitis B Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Fourteen cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Acute Hepatitis B Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

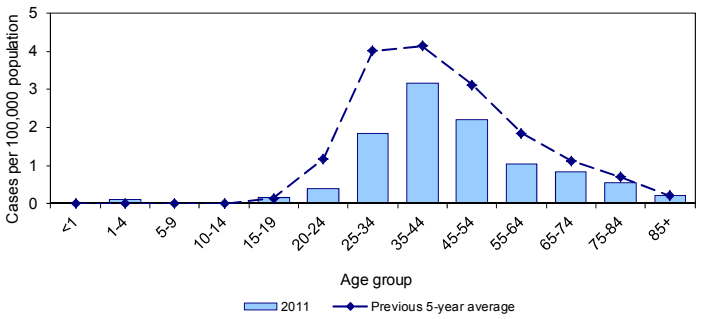


Figure 4. Reported Acute Hepatitis B Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

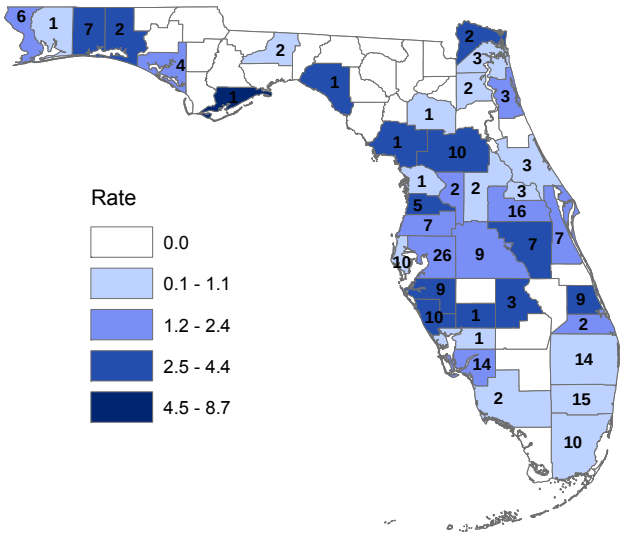


Table 1. Distribution of the Number of Sexual Partners in the Six Months Prior to Symptom Onset for People with Reported Acute Hepatitis B, Florida 2011

Number of sexual partners*	Male cases (N=142)		Female cases (N=92)	
	Number (percent) of male partners	Number (percent) of female partners	Number (percent) of male partners	Number (percent) of female partners
0	86 (60.6)	29 (20.4)	17 (18.5)	65 (70.7)
1	5 (3.5)	49 (34.5)	36 (39.1)	1 (1.1)
2-5	6 (4.2)	15 (10.6)	16 (17.4)	3 (3.3)
>5	6 (4.2)	12 (8.5)	2 (2.2)	0 (0.0)
Unknown	37 (26.1)	36 (25.4)	20 (21.7)	21 (22.8)
No answer	2 (1.4)	1 (0.7)	1 (1.1)	2 (2.1)
Total	142 (100.0)	142 (100.0)	92 (100.0)	92 (100.0)
Cases reporting ≥1	17 (12.0)	76 (53.5)	54 (58.7)	4 (4.3)

* Sexual history is collected by asking about the number of sexual partnerships in the last 6 months prior to having symptoms, regardless of gender.

Prevention

Hepatitis B vaccines are available to protect against HBV infection. In healthcare settings, implementing universal precautions for individuals in contact with body fluids will reduce risk to healthcare workers.

High-risk groups for infection are listed below.

- Drug users who share needles.
- Healthcare workers who have contact with infected blood.
- Men who have sex with men.
- People who have multiple sexual partners.
- Household contacts of infected persons.
- Infants born to mothers who are HBV carriers.

References

Centers for Disease Control and Prevention. 1999. Notice to Readers Update: Recommendations to Prevent Hepatitis B Virus Transmission -- United States. *Morbidity and Mortality Weekly Report*, 48(2):33-34. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/00056293.htm.

Centers for Disease Control and Prevention. 2005. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States. Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part 1: Immunization of Infants, Children, and Adolescents. *Morbidity and Mortality Weekly Report*, 54(RR16);1-23. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5416a1.htm.

Centers for Disease Control and Prevention. 2008. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed. Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

Centers for Disease Control and Prevention. 2009. Surveillance for Acute Viral Hepatitis---United States, 2007. *Morbidity and Mortality Weekly Report*, 58(SS03);1-27. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5803a1.htm.

Centers for Disease Control and Prevention. 2012. *Epidemiology and Prevention of Vaccine- Preventable Diseases*, 12th ed. Available at http://www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Additional Resources

Centers for Disease Control and Prevention. Hepatitis B Information for Health Professionals. Available at http://www.cdc.gov/hepatitis/HBV/index.htm.

Centers for Disease Control and Prevention. Viral Hepatitis – Resource Center. Available at http://www.cdc.gov/hepatitis/Resources/Professionals/MMWRs.htm.

World Health Organization. Hepatitis B. Available at http://www.who.int/mediacentre/factsheets/fs204/en/.

Hepatitis B (HBsAg+) in Pregnant Women

Hepatitis B (+HBsAg) in Pregnant Women			
Number of cases			481
2011 incidence rate per 100,000 population			13.5
Percent change from 5-year average (2006-2010) reported incidence rate			-12.6%
Age			Years
Mean			30.1
Median			30.0
Min-Max			15 - 48
Race	Number	(Percent)	Rate
White	86	(18.7%)	0.6
Black	199	(43.2%)	6.5
Other	176	(38.2%)	10.2
Unk	20		
Ethnicity	Number	(Percent)	Rate
Hispanic	43	(9.5%)	1.0
Non-Hispanic	412	(90.5%)	2.8
Unk	26		
Sex	Number	(Percent)	Rate
Male	0	(0.0%)	NA
Female	481	(100.0%)	5.0
Unk	0		

Disease Abstract

Hepatitis B is a vaccine-preventable disease caused by infection with the hepatitis B virus (HBV) that leads to inflammation of the liver. Diagnostic testing for hepatitis B includes testing for presence of hepatitis B surface antigen (HBsAg+). If a pregnant woman is found to be HBsAg+, there is an increased risk for the infant to be exposed to the virus and become chronically infected with HBV. There were 481 pregnant women who were HBsAg+ in 2011, which is an increase from 438 women in 2010 (Figure 1).

Figure 1. Reported Hepatitis B (+HBsAg) in Pregnant Women Incidence Rate by Year Reported, Florida, 2002-2011

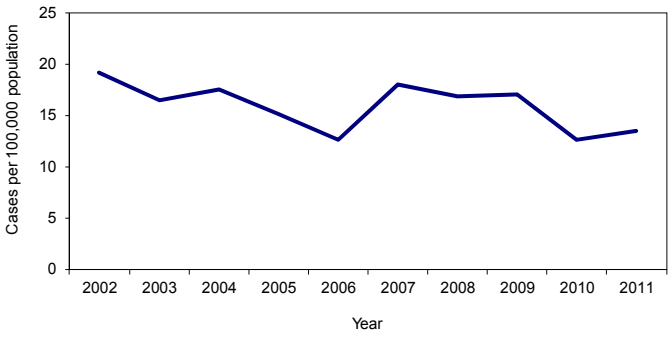
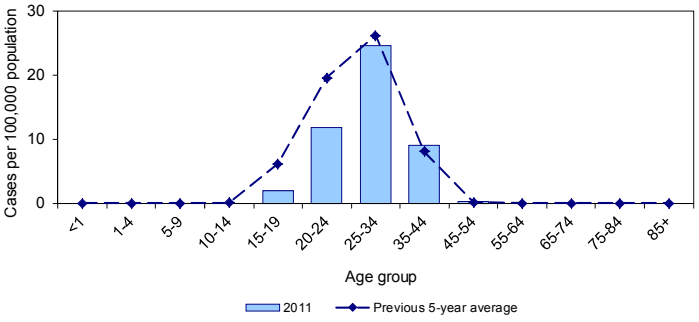


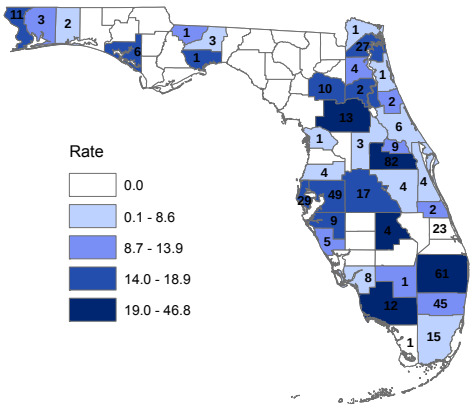
Figure 2. Reported Hepatitis B (+HBsAg) in Pregnant Women Incidence Rate in Age Group, Florida, 2011 and 2006-2010 Average



The incidence rate for 25 to 34-year-olds was highest, with most cases identified among women during routine prenatal screening (Figure 2). HBsAg+ pregnant women were reported in 38 (56.7%) of the 67 Florida counties (Figure 3).

No Florida-born infants were identified as perinatal cases of hepatitis B, compared to one infant in 2010. Of note, the 2010 case had received all three recommended doses of HBV-containing vaccine and HBV immune globulin after birth. In 2009 there were no Florida-born infants identified as perinatal cases of hepatitis B.

Figure 3. Reported Hepatitis B (HBsAg+) in Pregnant Women, Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

Hepatitis B immune globulin (HBIG) is prepared from human plasma known to contain a high titer of antibody to HBsAg (anti-HBs). A regimen combining HBIG and hepatitis B vaccine is 85%-95% effective in preventing HBV infection when administered at birth to infants born to HBsAg+ mothers. HBIG and the first dose of hepatitis B vaccine should be administered within 12 hours of birth. The second dose should be given at one month of age and the third dose at six months of age. Dose three of hepatitis B vaccine should not be given before six months of age. These infants should have serologic testing at nine to 15 months of age to determine if a protective antibody response developed after vaccination. Infants who do not respond to the primary vaccination series should be given three additional doses of hepatitis B vaccine in a 0, 1-2, 4-6 month schedule and have HBsAg and anti-HBs blood tests repeated to determine response. Combination vaccines are also available to for children and adults.

References

Centers for Disease Control and Prevention. 2005. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States. Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part 1: Immunization of Infants, Children, and Adolescents. *Morbidity and Mortality Weekly Report*, 54(RR16);1-23.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5416a1.htm.

Centers for Disease Control and Prevention. 2006. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults. *Morbidity and Mortality Weekly Report*, 55(RR16);1-25.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5516a1.htm.

Centers for Disease Control and Prevention. 2012. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 5th ed.
Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

Centers for Disease Control and Prevention. 2012. *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 12th ed.
Available at http://www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Additional Resources

Centers for Disease Control and Prevention. Hepatitis B Vaccination.
Available at http://www.cdc.gov/vaccines/vpd-vac/hepb/default.htm.

Centers for Disease Control and Prevention. Immunization Schedules.
Available at http://www.cdc.gov/vaccines/schedules/index.html.

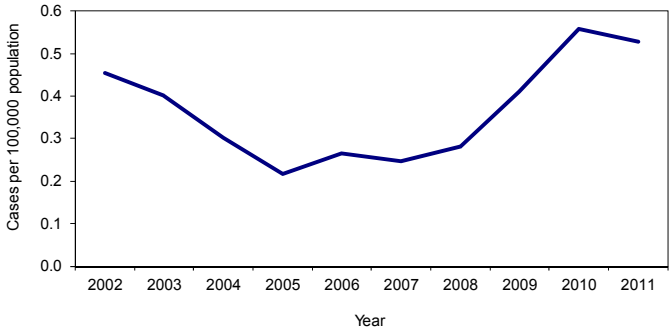
Hepatitis C, Acute

Acute Hepatitis C			
Number of cases			100
2011 incidence rate per 100,000 population			0.5
Percent change from 5-year average (2006-2010) reported incidence rate			50.0%
Age			Years
Mean			34.4
Median			30.5
Min-Max			12 - 67
Race	Number	(Percent)	Rate
White	89	(91.8%)	0.6
Black	6	(6.2%)	NA
Other	2	(2.1%)	NA
Unk	3		
Ethnicity	Number	(Percent)	Rate
Hispanic	11	(11.3%)	NA
Non-Hispanic	86	(88.7%)	0.6
Unk	3		
Sex	Number	(Percent)	Rate
Male	51	(51.0%)	0.6
Female	49	(49.0%)	0.5
Unk	0		

Disease Abstract

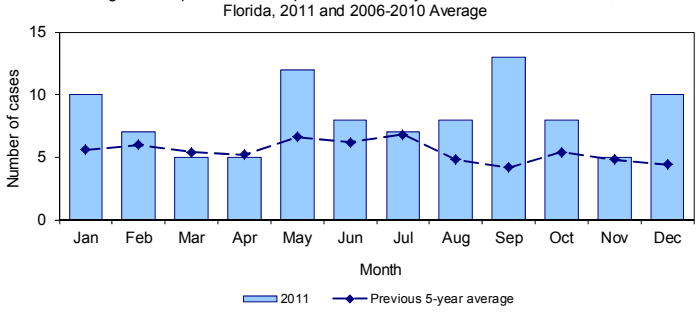
Hepatitis C is a viral disease that leads to inflammation of the liver. Infection with hepatitis C virus (HCV) is a leading cause of chronic liver disease, ranging from mild to severe, including cirrhosis and liver cancer. Approximately 75-85% of persons infected with HCV will develop chronic infection and approximately 60-70% of chronically infected people will develop chronic liver disease. Acute HCV infection is distinguishable from chronic HCV infection only by the presence of symptoms compatible with an acute viral infection. A total of 100 acute hepatitis C cases were reported in 2011. The incidence rate for acute hepatitis C has been variable over the last ten years; incidence was low from 2005 to 2008, but has increased since 2008. There was a 50.0% increase in 2011 compared to the previous 5-year average incidence (Figure 1).

Figure 1. Reported Acute Hepatitis C Incidence Rate by Year Reported, Florida, 2002-2011



There is no seasonal trend for acute hepatitis C (Figure 2). Overall, the highest incidence rates for 2011 occurred among 25 to 34-year-olds, which is consistent with historical trends. However, when the cases are broken down into smaller age groups, the historical trend is not as consistent. In 2011, the incidence rates were higher than the previous 5-year average in all age groups in which cases were reported except for those aged 35-44 years and those aged 65-74 years (Figure 3). Acute hepatitis C cases were reported in 26 (38.8%) of 67 counties in Florida (Figure 4).

Figure 2. Reported Acute Hepatitis C Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Two cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Acute Hepatitis C Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

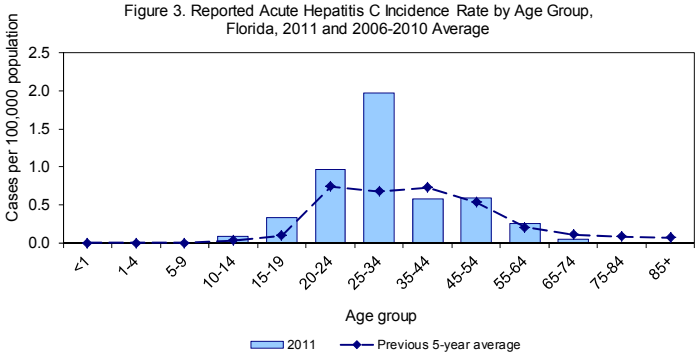
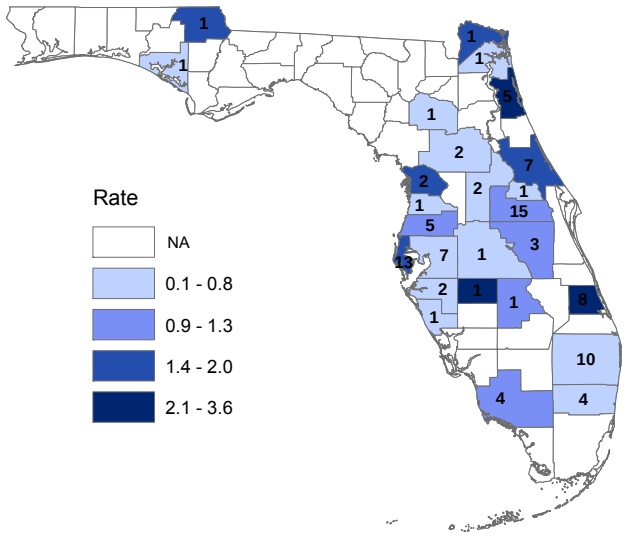


Figure 4. Reported Acute Hepatitis C Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



NA Hepatitis C is reported by health care providers and through laboratory test reports. Not all counties perform interviews of hepatitis C laboratory reports, which are needed to further differentiate acute and chronic infections.

The acute hepatitis C surveillance case definition changed in 2008, leading to more cases being classified as confirmed compared to previous reporting years. In 2011, 64 (64.0%) cases were confirmed compared to 53.3% in 2010, 68.8% in 2009, 61.5% in 2008, 34.0% in 2007, and 36.7% in 2006.

In 2011, there were three acute hepatitis C cases classified as outbreak-associated due to an epidemiological link to a confirmed or suspected hepatitis C case. There was one death of an acute hepatitis C case due to substance abuse. Some acute infections may have been unrecognized as acute infections and reported or classified as chronic infections. Newly recognized chronic infections in young adults share many risk factors and other characteristics with acute cases. Selected risk factors for acute HCV infections in 2011 are summarized in Table 1.

Table 1. Selected Risk Factors for Reported Acute Hepatitis C Cases, Florida 2011

Risk Factor	Male cases (N=51) Number (percent)	Female cases (N=49) Number (percent)
Body piercing	1 (2.0)	3 (6.1)
Tattoo	9 (17.7)	5 (10.2)
Injection drug use	20 (39.2)	21 (42.9)
Street drug use	17 (33.3)	16 (32.7)

Prevention

Use universal precautions for individuals in contact with body fluids in healthcare settings. High-risk groups for infection are below:

- Drug abusers who share needles
- Healthcare workers who have contact with infected blood
- Men who have sex with men
- People who have multiple sexual partners
- Household contacts of infected persons
- Infants born to mothers who are HCV carriers

References

Centers for Disease Control and Prevention. 1998. Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease. *Morbidity and Mortality Weekly Report,* 47(RR19);1-39.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/00055154.htm.

Centers for Disease Control and Prevention. 2011. Hepatitis C Virus Infection Among Adolescents and Young Adults --- Massachusetts, 2002—2009. *Morbidity and Mortality Weekly Report*, 60(17);537-541.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6017a2.htm.

Centers for Disease Control and Prevention. 2012. Notes from the Field: Hepatitis C Virus Infections Among Young Adults — Rural Wisconsin, 2010. *Morbidity and Mortality Weekly Report*, 61(19);358-358.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6119a7.htm?s_cid=mm6119a7_w.

Additional Resources

Centers for Disease Control and Prevention. Viral Hepatitis.
Available at http://www.cdc.gov/ncidod/diseases/hepatitis/c/faq.htm#1a.

Florida Department of Health. Hepatitis Prevention Program.
Available at http://www.doh.state.fl.us/disease_ctrl/aids/hep/index.html.

HIV Infection and AIDS

HIV Infection		
Number of cases		6,046
2011 incidence rate per 100,000 population		31.9
Percent change from 5-year average (2006-2010) reported incidence rate		-7.5%
Age		Years
Mean		39.0
Median		39
Min-Max		0-92
Race	Number (Percent)	Rate
White	3,097 (51.4%)	21.9
Black	2,845 (47.2%)	93.6
Other	83 (1.4%)	4.8
Unk	21	
Ethnicity	Number (Percent)	Rate
Hispanic	1,365 (23.1%)	31.6
Non-Hispanic	4,542 (76.9%)	31.1
Unk	139	
Sex	Number (Percent)	Rate
Male	4,613 (76.3%)	49.8
Female	1,433 (23.7%)	14.8
Unk	0	

AIDS		
Number of cases		3,442
2011 incidence rate per 100,000 population		18.2
Percent change from 5-year average (2006-2010) reported incidence rate		-16.8%
Age		Years
Mean		42.8
Median		43
Min-Max		8-92
Race	Number (Percent)	Rate
White	1,430 (41.6%)	10.1
Black	1,966 (57.2%)	64.7
Other	39 (1.1%)	2.3
Unk	7	
Ethnicity	Number (Percent)	Rate
Hispanic	650 (19.1%)	15.1
Non-Hispanic	2,751 (80.9%)	18.8
Unk	41	
Sex	Number (Percent)	Rate
Male	2,337 (67.9%)	25.2
Female	1,105 (32.1%)	11.4
Unk	0	

Disease Abstract

HIV is the virus that can lead to AIDS. HIV is most commonly transmitted through anal sex, vaginal sex, and sharing drug injection equipment with an infected person. Within a few weeks of being infected with HIV, some people develop flu-like symptoms that last for a week or two, but others have no symptoms at all. People living with HIV may appear and feel healthy for several years. AIDS is the late stage of HIV infection, when a person's immune system is severely damaged and has difficulty fighting diseases and certain cancers.

In 2010 (the most recent year for which national data are available), 43,607 HIV infection cases were reported nationally, with an estimated 33,015 AIDS cases diagnosed. Florida ranked first in the nation for HIV infections reported and third for AIDS cases diagnosed, contributing 12.0% and 11.1% of the nation's cases, respectively.

When duplicate HIV or AIDS cases are identified in previous years, these cases are deleted from the surveillance system database; therefore, the number of cases presented in this report for 2002-2010 may be lower than the number of cases presented in reports from previous years.

Newly reported HIV infection cases decreased each year from 2002 until 2007 (Figure 1). In November 2006, reporting laws were changed to include additional types of laboratory results. This, along with the expansion of electronic laboratory reporting in 2008, led to more cases reported during that time.

Reported AIDS cases increased in 2004 due to increased CD4 testing statewide (CD4 testing is used to monitor immune function and disease progression). Electronic laboratory reporting delays in late 2007 decreased cases that should have been reported in that year and contributed to an artificial spike in 2008. The expansion of electronic laboratory reporting in 2008 increased the completeness and timeliness of reporting, which further contributed to the peak that year (Figure 2).

The highest rate of reported HIV infection cases in 2011 was among 20 to 44-year-olds, compared to the rate of AIDS cases, which was highest among 35 to 54-year-olds (Figure 3). HIV infection cases tend to be younger than AIDS cases and reflect more recent transmission; HIV infection cases thus present a more current picture of the epidemic.

Figure 1. Reported HIV Infection Incidence Rate, Florida, 2002-2011

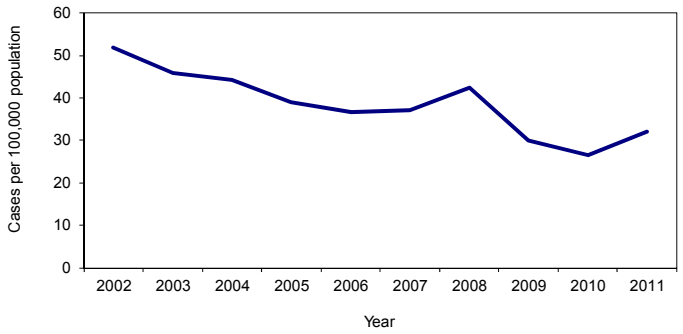
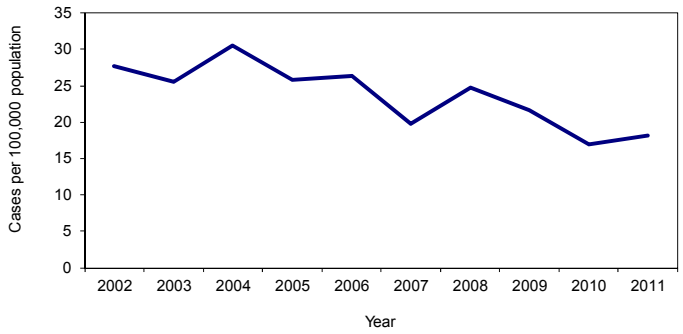
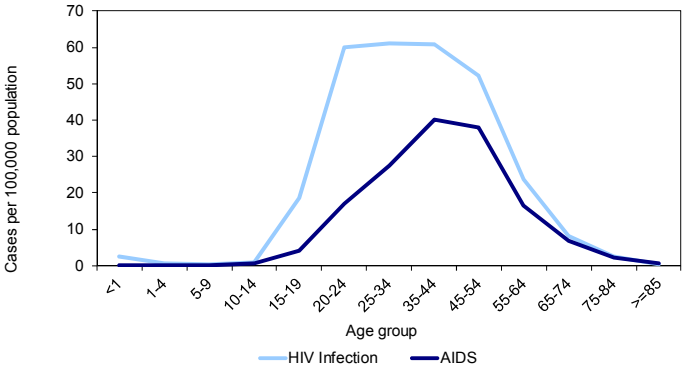


Figure 2. Reported AIDS Incidence Rate, Florida, 2002-2011



Over the past decade, the proportion of adult (13 years and older) HIV infection cases among men has increased while the proportion among women has decreased. The result is an increase in the male-to-female ratio, from 2.2:1 in 2002 to 3.2:1 in 2011. The relative increase in adult male HIV cases might be attributed to proportional increases in HIV transmission among men who have sex with men (MSM). Although the proportion of adult (13 years and older) AIDS cases among men and women has remained fairly level over the past decade, the male-to-female ratio declined slightly from 2.4:1 in 2002 to 2.1:1 in 2011.

Figure 3. Reported HIV Infection and AIDS cases by Age Group, Florida, 2011



In 2011, at least one HIV infection case was reported in all but three Florida counties (Figure 4). Nine counties reported 100 or more cases. These nine counties include Broward, Duval, Hillsborough, Lee, Miami-Dade, Orange, Palm Beach, Pinellas, and Polk. They reported a combined total of 4,606 cases, or 76.2% of Florida's total 6,046 reported cases in 2011. The greatest numbers of HIV cases were reported from Miami-Dade (1,445), Broward (1,040), and Orange (495). These three counties reported a combined total of 2,980 cases in 2011, or 49.3% of the statewide total.

In 2011, at least one AIDS case was reported in all but three Florida counties (Figure 5). Although the AIDS epidemic is widespread throughout Florida, the majority of cases were reported from eight counties: Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, Pinellas, and St. Lucie, with each reporting over 100 cases in 2011. These eight counties reported a combined total of 2,531 cases, or 73.5% of Florida's total 3,442 reported cases in 2011. The greatest numbers of AIDS cases were reported from two counties located in the southeastern part of the state, Broward (613 cases) and Miami-Dade (736 cases). Their combined total (1,349 cases) represents 39.2% of the 2011 statewide total.

Risk factors for reported HIV infection and AIDS cases are presented in Tables 1 and 2. There has been an increase in newly reported HIV cases among MSM in recent years (data not shown). This is demonstrated by the higher percent of MSM among HIV cases compared to AIDS cases (70.6% of HIV cases, 58.6% of AIDS cases), as HIV cases tend to represent a more recent picture of the epidemic.

Figure 4. Reported HIV Infection Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

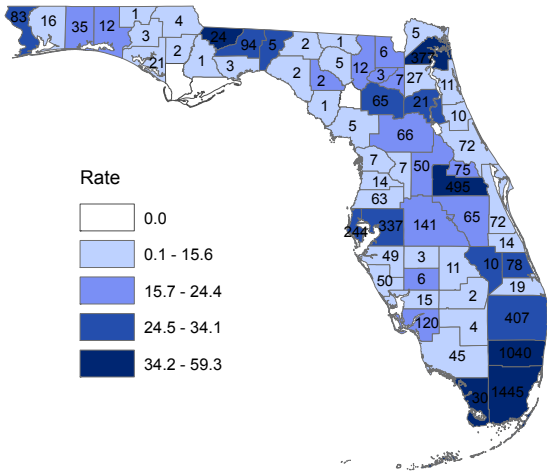


Figure 5. Reported AIDS Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

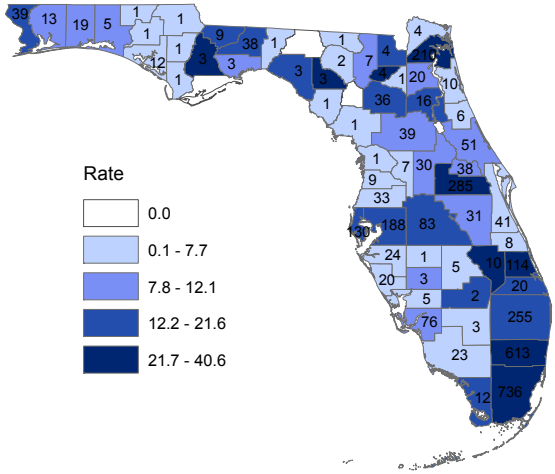


Table 1. Risk Factors for Reported Adult (13 Years and Older) HIV Infection Cases by Gender, Florida 2011

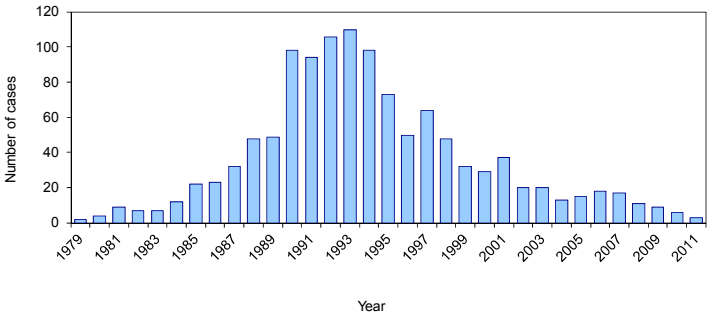
Risk Factor	Male cases (N=4,608)	Female cases (N=1,419)
	Number (percent)	Number (percent)
Men who have sex with men (MSM)	3,255 (70.6)	N/A
Heterosexual	1,057 (22.9)	1,295 (91.3)
Injection drug user (IDU)	192 (4.2)	110 (7.8)
MSM and IDU	94 (2.0)	N/A
Other	10 (0.2)	14 (1.0)
Total	4,608 (100.0)	1,419 (100.0)

Table 2. Risk Factors for Reported Adult (13 Years and Older) AIDS Cases by Gender, Florida 2011

Risk Factor	Male cases (N=2,336)	Female cases (N=1,105)
	Number (percent)	Number (percent)
Men who have sex with men (MSM)	1,368 (58.6)	N/A
Heterosexual	722 (30.9)	962 (87.1)
Injection drug user (IDU)	152 (6.5)	126 (11.4)
MSM and IDU	80 (3.4)	N/A
Other	14 (0.6)	17 (1.5)
Total	2,336 (100.0)	1,105 (100.0)

Perinatal HIV/AIDS Cases

Figure 6. Reported Perinatal HIV/AIDS Cases by Year of Birth, Florida, 1979-2011



From 1979 through 2011, 1,185 perinatally HIV - infected babies were born in Florida (Figure 6). The birth of HIV-infected babies rose from 1979 through 1993. In April 1994, the U.S. Public Health Service released guidelines for using zidovudine (ZDV), also known as azidothymidine (AZT), to reduce perinatal HIV transmission. In 1995, recommendations for HIV counseling and voluntary testing for pregnant women were published. Beginning in October 1996, Florida law required the offering of HIV testing to pregnant women. As a result of this increase in testing for HIV infection, more HIV positive women could be offered ZDV during pregnancy. Enhanced perinatal surveillance systems have documented increased use of ZDV among exposed infants and mothers of HIV-infected children at the prenatal, intrapartum, delivery, and neonatal stages. In the past few years, the use of other medical therapies, including protease inhibitors, has supplemented the use of ZDV for both infected mothers and their babies. The use of these medical therapies has been accompanied by a decrease in the number of perinatally HIV-infected infants and is responsible for the dramatic decline in perinatally-acquired HIV/AIDS since 1994. Other initiatives have also contributed to the reduction in cases. Major initiatives in Florida include Targeted Outreach to Pregnant Women Act (TOPWA) programs, the assignment of perinatal nurses to the most heavily impacted counties, social marketing, and provider education. Combined, these successful initiatives have resulted in a 97.3% decline in perinatal HIV cases in Florida from 110 cases in 1993 to three cases in 2011.

Prevention

HIV is most commonly transmitted through anal sex, vaginal sex, or sharing drug injection equipment with a person infected with HIV. The following recommendations may help reduce the risk of HIV transmission.

- Everyone between the ages of 13 and 64 should be tested for HIV at least once.
- People at increased risk for HIV should be tested at least once per year.
- People with HIV should obtain medical care, treatment, and supportive services.
- HIV-infected women who are pregnant or who are planning to become pregnant should seek prenatal health care services.
- Abstain from sexual activity or seek a long-term mutually monogamous relationship with an uninfected partner.
- Limit the number of sex partners.
- Use latex condoms correctly and consistently.
- Male circumcision has been shown to reduce the risk of HIV transmission from women to men during vaginal sex.
- Do not inject drugs. Injection drug users should seek counseling and treatment to stop or reduce drug use.
- Obtain medical treatment immediately after exposure to HIV. Sometimes HIV medications can prevent infection if they are started quickly.

Florida's comprehensive HIV prevention program provides high-quality culturally appropriate prevention and education services to Florida's at-risk and HIV-infected populations. The program's overarching goals include reducing the number of new HIV infections, increasing the proportion of HIV-infected persons who know their status, linking HIV-infected persons to care and support services, and reducing risky behaviors that might lead to HIV/STD infection.

Our comprehensive program has multiple components, each designed around evidence-based models that are targeted, monitored, and evaluated to ensure maximum effectiveness. The HIV prevention community planning process provides a voice for persons affected by and infected with HIV. The process is designed to allow information to flow from the top down and from the bottom up and to ensure that all of our prevention activities are aligned with our comprehensive prevention plan.

References

Centers for Disease Control and Prevention. Basic Information about HIV and AIDS.
Available at http://www.cdc.gov/hiv/topics/basic/index.htm#hiv.

Florida Department of Health. Trends & Statistics.
Available at http://www.doh.state.fl.us/disease_ctrl/aids/trends/trends.html.

Lead Poisoning

Lead Poisoning		
Number of cases		742
2011 incidence rate per 100,000 population		3.9
Percent change from 5-year average (2006-2010) reported incidence rate		-19.6%
Age		Years
Mean		29.4
Median		30.0
Min-Max		0 - 89
Race	Number (Percent)	Rate
White	311 (58.0%)	2.2
Black	122 (22.8%)	4.0
Other	103 (19.2%)	6.0
Unk	206	
Ethnicity	Number (Percent)	Rate
Hispanic	168 (31.6%)	3.9
Non-Hispanic	364 (68.4%)	2.5
Unk	210	
Sex	Number (Percent)	Rate
Male	611 (83.5%)	6.6
Female	121 (16.5%)	1.3
Unk	10	

Disease Abstract

Lead is a highly toxic substance and exposure can produce a wide range of adverse health effects. Both adults and children can suffer from the effects of lead poisoning, although childhood lead poisoning is much more common. The most common source of human exposure to lead is paint in homes and buildings built before 1978. Lead can also be emitted into the air from industrial sources, leaded aviation gasoline, and enter drinking water through lead pipes. Lead is used in the production of batteries, ammunition, metal products, and devices to shield X-rays. In recent years, the use of lead in paints, ceramic products, caulking, and pipe solder have been dramatically reduced because of health concerns.

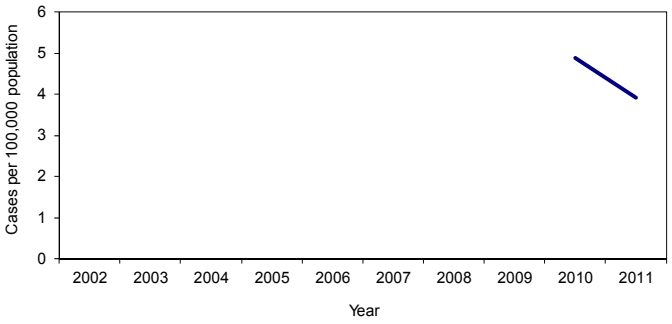
The Florida Department of Health recommends blood lead screening among children less than 6-years-old who are at high risk for lead poisoning. Children under the age of six are considered to be at risk because they tend to put their hands or other objects into their mouths, they absorb a greater percentage of lead than adults, and their developing bodies are more vulnerable to lead's effects.

Other populations at risk include children living in pre-1978 housing, Medicaid-eligible children, children adopted outside of the U.S., refugees, immigrants, and adults who have lead-related occupations or hobbies.

The case definition for lead poisoning has changed over time. Currently, a confirmed case of lead poisoning is defined as an individual with a blood lead level greater than or equal to 10 micrograms per deciliter (µg/dL) from a venous specimen or blood lead level greater than or equal to 10 µg/dL from two capillary specimens taken within three months (12 weeks) of one another.

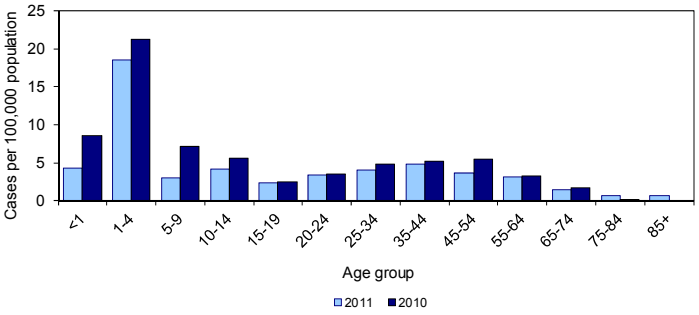
Prior to 2010, lead poisoning case data were primarily stored outside of the state's reportable disease surveillance system; for this reason, only data for 2010 and 2011 are presented in this report. The incidence in 2011 was less than 2010 (Figure 1). Lead poisoning cases were reported in all age groups in 2011, with the highest rates in the 1 to 4-year-olds (Figure 2).

Figure 1. Lead Poisoning Incidence Rate by Year Reported, Florida, 2002-2011



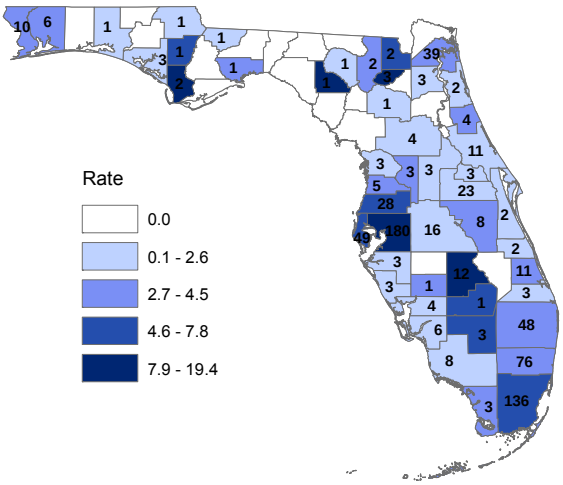
Note: Lead poisoning was not captured consistently in Merlin prior to 2010

Figure 3. Reported Lead Poisoning Incidence Rate by Age Group, Florida, 2010 and 2011



Lead poisoning cases were reported in 49 (73.1%) of the 67 Florida counties (Figure 3). Several counties reported an increased number of lead poisoning cases. Hillsborough County had a large number of new adult cases identified as a result of cases found during occupational blood lead screenings. Specifically, a major battery recycling plant underwent construction expansion and a large number of employees were screened for lead poisoning.

Figure 3. Reported Lead Poisoning Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

Lead poisoning is preventable. The most effective method for preventing lead poisoning is to eliminate lead sources, especially from homes or areas that are frequently visited by children.

- For homes built before 1978, make sure paint is well maintained. Make sure children do not have access to peeling paint or chewable surfaces.
- Check drinking water to ensure it does not contain hazardous levels of lead.
- Use only cold water from the tap for drinking, cooking, and making baby formula. Hot water is more likely to contain higher levels of lead.
- Make sure your child's diet has foods high in iron, calcium, and zinc. These foods make it harder for the body to absorb lead. Check ceramic ware for lead that can leach into food and drinks.
- Do not store alcohol in crystal containers. Crystal decanters and glasses are often made with lead; when an acidic substance or alcohol is left in these containers for longer than just a few hours, there is a risk that the lead could leach into the liquid.
- Lead has been found in some home remedies and cosmetics often imported from the Middle East, Southeast Asia, India, the Dominican Republic, and Mexico. The remedies are usually bright yellow or orange in color. Examples include: Alarcon, Alkohl, Azarcon, Bali goli, Bint alzahab, Coral, Greta, Farouk, Ghasard, Kandu, Kohl, Liga, Litargirio, Lozeena, Pay-loo-ah, Sindoor, and Surma. There are many others. These products should be avoided.
- Cover bare soil play areas. Children should avoid playing in bare soil areas, unless these areas are known to be free of lead.

Children who are at high risk for lead exposures should be tested and follow-up care should be provided for those who are diagnosed with a confirmed case of lead poisoning.

References

Centers for Disease Control and Prevention. Lead.
Available at http://www.cdc.gov/nceh/lead/.

U.S. Environmental Protection Agency. Lead.
Available at http://www.epa.gov/lead/.

Additional Resources

Florida Department of Health. Childhood Lead Poisoning Screening and Case Management Guide.
Available at http://www.doh.state.fl.us/environment/medicine/lead/pdfs/ChildhoodLeadPoisoningScreeningandCaseManagementGuide.pdf.

Florida Department of Health. Healthy Homes and Lead Poisoning Prevention Program.
Available at http://doh.state.fl.us/Environment/medicine/lead/index.html.

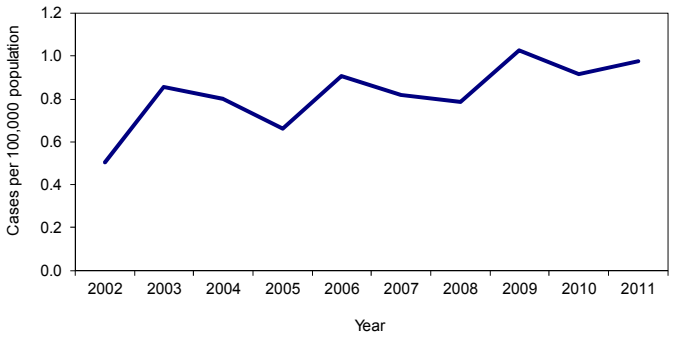
Legionellosis

Legionellosis			
Number of cases			185
2011 incidence rate per 100,000 population			1.0
Percent change from 5-year average (2006-2010) reported incidence rate			9.8%
Age			Years
Mean			61.9
Median			62.0
Min-Max			2 - 98
Race	Number	(Percent)	Rate
White	156	(87.2%)	1.1
Black	22	(12.3%)	0.7
Other	1	(0.6%)	NA
Unk	6		
Ethnicity	Number	(Percent)	Rate
Hispanic	12	(6.7%)	NA
Non-Hispanic	168	(93.3%)	1.1
Unk	5		
Sex	Number	(Percent)	Rate
Male	114	(62.0%)	1.2
Female	70	(38.0%)	0.7
Unk	1		

Disease Abstract

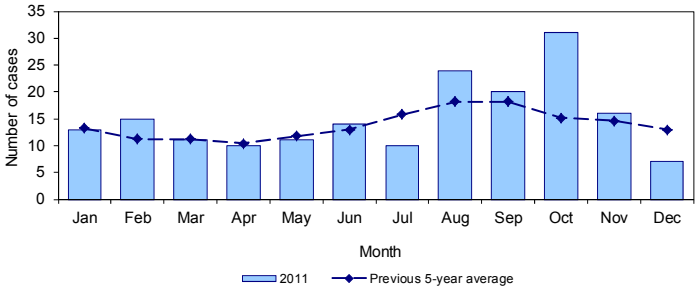
Legionellosis is associated with two clinically and epidemiologically distinct illnesses that are caused by *Legionella* bacteria. Legionnaires' disease is characterized by fever, muscle pain, cough, and clinical or radiographic pneumonia. Pontiac fever is a milder illness without pneumonia. The Florida incidence rate for legionellosis has steadily increased over the past decade, which is consistent with national trends (Figure 1).

Figure 1. Reported Legionellosis Incidence Rate by Year Reported, Florida, 2002-2011



In previous years, the incidence of legionellosis typically increased in the summer months (Figure 2). In 2011, the highest incidence of legionellosis occurred in October, and the number of cases exceeded the previous 5-year average in February, June, August, September, October, and November. The highest incidence rates continue to occur among adults 45 years of age and older (Figure 3). In 2011, those aged 85 years and older had the highest incidence rate, which was substantially higher than the previous 5-year average. Legionellosis cases were reported in 34 (50.7%) of 67 counties in Florida (Figure 4). Counties in the central, southwestern, and southeastern regions of Florida reported the highest incidence rates.

Figure 2. Reported Legionellosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Three cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Legionellosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

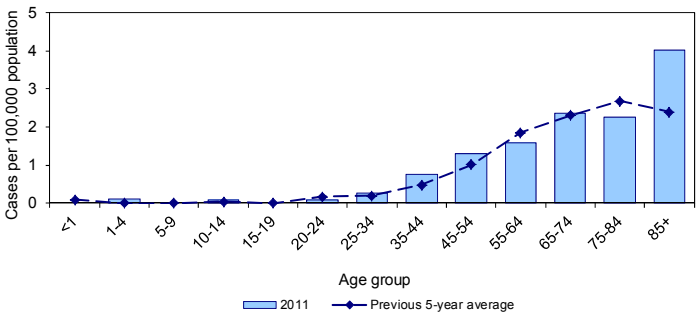
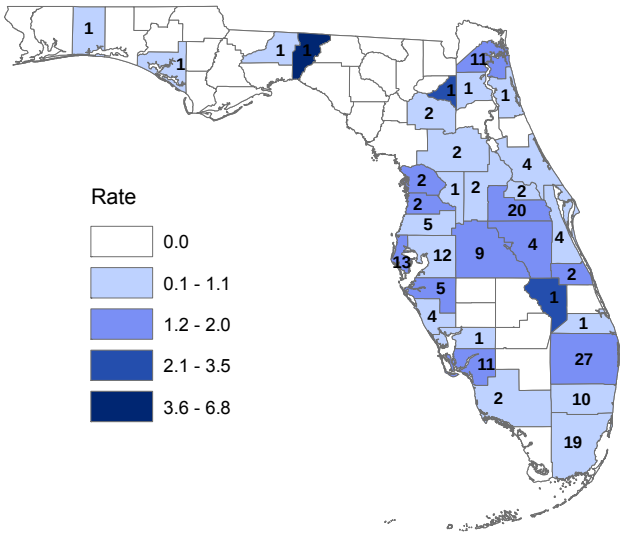


Figure 4. Reported Legionellosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Of the 185 cases reported in 2011, all were confirmed, the vast majority were hospitalized (183 cases, 98.9%), and 15 (8.1%) died with (not necessarily from) legionellosis. Due to *Legionella* testing guidelines, hospitalized pneumonia patients are more likely to receive testing for *Legionella* than outpatients. Seven (3.8%) infections were acquired in states other than Florida and one (0.5%) infection was acquired in the Bahamas. Three (1.6%) outbreak-associated legionellosis cases were reported in October in a mobile home retirement community in Hillsborough County. The likely source was determined to be an outdoor decorative fountain. For additional information on this outbreak, see Section 6: Notable Outbreaks and Case Investigations.

Risk factor data for legionellosis was captured electronically starting in 2011 and are presented in Table 1.

Table 1. Selected Risk Factors for Reported Legionellosis Cases, Florida 2011

Risk Factor	Number (percent)
Visited a hospital as inpatient or outpatient in the two weeks prior to onset	22 (11.9)
Worked at a hospital in the two weeks prior to onset	1 (0.5)
Recently exposed to shower with detachable nozzle	61 (33)
Recently exposed to hot tub or spa	18 (9.7)
Recently exposed to room humidifier	4 (2.2)
Recently exposed to evaporative condenser	3 (1.6)
Recently exposed to ultrasonic mist machine	3 (1.6)
Recently exposed to decorative fountain	20 (10.8)
Home water heater was set at or below 122° F	41 (22.2)
Recent residential plumbing repair	9 (4.9)
Worked with potting soil	17 (9.2)
Health risk factors for legionellosis	149 (80.5)

Prevention

Recommendations to decrease the proliferation of or exposure to *Legionella* bacteria are listed below.

- Drain cooling towers when not in use, and mechanically clean periodically to remove scale and sediment.
- Use appropriate biocides to limit the growth of slime-forming organisms.
- Do not use tap water in respiratory therapy devices.
- Maintain hot water system temperatures at ≥50°C (122°F).
- Provide proper maintenance of hot tub/spas.

References

Neil K, Berkelman R. 2008. Increasing Incidence of Legionellosis in the United States, 1990–2005: Changing Epidemiologic Trends. *Clinical Infectious Disease*, 47(5);591-599. Available at http://cid.oxfordjournals.org/content/47/5/591.full.

Additional Resources

Centers for Disease Control and Prevention. Legionellosis Resource Site. Available at http://www.cdc.gov/legionella/patient_facts.htm.

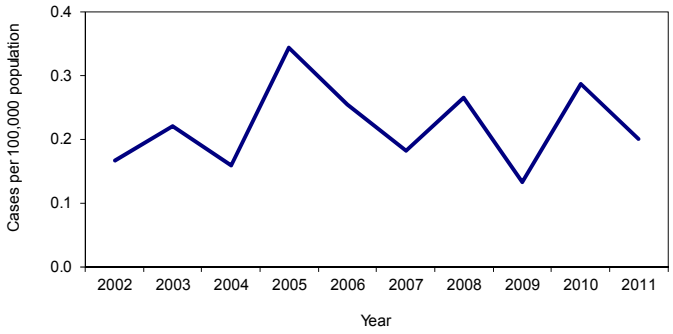
Listeriosis

Listeriosis			
Number of cases			38
2011 incidence rate per 100,000 population			0.2
Percent change from 5-year average (2006-2010) reported incidence rate			-10.6%
Age			Years
Mean			61.6
Median			70.5
Min-Max			0 - 91
Race	Number	(Percent)	Rate
White	30	(83.3%)	0.2
Black	5	(13.9%)	NA
Other	1	(2.8%)	NA
Unk	2		
Ethnicity	Number	(Percent)	Rate
Hispanic	13	(35.1%)	NA
Non-Hispanic	24	(64.9%)	0.2
Unk	1		
Sex	Number	(Percent)	Rate
Male	17	(44.7%)	NA
Female	21	(55.3%)	0.2
Unk	0		

Disease Abstract

Listeriosis is a foodborne illness caused by *Listeria monocytogenes* bacteria resulting in fever and muscle aches, sometimes preceded by diarrhea or other gastrointestinal symptoms. The disease primarily affects older adults, pregnant women, newborns, and adults with weakened immune systems. Rarely, persons without these risk factors can also be affected. The reported incidence rate for listeriosis has shown no clear trend over the last ten years (Figure 1). In 2011, there was a 10.6% decrease in comparison to the previous 5-year average incidence rate. A total of 38 cases were reported in 2011, which is lower than what was reported in 2010 (54 cases).

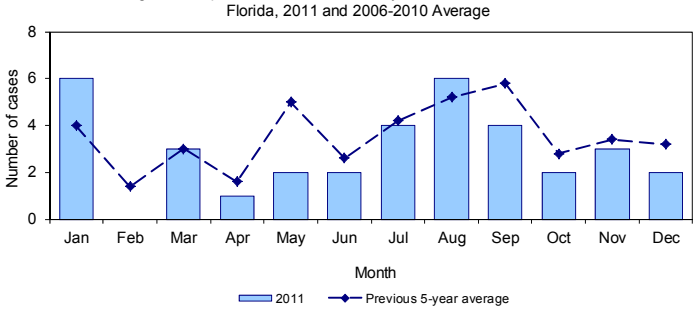
Figure 1. Reported Listeriosis Incidence Rate by Year Reported, Florida, 2002-2011



Historically, the number of cases reported tends to increase slightly in the late summer months with a high number of cases in July, August, and September. In 2011, a similar trend was observed but with a notably early peak in January and a second peak in August (Figure 2). These peaks do not appear to be outbreak-related; all cases were classified as sporadic with the exception of three cases associated with pregnancy.

The highest incidence rates for listeriosis are seen in newborns and the elderly (Figure 3). In 2011, incidence rates were at or lower than the previous 5-year average incidence rates for newborns and those over 65. Listeriosis was reported in 13 (19.4%) of 67 counties in Florida, with a similar geographic distribution to previous years (Figure 4).

Figure 2. Reported Listeriosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Three cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Listeriosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

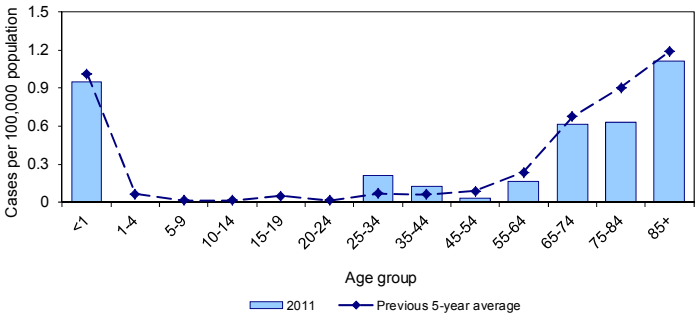
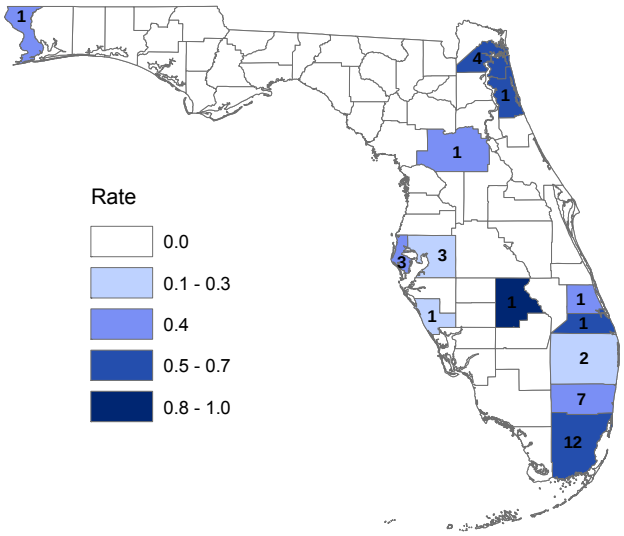


Figure 4. Reported Listeriosis Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



The incidence rate was slightly higher in females than in males for 2011, which is consistent with historical patterns. Groups at increased risk for listeriosis include pregnant women, newborns, persons who are immunocompromised, and older adults. People in these risk groups are also more likely to become seriously ill. In 2011, 35 (92.1%) patients were hospitalized and five died.

Prevention

General guidelines for the prevention of listeriosis:

- Wash raw produce thoroughly before eating, cutting, or cooking. Firm produce, such as melons, should be scrubbed with a clean produce brush.
- Separate uncooked meats and poultry from vegetables, cooked foods, and ready-to-eat foods.
- Wash hands, knives, countertops, and cutting boards after handling and preparing uncooked foods.
- Because *Listeria monocytogenes* can grow in refrigerated foods, use an appliance thermometer to check the temperature inside your refrigerator. The refrigerator should be 40°F or lower and the freezer 0°F or lower.
- Use hot water and soap to immediately clean up all spills in your refrigerator. Special care should be taken with juices from hot dog and lunch meat packages, raw meat, and raw poultry.
- Cook meat and poultry thoroughly. For a list of recommended temperatures for meat and poultry, see the chart at http://www.foodsafety.gov/keep/charts/mintemp.html.
- Do not store food items in the refrigerator beyond the use-by date; consume precooked or ready-to-eat food promptly. A list of storage time guidelines can be found at http://www.foodsafety.gov/keep/charts/storagetimes.html.
- Do not drink raw (unpasteurized) milk or consume foods made with raw milk.

Additional recommendations for high-risk groups (pregnant women, the elderly, persons with AIDS, cancer, diabetes, liver or kidney disease, or otherwise weakened immune systems):

- Do not eat hot dogs, luncheon meats, cold cuts, other deli meats, fermented sausages, or dry sausages unless these items are heated until steaming hot just before serving. Wash hands, utensils, and food preparation surfaces after handling these items.
- Do not eat refrigerated pâté or meat spreads from a deli counter or refrigerated section of a store. Foods that do not need refrigeration, like canned or shelf-stable pâté and meat spreads, are safe to eat. Refrigerate after opening.
- Do not eat soft cheeses such as feta, queso blanco, queso fresco, brie, Camembert, blue-veined, or panela (queso panela) unless it is labeled as made with pasteurized milk.
- Do not eat refrigerated smoked seafood, unless it is contained in a cooked dish, such as a casserole, or unless it is a canned or shelf-stable product.

Additional Resources

Centers for Disease Control and Prevention. *Listeria* (Listeriosis).
Available at http://www.cdc.gov/listeria/.

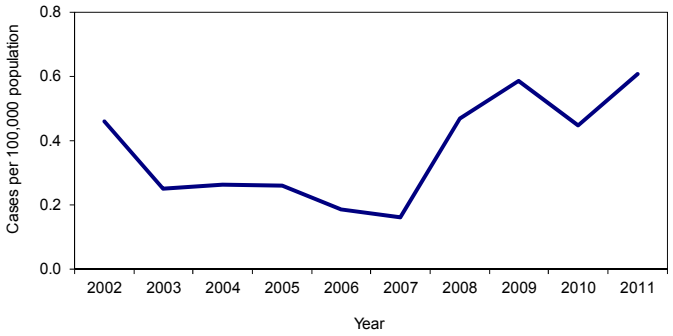
Lyme Disease

Lyme Disease			
Number of cases			115
2011 incidence rate per 100,000 population			0.6
Percent change from 5-year average (2006-2010) reported incidence rate			64.7%
Age			Years
Mean			44.2
Median			46.0
Min-Max			4 - 90
Race	Number	(Percent)	Rate
White	105	(99.1%)	0.7
Black	1	(0.9%)	NA
Other	0	(0.0%)	NA
Unk	9		
Ethnicity	Number	(Percent)	Rate
Hispanic	6	(5.8%)	NA
Non-Hispanic	98	(94.2%)	0.7
Unk	11		
Sex	Number	(Percent)	Rate
Male	66	(57.4%)	0.7
Female	49	(42.6%)	0.5
Unk	0		

Disease Abstract

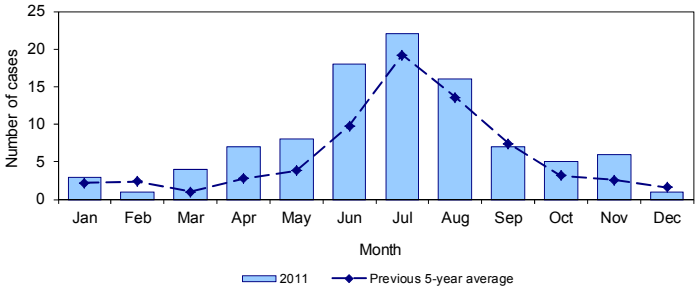
Lyme disease is caused by infection with *Borrelia burgdorferi* bacteria following the bite of an infected tick. Typical symptoms include fever, headache, fatigue, and a characteristic skin rash called erythema migrans. After declines in the reported incidence of Lyme disease in the early part of the decade, incidence has been increasing since 2007 (Figure 1). In 2011, 115 cases were reported in Florida residents, representing a 64.7% increase over the average incidence from 2006 to 2010. Although there is likely a true increase in cases, some of the increase may be partly attributed to a change in the surveillance case definition in 2008, which expanded the acceptable laboratory testing.

Figure 1. Reported Lyme Disease Incidence Rate by Year Reported, Florida, 2002-2011



Lyme disease incidence is historically highest in the summer months with a peak in July, which was the pattern observed in 2011 (Figure 2). In 2011, the highest incidence of Lyme disease was in those 65-84 years old (Figure 3). This general trend is consistent with the previous 5-year average for age; however, the age groups in Florida tend to be older than the nationally reported peak incidence group of those 45-54 years old. The increased peak in 5 to 19-year-olds in 2011 is consistent with national trends. Lyme disease was reported in residents of 30 (44.8%) of the 67 Florida counties, but only 15 counties reported cases where infection was acquired in Florida. Most Florida-acquired infections were reported in North and Central Florida.

Figure 2. Reported Lyme Disease Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Fifteen cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Lyme Disease Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

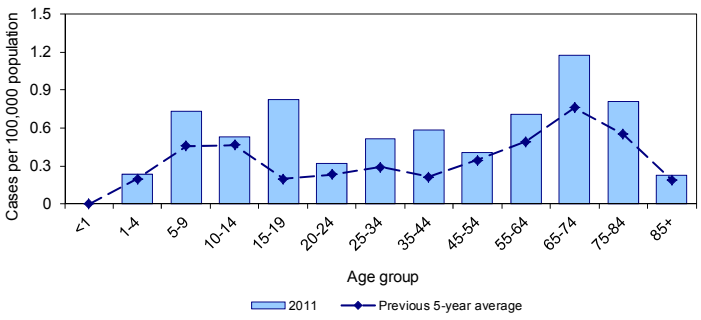
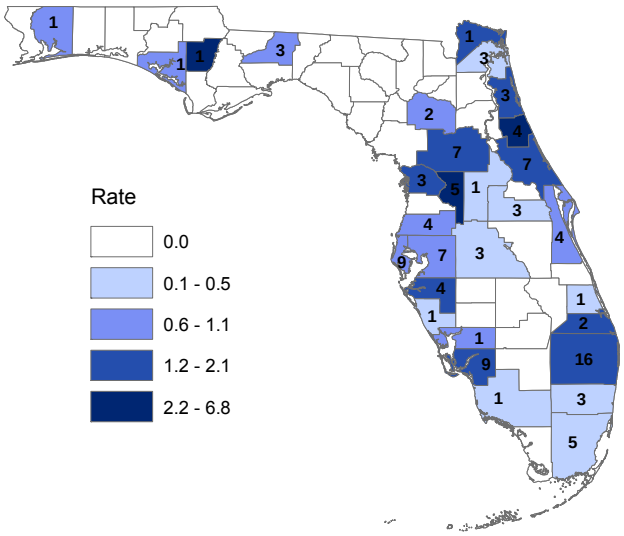


Figure 4. Reported Lyme Disease Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



Of the 115 cases reported in 2011, 78 (67.8%) were confirmed and 37 (32.2%) were probable. Most people (87 cases, 75.6%) acquired their infection while in other states or countries. Florida-acquired Lyme disease infections accounted for 22 (19.1%) cases, which is similar to recent years; 22 (18.2%) cases acquired infection in Florida in 2009 and 22 (26.2%) cases in 2010. Location of exposure was unknown for six (4.3%) cases in 2011. The Northeast and upper Midwest U.S., particularly New York, Massachusetts, Pennsylvania, New Jersey, Connecticut, and Wisconsin, were the states most commonly listed as the exposure locations for Florida cases where infection was acquired outside of the state.

Acute Lyme disease cases include patients with symptoms of less than 30 days duration, without late clinical signs such as intermittent arthritis. Late-manifestation Lyme disease cases include patients with symptoms greater than 30 days duration or those with late clinical signs such as intermittent arthritis or other neurological signs. Of the 87 imported cases, 57 (65.5%) presented with acute disease compared with 17 (77.3%) of the 22 Florida-acquired infections. Of the 57 imported cases with acute disease, 37 (64.9%) reported an erythema migrans skin rash, compared to 10 (58.8%) of those that were Florida-acquired infections. Imported cases are more frequently identified with late-manifestations of Lyme disease: 30 (34.5%) imported cases compared to five (22.7%) Florida-acquired cases. More detailed tick-borne illness surveillance data available at: http://doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_surveillance_reports.html.

Prevention

Lyme disease can be treated with doxycycline, though prevention of tick bites is the best way to avoid disease. Prevention measures include the following strategies:

- Wear light-colored clothing so that ticks crawling on clothing are visible.
- Tuck pants legs into socks so that ticks cannot crawl inside clothing.
- Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary.

- Search the body for ticks frequently when spending time in potentially tick-infested areas.
- If a tick is found, it should be removed as soon as possible.
  - Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting.
  - Do not use bare fingers to crush ticks.
  - Wash hands following tick removal.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

As most Florida cases acquire infection while in Lyme-endemic areas of the Northeastern U.S., these prevention measures are especially important while visiting those areas.

Additional Resources

Centers for Disease Control and Prevention. Lyme Disease.
Available at http://www.cdc.gov/lyme/.

Centers for Disease Control and Prevention. Lyme Disease and Animals.
Available at http://www.cdc.gov/healthypets/diseases/lyme.htm.

Florida Department of Health. Tick-Borne Disease in Florida.
Available at http://doh.state.fl.us/Environment/medicine/arboviral/index.html.

Florida Department of Health. Tick-Borne Disease Surveillance Summaries.
Available at http://doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_surveillance_reports.html.

Malaria

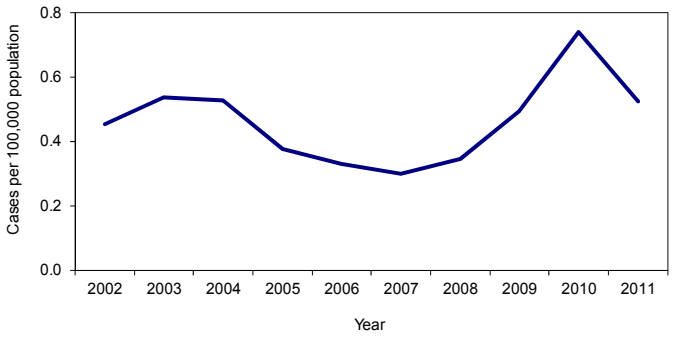
Malaria		
Number of cases		99
2011 incidence rate per 100,000 population		0.5
Percent change from 5-year average (2006-2010) reported incidence rate		18.3%
Age		Years
Mean		39.9
Median		40.0
Min-Max		0 - 80
Race	Number (Percent)	Rate
White	28 (28.6%)	0.2
Black	53 (54.1%)	1.7
Other	17 (17.3%)	NA
Unk	1	
Ethnicity	Number (Percent)	Rate
Hispanic	11 (11.6%)	NA
Non-Hispanic	84 (88.4%)	0.6
Unk	4	
Sex	Number (Percent)	Rate
Male	65 (66.3%)	0.7
Female	33 (33.7%)	0.3
Unk	1	

Disease Abstract

Human malaria is caused by five species of protozoan parasites of the genus *Plasmodium*: *P. vivax, P. falciparum, P. malariae, P. ovale*, and *P. knowlesi*. All are transmitted to people via the bite and blood-feeding behavior of mosquitoes of the genus *Anopheles*. Transmission can also occur via blood transfusion. People with malaria often experience fever, chills, and flu-like illness. Left untreated, they may develop severe complications and die.

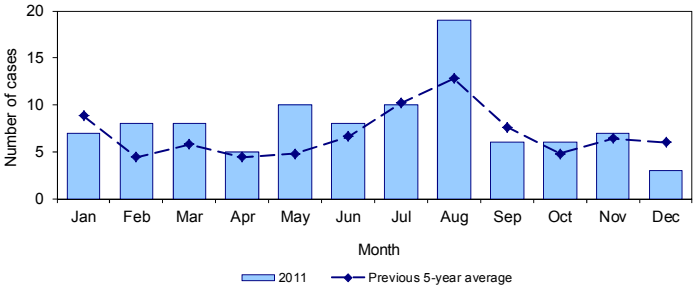
Malaria was endemic in Florida until the 1940s. In 2011, all cases were in travelers returning to Florida from malaria-endemic regions of the world; however, competent vectors do exist in the state, providing the potential for local transmission. The incidence rate for malaria in Florida declined for several years until 2008, when it began to rise to a peak in 2010 (Figure 1). The rate declined slightly in 2011, but remains higher than previous years.

Figure 1. Reported Malaria Incidence Rate by Year Reported, Florida, 2002-2011



Malaria cases occur in Florida residents year-round with more cases typically occurring during the summer months, correlating with the rainy season in source countries such as Haiti, as well as the summer travel season for Florida residents (Figure 2). The 2011 peak was in August, consistent with historical trends. Higher incidence rates occur in 20 to 54-year-olds, and this was observed again in 2011 (Figure 3). Malaria cases were reported in 23 (34.3%) of 67 Florida counties, although all infections were acquired while traveling in other countries (Figure 4 and Table 1). The largest proportion of cases (49 cases, 49.5%) acquired malaria infection while visiting relatives or friends. Travelers visiting relatives or friends are considered a high-risk group since any prior immunity from previous exposure while living abroad may have waned and they tend not to take proper malaria prevention precautions. Other reasons for travel to malaria-endemic areas included business (19 cases, 19.2%), missionary or volunteer work (seven cases, 7.1%), and tourism (three cases, 3.0%). Eight (8.1%) cases were immigrants to Florida, four (4.0%) were refugees, and the remaining two (2.0%) were unknown. Seventy-four (79.6% of the 94 cases with information about prophylaxis use) cases reported not using any anti-malarial chemoprophylaxis.

Figure 2. Reported Malaria Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Two cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Malaria Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

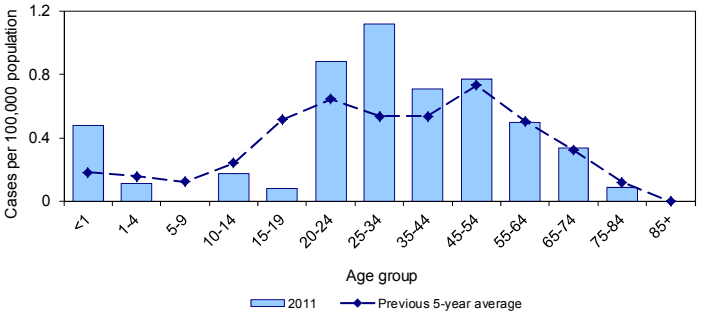
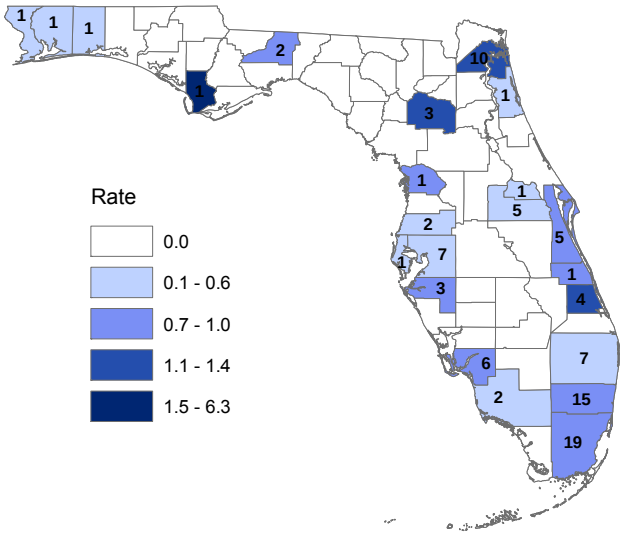


Figure 4. Reported Malaria Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Of the 2011 cases, 60 (60.6 %) were infected with *P. falciparum,* 35 (35.4%) with *P. vivax,* two (2.0%) with *P. ovale,* one with *P. malariae* (1.0%), and one (1.0%) with an undetermined species. No deaths were reported in 2011, but 77 (77.8%) cases were hospitalized.

Table 1. Reported Malaria Cases by Country/Region where Infection was Acquired, Florida 2011

County/Region	Number (percent)
Haiti	28 (28.3)
Africa	38 (38.4)
Asia	23 (23.2)
South America	6 (6.1)
Central America	4 (4.0)
Total	99 (100.0)

Prevention

No vaccine is currently available for malaria. Travelers to malaria-endemic countries should consult with their doctors to make sure they receive an appropriate preventative chemoprophylactic regimen and should take the full course of chemoprophylaxis as prescribed. A number of factors should be taken into consideration prior to prescribing chemoprophylaxis including: risk, the species of malaria present in the destination region, drug resistance, and how well the drug is tolerated.

Following the personal protection measures below can also help prevent malaria infection.

- Avoid contact with mosquitoes by using an insect repellent containing DEET or other EPA-approved ingredient.
- Remain in well-screened areas.
- Keep skin covered in clothing.
- Use insecticide-treated bed nets.

References

Centers for Disease Control and Prevention. 2012. CDC Health Information for International Travel 2012. New York: Oxford University Press.
Available at http://wwwn.cdc.gov/travel/contentYellowBook.aspx.

Additional Resources

Florida Department of Health. Surveillance and Control of Selected Mosquito-borne Diseases in Florida 2012 Guidebook.
Available at http://doh.state.fl.us/Environment/medicine/arboviral/pdfs/2012/MosquitoGuide2012.pdf.

Florida Department of Health. Malaria.
Available at http://www.doh.state.fl.us/Environment/medicine/arboviral/Malaria.html.

Measles

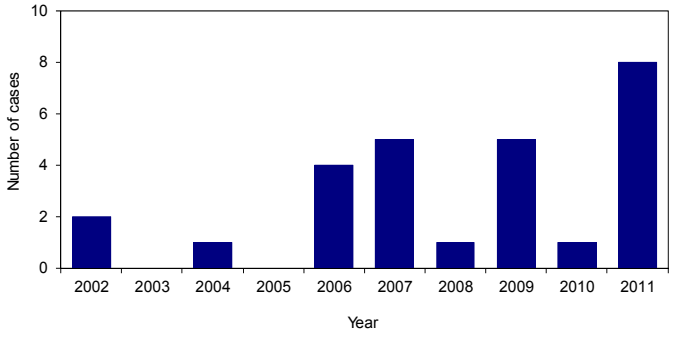
Measles			
Number of cases			8
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) number of reported cases			150.0%
Age			Years
Mean			12.4
Median			13.0
Min-Max			1 - 34
Race	Number	(Percent)	Rate
White	7	(100.0%)	NA
Black	0	(0.0%)	NA
Other	0	(0.0%)	NA
Unk	1		
Ethnicity	Number	(Percent)	Rate
Hispanic	1	(14.3%)	NA
Non-Hispanic	6	(85.7%)	NA
Unk	1		
Sex	Number	(Percent)	Rate
Male	4	(57.1%)	NA
Female	3	(42.9%)	NA
Unk	1		

Disease Abstract

Measles is a highly contagious vaccine-preventable respiratory disease caused by the measles virus. Symptoms include fever, runny nose, cough, and a rash all over the body. Measles is a disease of urgent public health importance. Each case requires tracking all contacts and conducting interviews to assess susceptibility and focus the public health response. Florida has many possible sources of virus introduction due to many foreign visitors each year, the ease of international travel, and the increasing incidence of measles in the U.S. and abroad. When a case is identified in another state or country, all possible contacts in Florida are tracked in order to identify other potential cases and prevent continued transmission.

In 2011, eight laboratory-confirmed cases of measles were reported, which is more than any other year since 1997 when 27 cases were reported (Figure 1). Countries in Europe have experienced increases in measles activity over the past several years, with several countries being classified as measles endemic. Measles vaccination rates have recently fallen in many of those countries partly due to unfounded concerns about vaccine safety.

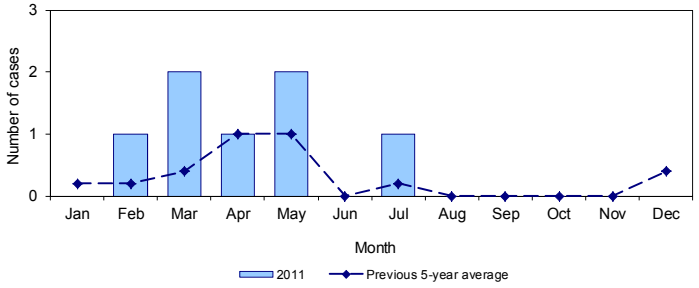
Figure 1. Reported Measles Cases by Year Reported, Florida, 2002-2011



Seven (87.5%) cases occurred between February and July of 2011, which is consistent with the national peak of measles cases (Figure 2). Three (37.5%) cases were in 1 to 4 year olds, four (50.0%) cases were in 10 to 19-year-olds, and one (12.5%) case was in a 25 to 34-year-old (Figure 3).

The only geographic clustering was in Alachua County with three (37.5%) outbreak-associated cases that acquired infections while traveling in India (Figure 4). One infection (12.5%) was outbreak-associated and acquired in Romania. One (12.5%) infection was acquired in the United Kingdom, and it is unknown whether there were any other measles cases associated with this case. One (12.5%) case reported travel in Florida and other states during the exposure period and later infected another case. The eighth case was not interviewed, so the location of exposure is unknown. Seven (87.5%) cases were unvaccinated children 12 months to 17 years of age; four (50.0%) indicated religious exemption to vaccination.

Figure 2. Reported Measles Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: One case was reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Measles Cases by Age Group, Florida, 2011 and 2006-2010 Average

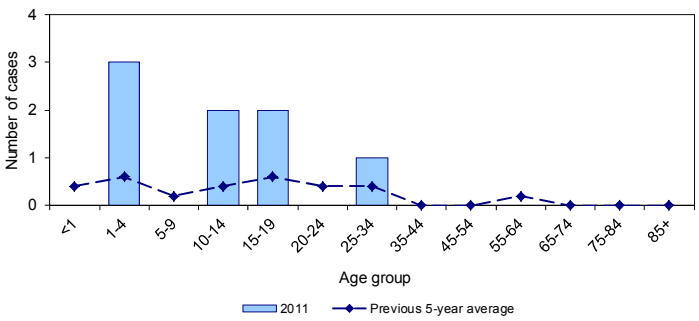
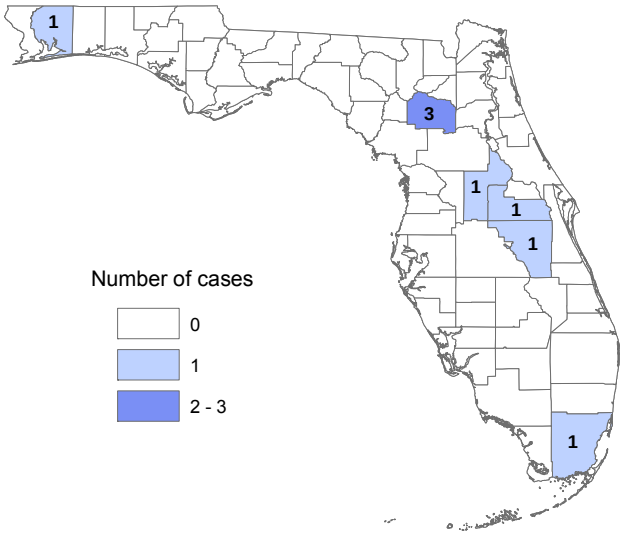


Figure 4. Reported Measles Cases by County, Florida, 2011



Prevention

Vaccination against measles is recommended for all children after their first birthday. Two doses of measles vaccine (preferably as measles, mumps, rubella [MMR] vaccine) are required for entry and attendance in kindergarten through twelfth grade. All children attending or entering childcare facilities or family daycare must be age-appropriately vaccinated with one or two doses of measles vaccine. At least one dose of MMR vaccine is recommended for adults born in or after 1957.

References

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Centers for Disease Control and Prevention. Immunization Schedules.
Available at http://www.cdc.gov/vaccines/schedules/index.html.

Meningococcal Disease

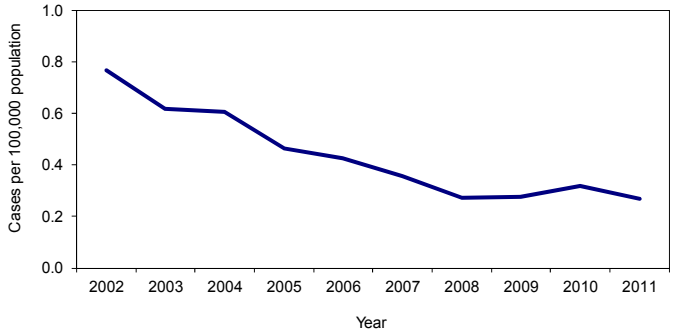
Meningococcal Disease			
Number of cases			51
2011 incidence rate per 100,000 population			0.3
Percent change from 5-year average (2006-2010) reported incidence rate			-18.5%
Age			Years
Mean			40.2
Median			32.0
Min-Max			0 - 89
Race	Number	(Percent)	Rate
White	36	(72.0%)	0.3
Black	13	(26.0%)	NA
Other	1	(2.0%)	NA
Unk	1		
Ethnicity	Number	(Percent)	Rate
Hispanic	17	(34.0%)	NA
Non-Hispanic	33	(66.0%)	0.2
Unk	1		
Sex	Number	(Percent)	Rate
Male	27	(52.9%)	0.3
Female	24	(47.1%)	0.2
Unk	0		

Disease Abstract

Meningococcal disease includes both meningitis and septicemia due to *Neisseria meningitidis* bacteria. There are many different serogroups of *N. meningitidis*. The common serogroups in the U.S. include A, B, C, W-135, and Y. In Florida, serogroup A has not been detected since 2004. The most common serogroup isolated in Florida in 2011 was serogroup W-135 (Table 1).

The reported incidence rate for meningococcal disease has declined gradually over the previous 10 years, and in 2011 was less than half of what it was 10 years ago (Figure 1). This long-term downward trend reversed in 2009 and 2010, mostly because of an increase in W-135 infections in south Florida.

Figure 1. Reported Meningococcal Disease Incidence Rate by Year Reported, Florida, 2002-2011

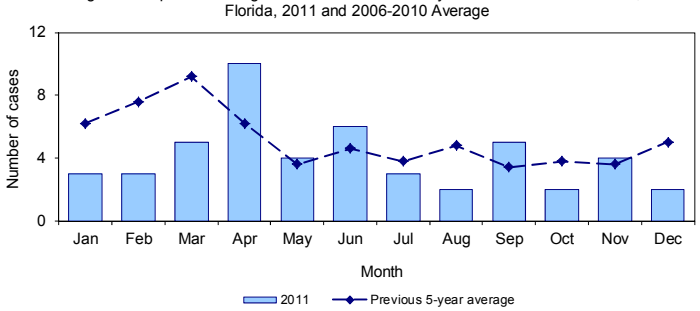


There is a general seasonal increase in cases in late winter and early spring (Figure 2). Unlike previous years, the highest incidence rates occurred in those over 85 years of age (Figure 3). In 2011, the incidence rates were lower than or equal to the previous 5-year average in all age groups except those aged 5-9 years, 25-34 years, and those 85 years and older. Meningococcal disease was reported in 19 (28.4%) of 67 counties in Florida (Figure 4). Counties in central and southeastern Florida reported the highest incidence rates.

In 2011, 48 (94.1%) cases were confirmed; 18 cases were related to a pulsed-field gel electrophoresis (PFGE) cluster of serogroup W-135 in southeast Florida that had been previously reported (see article in References). Ten (19.6%) cases of meningococcal disease resulted in death.

Please see Section 4: Summary of Antimicrobial Resistance Surveillance for additional information on MeningNet, an enhanced meningococcal surveillance system used to monitor antimicrobial susceptibility.

Figure 2. Reported Meningococcal Disease Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Two cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Meningococcal Disease Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

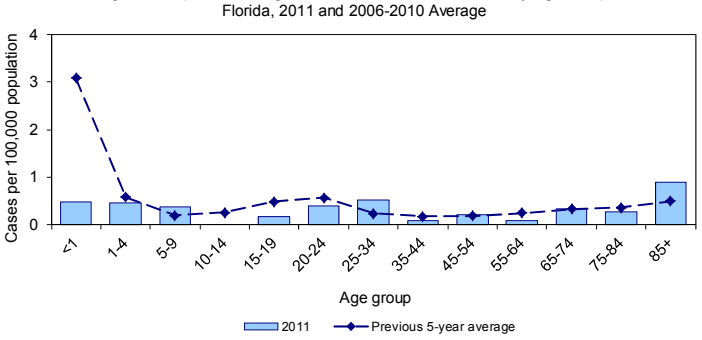


Figure 4. Reported Meningococcal Disease Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

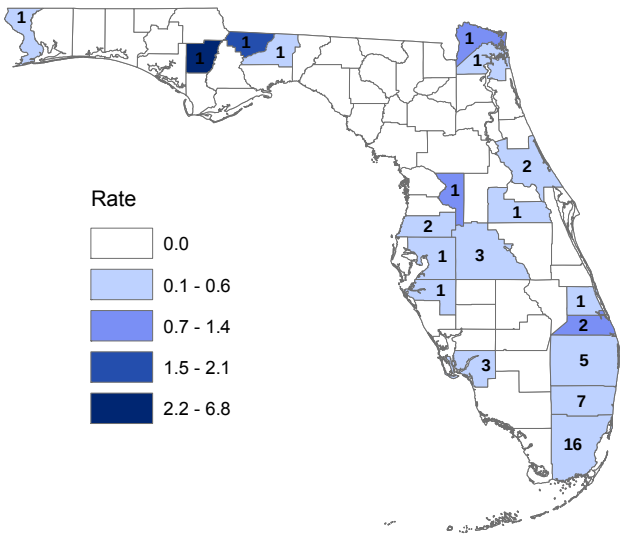


Table 1. Reported Meningococcal Cases by Serogroup, Florida 2011

Serogroup	Number (percent)
Group A	0 (0.0)
Group B	13 (25.5)
Group C	9 (17.6)
Group Y	6 (11.8)
Group W-135	19 (37.3)
Unknown	1 (2.0)
Other	0 (0.0)
Isolate not submitted for serogrouping	3 (5.9)
Total	51 (100.0)

Prevention

Meningococcal vaccines are available to reduce the likelihood of contracting *Neisseria meningitidis*. Two types of vaccines, licensed in 1978 and 2005, provide protection against four serogroups (A, C, Y, and W-135). There are two meningococcal conjugate vaccines (MCV4) and one meningococcal polysaccharide vaccine (MPSV4) approved for use in the United States. MPSV4 is only recommended for those persons older than 55 years of age or when MCV4 is not available.

Droplet precautions should be implemented if an infected individual is hospitalized. Anyone who has close contact with an infected person's respiratory or oral secretions (i.e., kissing, sharing utensils or drinks, exposure to respiratory secretions during healthcare or resuscitation) or extended close household or social contact should receive antibiotic prophylaxis with an approved regimen (ciprofloxacin and rifampin are used most often).

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Centers for Disease Control and Prevention. 2005. Prevention and Control of Meningococcal Disease. *Morbidity and Mortality Weekly Report*, 54(RR07);1-21. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5407a1.htm.

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Mercury Poisoning

Mercury Poisoning			
Number of cases			7
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) reported incidence rate			-78.2%
Age			Years
Mean			44.0
Median			51.0
Min-Max			21 - 55
Race	Number	(Percent)	Rate
White	6	(85.7%)	NA
Black	0	(0.0%)	NA
Other	1	(14.3%)	NA
Unk	0		
Ethnicity	Number	(Percent)	Rate
Hispanic	1	(14.3%)	NA
Non-Hispanic	6	(85.7%)	NA
Unk	0		
Sex	Number	(Percent)	Rate
Male	4	(57.1%)	NA
Female	3	(42.9%)	NA
Unk	0		

Description

Mercury is a naturally occurring element. Its distribution in the environment is the result of both natural and man-made processes. There are three categories of mercury, each with unique characteristics and unique potential health effects: elemental mercury, organic mercury compounds, and inorganic mercury compounds. Exposures are typically due to consumption or ingestion of mercury or inhaling the vapors. The organic mercury compound methylmercury is the most likely to cause adverse health effects in the general population. Methylmercury can cause impaired neurological development, impaired peripheral vision; disturbed sensations ("pins and needles" feelings, usually in the hands, feet, and around the mouth); lack of coordination of movements; impairment of speech, hearing, walking; and muscle weakness.

Common sources of each of the mercury categories are below.

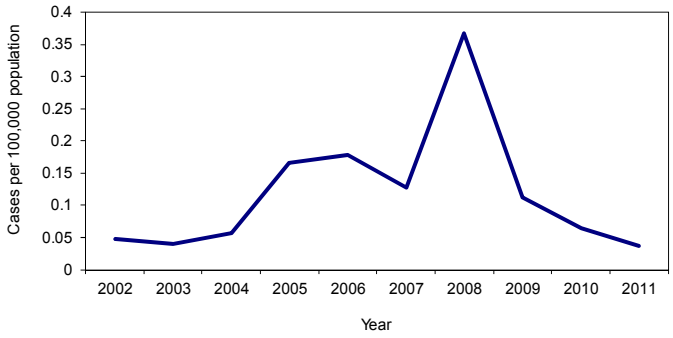
- Elemental or metallic mercury: broken mercury thermometers, blood pressure monitors, fluorescent light bulbs, dental amalgam, neon signs, outdoor lighting, cameras, electrical switches, batteries, and some folk medicines.
- Organic mercury compounds: certain freshwater and saltwater fish and marine mammals. Ethylmercury and methylmercury are used medically as fungicides and antibacterials.
- Inorganic mercury compounds: sometimes used in skin lightening creams and as antiseptic creams and ointments, as well as in folk medicines; used in preserving solutions for biological specimens; and used as a reagent in analytical chemistry reactions, photography, and metal etching solutions.

Mercury poisoning is diagnosed by laboratory testing. Elevated levels of mercury are defined as ≥10 micrograms per liter (µg/L) of urine, ≥10 µg/L of whole blood, or ≥5 micrograms per gram (µg/g) of hair. Blood or urine samples are used to test for exposure to metallic mercury and to inorganic forms of mercury. Mercury in whole blood or in scalp hair is measured to determine exposure to methlymercury.

Disease Abstract

From 2002 through 2011, 221 cases of mercury poisonings were reported in Florida. The incidence rate for mercury poisoning was somewhat higher during 2005 through 2008 than in surrounding years (Figure 1). The decrease in number of cases seen beginning in 2009 was mainly due to a change in case definition. Prior to August 2008, only laboratory confirmation was required to meet the confirmed case definition and there was no probable case definition. Starting in August 2008, laboratory-confirmed individuals also had to be symptomatic to meet the confirmed case definition. A probable case

Figure 1. Reported Mercury Poisoning Incidence Rate by Year Reported, Florida, 2002-2011

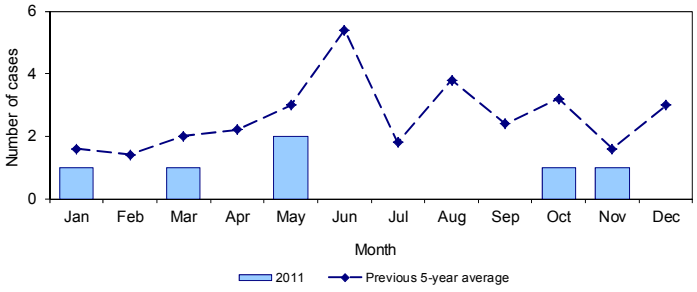


classification was added for symptomatic people with a high index of suspicion (based on the person's exposure history) or an epidemiologic link to a laboratory-confirmed case.

Seven mercury poisoning cases were reported in 2011, six (85.7%) confirmed and one (14.3%) probable. One (14.3%) case was self-injected mercury, but the most commonly reported potential source of mercury exposure was fish consumption. Six (85.7%) cases ate fish within a month of illness identification. Two of the affected people reported eating 18-30 ounces of fish per week; one person reported eating 96-126 ounces, and one person ate ≤12 ounces. Two people did not report the amount of fish consumed.

There is no apparent seasonality for mercury poisoning (Figure 2). Historically, the highest incidence of mercury poisoning was in infants <1-year-old and 45 to 54-year-olds, though there is not a strong trend with age (Figure 3). In 2011, all cases were in 20 to 64-year-olds. Mercury poisoning cases were reported in five (7.5%) of 67 Florida counties, with Broward and Pinellas counties each reporting two cases.

Figure 2. Reported Mercury Poisoning Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: One case was reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Mercury Poisoning Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

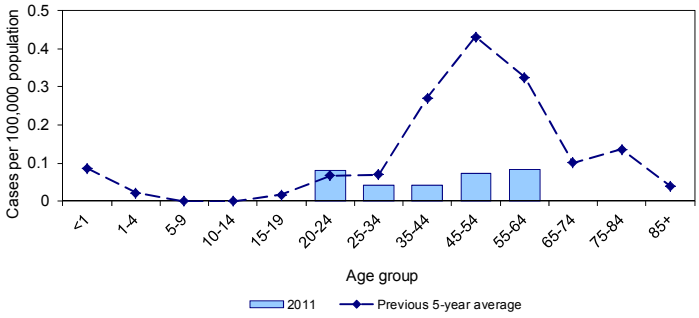
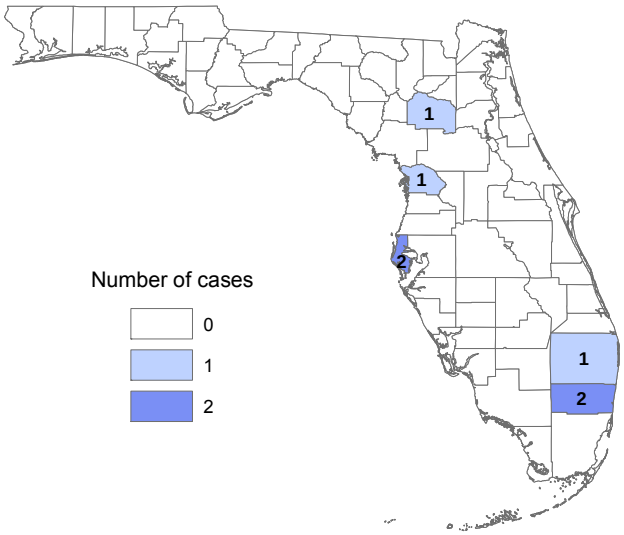


Figure 4. Reported Mercury Poisoning Cases by County, Florida, 2011



Prevention

The Florida Department of Health (FDOH) provides health advisories related to fish consumption in Florida. The *Florida Commercial Fish Wallet Card for Women of Child-Bearing Age* was developed to educate all consumers about mercury levels found in fish commonly available in Florida (both commercial and recreational fish species) and their safe consumption levels during pregnancy (see Additional Resources section below). FDOH has created a brochure and a one-page fact sheet about mercury to educate Floridians about risk and prevention of mercury exposure.

Reduce the risk of exposure to mercury by using the prevention measures below.

- Carefully handle and dispose of products that contain mercury, such as thermometers or fluorescent light bulbs. Do not vacuum up spilled mercury, because it will vaporize and increase exposure. Teach children not to play with shiny, silver liquids.
- Properly dispose of older medicines that contain mercury and keep all mercury-containing medicines away from children.
- Pregnant women and children should stay away from rooms where liquid mercury has been used.
- Follow wildlife and fish advisories.

References

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Available at http://www.atsdr.cdc.gov/mercury/.

Centers for Disease Control and Prevention. Mercury.
Available at http://emergency.cdc.gov/agent/mercury/index.asp.

Additional Resources

Agency for Toxic Substances & Disease Registry. Mercury and Your Health.
Available at http://www.atsdr.cdc.gov/mercury/.

Florida Department of Health. Mercury Poisoning.
Available at http://www.doh.state.fl.us/Environment/medicine/Mercury_Poisoning.html.

Florida Department of Health. Fish Consumption Advisories.
Available at http://www.doh.state.fl.us/floridafishadvice/.

U.S. Environmental Protection Agency. Mercury.
Available at http://www.epa.gov/mercury/.

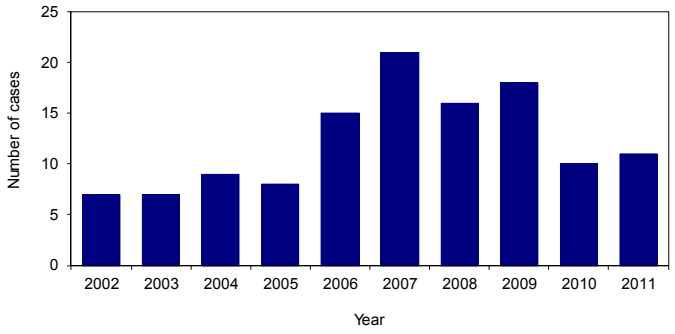
Mumps

Mumps			
Number of cases			11
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) number of reported cases			-31.3%
Age			Years
Mean			30.0
Median			25.0
Min-Max			4 - 57
Race	Number	(Percent)	Rate
White	8	(80.0%)	NA
Black	0	(0.0%)	NA
Other	2	(20.0%)	NA
Unk	1		
Ethnicity	Number	(Percent)	Rate
Hispanic	0	(0.0%)	NA
Non-Hispanic	9	(100.0%)	NA
Unk	2		
Sex	Number	(Percent)	Rate
Male	4	(36.4%)	NA
Female	7	(63.6%)	NA
Unk	0		

Disease Abstract

Mumps is a contagious, vaccine-preventable disease that is caused by the mumps virus. Mumps typically begins with a few days of fever, headache, muscle aches, tiredness, and loss of appetite and is followed by swelling of salivary glands. Eleven confirmed cases were reported in 2011, representing a slight increase from 10 confirmed cases in 2010 and a decrease from 18 confirmed cases in 2009 (Figure 1). Incidence of mumps was relatively unchanged from 2000 to 2005. However, in 2006, there was a significant increase in cases in the U.S., especially in the college-age population. The peak in Florida mumps cases occurred in 2007 and has declined since; in 2011 activity was 31.3% below the previous 5-year average.

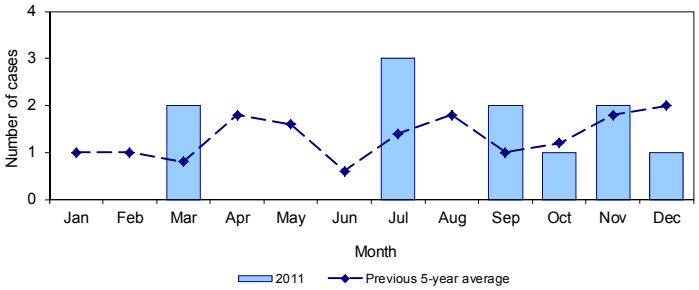
Figure 1. Reported Mumps Cases by Year Reported, Florida, 2002-2011



There is no seasonal pattern for mumps (Figure 2). Historically, more mumps cases are seen among 1 to 9-year-olds, although in 2011 only one case was reported in this age group (Figure 3). Mumps cases were reported in six counties, with Palm Beach and Orange counties each having three cases (Figure 4).

Two (18.2%) cases were hospitalized. Three (27.3%) people received one dose of mumps-containing vaccine, two (18.2%) received two doses of mumps-containing vaccine, two (18.2%) had no history of vaccination, and four (36.4%) had unknown immunization status. Three (27.3%) cases were associated with an outbreak on a cruise from England to New York City. Two cases (18.2%) reported travel to other states during their incubation periods. No other outbreak-associated or imported cases were reported in 2011.

Figure 2. Reported Mumps Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Missing cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Mumps Cases by Age Group, Florida, 2011 and 2006-2010 Average

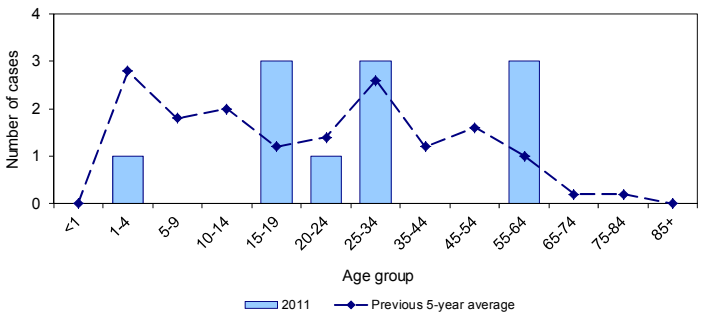
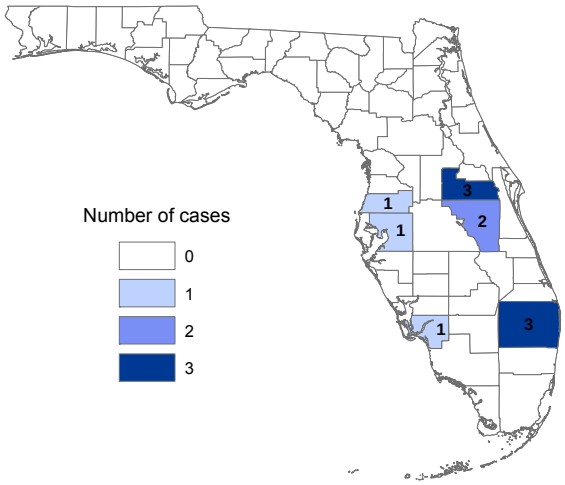


Figure 4. Reported Mumps Cases by County, Florida, 2011



Prevention

Use of mumps vaccine (usually administered in measles, mumps, rubella [MMR] or measles, mumps, rubella, varicella [MMRV] vaccines) is the best way to prevent mumps. Vaccination with two doses of mumps-containing vaccine is recommended. The first dose of MMR should be given at 12 months of age and the second dose at kindergarten entrance. Proof of MMR is required for entry and attendance in childcare facilities, family daycare homes, and kindergarten through twelfth grade. Many colleges in Florida also require mumps vaccination for entry. Following the 2006 multi-state mumps outbreak in young adults, two doses of mumps vaccine are now recommended for all children and young adults up to age 24.

References

Centers for Disease Control and Prevention. 2012. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 5th ed.
Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

Centers for Disease Control and Prevention, 2012. *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 12th ed.
Available at http://www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Additional Resources

Centers for Disease Control and Prevention. Mumps Vaccination.
Available at http://www.cdc.gov/vaccines/vpd-vac/mumps/default.htm.

Centers for Disease Control and Prevention. Immunization Schedules.
Available at http://www.cdc.gov/vaccines/schedules/index.html.

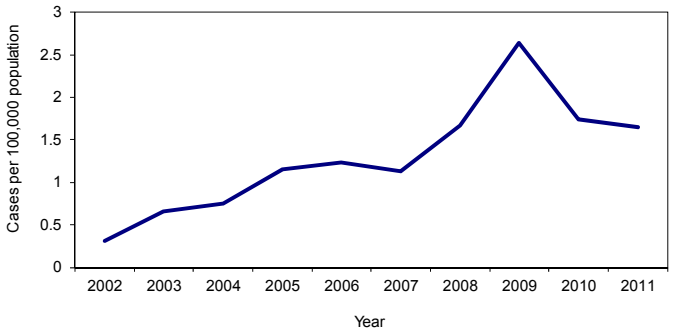
Pertussis

Pertussis		
Number of cases		312
2011 incidence rate per 100,000 population		1.6
Percent change from 5-year average (2006-2010) reported incidence rate		-2.1%
Age		Years
Mean		14.8
Median		8.0
Min-Max		0 - 77
Race	Number (Percent)	Rate
White	261 (84.2%)	1.8
Black	30 (9.7%)	1.0
Other	19 (6.1%)	NA
Unk	2	
Ethnicity	Number (Percent)	Rate
Hispanic	77 (24.9%)	1.8
Non-Hispanic	232 (75.1%)	1.6
Unk	3	
Sex	Number (Percent)	Rate
Male	133 (42.6%)	1.4
Female	179 (57.4%)	1.9
Unk	0	

Disease Abstract

Pertussis is a severe vaccine-preventable respiratory disease caused by *Bordetella pertussis* bacteria. It is also known as whooping cough. Florida pertussis rates increased steadily from 2002 through 2009 and fell slightly in 2010 and 2011 (Figure 1).

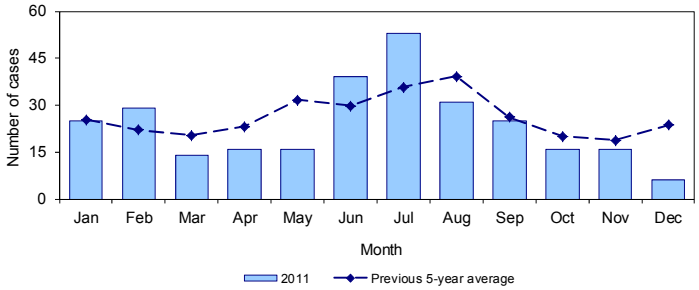
Figure 1. Reported Pertussis Incidence Rate by Year Reported, Florida, 2002-2011



Cases peaked in the summer months in 2011, as they did in the previous five years (Figure 2). As in the previous five years and in 2011, most pertussis cases were identified in infants and young children (Figure 3). Cases in adolescents and adults can be sources of infection for young children but often are not recognized due to less severe symptoms and presentations. Pertussis was reported in 40 (59.7%) of 67 counties in Florida (Figure 4).

Of the 312 reported cases in 2011, 91 (29.2%) were reported in infants less than 12 months of age, too young to have completed the vaccination series. Of the reported cases, 86 were hospitalized (27.5%) and generalized or focal seizures were reported in four. One infant died from confirmed pertussis; both parents of the baby had cough illness with onset prior to the infant. Over 50% of cases did not have a known history of vaccination (Table 1).

Figure 2. Reported Pertussis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Twenty-six cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Pertussis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

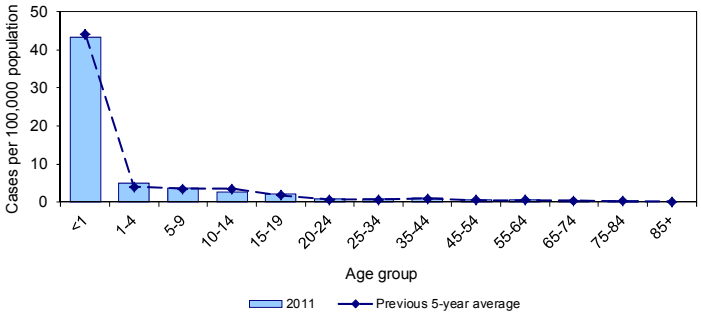


Figure 4. Reported Pertussis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

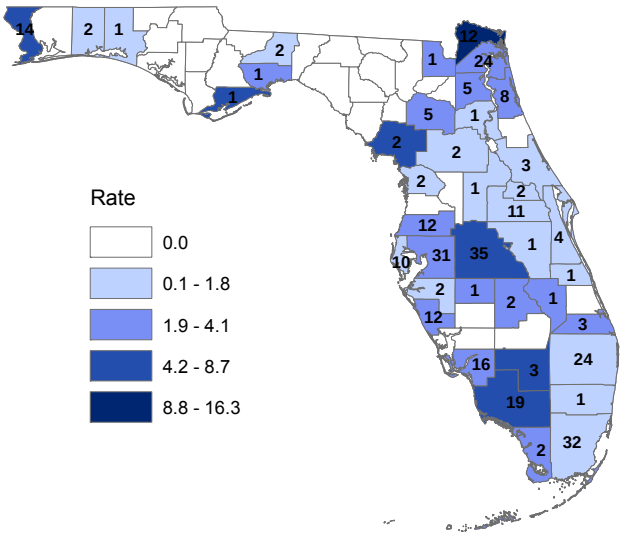


Table 1. Number of Pertussis-Containing Vaccinations Received by Reported Pertussis Cases, Florida 2011

Number of Vaccinations Received	Number (percent)
No known record of vaccination	174 (55.8)
1	33 (10.6)
2	11 (3.5)
3	11 (3.5)
4	17 (5.4)
5	46 (14.7)
6	20 (6.4)
Total	312 (100.0)

Prevention

Currently, only acellular pertussis vaccines combined with diphtheria and tetanus toxoids (DTaP and Tdap) are available in the U.S. The five DTaP doses should be administered to children at ages two months, four months, six months, 15-18 months, and 4-6 years. This vaccine is also available in combination with other childhood vaccines. The increase in disease in the early teenage years is a reflection of waning immunity from the vaccine. One dose of Tdap vaccine is now recommended between ages 10 and 64 years. As of school year 2011-2012, Tdap vaccine is required for children entering or transferring to seventh, eighth, and ninth grades. Post-exposure antibiotic and vaccine prophylaxis of close contacts of a case are the major outbreak control measures to prevent pertussis transmission.

References

Centers for Disease Control and Prevention. 2000. *Guidelines for the Control of Pertussis Outbreaks*. Centers for Disease Control and Prevention: Atlanta, GA. Available at http://www.cdc.gov/vaccines/pubs/pertussis-guide/guide.htm.

Centers for Disease Control and Prevention. 2012. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 5th ed. Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

Centers for Disease Control and Prevention, 2012. *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 12th ed. Available at http://www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Additional Resources

Centers for Disease Control and Prevention. Pertussis (Whooping Cough) Vaccination. Available at www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm.

Centers for Disease Control and Prevention. Immunization Schedules. Available at http://www.cdc.gov/vaccines/schedules/index.html.

Pesticide-Related Illness and Injury

Pesticide-Related Illness and Injury		
Number of cases		451
2011 incidence rate per 100,000 population		2.4
Percent change from 5-year average (2006-2010) reported incidence rate		4.3%
Age		Years
Mean		37.0
Median		37
Min-Max		0-93
Sex	Number (Percent)	Rate
Male	170 (2.8%)	1.8
Female	281 (4.6%)	2.9
Unknown	0	

Note that race and ethnicity were not collected for the majority of cases reported in 2011 and are therefore not presented here.

Disease Abstract

Over the past 20 years, concern about environmental health issues has increased, particularly in the area of pesticide exposure. Pesticide use has expanded dramatically since the discovery of dichloro-diphenyl-trichloroethane (DDT) in 1939. Approximately 16,000 pesticide products are registered with the U.S. Environmental Protection Agency. Pesticide-related illness and injuries refer to acute and sub-acute illness or injury resulting from pesticide exposure. Whether pesticide exposure produces health effects in humans depends on the agent, the exposure scenario, and individual susceptibility. Agent-specific factors include the inherent toxicity of the pesticide, the physical characteristics of the formulation, and the presence of other compounds (e.g., adjuvants, carriers, emulsifying agents). Pesticide exposure may result in a wide range of symptoms. Acute illness may be mild (e.g., headache, rash, or flu-like symptoms) or more severe (e.g., serious systemic illness, third degree burns, neurologic effects, and even death).

Cases of pesticide-related illness and injury are identified from multiple sources including: electronic laboratory reports, the Florida Poison Information Center Network (FPCIN), emergency department (ED) chief complaint data, ill individuals, co-workers, family members, and others. Availability of FPICN and ED chief complaint data in the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) has provided a useful tool for county health department (CHD) staff to access clinical pesticide poisoning events present in those data sets.

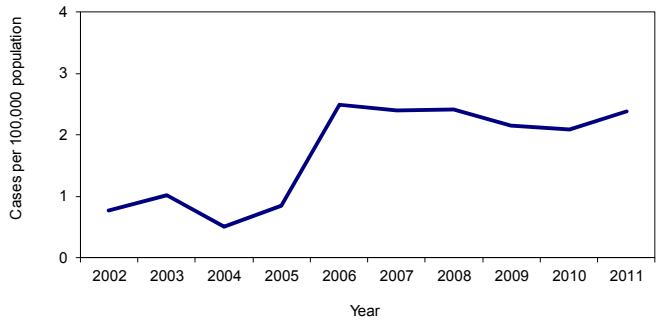
The Florida Department of Health (FDOH) uses a standard protocol based on the National Institute of Occupational Safety and Health (NIOSH) surveillance guidelines for classifying cases of pesticide-related illness and injury. Confirmed, probable, and possible case classifications meet the reportable case criteria and are reported to the Sentinel Event Notification System for Occupational Risk (SENSOR) program within NIOSH.

Not all case reports of pesticide-related illness and injury that meet the case definition are able to be investigated by CHDs. When cases are investigated, information collected is entered into Merlin, Florida's web-based, reportable disease surveillance system. All reports meeting the confirmed, probable, or possible case definitions are entered into the electronic Pesticide Incident Monitoring System (PIMS) database, regardless of whether they are entered into Merlin. The number of cases in PIMS is higher than in Merlin. In 2010, only 39 (9.9%) of 392 cases in PIMS were reported in Merlin; 173 (38.4%) of 451 cases in PIMS were reported in Merlin in 2011. This report presents data from PIMS.

Description

The 2010 Florida Morbidity Statistics Report included data for 2009, which was the most recent data available at that time. This report includes data for 2010 and 2011. From 2002 through 2011, there were 3,161 cases of pesticide-related illness and injuries reported to the FDOH. There were 392 cases (2.1 cases per 100,000 population) of acute pesticide poisoning reported during 2010 and 451 cases (2.4 cases per 100,000 population) reported during 2011 (Figure 1). The increase in cases seen since 2006 is related to additional cases identified as a result of direct access to FPICN data by FDOH, which has led to more complete case ascertainment.

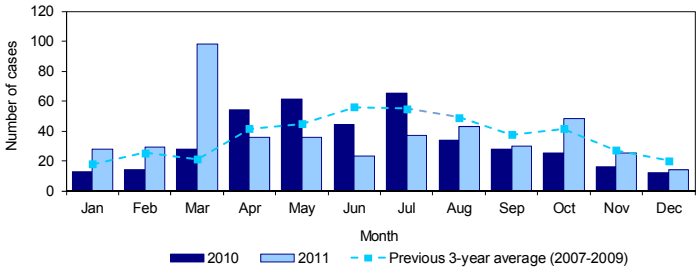
Figure 1. Reported Pesticide Poisoning Cases by Year Reported, Florida, 2002-2011



Case distribution is not uniform throughout the year, with more cases during the spring and summer (Figure 2). The increase in the number of cases observed in March 2011 is related to a large cluster involving school staff and students after a pesticide drift. As students were arriving for classes, an agricultural pesticide applicator airplane was spraying a nearby cornfield with three different chemicals. Students and school staff began to notice an odor and complained of eye and skin irritation; 57 pesticide-related illness and injury cases were reported. For additional information on this event, see Section 6: Notable Outbreaks and Case Investigations. A second large cluster was identified in October 2011 after fumigation of a courthouse; 37 cases were identified.

Cases ranged from less than 1 to 87 years old in 2010 and up to 93 years old in 2011. The mean and median ages in 2010 were 39 and 40 years respectively; in 2011, mean and median ages were both 37 years. Almost half of the cases were in 20 to 44-year olds (174, 44.4% in 2010; 222, 49.2% in 2011). The incidence rate was highest among 20 to 24-year olds (5.0 cases per 100,000 population in 2010; 5.9 cases per 100,000 population in 2011) (Figure 3). Pesticide-related illness and injury cases were reported in 58 (86.6%) of 67 Florida counties (Figure 4). The majority of cases occurred in counties with large populations. However, rates of pesticide-related illness and injury were more often higher in the northern part of the state.

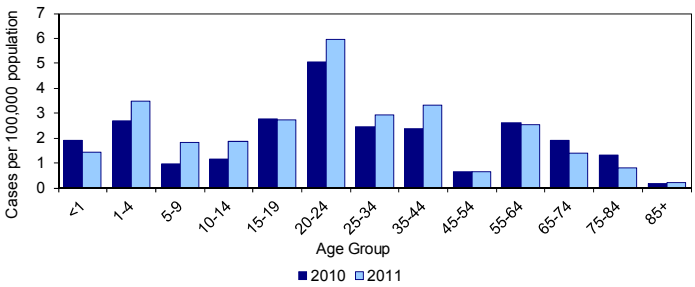
Figure 2. Reported Pesticide Poisoning Cases by Estimated Month of Onset*, Florida, 2010 and 2011



*If no onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include onset date, diagnosis date, laboratory report date, and county health department notified date

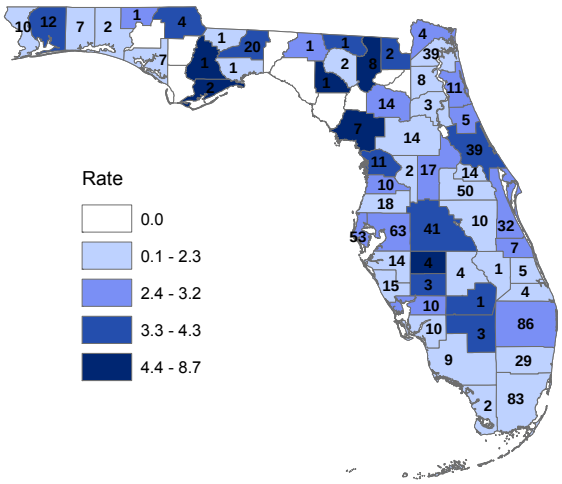
Note: Cases with onset date in 2010 but reported in 2011 are included in the 2010 counts in the month in which onset occurred. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Pesticide Poisoning Incidence Rate by Age Group, Florida, 2010 and 2011



Note: Eight cases in 2011 and seven cases in 2010 were missing age and are not included.

Figure 4. Reported Pesticide-Related Illness and Injury Cases and Average Annual Incidence Rates per 100,000 Population by County, Florida, 2010 and 2011



The majority of the cases were classified as possible, followed by probable and confirmed (Table 1). To meet the disease reporting criteria for pesticide-related illness and injury, people must have two or more acute pesticide-related health effects. Ocular health effects were most commonly reported among cases; most cases were considered to have experienced low severity of illness (Table 2). Thirty-six (9.2%) individuals were hospitalized in 2010 and 27 (6.0%) in 2011. Two deaths were identified as pesticide-related during 2010 and no deaths were identified in 2011.

Table 1. Case Definition Classification for Reported Cases of Pesticide-Related Illness and Injury, Florida 2010 and 2011

Case definition classification	2010 cases Number (percent)	2011 cases Number (percent)
Confirmed	38 (9.7)	41 (9.1)
Probable	49 (12.5)	104 (23.1)
Possible	305 (77.8)	306 (67.8)
Total	392 (100.0)	451 (100.0)

Table 2. Health Effects for Reported Cases of Pesticide-Related Illness and Injury, Florida 2010 and 2011

Category	2010 cases Number (percent)	2011 cases Number (percent)
Health effects*		
Ocular	149 (38.0)	172 (38.1)
Gastrointestinal	121 (30.9)	152 (33.7)
Respiratory	108 (27.6)	143 (31.7)
Neurological	103 (26.3)	173 (38.4)
Dermal	93 (23.7)	131 (29.0)
Severity of illness		
Low	311 (79.3)	367 (81.4)
Moderate	70 (17.9)	79 (17.5)
High	9 (2.3)	5 (1.1)
Death	2 (0.5)	0 (0.0)
Total	392 (100.0)	451 (100.0)

* Cases must report two or more health effects, so percentages will not total to 100%.

Routes of exposure for pesticide poisonings are shown in Figure 5. During 2010 and 2011, the most frequent route of pesticide exposure was inhalation, followed by dermal and ocular. Most of the cases during 2010 occurred in the home (326, 83.2% in 2010; 308, 68.3% in 2011). Other sites of reported exposures include schools, workplace, nursery and farm, and service establishments.

Applications of a pesticide material released at the intended location (target site) and not carried by air to another area are considered to be targeted applications. Pesticide exposure occurred during targeted application for 234 (59.7%) cases in 2010 and 173 (38.4%) cases in 2011 (Figure 6). Pesticide drift accounted for only 45 (11.5%) and 87 (19.3%) cases during 2010 and 2011, respectively. The majority of cases reported that they were applying pesticides at the time of exposure (Table 3).

Figure 5. Reported Pesticide Poisoning Cases by Route of Exposure, Florida, 2010 and 2011

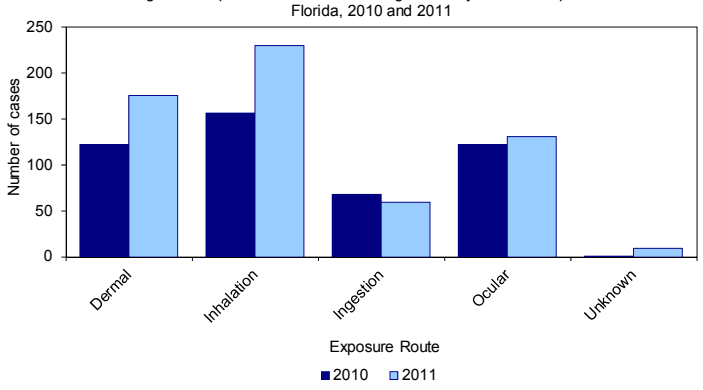
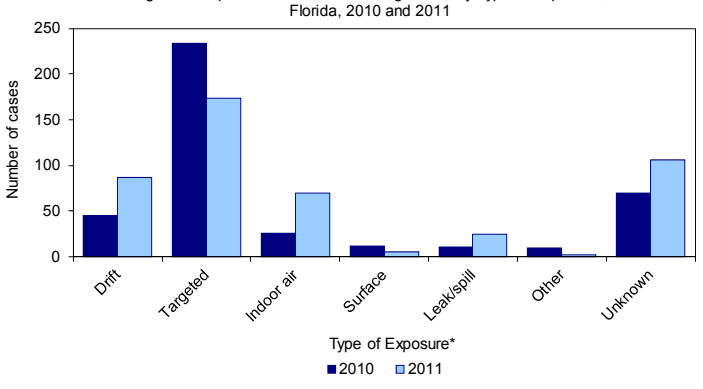


Figure 6. Reported Pesticide Poisoning Cases by Type of Exposure*, Florida, 2010 and 2011



***Definitions of exposure types**

- Drift: individual was exposed via the movement of pesticides away from the treatment site.
- Targeted: individual 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: individual was exposed via indoor air contamination (this includes residential, commercial and greenhouse indoor air).
- Surface: individual was exposed via contact with pesticide residues on treated surface (e.g., plant material, carpets, or a treated animal) or entry into an outdoor treated area.
- Leak/spill: individual was exposed to a leak or spill of pesticide material from a leaking container or equipment, flood waters, emergency response, etc.

Table 3. Activity at the Time of Pesticide Exposure for Reported Cases of Pesticide-Related Illness and Injury, Florida, 2010 and 2011

Activity at time of exposure	2010 cases Number (percent)	2011 cases Number (percent)
Applying pesticides	238 (60.7)	154 (34.2)
Routine indoor living	21 (5.4)	73 (16.2)
Routine outdoor living	6 (1.5)	67 (14.9)
Routine work/not application	6 (1.5)	7 (1.6)
Application to self or other human	0 (0.0)	4 (0.9)
Transport or disposal of pesticides	0 (0.0)	1 (0.2)
Emergency response	0 (0.0)	1 (0.2)
Not applicable	7 (1.8)	0 (0.0)
Combination of multiple activites	2 (0.5)	0 (0.0)
Mixing or loading pesticides	0 (0.0)	0 (0.0)
Unknown	112 (28.6)	144 (31.9)
Total	**392 (100.0)**	**451 (100.0)**

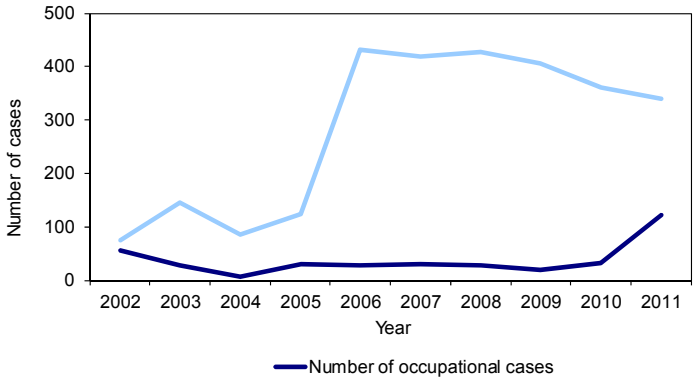
There has been an increase in non-occupational case identification since 2006 due to direct access to FPICN data (Figure 7). However, this additional data set did not result in an increase in the number of reported occupational cases during 2010 (31, 7.9%). The increase in occupational cases in 2011 (122, 27.1%) was mainly due to two large clusters involving 94 cases.

Prevention

Tips for preventing pesticide-related illness and injury are listed below.

- When using pesticides, always read the label first and strictly follow the directions.
- Use pesticide products only for pests indicated on the label and use only the minimum amount of pesticide as directed by the label (twice the amount will not do twice the job).
- Use protective measures when handling pesticides as directed by the label, change clothes after applying pesticides, and wash your hands immediately after applying pesticides.

Figure 7. Reported Pesticide Poisoning Cases by Occupational Exposure, Florida, 2010 and 2011



- Before applying a pesticide (indoors or outdoors), remove children, their toys, and pets from the area to be sprayed. Do not put items back until the pesticide has dried or as specified by label instructions.

Additional Resources

Florida Department of Health. Chemical Disease Surveillance Introduction.
Available at http://doh.state.fl.us/Environment/medicine/Chemical_Surveillance/index.html.

Florida Department of Health. Pesticide Poisoning.
Available at http://www.doh.state.fl.us/environment/medicine/pesticide/index.html.

Centers for Disease Control and Prevention. Pesticide Illness & Injury Surveillance.
Available at http://www.cdc.gov/niosh/topics/pesticides/.

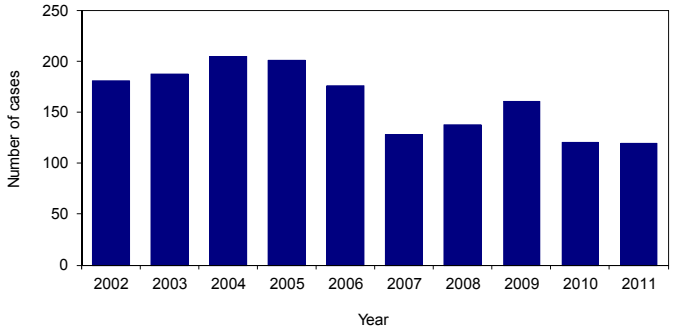
Rabies, Animal

Animal Rabies	
Number of cases	120
Percent change from 5-year average (2006-2010) number of reported cases	-17.1%

Disease Abstract

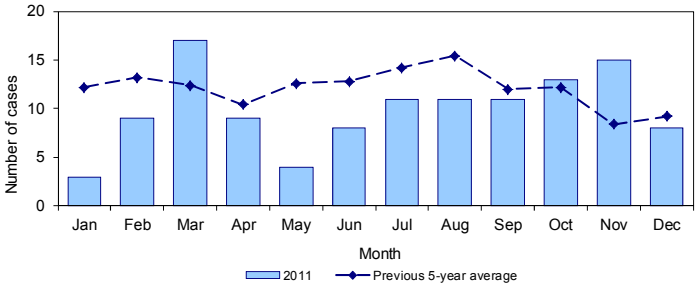
Rabies is a vaccine-preventable viral disease of mammals most often transmitted through the bite of a rabid animal via infected saliva. The vast majority of rabies infections occur in wild animals like raccoons, skunks, bats, and foxes.

Figure 1. Reported Animal Rabies Cases by Year Reported, Florida, 2002-2011



Animal rabies is endemic in the raccoon and bat populations of Florida. Rabies frequently spreads from raccoons, and occasionally bats, into 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 120 rabid animals were reported in 2011 (note that 119 [99.2%] of those positive animals were actually tested in 2011; one animal was tested in July 2010). Among the 2,375 animals tested at the Bureau of Public Health Laboratories (BPHL) in 2011, there were 119 confirmed rabid animals. This represents an 18.8% decrease in identified rabid animals from the previous five-year average. There was also a 23.1% decrease in the number of total animals tested for rabies infection. The decrease in testing may be in part due to decreasing state and local budgets, resulting in fewer resources available to pursue animal testing, as well as the requirement that a human or domestic animal exposure (such as a bite or scratch from a potentially infected animal) must have occurred prior to animal testing. Fee-based testing through the Kansas State University (KSU) Rabies Laboratory is available for those jurisdictions with funds available to pay for animal testing not associated with a human or domestic animal exposure. None of the 40 animals submitted to KSU Rabies Laboratory were positive for rabies.

Figure 2. Reported Animal Rabies Cases by Month of Laboratory Report, Florida, 2011 and 2006-2010 Average



Note: One case was reported in 2011 with laboratory report date in earlier years; this is included in the 2006-2010 average. Cases with laboratory date in 2011 but reported in 2012 are not included.

Historically, the number of animals testing positive for rabies in Florida tends to peak in July or August, with a smaller peak in late winter (February). In 2011, activity peaked in March, followed by a smaller peak in October and November (Figure 2). The late peak was in part driven by increased rabies activity in north Florida including an outbreak centered around Bay County; however, late activity was seen throughout the state. The counties reporting the most cases in 2011 were Bay (10) and Alachua (8). In 2011, rabid animals were reported in 41 (61.2%) of 67 counties in Florida (Figure 3).

Raccoons accounted for the majority of rabid animals in 2011 (79, 66.4%) (Table 1); rabies was identified in 18 bats (15.1%) and 11 cats (9.2%). Feline rabies was above the 20-year average, while rabies in raccoons, bats, and foxes were at or below their respective 20-year averages. This may represent increased rabies activity in cats or increased likelihood of human and domestic animal contact with rabid cats compared to rabid wildlife. In at least three cases, Bay (2) and Duval (1), rabid cats were part of a larger colony, ranging from 15 to 80 cats residing on a residential property. In one of these cases, the homeowner also had a pet

wild raccoon. Since 1997, rabid cats have continued to outnumber rabid dogs, although rabies vaccination is compulsory for both. Two particularly challenging bat cases investigated by the Pinellas County Health Department occurred in 2011. One involved a student who brought a live bat to school where the bat was used as a hands-on educational tool; the bat was later confirmed to have rabies at the state public health laboratory. A second case involved a birthday party in a large apartment complex where children played with a live bat for several hours and then placed the live bat in a bag and presented it to the birthday child. In this situation, the bat escaped and was not tested; however, rabies post-exposure prophylaxis was recommended for all potentially exposed persons.

Molecular sequencing of rabies positive bats, non-reservoir species, and a subgroup of rabid raccoons by KSU Rabies Laboratory confirmed 45 terrestrial animals (31 raccoons, 11 cats, 2 bobcats, and 1 grey fox) were infected with the eastern U.S. raccoon rabies variant. One bat was confirmed with a bat variant and additional sequencing is ongoing.

Figure 3. Reported Animal Rabies Cases by County, Florida, 2011

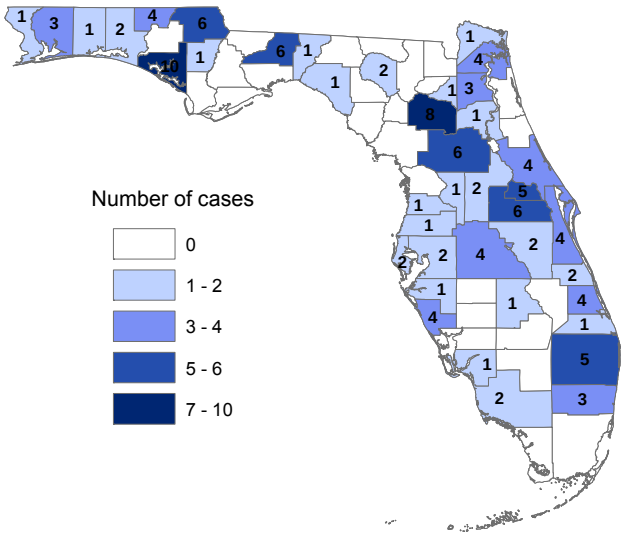


Table 1. Reported Animal Rabies Infections by Type of Animal, Florida 2011*

Animal	Number (percent)
Raccoon	79 (66.4)
Bat	18 (15.1)
Cat	11 (9.2)
Fox	6 (5.0)
Bobcat	2 (1.7)
Dog	1 (0.8)
Horse	1 (0.8)
Skunk	1 (0.8)
Total	119 (100.0)

*Note that one animal was tested in July 2010 and is not included in this table.

Prevention

During 2011, the Florida Rabies Advisory Committee revised the rabies guidebook to provide information for county health departments and others involved in rabies control and prevention.
Prevention measures include the following strategies:

- Vaccinate pets and at-risk livestock.
- Avoid direct human and domestic animal contact with wild animals.
- Educate the public to reduce contact with stray and feral animals.
- Support animal control in efforts to reduce feral and stray animal populations.
- Bat-proof homes, including use of window screens.
- Provide pre-exposure prophylaxis for people in high-risk professions, such as animal control and veterinary personnel, laboratory workers, and those working with wildlife.

Pet food placed outside is a strong attractant for raccoons and other wildlife. Consider pre-exposure prophylaxis for those traveling extensively where rabies is common in domestic animals. Oral bait vaccination programs for wildlife are justified in some situations. These programs can be effective but require careful advance planning and substantial time and financial commitments.

Additional Resources

Centers for Disease Control and Prevention. Rabies.
Available at http://www.cdc.gov/rabies/.

Florida Department of Health. Rabies.
Available at http://doh.state.fl.us/Environment/medicine/rabies/rabies-index.html.

Florida Department of Health. Rabies Prevention and Control in Florida, 2012.
Available at http://doh.state.fl.us/Environment/medicine/rabies/Documents/RabiesGuide2012Final.pdf.

Rabies, Possible Exposure where Post-Exposure Prophylaxis was Recommended

Possible Rabies Exposure where Post-Exposure Prophylaxis was Recommended		
Number of cases		2,410
2011 incidence rate per 100,000 population		12.7
Percent change from 5-year average (2006-2010) reported incidence rate		43.6%
Age		Years
Mean		37.6
Median		37.0
Min-Max		0 - 96
Race	Number (Percent)	Rate
White	1,887 (89.0%)	13.3
Black	167 (7.9%)	5.5
Other	67 (3.2%)	3.9
Unk	289	
Ethnicity	Number (Percent)	Rate
Hispanic	349 (16.0%)	8.1
Non-Hispanic	1,827 (84.0%)	12.5
Unk	234	
Sex	Number (Percent)	Rate
Male	1,185 (49.2%)	12.8
Female	1,224 (50.8%)	12.7
Unk	1	

Disease Abstract

In 2001, reporting was initiated for animal encounters that triggered a recommendation for rabies post-exposure prophylaxis (PEP). Rabies PEP is recommended when an individual is bitten, scratched, or has mucous membrane or fresh wound contact with the saliva or nervous tissue of a laboratory-confirmed rabid animal, or a suspected rabid animal that is not available for testing.

The annual incidence of exposures for which PEP is recommended has increased since case reporting was initiated (Figure 1). This increase in PEP may be due to improved reporting, increased exposures to possible rabid animals, increased inappropriate or unnecessary use of PEP, or a combination of factors. Reductions in state and local resources may contribute to increases in inappropriate or unnecessary use of PEP, as resources may not be available to investigate animal exposures and confirm animal health status, or to provide regular rabies PEP education for health care providers.

PEP is recommended year-round in Florida (Figure 2). The highest incidence was reported in individuals between 20 and 24 years of age (Figure 3). Possible rabies exposure cases where PEP was recommended was reported in 59 (88.1%) of 67 Florida counties (Figure 4).

Figure 1. Reported Possible Rabies Exposure where Post-Exposure Prophylaxis was Recommended Incidence Rate by Year Reported, Florida, 2002-2011

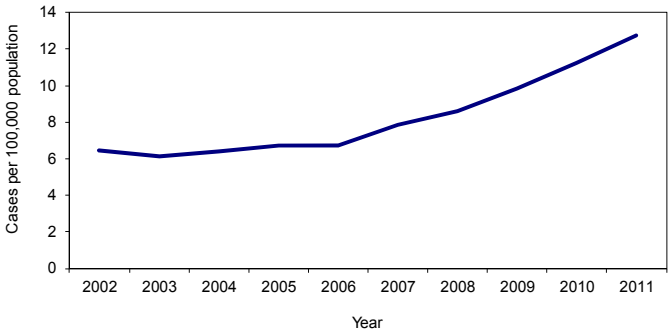
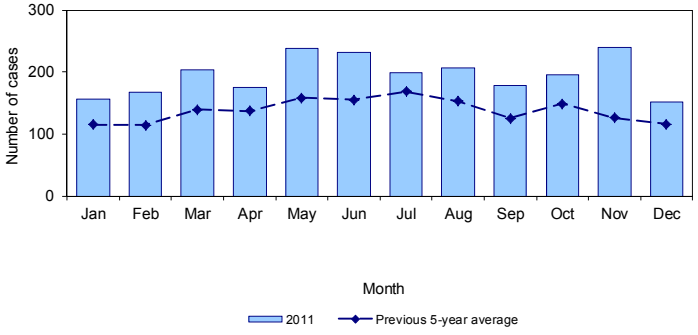
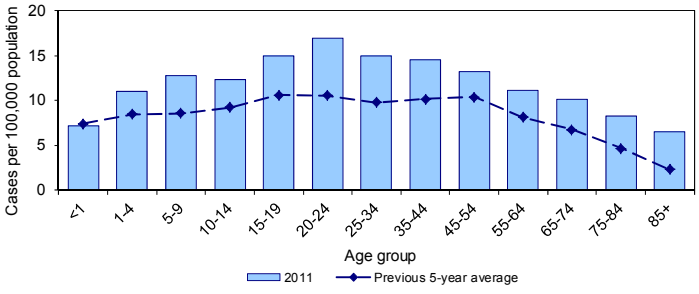


Figure 2. Reported Possible Rabies Exposure where Post-Exposure Prophylaxis was Recommended Cases by Month of Exposure, Florida, 2011 and 2006-2010 Average



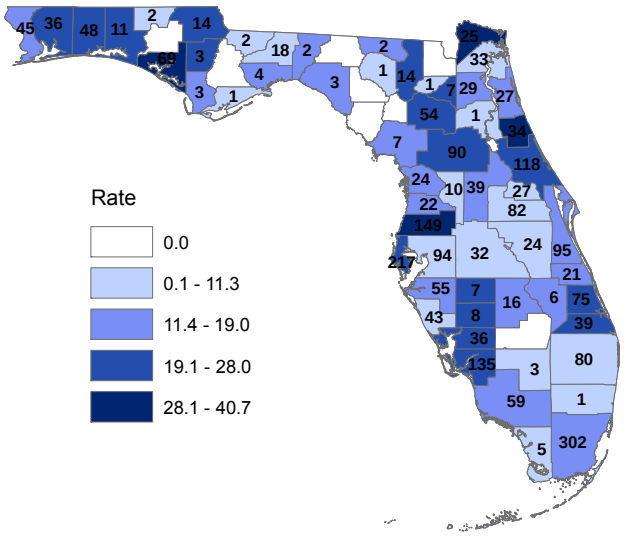
Note: Sixty-nine cases were reported in 2011 with exposure date in earlier years; these are included in the 2006-2010 average. Cases with exposure date in 2011 but reported in 2012 are not included.

Figure 3. Reported Possible Rabies Exposure where Post-Exposure Prophylaxis was Recommended Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average



Note: Two cases from 2011 were missing data on age and are not included.

Figure 4. Possible Rabies Exposure Cases where Post-Exposure Prophylaxis was Recommended and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

Contact with wildlife and unfamiliar domestic animals should be limited. It is especially important to educate children about appropriate interactions with animals. If bitten, wash the area thoroughly with soap and water, seek medical attention, and report the bite to the local county health department. Domestic animals should be vaccinated against rabies.

Additional Resources

Florida Department of Health. Dog Bite Prevention.
Available at http://doh.state.fl.us/Environment/medicine/arboviral/Zoonoses/dogbite_home.html.

Florida Department of Health. Rabies.
Available at http://doh.state.fl.us/Environment/medicine/rabies/rabies-index.html.

Florida Department of Health. Rabies Prevention and Control in Florida, 2012.
Available at http://doh.state.fl.us/Environment/medicine/rabies/Documents/RabiesGuide2012Final.pdf.

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever			
Number of cases			12
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) number of reported cases			-27.7%
Age			Years
Mean			50.1
Median			48.0
Min-Max			15 - 86
Race	Number	(Percent)	Rate
White	9	(100.0%)	NA
Black	0	(0.0%)	NA
Other	0	(0.0%)	NA
Unk	3		
Ethnicity	Number	(Percent)	Rate
Hispanic	1	(11.1%)	NA
Non-Hispanic	8	(88.9%)	NA
Unk	3		
Sex	Number	(Percent)	Rate
Male	9	(75.0%)	NA
Female	3	(25.0%)	NA
Unk	0		

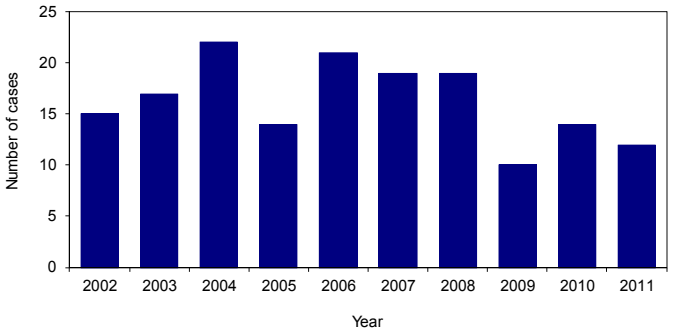
Description

Rocky Mountain spotted fever (RMSF) is a tickborne disease caused by *Rickettsia rickettsii* bacteria. Typical symptoms include fever, headache, abdominal pain, vomiting, and muscle pain; a rash may also develop. Illness can be severe or even fatal if not treated. Antibodies for other spotted fever rickettsial species such as *R. parkeri*, *R. amblyommii, R. africae,* and *R. conorii* cross-react with serologic tests for the RMSF agent, *R. rickettsii*; commercial testing to differentiate other spotted fever rickettsiosis (SFR) from RMSF is currently limited. National reporting criteria for RMSF was expanded to include all SFR, and Florida is in the process of revising state reporting requirements to align with updated SFR national reporting criteria. Clinically, the presence of eschar-type lesions at the site of a tick bite is suggestive of infection from a SFR other than *R. rickettsii*. The American dog tick, *Dermacentor variabilis*, is the principal RMSF vector in Florida; the primary vector for *R. parkeri* is the Gulf Coast tick, *Amblyomma maculatum*; and the primary vector for *R. amblyommii* is believed to be the Lone Star tick, *Amblyomma americanum*. The elderly, males, blacks, people with glucose-6-phosphate-dehydrogenase (G6PD) deficiency, and people with a history of alcohol abuse are at greatest risk for severe disease.

Disease Abstract

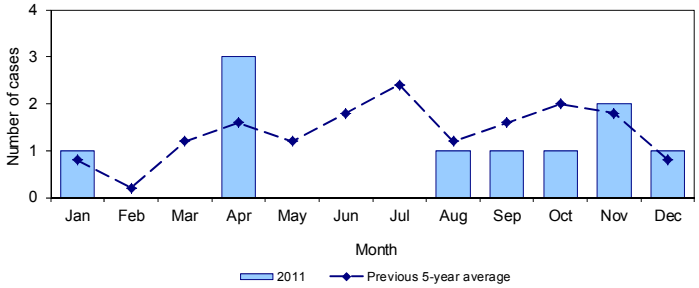
In 2011 there were 12 cases of RMSF reported (Figure 1). All 12 cases, (two confirmed and 10 probable) had positive serology for RMSF at commercial laboratories, although there were two infections with eschar lesions indicating an SFR other than RMSF. Additional testing by the Centers for Disease Control and Prevention (CDC) to determine the causative species was not performed for the two cases with eschar lesions. The extent that ecological factors (e.g., rainfall, ambient temperature, fluctuations in tick host densities) have on incidence of disease in humans in Florida is unknown. In Florida, cases of RMSF are reported year-round, though peak transmission typically occurs during the summer and fall months (Figure 2). RMSF tends to affect adults more than children, and in 2011, there were more cases reported in those aged 45 to 54 years than in any other age group (Figure 3). RMSF cases were reported in nine (13.4%) of 67 Florida counties (Figure 4).

Figure 1. Reported Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 2002-2011



Of the 2011 cases, nine (75.0%) people acquired the infection in Florida and three (25.0%) cases acquired the infection in other U.S. states; two (16.7%) people reported travel to Georgia and one (8.3%) reported travel to Georgia and Tennessee. The national case fatality rate for treated cases is approximately 5% and for untreated cases is up to 20%. Only one (8.3%) reported case, an 86-year-old male, was hospitalized in 2011 and no deaths were attributed to RMSF. More detailed tick-borne illness surveillance data are available at: http://doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_surveillance_reports.html.

Figure 2. Reported Rocky Mountain Spotted Fever Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Two cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2011 and 2006-2010 Average

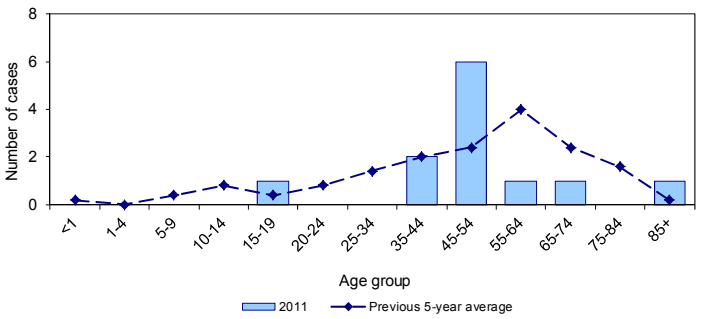
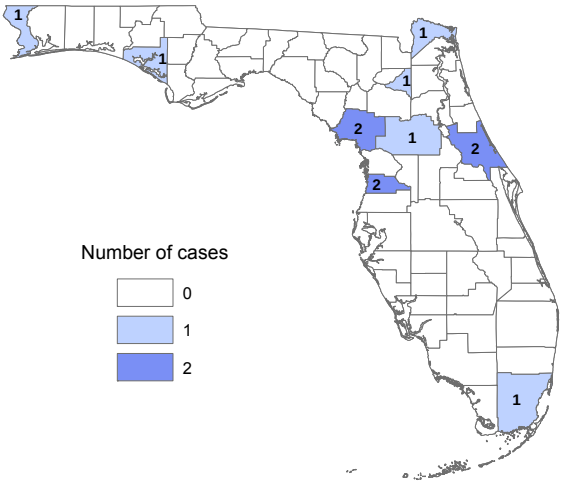


Figure 4. Reported Rocky Mountain Spotted Fever Cases by County, Florida, 2011



Prevention

Prevention of tick bites is the best way to avoid disease. Methods for preventing tick bites are below.

- Wear light-colored clothes so that ticks crawling on clothing are visible.
- Tuck pant legs into socks so that ticks cannot crawl inside clothing.
- Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary.
- Search the body for ticks frequently when spending time in potentially tick-infested areas.
- If a tick is found, it should be removed as soon as possible.
    - Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting.
    - Do not use bare fingers to crush ticks.
    - Wash hands following tick removal.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

Additional Resources

Centers for Disease Control and Prevention. Rocky Mountain Spotted Fever (RMSF). Available at http://www.cdc.gov/rmsf/.

Florida Department of Health. Tick-Borne Disease in Florida. Available at http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

Florida Department of Health. Tick-Borne Disease Surveillance Summaries. Available at http://doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_surveillance_reports.html.

Paddock CD, Sumner JW, Comer JA, Zaki SR, Goldsmith CS, Goddard J, McLellan SLF, Tamminga CL, Ohl CA. 2004. *Rickettsia parkeri*: A Newly Recognized Cause of Spotted Fever Rickettisiosis in the United States. *Clinical Infectious Diseases*, 38(6):805-811. Available at http://cid.oxfordjournals.org/content/38/6/805.full.pdf+html.

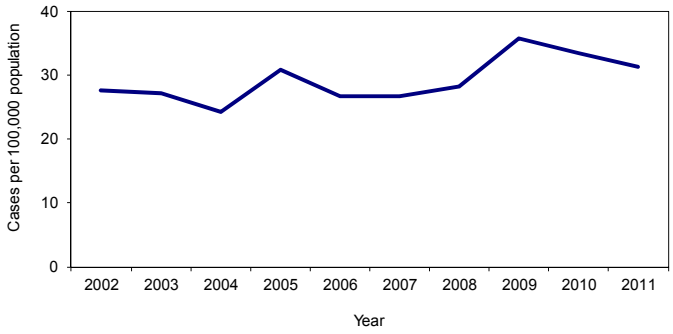
Salmonellosis

Salmonellosis			
Number of cases			5,923
2011 incidence rate per 100,000 population			31.3
Percent change from 5-year average (2006-2010) reported incidence rate			3.6%
Age			Years
Mean			24.3
Median			9.0
Min-Max			0 - 95
Race	Number	(Percent)	Rate
White	4,664	(80.8%)	32.9
Black	702	(12.2%)	23.1
Other	408	(7.1%)	23.6
Unk	149		
Ethnicity	Number	(Percent)	Rate
Hispanic	1,376	(23.9%)	31.9
Non-Hispanic	4,375	(76.1%)	29.9
Unk	172		
Sex	Number	(Percent)	Rate
Male	2,885	(48.8%)	31.2
Female	3,026	(51.2%)	31.3
Unk	12		

Disease Abstract

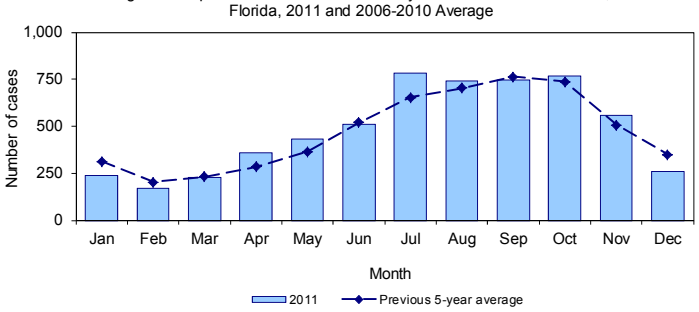
Salmonellosis is a diarrheal illness caused by infection with *Salmonella* bacteria (excluding *Salmonella* serotype Typhi, which causes typhoid fever). There are more than 2,500 serotypes of Salmonella. Of isolates forwarded to the Florida Bureau of Public Health Laboratories, serotypes Javiana, Flint, and Newport are the most commonly identified by pulsed-field gel electrophoresis. The case definition for salmonellosis changed in July 2011 to align with other changes to enteric case definitions. Starting July 27, 2011, detection of *Salmonella* using any non-culture laboratory method met the suspect case definition, regardless of whether the case was clinically compatible. Note that suspect cases are not included in this report.

Figure 1. Reported Salmonellosis Incidence Rate by Year Reported, Florida, 2002-2011



The incidence rate for salmonellosis has slightly increased overall in the last ten years (Figure 1). Incidence peaked in 2009 when 6,741 cases were reported, but decreased in 2010 (6,281 cases) and 2011 (5,923 cases). Salmonellosis has a strong seasonal trend with the number of cases increasing in the summer and early fall, typically peaking in September (Figure 2). In 2011, onsets peaked in July, which is earlier than expected. The highest incidence rates continue to occur among infants <1 year old and children 1-4 years old (Figure 3). Incidence rates in 2011 were very similar to the previous 5-year average in all age groups. Salmonellosis was reported in all 67 counties in Florida in 2011 (Figure 4). Rates vary across the state, but generally appear to be higher in the northern part of the state.

Figure 2. Reported Salmonellosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: One hundred twenty-nine cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Salmonellosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

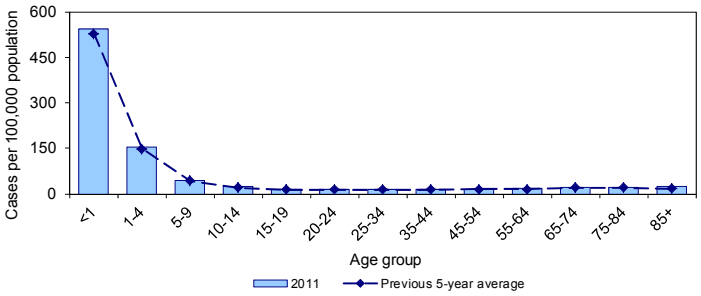
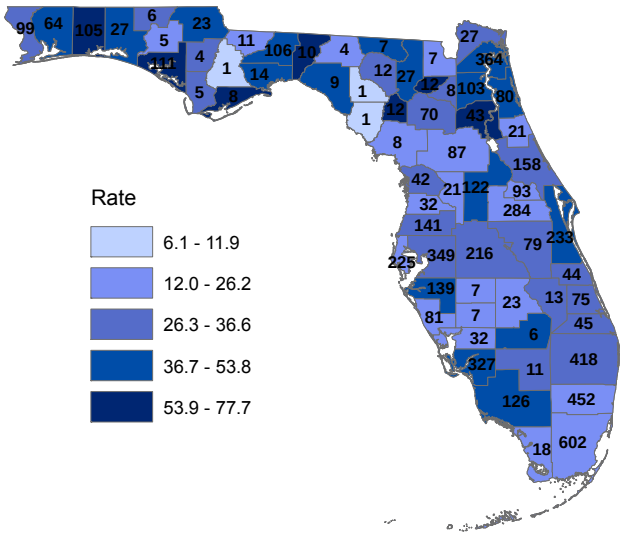


Figure 4. Reported Salmonellosis Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



In 2011, 5,678 (95.9%) of salmonellosis cases were laboratory-confirmed. Of reported salmonellosis cases in 2011, 1,531 (25.8%) were hospitalized, compared to 25.9% in 2010. An average of 15 people die each year with (not necessarily from) salmonellosis; the majority of these cases are elderly with underlying health conditions. Ten people died in 2011 with salmonellosis. In the previous five years, an average of 8.1% of salmonellosis cases are reported as outbreak-associated; this increased to 681 cases (11.5%) in 2011.

Prevention

Reduce the likelihood of contracting salmonellosis by using the preventive measures below.

- Cook all meat products and eggs thoroughly, particularly poultry.
- Avoid cross-contamination by cleaning utensils, counter tops, cutting boards, and sponges after they come in contact with raw poultry or other meat.
- Wash your hands thoroughly before, during, and after food preparation.
- Do not allow the fluids from raw poultry or meat to drip onto other foods.
- Consume only pasteurized milk, milk products, or juices.
- Wash your hands after coming into contact with any animals or their environment.
- Wash your hands, and children's hands, after toilet use.
- People with diarrhea should not prepare food or pour drinks for others.
- Children less than 5 years old are particularly vulnerable to infection and should only have contact with animals, including turtles, other reptiles, and baby chicks, under strict supervision to limit contamination of hands and clothing.

Additional Resources

Centers for Disease Control and Prevention. *Salmonella*.
Available at http://www.cdc.gov/salmonella/.

Florida Department of Health. 2000. *Guidelines for Control of Outbreaks of Enteric Disease in Child Care Settings.*
Available at http://www.doh.state.fl.us/disease_ctrl/epi/surv/enteric.pdf.

Shiga Toxin-Producing *Escherichia coli* Infection

Shiga Toxin-Producing *Escherichia coli* Infection		
Number of cases		103
2011 incidence rate per 100,000 population		0.5
Percent change from 5-year average (2006-2010) reported incidence rate		-1.4%
Age		Years
Mean		14.9
Median		11.0
Min-Max		0 - 81
Race	Number (Percent)	Rate
White	85 (87.6%)	0.6
Black	6 (6.2%)	NA
Other	6 (6.2%)	NA
Unk	6	
Ethnicity	Number (Percent)	Rate
Hispanic	30 (31.3%)	0.7
Non-Hispanic	66 (68.8%)	0.5
Unk	7	
Sex	Number (Percent)	Rate
Male	40 (40.0%)	0.4
Female	60 (60.0%)	0.6
Unk	3	

Description

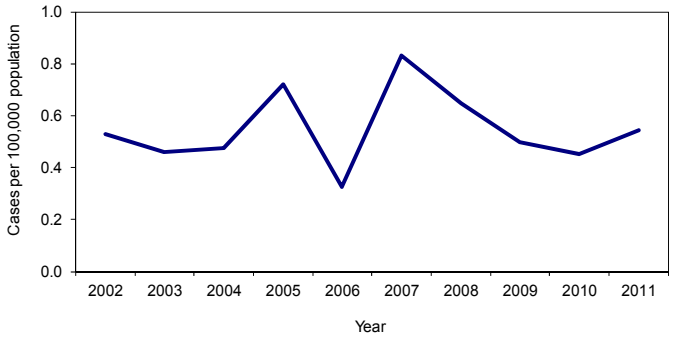
Shiga toxin-producing *Escherichia coli* (STEC) bacteria cause a diarrheal illness, which can be severe and occasionally results hemolytic uremic syndrome (HUS). The most commonly identified serogroup of STEC in the U.S. is O157:H7; however, many other serogroups can cause disease due to STEC. Serogroups O26, O111, and O103 are the non-O157 serogroups that most often cause illness in the U.S. Overall, the non-O157 serogroups are less likely than *E. coli* O157:H7 to cause severe illness; however, some non-O157 STEC serogroups can cause the most severe manifestations of illness.

Prior to 2008, STEC infections were reported under multiple disease codes, depending on the serogroup. One reporting code captured only serogroup O157:H7. Another reporting code captured known serogroups other than O157:H7. Previous Florida Morbidity Statistics Reports included only the disease code for *E. coli* O157:H7. However, in 2008, these reporting codes were combined into one and *E. coli* O157:H7 is no longer separated from the non-O157 strains. The figures in this report reflect cases due to infections with all STEC serogroups, not just serogroup O157:H7; therefore, they cannot be compared to E. coli O157:H7 numbers in reports prior to 2008.

Disease Abstract

The incidence of confirmed and probable STEC infection cases has varied over the past 10 years, with a low in 2006 and a high in 2007 (Figure 1). There was a 21.2% increase in the number of reported cases in 2011 compared to 2010, though the incidence rate was slightly below the previous 5-year average. STEC infection typically peaks in the late spring and early summer; in 2011, the cases were most common in March, May, June, and July (Figure 2).

Figure 1. Reported Shiga Toxin-Producing *Escherichia coli* Infection Incidence Rate by Year Reported, Florida, 2002-2011

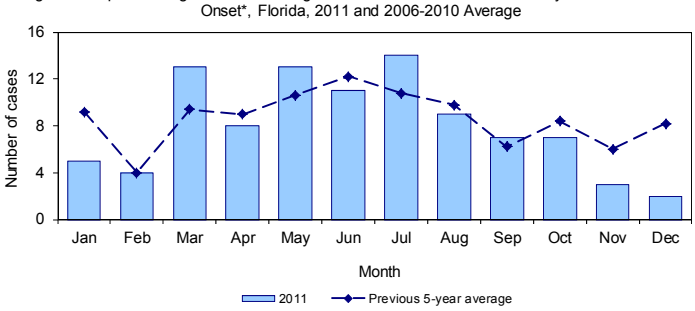


STEC infection incidence is highest in children <5 years old (Figure 3). Incidence in 2011 was above the previous 5-year average in all age groups below 35 years, and was below the average in all age groups 35 years and above. STEC infection cases were reported in 30 (44.8%) of the 67 counties in Florida (Figure 4).

A total of 92 (89.3%) cases were confirmed (i.e., Shiga toxin was detected and *E. coli* was isolated) and 11 (11.7%) cases were probable (i.e., a person with clinical illness who was epidemiologically linked to a confirmed case or *E. coli* O157 isolated but no Shiga toxin was detected). An additional 293 suspected cases were reported in 2011 (i.e., Shiga toxin was detected, but no *E. coli* was isolated), but are not included in this report. Of these 293 suspect cases, 39 (13.3%) were pending final Centers for Disease Control and Prevention (CDC) results when the 2011 disease reporting database closed. Though these cases could not be counted as confirmed, it is likely that some portion of them will later be laboratory confirmed. Serotypes for confirmed cases are presented in Table 1.

Of reported STEC infection cases in 2011, 13 (12.6%) were hospitalized, compared to an average 21.0% of cases in the previous five years, and there were no deaths reported. Twenty-one cases (20.4%) were classified as outbreak-associated in 2011, compared to 24.7% of cases reported in 2010. Fifteen (14.6%) cases acquired infection outside of Florida in 2011 (five in other states, 10 in other countries), which is comparable to 2010 (15.3%).

Figure 2. Reported Shiga Toxin-Producing *Escherichia coli* Infection Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Seven cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Shiga Toxin-Producing *Escherichia coli* Infection Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

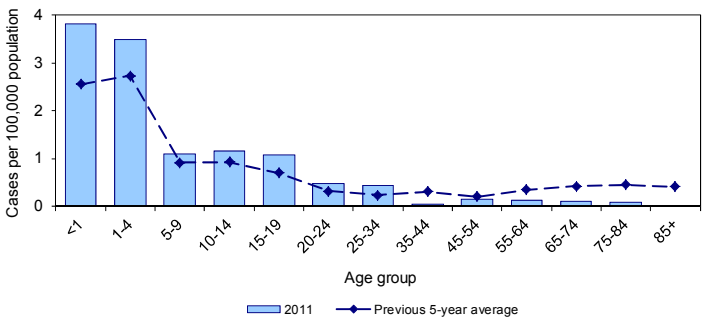


Figure 4. Reported Shiga Toxin-Producing *Escherichia coli* Infection Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

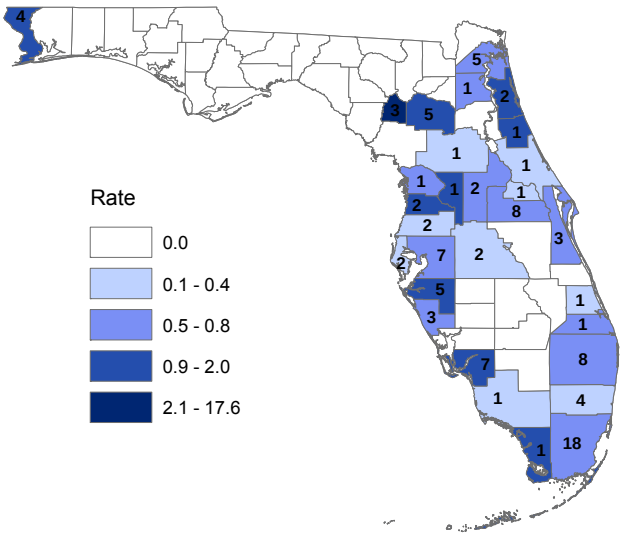


Table 1. Serotypes for Reported Confirmed* Shiga Toxin-Producing *Escherichia coli* Infection Cases, Florida 2011

Serotype	Number (percent)
O157:H7	32 (35.2)
O103:H2	10 (11)
O111:non-motile	9 (9.9)
O26:H11	7 (7.7)
O118:H16	6 (6.6)
O157, Shiga toxin	6 (6.6)
O111:H8	5 (5.5)
O157:non-motile	4 (4.4)
O45:H2	2 (2.2)
O76:H19	2 (2.2)
O rough:H19	1 (1.1)
O rough:non-motile	1 (1.1)
O undetermined:H19	1 (1.1)
O126:H27	1 (1.1)
O152:H2	1 (1.1)
O153:H2	1 (1.1)
O157:non-motile	1 (1.1)
O178:H19	1 (1.1)
Total confirmed cases*	91 (100.0)

* Note that one case reported as confirmed is excluded from this table because it should have been reported as suspect because no *E. coli* was actually isolated.

Prevention

Children less than 5-years-old are particularly vulnerable to STEC infection. To reduce the likelihood of becoming infected with STEC, observe the guidelines below.

- Wash your hands thoroughly after using the bathroom or changing diapers and before preparing or eating food. Wash hands after contact with animals or their environments (at farms, petting zoos, fairs, backyards, etc.).
- Cook all meat products thoroughly, particularly ground beef.
- Avoid cross-contamination in food preparation areas by thoroughly washing hands, counters, cutting boards, and utensils after they touch raw meat. Do not allow the fluids from raw meat to come in contact with other foods.
- Avoid raw milk, unpasteurized dairy products, and unpasteurized juices (e.g., fresh apple cider).
- Avoid swallowing water when swimming or playing in lakes, ponds, streams, swimming pools, and backyard "kiddie" pools.

Additional Resources

Centers for Disease Control and Prevention. *Escherichia coli* O157:H7 and other Shiga toxin-producing *Escherichia coli* (STEC).
Available at http://www.cdc.gov/ecoli/index.html.

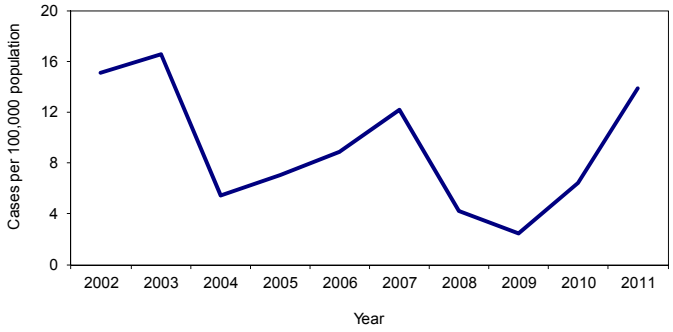
Shigellosis

Shigellosis			
Number of cases			2,635
2011 incidence rate per 100,000 population			13.9
Percent change from 5-year average (2006-2010) reported incidence rate			102.9%
Age			Years
Mean			13.8
Median			6.0
Min-Max			0 - 102
Race	Number	(Percent)	Rate
White	1,557	(59.8%)	11.0
Black	844	(32.4%)	27.8
Other	201	(7.7%)	11.6
Unk	33		
Ethnicity	Number	(Percent)	Rate
Hispanic	637	(24.6%)	14.8
Non-Hispanic	1,957	(75.4%)	13.4
Unk	41		
Sex	Number	(Percent)	Rate
Male	1,244	(47.2%)	13.4
Female	1,391	(52.8%)	14.4
Unk	0		

Disease Abstract

Shigellosis is a diarrheal disease caused by infection with *Shigella* bacteria. The case definition for shigellosis changed in July 2011 to align with other changes to enteric case definitions. Starting July 27, 2011, detection of *Shigella* using any non-culture laboratory method met the suspect case definition, regardless of whether the case was clinically compatible. Note that suspect cases are not included in this report.

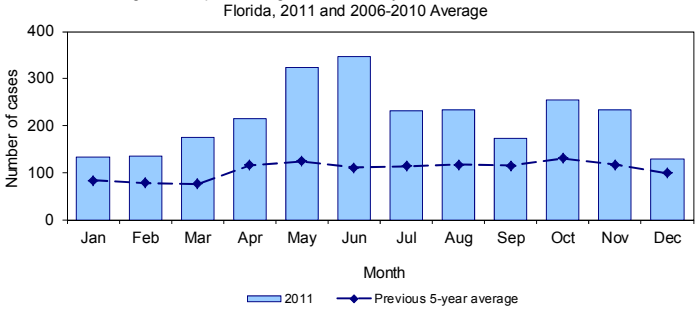
Figure 1. Reported Shigellosis Incidence Rate by Year Reported, Florida, 2002-2011



The incidence rate for shigellosis has varied considerably over the last ten years (Figure 1). Periodic community-wide outbreaks involving childcare centers account for most of the observed variability. Shigellosis activity started increasing in 2010 and continued to increase in 2011. Historically, shigellosis does not have a distinct seasonal pattern, but instead varies between years; activity in 2011 peaked in May and June, with a smaller peak in October and November (Figure 2). The highest incidence rates continue to occur among children aged 1-4 years and 5-9 years (Figure 3). The age distribution in 2011 was similar to the previous five years, but with more cases, particularly in the younger age groups. Shigellosis was reported in 54 (80.6%) of 67 counties in Florida. Counties with the most cases and highest incidence rates were generally in the central part of the state (Figure 4).

Of reported shigellosis cases, 411 (15.6%) were hospitalized, which is lower than the 21.4% of cases hospitalized in 2010, and no deaths were reported. In 2011, 1,268 (48.1%) reported cases were outbreak-associated, compared to 28.6% of cases in 2010. A total of 634 (24.1%) cases were daycare attendees or staff, which is slightly decreased from 27.0% in 2010.

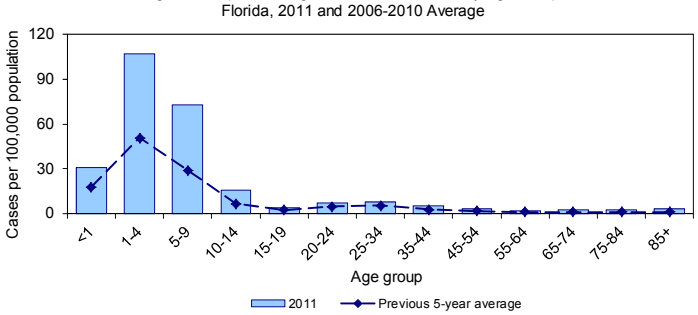
Figure 2. Reported Shigellosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

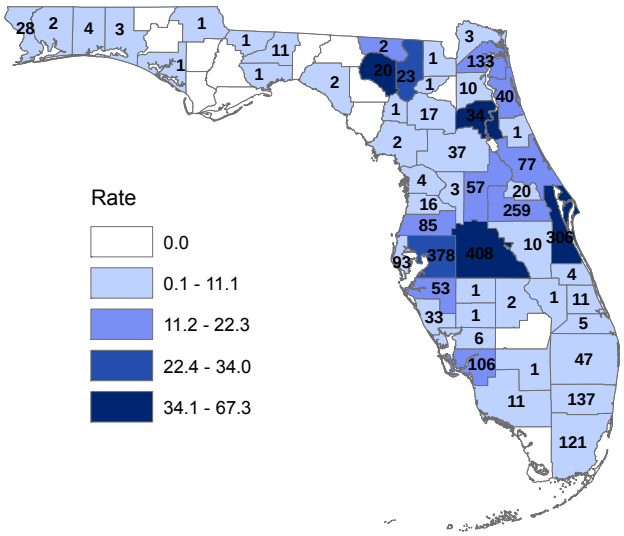
Note: Fifty-one cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Shigellosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average



Note: One case from 2011 was missing data on age and is not included.

Figure 4. Reported Shigellosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

Reduce the likelihood of contracting shigellosis by using the preventive measures below.

- Practice good hand hygiene, especially after toilet use and before preparing food.
- Supervise hand washing of toddlers and small children after they use the toilet.
- Dispose of soiled diapers properly.
- Keep children with diarrhea out of child care settings.
- Do not prepare food for others while ill with diarrhea.
- Avoid swallowing water from ponds, lakes, or untreated pools.

Outbreaks in daycare centers are common and control may be difficult. The Florida Department of Health has published outbreak control measures for childcare settings (see Additional Resources).

Additional Resources

Centers for Disease Control and Prevention. Shigellosis.
Available at http://www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/.

Lampel KA. *Shigella* Species. *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook*. Lampel KA, Al-Khaldi S, Cahill SM, eds. 2nd edition. U.S. Food and Drug Administration.
Available at http://www.fda.gov/downloads/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/UCM297627.pdf.

Florida Department of Health. 2000. *Guidelines for Control of Outbreaks of Enteric Disease in Child Care Settings.*
Available at http://www.doh.state.fl.us/disease_ctrl/epi/surv/enteric.pdf.

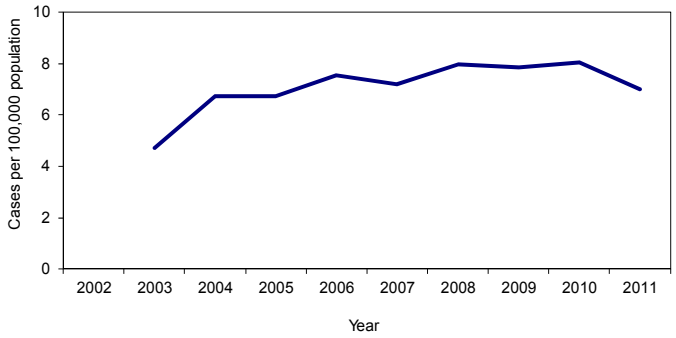
Streptococcus pneumoniae, Invasive Disease

Streptococcus pneumoniae, Invasive Disease		
Number of cases		1,324
2011 incidence rate per 100,000 population		7.0
Percent change from 5-year average (2006-2010) reported incidence rate		-9.4%
Age		Years
Mean		51.8
Median		56.0
Min-Max		0 - 101
Race	Number (Percent)	Rate
White	952 (73.9%)	6.7
Black	309 (24.0%)	10.2
Other	28 (2.2%)	1.6
Unk	35	
Ethnicity	Number (Percent)	Rate
Hispanic	177 (14.0%)	4.1
Non-Hispanic	1,086 (86.0%)	7.4
Unk	61	
Sex	Number (Percent)	Rate
Male	654 (49.4%)	7.1
Female	670 (50.6%)	6.9
Unk	0	

Disease Abstract

Streptococcus pneumoniae bacteria cause many clinical syndromes depending on the site of infection (e.g., otitis media, pneumonia, bacteremia, meningitis, sinusitis, peritonitis, and arthritis). Invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or cerebrospinal fluid. Cases are classified as drug-resistant when the isolate has intermediate or resistant susceptibility to one or more commonly used antibiotics. Drug-resistant cases have been reportable since 1996 and drug-susceptible cases have been reportable since 2003.

Figure 1. Reported *Streptococcus pneumoniae*, Invasive Disease Incidence Rate by Year Reported, Florida, 2002-2011

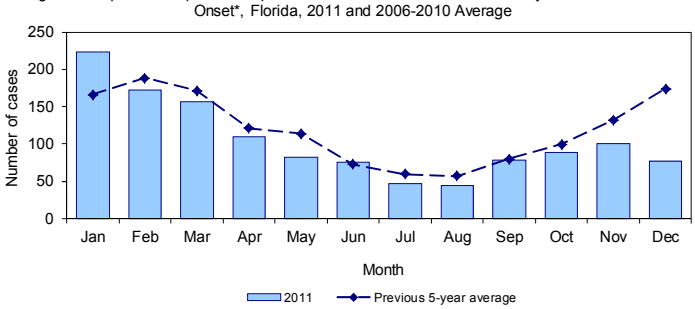


Note: Drug-Susceptible *S. pneumoniae* was not reportable until 2003.

Since 2004, the second year of reporting drug-susceptible cases, the annual incidence rate of invasive pneumococcal disease increased 19.4% from 6.7 cases per 100,000 population to a peak of 8.0 cases per 100,000 population in 2010 (Figure 1). In 2011, the incidence rate was 7.0 cases per 100,000 population; a decrease of 12.5% compared to 2010. The majority of invasive pneumococcal disease cases occur during the winter months (Figure 2). In 2011, cases peaked in January, the only month that exceeded the 5-year monthly average. Case numbers were substantially lower than the 5-year monthly average in November and December.

The highest incidence rates were reported among adults aged 85 years and older, infants less than one year old, and adults aged 75-84 years (Figure 3). Additionally, among infants <1-year-old, the incidence rate decreased to 15.7 per 100,000 in 2011 compared to the previous 5-year average of 29.4 per 100,000. This decrease in invasive pneumococcal disease is associated with the widespread use of the pediatric 13-valent pneumococcal conjugate vaccine, which was introduced in 2010. *S. pneumoniae* invasive disease was reported in 59 (88.1%) of 67 counties in Florida (Figure 4).

Figure 2. Reported *Streptococcus pneumoniae*, Invasive Disease Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Sixty-five cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported *Streptococcus pneumoniae*, Invasive Disease Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

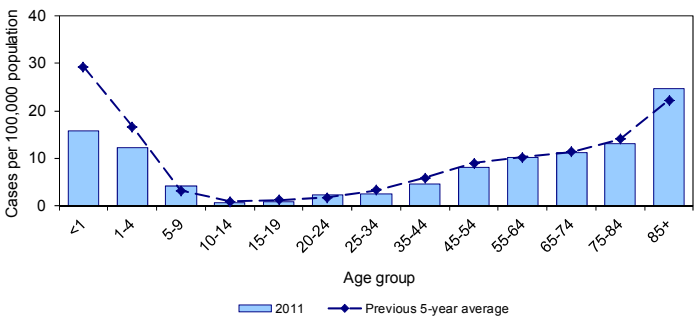
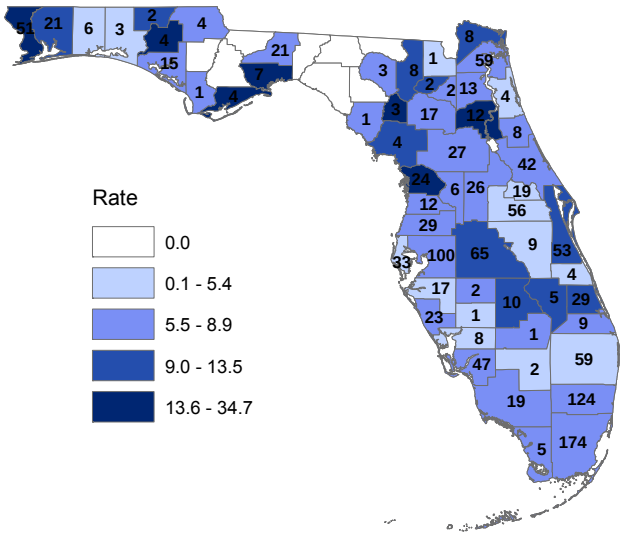


Figure 4. Reported *Streptococcus pneumoniae*, Invasive Disease Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Please see Section 4: Summary of Antimicrobial Resistance Surveillance for more information on specific antimicrobial resistance patterns of *S. pneumoniae* in Florida.

Prevention

The most effective way of preventing pneumococcal infections is through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children through age 5, with vaccination beginning in the first year of life. The older pneumococcal polysaccharide vaccine should be administered routinely to all adults over 65 years old. The vaccine is also indicated for children 6-18 years old with certain underlying medical conditions. Additionally, it is important to practice good hand hygiene, to take antibiotics only when necessary, and to finish the entire course of any prescribed treatment.

Additional Resources

Centers for Disease Control and Prevention. *Streptococcus pneumoniae* Disease.
Available at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/streppneum_t.htm.

Centers for Disease Control and Prevention. 2000. Preventing Pneumococcal Disease among Infants and Young Children: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity and Mortality Weekly Report*, 49(RR09);1-38.
Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4909a1.htm.

Florida Department of Health. *Streptococcus pneumoniae*.
Available at http://www.doh.state.fl.us/Disease_ctrl/epi/htopics/anti_res/S.pneumoniae.htm

Syphilis

Syphilis			
Number of cases			4,142
2011 incidence rate per 100,000 population			21.9
Percent change from 5-year average (2006-2010) reported incidence rate			5.8%
Age			Years
Mean			37.3
Median			37
Min-Max			0 - 90
Race	Number	(Percent)	Rate
White	2,157	(54.3%)	15.2
Black	1,651	(41.6%)	54.3
Other	165	(4.2%)	9.5
Unknown	169		
Ethnicity	Number	(Percent)	Rate
Hispanic	1,012	(26.8%)	23.5
Non-Hispanic	2,766	(73.2%)	18.9
Unknown	364		
Sex	Number	(Percent)	Rate
Male	3,248	(78.4%)	35.1
Female	893	(21.6%)	9.2
Unknown	1		

Early Syphilis			
Number of cases			2,469
2011 incidence rate per 100,000 population			13.0
Percent change from 5-year average (2006-2010) reported incidence rate			15.2%
Age			Years
Mean			36.0
Median			35
Min-Max			2 - 80
Race	Number	(Percent)	Rate
White	1,378	(57%)	9.7
Black	954	(39.5%)	31.4
Other	85	(3.5%)	4.9
Unknown	52		
Ethnicity	Number	(Percent)	Rate
Hispanic	596	(25.9%)	13.8
Non-Hispanic	1,707	(74.1%)	11.7
Unknown	166		
Sex	Number	(Percent)	Rate
Male	2,109	(85.4%)	22.8
Female	360	(14.6%)	3.7
Unknown	0		

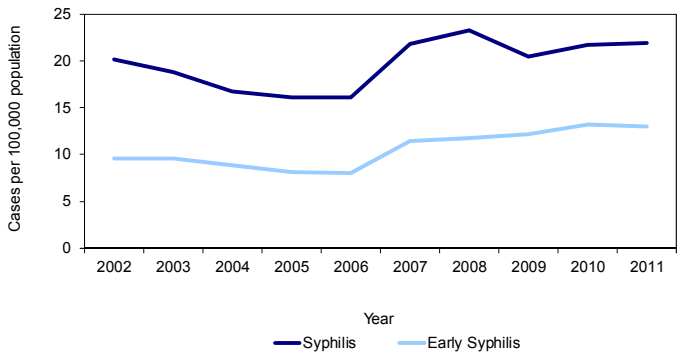
Disease Abstract

Syphilis is a sexually transmitted disease (STD) caused by *Treponema pallidum* bacteria. Syphilis is transmitted from person to person by direct contact with syphilis sores. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Syphilis can be transmitted during vaginal, anal, or oral sexual contact. Pregnant women with the disease can pass it to their unborn children.

The rate of syphilis cases has been increasing slightly since 2009, with 4,142 cases (21.9 cases per 100,000 population) reported in 2011 (Figure 1). Of those cases, 32 (0.8%) were reported as congenital cases. Only 24 congenital cases were reported in the previous year. This increase may be due to improved surveillance reporting efforts in Florida. Syphilis was the most prevalent STD co-infection reported among people with HIV in 2011; 1,471 (35.5%) reported syphilis cases were in people known to be HIV positive.

Syphilis is separated into early and late syphilis; early syphilis refers to syphilis of under one year's duration, late or latent syphilis refers to syphilis diagnosed more than a year after infection. Early syphilis is considered the infectious stage. In 2011, 2,469 cases of early syphilis were reported in Florida. The incidence rate of early syphilis was 13.0 cases per 100,000 population, which was a very slight decrease from the previous year (13.2 cases per 100,000 population) (Figure 1).

Figure 1. Reported Syphilis and Early Syphilis Incidence Rates, Florida, 2002-2011



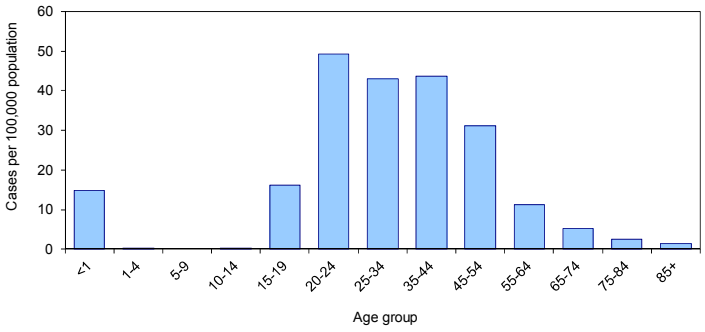
The rate of syphilis cases among blacks (54.3 cases per 100,000 population) was more than three times the rate in whites (15.2 cases per 100,000 population); this difference was slightly less pronounced for early syphilis cases (31.4 cases per 100,000 population in blacks compared to 9.7 cases per 100,000 population for whites). Rates of syphilis and early

syphilis were much higher in men than women (3.8 times higher for syphilis and 6.2 times higher for early syphilis). This gender disparity increased from 2010 with the largest gender differences seen among Hispanics.

The majority of syphilis cases in 2011 were in 20 to 54-year-olds (Figure 2). The number of early syphilis cases was much higher in men who have sex with men (MSM) compared to other men and women for 20 to 64-year-olds (Figure 3). Of MSM with early syphilis infection, 1,007 (58.9%) were co-infected with HIV, compared to 32 (8.0%) non-MSM men and 22 (6.1%) women.

Fifty-eight (86.6%) of 67 Florida counties had at least one case of syphilis reported in 2011 (Figure 4). Eight counties (Broward, Duval, Escambia, Hillsborough, Miami-Dade, Orange, Palm Beach, and Pinellas) each had more than 100 cases reported and accounted for 83.3% of all reported cases.

Figure 2. Reported Syphilis Incidence Rate by Age Group, Florida, 2011



Note: One case from 2011 were missing data on age and are not included.

Figure 3. Early Syphilis Cases by Age Group, Gender, and Sexual Preference, Florida, 2011

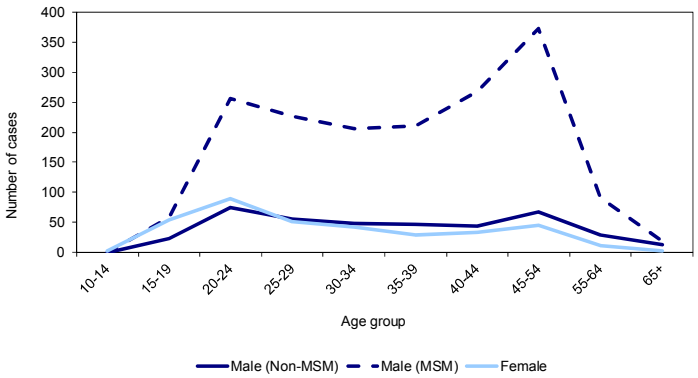
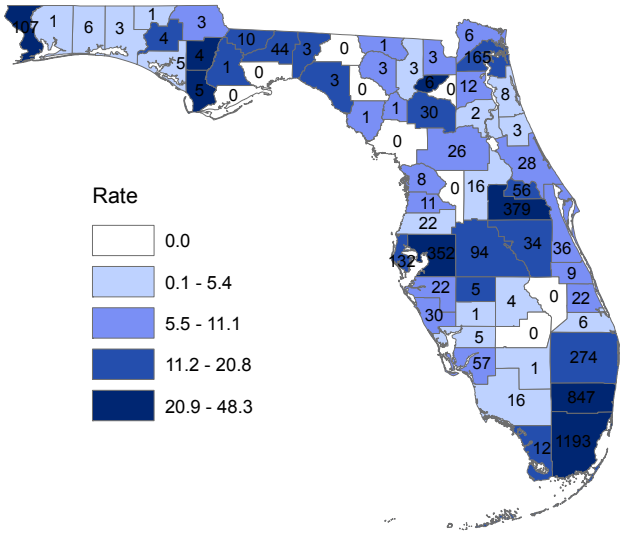


Figure 4. Reported Syphilis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

The prevalence of syphilis in communities and high-risk behaviors associated with certain population groups continue to contribute to morbidity. The trends in the distribution of early syphilis by gender, age, and race/ethnicity provide a useful guide for targeting and tailoring programs and resources to address disease elimination efforts.

The most effective way to avoid transmission of sexually transmitted diseases, including syphilis, is to abstain from sexual contact or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. It is important that sex partners talk to each other about their HIV status and history of other STDs so that preventive action can be taken. Transmission of syphilis cannot be prevented by washing the genitals, urinating, or douching after sex. Genital ulcers can occur anywhere in the genital area, including those areas covered or protected by a latex condom. Correct and consistent use of latex condoms can reduce the risk of syphilis only when the condom adequately covers the site of potential exposure.

References

Centers for Disease Control and Prevention. Syphilis - CDC Fact Sheet. Available at http://www.cdc.gov/std/syphilis/STDFact-syphilis.htm.

Tuberculosis

Tuberculosis		
Number of cases		753
2011 incidence rate per 100,000 population		4.0
Percent change from 5-year average (2006-2010) reported incidence rate		-18.4%
Race	Number (Percent)	Rate
White	351 (46.6%)	2.5
Black	299 (39.7%)	9.8
Other	103 (13.7%)	6.0
Unk	0	
Ethnicity	Number (Percent)	Rate
Hispanic	198	4.6
Non-Hispanic	555	3.8
Unk	0	
Sex	Number (Percent)	Rate
Male	492 (65.3%)	5.3
Female	261 (34.7%)	2.7
Unk	0	

Description

Tuberculosis (TB) is an airborne infectious disease, mostly respiratory, caused by the *Mycobacterium tuberculosis* bacteria. This disease is spread by aerosolized droplets from people with active TB. The TB bacteria usually attack the lungs, but can attack any part of the body such as the kidney, spine, and brain. If not treated properly, TB disease can be fatal. Symptoms of TB disease depend on where in the body the TB bacteria are growing and may include a bad cough that lasts 3 weeks or longer, pain in the chest, coughing up blood or sputum (phlegm from deep inside the lungs), weakness or fatigue, weight loss, no appetite, chills, fever, and sweating at night.

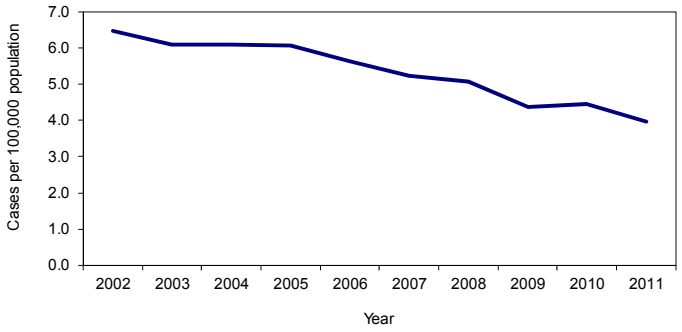
Each year, over nine million infections and 1.7 million deaths are caused by this disease worldwide. Only 10% of healthy individuals infected with TB bacteria will ever get the active form of the disease. However, this risk increases dramatically with specific risk factors and co-morbid conditions.

For most diseases included in this report, the date a case was reported determines which cases are included in this report (see *Interpreting the Data* in the *Introduction* for additional information). In contrast, the "date counted" is utilized to determine which cases to include for TB. The date counted is the date when a suspect case becomes a confirmed case of TB. Only confirmed TB cases are included in this report.

Disease Abstract

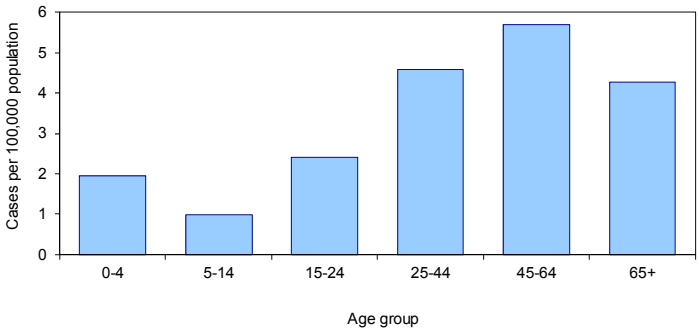
TB has been decreasing over the past decade in Florida (Figure 1). In 2011, 753 TB cases were counted in Florida; a 10.0% decrease in cases from 2010, when 835 cases were counted. Case counts reported in other sources may vary due to inclusion of cases collected after the reporting period.

Figure 1. Counted Tuberculosis Case Incidence Rate by Year Counted, Florida, 2002-2011



Medically underserved and low-income populations, including racial and ethnic minorities such as blacks, Hispanics, and Asians, have high rates of TB exposure and infection. These populations are disproportionately represented among reported cases of TB in Florida. This is partly due to immigration from countries where TB is more common. The incidence rate of TB is 9.8 cases per 100,000 population for blacks, and 6.0 for other races, compared to 2.5 for whites. The rate in Hispanics is 4.6, compared to 3.8 in non-Hispanics.

Figure 2. Counted Tuberculosis Case Incidence Rate by Age Group, Florida, 2011



The largest proportion of cases is in 45 to 64-year olds, followed by 25 to 44-year olds (Figure 2). Males have a higher case rate than females for all age groups, except in 0 to 4-year-olds (Figure 3). Over the past ten years, pediatric cases of TB in children less than 15 years old have contributed between 3.4%

of cases in 2009 and 7.1% of cases in 2004 (Figure 4). In 2011, 43 (5.7%) cases were in children less than 15 years old. TB cases were counted in 51 (76.1%) of 67 Florida counties; higher incidence rates were seen in the southern part of the state (Figure 5).

Figure 3. Counted Tuberculosis Case Incidence Rate by Age Group and Gender, Florida, 2011

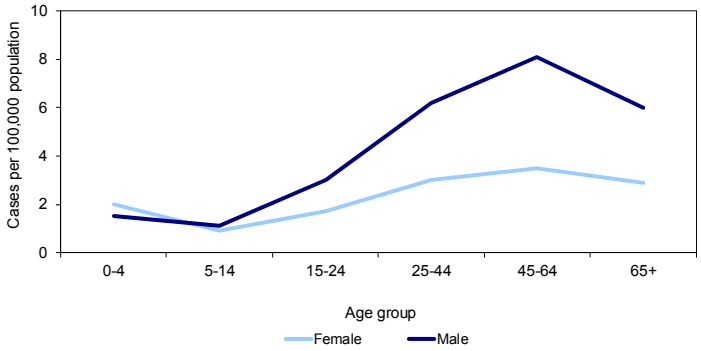


Figure 4. Percent of Counted Tuberculosis Cases in Children <15 Years Old by Year Counted, Florida, 2002-2011

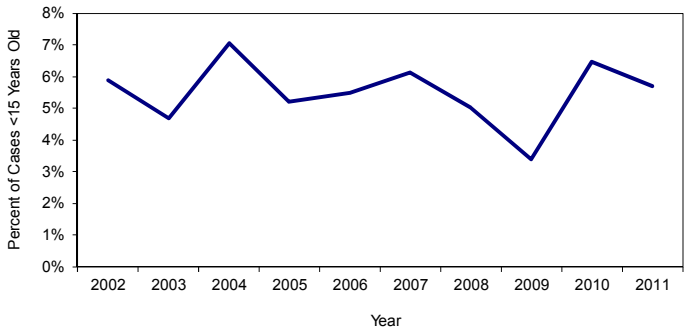
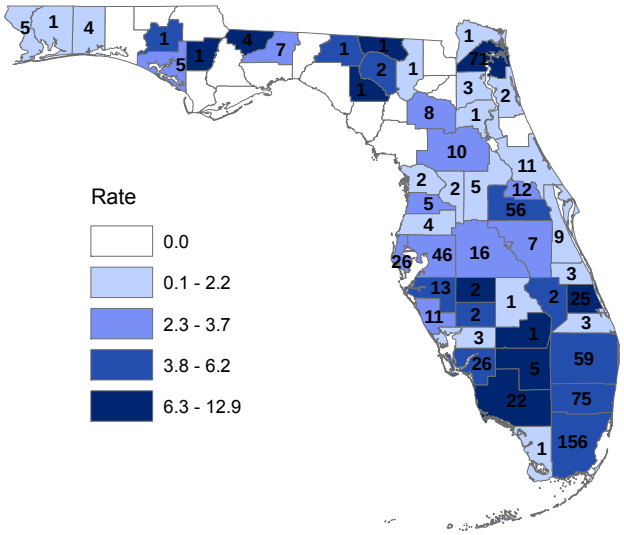


Figure 5. Counted Tuberculosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

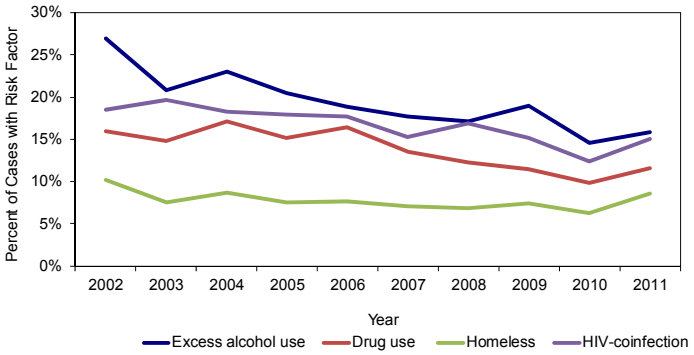


The risk factors (within a year of TB diagnosis) associated with having TB disease from 2002 to 2011 include excess alcohol use, drug use, homelessness, and HIV co-infection. In 2011, excess alcohol use was reported for 119 (15.8%) cases, drug use in 87 (11.6%) cases, homelessness in 65 (8.6%) cases, and HIV co -infection in 113 (15.0%) cases (Figure 6). Please note: multiple risk factors can be reported for a case and not all cases will have these risk factors.

Effective TB prevention and control within correctional settings are essential elements to protecting the health of inmates, staff, and the community. However, responsibility for care must be transferred to the county health department in order to ensure adherence to treatment once inmates with active TB disease are released back into the community. Failure to complete treatment could lead to acquiring multi-drug

resistance to TB medications, developing active TB disease, or exposing the general community to possible TB infections. There were 21 TB cases in 2011 in correctional facility residents. Twelve (57.1%) were from state prisons, seven (33.3%) from local jails, one (4.8%) from federal prisons, and one (4.8%) from another detainment facility.

Figure 6. Percent of Counted Tuberculosis Cases with Risk Factors by Year Counted, Florida, 2002-2011



Over the past 20 years, the number of TB cases counted in foreign-born people has remained relatively constant, ranging from 406 cases in 1996 to 526 cases in 2004 (Figure 7). In contrast, the number of TB cases counted in U.S.-born people has decreased dramatically from 1,277 cases in 1994 to 345 cases in 2011. In 2011, 408 (54.2%) cases of TB were counted in foreign-born people; of those, 102 (25.0%) were born in Haiti, 45 (11.0%) were born in Mexico, and 261 (64.0%) were born in a variety of other countries.

Figure 8 shows the percentage of TB cases whose isolates are resistant to isoniazid (INH) alone, and resistant to both INH and rifampin (RIF) from 2002 to 2011. In 2011, 5.0% were resistant to INH and 0.8% were resistance to both INH and RIF, also known as multi-drug resistance.

Figure 7. Counted Tuberculosis Cases by Country of Birth, Florida, 1994-2011

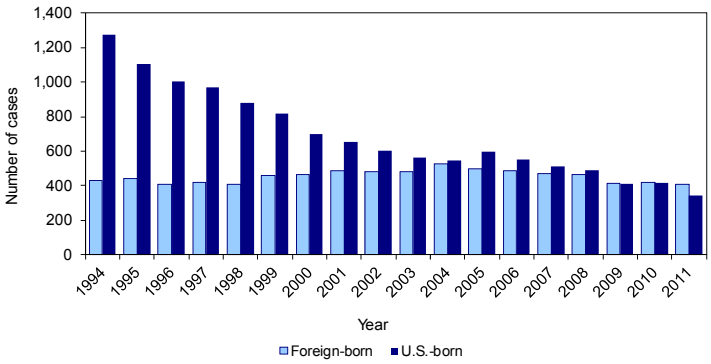
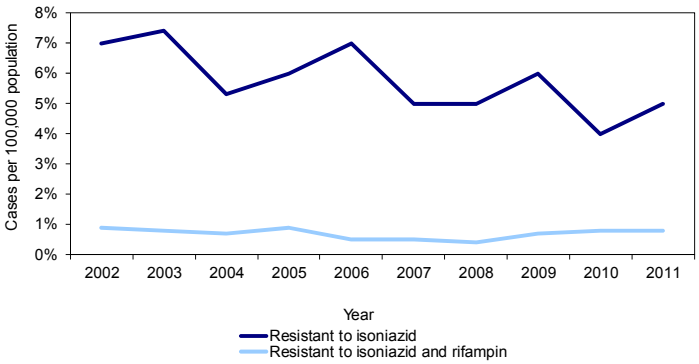


Figure 8. Percentage of Counted Tuberculosis Cases with Isoniazid and Rifampin Resistance on Initial Susceptibility Testing, Florida, 2002-2011



Prevention

TB is an airborne disease and transmission can essentially be prevented through adequate ventilation and limited contact with patients.

In parts of the world where this disease is common, the World Health Organization recommends that infants receive a vaccine called bacille Calmette-Guérin (BCG). BCG is fairly effective in protecting small children from severe TB complications. It does not protect adults very well against pulmonary TB, which is the easiest form of TB to spread to others. BCG is not currently recommended for infants in the U.S.

References

Centers for Disease Control and Prevention. Tuberculosis (TB).
Available at http://www.cdc.gov/tb/.

National Institute of Allergies and Infectious Diseases. Tuberculosis (TB).
Available at http://www.niaid.nih.gov/topics/tuberculosis/understanding/Pages/Default.aspx.

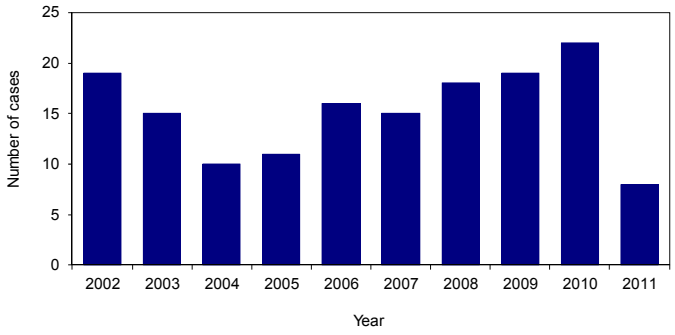
Typhoid Fever

Typhoid Fever		
Number of cases		8
2011 incidence rate per 100,000 population		NA
Percent change from 5-year average (2006-2010) number of reported cases		-55.6%
Age		Years
Mean		19.6
Median		20.5
Min-Max		3 - 34
Race	Number (Percent)	Rate
White	3 (37.5%)	NA
Black	1 (12.5%)	NA
Other	4 (50.0%)	NA
Unk	0	
Ethnicity	Number (Percent)	Rate
Hispanic	2 (25.0%)	NA
Non-Hispanic	6 (75.0%)	NA
Unk	0	
Sex	Number (Percent)	Rate
Male	5 (62.5%)	NA
Female	3 (37.5%)	NA
Unk	0	

Disease Abstract

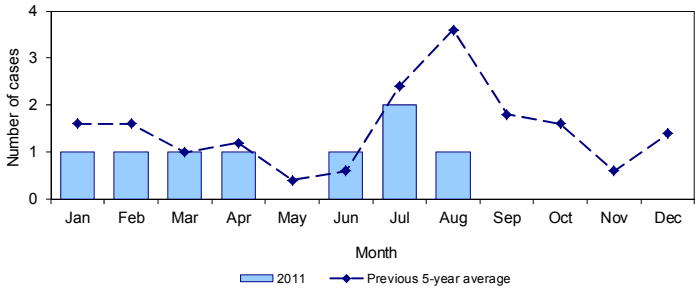
Typhoid fever is a systemic illness caused by *Salmonella enterica* serotype Typhi (*Salmonella* Typhi) bacteria. People with typhoid fever typically have a sustained high fever and may also experience weakness, stomach pains, headache, loss of appetite, or rash. The number of typhoid fever cases reported annually for the last 10 years has ranged from 10 to 22 (Figure 1). Only eight cases were reported in 2011. Typhoid fever cases tend to peak in the summer months; in 2011 there was not much seasonality due to the low number of cases that were reported (Figure 2). Four cases were reported in people 25-34 years old, which is typically the age group with the most cases (Figure 3). Cases were reported in 6 (9.0%) of 67 Florida counties, with the most cases (three) in Miami-Dade County (Figure 4).

Figure 1. Reported Typhoid Fever Cases by Year Reported, Florida, 2002-2011



All eight 2011 cases were confirmed and hospitalized, but no deaths were reported. One case was outbreak-associated and acquired in Florida due to a household contact being identified as an asymptomatic carrier. One other case was acquired in Florida, though no source was identified. The remaining six cases were acquired outside the U.S.: three (50.0%) from India, one (16.7%) from Guatemala, one (16.7%) from Mexico, and one (16.7%) from Pakistan. An average 79.7% of cases in the previous 5 years were imported from outside the U.S., compared to the six (75.0%) cases in 2011. Slightly more than half of the imported cases reported in the previous five years originated in India (28.2%) and Haiti (26.8%).

Figure 2. Reported Typhoid Fever Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Missing cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Typhoid Fever Cases by Age Group, Florida, 2011 and 2006-2010 Average

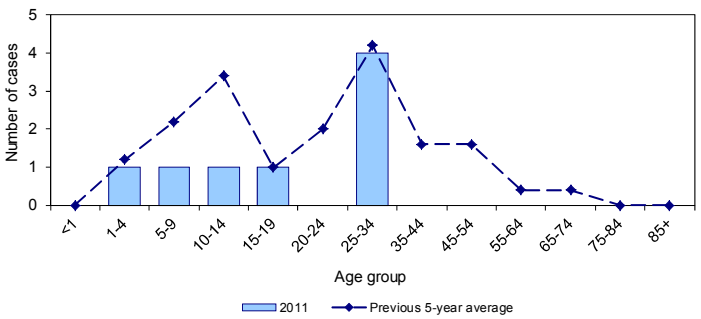
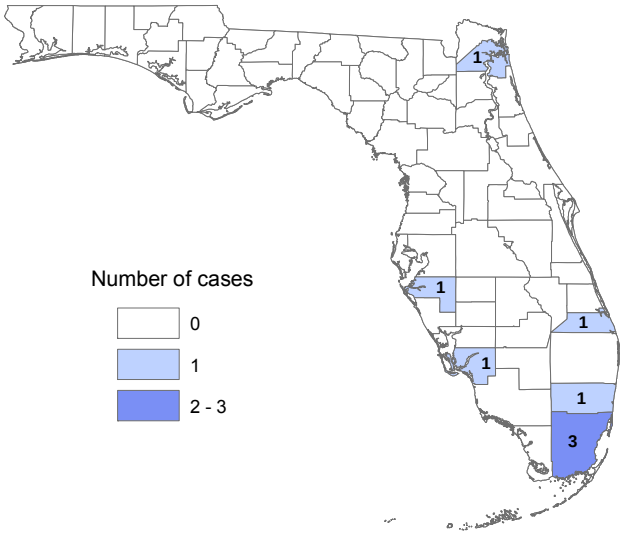


Figure 4. Reported Typhoid Fever Cases by County, Florida, 2011



Prevention

Salmonella Typhi lives only in humans. People ill with typhoid, and the small number of people who become carriers, shed *Salmonella* Typhi in their stool. People get typhoid fever after eating food or drinking beverages that have been handled by a person who is shedding *Salmonella* Typhi or when sewage contaminated with *Salmonella* Typhi bacteria gets into the water used for drinking or washing food. Typhoid fever is common in most parts of the world except in industrialized regions such as the U.S., Canada, Western Europe, Australia, and Japan. Therefore, people traveling to the developing world should consider taking precautions. Avoid high-risk foods and drinks such as raw vegetables and fruits that cannot be peeled, food from street vendors, foods that are not thoroughly cooked and served hot, drinks with ice, ice cream, and tap water. Additionally, consider getting vaccinated against typhoid fever when traveling to areas where typhoid fever is common.

Ill individuals should be treated promptly and effectively. When people with typhoid fever infection are identified, they should be followed by their county health department until stool cultures are negative for *Salmonella* Typhi. People infected with *Salmonella* Typhi should practice good hygiene (washing hands thoroughly with soap and water after using the bathroom) and should not prepare or serve food for others.

References

Centers for Disease Control and Prevention. Typhoid Fever.
Available at http://www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/.

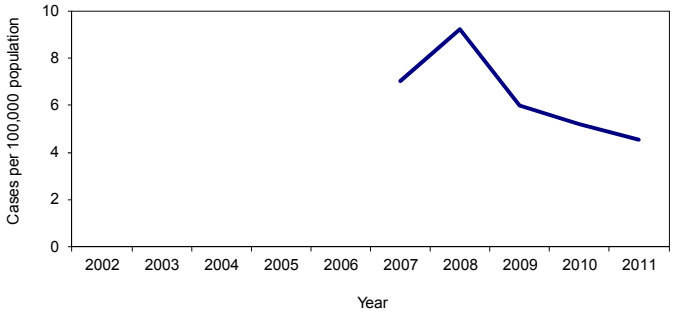
Varicella

Varicella			
Number of cases			861
2011 incidence rate per 100,000 population			4.5
Percent change from 5-year average (2006-2010) reported incidence rate			-33.7%
Age			Years
Mean			13.8
Median			9.0
Min-Max			0 - 84
Race	Number	(Percent)	Rate
White	691	(81.4%)	4.9
Black	97	(11.4%)	3.2
Other	61	(7.2%)	3.5
Unk	12		
Ethnicity	Number	(Percent)	Rate
Hispanic	228	(27.1%)	5.3
Non-Hispanic	614	(72.9%)	4.2
Unk	19		
Sex	Number	(Percent)	Rate
Male	423	(49.1%)	4.6
Female	438	(50.9%)	4.5
Unk	0		

Disease Abstract

Varicella is a highly contagious vaccine-preventable disease caused by the varicella-zoster virus. Commonly called chickenpox, it causes a blister-like rash, itching, tiredness, and fever. Varicella became reportable in Florida in late 2006. The incidence of varicella has been decreasing since 2008 (Figure 1). In 2011, varicella incidence was highest in the spring, with a peak in April (Figure 2). Most cases in 2011 occurred in children under 15 years of age. The majority of these cases were in <1-year-olds, prior to the age when children are eligible for vaccination (Figure 3).

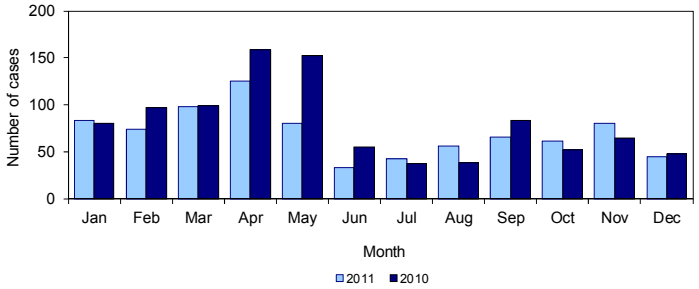
Figure 1. Reported Varicella Incidence Rate by Year Reported, Florida, 2002-2011



Note: Varicella was not reportable prior to 2007

Of the 861 reported cases, 502 (58.3%) had a known history of vaccination, 292 (33.9%) had received one vaccination, and 210 (24.4%) had received two vaccinations. There were 244 (28.3%) outbreak-associated cases in 36 counties. Varicella was reported in 57 (85.0%) of the 67 Florida counties (Figure 4). Childcare centers and schools are the most common sites for varicella outbreaks.

Figure 2. Reported Varicella Cases by Estimated Month of Onset*, Florida, 2010 and 2011



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Thirteen cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Varicella Incidence Rate by Age Group, Florida, 2010 and 2011

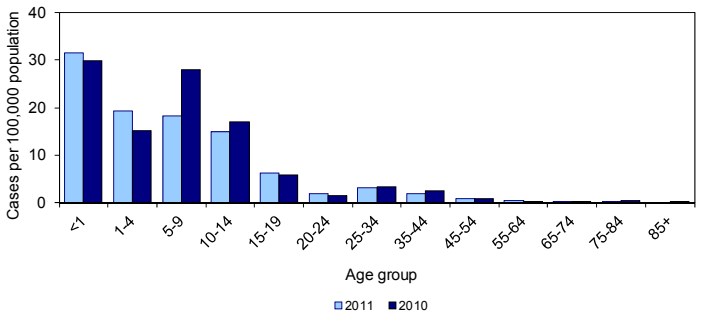
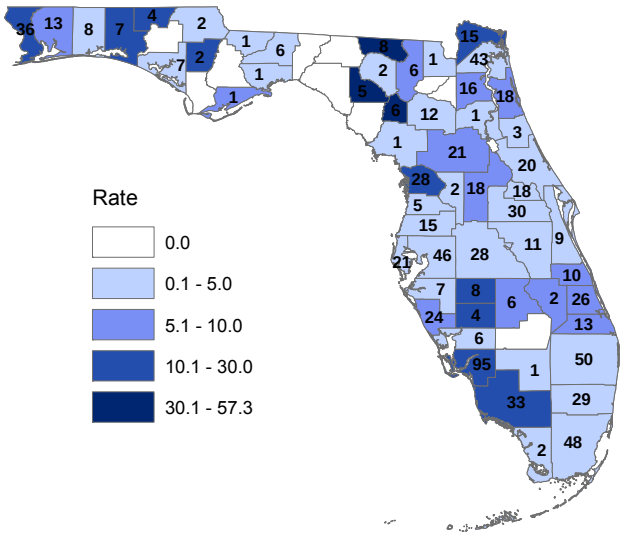


Figure 4. Reported Varicella Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

Varicella vaccine is recommended at age 12 to 15 months and at age 4 to 6 years. Doses given prior to age 13 years should be separated by at least three months. Doses given after age 13 years should be separated by at least four weeks. Due to the potential for disease occurrence after one dose of vaccine, the current recommendation is for two doses. Proof of varicella vaccination or healthcare provider documentation of disease is required for entry and attendance in childcare facilities, family daycare homes, and schools for certain grades. For entry and attendance to schools in 2011-2012, kindergarten through third grade students must have two doses of varicella vaccine and children in grades four through ten must have one dose. Varicella outbreaks continue to occur even in settings such as schools where most children are vaccinated with one dose. However, fewer, smaller outbreaks have been reported since the two-dose varicella vaccination program started in the U.S. The vaccine may not prevent all chickenpox, but it is very effective at preventing severe cases.

The U.S. Advisory Committee on Immunization Practices (ACIP) recommends varicella vaccine for susceptible persons following exposure to a case of varicella infection. If administered within 72 hours, and possibly up to 120 hours following varicella exposure, varicella vaccine may prevent or significantly reduce the severity of illness. Post-exposure vaccine use should be considered following exposures in healthcare settings, where transmission risk should be minimized at all times, and in households. If exposure to varicella does not cause infection, post-exposure vaccination with varicella vaccine should induce protection against subsequent infection; if exposure results in infection, the vaccine may reduce the severity of the disease.

Varicella zoster immune globulin (VZIG or VariZIG) is recommended for post-exposure prophylaxis of susceptible persons who are at high risk for developing severe disease when varicella vaccine is contraindicated. VZIG is most effective in preventing varicella infection when given as soon as possible after exposure, but may be given up to ten days following exposure.

References

Centers for Disease Control and Prevention. 2012. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 5th ed.
Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

Centers for Disease Control and Prevention, 2012. *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 12th ed.
Available at http://www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Centers for Disease Control and Prevention. 2012. FDA Approval of an Extended Period for Administering VariZIG for Postexposure Prophylaxis of Varicella. *Morbidity and Mortality Weekly Report,* 61(12);212.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6112a4.htm.

Additional Resources

Centers for Disease Control and Prevention. Chickenpox (Varicella).
Available at http://www.cdc.gov/chickenpox/about/index.html.

Centers for Disease Control and Prevention. Immunization Schedules.
Available at http://www.cdc.gov/vaccines/schedules/index.html.

Vibriosis

Vibriosis			
Number of cases			155
2011 incidence rate per 100,000 population			0.8
Percent change from 5-year average (2006-2010) reported incidence rate			44.1%
Age			Years
Mean			46.1
Median			50.0
Min-Max			2 - 88
Race	Number	(Percent)	Rate
White	121	(82.3%)	0.9
Black	20	(13.6%)	0.7
Other	6	(4.1%)	NA
Unk	8		
Ethnicity	Number	(Percent)	Rate
Hispanic	11	(7.7%)	NA
Non-Hispanic	132	(92.3%)	0.9
Unk	12		
Sex	Number	(Percent)	Rate
Male	108	(72.0%)	1.2
Female	42	(28.0%)	0.4
Unk	5		

Disease Abstract

Vibriosis is caused by *Vibrio* bacteria, and includes about a dozen species known to cause human illness. Transmission occurs primarily through the foodborne route, and in Florida, infection with *Vibrio* occurs principally from eating raw or undercooked shellfish. Transmission can also occur through contact of broken skin with seawater where *Vibrio* species are endemic, which includes the coastal areas of the Gulf of Mexico. Clinical manifestations vary depending on the infecting *Vibrio* species. The species of greatest public health concern in Florida are *V. vulnificus* and *V. parahaemolyticus*. This report combines data on all *Vibrio* infections (excluding cholera, which is described separately) to provide a general description of the disease burden.

Incidence of vibriosis increased dramatically in 2011 (44.1%) compared to the previous average 5-year incidence (Figure 1). Following a period of decreasing incidence from 2003 to 2008, vibriosis has increased steadily since 2008. Vibriosis tends to increase in the warm summer months, typically peaking in August (Figure 2). The most cases of vibriosis in 2011 occurred in April, which is somewhat earlier than the typical peak.

The highest incidence of vibriosis is usually seen in people 45 years or older, as this is a population that is likely to have chronic conditions that predispose them to developing infection (Figure 3). Incidence was high in 2011 and higher than the previous 5-year average in all age groups except <1-year-olds and 10 to 14-year-olds. Vibriosis cases were reported in 39 (58.2%) of 67 Florida counties in 2011; coastal counties have more reported cases of vibriosis (Figure 4).

Figure 1. Reported Vibriosis Incidence Rate by Year Reported, Florida, 2002-2011

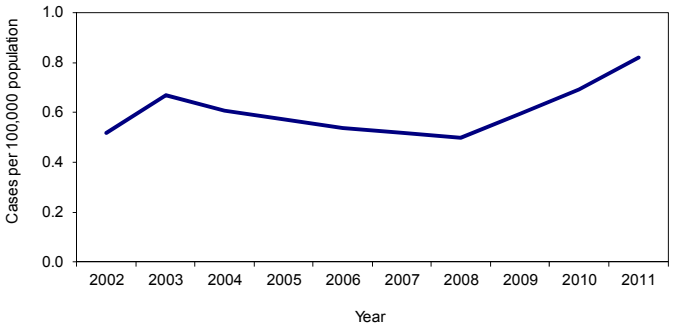
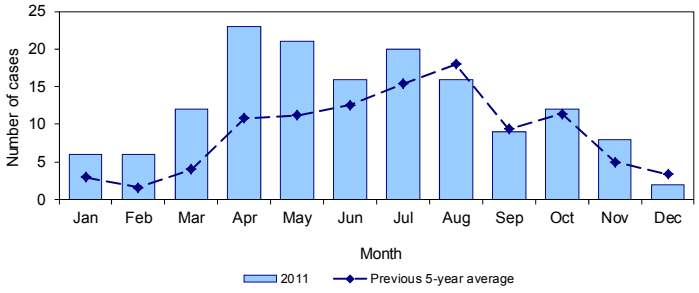


Figure 2. Reported Vibriosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Four cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

Figure 3. Reported Vibriosis Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average

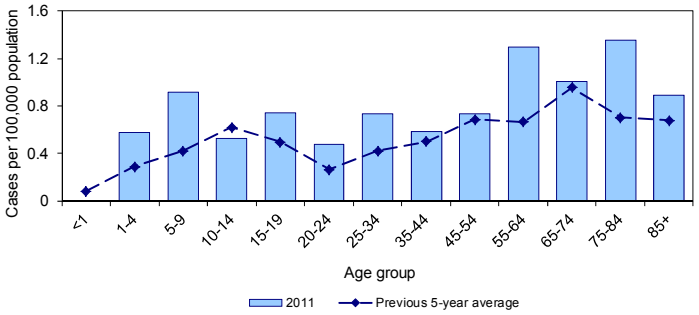


Figure 4. Reported Vibriosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

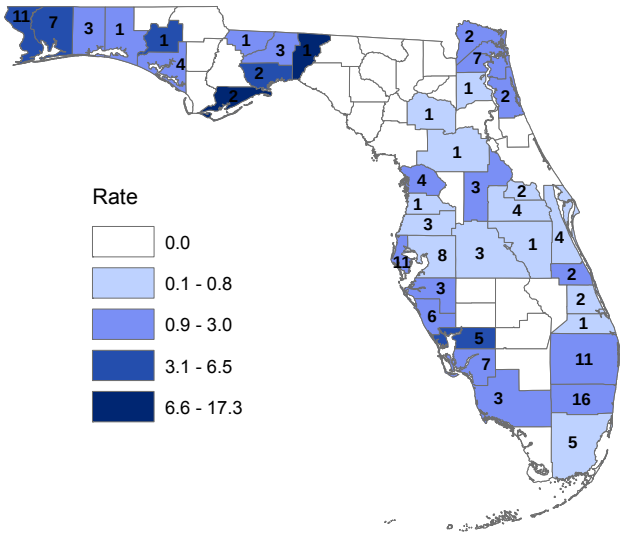


Table 1 presents vibriosis cases by species. The majority of reported vibriosis cases were confirmed (153, 98.7%). Most cases (138, 89.0%) were acquired in Florida; though seven (4.5%) were acquired in other U.S. states and four (2.6%) were acquired in other countries. Location of exposure could not be determined for six (3.9%) cases. At least 18 people died with (not necessarily from) *Vibrio* infections.

Table 1. Vibriosis Cases by *Vibrio* Species, Florida 2011

Species	Number (percent)
Vibrio alginolyticus	49 (31.6)
Vibrio vulnificus	35 (22.6)
Vibrio parahaemolyticus	28 (18.1)
Vibrio cholerae Non-O1	24 (15.5)
Vibrio, other	13 (8.4)
Vibrio fluvialis	2 (1.3)
Vibrio hollisae	2 (1.3)
Vibrio mimicus	2 (1.3)
Total	155 (100.0)

V. alginolyticus infections

V. alginolyticus infections typically present as self-limited wound infections and ear infections. Septicemia and death have been reported in immunocompromised individuals and burn patients. Infection is commonly associated with exposure to seawater.

V. cholerae, non-O1 infections

Non-O1 *V. cholerae* infections usually result in gastroenteritis, but can cause septicemic infections similar to *V. vulnificus* in rare cases, and has resulted in death. No major outbreaks of diarrhea have been attributed to this organism. Sporadic cases occur frequently mainly along the coasts of the U.S. and are usually associated with the consumption of raw oysters during the warmer months.

A cluster of 10 toxigenic *V. cholerae* O75 cases associated with oyster consumption was investigated in 2011. See Section 6: Notable Outbreaks and Case Investigations for a summary of this investigation.

V. parahaemolyticus infections

V. parahaemolyticus infections typically manifest as gastrointestinal disorders with symptoms of diarrhea, abdominal pain, nausea, fever, and headache. It is commonly associated with the consumption of raw oysters and is also associated with the consumption of cross-contaminated crustacean shellfish (crab,

shrimp, and lobster). *V. parahaemolyticus* can also cause wound infections when broken skin is exposed to seawater where *V. parahaemolyticus* is endemic.

V. vulnificus infections

V. vulnificus infections typically manifest as septicemia in people who have chronic liver disease, chronic alcoholism, or are immunocompromised. *V. vulnificus* infections can lead to severe outcomes including death. *V. vulnificus* infections are commonly associated with the consumption of raw oysters although the bacteria can also infect wounds exposed to coastal or marine waters or raw seafood juices.

Prevention

Reduced the likelihood of contracting vibriosis by using the prevention measures below.

- Do not eat raw or undercooked shellfish or crabs; cook shellfish and crabs completely and throw away shellfish that do not open during cooking.
- Do not let raw shellfish or crabs or their drippings touch other foods.
- Clean surfaces and containers that raw shellfish or crabs touched during preparation.
- Wear gloves when touching raw shellfish or crabs or their drippings.
- Keep open cuts and sores away from raw shellfish or crabs, their drippings, and coastal waters.
- If exposed to coastal water, raw shellfish, crabs, or their drippings, wash wound with soap and clean water.

Additional Resources

Centers for Disease Control and Prevention. *Vibrio parahaemolyticus*.
Available at http://www.cdc.gov/nczved/divisions/dfbmd/diseases/vibriop/.

Centers for Disease Control and Prevention. *Vibrio vulnificus*.
Available at http://www.cdc.gov/nczved/divisions/dfbmd/diseases/vibriov/.

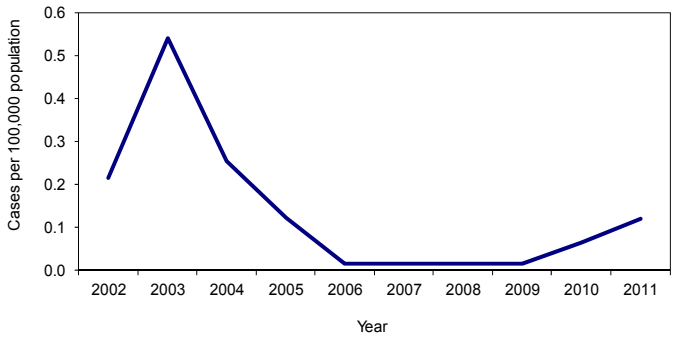
West Nile Virus Disease

West Nile Virus Disease		
Number of cases		23
2011 incidence rate per 100,000 population		0.1
Percent change from 5-year average (2006-2010) reported incidence rate		374.4%
Age		Years
Mean		51.9
Median		52.0
Min-Max		22 - 85
Race	Number (Percent)	Rate
White	18 (78.3%)	NA
Black	5 (21.7%)	NA
Other	0 (0.0%)	NA
Unk	0	
Ethnicity	Number (Percent)	Rate
Hispanic	2 (8.7%)	NA
Non-Hispanic	21 (91.3%)	0.1
Unk	0	
Sex	Number (Percent)	Rate
Male	12 (52.2%)	NA
Female	11 (47.8%)	NA
Unk	0	

Disease Abstract

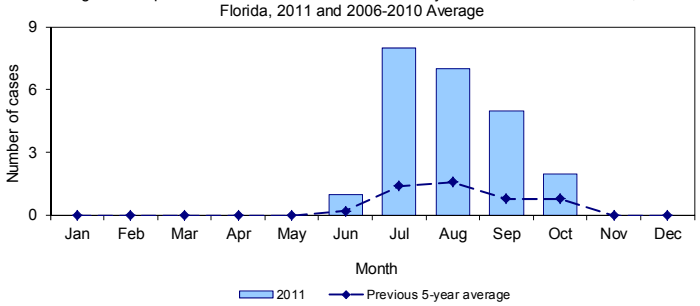
West Nile virus (WNV) disease is spread by mosquitoes. Most infections are asymptomatic, though clinical disease ranges from mild febrile illness to severe encephalitis. The incidence rate of WNV disease peaked in Florida in 2003 (Figure 1). It remained stable and near zero from 2006 until 2010; in 2010, there were 12 human cases and in 2011, there were 23 human cases. Of the 23 reported cases in 2011, 20 (87.0%) were neuroinvasive.

Figure 1. Reported West Nile Virus Disease Incidence Rate by Year Reported, Florida, 2002-2011



WNV disease activity peaked in summer and early fall (July through October), which is consistent with historical trends (Figure 2). People are more likely to come into contact with mosquitoes that carry the virus during these months. Increased age is considered a risk factor for WNV disease; although over the previous five years, the incidence rate has been sufficiently low, so little variation has been seen by age group (Figure 3). In 2011, the highest incidence rate was in 55 to 64-year-olds, followed by 45 to 54-year-olds, and those 85 years and older.

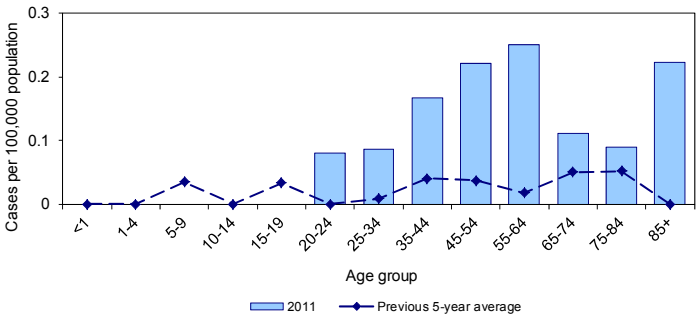
Figure 2. Reported West Nile Virus Disease Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



*If no illness onset date was available, the earliest date associated with the case was used to approximate onset date. Dates associated with cases include illness onset date, diagnosis date, laboratory report date, and county health department notified date.

Note: Missing cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

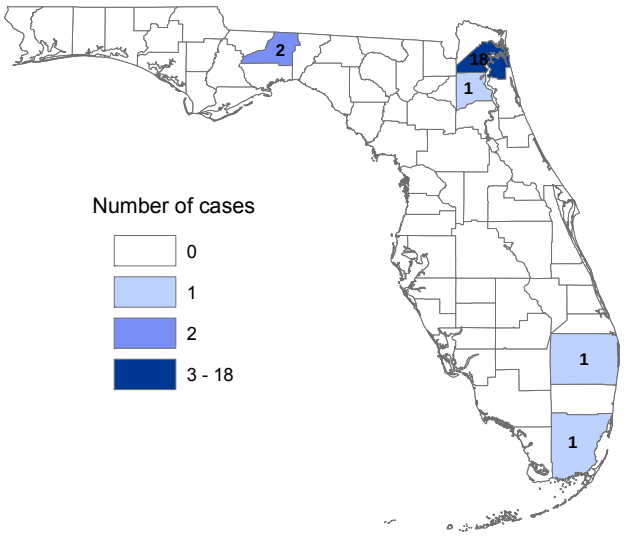
Figure 3. Reported West Nile Virus Disease Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average



The level of virus transmission between bird and mosquito populations is dependent on a number of environmental factors. Drought conditions that persisted from 2006 to 2009 across most of the state may have contributed to the previous decrease in cases. Population immunity may also play a role. West Nile virus transmission tends to be localized from year-to-year in Florida. Most exposures in 2010 occurred in counties located in the central and southern part of the state. In contrast, cases in 2011 were focused in Duval County with 18 (78.3%) cases (Figure 4). For more information on Duval County cases, see Section 6:

Notable Outbreaks and Case Investigations. WNV disease cases were reported in five (7.5%) of the 67 Florida counties (Figure 4). All cases became infected locally within the state.

Figure 4. Reported West Nile Virus Disease Cases by County, Florida, 2011



Of the 2011 WNV disease cases, 22 (95.7%) were hospitalized, and two deaths were reported in individuals with underlying medical conditions (immunosuppressive medication). Eleven (47.8%) cases were smokers (10 of whom reported smoking outdoors), seven (30.4%) cases did not have screened windows, three (13.0%) cases were homeless, and 12 (52.0%) cases had underlying health conditions. Please note that cases could report multiple risk factors.

Prevention

There is no specific treatment for WNV disease, and therapy is supportive for ill people; prevention is a necessity. Measures that should be taken to avoid being bitten by mosquitoes include the tips below ("Drain and Cover").

Drain standing water to stop mosquitoes from multiplying

- Drain water from garbage cans, house gutters, buckets, pool covers, coolers, toys, flower pots, or any other containers where sprinkler or rain water has collected.
- Discard old tires, drums, bottles, cans, pots and pans, broken appliances and other items that are not being used.
- Empty and clean birdbaths and pet water bowls at least once or twice a week.
- Protect boats and vehicles from rain with tarps that do not accumulate water.
- Maintain swimming pools in good condition and chlorinate appropriately; empty plastic swimming pools when not in use.

Cover skin with clothing or repellent

- Clothing: wear shoes, socks, and long pants and long-sleeves; this type of protection may be necessary for people who must work in areas where mosquitoes are present.

- Repellent: apply mosquito repellent to bare skin and clothing.
  - Always use repellents according to the label. Repellents with DEET, picaridin, oil of lemon eucalyptus, and IR3535 are effective.
  - Use mosquito netting to protect children younger than 2-months-old.

Cover doors and windows with screens to keep mosquitoes out of your house

- Repair broken screening on windows, doors, porches, and patios.

References

Centers for Disease Control and Prevention. West Nile Virus.
Available at http://www.cdc.gov/ncidod/dvbid/westnile/index.htm.

Additional Resources

Florida Department of Health. 2009. Surveillance and Control of Selected Mosquito-Borne Diseases in Florida.
Available at http://www.doh.state.fl.us/Environment/medicine/arboviral/2009MosquitoGuide.pdf.