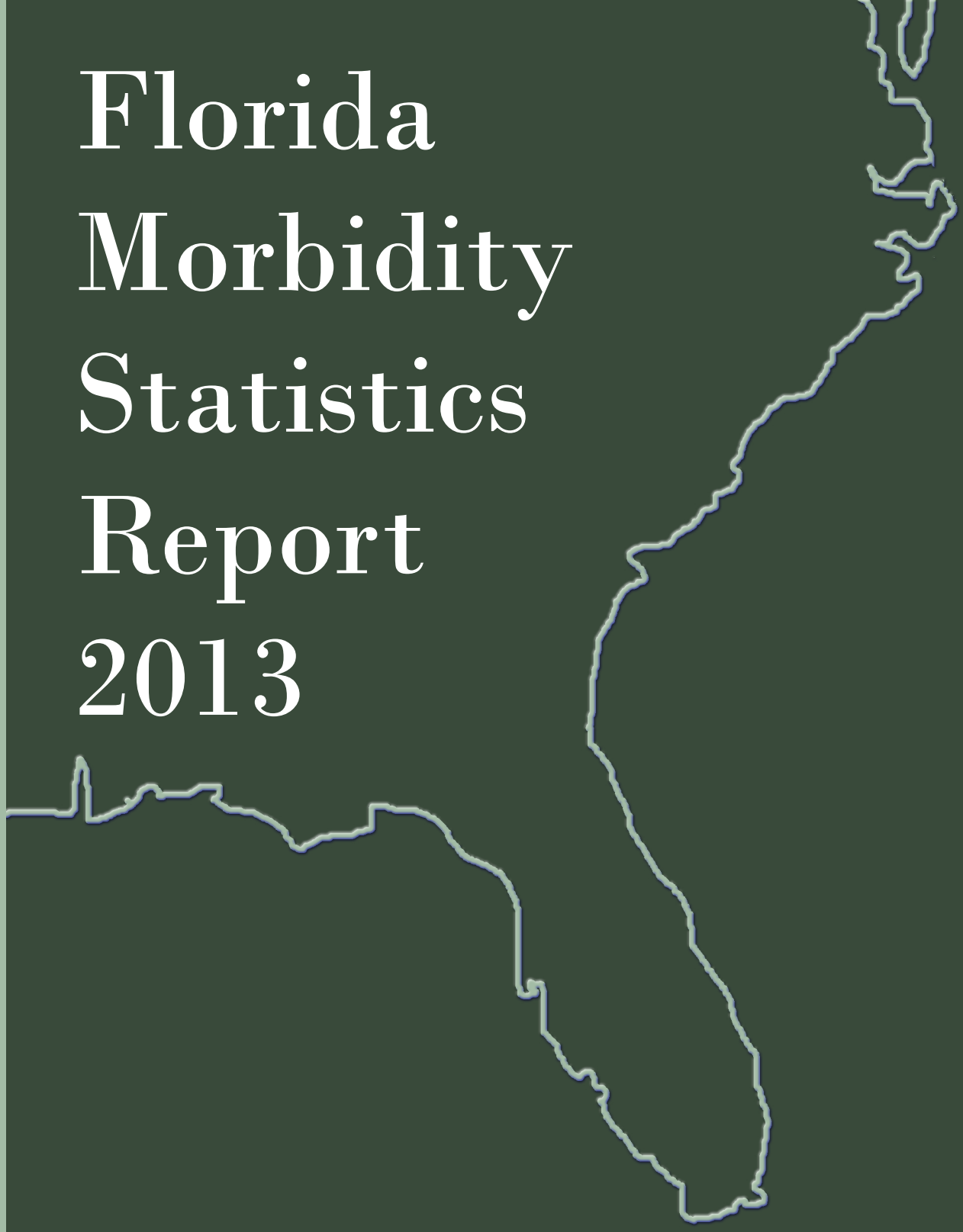
Florida Morbidity Statistics Report 2013



Florida Department of Health
Bureau of Epidemiology

Florida Morbidity Statistics Report

2013

Florida Department of Health
Division of Disease Control and Health Protection
Bureau of Epidemiology
4052 Bald Cypress Way, Bin #A-12
Tallahassee, Florida 32399-1720
850-245-4401

Florida Department of Health:
www.FloridaHealth.gov

Florida Morbidity Statistics Reports:
www.FloridaHealth.gov/MorbidityStatisticsReport

Published June 2015

Table of Contents

Introduction

Background

The *Florida Morbidity Statistics Report* is the official record of the occurrence of reportable diseases in Florida and this edition marks the fifty-eighth publication since 1945. The data contained here are final, unless otherwise noted. The mission of the Florida Department of Health is to protect, promote, and improve the health of all people in Florida through integrated state, county, and community efforts. Per section 381.003, Florida Statutes "The Department shall conduct a communicable disease prevention and control program as part of fulfilling its public health mission." This report directly supports the mission of the Department by identifying patterns and trends in the incidence of disease that are used as the scientific basis for development of disease control and prevention strategies and policies.

Disease control and prevention are core functions of any public health agency. Protection of the public's health from existing, emerging, and re-emerging diseases requires diligence in all aspects of public health. Public health partners identifying and characterizing emerging trends in disease are the physicians, nurses, laboratorians, hospital infection preventionists, and other health care professionals who participate in reportable disease surveillance. Without their participation, the ability to recognize and intervene in emerging public health issues would be much more limited.

Acknowledgements

The Bureau of Epidemiology thanks all program areas within the Florida Department of Health that contributed to this report including the sections of HIV/AIDS, Immunization, Sexually Transmitted Diseases (STD) and Viral Hepatitis, and Tuberculosis Control. Finally, many thanks are extended to the county health department staff and other public health professionals who are involved in reportable disease surveillance, either through disease control activities, case investigations, data collection, laboratory testing, or other essential functions.

Purpose

The *Florida Morbidity Statistics Report* is compiled in a single reference document to:

- Summarize annual morbidity from reportable communicable and environmental diseases in Florida.
- Describe patterns of disease that can be assessed over time, compared with trends from other states, and act as an aid in directing future disease prevention and control efforts.
- Provide a resource to medical and public health authorities at county, state, and national levels.

Data Sources

Data presented in this report are based on reportable disease information received by county and state health department staff from physicians, hospitals, and laboratories throughout the state obtained through passive and active surveillance. Reporting of suspected and confirmed reportable diseases and conditions in the state of Florida is mandated under section 381.0031, Florida Statutes and Florida Administrative Code Chapter 64D-3. People in charge of laboratories, hospitals, medical facilities, or other facilities providing health services (which can include schools, nursing homes, and state institutions) are required to report certain diseases and conditions and the associated laboratory test results as listed in the Table of Notifiable Diseases or Conditions to be Reported, Florida Administrative Code Chapter 64D-3. Reporting of test results by a laboratory does not nullify a practitioner's obligation to report the disease or condition. These data are the basis for providing useful information on reportable diseases and conditions in Florida to health care workers and policymakers, and would not be possible without the cooperation of the extensive network involving both private and public sector participants. Data are collected by multiple means:

- Passive surveillance relies on physicians, laboratories, and other health care providers to report diseases to the Florida Department of Health confidentially in one of three forms: electronically, by telephone, or by facsimile. Increasingly, information about cases of reportable diseases and conditions is passed from providers, especially laboratories, to the Department as electronic records. This occurs automatically, without the involvement of a person after the electronic transmission process has been established between the Department and the reporting partner.

- Active surveillance entails Department staff regularly contacting hospitals, laboratories, and physicians in an effort to identify all cases of a given disease or condition.

References

The following references were used in many of the disease-specific chapters within Section 2: Data Summaries for Selected Reportable Diseases/Conditions of Frequent Occurrence.

Centers for Disease Control and Prevention. CDC A-Z Index. Available at www.cdc.gov/az/a.html.

Centers for Disease Control and Prevention. 1999. Combination Vaccines for Childhood Immunization. *Morbidity and Mortality Weekly Report*, 48(RR05);1-15. Available at www.cdc.gov/mmwr/PDF/rr/rr4805.pdf.

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

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

Centers for Disease Control and Prevention. 2014. *CDC Health Information for International Travel 2014*. New York: Oxford University Press. Available at wwwnc.cdc.gov/travel/page/yellowbook-home-2014.

Centers for Disease Control and Prevention. 2014. National, State, and Selected Local Area Vaccination Coverage Among Children Aged 19-35 Months – United States, 2013. *Morbidity and Mortality Weekly Report*, 63(34);741-748. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6334a1.htm?s_cid=mm6334a1_w.

Heymann DL (ed). 2015. *Control of Communicable Diseases Manual*. 20th ed. Washington, D.C.: American Public Health Association Press.

Interpreting the Data

Information in this report should be interpreted in light of the limitations below.

1. Underreporting

   The data presented in this report are primarily based on passive reporting by health care providers and laboratories across Florida. Case reporting is most often dependent upon a person becoming ill, seeking medical attention, the health care provider ordering laboratory testing, and finally the health care provider or laboratory reporting the case. Frequently, not all steps in this process occur, so the number of reported cases represents a fraction of the true number of cases of reportable illnesses occurring in Florida each year. Evaluations of infectious disease reporting systems have indicated that the completeness of reporting varies by disease. The less common but more severe reportable diseases such as bacterial meningitis, diphtheria, polio, botulism, anthrax, tuberculosis, and congenital syphilis are more completely reported than the more common diseases with less severe symptoms such as hepatitis A or campylobacteriosis. Variation in identified disease incidence at the local level probably reflects, to varying degrees, both differences in the true incidence of disease and differences in the vigor with which surveillance is performed.

2. Reliability of Rates
   All incidence rates in this report are expressed as the number of reported cases of a disease or condition per 100,000 population unless otherwise specified. All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS), a web-based data query system with community tools, health indicators, and data queries for public consumption (www.floridacharts.com/charts/default.aspx). Population estimates within CHARTS are provided by the Florida Department of Health, Division of Public Health Statistics and Performance Management, in consultation with the Florida Legislature's Office of Economic and Demographic Research. Estimates in CHARTS are updated at least once per year, and population data were extracted from CHARTS for this report on August 7, 2014 after the annual update in CHARTS. Note that previous editions of this report may show somewhat different populations for a given year than the ones shown here, as these estimates are revised periodically. This is especially true given the recent 2010 census.

   Animal rabies is not expressed as a rate; it is only expressed as the number of cases because no reliable denominators exist for animal populations.

   Rates for diseases with only a few cases reported per year can be unstable and should be interpreted with caution. The observation of zero events is especially difficult to interpret. Rates were not generally calculated in this report when there were less than 20 cases, except as part of graphs and maps. In some cases, even though maps and graphs (e.g., by year, gender, race) may have small individual counts, rates were calculated. These maps include footnotes as a reminder that rates based on less than 20 cases are not reliable.

3. Reporting Period
   To ensure consistent case counting, the data in this report are aggregated by the date the case was reported to the Bureau of Epidemiology unless otherwise noted. The date of illness onset or the date of diagnosis may not be available for all cases. Cases reported early in 2013 may have actually had onset or been diagnosed in 2012; rarely, cases reported in 2013 may have onset or diagnosis dates prior to 2012. Additionally, cases with illness onset or diagnosis late in 2013 may not have been reported to the Bureau of Epidemiology by the end of the 2013 reporting year, and thus would not be included in this report. The reporting year is defined by the standard reporting weeks as outlined by the Centers for Disease Control and Prevention (CDC), where every year has at least 52 reporting weeks and some years have 53; there were 52 weeks in 2013. The data in this report are consistent with national surveillance data published weekly by CDC. Additionally, disease-specific reports describing data by other dates, such as disease onset and diagnosis dates, may also be published and available on the Florida Department of Health website. Diseases that use different dates to aggregate data in this report have an explanation of what date is used in the disease-specific chapter.

4. Case Definition
   Cases of most diseases are classified as confirmed, probable, or suspect at the state level using a published set of surveillance case definitions in line with national case definitions where appropriate (*Surveillance Case Definitions for Selected Reportable Diseases in Florida*, available at www.FloridaHealth.gov/DiseaseCaseDefinitions). Case classifications are reviewed at the state level for many diseases. Following CDC *Morbidity and Mortality Weekly Report* (MMWR) print criteria (available at www.cdc.gov/nndss/script/downloads.aspx), only confirmed and probable cases have been included for all diseases (i.e., suspect cases are excluded) in this report unless otherwise specified.

   Changes to case definitions can affect the number of cases reported, which can impact calculated incidence rates, but ultimately case definition changes do not change the true incidence of a disease.

Each year case definitions are evaluated for necessary revisions. A number of changes were made to reportable disease case definitions in 2013 as a result of position statements approved by the Council of State and Territorial Epidemiologists (CSTE) in 2012.

Summary of case definition changes effective January 2013:

a. Hansen's disease: revised the clinical and laboratory criteria and added a suspect case classification.

b. Influenza due to novel or pandemic strains: revised the laboratory criteria and clarified confirmed and probable case classification criteria.

c. Leptospirosis: added to the list of nationally notifiable conditions and modified clinical and laboratory criteria. Eliminated clinical criteria from confirmed case classification criteria. Epidemiologic linkage was added to "exposure events" to meet the probable case classification criteria.

d. Measles: revised the probable case classification and laboratory criteria and eliminated the suspect case classification.

e. Meningitis, bacterial or mycotic: revised laboratory criteria.

f. Rubella: updated clinical and laboratory criteria.

5. Assigning Cases to Counties
Cases are assigned to Florida counties based on the county of residence at the time of the disease identification, regardless of where they became ill or were hospitalized, diagnosed, or exposed. Cases who reside outside of Florida are not counted as Florida cases regardless of whether they became ill or were hospitalized, diagnosed, or exposed in Florida. Cases in out-of-state residents are not counted as Florida cases and are not included in this report, unless specifically noted. These cases are referred through an interstate reciprocal notification system to the state where the person resides.

6. Population Estimates
All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS) (www.floridacharts.com/charts/default.aspx), a web-based data query system with community tools, health indicators, and data queries for public consumption (www.floridacharts.com/charts/default.aspx). Population estimates within CHARTS are provided by the Florida Department of Health Division of Public Health Statistics and Performance Management, in consultation with the Florida Legislature's Office of Economic and Demographic Research. Estimates in CHARTS are updated at least once per year, and population data were extracted from CHARTS for this report on August 7, 2014. Note that previous editions of this report may show somewhat different populations for a given year than the ones shown here, as these estimates are revised periodically. This is especially true given the recent 2010 census.

7. Florida Disease Codes in Merlin
Reported case data are stored in Merlin, Florida's web-based reportable disease surveillance system. When entering case data into Merlin, users assign a Florida Disease Code based on the disease. Due to changes in case definitions over time, new codes have been added and outdated codes have expired. In addition, some diseases have multiple disease codes that represent different clinical manifestations.

Diseases that include cases from multiple or expired Florida Disease Codes in this report:

a. California Serogroup Virus Disease
California Serogroup Virus Neuroinvasive Disease - 06250
California Serogroup Virus Non-Neuroinvasive Disease - 06251

b. Dengue Fever
Dengue Fever - 06100
Dengue Fever, Severe - 06101

c. Eastern Equine Encephalitis
Eastern Equine Encephalitis Neuroinvasive Disease - 06220
Eastern Equine Encephalitis Non-Neuroinvasive Disease - 06221

d. Ehrlichiosis/Anaplasmosis
Ehrlichiosis/Anaplasmosis (*Ehrlichia ewingii*) - 08383
Ehrlichiosis/Anaplasmosis, HGA (*Anaplasma phagocytophilum*) - 08381
Ehrlichiosis/Anaplasmosis, HME (*Ehrlichia chaffeensis*) - 08382
Ehrlichiosis/Anaplasmosis, Undetermined - 08384

e. Encephalitis, Other (Non-Arboviral)
Encephalitis, Other (Non-Arboviral) - 03236
Encephalitis (Herpes) - 05430 (EXPIRED)
Encephalitis (Influenza) - 48780 (EXPIRED)
Encephalitis (Measles) - 05500 (EXPIRED)
Encephalitis (Mumps) - 07220 (EXPIRED)
Encephalitis (Other) - 32390 (EXPIRED)
Encephalitis (Varicella) - 05200 (EXPIRED)

f. *H. influenzae* Invasive Disease in Children <5 Years Old
Haemophilus influenzae Invasive Disease - 03841
Cellulitis (*Haemophilus influenzae*) - 69290 (EXPIRED)
Epiglottitis (*Haemophilus influenzae*) - 46430 (EXPIRED)
Meningitis (*Haemophilus influenzae*) - 32000 (EXPIRED)
Pneumonia (*Haemophilus influenzae*) - 48220 (EXPIRED)
Septic Arthritis (*Haemophilus influenzae*) - 71100 (EXPIRED)

g. Listeriosis
Listeriosis - 02700
Meningitis (*Listeria monocytogenes*) - 32070 (EXPIRED)

h. Plague
Plague, Bubonic - 02000
Plague, Pneumonic - 02050

i. Poliomyelitis
Poliomyelitis, Nonparalytic - 04520
Poliomyelitis, Paralytic - 04590

j. Q Fever
Q Fever, Acute (*Coxiella burnetii*) - 08301
Q Fever, Chronic (*Coxiella burnetii*) - 08302
Q Fever - 08300 (EXPIRED)

l. Rubella
Rubella - 05690
Rubella, Congenital Syndrome - 77100

l. Shiga Toxin-Producing *E. coli* Infection
Escherichia coli, Shiga Toxin-Producing (STEC) Infection - 00800
Shiga Toxin-Producing *Escherichia coli* (STEC) Infection, Non-O157 - 41602 (EXPIRED)
Shiga Toxin-Producing *Escherichia coli* (STEC) Infection, O157:H7 - 41601 (EXPIRED)

m. St. Louis Encephalitis
   St. Louis Encephalitis Neuroinvasive Disease - 06230
   St. Louis Encephalitis Non-Neuroinvasive Disease - 06231

n. Typhus Fever
   Typhus Fever, Endemic (*Rickettsia typhi*) - 08100
   Typhus Fever, Epidemic (*Rickettsia prowazekii*) - 08000
   Typhus Fever - 08190 (EXPIRED)

o. Venezuelan Equine Encephalitis
   Venezuelan Equine Encephalitis Neuroinvasive Disease - 06620
   Venezuelan Equine Encephalitis Non-Neuroinvasive Disease - 06621

p. Vibriosis (Excluding Cholera)
   Vibriosis (*Grimontia hollisae*) - 00196
   Vibriosis (*Vibrio alginolyticus*) - 00195
   Vibriosis (*Vibrio cholerae* Type Non-O1) - 00198
   Vibriosis (*Vibrio fluvialis*) - 00194
   Vibriosis (*Vibrio mimicus*) - 00197
   Vibriosis (*Vibrio parahaemolyticus*) - 00540
   Vibriosis (*Vibrio vulnificus*) - 00199
   Vibriosis (Other *Vibrio* Species) - 00193

q. West Nile Virus Disease
   West Nile Virus Neuroinvasive Disease - 06630
   West Nile Virus Non-Neuroinvasive Disease - 06631

r. Western Equine Encephalitis
   Western Equine Encephalitis Neuroinvasive Disease - 06210
   Western Equine Encephalitis Non-Neuroinvasive Disease - 06211

Summary of Key Disease Trends in 2013

Sexually transmitted diseases (STDs), HIV, and AIDS are the most common reportable diseases in Florida, particularly among 15- to 54-year-olds. Chlamydia incidence has been increasing over the past 10 years, with over 80,000 cases reported in Florida in 2013. As chlamydia has increased, the number of gonorrhea cases has consistently decreased nationally and in Florida since 2006. However, in 2013, there was a slight increase in cases compared to 2012, but incidence was still lower than the previous 5-year average. A shift in treatment guidelines and recommendations for screening of women under the age of 25 contributed to the decrease in gonorrhea cases. Syphilis incidence has remained relatively stable for the past 10 years, but has been increasing since 2009, with a 16.8% increase in 2013 compared to the past five years. The incidence of HIV and AIDS has also decreased overall in the last 10 years, though both AIDS and HIV infection increased in 2013, partially due to an expansion of electronic laboratory reporting in 2012 which resulted in receiving more laboratory reports.

In the mid-1980s, tuberculosis (TB) re-emerged as a public health threat in the U.S. The number of cases of TB in Florida has decreased every year since 1994. The incidence in 2013 decreased 21.5% compared to the past five years. Over the past 20 years, the number of TB cases counted in foreign-born people has remained relatively constant while decreasing dramatically in U.S.-born people. As a consequence, the proportion of all Florida TB cases that are made up of people born in a foreign country has grown to 57.4% of all TB cases in 2013.

Florida consistently has one of the highest rates of enteric disease in the nation, with 10,000 to 12,000 cases reported annually. Enteric diseases disproportionately affect children less than five years old. Incidence continued to be high in 2013, particularly for salmonellosis, which is the most commonly reported enteric disease. Historically, shigellosis has a cyclic temporal pattern with large, community-wide outbreaks, frequently involving daycare centers, every two to three years. Shigellosis has the highest rate of outbreak-associated cases among the reportable enteric diseases (35-50% of cases over the past three years). Shigellosis activity increased in 2010 and 2011, but started decreasing in 2012 and continued to decrease in 2013. The incidence of Shiga toxin-producing *E. coli* (STEC) has increased since 2006 and continued to increase in 2013. The increase may be due, in part, to more widespread use of non-culture screening tests that detect Shiga toxin. Incidence of other enteric diseases remained relatively stable in 2013.

Despite high vaccine coverage in Florida, vaccine-preventable diseases (VPDs) continued to occur. Vaccination coverage in Florida and nationally for 2013 was published by the Centers for Disease Control and Prevention in the Morbidity and Mortality Weekly Report in August 2014 (see National, State, and Selected Local Area Vaccination Coverage Among Children Aged 19–35 Months — United States, 2013 available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6334a1.htm?s_cid=mm6334a1_e). In 2013, VPD incidence increased overall in Florida compared to 2012. Acute hepatitis A and hepatitis B incidence has declined drastically over the past decade, likely due to increased vaccination coverage. Hepatitis A incidence increased slightly in 2013 compared to 2012, but was still 15.1% below the previous 5-year average. Acute hepatitis B incidence increased 20.3% compared to the previous 5-year average, partially due to an enhanced surveillance project that focuses on chronic hepatitis in young adults. The additional follow-up has resulted in identifying acute cases that would otherwise have been misclassified as chronic. Varicella incidence has been declining since 2008 due to effective vaccination programs. Beginning with the 2008-2009 school year, children entering kindergarten were required to receive two doses of varicella vaccine. Pertussis incidence has increased nationwide over the past 10 years, despite routine vaccine use. In Florida, there was a sharp increase in reported pertussis cases in 2012, and incidence in 2013 was 76.2% higher than the previous 5-year average.

Arboviral diseases continued to be a threat in Florida in 2013. Lyme disease, transmitted by ticks, increased in 2013, primarily due to an increase in cases imported from other states. Approximately

80% of infections were acquired in other states (primarily in the Northeast and upper Midwest U.S.) in 2013, compared to ~60% in 2012. West Nile virus (WNV) disease incidence decreased dramatically compared to 2012, when a large number of cases were reported in Duval County. The 2012 outbreak likely resulted from many factors, including higher-than-normal temperatures that influenced mosquito and bird abundance, viral replication in host mosquitoes and interactions of birds and mosquitoes. The incidence of dengue fever was high in 2013. Most notably, an outbreak of locally acquired dengue virus 1 (DENV-1) occurred in Martin County, resulting in at least 28 people being infected.

Chronic hepatitis C continues to account for a large bulk of infectious disease burden in Florida with over 19,000 confirmed and probable cases reported annually. In 2013, the rate of reported newly diagnosed chronic hepatitis C cases was higher than any previous year. The highest rates occurred among people 45 to 64 years old, which is reflective of the revised national screening guidelines. While the overall rate for this age group has remained stable over the past five years, the burden of illness within this age group has shifted from the 45- to 54-year-olds to the 55- to 64-year-olds. In contrast, the rate of chronic hepatitis C new diagnoses has continued to increase since 2005 among people aged 20 to 34 years. This trend is seen in acute hepatitis C cases as well. An enhanced surveillance project that focuses on chronic hepatitis in young adults was implemented in 2012 in Florida. The additional follow-up has resulted in identifying acute cases that would otherwise have been misclassified as chronic. Collection of risk factor information has also been improved for chronic hepatitis C cases. The majority of new hepatitis C infections in Florida are due to injection drug use (IDU). In Florida and other states, the dual increases in hepatitis C incidence and IDU among young adults has been associated with the proliferation of highly addictive prescription opioid painkillers.

For additional information on disease-specific trends, see Section 1: Summary of Selected Reportable Diseases/Conditions, Section 2: Data Summaries for Selected Reportable Diseases/Conditions of Frequent Occurrence and Section 3: Narratives for Selected Reportable Diseases/Conditions of Infrequent Occurrence.

References

Suryaprasad AG, White JZ, Xu F, Eichler BA, Hamilton J, Patel A, et al. 2014. Emerging Epidemic of Hepatitis C Virus Infections Among Young Non-Urban Persons who Inject Drugs in the United States, 2006–2012. *Clinical Infectious Diseases*, 59(10):1411-1419.

Zibbell JE, Iqbal K, Patel RC, Suryaprasad A, Sanders KJ, Moore-Moravian L, et al. 2015. Increases in Hepatitis C Virus Infection Related to Injection Drug Use Among Persons Aged ≤30 Years — Kentucky, Tennessee, Virginia, and West Virginia, 2006–2012. *Morbidity and Mortality Weekly Report*, 64(17):453-458. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6417a2.htm.

List of Reportable Diseases/Conditions in Florida, 2013

Section 381.0031 (2), Florida Statutes, provides that "Any practitioner licensed in this state to practice medicine, osteopathic medicine, chiropractic medicine, naturopathy, or veterinary medicine; any hospital licensed under part I of Chapter 395, Florida Statutes; or any laboratory licensed under Chapter 483, Florida Statutes that diagnoses or suspects the existence of a disease of public health significance shall immediately report the fact to the Department of Health." County health departments serve as the Department's representative in this reporting requirement. Furthermore, section 381.0031 (4), Florida Statutes, provide that "The Department shall periodically issue a list of infectious or noninfectious diseases determined by it to be a threat to public health and therefore of significance to public health and shall furnish a copy of the list to the practitioners . . .". This list reflects diseases and conditions that were reportable in 2013. Updates may be made in future years; *Florida Morbidity Statistics Reports* for subsequent years will reflect changes in the list.

Any disease outbreak
Any grouping or clustering of disease
Acquired immune deficiency syndrome (AIDS)
Amebic encephalitis
Anthrax
Arsenic poisoning
Botulism
Brucellosis
California serogroup virus disease
Campylobacteriosis
Cancer (excluding non-melanoma skin cancer and including benign and borderline intracranial and CNS tumors)
Carbon monoxide poisoning
Chancroid
Chlamydia
Cholera (*Vibrio cholerae* type O1)
Ciguatera fish poisoning
Congenital anomalies
Conjunctivitis in neonates <14 days old
Creutzfeldt-Jakob disease (CJD)
Cryptosporidiosis
Cyclosporiasis
Dengue fever
Diphtheria
Eastern equine encephalitis
Ehrlichiosis/anaplasmosis
Encephalitis, other (non-arboviral)
Escherichia coli infection, Shiga toxin-producing
Giardiasis, acute
Glanders
Gonorrhea
Granuloma inguinale
Haemophilus influenzae invasive disease
Hansen's disease (leprosy)
Hantavirus infection
Hemolytic uremic syndrome (HUS)
Hepatitis A
Hepatitis B, C, D, E, and G
Hepatitis B surface antigen in pregnant women or children <2 years old
Herpes simplex virus (HSV) in infants <60 days old with disseminated infection and liver involvement; encephalitis; and infections limited to skin, eyes, and mouth; anogenital HSV in children <12 years old
Human immunodeficiency virus (HIV) infection
Human papillomavirus (HPV), associated laryngeal papillomas or recurrent respiratory papillomatosis in children <6 years old; anogenital papillomas in children <12 years old
Influenza A, novel or pandemic strains
Influenza-associated pediatric mortality in children <18 years old
Lead poisoning
Legionellosis
Leptospirosis
Listeriosis
Lyme disease
Lymphogranuloma venereum (LGV)
Malaria
Measles (rubeola)
Melioidosis
Meningitis, bacterial or mycotic
Meningococcal disease
Mercury poisoning
Mumps
Neurotoxic shellfish poisoning
Pertussis
Pesticide-related illness and injury, acute
Plague
Poliomyelitis
Psittacosis (ornithosis)
Q fever
Rabies (human, animal, possible exposure)
Ricin toxin poisoning
Rocky Mountain spotted fever
Rubella
St. Louis encephalitis
Salmonellosis
Saxitoxin poisoning (paralytic shellfish poisoning)
Severe acute respiratory syndrome (SARS) associated with coronavirus infection
Shigellosis
Smallpox
Staphylococcal enterotoxin B poisoning
Staphylococcus aureus, intermediate or full resistance to vancomycin (VISA, VRSA)
Staphylococcus aureus, community-associated mortality
Streptococcal invasive disease (Group A)
Streptococcus pneumoniae invasive disease
Syphilis
Tetanus
Toxoplasmosis
Trichinellosis (trichinosis)
Tuberculosis
Tularemia
Typhoid fever (*Salmonella* serotype Typhi)
Typhus fever, epidemic and endemic
Vaccinia disease
Varicella (chickenpox)
Venezuelan equine encephalitis
Vibriosis (excluding cholera)
Viral hemorrhagic fevers
West Nile virus disease
Western equine encephalitis virus disease
Yellow fever

Florida County Boundaries

Florida Population Estimates by Year, Age Group, Gender, Race, and Ethnicity

Year	Population
2004	17,476,489
2005	17,876,663
2006	18,237,596
2007	18,500,958
2008	18,636,837
2009	18,711,844
2010	18,820,278
2011	18,934,175
2012	19,042,458
2013	19,318,859

Age Group	2013 Population
<1	211,231
1-4	880,025
5-9	1,112,712
10-14	1,140,733
15-19	1,200,272
20-24	1,282,463
25-34	2,403,341
35-44	2,362,567
45-54	2,697,200
55-64	2,515,421
65-74	1,900,490
75-84	1,133,668
85+	478,736
Total	19,318,859

Gender	2013 Population
Female	9,874,288
Male	9,444,571
Race	**2013 Population**
White	15,122,965
Black	3,212,321
Other	983,573
Ethnicity	**2013 Population**
Non-Hispanic	14,772,415
Hispanic	4,546,444
Total	19,318,859

Florida Morbidity Statistics Report Editors and Contributors

Editors

Leah Eisenstein, MPH (Lead Editor)	Bureau of Epidemiology
Janet Hamilton, MPH (Senior Editor)	Bureau of Epidemiology
Jamie DeMent, MNS (Section Editor)	Bureau of Epidemiology
Beth Ann Eichler, MS (Section Editor)	Bureau of Epidemiology
Nicole Kikuchi, MPH (Section Editor)	Bureau of Epidemiology
Catherine Lesko, MPH (Section Editor)	Bureau of Epidemiology
Scott Pritchard, MPH (Section Editor)	Bureau of Epidemiology
Heather Rubino, PhD, MS (Section Editor)	Bureau of Epidemiology
Danielle Stanek, DVM (Section Editor)	Bureau of Epidemiology
Michael Wydotis (Reviewer)	Bureau of Epidemiology
Sharon Watkins, PhD	Bureau of Epidemiology, Chief
German Gonzalez, MD, MPH	Bureau of Epidemiology
Anna Likos, MD, MPH	Division of Disease Control and Health Protection, State Epidemiologist
Carina Blackmore, DVM, PhD, Dipl AVCPM	Division of Disease Control and Health Protection, Bureau of Public Health Laboratories, Chief Deputy State Epidemiologist

Florida Department of Health (DOH) Contributors

Margie Alderman, RN	DOH-Hendry, DOH-Glades
James Ashworth	DOH-Hillsborough
Robert Bernstein, MD, PhD, FACPM	Bureau of Epidemiology
Andrea Bingham, PhD, MSPH	Bureau of Epidemiology
Dean Bodager, RS, DAAS, MPA	Bureau of Epidemiology
Philip Cavicchia, PhD	Bureau of Epidemiology
Dawn Childs, MPH, MA, BSN	Bureau of Communicable Diseases, Immunization Section
Grethel Clark, MPH	DOH-Martin
Maura Comer, MPH, CPH	Bureau of Epidemiology
Adrian Cooksey, DrPH, MPH	Bureau of Communicable Diseases, Sexually Transmitted Diseases and Viral Hepatitis Section
Alazandria Cruze, MPH, CPH	DOH-Miami-Dade
Jamie DeMent, MNS	Bureau of Epidemiology
Michael Drennon, MSPH	DOH-Sarasota
Cristina Dusek, RN, BSN	Bureau of Epidemiology
Danielle Egger, CEHP	DOH-Pinellas
Erika Flagg, MPH	Bureau of Epidemiology
Keila Flores-Burgos	DOH-Orange

Contributors (Continued)

Tricia Foster, MPH	Bureau of Epidemiology
Mike Friedman, MPH	Bureau of Epidemiology
German Gonzalez, MD, MPH	Bureau of Epidemiology
Lea Heberlein-Larson, MPH, SM(ASCP)CM	Bureau of Public Health Laboratories-Tampa
Deborah Hensley, MPH, MHA	DOH-Pasco
Tammy Jernigan, ARNP, MSN, CIC	Bureau of Epidemiology
Alan Johnson, BSAE	DOH-DeSoto
Lori Johnston	Bureau of Communicable Diseases, Tuberculosis Control Section
Keith Keene, CEHP	DOH-DeSoto
Nicole Kikuchi, MPH	Bureau of Epidemiology
Ruth Kim, MD, MPH	DOH-St. Lucie
Paula Kinchen, RN	DOH-Columbia
Ben Klekamp, MSPH, CPH	DOH-Orange
Kimberly Kossler, MPH, RN, CPH	DOH-St. Lucie
JoAnne Lamb, MPH	DOH-Pinellas
Mark Lander, MS	DOH-Columbia
Andrea Leapley, MPH	DOH-Pinellas
Shamilla Lutchman	DOH-Palm Beach
Lorene Maddox, MPH	Bureau of Communicable Diseases, HIV/AIDS Section
Michelle Mancilla, RN, BSN	DOH-Orange
Sarah Matthews, MPH	DOH-Orange
James Matthias, MPH	Bureau of Communicable Diseases, Sexually Transmitted Diseases and Viral Hepatitis Section
Laura Matthias, MPH	Bureau of Epidemiology
Alvaro Mejia-Echeverry, MD, MPH	DOH-Miami-Dade
Valerie Mock	Bureau of Public Health Laboratories-Jacksonville
Madgene Moise, MPH	Bureau of Communicable Diseases, HIV/AIDS Section
Holly Montejano, MS	DOH-Orange
Stephanie Moody-Geissler, MPH	Bureau of Epidemiology
Prakash Mulay, MBBS, MPH	Bureau of Epidemiology
Bonnie Mull, MPH	Bureau of Epidemiology
Garik Nicholson, MPH	DOH-Pasco
David Overfield	DOH-Orange
Scott Pritchard, MPH	Bureau of Epidemiology
Barbara Progulske, DVM, MPH, Dipl. ACVPM	DOH-Indian River
Brian Prowant	DOH-Hendry, DOH-Glades
Sudha Rajagopalan, MPH	Bureau of Epidemiology

Contributors (Continued)

Edhelene Rico, MPH	DOH-Miami-Dade
Renay Rouse	DOH-Martin
Laura Rutledge, RN, BSN	Bureau of Communicable Diseases, Immunization Section
Elizabeth Sarney, RN	DOH-Sarasota
Ann Schmitz, DVM, AM	Bureau of Epidemiology
Valerie Shipley, RN, BSN	Bureau of Communicable Diseases, Immunization Section
Tania Slade, MPH	DOH-Orange
Danielle Stanek, DVM	Bureau of Epidemiology
Juan Suarez	Bureau of Epidemiology
Robin Terzagian	Bureau of Epidemiology
Mackenzie Tewell, MA, MPH, CPH	DOH-Hillsborough
Karen Thomas, MD, MPH	DOH-Martin
Dearline Thomas-Brown, MPH, RN, BSN	Bureau of Communicable Diseases, Immunization Section
Thomas Török, MD, MPH	Bureau of Epidemiology
Kathleen Van Zile, RS, MS	Bureau of Epidemiology
Charles Vogt III, MS, CEHP	DOH-Indian River
Ruth Voss, RN, MPH	DOH-Duval
Robert Washam, RS, MPH	DOH-Martin
Lea Williams	DOH-Orange
Tiffany Winston, MPH	Bureau of Epidemiology

Selected Division of Disease Control and Health Protection Contacts

Bureau of Epidemiology
(850) 245-4401 (accessible 24 hours a day, 7 days a week, 365 days a year)

Bureau of Communicable Diseases

HIV/AIDS Section
(850) 245-4334

Immunization Section
(850) 245-4342

Sexually Transmitted Diseases and Viral Hepatitis Section
(850) 245-4303

Tuberculosis Control Section
(850) 245-4350

Section 1

Summary of Selected Reportable Diseases/Conditions

Table 1: Reported Confirmed and Probable Cases and Incidence Rate (Per 100,000 Population) of Reportable Diseases/Conditions of Frequent Occurrence, Florida, 2004-2013

Reportable Disease/Condition	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
AIDS[1]	5,356	30.7	4,633	25.9	4,829	26.5	3,668	19.8	4,616	24.8	4,038	21.6	3,173	16.9	3,295	17.4	2,652	13.9	3,282	17.0
Campylobacteriosis	1,009	5.8	894	5.0	941	5.2	1,017	5.5	1,118	6.0	1,120	6.0	1,211	6.4	2,039	10.8	1,964	10.3	2,027	10.5
Carbon Monoxide Poisoning	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	43	0.2	172	0.9	85	0.4	69	0.4	161	0.8
Chlamydia	42,554	243.5	43,372	242.6	48,929	268.3	57,732	312.0	70,732	379.5	72,932	389.8	74,777	397.3	76,076	401.8	77,890	409.0	80,991	419.2
Ciguatera Fish Poisoning	4	NA	10	NA	32	0.2	29	0.2	53	0.3	49	0.3	20	0.1	48	0.3	30	0.2	49	0.3
Creutzfeldt-Jakob Disease	14	NA	17	NA	14	NA	12	NA	23	0.1	15	NA	13	NA	16	NA	23	0.1	20	0.1
Cryptosporidiosis	149	0.9	350	2.0	717	3.9	738	4.0	549	2.9	497	2.7	408	2.2	437	2.3	470	2.5	409	2.1
Cyclosporiasis	9	NA	524	2.9	31	0.2	32	0.2	59	0.3	40	0.2	63	0.3	58	0.3	25	0.1	47	0.2
Dengue Fever[2]	13	NA	19	NA	20	0.1	46	0.3	33	0.2	55	0.3	195	1.0	71	0.4	124	0.7	160	0.8
Ehrlichiosis/Anaplasmosis[2]	7	NA	5	NA	6	NA	21	0.1	12	NA	14	NA	14	NA	26	0.1	28	0.2	23	0.1
Giardiasis, Acute	1,126	6.4	987	5.5	1,165	6.4	1,268	6.9	1,391	7.5	1,981	10.6	2,139	11.4	1,255	6.6	1,095	5.8	1,114	5.8
Gonorrhea	18,580	106.3	20,225	113.1	23,961	131.4	23,366	126.3	23,233	124.7	20,880	111.6	20,171	107.2	19,704	104.1	19,554	102.7	21,073	109.1
H. influenzae Invasive Disease in Children <5 Years Old[2,3]	15	NA	23	2.4	19	NA	28	2.8	25	2.4	29	3.0	32	3.5	23	2.6	24	2.7	22	2.5
HIV Infection[1]	7,719	44.2	6,954	38.9	6,684	36.7	6,867	37.1	7,853	42.1	5,557	29.7	4,913	26.1	5,044	26.6	4,531	23.8	5,938	30.7
Hepatitis A	295	1.7	289	1.6	233	1.3	171	0.9	165	0.9	191	1.0	178	0.9	110	0.6	118	0.6	133	0.7
Hepatitis B, Acute	527	3.0	510	2.9	446	2.4	368	2.0	358	1.9	318	1.7	315	1.7	235	1.2	292	1.5	375	1.9
Hepatitis B, Surface Antigen in Pregnant Women[4]	599	17.5	530	15.2	448	12.7	643	18.1	599	16.9	598	17.0	438	12.4	481	13.6	413	11.6	482	13.4
Hepatitis C, Acute	53	0.3	39	0.2	49	0.3	46	0.2	53	0.3	77	0.4	105	0.6	100	0.5	168	0.9	220	1.1
Lead Poisoning	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	916	4.9	742	3.9	864	4.5	683	3.5
Legionellosis	141	0.8	119	0.7	167	0.9	153	0.8	148	0.8	193	1.0	172	0.9	185	1.0	213	1.1	250	1.3
Listeriosis[2]	28	0.2	59	0.3	46	0.3	34	0.2	50	0.3	25	0.1	54	0.3	38	0.2	33	0.2	41	0.2
Lyme Disease	46	0.3	47	0.3	34	0.2	30	0.2	88	0.5	110	0.6	84	0.4	115	0.6	118	0.6	138	0.7
Malaria	93	0.5	68	0.4	61	0.3	56	0.3	65	0.3	93	0.5	139	0.7	99	0.5	59	0.3	54	0.3
Meningitis, Bacterial or Mycotic	128	0.7	127	0.7	162	0.9	135	0.7	199	1.1	210	1.1	183	1.0	192	1.0	191	1.0	153	0.8
Meningococcal Disease	107	0.6	84	0.5	79	0.4	67	0.4	51	0.3	52	0.3	60	0.3	51	0.3	45	0.2	58	0.3
Pertussis	132	0.8	208	1.2	228	1.3	211	1.1	314	1.7	497	2.7	328	1.7	312	1.6	575	3.0	732	3.8
Pesticide-Related Illness and Injury, Acute[5]	91	0.5	154	0.9	460	2.5	449	2.4	455	2.4	405	2.2	392	2.1	451	2.4	71	0.4	68	0.4
Rabies, Animal	205	NA	201	NA	176	NA	128	NA	138	NA	161	NA	121	NA	120	NA	102	NA	103	NA
Rabies, Possible Exposure	1,128	6.5	1,215	6.8	1,244	6.8	1,474	8.0	1,618	8.7	1,853	9.9	2,114	11.2	2,410	12.7	2,371	12.5	2,721	14.1
Rocky Mountain Spotted Fever[6]	22	0.1	14	NA	21	0.1	19	NA	19	NA	10	NA	13	NA	12	NA	31	0.2	22	0.1
S. pneumoniae Invasive Disease, Drug-Resistant	581	3.3	614	3.4	774	4.2	726	3.9	792	4.3	779	4.2	816	4.3	645	3.4	457	2.4	537	2.8
S. pneumoniae Invasive Disease, Drug-Susceptible	606	3.5	598	3.3	620	3.4	622	3.4	704	3.8	701	3.7	693	3.7	679	3.6	531	2.8	552	2.9
Salmonellosis	4,276	24.5	5,552	31.1	4,928	27.0	5,022	27.1	5,312	28.5	6,741	36.0	6,282	33.4	5,923	31.3	6,523	34.3	6,133	31.8
Shiga Toxin-Producing *E. coli* Infection[2]	78	0.5	114	0.6	38	0.2	47	0.3	65	0.3	94	0.5	85	0.5	103	0.6	93	0.5	121	0.6
Shigellosis	965	5.5	1,270	7.1	1,646	9.0	2,288	12.4	801	4.3	461	2.5	1,212	6.4	2,635	13.9	1,702	8.9	1,018	5.3
Streptococcal Invasive Disease, Group A	219	1.3	260	1.5	312	1.7	309	1.7	275	1.5	279	1.5	268	1.4	248	1.3	248	1.3	299	1.5
Syphilis	2,964	17.0	2,887	16.2	2,944	16.1	3,927	21.2	4,585	24.6	3,861	20.6	4,077	21.7	4,142	21.9	4,510	23.7	5,075	26.3
Tuberculosis[1]	1,076	6.2	1,094	6.1	1,038	5.7	989	5.3	957	5.1	822	4.4	833	4.4	754	4.0	679	3.6	652	3.4
Varicella	NR	NR	NR	NR	NR	NR	1,321	7.1	1,735	9.3	1,125	6.0	977	5.2	861	4.5	815	4.3	659	3.4
Vibriosis (Excluding Cholera)[2]	107	0.6	103	0.6	99	0.5	97	0.5	94	0.5	112	0.6	130	0.7	155	0.8	147	0.8	191	1.0

1 For tuberculosis, date counted (date when the suspected diagnosis is confirmed by clinical, radiographic and laboratory testing) is used to determine cases for each year. For tuberculosis, sexually transmitted diseases (STDs), and other reportable diseases, the number of cases reported in past years should not change. However, different reconciliation processes are in place for AIDS and HIV infection. As a result, case numbers for prior years in the above tables may vary from previous reports.

2 For information on what is included in this disease category, see the paragraph on Florida Disease Codes in Merlin within Interpreting the Data in the Introduction (page viii).

3 Rate is per 100,000 children <5 years old.

4 Rate is per 100,000 women aged 15-44 years.

5 Note that acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

6 One case in 2010 and two cases in 2013 were initially reported as Rocky Mountain spotted fever but were subsequently confirmed as *Rickettsia africae* infection by the Centers for Disease Control and Prevention. These three cases are excluded from this report.

NA Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table. Animal rabies is only expressed as the number of cases because no reliable denominators exist for animal populations. Prior to 2010, lead poisoning case data were primarily stored outside of the state's reportable disease surveillance system and are not included in this table.

NR Not Reportable.

NOTE: Changes in disease case definitions can affect case counts over time. For information on case definition changes that affected case counts, refer to the disease-specific chapter in Section 2.

Table 2: Reported Confirmed and Probable Cases of Reportable Diseases/Conditions of Infrequent Occurrence, Florida, 2004-2013

Reportable Disease/Condition	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Amebic Encephalitis	NR	NR	NR	NR	NR	3	0	1	0	1
Anthrax	0	0	0	0	0	0	0	1	0	0
Arsenic Poisoning	NR	NR	NR	NR	NR	9	14	7	5	13
Botulism, Foodborne	0	0	1	0	0	0	0	0	0	0
Botulism, Infant	1	1	0	1	1	1	1	0	1	0
Botulism, Other	2	0	0	0	0	0	0	0	0	0
Botulism, Wound	0	0	0	0	0	0	0	0	0	0
Brucellosis	8	3	5	10	10	9	9	6	17	9
California Serogroup Virus Disease[1]	4	0	1	1	1	0	0	1	0	0
Cholera	0	0	0	0	0	0	4	11	7	4
Diphtheria	0	0	0	0	0	0	0	0	0	0
Eastern Equine Encephalitis[1]	1	5	0	0	1	0	4	0	2	2
Encephalitis, Other (Non-Arboviral)[1]	8	8	5	18	12	27	15	24	12	4
Glanders	0	0	0	0	0	0	0	0	0	0
Hansen's Disease (Leprosy)	5	2	7	10	10	7	12	11	10	10
Hantavirus Infection	0	0	0	0	0	0	0	0	0	0
Hemolytic Uremic Syndrome	6	20	5	6	5	5	8	4	1	14
Hepatitis B, Perinatal	0	2	6	2	3	0	1	0	1	2
Hepatitis D	NR	NR	NR	1	0	1	0	0	0	1
Hepatitis E	NR	NR	NR	1	0	2	1	7	1	0
Hepatitis G	NR	NR	NR	0	0	1	0	2	0	0
Leptospirosis	1	2	2	1	0	1	2	4	1	1
Measles	1	0	4	5	1	5	1	8	0	7
Melioidosis	0	1	1	0	0	0	0	0	1	0
Mercury Poisoning	10	30	33	24	69	21	12	7	10	5
Mumps	9	8	15	21	16	18	10	11	5	1
Neurotoxic Shellfish Poisoning	0	4	16	1	0	0	0	0	0	0
Plague[1]	0	0	0	0	0	0	0	0	0	0
Poliomyelitis[1]	0	0	0	0	0	0	0	0	0	0
Psittacosis	1	0	1	0	2	0	0	0	0	0
Q Fever[1]	2	1	8	2	1	1	2	3	1	2
Rabies, Human	1	0	0	0	0	0	0	0	0	0
Ricin Toxin Poisoning	0	0	0	0	0	0	0	0	0	1
Rubella[1]	0	0	1	0	3	0	0	0	0	0
S. aureus Infection, Intermediate Resistance to Vancomycin	0	0	0	1	3	6	1	3	7	5
S. aureus Infection, Resistant to Vancomycin	0	0	0	0	0	0	0	0	0	0
Saxitoxin Poisoning	1	0	0	0	0	0	0	0	0	3
Severe Acute Respiratory Syndrome	0	0	0	0	0	0	0	0	0	0
Smallpox	0	0	0	0	0	0	0	0	0	0
St. Louis Encephalitis[1]	0	0	0	0	0	0	0	0	0	0
Staphylococcal Enterotoxin B Poisoning	0	0	0	0	2	0	0	0	0	0
Tetanus	4	3	2	5	2	0	5	3	4	5
Toxoplasmosis	24	2	4	9	14	4	10	7	8	10
Trichinellosis	0	1	1	0	1	0	0	0	0	0
Tularemia	0	1	0	0	0	1	0	0	0	1
Typhoid Fever	10	11	16	15	18	19	22	8	11	11
Typhus Fever[1]	1	0	2	1	0	1	0	2	0	0
Vaccinia Disease	0	0	0	0	0	0	0	1	0	0
Venezuelan Equine Encephalitis[1]	0	0	0	0	0	0	0	0	0	0
Viral Hemorrhagic Fever	0	0	0	0	0	0	0	0	0	0
West Nile Virus Disease[1]	45	22	3	3	3	3	12	23	74	7
Western Equine Encephalitis[1]	0	0	0	0	0	0	0	0	0	0
Yellow Fever	0	0	0	0	0	0	0	0	0	0

1 For information on what is included in this disease category, see the paragraph on Florida Disease Codes in Merlin within Interpreting the Data in the Introduction (page viii).

NR Not reportable.

Note that changes in disease case definitions can affect case counts over time. For information on case definition changes that affected case counts, refer to the disease-specific chapter in Section 2.

Table 3: Reported Confirmed and Probable Cases and Incidence Rate (Per 100,000 Population) of Reportable Diseases/Conditions of Frequent Occurrence by Age Group, Florida, 2013

Reportable Disease/Condition	<1 years		1-4 years		5-9 years		10-14 years		15-19 years		20-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65-74 years		75-84 years		85+ years		Unknown age
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number
AIDS	1	NA	0	NA	0	NA	5	NA	28	2.3	175	13.7	711	29.6	894	37.8	937	34.7	423	16.8	90	4.7	18	NA	0	NA	0
Campylobacteriosis	105	49.7	322	36.6	161	14.5	80	7.0	80	6.7	96	7.5	157	6.5	182	7.7	227	8.4	210	8.3	232	12.2	123	10.9	52	10.9	0
Carbon Monoxide Poisoning	3	NA	17	NA	19	NA	9	NA	8	NA	14	NA	27	1.1	16	NA	17	NA	9	NA	9	NA	7	NA	6	NA	0
Chlamydia	12	NA	0	NA	5	NA	597	52.3	19,791	1,649.0	33,880	2,642.0	20,488	852.5	4,314	182.6	1,434	53.2	367	14.6	66	3.5	13	NA	7	NA	17
Ciguatera Fish Poisoning	0	NA	0	NA	3	NA	2	NA	4	NA	4	NA	4	NA	11	NA	12	NA	5	NA	4	NA	0	NA	0	NA	0
Creutzfeldt-Jakob Disease	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	1	NA	5	NA	10	NA	4	NA	0	NA	0
Cryptosporidiosis	5	NA	40	4.5	25	2.2	12	NA	8	NA	17	NA	58	2.4	54	2.3	49	1.8	48	1.9	52	2.7	27	2.4	14	NA	0
Cyclosporiasis	0	NA	1	NA	1	NA	1	NA	0	NA	1	NA	4	NA	3	NA	6	NA	17	NA	9	NA	3	NA	1	NA	0
Dengue Fever[1]	1	NA	0	NA	4	NA	6	NA	12	NA	11	NA	17	NA	26	1.1	35	1.3	31	1.2	15	NA	2	NA	0	NA	0
Ehrlichiosis/Anaplasmosis[1]	0	NA	1	NA	0	NA	0	NA	0	NA	1	NA	1	NA	1	NA	5	NA	3	NA	9	NA	2	NA	0	NA	0
Giardiasis, Acute	12	NA	200	22.7	115	10.3	66	5.8	45	3.7	55	4.3	121	5.0	134	5.7	131	4.9	108	4.3	78	4.1	40	3.5	9	NA	0
Gonorrhea	2	NA	5	NA	6	NA	140	12.3	3,721	310.0	7,421	578.7	6,177	257.0	2,050	86.8	1,147	42.5	314	12.5	73	3.8	9	NA	2	NA	6
H. influenzae Invasive Disease in Children <5 Years Old[1,2]	15	NA	7	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
HIV Infection	13	NA	2	NA	2	NA	10	NA	185	15.4	733	57.2	1,506	62.7	1,361	57.6	1,334	49.5	620	24.7	149	7.8	21	1.9	2	NA	0
Hepatitis A	0	NA	1	NA	1	NA	2	NA	3	NA	7	NA	19	NA	20	0.8	26	1.0	20	0.8	20	1.1	12	NA	2	NA	0
Hepatitis B, Acute	0	NA	0	NA	0	NA	0	NA	1	NA	7	NA	71	3.0	131	5.5	98	3.6	41	1.6	17	NA	9	NA	0	NA	0
Hepatitis B, Surface Antigen in Pregnant Women[3]	0	NA	0	NA	0	NA	1	NA	18	NA	71	11.3	273	22.9	118	9.9	1	NA	0	NA	0	NA	0	NA	0	NA	0
Hepatitis C, Acute	0	NA	0	NA	0	NA	0	NA	8	NA	40	3.1	85	3.5	54	2.3	19	NA	11	NA	3	NA	0	NA	0	NA	0
Lead Poisoning	14	NA	157	17.8	41	3.7	22	1.9	19	NA	43	3.4	97	4.0	99	4.2	93	3.4	62	2.5	28	1.5	6	NA	2	NA	0
Legionellosis	0	NA	1	NA	0	NA	0	NA	3	NA	2	NA	10	NA	22	0.9	32	1.2	57	2.3	60	3.2	43	3.8	20	4.2	0
Listeriosis[1]	2	NA	0	NA	0	NA	0	NA	3	NA	1	NA	0	NA	0	NA	5	NA	5	NA	8	NA	9	NA	8	NA	0
Lyme Disease	0	NA	7	NA	8	NA	8	NA	8	NA	9	NA	10	NA	10	NA	17	NA	20	0.8	32	1.7	8	NA	1	NA	0
Malaria	0	NA	2	NA	1	NA	4	NA	5	NA	3	NA	5	NA	8	NA	12	NA	11	NA	2	NA	1	NA	0	NA	0
Meningitis, Bacterial or Mycotic	41	19.4	4	NA	6	NA	3	NA	5	NA	10	NA	10	NA	15	NA	15	NA	17	NA	14	NA	10	NA	3	NA	0
Meningococcal Disease	6	NA	6	NA	2	NA	0	NA	3	NA	5	NA	6	NA	4	NA	4	NA	7	NA	4	NA	5	NA	6	NA	0
Pertussis	193	91.4	121	13.8	119	10.7	91	8.0	41	3.4	23	1.8	39	1.6	31	1.3	27	1.0	23	0.9	16	NA	7	NA	1	NA	0
Pesticide-Related Illness and Injury, Acute[4]	0	NA	2	NA	1	NA	2	NA	1	NA	5	NA	18	NA	13	NA	14	NA	8	NA	3	NA	1	NA	0	NA	0
Rabies, Possible Exposure	20	9.5	106	12.1	149	13.4	146	12.8	179	14.9	252	19.7	429	17.9	377	16.0	396	14.7	335	13.3	217	11.4	91	8.0	24	5.0	0
Rocky Mountain Spotted Fever[5]	0	NA	0	NA	0	NA	1	NA	0	NA	0	NA	2	NA	3	NA	5	NA	6	NA	3	NA	2	NA	0	NA	0
S. pneumoniae Invasive Disease, Drug-Resistant	13	NA	34	3.9	12	NA	1	NA	2	NA	7	NA	34	1.4	38	1.6	85	3.2	99	3.9	97	5.1	68	6.0	47	9.8	0
S. pneumoniae Invasive Disease, Drug-Susceptible	14	NA	34	3.9	12	NA	5	NA	4	NA	9	NA	28	1.2	42	1.8	95	3.5	113	4.5	86	4.5	64	5.6	46	9.6	0
Salmonellosis	1,249	591.3	1,313	149.2	551	49.5	220	19.3	165	13.8	153	11.9	356	14.8	338	14.3	453	16.8	465	18.5	438	23.1	322	28.4	110	23.0	0
Shiga Toxin-Producing *E. coli* Infection[1]	3	NA	27	3.1	13	NA	10	NA	11	NA	6	NA	8	NA	6	NA	9	NA	8	NA	13	NA	4	NA	3	NA	0
Shigellosis	24	11.4	284	32.3	270	24.3	57	5.0	16	NA	58	4.5	112	4.7	74	3.1	51	1.9	34	1.4	21	1.1	10	NA	7	NA	0
Streptococcal Invasive Disease, Group A	2	NA	11	NA	12	NA	6	NA	6	NA	13	NA	24	1.0	29	1.2	48	1.8	52	2.1	45	2.4	27	2.4	24	5.0	0
Syphilis	37	17.5	1	NA	0	NA	8	NA	234	19.5	860	67.1	1,430	59.5	1,079	45.7	968	35.9	329	13.1	106	5.6	20	1.8	3	NA	0
Tuberculosis	7	NA	10	NA	5	NA	5	NA	21	1.8	33	2.6	96	4.0	111	4.7	124	4.6	124	4.9	57	3.0	43	3.8	16	NA	0
Varicella	60	28.4	137	15.6	163	14.7	100	8.8	41	3.4	20	1.6	61	2.5	33	1.4	22	0.8	14	NA	4	NA	3	NA	1	NA	0
Vibriosis (Excluding Cholera)[1]	0	NA	6	NA	8	NA	6	NA	4	NA	5	NA	18	NA	32	1.4	26	1.0	27	1.1	36	1.9	14	NA	9	NA	0

1 For information on what is included in this disease category, see the paragraph on Florida Disease Codes in Merlin within Interpreting the Data in the Introduction (page viii).

2 Rate is per 100,000 children <5 years old.

3 Rate is per 100,000 women aged 15-44 years.

4 Note that acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.

5 Two cases in 2013 were initially reported as Rocky Mountain spotted fever but were subsequently confirmed as *Rickettsia africae* infection by the Centers for Disease Control and Prevention. These two cases are excluded from this report.

NA Not applicable. Rates calculated for less than 20 cases are unreliable and therefore are not included in this table.

Note that this table includes all diseases from Table 1 except animal rabies.

Table 4: Top 10 Reported Confirmed and Probable Cases of Reportable Diseases/Conditions by Age Group, Florida, 2013

	Age Group												
Rank	<1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1	Salmonellosis (1,249)	Salmonellosis (1,313)	Salmonellosis (551)	Chlamydia (597)	Chlamydia (19,791)	Chlamydia (33,880)	Chlamydia (20,488)	Chlamydia (4,314)	Chlamydia (1,434)	HIV Infection (620)	Salmonellosis (438)	Salmonellosis (322)	Salmonellosis (110)
2	Pertussis (193)	Campylobacteriosis (322)	Shigellosis (270)	Salmonellosis (220)	Gonorrhea (3,721)	Gonorrhea (7,421)	Gonorrhea (6,177)	Gonorrhea (2,050)	HIV Infection (1,334)	Salmonellosis (465)	Campylobacteriosis (232)	*S. pneumoniae* Invasive Disease (132)	*S. pneumoniae* Invasive Disease (93)
3	Campylobacteriosis (105)	Shigellosis (284)	Varicella (163)	Rabies, Possible Exposure (146)	Syphilis (234)	Syphilis (860)	HIV Infection (1,506)	HIV Infection (1,361)	Gonorrhea (1,147)	AIDS (423)	Rabies, Possible Exposure (217)	Campylobacteriosis (123)	Campylobacteriosis (52)
4	Varicella (60)	Giardiasis, Acute (200)	Campylobacteriosis (161)	Gonorrhea (140)	HIV Infection (185)	HIV Infection (733)	Syphilis (1,430)	Syphilis (1,079)	Syphilis (968)	Chlamydia (367)	*S. pneumoniae* Invasive Disease (183)	Rabies, Possible Exposure (91)	Rabies, Possible Exposure (24)
5	Meningitis, Bacterial or Mycotic (41)	Lead Poisoning (157)	Rabies, Possible Exposure (149)	Varicella (100)	Rabies, Possible Exposure (179)	Rabies, Possible Exposure (252)	AIDS (711)	AIDS (894)	AIDS (937)	Rabies, Possible Exposure (335)	HIV Infection (149)	Legionellosis (43)	Streptococcal Invasive Disease, Group A (24)
6	Syphilis (37)	Varicella (137)	Pertussis (119)	Pertussis (91)	Salmonellosis (165)	AIDS (175)	Rabies, Possible Exposure (429)	Rabies, Possible Exposure (377)	Salmonellosis (453)	Syphilis (329)	Syphilis (106)	Tuberculosis (43)	Legionellosis (20)
7	*S. pneumoniae* Invasive Disease (27)	Pertussis (121)	Giardiasis, Acute (115)	Campylobacteriosis (80)	Campylobacteriosis (80)	Salmonellosis (153)	Salmonellosis (356)	Salmonellosis (338)	Rabies, Possible Exposure (396)	Gonorrhea (314)	AIDS (90)	Giardiasis, Acute (40)	Tuberculosis (16)
8	Shigellosis (24)	Rabies, Possible Exposure (106)	Lead Poisoning (41)	Giardiasis, Acute (66)	Giardiasis, Acute (45)	Campylobacteriosis (96)	Hepatitis B, Surface Antigen in Pregnant Women (273)	Campylobacteriosis (182)	Campylobacteriosis (227)	*S. pneumoniae* Invasive Disease (212)	Giardiasis, Acute (78)	Cryptosporidiosis (27)	Cryptosporidiosis (14)
9	Rabies, Possible Exposure (20)	*S. pneumoniae* Invasive Disease (68)	Cryptosporidiosis (25)	Shigellosis (57)	Pertussis (41)	Hepatitis B, Surface Antigen in Pregnant Women (71)	Campylobacteriosis (157)	Giardiasis, Acute (134)	*S. pneumoniae* Invasive Disease (180)	Campylobacteriosis (210)	Gonorrhea (73)	Streptococcal Invasive Disease, Group A (27)	Giardiasis, Acute (9)
10	*H.influenzae* Invasive Disease in Children <5 Years Old (15)	Cryptosporidiosis (40)	*S. pneumoniae* Invasive Disease (24)	Lead Poisoning (22)	Varicella (41)	Shigellosis (58)	Giardiasis, Acute (121)	Hepatitis B, Acute (131)	Giardiasis, Acute (131)	Tuberculosis (124)	Chlamydia (66)	HIV Infection (21)	Vibriosis (Excluding Cholera) (9)

Table 4 includes the top 10 diseases based on frequency of report by age group. These diseases are grouped by color into a few general disease families:

Enteric diseases	Sexually transmitted infections	Lead poisoning	Rabies, possible exposure
Vaccine-preventable diseases	HIV/AIDS	Tuberculosis	Invasive bacterial diseases

Table 5: Reported Confirmed and Probable Cases of Reportable Diseases/Conditions of Frequent Occurrence by Month of Occurrence1, Florida, 2013

Selected Reportable Diseases	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Campylobacteriosis	122	146	144	161	174	210	269	212	166	149	128	146
Carbon Monoxide Poisoning	5	1	47	1	8	27	6	4	27	21	7	7
Ciguatera Fish Poisoning	0	0	0	2	9	5	5	12	7	5	4	0
Creutzfeldt-Jakob Disease	4	2	1	2	0	2	3	1	0	3	0	2
Cryptosporidiosis	31	15	33	15	41	34	37	53	59	43	27	21
Cyclosporiasis	1	0	0	0	2	23	17	1	1	1	1	0
Dengue Fever[2]	16	6	3	10	3	10	21	42	11	7	14	17
Ehrlichiosis/Anaplasmosis[2]	1	0	2	0	3	7	4	3	2	1	0	0
Giardiasis, Acute	76	76	94	73	70	80	121	132	109	100	88	95
H. influenzae Invasive Disease in Children <5 Years Old[2]	4	4	2	2	1	1	1	2	0	0	0	5
Hepatitis A	9	5	9	8	5	10	17	12	25	16	14	3
Hepatitis B, Acute	24	22	29	29	29	38	27	30	36	44	34	33
Hepatitis B, Surface Antigen in Pregnant Women	39	39	46	49	44	54	42	54	38	26	29	22
Hepatitis C, Acute	15	16	20	27	23	21	16	23	15	8	13	23
Lead Poisoning	59	158	66	44	49	42	37	48	41	52	36	51
Legionellosis	22	9	7	13	13	39	25	20	34	22	23	23
Listeriosis[2]	5	1	3	2	4	2	3	9	4	3	0	5
Lyme Disease	6	1	4	3	6	24	48	14	11	12	6	3
Malaria	8	4	4	2	4	5	4	7	4	2	6	4
Meningitis, Bacterial or Mycotic	14	7	14	8	14	16	14	14	8	15	15	14
Meningococcal Disease	8	10	7	3	1	3	1	6	4	5	5	5
Pertussis	33	31	38	57	75	66	78	76	101	72	63	42
Pesticide-Related Illness and Injury, Acute[3]	14	2	1	1	16	5	7	7	3	0	11	1
Rabies, Animal[4]	10	9	7	8	9	1	18	5	7	8	9	12
Rabies, Possible Exposure[5]	215	209	261	215	223	248	272	248	191	223	216	200
Rocky Mountain Spotted Fever[6]	0	0	0	3	0	1	6	7	2	2	1	0
S. pneumoniae Invasive Disease, Drug-Resistant	75	51	63	45	47	40	24	19	31	35	38	69
S. pneumoniae Invasive Disease, Drug-Susceptible	88	61	62	54	42	37	21	21	27	28	40	71
Salmonellosis	277	217	259	345	445	597	682	770	857	770	559	355
Shiga Toxin-Producing *E. coli* Infection[2]	3	12	8	7	15	8	14	9	11	6	10	18
Shigellosis	26	35	29	59	86	94	82	125	151	127	120	84
Streptococcal Invasive Disease, Group A	20	19	20	29	40	18	27	30	21	19	25	31
Varicella	63	69	70	75	62	33	29	52	64	54	36	52
Vibriosis (Excluding Cholera)[2]	2	5	9	13	18	23	30	28	27	19	9	8

1 The earliest date associated with the case was used to determine month of occurrence, unless otherwise noted. Dates associated with cases include illness onset date, diagnosis date, laboratory report date and county health department notified date.
2 For information on what is included in this disease category, see the paragraph on Florida Disease Codes in Merlin within Interpreting the Data in the Introduction (page viii).
3 Note that acute pesticide-related illness and injury counts include suspect cases, unlike other diseases in this report.
4 Month of occurrence is based on the month of laboratory report.
5 Month of occurrence is based on the month of exposure.
6 Two cases in 2013 were initially reported as Rocky Mountain spotted fever but were subsequently confirmed as *Rickettsia africae* infection by the Centers for Disease Control and Prevention. These two cases are excluded from this report.

Note that this table includes all diseases from Table 1 except AIDS, chlamydia, gonorrhea, HIV infection, syphilis, and tuberculosis.

Section 2

Data Summaries for Selected Reportable Diseases/Conditions of Frequent Occurrence

AIDS

Disease Facts

Cause: HIV

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

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

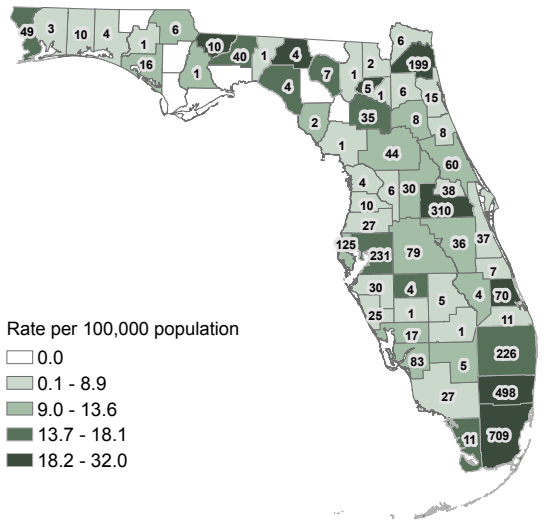
Reason for surveillance: Enhance efforts to prevent HIV transmission, improve allocation of resources for treatment services, and assist in evaluating the impact of public health interventions

Comments: The expansion of electronic laboratory reporting (ELR) in 2007 led to an artificial peak in newly reported cases in 2008, followed by a general decline in reported cases through 2012. Additional expansion of ELR in 2012 was followed by another increase in newly reported AIDS cases in 2013.

Summary of Case Demographics

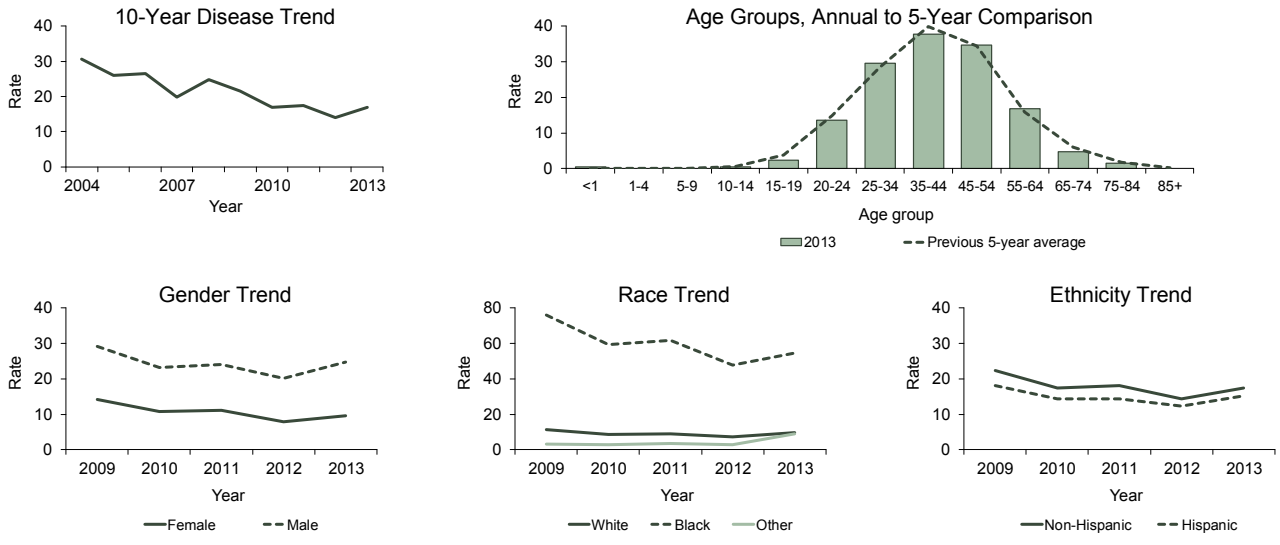
Summary			
Number of cases			3,282
Incidence rate (per 100,000 population)			17.0
Change from 5-year average incidence			-10.1%
Age (in years)			
Mean			43
Median			43
Min-max			0 - 84
Gender	**Number**	**(Percent)**	**Rate**
Female	944	(28.8)	9.6
Male	2,338	(71.2)	24.8
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	1,440	(43.9)	9.5
Black	1,752	(53.4)	54.5
Other	89	(2.7)	9.0
Unknown race	1		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	2,566	(78.7)	17.4
Hispanic	694	(21.3)	15.3
Unknown ethnicity	22		

Reported AIDS Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 3,216)



County totals exclude Department of Corrections cases (n=66).
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Reported AIDS Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Additional Information

For AIDS cases in adult men reported in 2013, male-to-male sexual contact was the most common risk factor (63.6%), followed by heterosexual contact (25.8%).

In 2013, blacks were over-represented among AIDS cases, accounting for 43.8% of adult cases among men and 69.4% of the adult cases among women.

For information on HIV, please see the HIV chapter within this section (page 31).

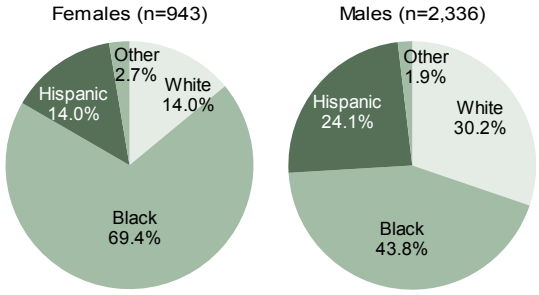
Please visit the AIDS Surveillance website to access additional information at www.FloridaHealth.gov/diseases-and-conditions/aids/surveillance/index.html.

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

Reported Adult (13 Years and Older) AIDS Cases by Gender and Mode of Exposure, Florida, 2013

Mode of exposure	Females cases (n=943)		Males cases (n=2,336)	
	Number	(percent)	Number	(percent)
Men who have sex with men (MSM)	NA		1,486	(63.6)
Heterosexual	821	(87.1)	603	(25.8)
Injection drug user (IDU)	109	(11.6)	152	(6.5)
MSM and IDU	NA		88	(3.8)
Other	13	(1.4)	7	(0.3)
Total	943		2,336	

Reported Adult (13 Years and Older) AIDS Cases by Gender and Race/Ethnicity, Florida, 2013



Campylobacteriosis

Disease Facts

Cause: *Campylobacter* bacteria

Type of illness: Gastroenteritis (diarrhea, vomiting)

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

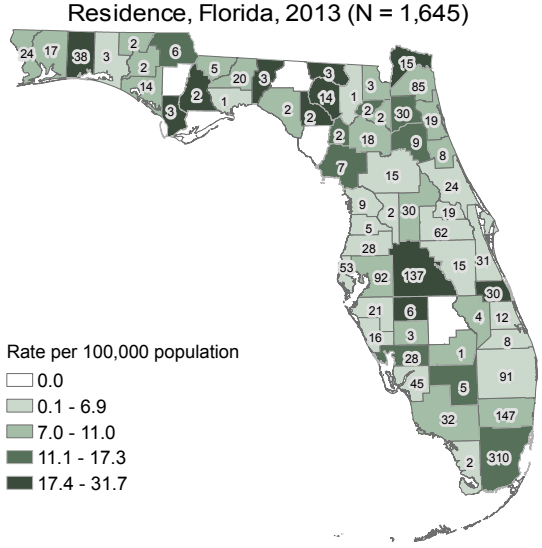
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

Comments: The use of culture-independent diagnostic testing for *Campylobacter* has increased significantly in recent years. Florida changed the campylobacteriosis surveillance case definition in January and July 2011 to adapt to this change, increasing the number of reported cases. Due to the change in the surveillance case definition, there were approximately seven months in 2011 when positive enzyme immunoassay (EIA) tests were included as part of the probable case definition.

Summary of Case Demographics

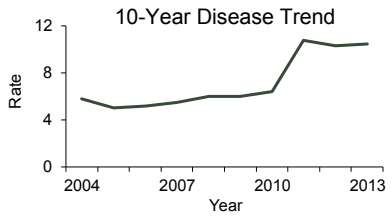
Summary			
Number of cases			2,027
Incidence rate (per 100,000 population)			10.5
Change from 5-year average incidence			+32.8%
Age (in years)			
Mean			36
Median			35
Min-max			0 - 100
Gender	**Number**	**(Percent)**	**Rate**
Female	933	(46.0)	9.4
Male	1,094	(54.0)	11.6
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	1,642	(85.3)	10.9
Black	121	(6.3)	3.8
Other	161	(8.4)	16.4
Unknown race	103		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	1,266	(65.9)	8.6
Hispanic	655	(34.1)	14.4
Unknown ethnicity	106		

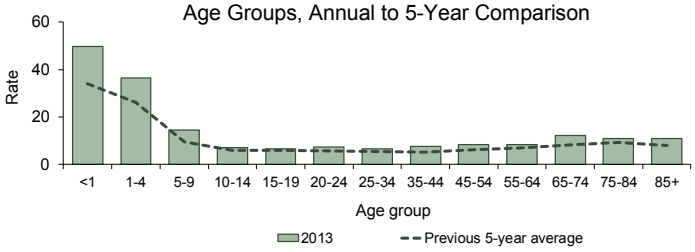
Reported Campylobacteriosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 1,645)

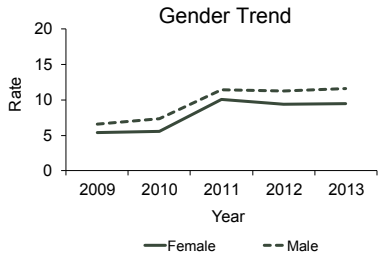


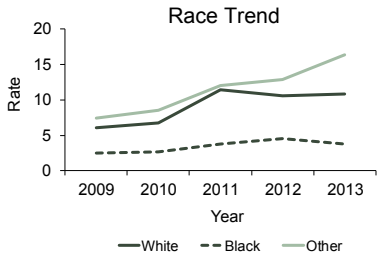
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

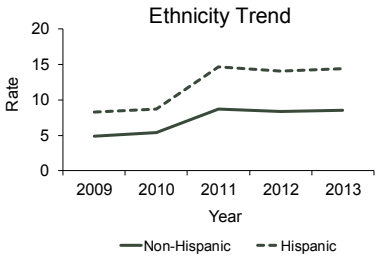
Reported Campylobacteriosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida









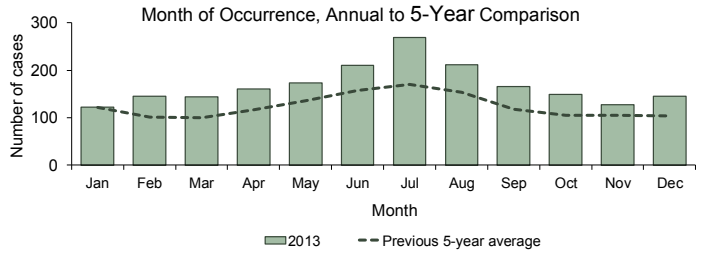


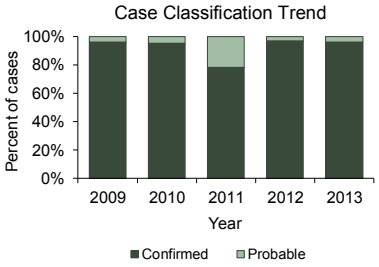
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Campylobacteriosis cases were missing 6.0% of ethnicity data in 2009, 6.6% of race data in 2009, 6.2% of ethnicity data in 2011, 5.1% of race data in 2011, 6.1% of ethnicity data in 2012, 6.2% of race data in 2012, 5.2% of ethnicity data in 2013, and 5.1% of race data in 2013.

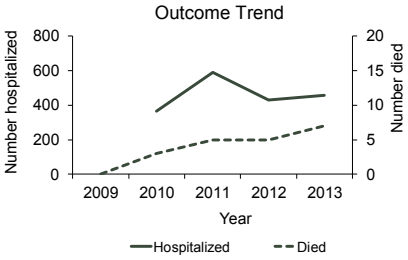
Summary of Case Factors

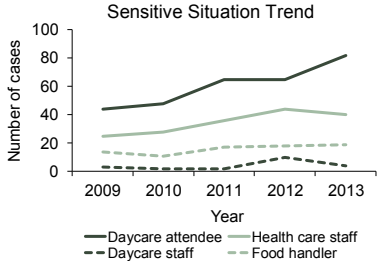
Summary	Number	
Number of cases	2,027	
Case classification	**Number**	**(Percent)**
Confirmed	1,955	(96.4)
Probable	72	(3.6)
Outcome	**Number**	**(Percent)**
Hospitalized	459	(22.6)
Died	7	(0.3)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	82	(4.0)
Daycare staff	4	(0.2)
Health care staff	40	(2.0)
Food handler	19	(0.9)
Imported status	**Number**	**(Percent)**
Acquired in Florida	1,645	(81.2)
Acquired in the U.S., not Florida	66	(3.3)
Acquired outside the U.S.	222	(11.0)
Acquired location unknown	94	(4.6)
Outbreak status	**Number**	**(Percent)**
Sporadic	1,822	(89.9)
Outbreak-associated	149	(7.4)
Outbreak status unknown	56	(2.8)

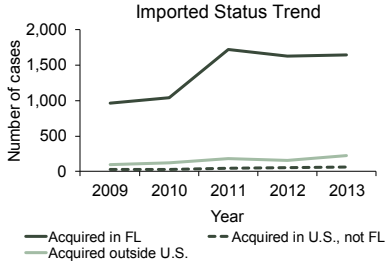
Reported Campylobacteriosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

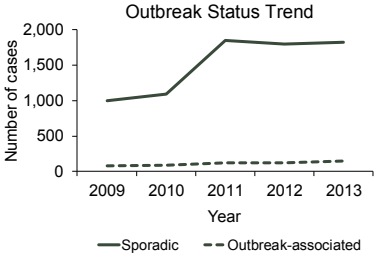












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Carbon Monoxide Poisoning

Disease Facts

Cause: Carbon monoxide (CO) gas

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

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

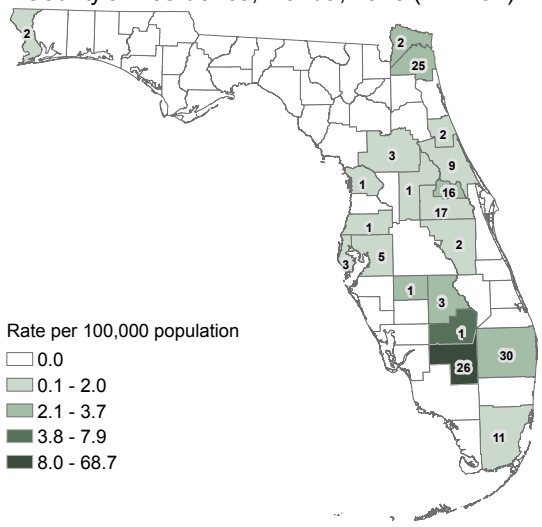
Reason for surveillance: Identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions, measure impact of public health interventions

Comments: CO poisoning became a reportable condition in Florida on November 24, 2008; therefore only cases from 2009 to 2013 are presented in this report. Increased incidence in 2013 was primarily due to outbreaks in Hendry, Palm Beach, Duval, and Seminole counties, which accounted for 69 cases.

Summary of Case Demographics

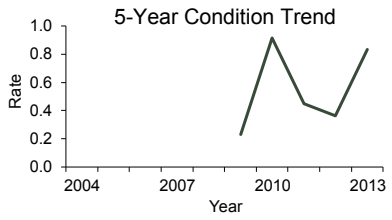
Summary			
Number of cases			161
Incidence rate (per 100,000 population)			0.8
Change from 4-year average incidence			+70.5%
Age (in years)			
Mean			32
Median			29
Min-max			0 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	98	(60.9)	1.0
Male	63	(39.1)	0.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	66	(49.3)	0.4
Black	59	(44.0)	1.8
Other	9	(6.7)	NA
Unknown race	27		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	101	(63.1)	0.7
Hispanic	59	(36.9)	1.3
Unknown ethnicity	1		

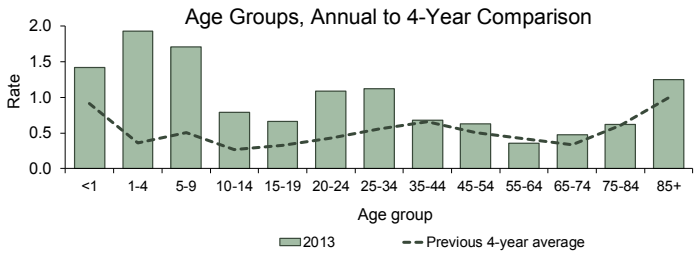
Reported Carbon Monoxide Poisoning Cases and Incidence Rates per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2013 (N = 161)

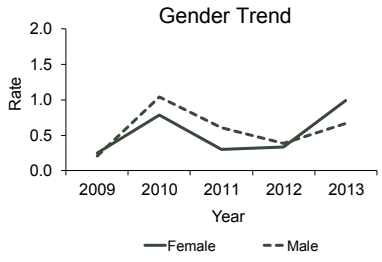


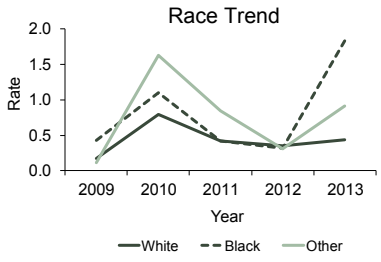
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

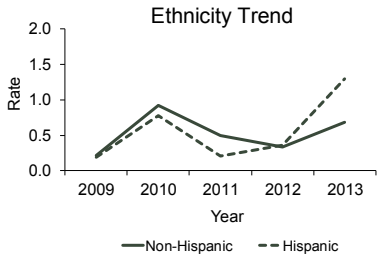
Reported Carbon Monoxide Poisoning Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











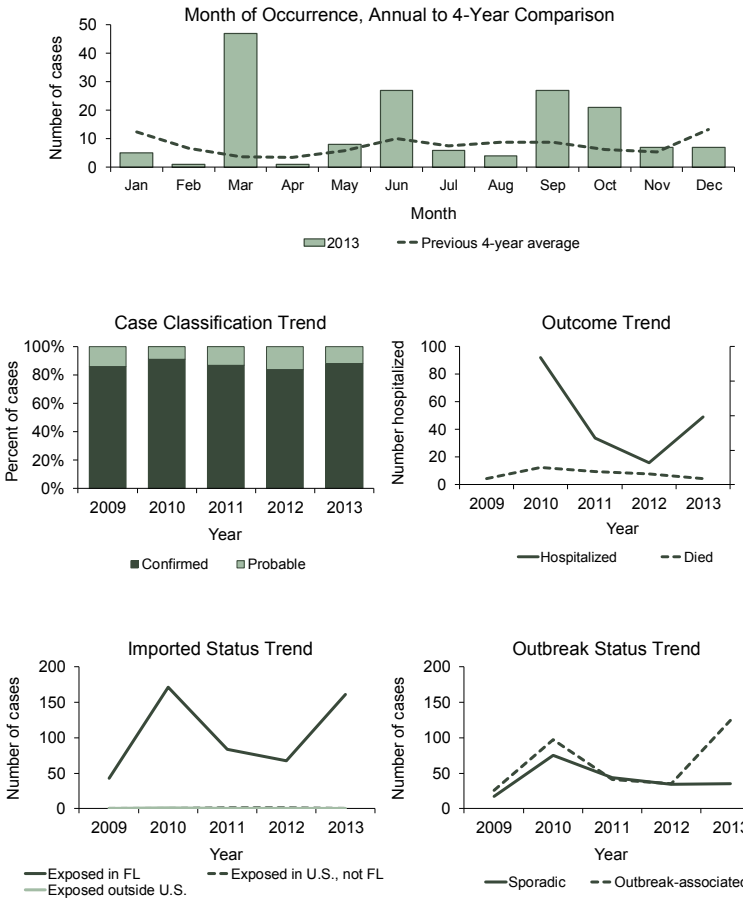
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Carbon monoxide poisoning cases were missing 7.0% of ethnicity data in 2009, 7.0% of race data in 2009, 5.8% of ethnicity data in 2012, and 16.8% of race data in 2013.

Carbon Monoxide Poisoning

Summary of Case Factors

Summary	Number	
Number of cases	161	
Case classification	**Number**	**(Percent)**
Confirmed	142	(88.2)
Probable	19	(11.8)
Outcome	**Number**	**(Percent)**
Hospitalized	49	(30.4)
Died	9	(5.6)
Imported status	**Number**	**(Percent)**
Exposed in Florida	161	(100.0)
Exposed in the U.S., not Florida	0	(0.0)
Exposed outside the U.S.	0	(0.0)
Exposed location unknown	0	(0.0)
Outbreak status	**Number**	**(Percent)**
Sporadic	35	(21.7)
Outbreak-associated	125	(77.6)
Outbreak status unknown	1	(0.6)
Exposure Type	**Number**	**(Percent)**
Generator	36	(22.4)
Forklift	31	(19.3)
Grill/stove	26	(16.1)
Automobile	22	(13.7)
Fire	6	(3.7)
Fuel-burning appliances	5	(3.1)
Power tools	3	(1.9)
Other	16	(9.9)
Unknown	16	(9.9)

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2013, the rate of CO poisoning was higher among women than men, a shift from previous years. Sixty-nine cases (42.9%) were related to four clusters identified in 2013. The clusters included a propane-fueled forklift operating inside a warehouse (22 cases), a generator being used in a strip mall next to a daycare (23 cases), a charcoal grill being used in an apartment (14 cases), and a charcoal grill that was not adequately extinguished being stored in a garage (10 cases).

Chlamydia

Disease Facts

Cause: *Chlamydia trachomatis* bacteria

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

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

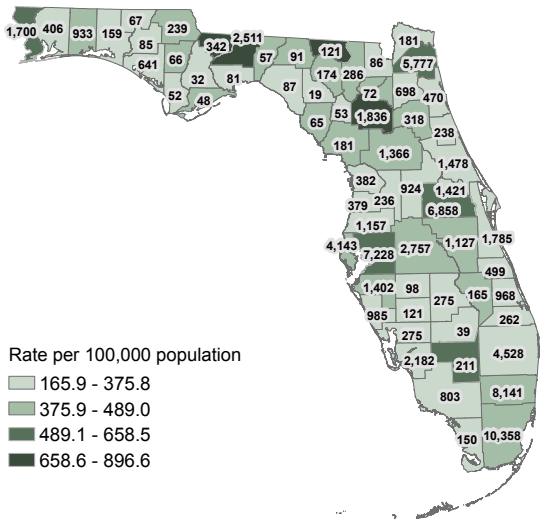
Reason for surveillance: Effective interventions implemented immediately for every case, monitor incidence over time, estimate burden of illness, evaluate treatment and prevention programs

Comments: Chlamydia is the most common reportable STD in Florida and the U.S. Incidence is highest among 15- to 24-year-old women, partly due to the emphasis on screening/treating women. Severe complications can occur in women, including pelvic inflammatory disease, inability to get pregnant, and ectopic pregnancies.

Summary of Case Demographics

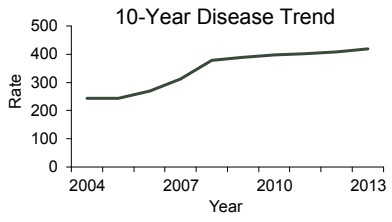
Summary			
Number of cases			80,991
Incidence rate (per 100,000 population)			419.2
Change from 5-year average incidence			+6.0%
Age (in years)			
Mean			24
Median			22
Min-max			0 - 100
Gender	**Number**	**(Percent)**	**Rate**
Female	57,259	(70.9)	579.9
Male	23,556	(29.1)	249.4
Unknown gender	176		
Race	**Number**	**(Percent)**	**Rate**
White	26,186	(44.2)	173.2
Black	32,329	(54.6)	1,006.4
Other	668	(1.1)	67.9
Unknown race	21,808		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	46,469	(83.6)	314.6
Hispanic	9,139	(16.4)	201.0
Unknown ethnicity	25,383		

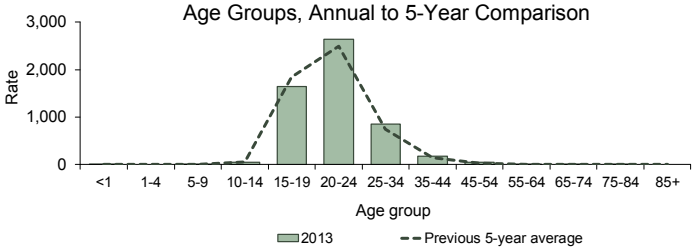
Reported Chlamydia Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 80,991)

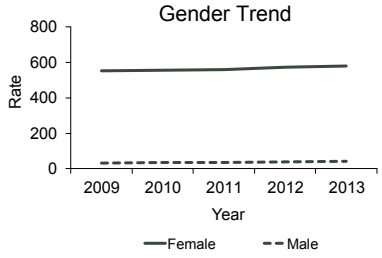


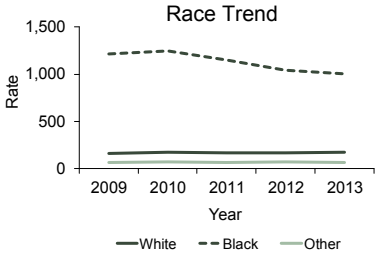
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

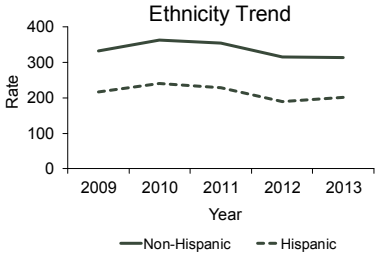
Reported Chlamydia Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Chlamydia cases were missing 21.2% of race data in 2009, 15.9% of race data in 2009, 15.4% of ethnicity data in 2010, 13.6% of race data in 2010, 18.9% of ethnicity data in 2011, 18.4% of race data in 2011, 30.0% of ethnicity data in 2012, 25.2% of race data in 2012, 31.3% of ethnicity data in 2013, and 26.9% of race data in 2013.

Ciguatera Fish Poisoning

Disease Facts

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

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

Exposure: Foodborne; consuming fish contaminated with ciguatoxins

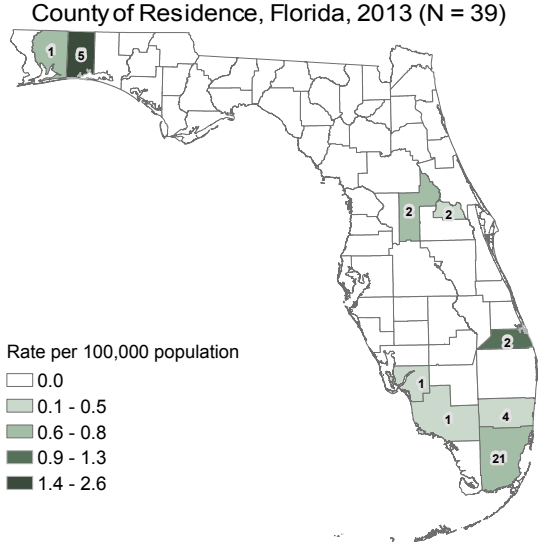
Reason for surveillance: Identify and control outbreaks, identify high-risk products (e.g., barracuda)

Comments: Outbreaks are usually associated with multiple people sharing an implicated fish. While case finding in Florida is thought to be more complete than in other states, underreporting is still likely due to lack of recognition and reporting by medical practitioners. Marine dinoflagellates are typically found in tropical and subtropical waters and are eaten by herbivorous fish that are in turn eaten by larger carnivorous fish, causing the toxins to bioaccumulate in larger fish, such as grouper. Cases in women exceeded cases in men in 2013.

Summary of Case Demographics

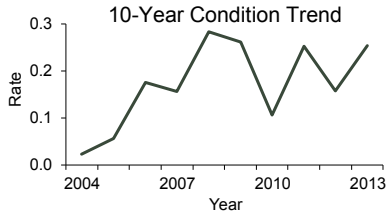
Summary			
Number of cases			49
Incidence rate (per 100,000 population)			0.3
Change from 5-year average incidence			+19.2%
Age (in years)			
Mean			39
Median			39
Min-max			5 - 74
Gender	**Number**	**(Percent)**	**Rate**
Female	27	(55.1)	0.3
Male	22	(44.9)	0.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	43	(87.8)	0.3
Black	4	(8.2)	NA
Other	2	(4.1)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	31	(64.6)	0.2
Hispanic	17	(35.4)	NA
Unknown ethnicity	1		

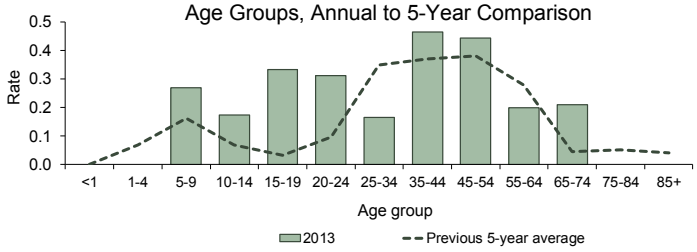
Reported Ciguatera Fish Poisoning Cases and Incidence Rates per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2013 (N = 39)

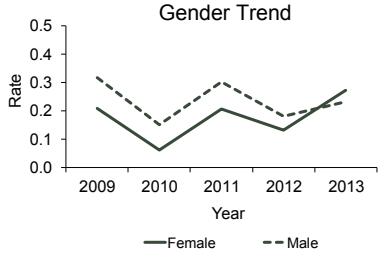


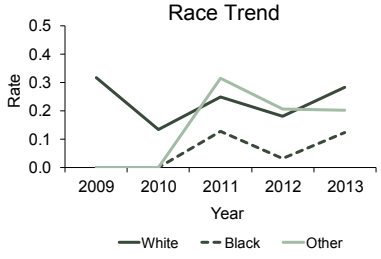
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

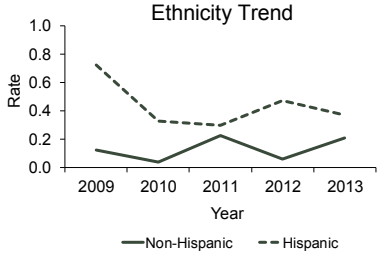
Reported Ciguatera Fish Poisoning Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











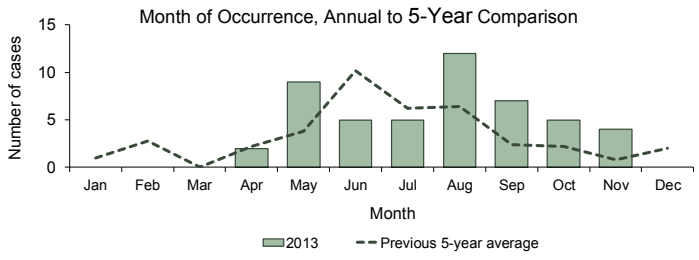
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Ciguatera fish poisoning cases were missing 8.3% of race data in 2011.

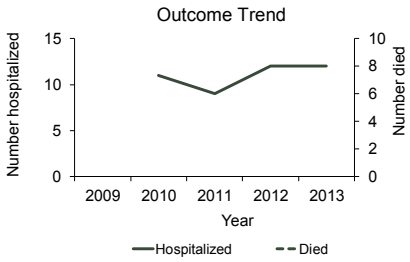
Ciguatera Fish Poisoning

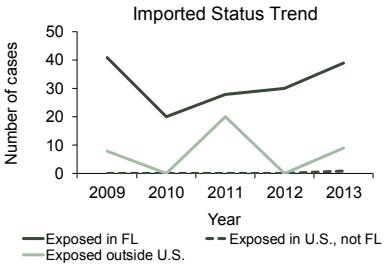
Summary of Case Factors

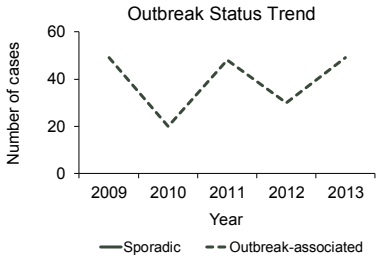
Summary	Number	
Number of cases	49	
Outcome	**Number**	**(Percent)**
Hospitalized	12	(24.5)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Exposed in Florida	39	(79.6)
Exposed in the U.S., not Florida	1	(2.0)
Exposed outside the U.S.	9	(18.4)
Exposed location unknown	0	(0.0)
Outbreak status	**Number**	**(Percent)**
Sporadic	0	(0.0)
Outbreak-associated	49	(100.0)
Outbreak status unknown	0	(0.0)

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









Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. A single case of ciguatera fish poisoning is considered an outbreak.

Cryptosporidiosis

Disease Facts

Cause: *Cryptosporidium* parasites

Type of illness: Gastroenteritis (diarrhea, vomiting)

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

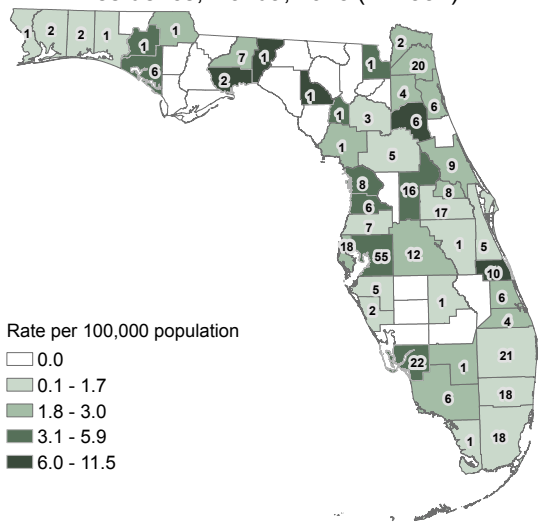
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food/water source, ill food handler), monitor incidence over time, estimate burden of illness

Comments: Florida changed the cryptosporidiosis surveillance case definition in January 2011. Detection of *Cryptosporidium* antigen by enzyme-linked immunoassay test was removed from the criteria to meet the confirmed case definition and is now used as criteria to meet the probable case definition instead, leading to more cases being classified as probable instead of confirmed.

Summary of Case Demographics

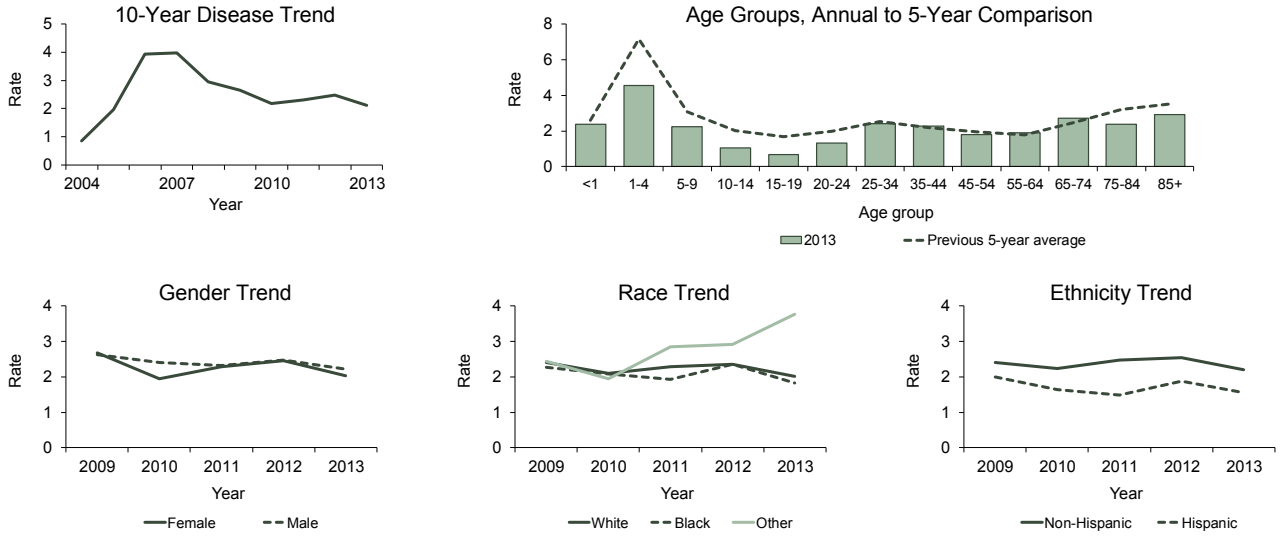
Summary			
Number of cases			409
Incidence rate (per 100,000 population)			2.1
Change from 5-year average incidence			-15.6%
Age (in years)			
Mean			42
Median			42
Min-max			0 - 99
Gender	**Number**	**(Percent)**	**Rate**
Female	200	(48.9)	2.0
Male	209	(51.1)	2.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	304	(76.0)	2.0
Black	59	(14.8)	1.8
Other	37	(9.3)	3.8
Unknown race	9		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	326	(82.1)	2.2
Hispanic	71	(17.9)	1.6
Unknown ethnicity	12		

Reported Cryptosporidiosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 351)



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

Reported Cryptosporidiosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



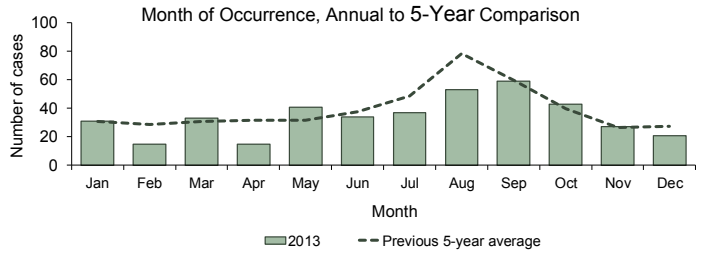
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Cryptosporidiosis cases were missing 12.9% of ethnicity data in 2009 and 10.1% of race data in 2009.

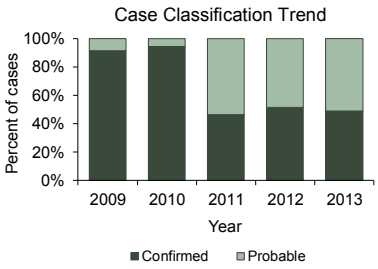
Cryptosporidiosis

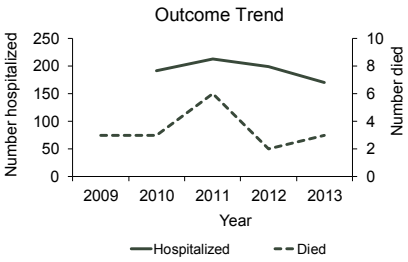
Summary of Case Factors

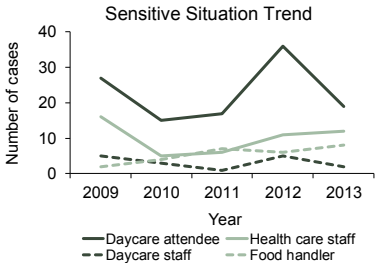
Summary	Number	
Number of cases	409	
Case classification	**Number**	**(Percent)**
Confirmed	201	(49.1)
Probable	208	(50.9)
Outcome	**Number**	**(Percent)**
Hospitalized	171	(41.8)
Died	3	(0.7)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	19	(4.6)
Daycare staff	2	(0.5)
Health care staff	12	(2.9)
Food handler	8	(2.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	351	(85.8)
Acquired in the U.S., not Florida	8	(2.0)
Acquired outside the U.S.	30	(7.3)
Acquired location unknown	20	(4.9)
Outbreak status	**Number**	**(Percent)**
Sporadic	355	(86.8)
Outbreak-associated	50	(12.2)
Outbreak status unknown	4	(1.0)

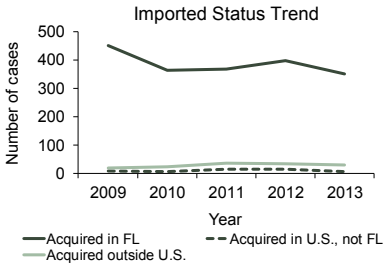
Reported Cryptosporidiosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

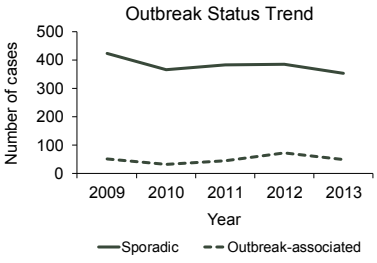












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Cyclosporiasis

Disease Facts

Cause: *Cyclospora* parasites

Type of illness: Gastroenteritis (diarrhea, vomiting)

Transmission: Fecal-oral; waterborne and foodborne

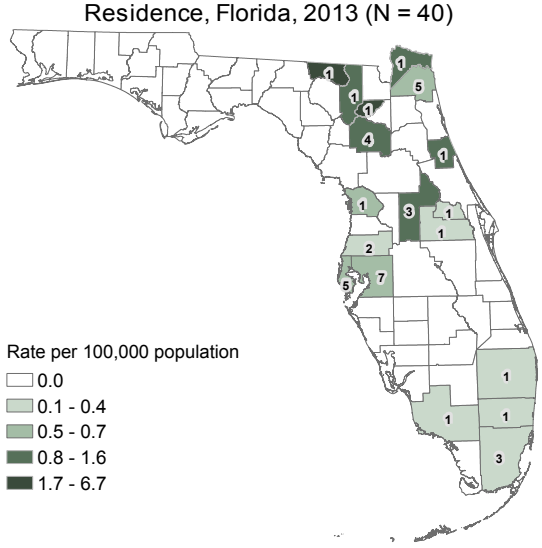
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness

Comments: Incidence is strongly seasonal, peaking in June and July. Large statewide or multistate outbreaks occur occasionally. A large multistate outbreak occurred in 2005 (see the Summary of Notable Outbreaks and Case Investigations section of the *Florida Morbidity Statistics Report, 1997-2006* for additional information). In 2013, a multistate outbreak including 631 cases from 25 states was associated with bagged salad and fresh cilantro from Mexico. Florida identified 33 cases possibly associated with this outbreak.

Summary of Case Demographics

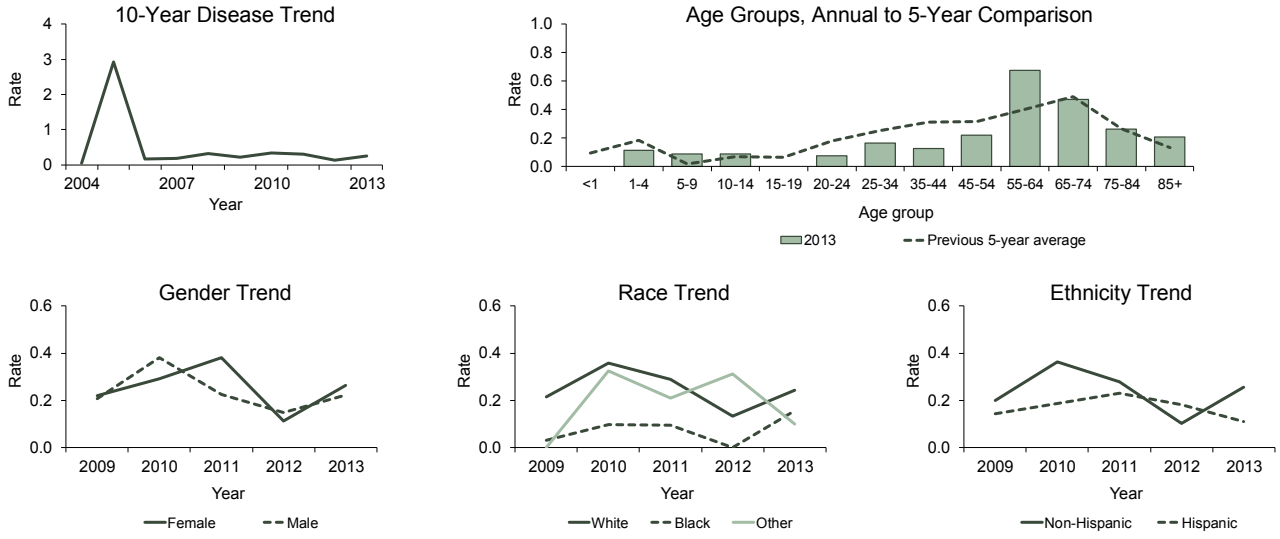
Summary			
Number of cases			47
Incidence rate (per 100,000 population)			0.2
Change from 5-year average incidence			-6.6%
Age (in years)			
Mean			53
Median			57
Min-max			2 - 95
Gender	**Number**	**(Percent)**	**Rate**
Female	26	(55.3)	0.3
Male	21	(44.7)	0.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	37	(86.0)	0.2
Black	5	(11.6)	NA
Other	1	(2.3)	NA
Unknown race	4		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	38	(88.4)	0.3
Hispanic	5	(11.6)	NA
Unknown ethnicity	4		

Reported Cyclosporiasis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 40)



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

Reported Cyclosporiasis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



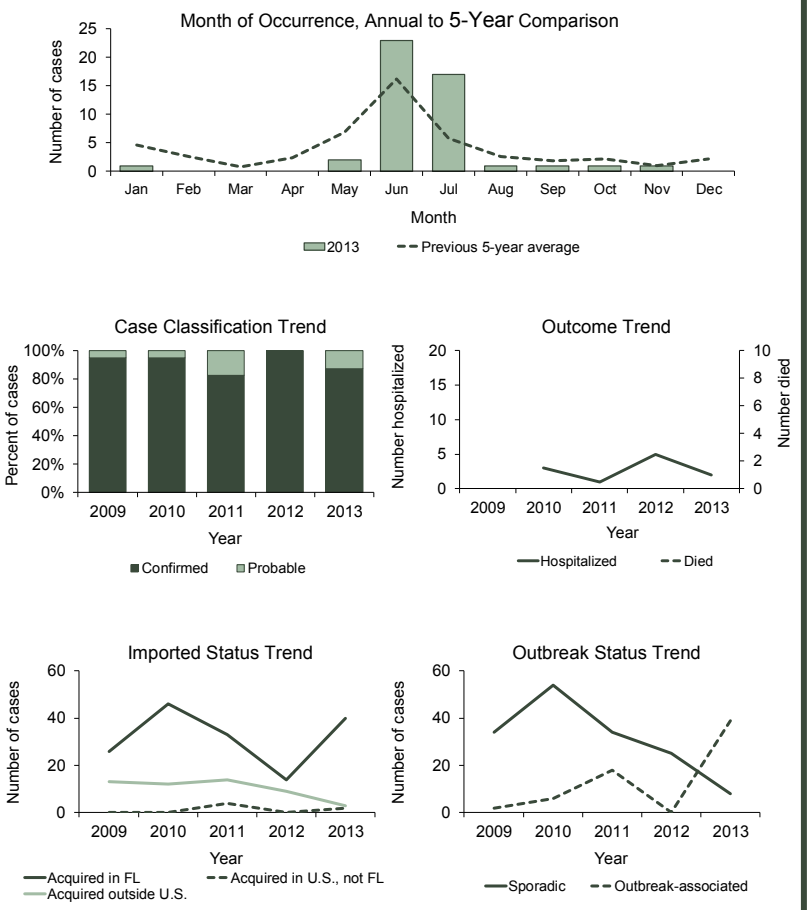
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Cyclosporiasis cases were missing 12.5% of ethnicity data in 2009, 17.5% of race data in 2009, 6.3% of race data in 2010, 12.1% of ethnicity data in 2011, 17.2% of race data in 2011, 8.0% of ethnicity data in 2012, 8.0% of race data in 2012, 8.5% of ethnicity data in 2013, and 8.5% of race data in 2013.

Cyclosporiasis

Summary of Case Factors

Summary	Number	
Number of cases	47	
Case classification	**Number**	**(Percent)**
Confirmed	41	(87.2)
Probable	6	(12.8)
Outcome	**Number**	**(Percent)**
Hospitalized	2	(4.3)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	40	(85.1)
Acquired in the U.S., not Florida	2	(4.3)
Acquired outside the U.S.	3	(6.4)
Acquired location unknown	2	(4.3)
Outbreak status	**Number**	**(Percent)**
Sporadic	8	(17.0)
Outbreak-associated	39	(83.0)
Outbreak status unknown	0	(0.0)

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Dengue Fever

Disease Facts

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

Type of illness: Acute febrile illness, symptoms include headache, joint pain, muscle aches, rash, and eye pain; warning signs for more severe disease (hemorrhagic fever or dengue shock syndrome) include severe abdominal pain, vomiting, and mucosal bleeding

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

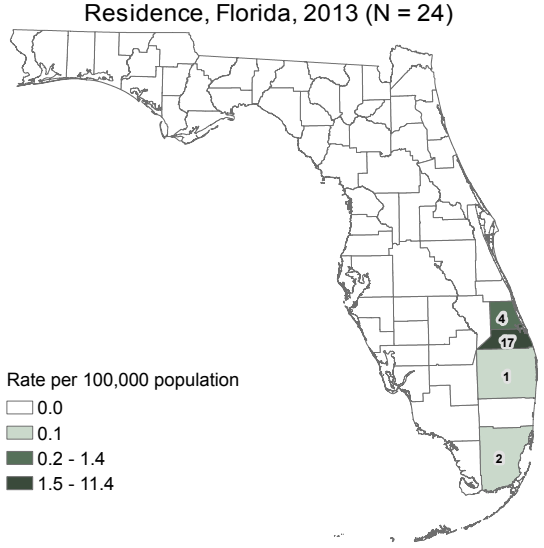
Reason for surveillance: Identify individual cases and implement control measures to prevent endemicity, monitor incidence over time, estimate burden of illness

Comments: An outbreak of locally acquired dengue fever occurred in Monroe County in 2009 and 2010. Isolated cases of locally acquired dengue fever were identified from 2010 to 2012. In 2013, there were two unrelated local introductions in Miami-Dade County (DENV-1 and 4) and one outbreak in Martin County (DENV-1).

Summary of Case Demographics

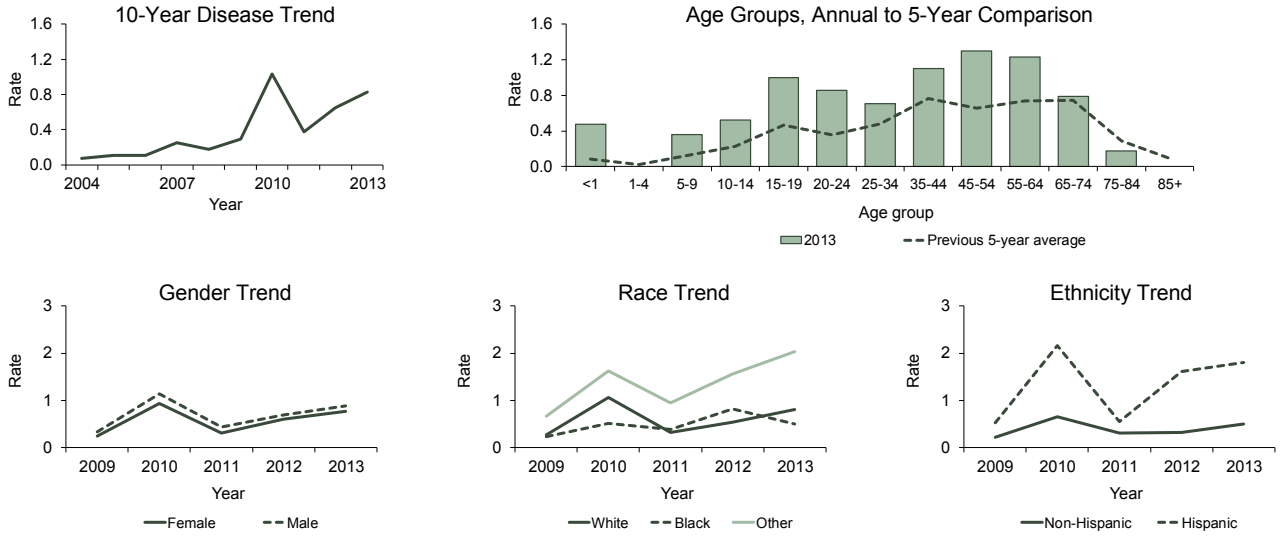
Summary			
Number of cases			160
Incidence rate (per 100,000 population)			0.8
Change from 5-year average incidence			+63.5%
Age (in years)			
Mean			43
Median			45
Min-max			0 - 83
Gender	Number	(Percent)	Rate
Female	76	(47.5)	0.8
Male	84	(52.5)	0.9
Unknown gender	0		
Race	Number	(Percent)	Rate
White	122	(77.2)	0.8
Black	16	(10.1)	NA
Other	20	(12.7)	2.0
Unknown race	2		
Ethnicity	Number	(Percent)	Rate
Non-Hispanic	74	(47.4)	0.5
Hispanic	82	(52.6)	1.8
Unknown ethnicity	4		

Reported Dengue Fever Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 24)



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

Reported Dengue Fever Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



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

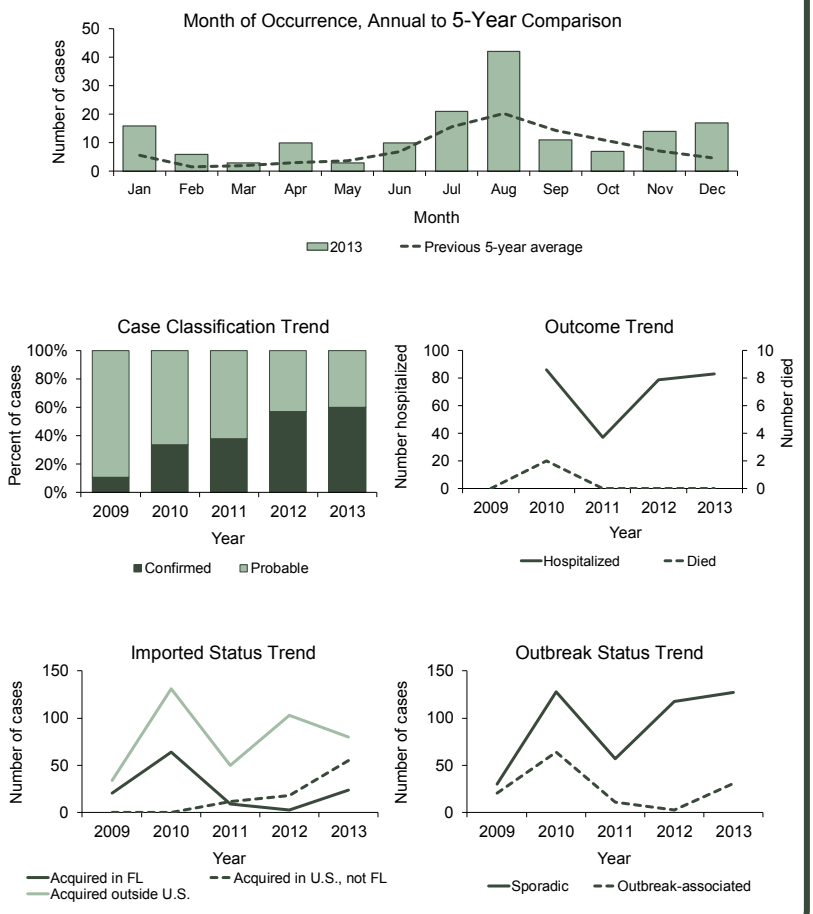
Dengue Fever

Summary of Case Factors

Summary	Number	
Number of cases	160	
Case classification	**Number**	**(Percent)**
Confirmed	96	(60.0)
Probable	64	(40.0)
Outcome	**Number**	**(Percent)**
Hospitalized	83	(51.9)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	24	(15.0)
Acquired in the U.S., not Florida	55	(34.4)
Acquired outside the U.S.	80	(50.0)
Acquired location unknown	1	(0.6)
Outbreak status	**Number**	**(Percent)**
Sporadic	127	(79.4)
Outbreak-associated	31	(19.4)
Outbreak status unknown	2	(1.3)
Region where infection acquired	**Number**	**(Percent)**
Central America/Caribbean	116	(85.9)
South America	10	(7.4)
Asia	6	(4.4)
Africa	3	(2.2)

Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data. Other reports may use illness onset date instead of report date, or county of exposure instead of the case's county of residence.

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2013, an outbreak of locally acquired dengue fever (DENV-1) occurred in Martin County, resulting in at least 28 people being infected. Two were non-Florida residents (not included in Florida morbidity counts) and five were residents of other Florida counties (four residing in St. Lucie County, one residing in Palm Beach County). Seven of the infected people were identified in a seroprevalence survey conducted as part of an emergency response. Four of those people were asymptomatic and therefore did not meet the Florida surveillance case definition for dengue fever. This was the second DENV introduction in Martin County since 2011. People that used DEET-based repellents were less likely to be infected in a survey conducted in Martin County; however only 13% of those surveyed routinely used any repellents when outside.

The two sporadic local introductions of dengue fever (DENV-1 and 4) in Miami-Dade County were both linked to household members with a history of recent travel to a dengue-endemic country followed by febrile illness.

Ehrlichiosis/Anaplasmosis

Disease Facts

Cause: *Ehrlichia chaffeensis*, *Ehrlichia ewingii* and *Anaplasma phagocytophilum* bacteria

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

Transmission: Tick-borne; bite of infective tick

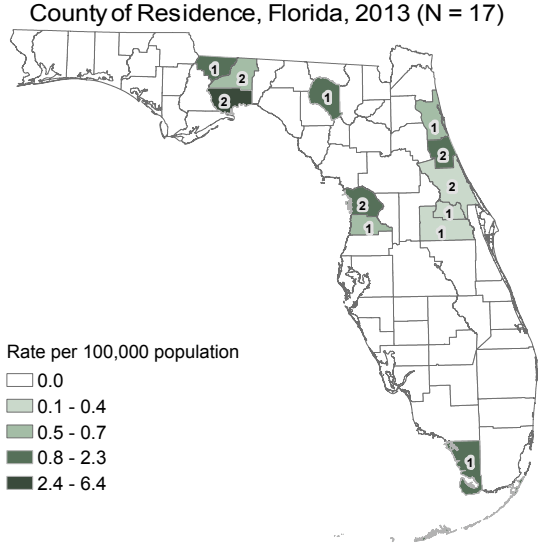
Reason for surveillance: Monitor incidence over time, estimate burden of illness, understand epidemiology of each species, target areas of high incidence for prevention education

Comments: Most infections reported were acquired in Florida, particularly in the north central part of the state. Though transmission peaks in the spring and summer, cases are reported year-round in Florida. Delays in treatment can result in severe outcome; a fatal infection of ehrlichiosis acquired in Florida was reported in a non-Florida resident in 2013 (cases in non-Florida residents are excluded from data in this report).

Summary of Case Demographics

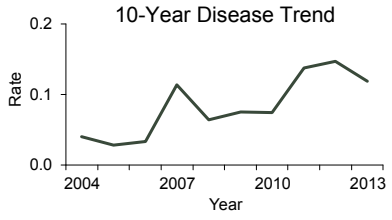
Summary			
Number of cases			23
Incidence rate (per 100,000 population)			0.1
Change from 5-year average incidence			+19.5%
Age (in years)			
Mean			56
Median			63
Min-max			4 - 81
Gender	**Number**	**(Percent)**	**Rate**
Female	10	(43.5)	NA
Male	13	(56.5)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	21	(91.3)	0.1
Black	1	(4.3)	NA
Other	1	(4.3)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	22	(95.7)	0.1
Hispanic	1	(4.3)	NA
Unknown ethnicity	0		

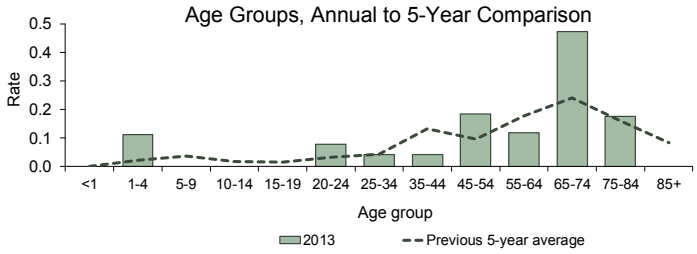
Reported Ehrlichiosis/Anaplasmosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 17)

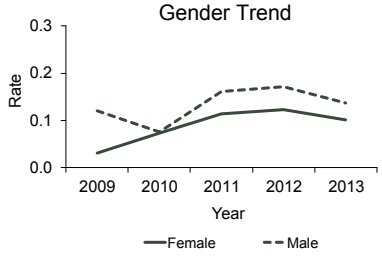


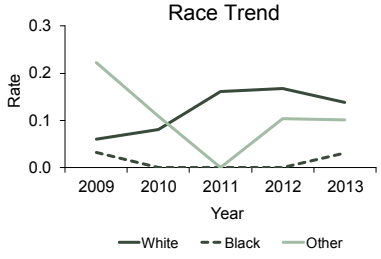
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

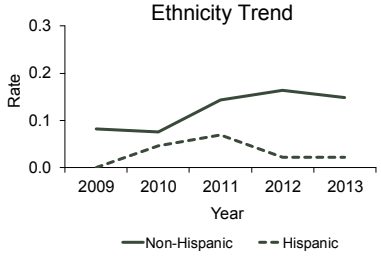
Reported Ehrlichiosis/Anaplasmosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Ehrlichiosis/anaplasmosis cases were missing 14.3% of ethnicity data in 2009, 14.3% of race data in 2009, 7.1% of ethnicity data in 2010, 7.1% of race data in 2010, 7.7% of ethnicity data in 2011, 7.7% of race data in 2011, 10.7% of ethnicity data in 2012, and 7.1% of race data in 2012.

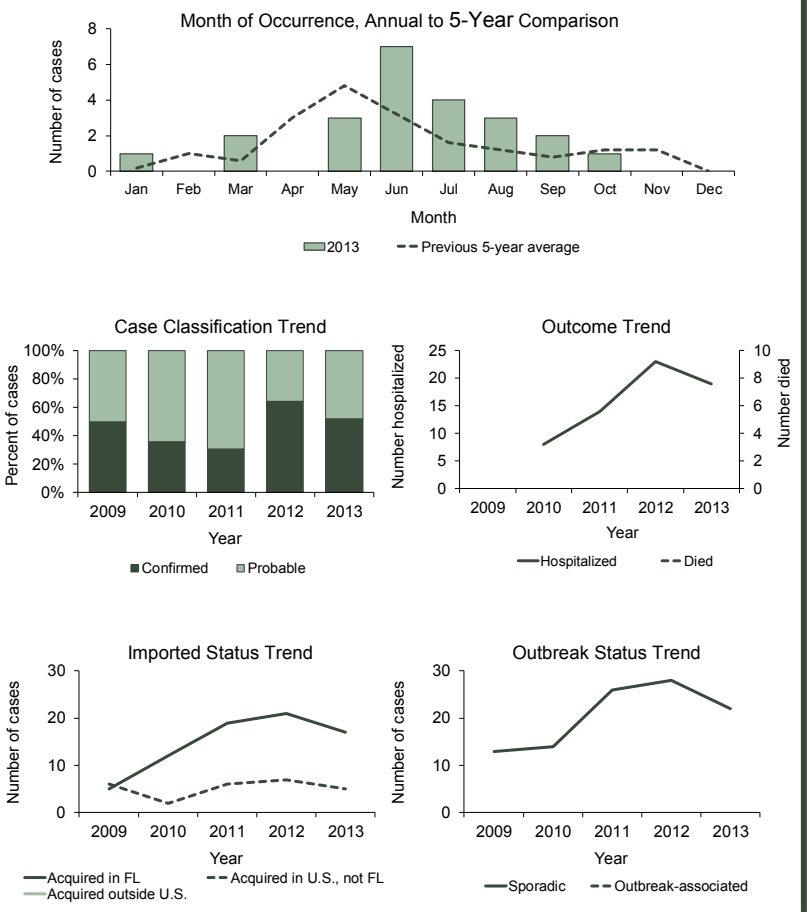
Ehrlichiosis/Anaplasmosis

Summary of Case Factors

Summary	Number	
Number of cases	23	
Case classification	**Number**	**(Percent)**
Confirmed	12	(52.2)
Probable	11	(47.8)
Outcome	**Number**	**(Percent)**
Hospitalized	19	(82.6)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	17	(73.9)
Acquired in the U.S., not Florida	5	(21.7)
Acquired outside the U.S.	0	(0.0)
Acquired location unknown	1	(4.3)
Outbreak status	**Number**	**(Percent)**
Sporadic	22	(95.7)
Outbreak-associated	0	(0.0)
Outbreak status unknown	1	(4.3)
Type of infection	**Number**	**(Percent)**
Ehrlichia chaffeensis (HME)	21	(91.3)
Anaplasma phagocytophilum (HGA)	2	(8.7)

Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data. Other reports may use illness onset date instead of report date, or county of exposure instead of the case's county of residence.

Reported Ehrlichiosis/Anaplasmosis Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Human illness caused by *Ehrlichia chaffeensis* is referred to as human monocytic ehrlichiosis (HME). It is transmitted by the lone star tick (*Amblyomma americanum*), which is one of the most commonly encountered ticks in the southeastern U.S. Human *E. ewingii* ehrlichiosis cases, caused by *Ehrlichia ewingii* transmitted by the lone star tick, present with similar symptoms of HME and are indistinguishable from *E. chaffeensis* by serologic testing. Some cases classified as HME may actually be due to *E. ewingii*. *E. ewingii* has most frequently been identified in immunocompromised patients. Anaplasmosis is a tick-borne bacterial disease caused by *Anaplasma phagocytophilum*. It was previously known as human granulocytotropic ehrlichiosis (HGE) and thought to be caused by another species of *Ehrlichia*, but was later renamed human granulocytotropic anaplasmosis (HGA) when the bacterium classification changed from *Ehrlichia* to *Anaplasma*. HGA is transmitted by *Ixodes* species ticks, such as *Ixodes scapularis*, the black-legged tick that transmits Lyme disease. Unlike HME, most HGA cases reported in Florida are due to infections acquired in the northeastern and midwestern U.S.

Giardiasis, Acute

Disease Facts

Cause: *Giardia* parasites

Type of illness: Gastroenteritis (diarrhea, vomiting)

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

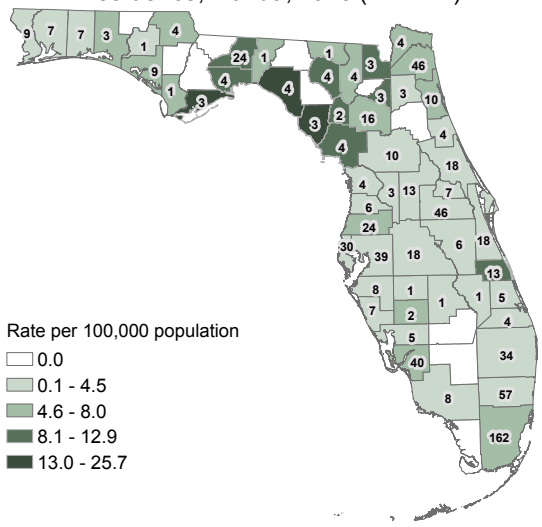
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food/water source, ill food handler), monitor incidence over time, estimate burden of illness

Comments: From August 2008 to January 2011, laboratory-confirmed cases no longer had to be symptomatic to meet the confirmed case definition. In January 2011, the giardiasis surveillance case definition reverted back to requiring a case to be symptomatic to meet the confirmed case definition. The changes in case definition resulted in an increase in reported cases in 2009 and 2010.

Summary of Case Demographics

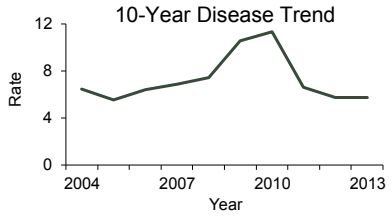
Summary			
Number of cases			1,114
Incidence rate (per 100,000 population)			5.8
Change from 5-year average incidence			-31.0%
Age (in years)			
Mean			31
Median			30
Min-max			0 - 89
Gender	**Number**	**(Percent)**	**Rate**
Female	418	(37.5)	4.2
Male	696	(62.5)	7.4
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	851	(84.2)	5.6
Black	101	(10.0)	3.1
Other	59	(5.8)	6.0
Unknown race	103		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	675	(66.4)	4.6
Hispanic	341	(33.6)	7.5
Unknown ethnicity	98		

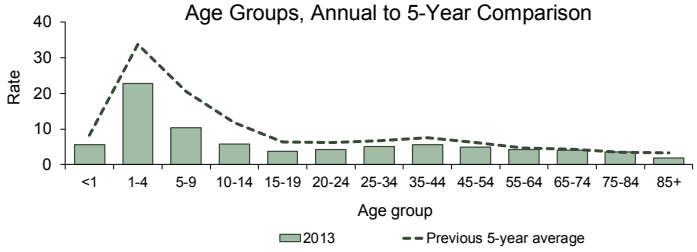
Reported Acute Giardiasis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 774)

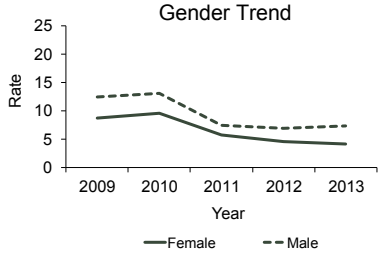


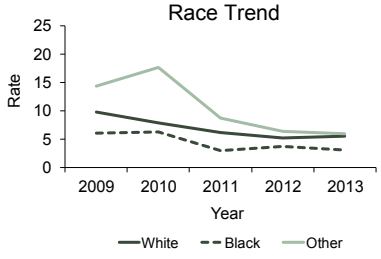
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

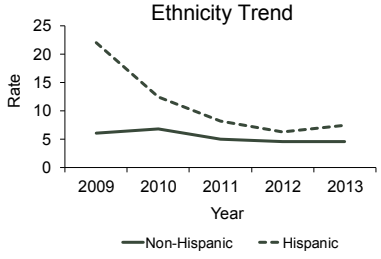
Reported Acute Giardiasis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











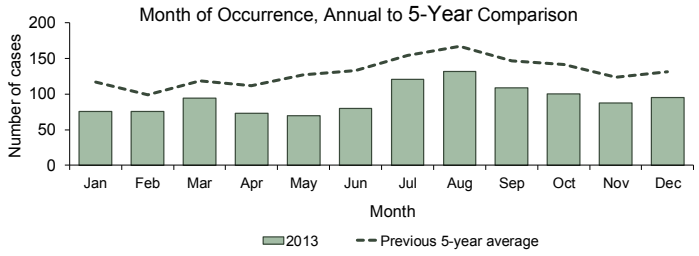
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute giardiasis cases were missing 9.4% of ethnicity data in 2009, 10.4% of race data in 2009, 28.7% of ethnicity data in 2010, 28.6% of race data in 2010, 13.1% of ethnicity data in 2011, 12.3% of race data in 2011, 13.2% of ethnicity data in 2012, 12.4% of race data in 2012, 8.8% of ethnicity data in 2013, and 9.2% of race data in 2013.

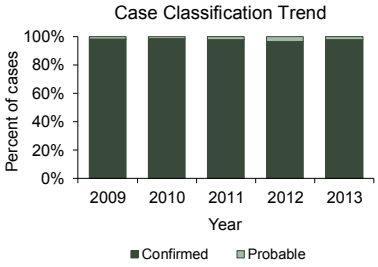
Giardiasis, Acute

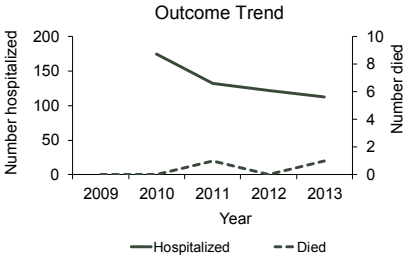
Summary of Case Factors

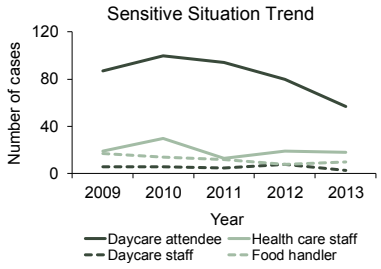
Summary	Number	
Number of cases	1,114	
Case classification	**Number**	**(Percent)**
Confirmed	1,091	(97.9)
Probable	23	(2.1)
Outcome	**Number**	**(Percent)**
Hospitalized	113	(10.1)
Died	1	(0.1)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	57	(5.1)
Daycare staff	3	(0.3)
Health care staff	18	(1.6)
Food handler	10	(0.9)
Imported status	**Number**	**(Percent)**
Acquired in Florida	774	(69.5)
Acquired in the U.S., not Florida	45	(4.0)
Acquired outside the U.S.	223	(20.0)
Acquired location unknown	72	(6.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	1,001	(89.9)
Outbreak-associated	96	(8.6)
Outbreak status unknown	17	(1.5)

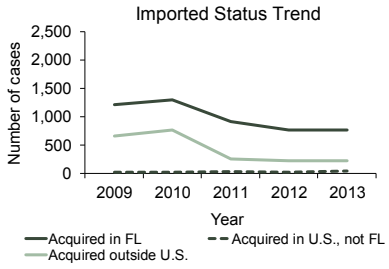
Reported Acute Giardiasis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

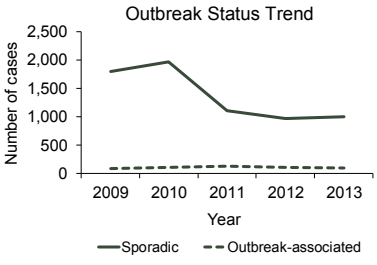












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Gonorrhea

Disease Facts

Cause: *Neisseria gonorrhoeae* bacteria

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

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

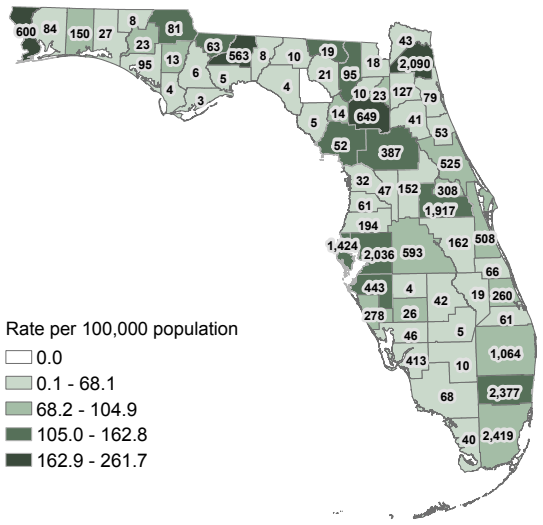
Reason for surveillance: Effective interventions implemented immediately for every case, monitor incidence over time, estimate burden of illness, evaluate treatment and prevention programs

Comments: Incidence is highest among 20- to 24-year-olds, followed closely by 15- to 19-year-olds. Incidence has declined nationally and in Florida in the past five years. A shift in treatment guidelines and recommendations for screening of women under the age of 25 likely contributed to the decrease in cases.

Summary of Case Demographics

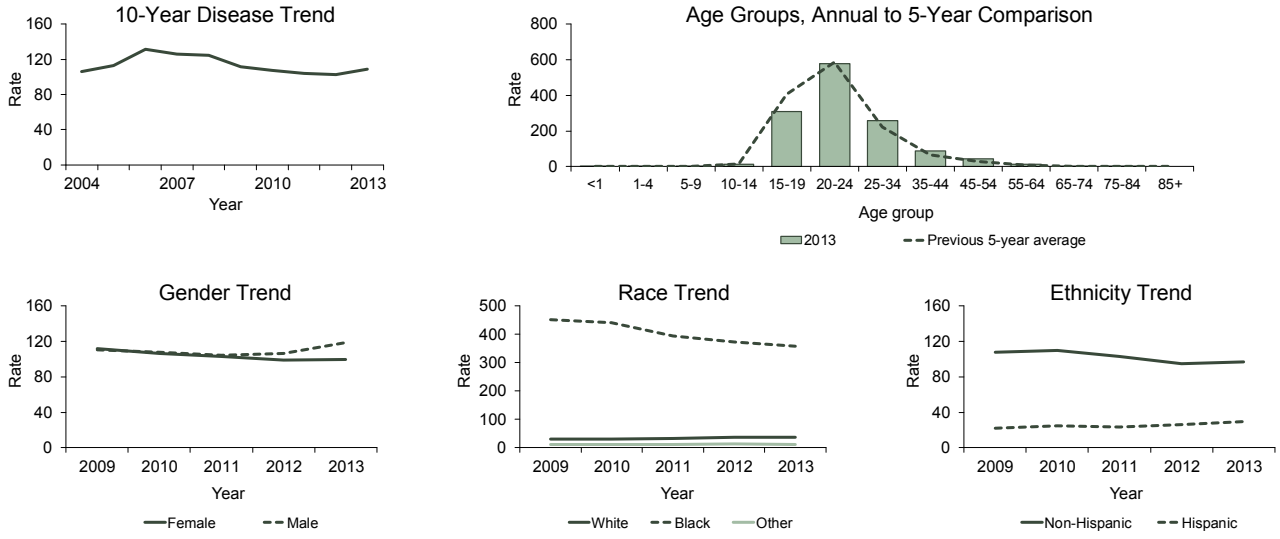
Summary			
Number of cases			21,073
Incidence rate (per 100,000 population)			109.1
Change from 5-year average incidence			-0.9%
Age (in years)			
Mean			27
Median			24
Min-max			0 - 87
Gender	**Number**	**(Percent)**	**Rate**
Female	9,822	(46.7)	99.5
Male	11,202	(53.3)	118.6
Unknown gender	49		
Race	**Number**	**(Percent)**	**Rate**
White	5,466	(32.0)	36.1
Black	11,503	(67.3)	358.1
Other	117	(0.7)	11.9
Unknown race	3,987		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	14,276	(89.3)	96.6
Hispanic	1,719	(10.7)	37.8
Unknown ethnicity	5,078		

Reported Gonorrhea Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 21,073)



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

Reported Gonorrhea Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Gonorrhea cases were missing 18.2% of ethnicity data in 2009, 11.3% of race data in 2009, 12.4% of ethnicity data in 2010, 9.1% of race data in 2010, 15.0% of ethnicity data in 2011, 12.3% of race data in 2011, 19.8% of ethnicity data in 2012, 10.8% of race data in 2012, 24.1% of ethnicity data in 2013, and 18.9% of race data in 2013.

HIV Infection

Disease Facts

Cause: HIV

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

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

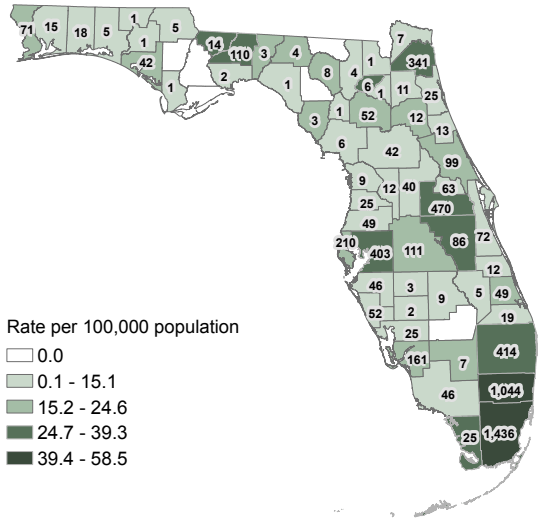
Reason for surveillance: Enhance efforts to prevent HIV transmission, improve allocation of resources for treatment services, and assist in evaluating the impact of public health interventions

Comments: The expansion of electronic laboratory reporting (ELR) in 2007 led to an artificial peak in newly reported cases in 2008, followed by a general decline in reported cases through 2012. Additional expansion of ELR in 2012 was followed by another increase in newly reported cases of HIV infection in 2013. These trends were observed across most race, sex, and risk groups throughout the state.

Summary of Case Demographics

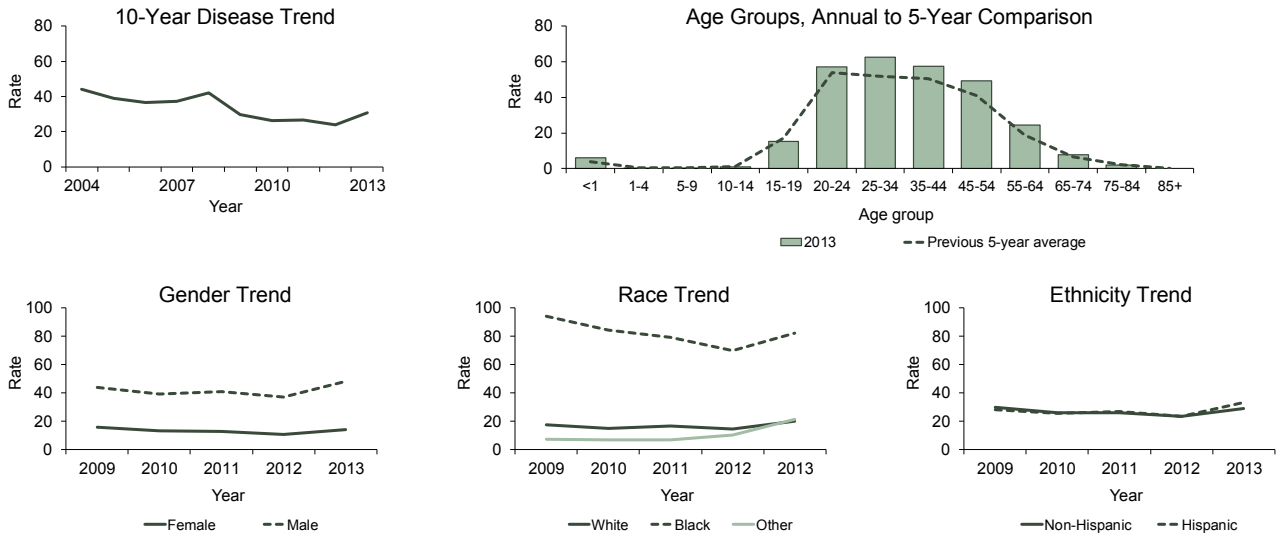
Summary			
Number of cases			5,938
Incidence rate (per 100,000 population)			30.7
Change from 5-year average incidence			+3.6%
Age (in years)			
Mean			39
Median			38
Min-max			0 - 87
Gender	Number	(Percent)	Rate
Female	1,386	(23.3)	14.0
Male	4,552	(76.7)	48.2
Unknown gender	0		
Race	Number	(Percent)	Rate
White	3,079	(51.9)	20.4
Black	2,641	(44.5)	82.2
Other	211	(3.6)	21.5
Unknown race	7		
Ethnicity	Number	(Percent)	Rate
Non-Hispanic	4,293	(73.8)	29.1
Hispanic	1,523	(26.2)	33.5
Unknown ethnicity	122		

Reported HIV Infection Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 5,830)



County totals exclude Department of Corrections cases (n=108).
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Reported HIV Infection Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Additional Information

HIV infection cases tend to represent a more current picture of the AIDS epidemic. For HIV infection cases in men reported in 2013, male-to-male sexual contact was the most common risk factor (77.3%), followed by heterosexual contact (16.4%).

In 2013, HIV infection cases by race and ethnicity were more evenly distributed among adult men compared to adult women; 65.6% of infected adult women are black.

From 1979 to 2013, 1,208 perinatally infected babies were born in Florida. The birth of HIV-infected babies rose from 1979 through 1993. In April 1994, the U.S. Public Health Service released guidelines for use of zidovudine (ZDV), also known as azidothymidine (AZT), to reduce perinatal HIV transmission. Beginning in October 1996, Florida law required the offering of HIV testing to pregnant women, resulting in more HIV-positive women being offered ZDV during their pregnancies. Enhanced perinatal surveillance systems have documented increased use of ZDV among exposed infants and HIV-infected mothers at the prenatal, intrapartum, delivery and neonatal stages.

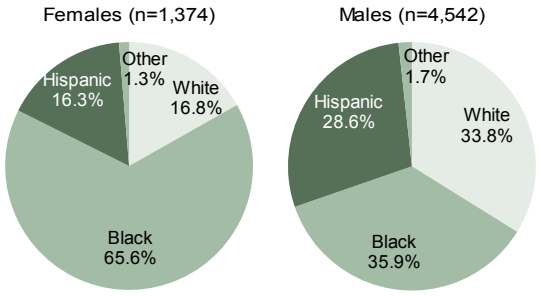
In the past few years, the use of other medical therapies, including protease inhibitors, has supplemented the use of ZDV for both infected mothers and their babies. The use of these medical therapies has been accompanied by a decrease in the number of perinatally HIV-infected infants and is responsible for the dramatic decline in perinatally acquired HIV/AIDS since 1994. Other initiatives in Florida have also contributed to the reduction in perinatal cases, including Targeted Outreach to Pregnant Women Act 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 90.9% decline in perinatally infected births in Florida from 110 cases in 1993 to 10 cases in 2013.

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

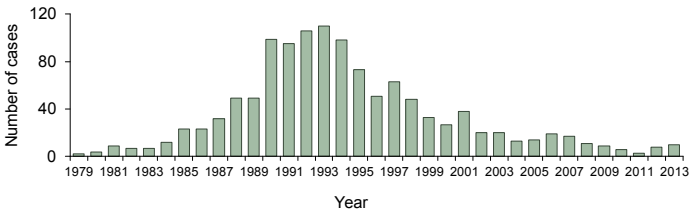
Reported Adult (13 Years and Older) HIV Infection Cases by Gender and Mode of Exposure, Florida, 2013

Mode of exposure	Females cases (n=1,374)		Males cases (n=4,542)	
	Number	(percent)	Number	(percent)
Men who have sex with men (MSM)	NA		3,512	(77.3)
Heterosexual	1,247	(90.8)	747	(16.4)
Injection drug user (IDU)	116	(8.4)	173	(3.8)
MSM and IDU	NA		107	(2.4)
Other	11	(0.8)	3	(0.1)
Total	1,374		4,542	

Reported Adult (13 Years and Older) HIV Infection Cases by Gender and Race/Ethnicity, Florida, 2013



Reported Perinatal HIV Infection Cases by Year of Birth, Florida, 1979-2013



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

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

H. influenzae Invasive Disease in Children <5 Years Old

Disease Facts

Cause: *Haemophilus influenzae* bacteria

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

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

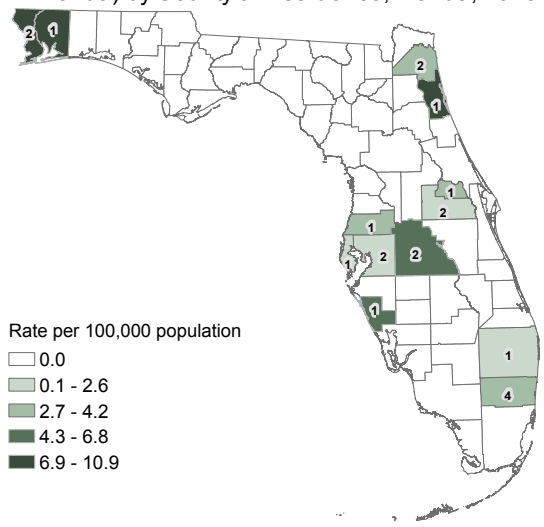
Reason for surveillance: Identify and control outbreaks, monitor incidence over time, monitor effectiveness of immunization programs and vaccines

Comments: *H. influenzae* serotype b (Hib) is a vaccine-preventable disease. Meningitis and septicemia due to Hib in children <5 years old have almost been eliminated since the introduction of effective Hib conjugate vaccines. One Hib case was reported in 2013, compared to three in 2012, zero in 2011, and four in 2010.

Summary of Case Demographics

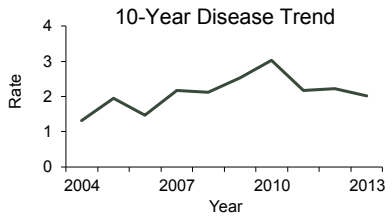
Summary			
Number of cases			22
Incidence rate (per 100,000 population)			2.0
Change from 5-year average incidence			-16.5%
Age (in years)			
Mean			1
Median			0
Min-max			0 - 4
Gender	Number	(Percent)	Rate
Female	8	(36.4)	NA
Male	14	(63.6)	NA
Unknown gender	0		
Race	Number	(Percent)	Rate
White	9	(40.9)	NA
Black	10	(45.5)	NA
Other	3	(13.6)	NA
Unknown race	0		
Ethnicity	Number	(Percent)	Rate
Non-Hispanic	16	(72.7)	NA
Hispanic	6	(27.3)	NA
Unknown ethnicity	0		

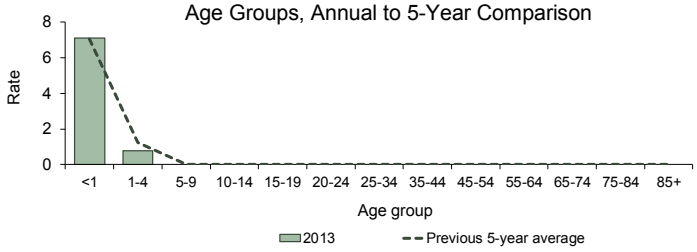
Reported *H. influenzae* Invasive Disease in Children <5 Years Old and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 21)

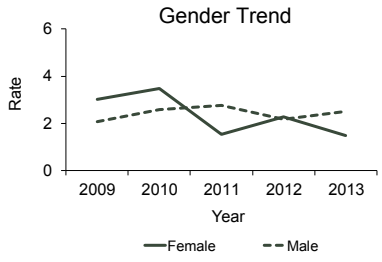


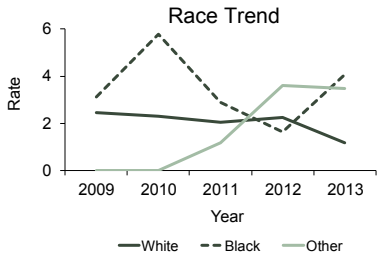
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

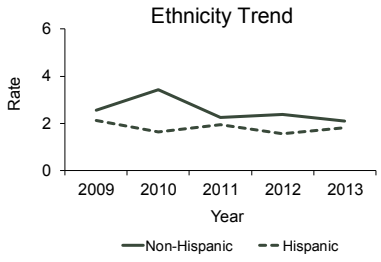
Reported *H. influenzae* Invasive Disease in Children <5 Years Old Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida









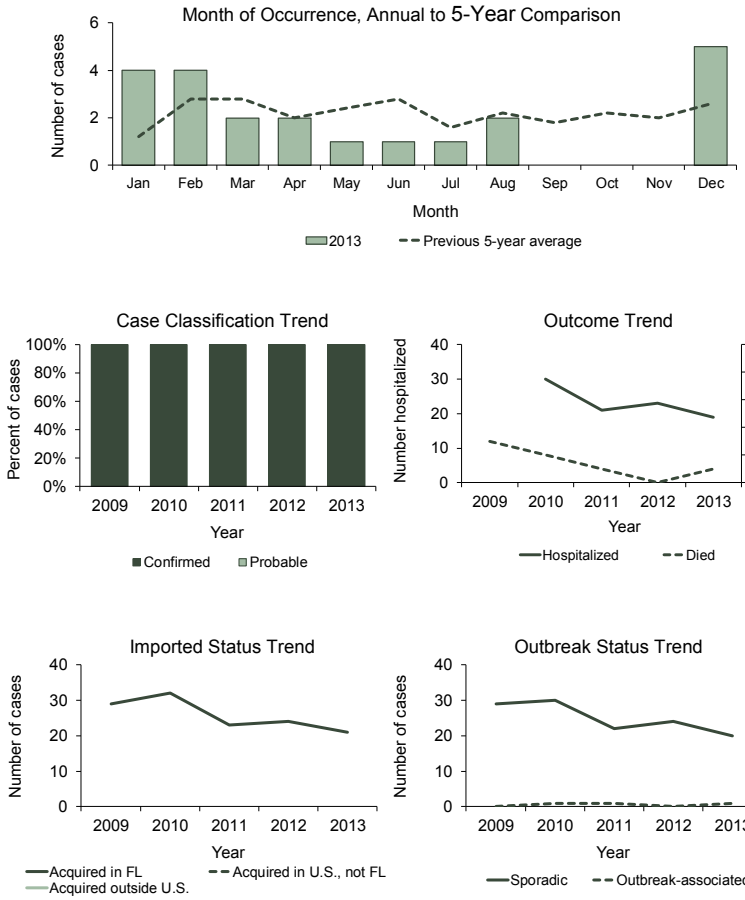


H. influenzae Invasive Disease in Children <5 Years Old

Summary of Case Factors

Summary	Number	
Number of cases	22	
Case classification	**Number**	**(Percent)**
Confirmed	22	(100.0)
Probable	0	(0.0)
Outcome	**Number**	**(Percent)**
Hospitalized	19	(86.4)
Died	1	(4.5)
Imported status	**Number**	**(Percent)**
Acquired in Florida	21	(95.5)
Acquired in the U.S., not Florida	0	(0.0)
Acquired outside the U.S.	0	(0.0)
Acquired location unknown	1	(4.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	20	(90.9)
Outbreak-associated	1	(4.5)
Outbreak status unknown	1	(4.5)

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Hepatitis A

Disease Facts

Cause: Hepatitis A virus (HAV)

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

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

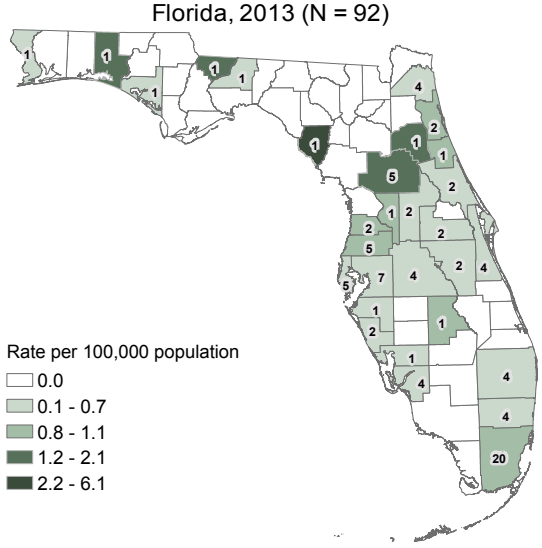
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor effectiveness of immunization programs

Comments: Hepatitis A is a vaccine-preventable disease. Incidence has continued to decline in Florida as well as nationally, likely due to increased use of the hepatitis A vaccine and recommendations to vaccinate as part of the routine childhood immunization schedule. A large portion of infections are acquired while traveling in other countries (27.1% in 2013).

Summary of Case Demographics

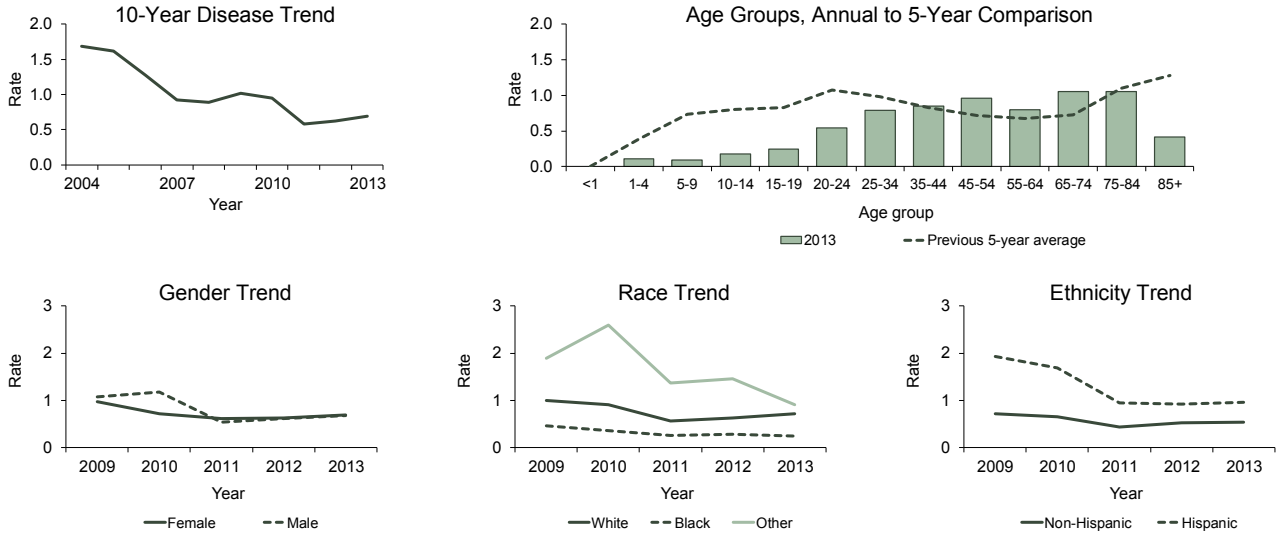
Summary			
Number of cases			133
Incidence rate (per 100,000 population)			0.7
Change from 5-year average incidence			-15.1%
Age (in years)			
Mean			50
Median			49
Min-max			3 - 93
Gender	**Number**	**(Percent)**	**Rate**
Female	69	(51.9)	0.7
Male	64	(48.1)	0.7
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	109	(86.5)	0.7
Black	8	(6.3)	NA
Other	9	(7.1)	NA
Unknown race	7		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	80	(64.5)	0.5
Hispanic	44	(35.5)	1.0
Unknown ethnicity	9		

Reported Hepatitis A Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 92)



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

Reported Hepatitis A Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida

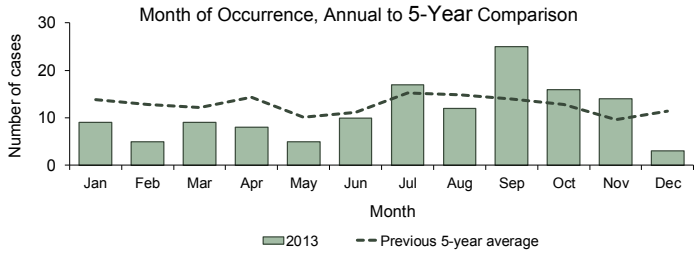


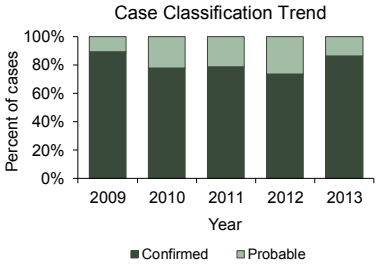
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hepatitis A cases were missing 6.3% of race data in 2009, 5.6% of ethnicity data in 2010, 6.8% of ethnicity data in 2013, and 5.3% of race data in 2013.

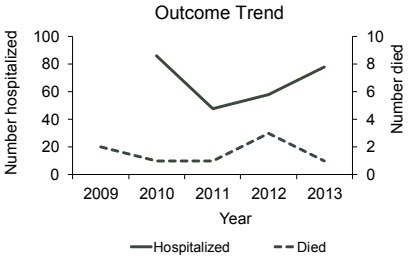
Summary of Case Factors

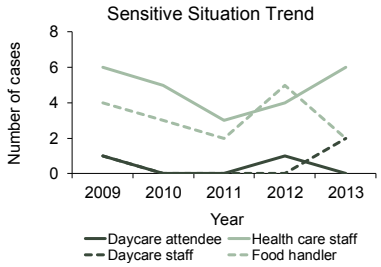
Summary	Number	
Number of cases	133	
Case classification	**Number**	**(Percent)**
Confirmed	115	(86.5)
Probable	18	(13.5)
Outcome	**Number**	**(Percent)**
Hospitalized	78	(58.6)
Died	1	(0.8)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	0	(0.0)
Daycare staff	2	(1.5)
Health care staff	6	(4.5)
Food handler	2	(1.5)
Imported status	**Number**	**(Percent)**
Acquired in Florida	92	(69.2)
Acquired in the U.S., not Florida	3	(2.3)
Acquired outside the U.S.	36	(27.1)
Acquired location unknown	2	(1.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	120	(90.2)
Outbreak-associated	9	(6.8)
Outbreak status unknown	4	(3.0)

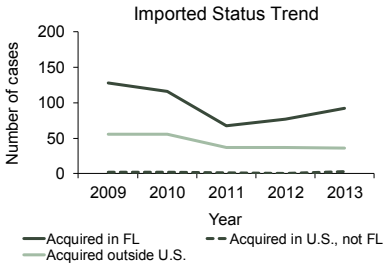
Reported Hepatitis A Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

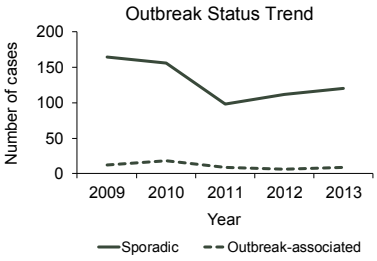












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2013, 165 confirmed hepatitis A cases from 10 states were identified as part of a multistate outbreak linked to Townsend Farms Organic Antioxidant Blend. The product contained pomegranate seeds from a company in Turkey that were contaminated with hepatitis A. The Food and Drug Administration traceback and traceforward investigation determined that the contaminated pomegranate seeds were also included in a Harris Teeter product, however no cases were identified who consumed this product. While Florida did not have any reported cases associated with this multistate outbreak, some county health departments did offer post-exposure prophylaxis to residents from other states who had been exposed to the product and were currently in Florida at the time the incident was reported.

Hepatitis B, Acute

Disease Facts

Cause: Hepatitis B virus (HBV)

Type of illness: Inflammation of the liver; sometimes asymptomatic; symptoms can include malaise, loss of appetite, nausea, vomiting, abdominal discomfort, and jaundice; ~5% of infections become chronic

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

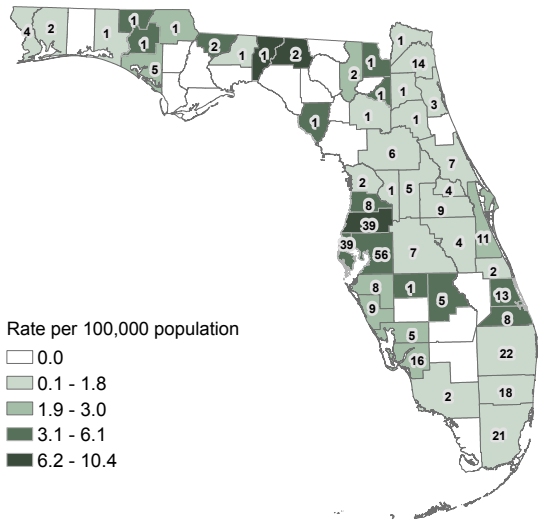
Reason for surveillance: Enhance efforts to prevent HBV transmission, identify and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions, monitor effectiveness of immunization programs

Comments: Hepatitis B is a vaccine-preventable disease. Incidence declined over the last decade due to increased vaccination. An enhanced surveillance project in 2012 has led to an increase in cases identified.

Summary of Case Demographics

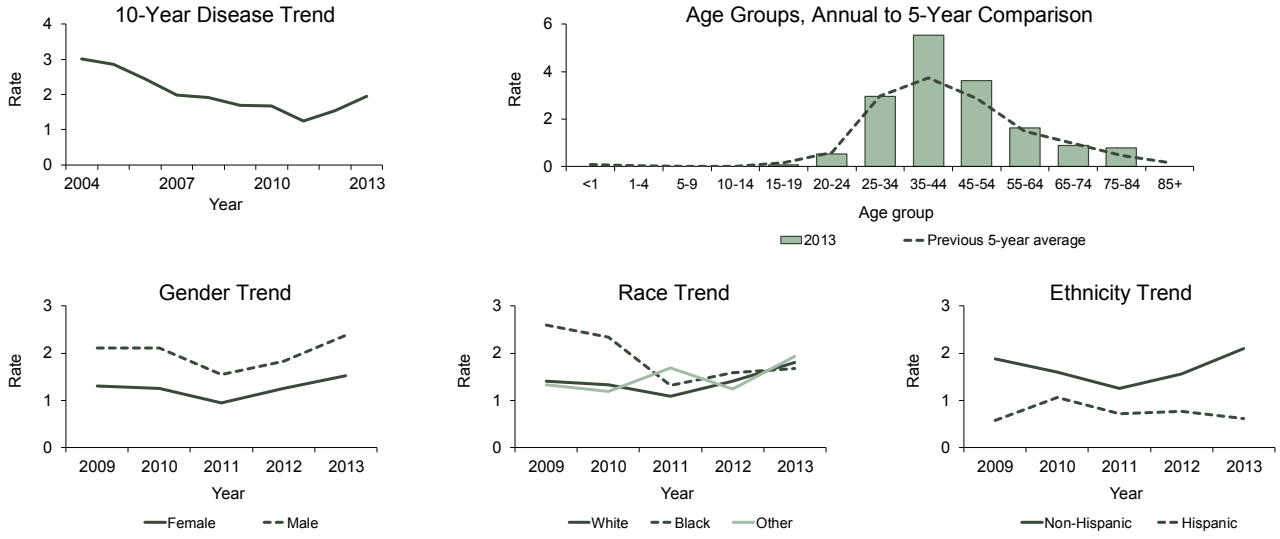
Summary			
Number of cases			375
Incidence rate (per 100,000 population)			1.9
Change from 5-year average incidence			+20.3%
Age (in years)			
Mean			44
Median			44
Min-max			17 - 82
Gender	**Number**	**(Percent)**	**Rate**
Female	150	(40.0)	1.5
Male	225	(60.0)	2.4
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	273	(78.9)	1.8
Black	54	(15.6)	1.7
Other	19	(5.5)	NA
Unknown race	29		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	310	(91.7)	2.1
Hispanic	28	(8.3)	0.6
Unknown ethnicity	37		

Reported Acute Hepatitis B Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 375)



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

Reported Acute Hepatitis B Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis B cases were missing 6.0% of ethnicity data in 2009, 5.7% of race data in 2009, 11.7% of ethnicity data in 2010, 11.1% of race data in 2010, 8.5% of ethnicity data in 2011, 7.2% of race data in 2011, 8.9% of ethnicity data in 2012, 6.8% of race data in 2012, 9.9% of ethnicity data in 2013, and 8.0% of race data in 2013.

Summary of Case Factors

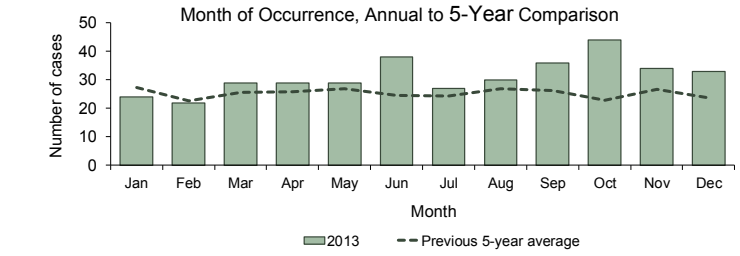
Summary	Number	
Number of cases	375	
Case classification	**Number**	**(Percent)**
Confirmed	323	(86.1)
Probable	52	(13.9)
Outcome	**Number**	**(Percent)**
Hospitalized	257	(68.5)
Died	8	(2.1)
Imported status	**Number**	**(Percent)**
Acquired in Florida	320	(85.3)
Acquired in the U.S., not Florida	5	(1.3)
Acquired outside the U.S.	3	(0.8)
Acquired location unknown	47	(12.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	337	(89.9)
Outbreak-associated	17	(4.5)
Outbreak status unknown	21	(5.6)

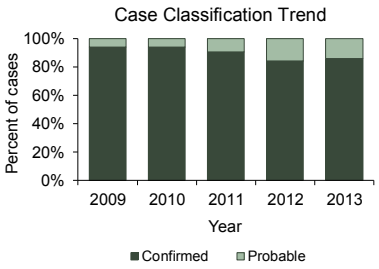
The number of reported acute hepatitis B cases continued to slowly increase in 2013, partially due to an enhanced surveillance project focusing on chronic hepatitis in young adults implemented in 2012. The additional follow-up has resulted in identifying acute cases that would otherwise have been misclassified as chronic. The increase was seen in both genders, blacks and whites, but not in Hispanics.

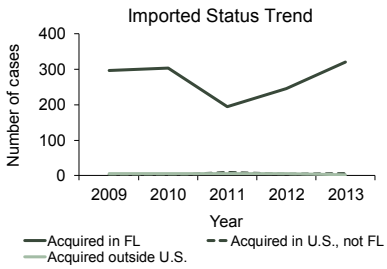
The 12 outbreak-associated cases were each linked to one other case; nine sexual links, two household links, and one personal contact link. Both the increase in cases and outbreak-associated cases can likely be attributed to improved reporting and surveillance as more providers report laboratory results electronically.

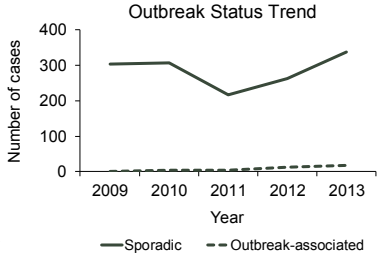
In 2013, 267 cases (71.2%) were interviewed to determine possible risk factors. Risk factors reported are shown to the right. Note that a person can report multiple risk factors. New infections of viral hepatitis are most frequently attributed to drug use, likely leading to sharing of injection equipment or risky sexual behaviors.

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

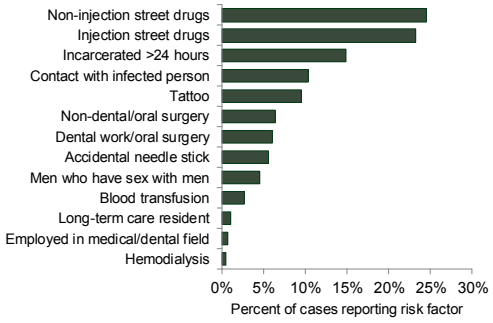








Risk Factors for Reported Acute Hepatitis B Cases, Florida, 2013



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak- associated indicates that two or more cases are epidemiologically linked.

Hepatitis B, Surface Antigen in Pregnant Women

Disease Facts

Cause: Hepatitis B virus (HBV)

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

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

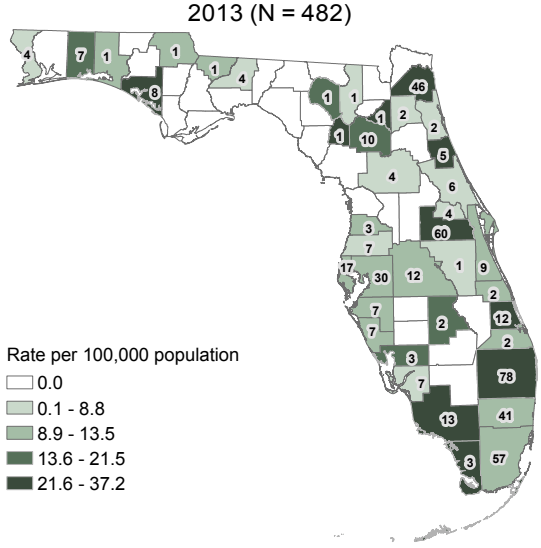
Reason for surveillance: Identify individual cases and implement control measures to prevent HBV transmission from mother to baby; evaluate effectiveness of screening programs

Comments: Hepatitis B is a vaccine-preventable disease. Identification of HBsAg in pregnant women allows for appropriate treatment of their infants, significantly reducing the infants' risk of contracting HBV. In the U.S., Asians have a high HBsAg carrier rate (7-16%) and account for most infections in the "other" race category.

Summary of Case Demographics

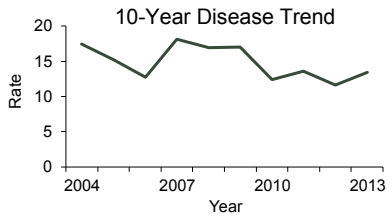
Summary			
Number of cases			482
Incidence rate (per 100,000 population)			13.4
Change from 5-year average incidence			-6.2%
Age (in years)			
Mean			30
Median			31
Min-max			14 - 45
Gender	**Number**	**(Percent)**	**Rate**
Female	482	(100.0)	13.4
Male	NA	NA	NA
Unknown gender	NA		
Race	**Number**	**(Percent)**	**Rate**
White	86	(19.2)	3.2
Black	193	(43.2)	26.7
Other	168	(37.6)	75.3
Unknown race	35		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	409	(93.6)	15.7
Hispanic	28	(6.4)	2.8
Unknown ethnicity	45		

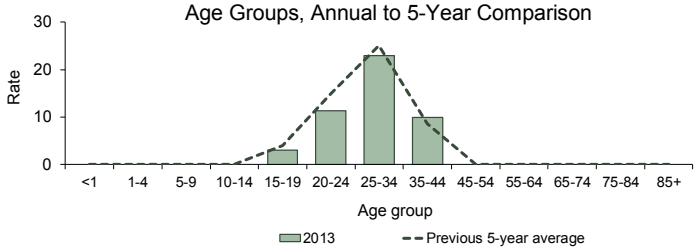
Reported Hepatitis B Surface Antigen in Pregnant Women Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 482)

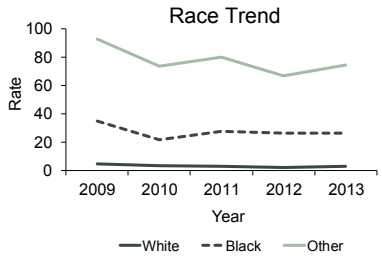


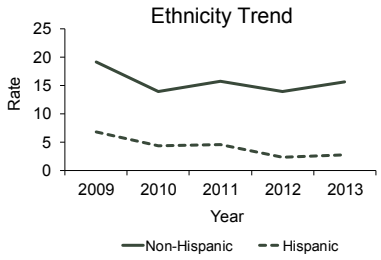
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

Reported Hepatitis B Surface Antigen in Pregnant Women Incidence Rate per 100,000 Population by Year, Age, Race, and Ethnicity, Florida









Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Hepatitis B surface antigen in pregnant women cases were missing 6.5% of ethnicity data in 2009, 6.2% of race data in 2009, 8.0% of ethnicity data in 2010, 6.6% of race data in 2010, 6.2% of ethnicity data in 2011, 5.3% of ethnicity data in 2012, 9.3% of ethnicity data in 2013, and 7.3% of race data in 2013.

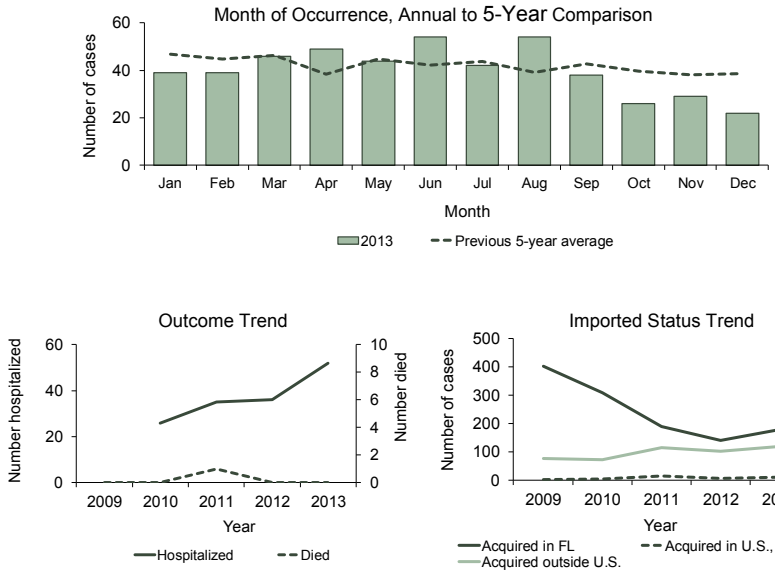
Hepatitis B, Surface Antigen in Pregnant Women

Summary of Case Factors

Summary	Number	
Number of cases	482	
Outcome	**Number**	**(Percent)**
Hospitalized	52	(10.8)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	181	(37.6)
Acquired in the U.S., not Florida	12	(2.5)
Acquired outside the U.S.	120	(24.9)
Acquired location unknown	169	(35.1)

According to the 2013 National Immunization Survey, the estimated HBV vaccination coverage for birth dose administered from birth through 3 days of age was 74.2% ± 1.4 in the U.S. and 58.0 ± 8.3 in Florida.

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired.

Hepatitis C, Acute

Disease Facts

Cause: Hepatitis C virus (HCV)

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

Transmission: Blood exposure, with most infections occurring due to sharing injection drug equipment; rarely from mother to child during pregnancy or delivery or by anal or vaginal sex

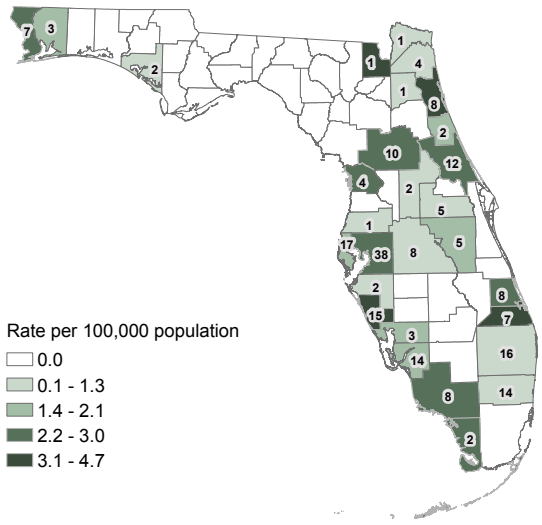
Reason for surveillance: Enhance efforts to prevent HCV transmission, identify and prevent outbreaks, improve allocation of resources for treatment services, assist in evaluating the impact of public health interventions and screening programs

Comments: A change in case definition in 2008 and an enhanced surveillance project focusing on chronic infections in young adults implemented in 2012 has led to an increase in the number of acute cases identified.

Summary of Case Demographics

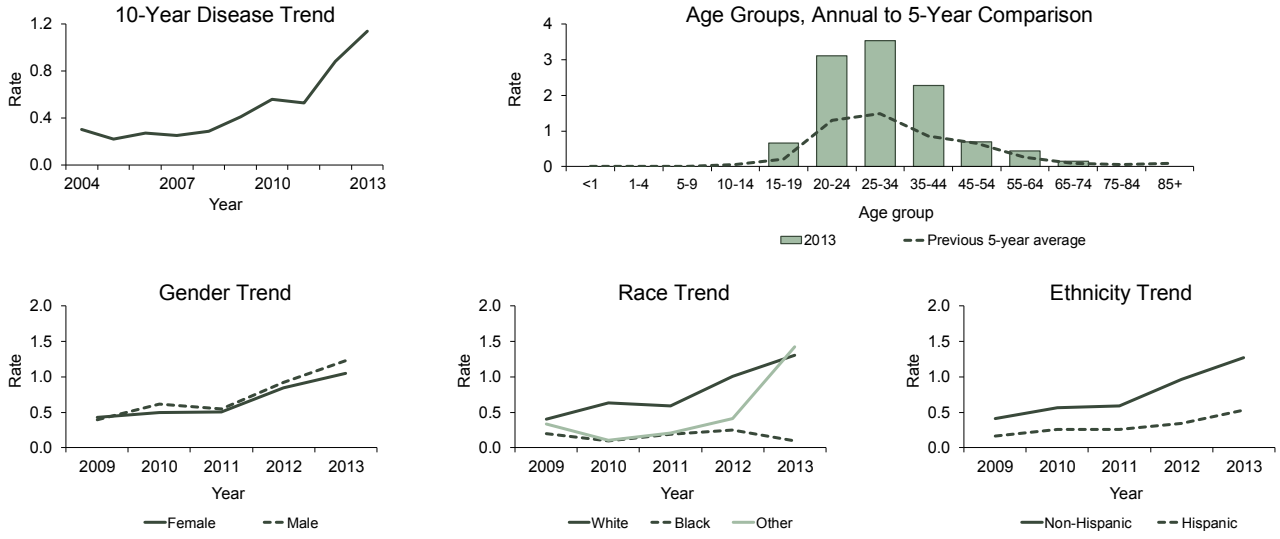
Summary			
Number of cases			220
Incidence rate (per 100,000 population)			1.1
Change from 5-year average incidence			+113.7%
Age (in years)			
Mean			34
Median			31
Min-max			16 - 70
Gender	**Number**	**(Percent)**	**Rate**
Female	104	(47.3)	1.1
Male	116	(52.7)	1.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	197	(92.1)	1.3
Black	3	(1.4)	NA
Other	14	(6.5)	NA
Unknown race	6		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	188	(88.7)	1.3
Hispanic	24	(11.3)	0.5
Unknown ethnicity	8		

Reported Acute Hepatitis C Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 220)



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

Reported Acute Hepatitis C Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



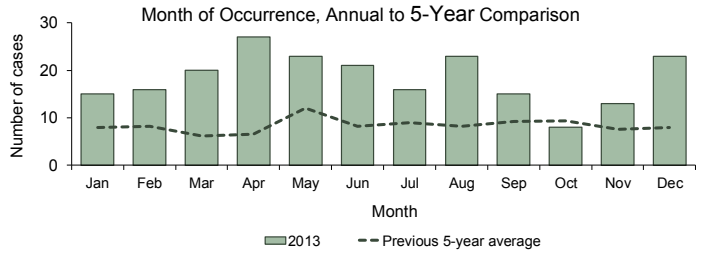
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Acute hepatitis C cases were missing 13.0% of ethnicity data in 2009, 11.7% of race data in 2009, 11.4% of ethnicity data in 2010, 6.7% of race data in 2010, and 7.1% of ethnicity data in 2012.

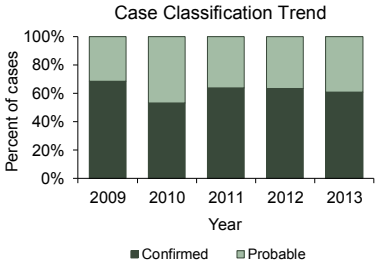
Hepatitis C, Acute

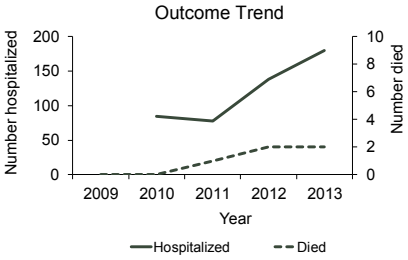
Summary of Case Factors

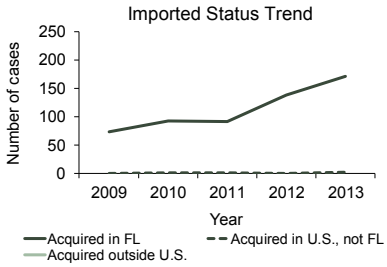
Summary	Number	
Number of cases	220	
Case classification	**Number**	**(Percent)**
Confirmed	134	(60.9)
Probable	86	(39.1)
Outcome	**Number**	**(Percent)**
Hospitalized	180	(81.8)
Died	2	(0.9)
Imported status	**Number**	**(Percent)**
Acquired in Florida	172	(78.2)
Acquired in the U.S., not Florida	3	(1.4)
Acquired outside the U.S.	0	(0.0)
Acquired location unknown	45	(20.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	195	(88.6)
Outbreak-associated	9	(4.1)
Outbreak status unknown	16	(7.3)

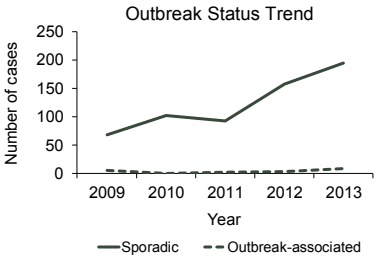
Reported Acute Hepatitis C Cases by Month of Occurrence, Case Classification, Outcome, Imported Status, and Outbreak Status, Florida

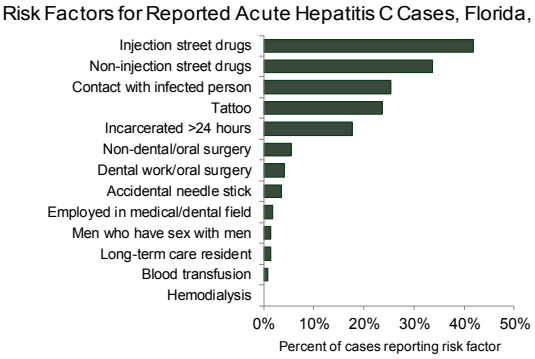












Variation in identified disease incidence at the local level likely reflects differences in the true incidence of disease and differences in the vigor with which surveillance is performed. Conducting surveillance for acute hepatitis C is difficult because acute infection is differentiated from chronic infection only by the presence of acute clinical symptoms. Most acute cases are identified only when symptoms warrant hospitalization. The majority of hepatitis C laboratory case reports received by the Florida Department of Health (DOH) are from laboratories and do not include symptom information. Additional follow-up is required to determine if they represent acute or chronic infection, or repeated testing of a person previously reported. Not all counties have the resources to conduct these investigations due to the large volume of laboratory results received. As a result, there is variation in the number of acute hepatitis C cases identified by county.

In 2012, DOH implemented an enhanced surveillance project focusing on chronic hepatitis in young adults. Increased testing and surveillance in 2013 allowed DOH to identify the largest number of acute hepatitis C cases identified in 10 years. In 2013, 153 cases (69.5%) were interviewed to determine possible risk factors. Risk factors reported are shown above. Note that a person can report multiple risk factors. Injection drug use and non-injection drug use were the most commonly reported risk factors, which was also true in the young adult population. New infections of viral hepatitis are most frequently attributed to drug use, likely leading to sharing of injection equipment or risky sexual behaviors.

Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Lead Poisoning

Disease Facts

Cause: Lead

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

Exposure: Most commonly ingestion of paint dust in houses built prior to elimination of lead in paints in 1978 for children; occupational exposure for adults

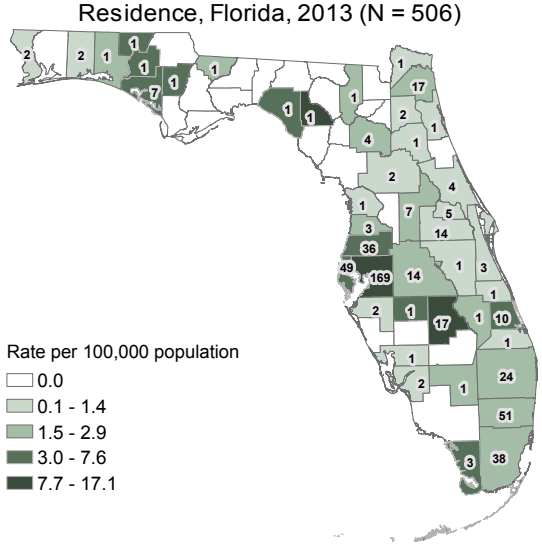
Reason for surveillance: Estimate burden among children, ensure follow-up care for identified cases, prevent new cases and exacerbation of illness, help target future public health interventions

Comments: Prior to 2010, lead poisoning case data were primarily stored outside the state's reportable disease surveillance system, therefore only cases from 2010 to 2013 are presented in this report. Lead poisoning is most often identified in children as part of routine screening.

Summary of Case Demographics

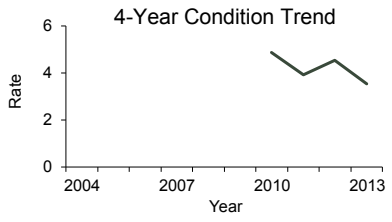
Summary			
Number of cases			683
Incidence rate (per 100,000 population)			3.5
Change from 3-year average incidence			-20.4%
Age (in years)			
Mean			29
Median			28
Min-max			0 - 87
Gender	**Number**	**(Percent)**	**Rate**
Female	125	(18.3)	1.3
Male	558	(81.7)	5.9
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	276	(53.6)	1.8
Black	156	(30.3)	4.9
Other	83	(16.1)	8.4
Unknown race	168		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	380	(73.1)	2.6
Hispanic	140	(26.9)	3.1
Unknown ethnicity	163		

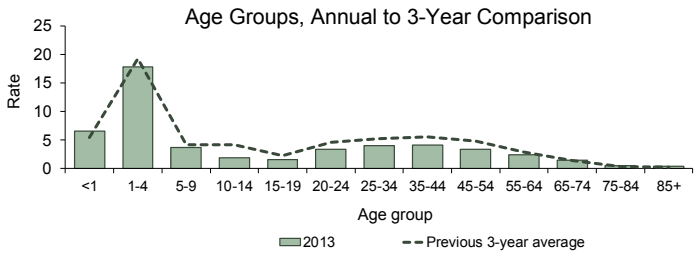
Reported Lead Poisoning Cases and Incidence Rates per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2013 (N = 506)

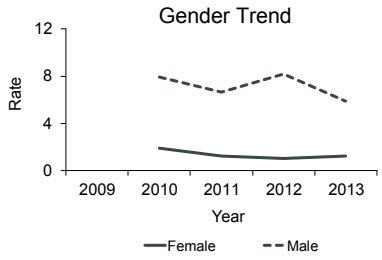


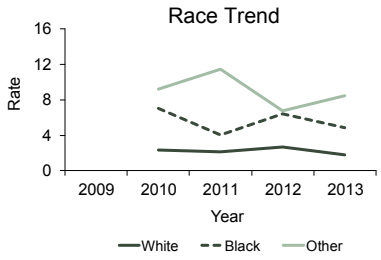
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

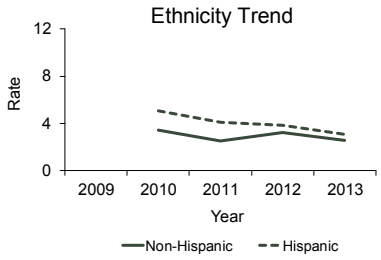
Reported Lead Poisoning Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











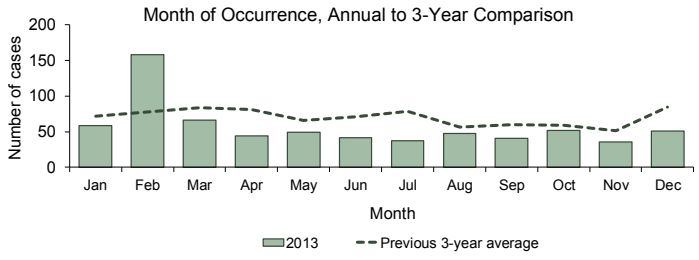
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lead poisoning cases were missing 22.1% of ethnicity data in 2010, 30.8% of race data in 2010, 26.0% of ethnicity data in 2011, 25.7% of race data in 2011, 25.7% of ethnicity data in 2012, 22.7% of race data in 2012, 24.6% of ethnicity data in 2013, and 25.9% of race data in 2013.

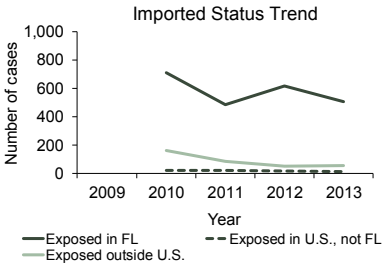
Lead Poisoning

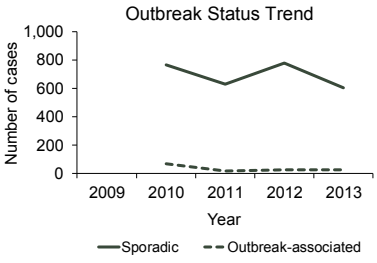
Summary of Case Factors

Summary	Number	
Number of cases	683	
Outcome	**Number**	**(Percent)**
Hospitalized	6	(0.9)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Exposed in Florida	506	(74.1)
Exposed in the U.S., not Florida	15	(2.2)
Exposed outside the U.S.	58	(8.5)
Exposed location unknown	104	(15.2)
Outbreak status	**Number**	**(Percent)**
Sporadic	607	(88.9)
Outbreak-associated	28	(4.1)
Outbreak status unknown	48	(7.0)

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







Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the exposure most likely occurred. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2012, the Centers for Disease Control and Prevention (CDC) defined a new reference level of 5 micrograms per deciliter (µg/dL) to identify people with elevated blood lead levels. In Florida, the surveillance case definition remains unchanged at ≥10 µg/dL.

The incidence of lead poisoning is highest in 1- to 4-year-olds, as routine lead screening is recommended by the CDC for children in this age group who are Medicaid-enrolled or eligible, foreign-born or otherwise identified as high-risk. The incidence rate of lead poisoning is much higher in men than women; this difference is mostly due to adult occupational cases of lead poisoning. Differences by gender among children are not observed. The large number of cases reported in Hillsborough County are primarily due to occupational screening.

Legionellosis

Disease Facts

Cause: *Legionella* bacteria

Type of illness: Common symptoms include fever, muscle pain, cough, and pneumonia

Transmission: Airborne; inhalation of aerosolized water containing the bacteria

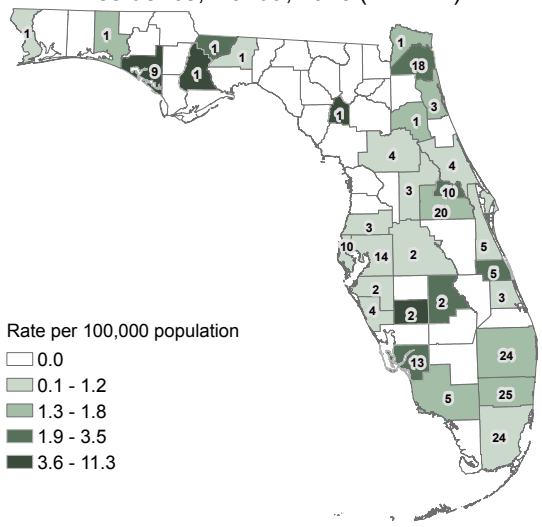
Reason for surveillance: Identify and control outbreaks, identify and mitigate common reservoirs, monitor incidence over time, estimate burden of illness

Comments: The elderly and those with weakened immune systems are at highest risk for developing disease. Environmental assessments are conducted for outbreaks to determine the source; recently identified sources in Florida and the U.S. include decorative fountains, hot tubs, cooling towers (air-conditioning units for large buildings), and potable water systems. Increasing incidence in Florida is consistent with the increase observed nationally over the past decade.

Summary of Case Demographics

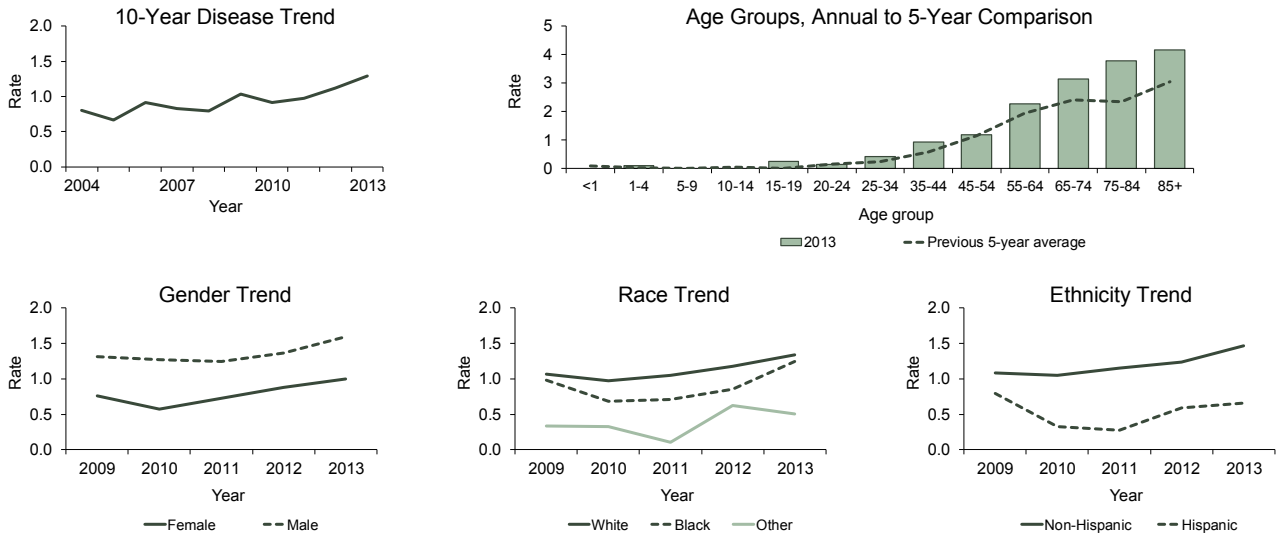
Summary			
Number of cases			250
Incidence rate (per 100,000 population)			1.3
Change from 5-year average incidence			+33.8%
Age (in years)			
Mean			63
Median			64
Min-max			1 - 98
Gender	**Number**	**(Percent)**	**Rate**
Female	99	(39.6)	1.0
Male	151	(60.4)	1.6
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	202	(81.8)	1.3
Black	40	(16.2)	1.2
Other	5	(2.0)	NA
Unknown race	3		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	217	(87.9)	1.5
Hispanic	30	(12.1)	0.7
Unknown ethnicity	3		

Reported Legionellosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 222)



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

Reported Legionellosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida

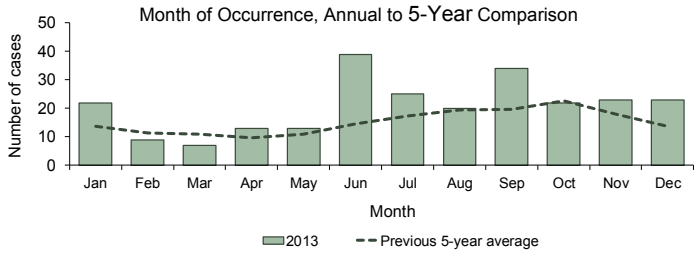


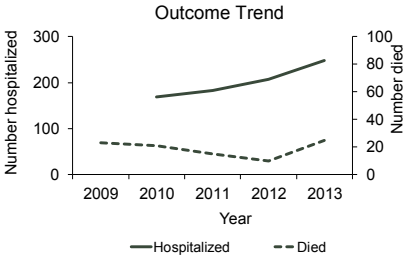
Legionellosis

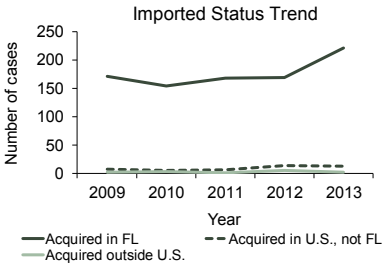
Summary of Case Factors

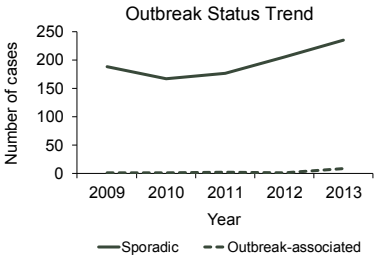
Summary	Number	
Number of cases	250	
Outcome	**Number**	**(Percent)**
Hospitalized	248	(99.2)
Died	25	(10.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	222	(88.8)
Acquired in the U.S., not Florida	13	(5.2)
Acquired outside the U.S.	3	(1.2)
Acquired location unknown	12	(4.8)
Outbreak status	**Number**	**(Percent)**
Sporadic	235	(94.0)
Outbreak-associated	9	(3.6)
Outbreak status unknown	6	(2.4)

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









Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In Florida, sporadic cases of both Legionnaires' disease and Pontiac fever (two distinct presentations of legionellosis) are monitored. Four outbreaks were identified in 2013 involving a hospital, an adult living facility, a continuing care retirement community, and an RV resort. Hot water systems, hot tubs, and cooling towers were identified as the sources of the outbreaks.

Listeriosis

Disease Facts

Cause: *Listeria monocytogenes* bacteria

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

Transmission: Foodborne; transmitted to infants during pregnancy

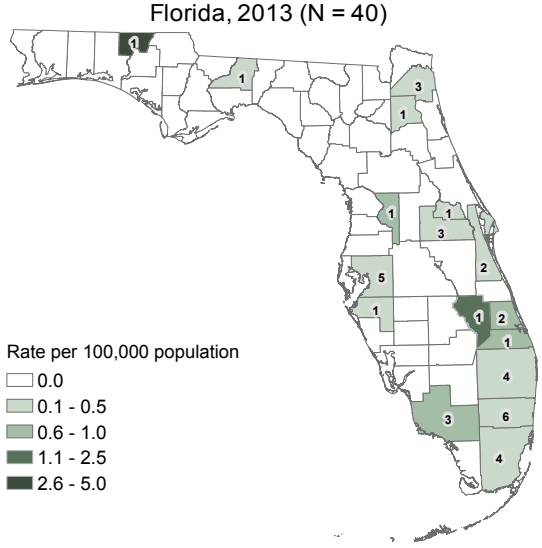
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product), monitor incidence over time, estimate burden of illness, reduce stillbirths

Comments: Listeriosis primarily affects older adults and people with weakened immune systems, pregnant women, and newborns. Infection during pregnancy can cause fetal loss, preterm labor, stillbirths, and illness or death in newborn infants.

Summary of Case Demographics

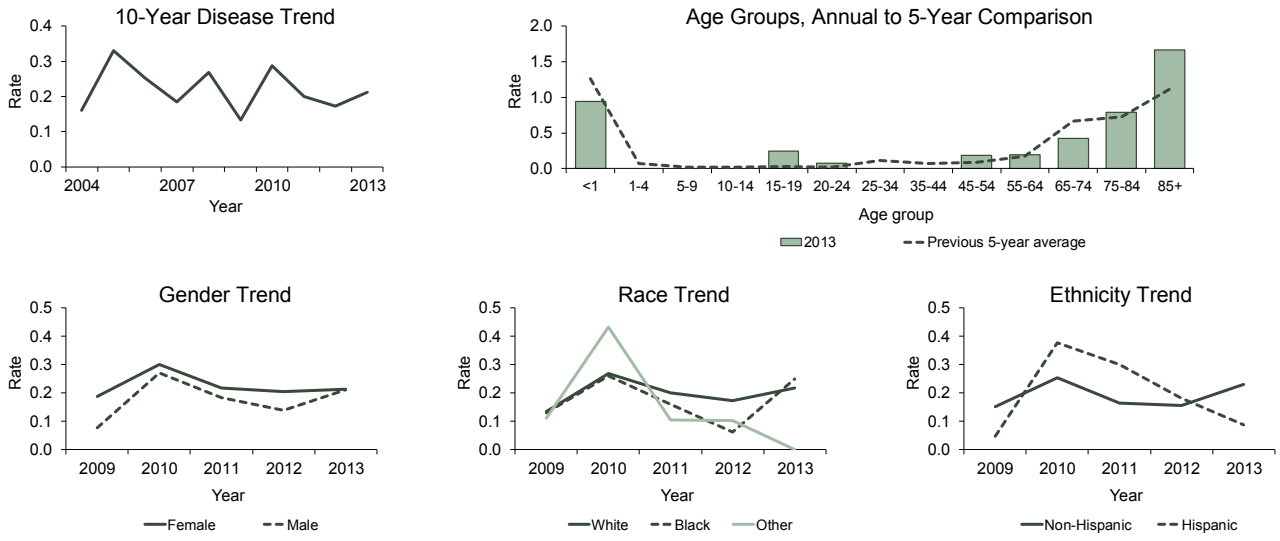
Summary			
Number of cases			41
Incidence rate (per 100,000 population)			0.2
Change from 5-year average incidence			-0.2%
Age (in years)			
Mean			63
Median			71
Min-max			0 - 89
Gender	**Number**	**(Percent)**	**Rate**
Female	21	(51.2)	0.2
Male	20	(48.8)	0.2
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	33	(80.5)	0.2
Black	8	(19.5)	NA
Other	0	(0.0)	NA
Unknown race	0		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	34	(89.5)	0.2
Hispanic	4	(10.5)	NA
Unknown ethnicity	3		

Reported Listeriosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 40)



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

Reported Listeriosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



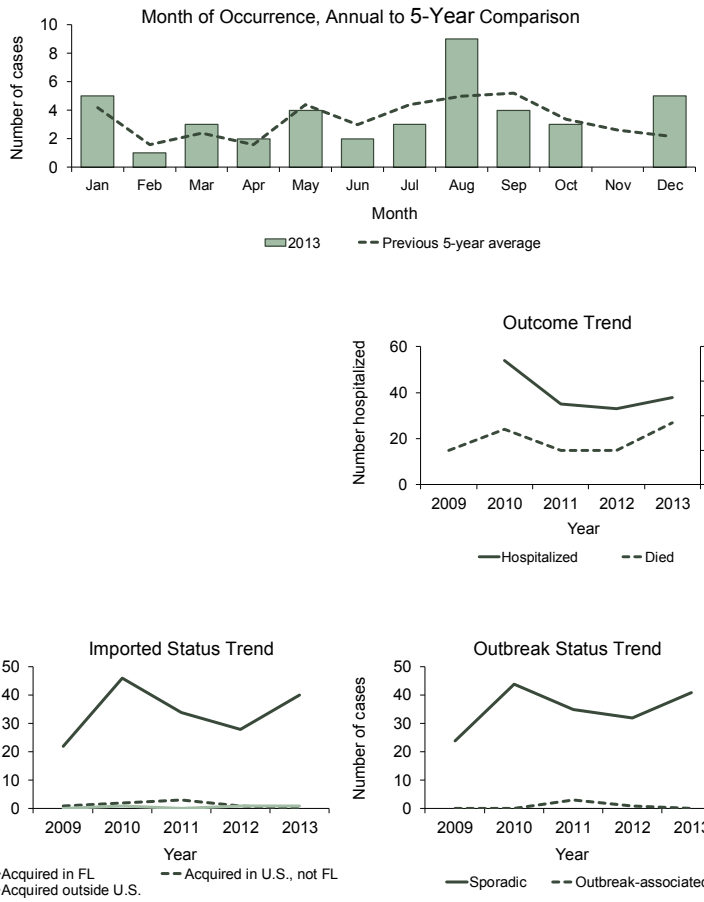
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Listeriosis cases were missing 5.3% of race data in 2011, 6.1% of ethnicity data in 2012, 12.1% of race data in 2012, and 7.3% of ethnicity data in 2013.

Listeriosis

Summary of Case Factors

Summary	Number	
Number of cases	41	
Outcome	**Number**	**(Percent)**
Hospitalized	38	(92.7)
Died	9	(22.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	40	(97.6)
Acquired in the U.S., not Florida	0	(0.0)
Acquired outside the U.S.	1	(2.4)
Acquired location unknown	0	(0.0)
Outbreak status	**Number**	**(Percent)**
Sporadic	41	(100.0)
Outbreak-associated	0	(0.0)
Outbreak status unknown	0	(0.0)

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

One 2013 listeriosis case was originally associated with a multistate cluster potentially linked to deli meats (Centers for Disease Control and Prevention [CDC] cluster code 1311MAGX6-1). However, after further analysis of the whole genome sequence of the isolate, the case was determined not to be associated with the outbreak. In March 2013, four previously reported cases matching a multistate cluster (CDC cluster code 1302MLGX6-2) were determined to be false positives due to contaminated laboratory culture media. These cases were not counted for surveillance purposes and are not included in the 41 cases reported in 2013. The manufacturer of the culture media notified all customers of the issue and reinforced the need to visually inspect all non-sterile prepared media prior to use to ensure there is no surface or subsurface contamination.

Lyme Disease

Disease Facts

Cause: *Borrelia burgdorferi* bacteria

Type of illness: Acute illness or late manifestation; common acute symptoms include fever, headache, fatigue, and erythema migrans (characteristic bull's-eye rash); late manifestation symptoms can include Bell's palsy, severe joint pain and swelling, and shooting pain

Transmission: Tick-borne; bite of infective tick

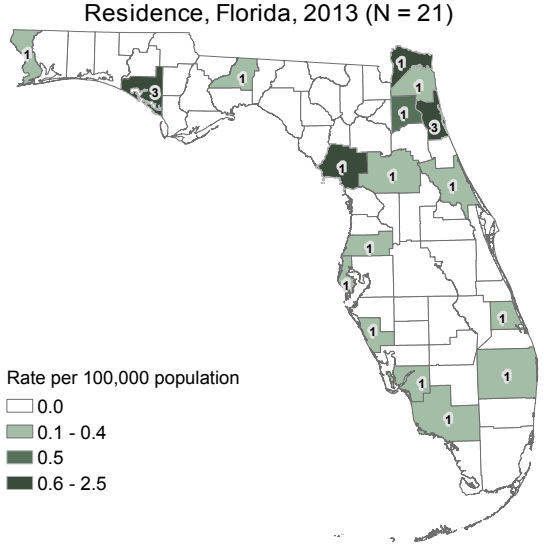
Reason for surveillance: Monitor incidence over time, estimate burden of illness and degree of endemicity, target areas of high incidence for prevention education

Comments: A case definition change in 2008 expanding the acceptable laboratory criteria contributes significantly to the increase in cases starting in 2008. Most cases (~65-85%) are imported from other states, primarily the Northeast and Midwest U.S. The increase in 2013 was due to an increase in imported cases.

Summary of Case Demographics

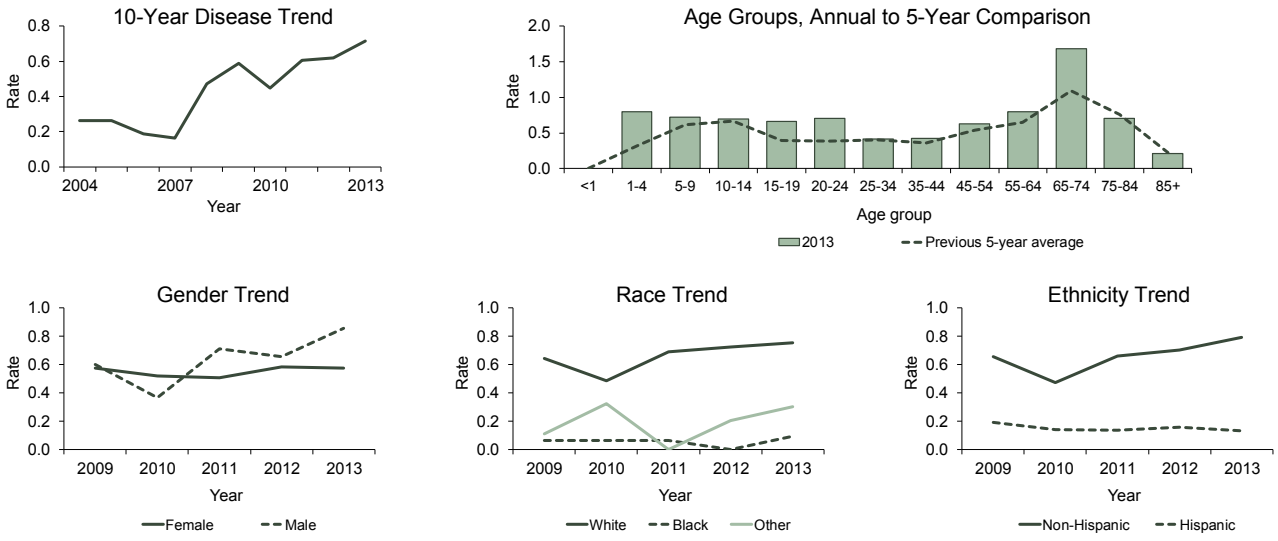
Summary			
Number of cases			138
Incidence rate (per 100,000 population)			0.7
Change from 5-year average incidence			+30.7%
Age (in years)			
Mean			44
Median			49
Min-max			2 - 88
Gender	**Number**	**(Percent)**	**Rate**
Female	57	(41.3)	0.6
Male	81	(58.7)	0.9
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	114	(95.0)	0.8
Black	3	(2.5)	NA
Other	3	(2.5)	NA
Unknown race	18		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	117	(95.1)	0.8
Hispanic	6	(4.9)	NA
Unknown ethnicity	15		

Reported Lyme Disease Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 21)



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

Reported Lyme Disease Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Lyme disease cases were missing 5.5% of ethnicity data in 2009, 10.9% of race data in 2009, 10.7% of ethnicity data in 2010, 8.3% of race data in 2010, 10.4% of ethnicity data in 2011, 8.7% of race data in 2011, 6.8% of ethnicity data in 2012, 6.8% of race data in 2012, 10.9% of ethnicity data in 2013, and 13.0% of race data in 2013.

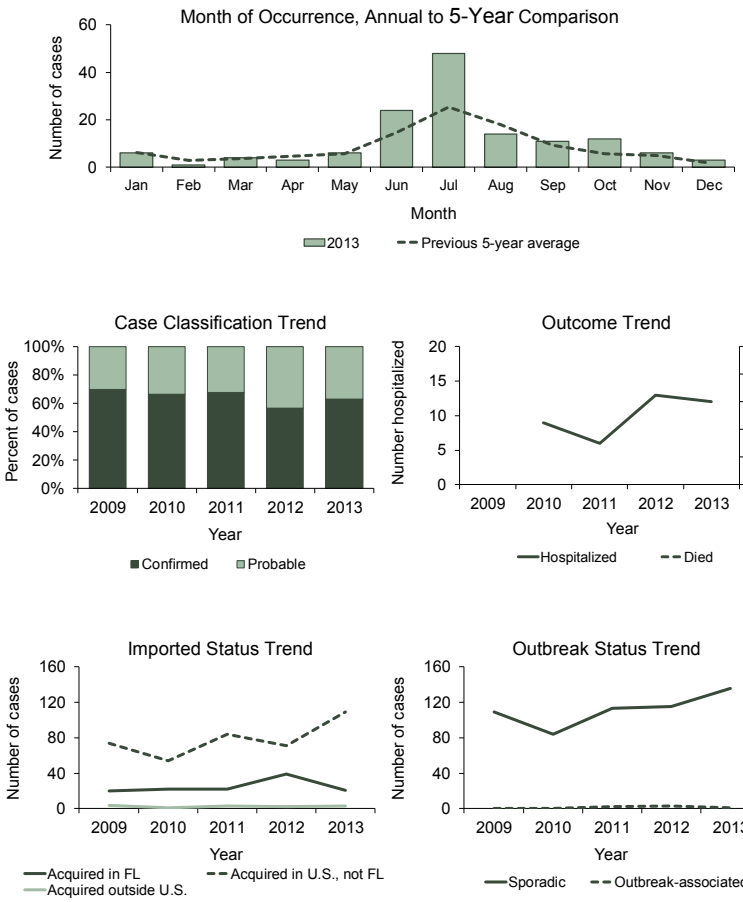
Note that the majority of Lyme disease cases are acquired outside of Florida.

Summary of Case Factors

Summary	Number	
Number of cases	138	
Case classification	**Number**	**(Percent)**
Confirmed	87	(63.0)
Probable	51	(37.0)
Outcome	**Number**	**(Percent)**
Hospitalized	12	(8.7)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	21	(15.2)
Acquired in the U.S., not Florida	109	(79.0)
Acquired outside the U.S.	3	(2.2)
Acquired location unknown	5	(3.6)
Outbreak status	**Number**	**(Percent)**
Sporadic	136	(98.6)
Outbreak-associated	1	(0.7)
Outbreak status unknown	1	(0.7)

Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data. Other reports may use illness onset date instead of report date, or county of exposure instead of the case's county of residence.

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Malaria

Disease Facts

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

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

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

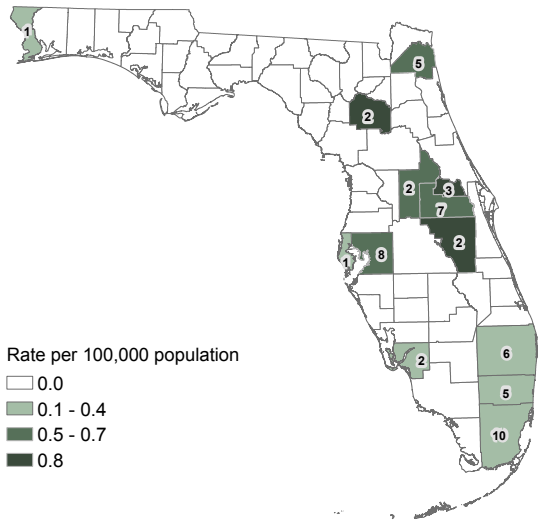
Reason for surveillance: Identify individual cases and implement control measures to prevent endemicity, monitor incidence over time, estimate burden of illness

Comments: There were no Florida-acquired malaria infections reported in 2013. All infections were associated with travel abroad to countries with endemic transmission (primarily African countries). Imported malaria cases peaked in 2010 after the January 2010 earthquake in Haiti resulted in an influx of Haitians in Florida, but decreased from 2011 to 2013. The last malaria case possibly acquired in Florida was reported in 2010.

Summary of Case Demographics

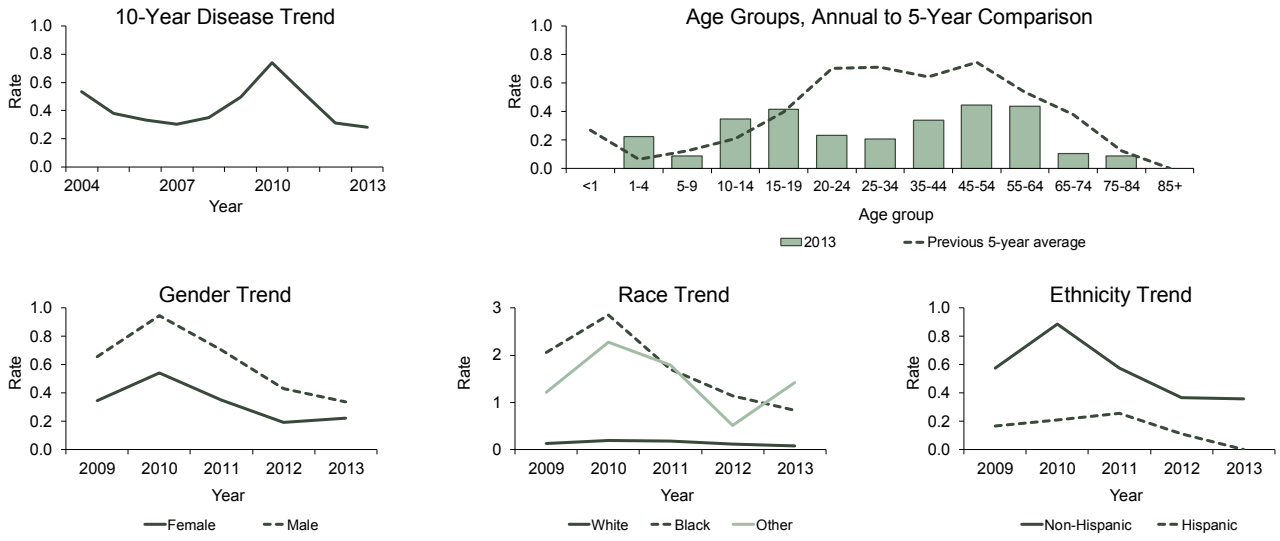
Summary			
Number of cases			54
Incidence rate (per 100,000 population)			0.3
Change from 5-year average incidence			-42.2%
Age (in years)			
Mean			39
Median			44
Min-max			2 - 80
Gender	**Number**	**(Percent)**	**Rate**
Female	22	(40.7)	0.2
Male	32	(59.3)	0.3
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	12	(22.6)	NA
Black	27	(50.9)	0.8
Other	14	(26.4)	NA
Unknown race	1		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	53	(100.0)	0.4
Hispanic	0	(0.0)	NA
Unknown ethnicity	1		

Reported Malaria Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 54)



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

Reported Malaria Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



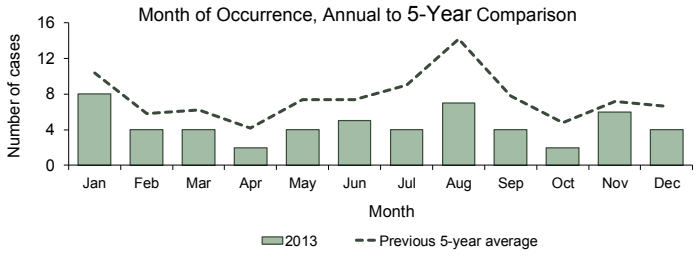
Note that the majority of malaria cases are acquired outside of Florida.

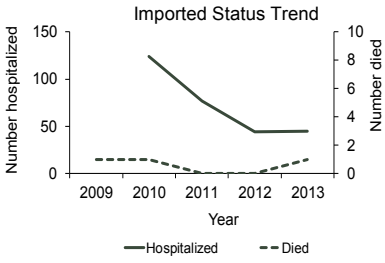
Summary of Case Factors

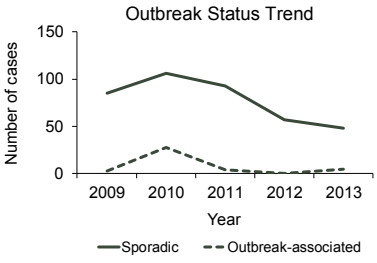
Summary	Number	
Number of cases	54	
Outcome	**Number**	**(Percent)**
Hospitalized	45	(83.3)
Died	1	(1.9)
Imported status	**Number**	**(Percent)**
Acquired in Florida	0	(0.0)
Acquired in the U.S., not Florida	0	(0.0)
Acquired outside the U.S.	54	(100.0)
Acquired location unknown	0	(0.0)
Outbreak status	**Number**	**(Percent)**
Sporadic	48	(88.9)
Outbreak-associated	5	(9.3)
Outbreak status unknown	1	(1.9)
Region where infection acquired	**Number**	**(Percent)**
Africa	33	(61.1)
Central America/Caribbean	8	(14.8)
South America	8	(14.8)
Asia	4	(7.4)
Unknown	1	(1.9)

Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data. Other reports may use illness onset date instead of report date, or county of exposure instead of the case's county of residence.

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







Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Meningococcal Disease

Disease Facts

Cause: *Neisseria meningitidis* bacteria

Type of illness: Neurological (meningitis) or bloodstream infections (septicemia) most common

Transmission: Person-to-person; direct contact or inhalation of respiratory droplets from nose or throat of colonized or infected person

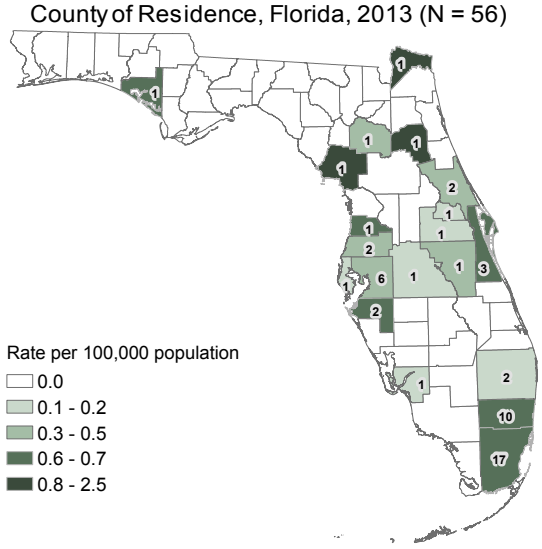
Reason for surveillance: Immediate public health actions are taken in response to every suspected meningococcal disease case to prevent secondary transmission, monitor effectiveness of immunization programs and vaccines

Comments: Five *N. meningitidis* serogroups cause almost all invasive disease (A, B, C, Y and W135). Vaccines provide protection against serogroups A, C, Y, and W135. In 2013, a high proportion of infections were due to serogroup W135 in Florida, primarily in Miami-Dade and Broward counties.

Summary of Case Demographics

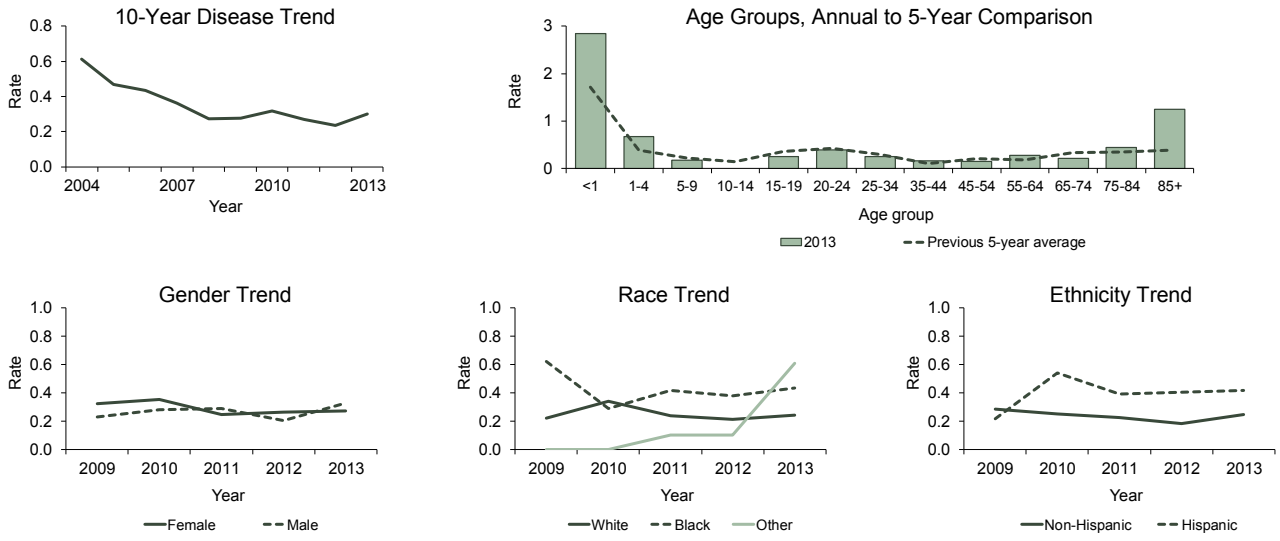
Summary			
Number of cases			58
Incidence rate (per 100,000 population)			0.3
Change from 5-year average incidence			+9.1%
Age (in years)			
Mean			41
Median			42
Min-max			0 - 92
Gender	**Number**	**(Percent)**	**Rate**
Female	27	(46.6)	0.3
Male	31	(53.4)	0.3
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	37	(64.9)	0.2
Black	14	(24.6)	NA
Other	6	(10.5)	NA
Unknown race	1		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	37	(66.1)	0.3
Hispanic	19	(33.9)	NA
Unknown ethnicity	2		

Reported Meningococcal Disease Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 56)



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

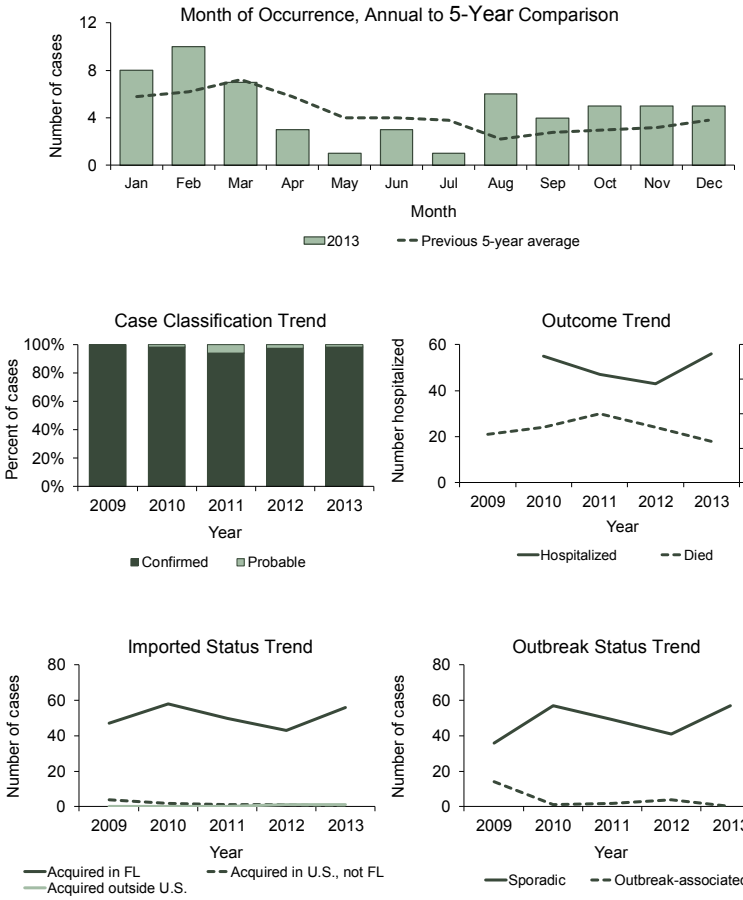
Reported Meningococcal Disease Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Summary of Case Factors

Summary	Number	
Number of cases	58	
Case classification	**Number**	**(Percent)**
Confirmed	57	(98.3)
Probable	1	(1.7)
Outcome	**Number**	**(Percent)**
Hospitalized	56	(96.6)
Died	6	(10.3)
Imported status	**Number**	**(Percent)**
Acquired in Florida	56	(96.6)
Acquired in the U.S., not Florida	0	(0.0)
Acquired outside the U.S.	1	(1.7)
Acquired location unknown	1	(1.7)
Outbreak status	**Number**	**(Percent)**
Sporadic	57	(98.3)
Outbreak-associated	0	(0.0)
Outbreak status unknown	1	(1.7)
Serogroup	**Number**	**(Percent)**
Group W135	21	(36.2)
Group B	13	(22.4)
Group C	11	(19.0)
Group Y	9	(15.5)
Non-groupable	2	(3.4)
Unknown	2	(3.4)

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak- associated indicates that two or more cases are epidemiologically linked.

Additional Information

Beginning in late 2008, a dominant clone of *N. meningitidis* W135 emerged in south Florida. This *N. meningitidis* clone has caused the majority of invasive meningococcal disease cases in south Florida over the past 7 years and has also caused an increase in invasive meningococcal disease in the region. For additional information on the initial cluster, please see the article below.

Doyle TJ, Mejia-Echeverry A, Fiorella P, Leguen F, Livengood J, Kay R, et al. 2010. Cluster of Serogroup W135 Meningococci, Southeastern Florida, 2008–2009. *Emerging Infectious Diseases*, 16(1):113-115. Available at wwwnc.cdc.gov/eid/article/16/1/09-1026_article.

Pertussis

Disease Facts

Cause: *Bordetella pertussis* bacteria

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

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

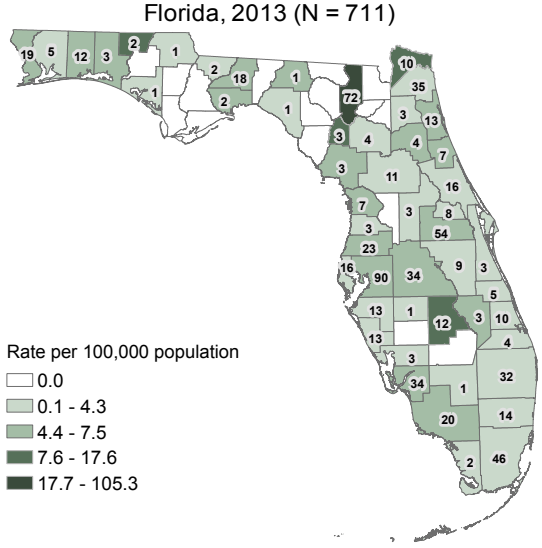
Reason for surveillance: Identify cases for treatment to prevent death, identify and prevent outbreaks, limit transmission in settings with infants or others who may transmit to infants, monitor effectiveness of immunization programs and vaccines

Comments: Pertussis incidence has increased nationwide since the 1980s. There was sharp increase in incidence in Florida in 2012, and that increase continued in 2013. Over 50% of the cases reported in 2013 were outbreak-associated. Incidence is highest in infants <1 year old.

Summary of Case Demographics

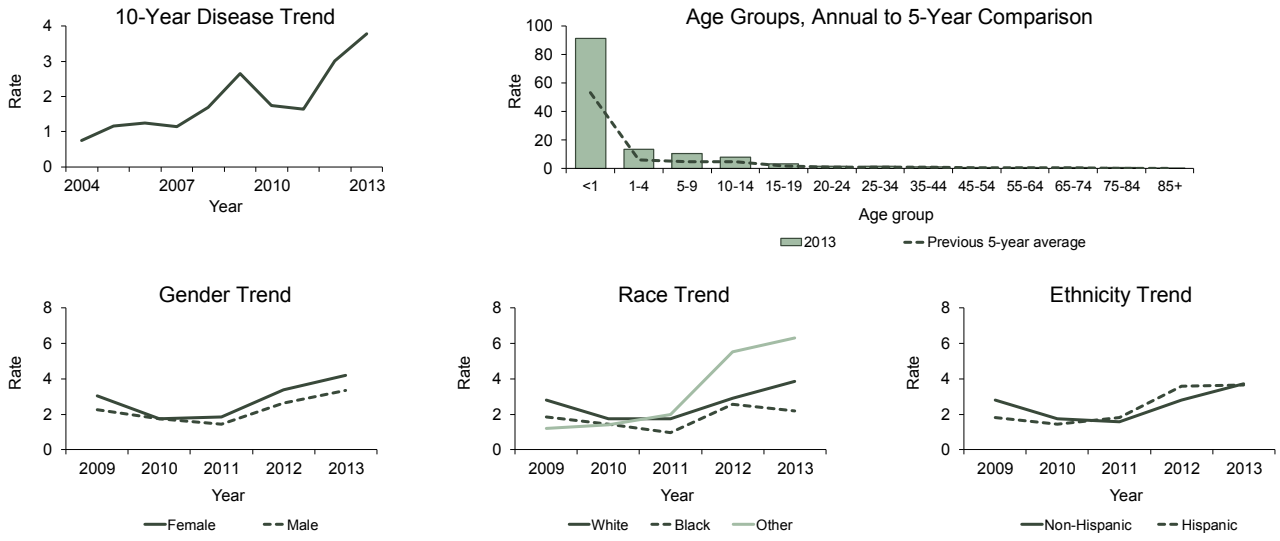
Summary			
Number of cases			732
Incidence rate (per 100,000 population)			3.8
Change from 5-year average incidence			+76.2%
Age (in years)			
Mean			14
Median			7
Min-max			0 - 96
Gender	**Number**	**(Percent)**	**Rate**
Female	414	(56.6)	4.2
Male	318	(43.4)	3.4
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	584	(81.6)	3.9
Black	70	(9.8)	2.2
Other	62	(8.7)	6.3
Unknown race	16		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	548	(76.8)	3.7
Hispanic	166	(23.2)	3.7
Unknown ethnicity	18		

Reported Pertussis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 711)



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

Reported Pertussis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida

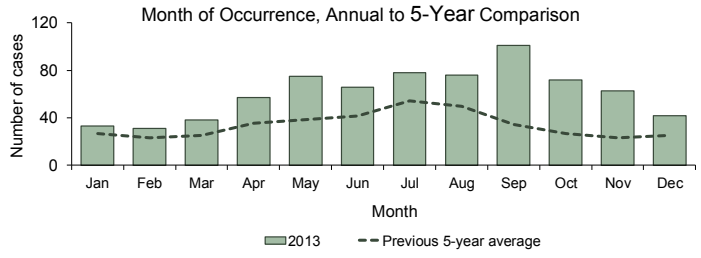


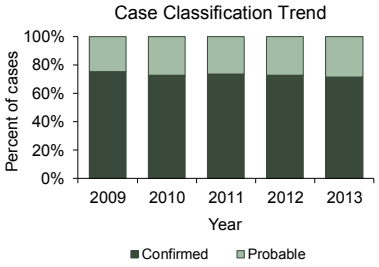
Pertussis

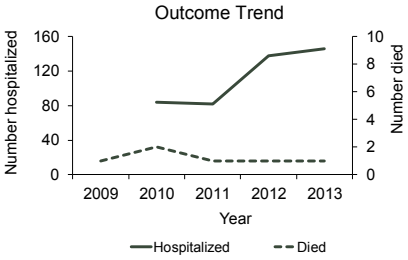
Summary of Case Factors

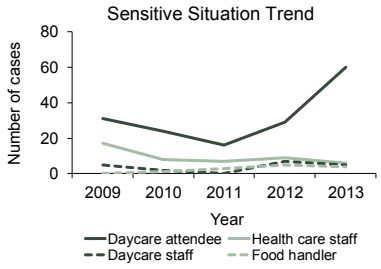
Summary	Number	
Number of cases	732	
Case classification	**Number**	**(Percent)**
Confirmed	526	(71.9)
Probable	206	(28.1)
Outcome	**Number**	**(Percent)**
Hospitalized	146	(19.9)
Died	1	(0.1)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	60	(8.2)
Daycare staff	5	(0.7)
Health care staff	6	(0.8)
Food handler	4	(0.5)
Imported status	**Number**	**(Percent)**
Acquired in Florida	711	(97.1)
Acquired in the U.S., not Florida	15	(2.0)
Acquired outside the U.S.	2	(0.3)
Acquired location unknown	4	(0.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	335	(45.8)
Outbreak-associated	392	(53.6)
Outbreak status unknown	5	(0.7)

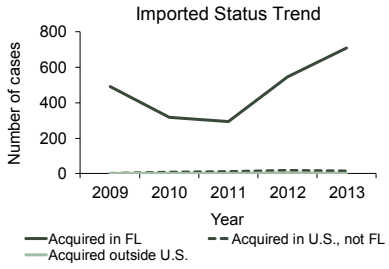
Reported Pertussis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

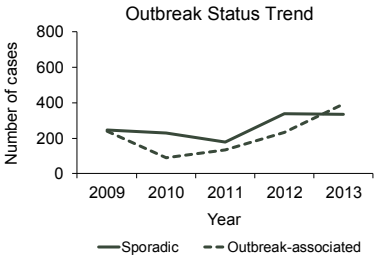












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Older adults often have milder infections and serve as the reservoirs and sources of infection for infants and young children. One dose of Tdap (tetanus, diphtheria, pertussis) vaccine became a requirement for children entering, attending, or transferring to the seventh grade during the 2009-2010 school year.

There was a large increase in reported pertussis cases in both 2012 and 2013, 53.6% of which were outbreak-associated in 2013. The majority of outbreak-associated cases in 2013 were among household members or close contacts, with the exception of an outbreak in Columbia County associated with a church involving 109 cases.

Pesticide-Related Illness and Injury, Acute

Disease Facts

Cause: Pesticides

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

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

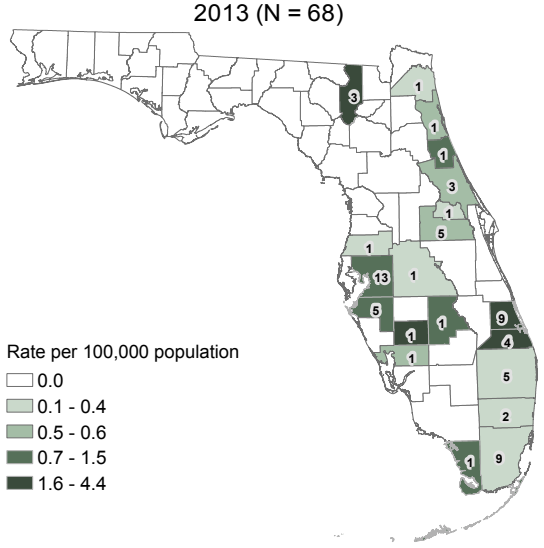
Reason for surveillance: Identify and mitigate persistent sources of exposure, identify populations at risk, evaluate trends in environmental conditions and occupational exposure, improve administration and proper use of pesticides to reduce exposure

Comments: Starting in January 2012, suspect sporadic cases (i.e., not part of a cluster) and suspect cases associated with non-occupational exposures (typically limited household exposures) were no longer reportable, resulting in a substantially decreased number of cases reported in 2012. Note that suspect cases are included in acute pesticide-related illness and injury case counts and rates in this report.

Summary of Case Demographics

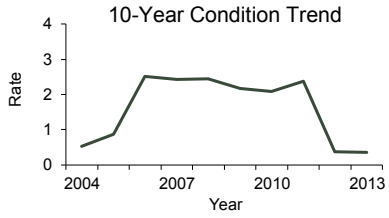
Summary			
Number of cases			68
Incidence rate (per 100,000 population)			0.4
Change from 5-year average incidence			-81.4%
Age (in years)			
Mean			39
Median			38
Min-max			3 - 81
Gender	**Number**	**(Percent)**	**Rate**
Female	26	(38.2)	0.3
Male	42	(61.8)	0.4
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	43	(69.4)	0.3
Black	12	(19.4)	NA
Other	7	(11.3)	NA
Unknown race	6		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	48	(81.4)	0.3
Hispanic	11	(18.6)	NA
Unknown ethnicity	9		

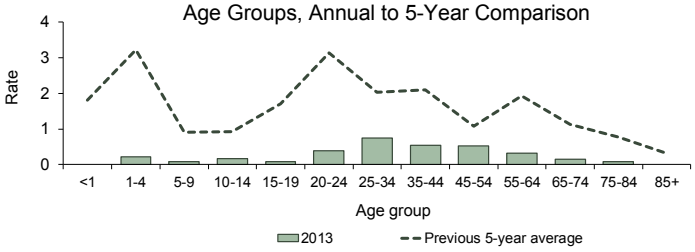
Reported Acute Pesticide-Related Illness and Injury Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 68)

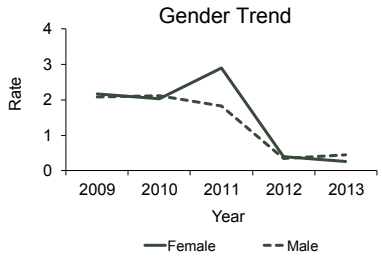


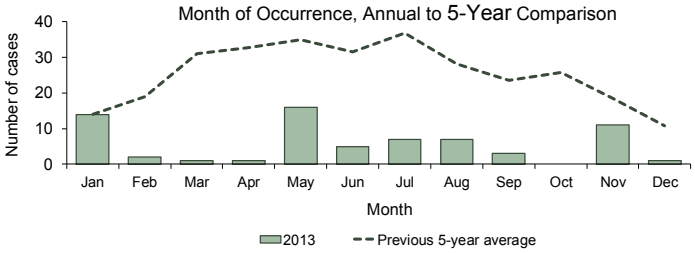
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

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









Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case.

Additional Information

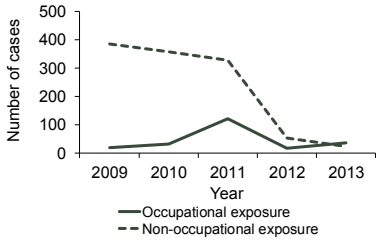
Reported Acute Pesticide-Related Illness and Injury Cases by Health Effects*, Severity of Illness, and Activity at the Time of Exposure, Florida, 2011-2013

Category	2011		2012		2013	
Health Effects*	Number	(Percent)	Number	(Percent)	Number	(Percent)
Respiratory	143	(31.7)	45	(63.4)	33	(48.5)
Gastrointestinal	152	(33.7)	40	(56.3)	21	(30.9)
Neurological	173	(38.4)	39	(54.9)	33	(48.5)
Ocular	172	(38.1)	23	(32.4)	25	(36.8)
Dermal	131	(29.0)	12	(16.9)	11	(16.2)
Severity of Illness	Number	(Percent)	Number	(Percent)	Number	(Percent)
Low	367	(81.4)	44	(62.0)	65	(95.6)
Moderate	79	(17.5)	22	(31.0)	2	(2.9)
High	5	(1.1)	4	(5.6)	1	(1.5)
Death	0	(0.0)	1	(1.4)	0	(0.0)
Activity at Time of Exposure	Number	(Percent)	Number	(Percent)	Number	(Percent)
Applying pesticide	154	(34.1)	18	(25.4)	9	(13.2)
Routine indoor living	73	(16.2)	22	(31.0)	8	(11.8)
Routine outdoor living	67	(14.9)	4	(5.6)	2	(2.9)
Routine work or activity not related to pesticide exposure	7	(1.6)	14	(19.7)	20	(29.4)
Other	6	(1.3)	12	(16.9)	21	(30.9)
Unknown	144	(31.9)	1	(1.4)	8	(11.8)
Total	451		71		68	

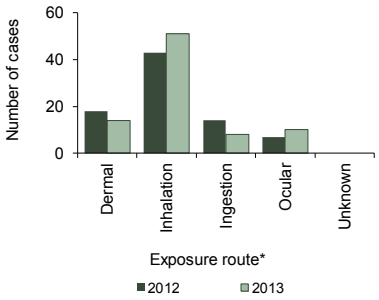
* Cases must report two or more health effects, therefore percentages will not total to 100%.

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

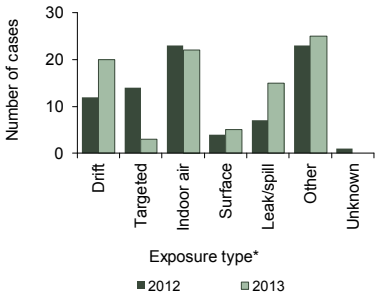
5-Year Occupational Exposure Trend



Exposure Route for 2012-2013



Exposure Type, 2012-2013



* Note that there may be multiple exposure types and routes for one case.

Definitions of exposure types:

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

Rabies, Animal and Possible Human Exposure

Disease Facts

Cause: Rabies virus

Type of illness in humans: Fever, headache, insomnia, confusion, hallucinations, increase in saliva, difficulty swallowing, and fear of water; death usually occurs within days of symptom onset

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

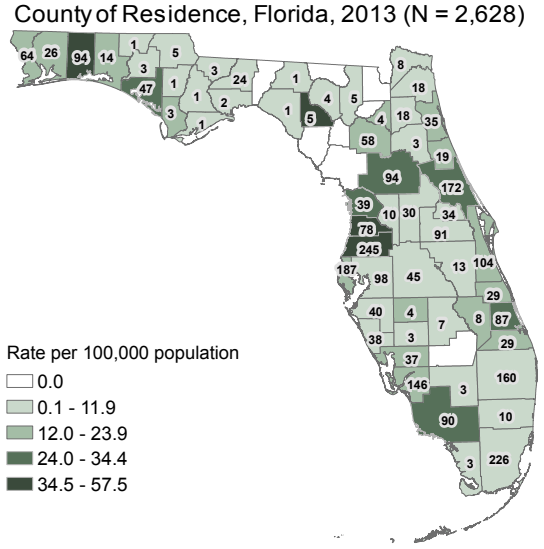
Reason for surveillance: Identify and mediate sources of exposure, ensure effective preventative measures are implemented

Comments: Incidence of human exposures to suspected rabid animals for which post-exposure prophylaxis (PEP) is recommended has increased since case reporting was initiated. A multistate and multicountry rabies organ transplant investigation in 2013 resulted in 564 people contacted and assessed for exposure and 71 receiving PEP, including many Florida residents.

Summary of Case Demographics

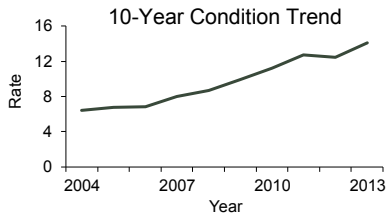
Possible exposure to rabies where PEP was recommended			
Number of cases			2,721
Incidence rate (per 100,000 population)			14.1
Change from 5-year average incidence			+28.1%
Age (in years)			
Mean			38
Median			37
Min-max			0 - 120
Gender	Number	(Percent)	Rate
Female	1,375	(50.6)	13.9
Male	1,344	(49.4)	14.2
Unknown gender	2		
Race	Number	(Percent)	Rate
White	1,985	(87.7)	13.1
Black	205	(9.1)	6.4
Other	74	(3.3)	7.5
Unknown race	457		
Ethnicity	Number	(Percent)	Rate
Non-Hispanic	1,929	(84.2)	13.1
Hispanic	361	(15.8)	7.9
Unknown ethnicity	431		

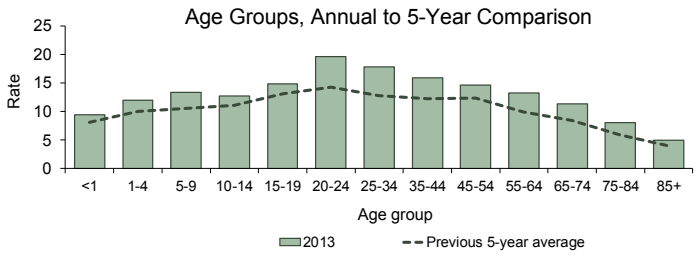
Reported Possible Exposure to Rabies Cases and Incidence Rates per 100,000 Population (Restricted to Exposures Occurring in Florida) by County of Residence, Florida, 2013 (N = 2,628)

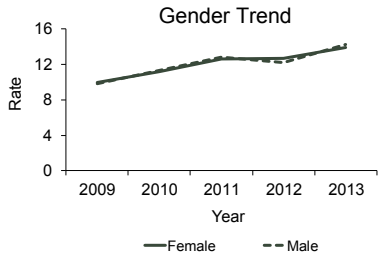


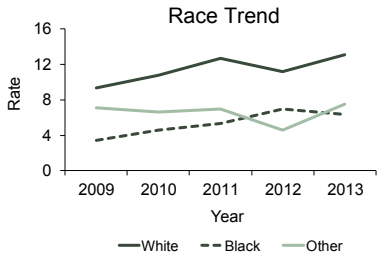
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

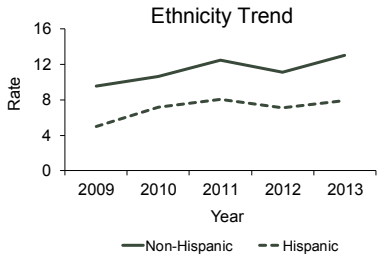
Reported Possible Exposure to Rabies Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida









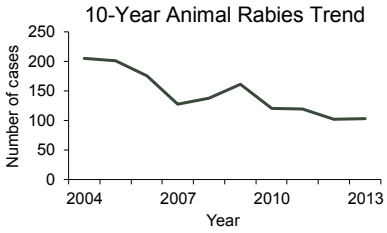


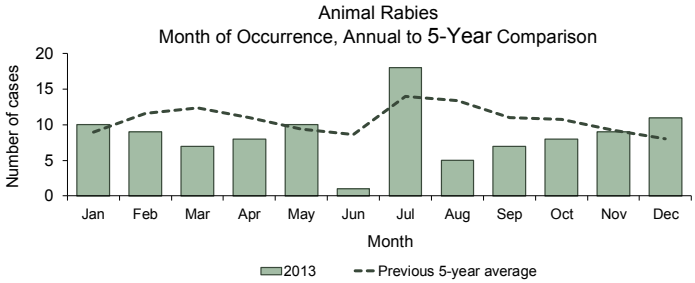
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Possible exposure to rabies cases were missing 14.0% of ethnicity data in 2009, 16.4% of race data in 2009, 12.1% of ethnicity data in 2010, 14.7% of race data in 2010, 9.8% of ethnicity data in 2011, 12.0% of race data in 2011, 18.3% of ethnicity data in 2012, 18.3% of race data in 2012, 15.8% of ethnicity data in 2013, and 16.8% of race data in 2013.

Additional Information

The last case of human rabies acquired in Florida was in 1948. The animals most frequently diagnosed with rabies in Florida are raccoons, bats, unvaccinated cats, and foxes. Rabies is endemic in the raccoon and bat populations of Florida. Rabies frequently spreads from raccoons, and occasionally bats, to other animal species such as foxes and cats.

Animal rabies summary	
Number of cases	103
Change from 5-year average cases	-19.8%





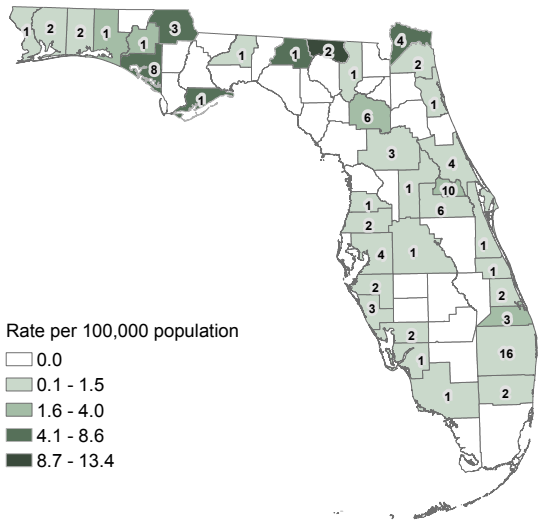
Laboratory testing for animal rabies is only done when animals potentially expose (e.g., bite) humans or domestic animals, thus these data do not necessarily correlate with the true prevalence of rabies by animal species in Florida. A total of 103 laboratory-confirmed rabid animals were reported in 2013.

Case counts in this report may differ from those found in other rabies reports as different criteria are used to assemble the data. Other reports use the calendar year, while this report uses report year. For additional information on calendar year versus report year, please see the paragraph on Reporting Period within Interpreting the Data in the Introduction (page vii). Note that one cat and one raccoon tested positive during the overlap of calendar year 2013 and report year 2014 and therefore will be included in the 2014 Florida Morbidity Statistics Report.

Laboratory-Confirmed Rabid Animals by Type of Animal, Florida, 2012 and 2013

Type of animal	2012		2013	
	Number	(Percent)	Number	(Percent)
Raccoon	59	(57.8)	70	(68.0)
Bat	14	(13.7)	19	(18.4)
Cat	8	(7.8)	8	(7.8)
Fox	11	(10.8)	2	(1.9)
Skunk	2	(2.0)	2	(1.9)
Bobcat	3	(2.9)	2	(1.9)
Other	1	(1.0)	0	(0.0)
Dog	2	(2.0)	0	(0.0)
Horse	2	(2.0)	0	(0.0)
Total	102		103	

Laboratory-Confirmed Rabid Animals by County, Florida, 2013 (N = 103)



Rocky Mountain Spotted Fever

Disease Facts

Cause: *Rickettsia rickettsii* bacteria

Type of illness: Fever, headache, abdominal pain, vomiting, and muscle pain; rash develops in 80% of cases

Transmission: Tick-borne; bite of infective tick

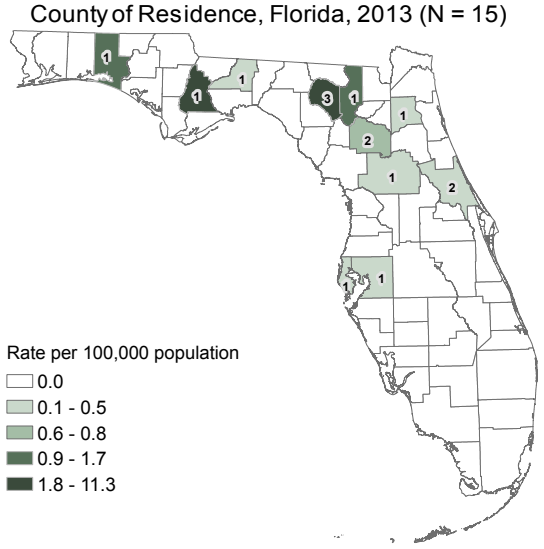
Reason for surveillance: Monitor incidence over time, estimate burden of illness, monitor geographical and temporal occurrence, target areas of high incidence for prevention education

Comments: Rocky Mountain spotted fever (RMSF) incidence has increased markedly in recent years in Florida, possibly due to increased disease awareness and reporting. Most infections are acquired within Florida, primarily in the northern and central regions of the state. Cases are reported year-round without distinct seasonality, though peak transmission typically occurs during the summer months.

Summary of Case Demographics

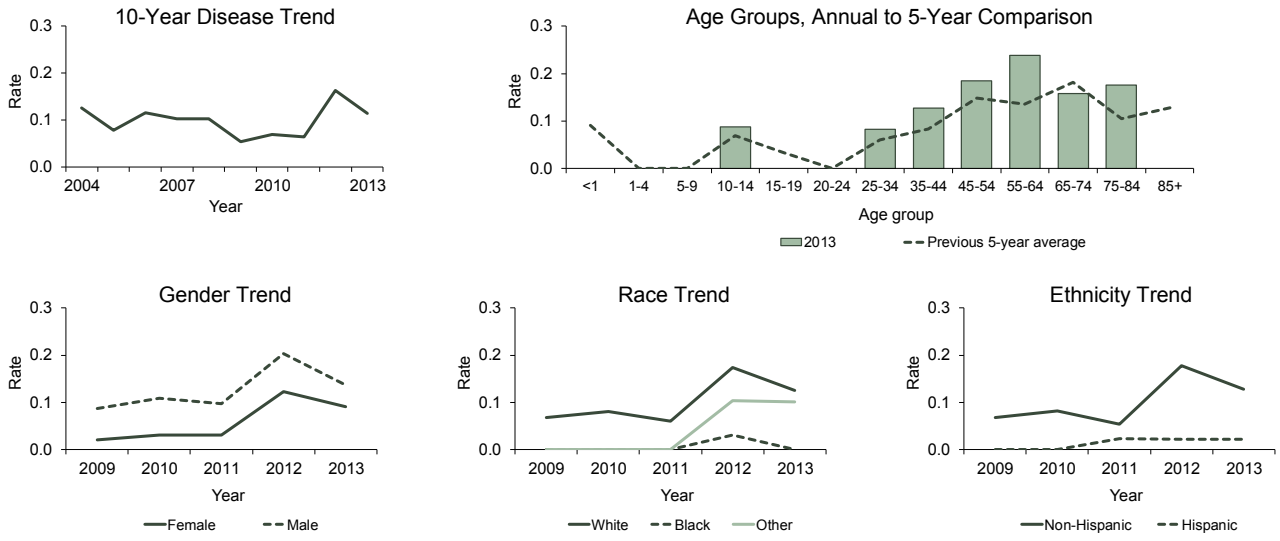
Summary			
Number of cases			22
Incidence rate (per 100,000 population)			0.1
Change from 5-year average incidence			+26.4%
Age (in years)			
Mean			54
Median			57
Min-max			12 - 80
Gender	**Number**	**(Percent)**	**Rate**
Female	9	(40.9)	NA
Male	13	(59.1)	NA
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	19	(95.0)	NA
Black	0	(0.0)	NA
Other	1	(5.0)	NA
Unknown race	2		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	19	(95.0)	NA
Hispanic	1	(5.0)	NA
Unknown ethnicity	2		

Reported Rocky Mountain Spotted Fever Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 15)



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

Reported Rocky Mountain Spotted Fever Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Rocky Mountain spotted fever cases were missing 7.7% of ethnicity data in 2010, 7.7% of race data in 2010, 25.0% of ethnicity data in 2011, 25.0% of race data in 2011, 12.9% of ethnicity data in 2012, 9.7% of race data in 2012, 9.1% of ethnicity data in 2013, and 9.1% of race data in 2013.

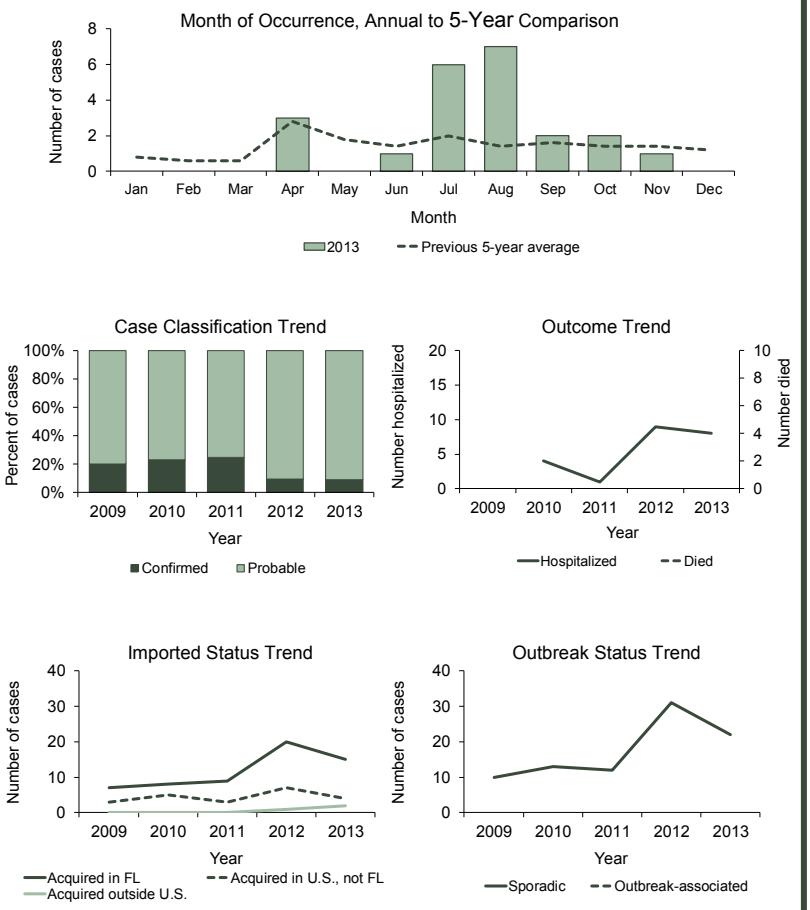
Rocky Mountain Spotted Fever

Summary of Case Factors

Summary	Number	
Number of cases	22	
Case classification	**Number**	**(Percent)**
Confirmed	2	(9.1)
Probable	20	(90.9)
Outcome	**Number**	**(Percent)**
Hospitalized	8	(36.4)
Died	0	(0.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	15	(68.2)
Acquired in the U.S., not Florida	4	(18.2)
Acquired outside the U.S.	2	(9.1)
Acquired location unknown	1	(4.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	22	(100.0)
Outbreak-associated	0	(0.0)
Outbreak status unknown	0	(0.0)

Case counts and rates from this report may differ from those found in other vector-borne disease reports as different criteria are used to assemble the data. Other reports may use illness onset date instead of report date, or county of exposure instead of the case's county of residence.

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Across the U.S., an estimated 90% of the rickettsial disease cases are RMSF. Human antibodies to spotted fever rickettsial species such as *R. parkeri*, *R. amblyommii*, *R. africae*, and *R. conorii* are known to cross-react with serologic tests for the RMSF organism *R. rickettsii*. In addition, commercial antibody testing to differentiate other spotted fever rickettsial infections (SFRs) from RMSF is currently limited. This may be one explanation for apparent changes in RMSF incidence, disease severity, and geographic distribution over time. National reporting criteria for RMSF were expanded to include all spotted SFRs in 2010, but as of 2013, the Florida surveillance case definition was limited to RMSF. Due to cross reactivity, other SFRs may be reported as RMSF. In 2013, the Centers for Disease Control and Prevention (CDC) reported increased *R. africae* activity in southern Africa. Four Florida travelers to this region developed eschar lesions at the site of a tick bite, and reported other symptoms consistent with SFR. Two of these cases were confirmed as *R. africae* by PCR testing at CDC and are not included in RMSF counts in this report. The other two cases had no confirmatory testing done and had only positive serologic testing for RMSF. These two cases were reported as RMSF and included in counts in this report, although *R. rickettsii* is not known to circulate in southern Africa and rarely is associated with eschars.

Salmonellosis

Disease Facts

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

Type of illness: Gastroenteritis (diarrhea, vomiting)

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

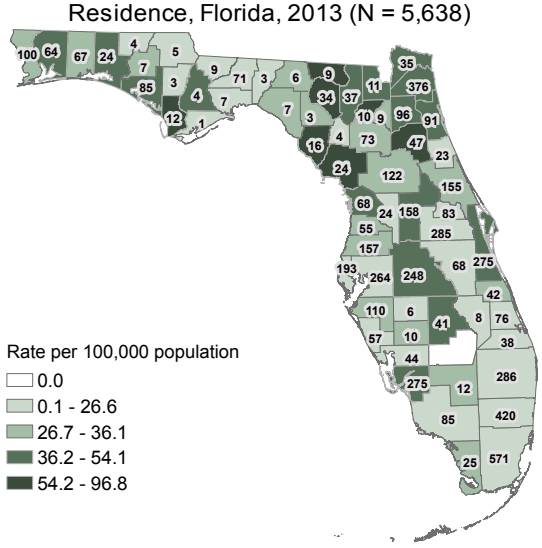
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

Comments: In recent years, Florida has had the highest number and one of the highest rates of salmonellosis cases of any state in the U.S. Salmonellosis rates are very high in <1-year-olds and decrease dramatically with age. The seasonal pattern is very strong, peaking in late summer.

Summary of Case Demographics

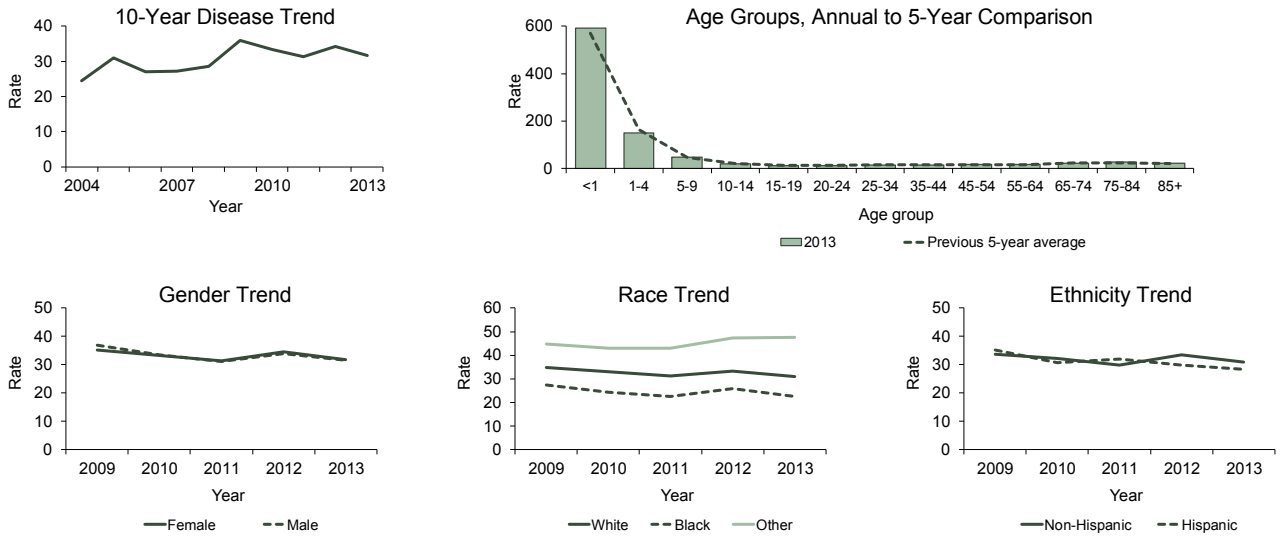
Summary			
Number of cases			6,133
Incidence rate (per 100,000 population)			31.7
Change from 5-year average incidence			-2.9%
Age (in years)			
Mean			25
Median			9
Min-max			0 - 97
Gender	**Number**	**(Percent)**	**Rate**
Female	3,145	(51.3)	31.9
Male	2,987	(48.7)	31.6
Unknown gender	1		
Race	**Number**	**(Percent)**	**Rate**
White	4,671	(79.6)	30.9
Black	728	(12.4)	22.7
Other	469	(8.0)	47.7
Unknown race	265		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	4,567	(78.0)	30.9
Hispanic	1,287	(22.0)	28.3
Unknown ethnicity	279		

Reported Salmonellosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 5,638)



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

Reported Salmonellosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida

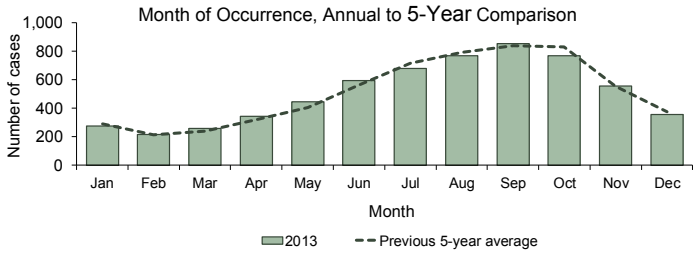


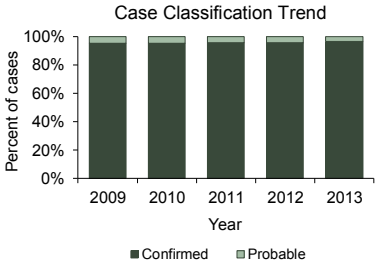
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Salmonellosis cases were missing 5.5% of ethnicity data in 2009 and 5.1% of race data in 2009.

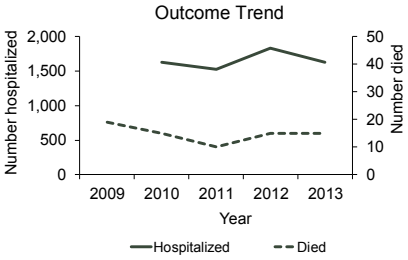
Summary of Case Factors

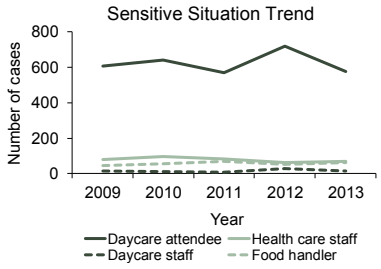
Summary	Number	
Number of cases	6,133	
Case classification	**Number**	**(Percent)**
Confirmed	5,933	(96.7)
Probable	200	(3.3)
Outcome	**Number**	**(Percent)**
Hospitalized	1,627	(26.5)
Died	15	(0.2)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	576	(9.4)
Daycare staff	14	(0.2)
Health care staff	71	(1.2)
Food handler	64	(1.0)
Imported status	**Number**	**(Percent)**
Acquired in Florida	5,638	(91.9)
Acquired in the U.S., not Florida	99	(1.6)
Acquired outside the U.S.	143	(2.3)
Acquired location unknown	253	(4.1)
Outbreak status	**Number**	**(Percent)**
Sporadic	5,513	(89.9)
Outbreak-associated	513	(8.4)
Outbreak status unknown	107	(1.7)

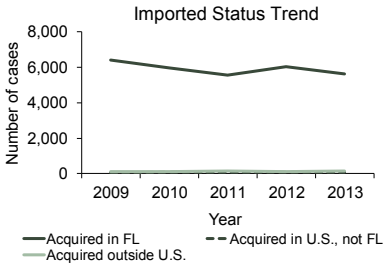
Reported Salmonellosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

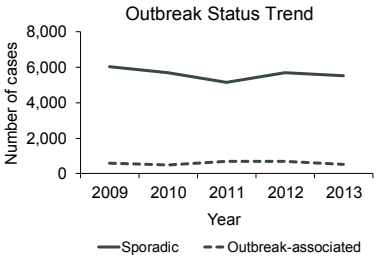












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

Most outbreak-associated cases are due to household clusters; however, some outbreak-associated cases are part of national or multistate outbreaks linked to particular food items. In 2013, Florida had 58 outbreak-associated cases that were part of 23 different multistate outbreaks.

Shiga Toxin-Producing *E. coli* (STEC) Infection

Disease Facts

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

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

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

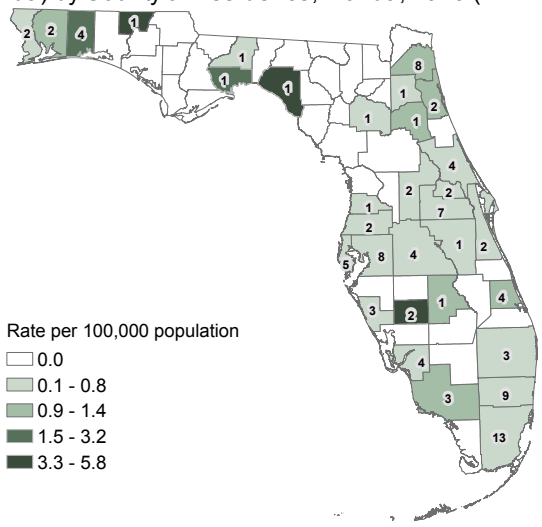
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., contaminated food product, ill food handler), monitor incidence over time, estimate burden of illness

Comments: Incidence varied considerably over the past 10 years. STEC infection typically peaks in late spring and early summer, although in 2013, the largest number of cases occurred in December. Incidence is highest in children <5 years old, a group shown to be particularly vulnerable to STEC infection. STEC incidence in women has increased steadily over the past five years, surpassing that of men in 2010 and remaining higher since.

Summary of Case Demographics

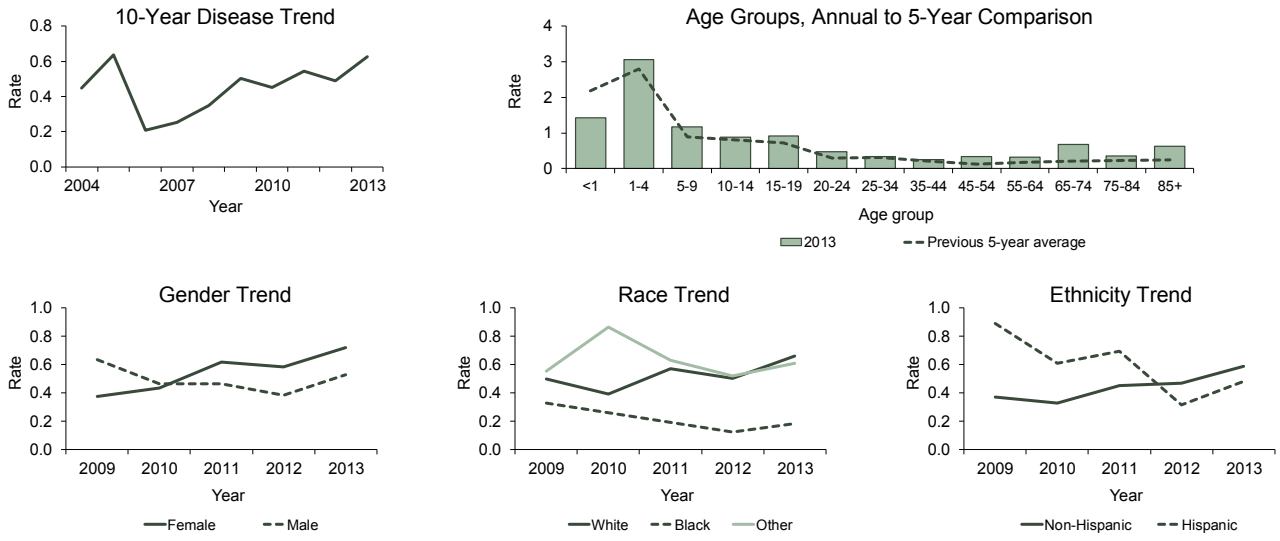
Summary			
Number of cases			121
Incidence rate (per 100,000 population)			0.6
Change from 5-year average incidence			+34.1%
Age (in years)			
Mean			28
Median			17
Min-max			0 - 91
Gender	**Number**	**(Percent)**	**Rate**
Female	71	(58.7)	0.7
Male	50	(41.3)	0.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	100	(89.3)	0.7
Black	6	(5.4)	NA
Other	6	(5.4)	NA
Unknown race	9		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	87	(79.8)	0.6
Hispanic	22	(20.2)	0.5
Unknown ethnicity	12		

Reported Shiga Toxin-Producing *E. coli* Infection Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 105)



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

Reported Shiga Toxin-Producing *E. coli* Infection Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



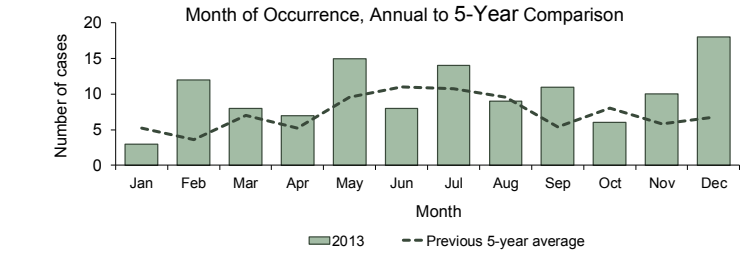
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Shiga toxin- producing E. coli infection cases were missing 5.3% of race data in 2009, 12.9% of ethnicity data in 2010, 12.9% of race data in 2010, 6.8% of ethnicity data in 2011, 5.8% of race data in 2011, 10.8% of ethnicity data in 2012, 9.7% of race data in 2012, 9.9% of ethnicity data in 2013, and 7.4% of race data in 2013.

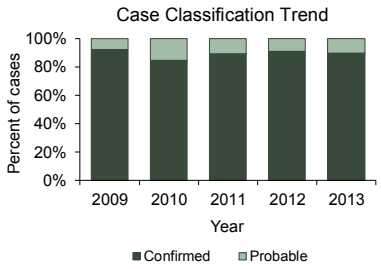
Shiga Toxin-Producing *E. coli* (STEC) Infection

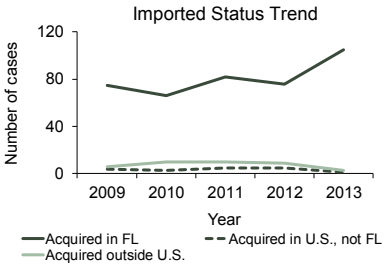
Summary of Case Factors

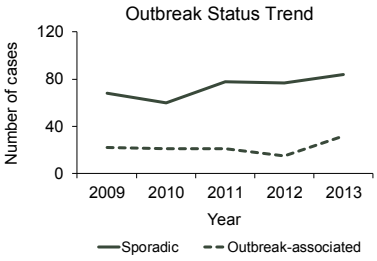
Summary	Number	
Number of cases	121	
Case classification	**Number**	**(Percent)**
Confirmed	109	(90.1)
Probable	12	(9.9)
Outcome	**Number**	**(Percent)**
Hospitalized	40	(33.1)
Died	1	(0.8)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	12	(9.9)
Daycare staff	0	(0.0)
Health care staff	3	(2.5)
Food handler	2	(1.7)
Imported status	**Number**	**(Percent)**
Acquired in Florida	105	(86.8)
Acquired in the U.S., not Florida	1	(0.8)
Acquired outside the U.S.	3	(2.5)
Acquired location unknown	12	(9.9)
Outbreak status	**Number**	**(Percent)**
Sporadic	84	(69.4)
Outbreak-associated	32	(26.4)
Outbreak status unknown	5	(4.1)
Serogroup	**Number**	**(Percent)**
O157	50	(45.9)
O103	13	(11.9)
O111	11	(10.1)
O121	5	(4.6)
O26	5	(4.6)
O145	4	(3.7)
O45	1	(0.9)
Other	20	(18.3)

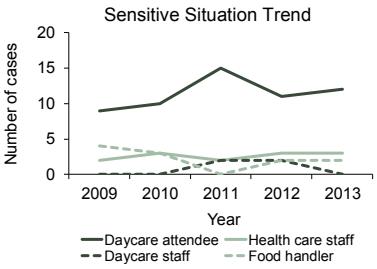
Reported Shiga Toxin-Producing *E. coli* Infection Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida











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

Most outbreak-associated cases are due to household clusters; however, some cases are part of national or multistate outbreaks linked to particular food items. In 2013, Florida had two cases that were part of an *E.coli* O121 multistate outbreak linked to Farm Rich products. Of note, Florida had two separate in-state *E. coli* O157 clusters including nine people; one cluster was associated with a kale product from a local natural food store.

Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak- associated indicates that two or more cases are epidemiologically linked.

Shigellosis

Disease Facts

Cause: *Shigella* bacteria

Type of illness: Gastroenteritis (diarrhea, vomiting)

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

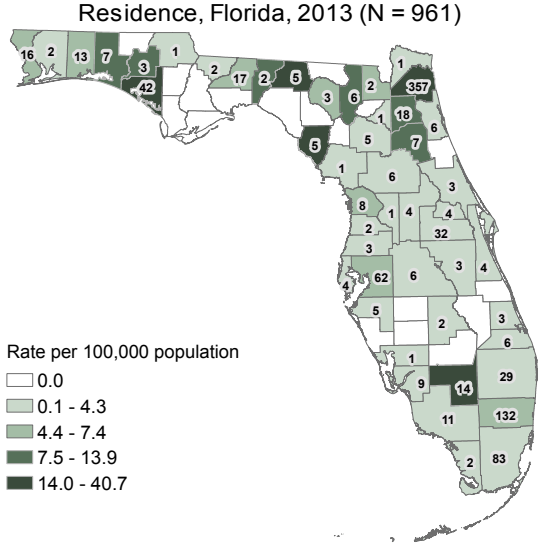
Reason for surveillance: Identify and control outbreaks, identify and mitigate common sources (e.g., ill daycare attendee), monitor incidence over time, estimate burden of illness

Comments: Shigellosis incidence decreased substantially in 2013. Historically, shigellosis has a cyclic temporal pattern with large, community-wide outbreaks, frequently involving daycare centers, every 2-3 years. Consistent with this trend, shigellosis incidence is highest in children aged 1 to 4 years and 5 to 9 years and a large portion of cases are outbreak-associated, primarily due to outbreaks in daycare centers. Shigellosis activity increased in 2010 and 2011, but started decreasing in 2012.

Summary of Case Demographics

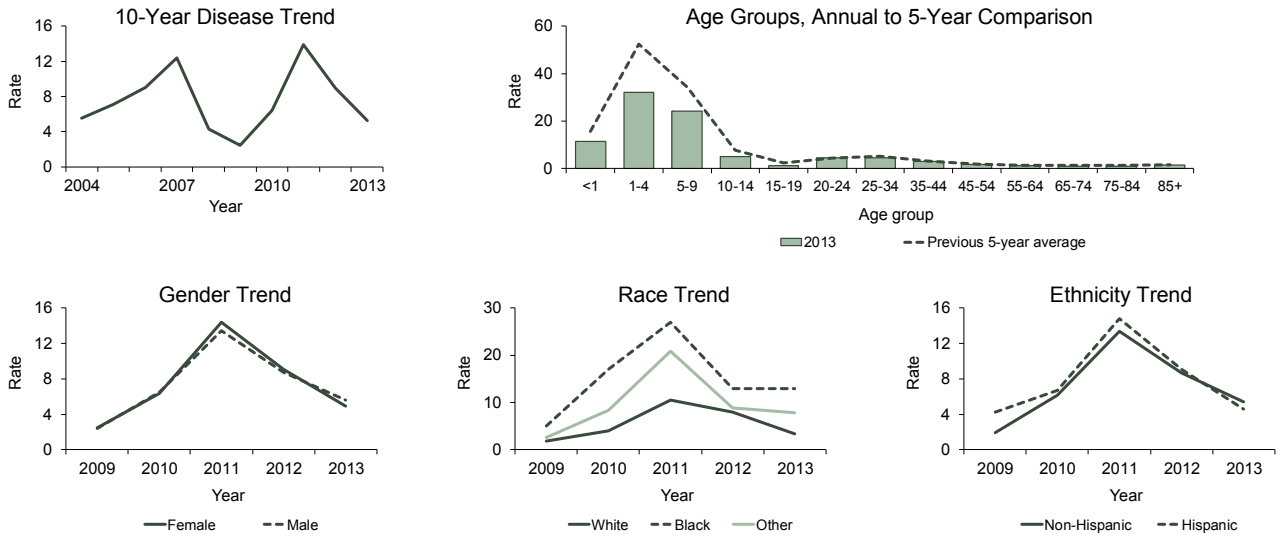
Summary			
Number of cases			1,018
Incidence rate (per 100,000 population)			5.3
Change from 5-year average incidence			-26.9%
Age (in years)			
Mean			18
Median			8
Min-max			0 - 95
Gender	**Number**	**(Percent)**	**Rate**
Female	489	(48.0)	5.0
Male	529	(52.0)	5.6
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	514	(51.0)	3.4
Black	417	(41.4)	13.0
Other	77	(7.6)	7.8
Unknown race	10		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	800	(79.3)	5.4
Hispanic	209	(20.7)	4.6
Unknown ethnicity	9		

Reported Shigellosis Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 961)



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

Reported Shigellosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida

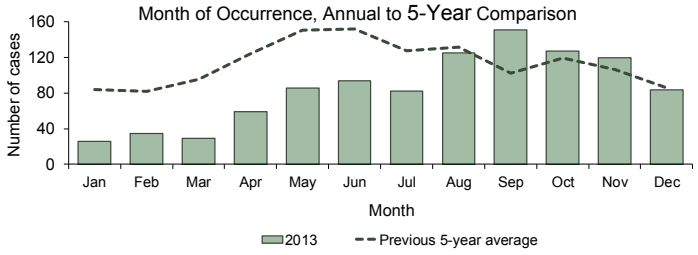


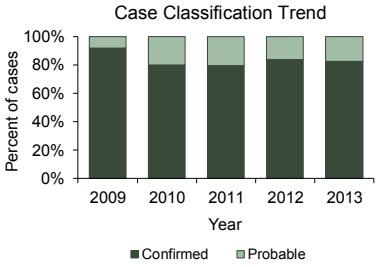
Shigellosis

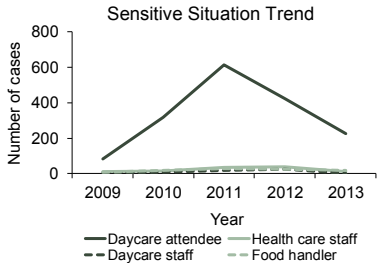
Summary of Case Factors

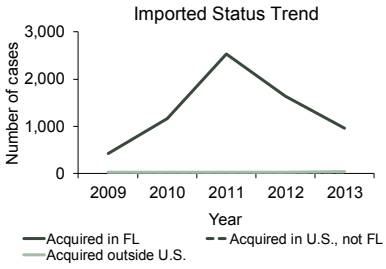
Summary	Number	
Number of cases	1,018	
Case classification	**Number**	**(Percent)**
Confirmed	842	(82.7)
Probable	176	(17.3)
Outcome	**Number**	**(Percent)**
Hospitalized	210	(20.6)
Died	1	(0.1)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	226	(22.2)
Daycare staff	2	(0.2)
Health care staff	12	(1.2)
Food handler	17	(1.7)
Imported status	**Number**	**(Percent)**
Acquired in Florida	961	(94.4)
Acquired in the U.S., not Florida	12	(1.2)
Acquired outside the U.S.	40	(3.9)
Acquired location unknown	5	(0.5)
Outbreak status	**Number**	**(Percent)**
Sporadic	620	(60.9)
Outbreak-associated	391	(38.4)
Outbreak status unknown	7	(0.7)

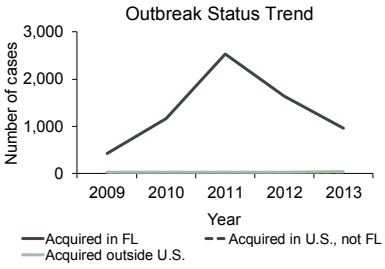
Reported Shigellosis Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida











Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Syphilis

Disease Facts

Cause: *Treponema pallidum* bacteria

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

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

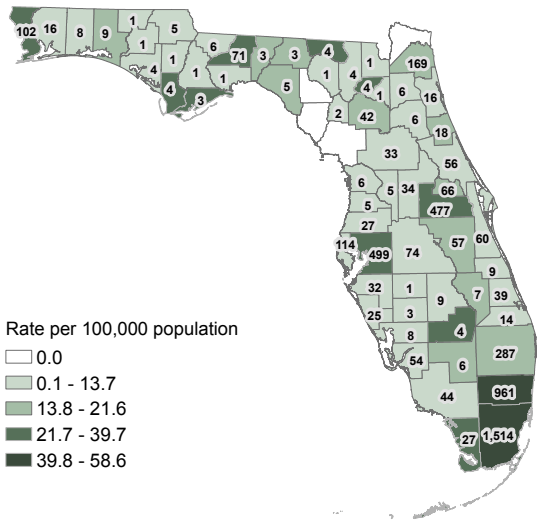
Reason for surveillance: Effective interventions implemented immediately for every case to prevent further transmission, monitor trends, evaluate effectiveness of control programs

Comments: Syphilis is separated into early syphilis (i.e., syphilis <1 year duration; the infectious stage) and late or latent syphilis (i.e., syphilis diagnosed >1 year after infection). Men who have sex with men (MSM) have a higher incidence of early syphilis than non-MSM men and are also more likely to be co-infected with HIV.

Summary of Case Demographics

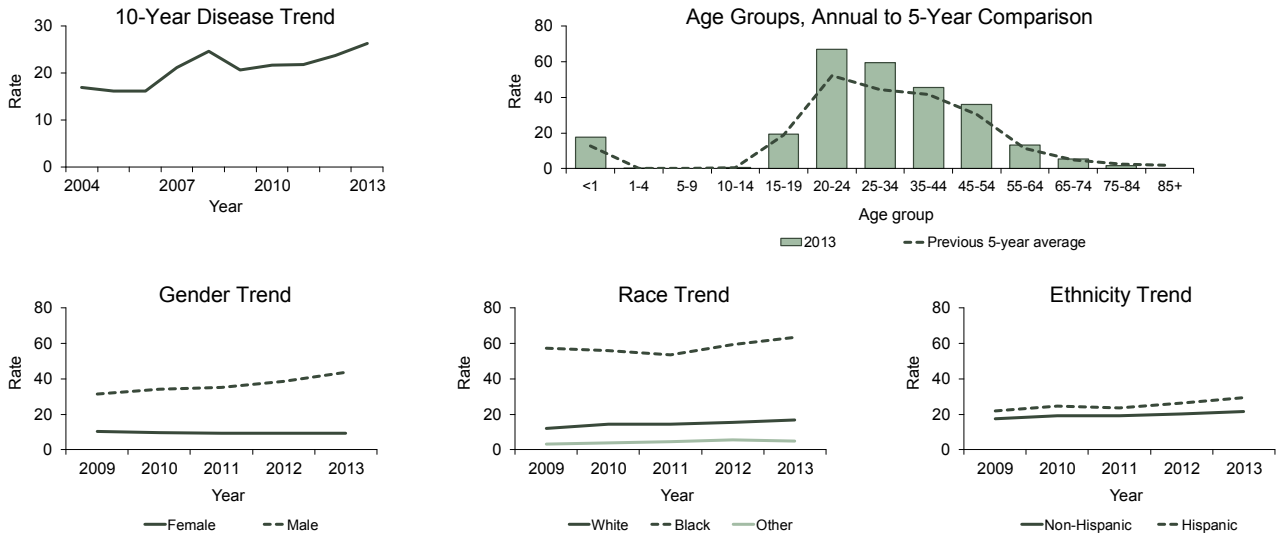
Summary			
Number of cases			5,075
Incidence rate (per 100,000 population)			26.3
Change from 5-year average incidence			+16.8%
Age (in years)			
Mean			36
Median			34
Min-max			0 - 98
Gender	**Number**	**(Percent)**	**Rate**
Female	931	(18.3)	9.4
Male	4,144	(81.7)	43.9
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	2,555	(55.0)	16.9
Black	2,041	(44.0)	63.5
Other	47	(1.0)	4.8
Unknown race	432		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	3,186	(70.4)	21.6
Hispanic	1,338	(29.6)	29.4
Unknown ethnicity	551		

Reported Syphilis Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 5,075)



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

Reported Syphilis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Syphilis cases were missing 9.9% of ethnicity data in 2009, 8.3% of race data in 2009, 5.3% of ethnicity data in 2010, 5.0% of race data in 2010, 7.7% of ethnicity data in 2011, 6.4% of race data in 2011, 8.2% of ethnicity data in 2012, 6.5% of race data in 2012, 10.9% of ethnicity data in 2013, and 8.5% of race data in 2013.

Tuberculosis

Disease Facts

Cause: *Mycobacterium tuberculosis* bacteria

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

Transmission: Person-to-person; inhalation of aerosolized droplets from people with active tuberculosis (TB)

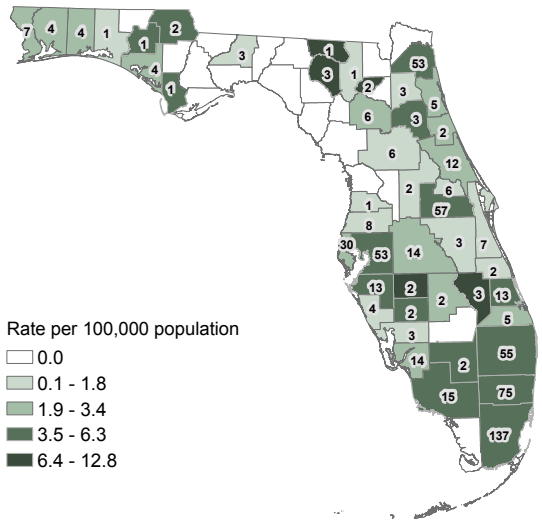
Reason for surveillance: Effective interventions implemented immediately for every case to prevent further transmission, monitor directly observed therapy programs, evaluate trends

Comments: TB continues to be a public health threat in Florida; however incidence has been declining over the past decade, and continued to decline in 2013. Medically underserved and low-income populations, including racial and ethnic minorities, have high rates of TB exposure and infection.

Summary of Case Demographics

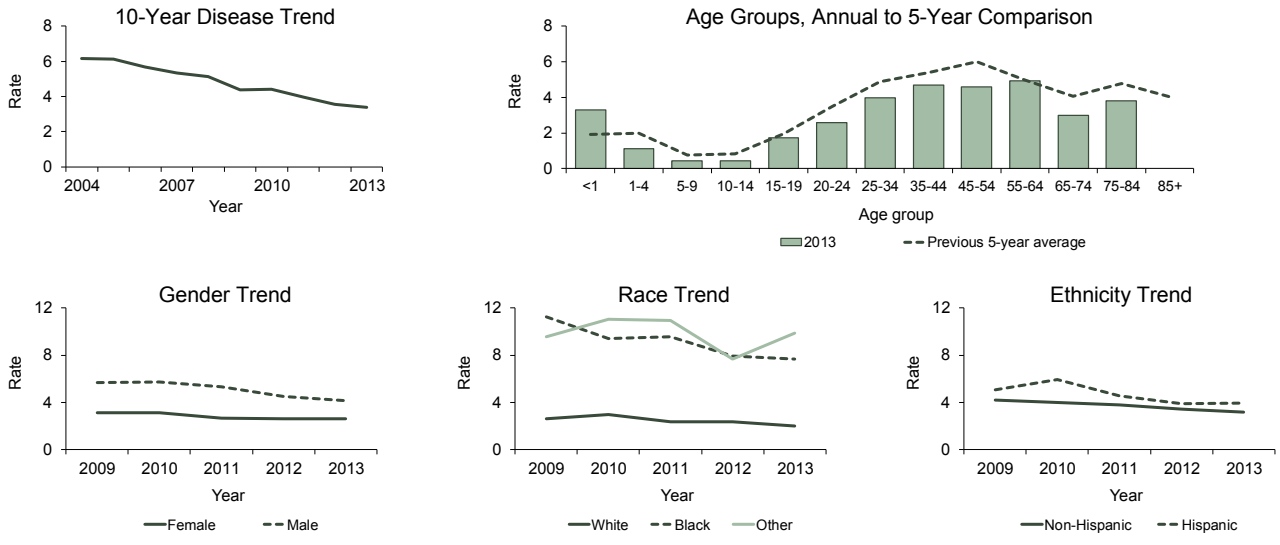
Summary			
Number of cases			652
Incidence rate (per 100,000 population)			3.4
Change from 5-year average incidence			-21.5%
Age (in years)			
Mean			47
Median			49
Min-max			0 - 95
Gender	Number	(Percent)	Rate
Female	259	(39.7)	2.6
Male	393	(60.3)	4.2
Unknown gender	0		
Race	Number	(Percent)	Rate
White	308	(47.2)	2.0
Black	247	(37.9)	7.7
Other	97	(14.9)	9.9
Unknown race	0		
Ethnicity	Number	(Percent)	Rate
Non-Hispanic	473	(72.5)	3.2
Hispanic	179	(27.5)	3.9
Unknown ethnicity	0		

Reported Tuberculosis Cases and Incidence Rates per 100,000 Population by County of Residence, Florida, 2013 (N = 652)



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

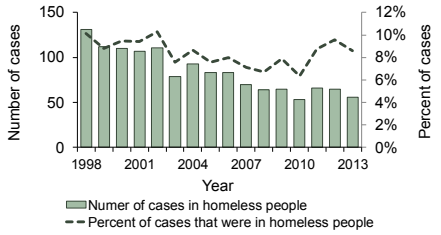
Reported Tuberculosis Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



Additional Information

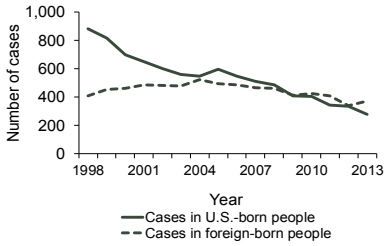
People experiencing homelessness are at increased risk for disease and are a focus for TB prevention and control efforts in Florida. Since 1998, the total number of TB cases among the homeless population in Florida has decreased by over 50%; however, in the same time period the percent of people with TB disease who are homeless has remained relatively stable. In 2013, 8.6% of TB cases were in homeless people.

Number and Percent of Homeless Counted Tuberculosis Cases, Florida, 1998-2013

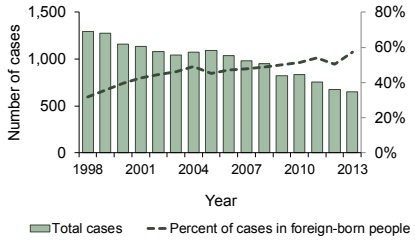


The rate of TB in U.S.-born people in Florida has been decreasing faster than the rate among foreign-born people. Being born in a country where TB is prevalent is one of the most significant risk factors for later developing TB and is a focus for TB prevention and control efforts in Florida. In 2013, 57.4% of the total cases counted in Florida were among the foreign-born people. The most common countries of origin in 2013 included Haiti, Mexico, India, and Guatemala, accounting for 44% of cases identified in foreign-born people.

Counted Tuberculosis Cases by Country of Birth, Florida, 1998-2013

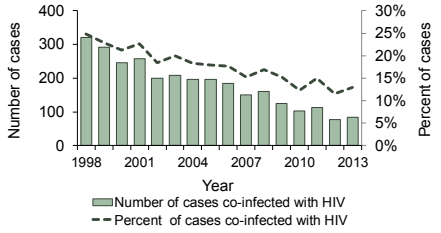


Counted Tuberculosis Cases and Percent Foreign-Born, Florida, 1998-2013



TB and HIV co-infection has been declining modestly but steadily over time in Florida. In 2013, 13% of TB cases were co-infected with HIV. HIV infection remains the biggest risk factor for developing active TB disease following infection with TB and is a focus for TB prevention and control efforts in Florida.

Number and Percent of Counted Tuberculosis Cases Co-Infected With HIV, Florida, 1998-2013



Varicella

Disease Facts

Cause: Varicella-zoster virus (VZV)

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

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

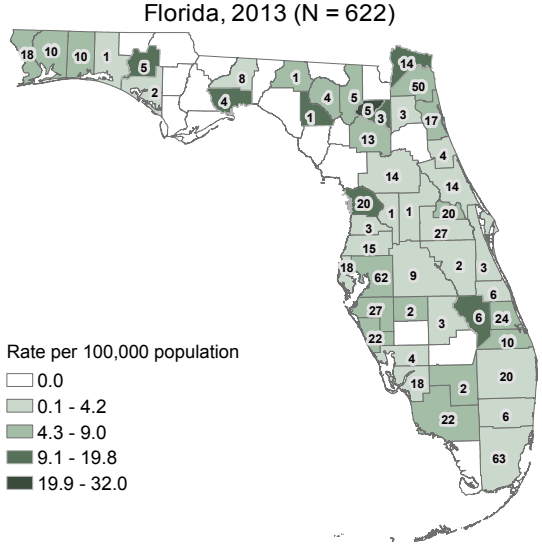
Reason for surveillance: Identify and control outbreaks, monitor effectiveness of immunization programs and vaccines, monitor trends and severe outcomes

Comments: Varicella (chicken pox) is a classic childhood disease that is now vaccine-preventable. It became reportable in Florida in late 2006 and has shown a steady decrease in incidence since 2008, due to effective vaccination programs. Beginning with the 2008-2009 school year, children entering kindergarten were required to receive two doses of varicella vaccine.

Summary of Case Demographics

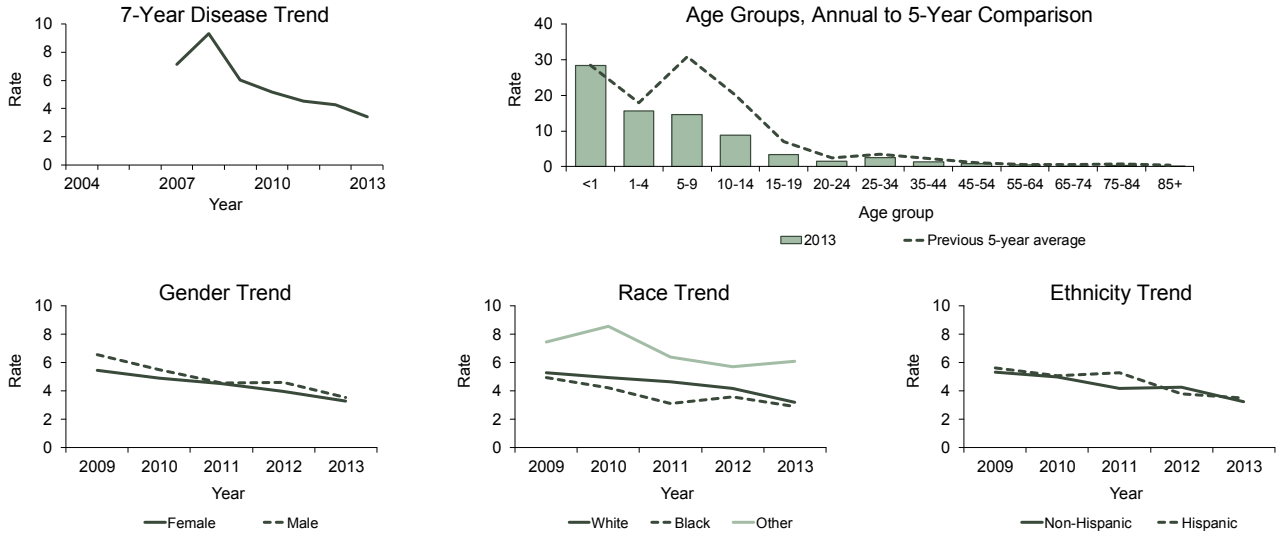
Summary			
Number of cases			659
Incidence rate (per 100,000 population)			3.4
Change from 5-year average incidence			-41.9%
Age (in years)			
Mean			14
Median			8
Min-max			0 - 85
Gender	**Number**	**(Percent)**	**Rate**
Female	324	(49.2)	3.3
Male	335	(50.8)	3.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	487	(76.0)	3.2
Black	94	(14.7)	2.9
Other	60	(9.4)	6.1
Unknown race	18		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	480	(75.1)	3.2
Hispanic	159	(24.9)	3.5
Unknown ethnicity	20		

Reported Varicella Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 622)



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

Reported Varicella Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida



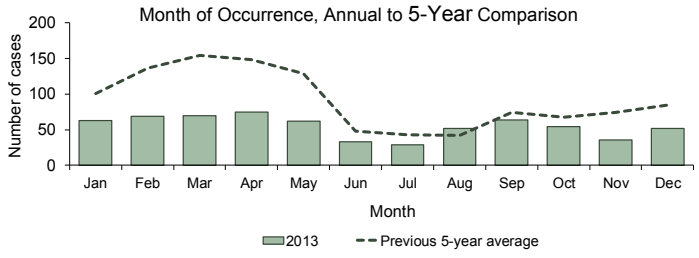
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Varicella cases were missing 10.0% of ethnicity data in 2009 and 11.1% of race data in 2009.

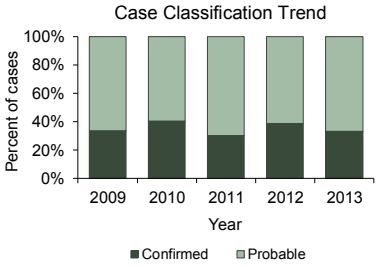
Varicella

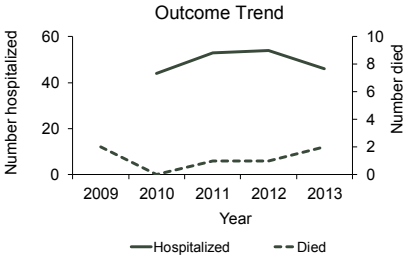
Summary of Case Factors

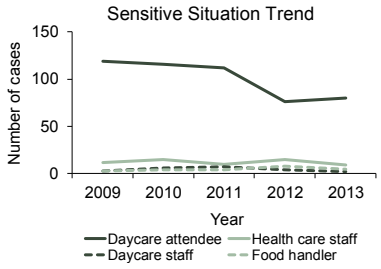
Summary	Number	
Number of cases	659	
Case classification	**Number**	**(Percent)**
Confirmed	220	(33.4)
Probable	439	(66.6)
Outcome	**Number**	**(Percent)**
Hospitalized	46	(7.0)
Died	2	(0.3)
Sensitive situation	**Number**	**(Percent)**
Daycare attendee	80	(12.1)
Daycare staff	2	(0.3)
Health care staff	9	(1.4)
Food handler	5	(0.8)
Imported status	**Number**	**(Percent)**
Acquired in Florida	622	(94.4)
Acquired in the U.S., not Florida	7	(1.1)
Acquired outside the U.S.	10	(1.5)
Acquired location unknown	20	(3.0)
Outbreak status	**Number**	**(Percent)**
Sporadic	459	(69.7)
Outbreak-associated	185	(28.1)
Outbreak status unknown	15	(2.3)

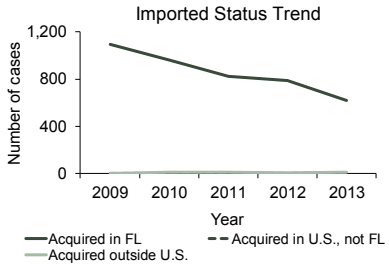
Reported Varicella Cases by Month of Occurrence, Case Classification, Outcome, Sensitive Situation, Imported Status, and Outbreak Status, Florida

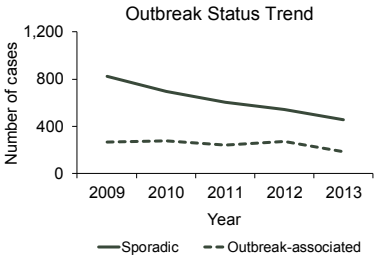












Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Sensitive situation categories are not mutually exclusive, and most cases do not fall into any of these categories. Imported status refers to where the infection was most likely acquired. Outbreak- associated indicates that two or more cases are epidemiologically linked.

Additional Information

Most cases of varicella occur in winter and spring with the highest incidence in school-aged children. There have been a few small outbreaks identified in school settings involving fewer than five cases, but the majority of cases identified as outbreak-associated were due to household clusters.

Vibriosis (Excluding Cholera)

Disease Facts

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

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

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

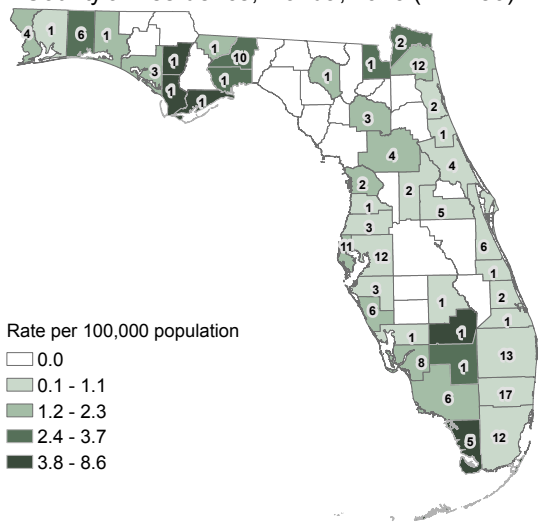
Reason for surveillance: Identify sources of transmission (e.g., shellfish collection area) and mitigate source, monitor incidence over time, estimate burden of illness

Comments: *Vibrio* species are endemic in Florida's seawater. Incidence is typically higher in the summer when exposure to seawater is more common and warmer water is conducive to bacterial growth. Incidence increased in 2013, which may in part be due to increased media attention on vibriosis since 2012.

Summary of Case Demographics

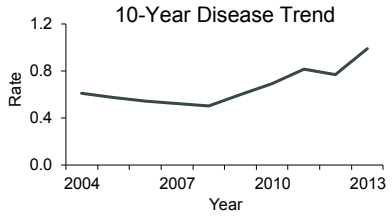
Summary			
Number of cases			191
Incidence rate (per 100,000 population)			1.0
Change from 5-year average incidence			+46.1%
Age (in years)			
Mean			49
Median			52
Min-max			2 - 98
Gender	**Number**	**(Percent)**	**Rate**
Female	54	(28.3)	0.5
Male	137	(71.7)	1.5
Unknown gender	0		
Race	**Number**	**(Percent)**	**Rate**
White	144	(80.4)	1.0
Black	26	(14.5)	0.8
Other	9	(5.0)	NA
Unknown race	12		
Ethnicity	**Number**	**(Percent)**	**Rate**
Non-Hispanic	158	(90.8)	1.1
Hispanic	16	(9.2)	NA
Unknown ethnicity	17		

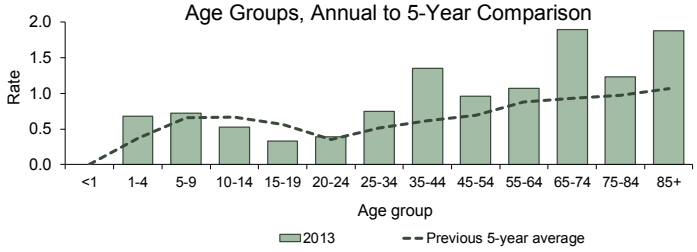
Reported Vibriosis (Excluding Cholera) Cases and Incidence Rates per 100,000 Population (Restricted to Infections Acquired in Florida) by County of Residence, Florida, 2013 (N = 180)

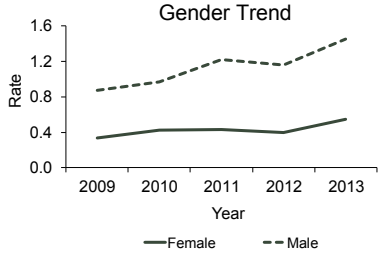


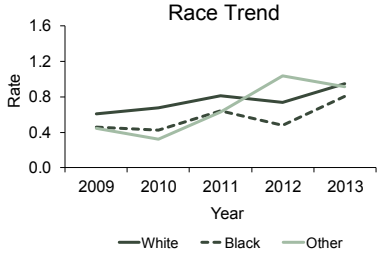
Note that rates based on <20 cases are not reliable and should be interpreted with caution.

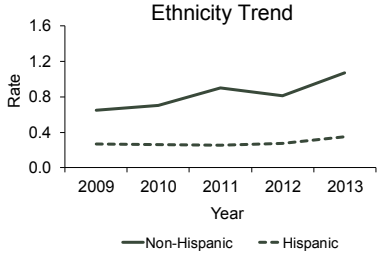
Reported Vibriosis (Excluding Cholera) Incidence Rate per 100,000 Population by Year, Age, Gender, Race, and Ethnicity, Florida











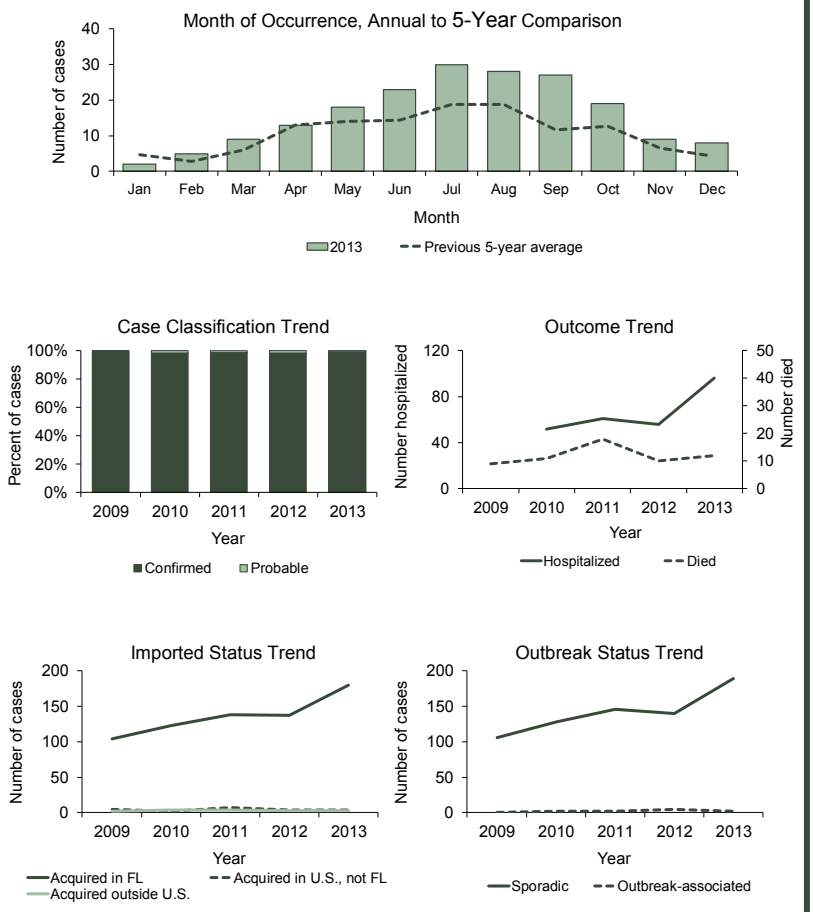
Note that trend graphs should be interpreted with caution when more than 5% of data are missing. Vibriosis (excluding cholera) cases were missing 5.4% of ethnicity data in 2009, 12.3% of ethnicity data in 2010, 10.8% of race data in 2010, 7.7% of ethnicity data in 2011, 5.2% of race data in 2011, 10.9% of ethnicity data in 2012, 8.2% of race data in 2012, 8.9% of ethnicity data in 2013, and 6.3% of race data in 2013.

Vibriosis (Excluding Cholera)

Summary of Case Factors

Summary	Number	
Number of cases	191	
Case classification	**Number**	**(Percent)**
Confirmed	190	(99.5)
Probable	1	(0.5)
Outcome	**Number**	**(Percent)**
Hospitalized	96	(50.3)
Died	12	(6.3)
Imported status	**Number**	**(Percent)**
Acquired in Florida	180	(94.2)
Acquired in the U.S., not Florida	4	(2.1)
Acquired outside the U.S.	3	(1.6)
Acquired location unknown	4	(2.1)
Outbreak status	**Number**	**(Percent)**
Sporadic	189	(99.0)
Outbreak-associated	2	(1.0)
Outbreak status unknown	0	(0.0)
Type of infection	**Number**	**(Percent)**
Vibrio parahaemolyticus	55	(28.8)
Vibrio alginolyticus	49	(25.7)
Vibrio vulnificus	41	(21.5)
Vibrio fluvialis	14	(7.3)
Vibrio cholerae Type Non-O1	12	(6.3)
Vibrio mimicus	8	(4.2)
Grimontia hollisae	4	(2.1)
Other *Vibrio* species	8	(4.2)

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



Interpretation:
Occurrence is determined by the earliest date associated with the case, which is most frequently the date of onset, but can also be the diagnosis date, the laboratory report date, or the date the county health department was notified of the case. For outcome, a case can be included in the hospitalized count as well as the death count. Hospitalized status means that a person was hospitalized at the time of their illness, though the hospitalization may not necessarily have been due to the illness. Hospitalization status is not available prior to 2010. Deaths include all people with the illness who died, though the death may not necessarily have been due to the illness. Imported status refers to where the infection was most likely acquired. Outbreak-associated indicates that two or more cases are epidemiologically linked.

Additional Information

In 2012, the most commonly reported *Vibrio* infection was *V. alginolyticus*, accounting for 38.8% of cases, compared to only 25.7% of cases in 2013. The number of infections in all other *Vibrio* species increased in 2013 compared to 2012. *Vibrio vulnificus* can cause particularly severe disease, with about 50% of bloodstream infections being fatal. Of the 41 cases due to *V. vulnificus* reported in 2013, 36 (87.8%) were hospitalized and 12 (29.3%) died, accounting for all 12 deaths in people with vibriosis. *V. vulnificus* infections typically occur in people who have chronic liver disease, a history of alcoholism, or are immunocompromised. Of the 41 cases, 35 (85.4%) had underlying medical conditions. Of the 12 people who died, three (25.0%) reported consuming seafood, one (8.3%) had a wound with exposure to seawater, one (8.3%) had multiple exposures, and seven (58.3%) had other or unknown exposures. Like other vibriosis cases, most *V. vulnificus* infections occur in the summer, in white, non-Hispanic men.

Section 3

Narratives for Selected Reportable Diseases/Conditions of Infrequent Occurrence

Arsenic Poisoning

Arsenic is a naturally occurring element that is widely distributed in the environment. It is usually found in conjunction with other elements like oxygen, chlorine, and sulfur (inorganic arsenic). Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Most arsenic-induced toxicity in humans is due to exposure to inorganic arsenic. Acute ingestion of toxic amounts of inorganic arsenic typically causes severe gastrointestinal symptoms (e.g., vomiting, abdominal pain, diarrhea), which might quickly 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 inorganic arsenic exposure are chromated copper arsenate (CCA)-treated wood, tobacco smoke, certain agricultural pesticides, and some homeopathic and naturopathic preparations and folk remedies. In addition, inorganic arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting private drinking wells (which are not regulated). Surveillance for arsenic poisoning is important to identify sources of arsenic exposure that are of public health concern (e.g., a water source, workplace exposure, homeopathic medicines, exposure to CCA-treated wood), prevent further or continued exposure, and to inform the public about how to reduce the risk of exposure.

Arsenic poisoning became a reportable condition in Florida in November 2008; since then, between 5 and 14 cases have been reported each year. Thirteen cases were reported in 2013, all of which were sporadic and laboratory-confirmed. Two cases were hospitalized, but no deaths were reported. Six cases were in women and seven were in men; 10 cases were in non-Hispanic white people, one case was in a non-Hispanic black person, and two cases were in people of unknown race and ethnicity. Ages ranged from 27 to 81 years old (average age was 57 years, median was 60 years). Cases were reported in residents of Bay (4), Broward (2), St. Lucie (2), Martin (1), Okaloosa (1), Pasco (1), Pinellas (1), and Walton (1) counties. All 13 people were interviewed. Twelve people were exposed in Florida; one person did not know where he was exposed. Three people were exposed to pesticides, one had intentional arsenic poisoning, one reported drinking well water, one took homeopathic medicines, and one person reported previous work in the mining industry. The remaining six people had unknown sources of exposure.

Brucellosis

Brucellosis is a systemic illness caused by several species of *Brucella* bacteria that can cause a range of symptoms in humans that may include fever, sweats, headaches, back pain, weight loss, and weakness. Brucellosis can also cause long-lasting or chronic symptoms that include recurrent fevers, joint pain, and fatigue. These bacteria are primarily transmitted among animal reservoirs, but people can be exposed when they come into contact with infected animals or animal products contaminated with the bacteria. Laboratorians can be at risk for exposure to *Brucella* species while working with human or animal cultures. Human infections in Florida are most commonly associated with exposure to feral swine infected with *Brucella suis*. Dogs and domestic livestock may also be infected with *B. suis*. Although dogs and dolphins may be infected with their own *Brucella* species, human illness is not commonly associated with them. Outside the U.S., unpasteurized milk products from infected goats, sheep, and cattle infected with *B. melitensis* and *B. abortus* are important sources of human infections. 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; intervening early and providing prophylaxis to prevent laboratory exposure-related infections from developing; detecting potentially contaminated products including food, transfusion, and organ transplant products; and detecting and responding to a bioterrorist event.

Over the past 10 years, between 3 and 17 brucellosis cases were reported annually in Florida residents. In 2013, nine cases were reported; six were confirmed, three were probable. The six confirmed cases included three *B. suis*, two *B. melitensis*, and one *B. abortus*. One case was outbreak

-associated, the remaining cases were sporadic. Six people were hospitalized, but no deaths were reported. Two cases were in women and seven were in men; five cases case were in non-Hispanic white people and four cases were in Hispanic white people. Ages ranged from 1 to 71 years old (average age was 48 years, median was 53 years). Cases occurred throughout the year, as is expected for a disease with an extended incubation period (up to several months) and the potential to cause chronic illness. Cases were reported in residents of Broward (2), Orange (2), Hendry (1), Lee (1), Miami-Dade (1), Polk (1), and St. Lucie (1) counties. All nine cases were interviewed. Only three infections were acquired in Florida, all associated with feral swine contact. One infection was reported as acquired in Florida but had no identified exposures in Florida and reported living on a farm in the Canary Islands. The remaining five cases reported exposures in Wisconsin, Israel, Mexico (2), and Venezuela. The exposure in Wisconsin involved butchering a pig. Exposures in Israel and Mexico included raw milk or livestock contact, including one traveler who reportedly transported a goat carcass from Mexico to Florida in a suitcase. The person who acquired infection in Venezuela was a new immigrant who could not identify a likely source of exposure, but brucellosis is highly endemic in animals in that country. This person donated platelets that were culture-positive for *B. abortus* that were transfused into an ill Miami-Dade resident. Due to rapid response by the blood bank, hospital, and the Florida Department of Health, the platelet recipient received rapid treatment with prophylactic antibiotics and was not infected.

Cholera

Cholera is an acute bacterial infection caused by toxigenic *Vibrio cholerae* serogroups O1 and O139. People with cholera can experience a wide range of symptoms, 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, seizures, coma, and death can occur within hours. Humans are the only documented natural host, but free-living *V. cholerae* organisms can exist in the aquatic environment. People get cholera after ingesting contaminated water or food. Large epidemics are often related to fecal contamination of water supplies or street-vended foods. Cholera is occasionally spread through eating raw or undercooked shellfish that are naturally contaminated. Cholera is rare in the U.S. and other industrialized nations and is usually due to ingestion of contaminated food or international travel. There has been a modest increase in imported cases since 1991 related to travel and ongoing epidemics in other countries. Surveillance for cholera in the U.S. is intended to determine if there is a source of infection of public health concern (e.g., contaminated commercially distributed food product) and to stop transmission from such a source, identify populations at risk of infection so as to provide targeted prevention outreach, and monitor trends in the epidemiology of toxigenic *V. cholerae* serogroups O1 and O139.

In Florida, cholera 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 in the U.S., so imported cases were anticipated. Four cholera cases were reported in 2010, 11 cases in 2011, seven cases in 2012, and four in 2013. All four cases reported in 2013 were culture-confirmed; all four people were hospitalized but no deaths were reported. Two cases were in women and two were in men; three cases were in non-Hispanic black people, and one was in a Hispanic white person. Ages ranged from 46 to 58 years old (average age was 51 years, median was 50 years). Cases were reported in residents of Miami-Dade (3) and Collier (1) counties. Cases occurred in July (2), September (1) and December (1). Three of the four infected people were interviewed. Three infections were acquired outside of the U.S. (two in Haiti, one in Cuba) and linked to ongoing cholera outbreaks in the originating countries. One health care worker became infected in Florida while providing hospital care for a Haitian traveler ill with cholera (see Section 4: Notable Outbreaks and Case Investigations for additional information on this incident).

Hansen's Disease (Leprosy)
Hansen's disease, commonly known as leprosy, is a bacterial disease of the skin and peripheral nerves caused by *Mycobacterium leprae*. Approximately 95% of people are resistant to infection. Those who do develop clinical illness can experience a wide range of clinical manifestations, but typically develop symptoms related to the skin, peripheral nerves, and nasal mucosa. Although the mode of transmission of Hansen's disease is not clearly defined, most investigators believe *that M. leprae* is usually spread person-to-person in respiratory droplets following extended close contact with an infected person, such as living in the same household. The incubation period is typically years, making it difficult to determine the source of infection. Some armadillos in the southern U.S. are naturally infected with *M. leprae*; it is not clear if armadillos are simply sentinels or true reservoirs of the bacteria. It is possible to get infected through contact with armadillos, but the risk is low. Transmission of Hansen's disease in the U.S. is rare, with about 200 cases reported each year. Most U.S. cases occur in immigrants, typically from Asia, the Asian Pacific Islands, and Latin America where the disease is endemic. Surveillance for Hansen's disease is intended to facilitate early diagnosis and appropriate treatment by an expert in order to minimize permanent nerve damage and prevent further transmission.

In Florida, less than 12 Hansen's disease cases are reported each year. Ten cases were reported in 2013, all of which were laboratory-confirmed cases. The median time from symptom onset to laboratory diagnosis was 8.5 months. Two people were known to be hospitalized but no deaths were reported. No cases were outbreak-associated. Five of the cases were in women and five were in men; seven cases were in non-Hispanic white people, two were in non-Hispanic black people, and one was in a Hispanic person of unknown race. Ages ranged from 35 to 75 years old (average age was 55 years, median was 58 years). Cases were reported in residents of Brevard (4), Hillsborough (2), Columbia (1), Martin (1), Okeechobee (1) and Polk (1) counties. No linkages between the cases were identified. Nine of the cases were interviewed. Two infections were reported as acquired in Florida (in Brevard County residents), one was reported as acquired outside the U.S. (Cuba), and the origin of the remaining seven infections was unknown. None of the infected people recalled direct contact with armadillos; one person reported chasing armadillos in Oklahoma. Of the nine people with known travel history, only two reported international travel (Cuba and Germany) including one person who was born in Cuba. One person was homeless.

Measles
Measles, also known as rubeola, is a vaccine-preventable respiratory disease caused by the measles virus. Before a routine vaccination program was introduced in the U.S., measles was a common illness in infants, children, and young adults. Most people have now been vaccinated in the U.S. and the disease has become rare. Measles is still common in many parts of the world where vaccination rates are low, including some countries in Africa, Asia, Europe, and the Pacific. Travelers with measles continue to bring the disease into the U.S. Measles is highly contagious among susceptible people and can spread to others from four days before to four days after a rash appears. A typical case of measles begins with mild to moderate fever, cough, runny nose, red eyes, and sore throat, possibly followed by tiny white spots inside the mouth, a red or reddish-brown generalized maculopapular rash, and high fever. Measles is only found in humans, and is spread by aerosolized droplets of saliva or mucus from the mouth, nose, or throat of an infected person, usually when the person coughs, sneezes, or talks. Surveillance for measles is important to identify infected people and prevent them from transmitting the virus to others by isolating the infected person and identifying and vaccinating any susceptible contacts. It is also important to educate potentially exposed people about the signs and symptoms of measles to facilitate early diagnosis and reduce the risk of further transmission.

In Florida, less than five measles cases are typically reported each year. In 2013, seven cases were reported; all of which were laboratory-confirmed. Six cases were outbreak-associated, including two household outbreaks. One case was hospitalized and no deaths were reported. Five cases were in

women and two were in men; six were in non-Hispanic white people and one was in a non-Hispanic black person. Ages ranged from 4 to 41 years old (average age was 22 years, median was 13 years). Cases were reported in residents of Orange (4), Seminole (2), and Broward (1) counties. Cases occurred in December (1), January (3), February (1), and March (2). All seven infected people were interviewed. Two infections were acquired outside of the U.S. (one in Mexico, one in Sudan) and the remaining five infections were acquired in Florida following introduction of the virus by an overseas traveler. None of the seven cases had a documented history of receiving measles-containing vaccine. All four cases in children had a religious exemption to vaccination requirements.

Mercury Poisoning

Mercury is a naturally occurring element distributed in the environment as a result of both natural and man-made processes. There are three forms of mercury (i.e., elemental or metallic mercury, organic mercury compounds, inorganic mercury compounds), each with unique characteristics and potential health threats. Mercury exposures are typically due to ingestion of mercury or inhalation of mercury vapors. Forms of mercury most likely encountered by the general public include elemental mercury vapor (found in some thermometers and dental amalgam), methylmercury, ethylmercury (found in some medical preservatives), and inorganic mercury (mercuric salts). Methylmercury is created when microorganisms in the environment convert inorganic mercury into its organic form, which can build up in the environment and accumulate in fish and marine mammals. Methylmercury is the most likely source of mercury leading to adverse health effects in the general population and can cause impaired neurological development; impaired peripheral vision; disturbed sensations (e.g., “pins and needles feelings” usually in the hands, feet, and around the mouth); lack of coordinated movements; impaired speech, hearing, and walking; and muscle weakness. Surveillance for mercury poisoning is important to determine if there is a source of mercury exposure of public health concern (e.g., fish, broken thermometer, dental amalgams), prevent further or continued exposure, and to inform the public about how to reduce the risk of exposure.

The number of mercury poisoning cases reported in Florida varies by year, from a high of 69 cases in 2008 to a low of five cases in 2013. All five cases were sporadic and laboratory-confirmed in urine (≥10 micrograms per liter [µg/L]) or whole blood (≥10 µg/L). No one was hospitalized and no deaths were reported. Two cases were in women and three were in men. Three cases where in non-Hispanic white people, one was in a non-Hispanic mixed-race person, and one was in a white person of unknown ethnicity. Ages ranged from 4 to 66 years old (average age was 39 years, median was 33 years). Cases were reported in residents of Bay (1), Miami-Dade (1), Duval (1), Highlands (1), and Monroe (1) counties. Only two people were directly interviewed, though some exposure information was available from the diagnosing physician for two additional cases. All five people were exposed in Florida. Four of the people reported fish consumption within a month of illness identification. Two people reported eating ≤12 ounces of fish per week, one person reported 36 to 60 ounces per week, and one person did not report their fish consumption. One person did not report any high-risk exposures for mercury poisoning.

***Staphylococcus aureus* Infection, Intermediate Resistance to Vancomycin**

Staphylococcus aureus is a common bacterium found on the skin and in the noses of healthy people. Most *S. aureus* infections are minor, but sometimes serious or fatal bloodstream infections, wound infections, or pneumonia can occur. *S. aureus* is also an important cause of health care-associated infections, especially among chronically ill patients who have recently had invasive procedures or who have indwelling medical devices. *S. aureus* is transmitted person-to-person by direct contact. *S. aureus* is spread via hands, especially among health care workers, which may become contaminated by contact with colonized or infected patients; colonized or infected body sites of the health care workers themselves; or devices, items, or other environmental surfaces contaminated with body fluids containing *S. aureus*.

Methicillin-resistant *S. aureus* (MRSA) is typically resistant to many antibiotics and has become more common in the last decade. Consequently, physicians rely heavily on vancomycin as the primary antibiotic for treating patients with serious MRSA infections. Vancomycin-intermediate *S. aureus* (VISA) and vancomycin-resistant *S. aureus* (VRSA) have acquired intermediate or complete resistance to vancomycin. VISA emerges when a patient with preexisting MRSA infection or colonization is exposed to repeated vancomycin use and the *S. aureus* strain develops a thicker cell wall. This resistance mechanism is not transferrable to susceptible strains. In contrast, VRSA emerges when a strain of *S. aureus* acquires the *vanA* gene from a vancomycin-resistant *Enterococcus* (VRE) organism. Recent exposure to vancomycin is not necessary. This type of gene-mediated resistance is theoretically transferable to susceptible strains or organisms, so there is potential for person-to-person transmission. No VRSA infection has ever been detected in Florida. Surveillance for VISA and VRSA is intended to identify infected people, evaluate their risk factors for infection, assess the risk of a patient transmitting infection to others, and to prevent such transmission. Additionally, it is important to track the emergence of a relatively new and rare clinically important organism.

Typically, between one and seven VISA cases are reported in Florida annually. Five cases were reported in 2013, all of which were sporadic and laboratory-confirmed. All five cases were hospitalized and two cases died, though not necessarily from their VISA infection. Two cases were in women and three were in men; all cases were in non-Hispanic white people. Ages ranged from 50 to 85 years old (average age was 68 years, median was 70 years). Cases were reported in residents of Palm Beach (3), Duval (1), and Hillsborough (1) counties. All cases were investigated, though only one case was interviewed.

Tetanus

Tetanus is a life-threatening but vaccine-preventable disease caused by the toxin produced by *Clostridium tetani* bacteria. Another name for tetanus is "lockjaw" because it often causes a person's neck and jaw muscles to lock, making it hard to open the mouth or swallow. Other symptoms may include headache, muscle spasms, painful muscle stiffness all over the body, seizures, fever and sweating, high blood pressure, and fast heart rate. Tetanus can be prevented through immunization and is rare in the U.S. Tetanus vaccines are available for children and adults in several different formulations. Booster tetanus vaccines are recommended at least every 10 years. Nearly all cases of tetanus are among people who have never received a tetanus vaccine or adults who do not stay up-to-date on their 10-year booster shots. Unlike other vaccine-preventable diseases, tetanus is not spread from person to person. *C. tetani* bacteria are found in high concentrations in soil and animal excrement and people can become infected when contaminated soil, dust, or manure enter the body through breaks in the skin (usually cuts or puncture wounds caused by contaminated objects). Tetanus is under surveillance to monitor the effectiveness of immunization programs and vaccines and to collect information on the temporal, geographic, and demographic occurrence to facilitate its prevention and control.

Typically, two to five tetanus cases are reported in Florida residents each year. Five cases were reported in 2013, all of which were sporadic and classified as probable. There are no clinical laboratory tests that can confirm tetanus infection. Due to the lack of confirmatory testing, there is no confirmed case definition for tetanus. All five people were hospitalized and one death was reported. Two cases were in women and three were in men; two cases were in non-Hispanic white people, one was in a non-Hispanic black person, one was in a non-Hispanic American Indian/Alaskan native, and one was in non-Hispanic person of unknown race. Ages ranged from 16 to 79 years old (average age was 47 years, median was 36 years). Cases were reported in residents of Duval (2), Broward (1), Miami-Dade (1), and Okaloosa (1) counties.

Four of the five infected people were interviewed. One man sustained a puncture wound on his finger with dirty steel cable, one man was cut during an outdoor sculpting class, one elderly man was cut on the hand while cleaning a pool, and one elderly woman was cut on the arm after falling onto a footstool. The exposure history for the infected woman who was not interviewed is unknown. One person was up-to-date on vaccinations, two were not up-to-date on vaccinations, and the vaccination status of two people was unknown.

Typhoid Fever

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. *Salmonella* Typhi lives only in humans. People get typhoid fever after eating food or drinking beverages that have been handled by a person who is shedding *Salmonella* Typhi in their stool 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. Good sanitation and aggressive case follow-up help prevent typhoid fever from becoming endemic in industrialized regions. Surveillance for typhoid fever is intended to determine if there is a source of infection of public health concern (e.g., an infected food handler or contaminated commercially distributed food product) and to stop transmission from such a source, assess the risk of infected people transmitting infection to others and prevent such transmission, and identify other unrecognized cases.

Typically, 10 to 20 typhoid fever cases are reported in Florida residents annually, with incidence peaking in summer months. Approximately 80% of infections are acquired in other countries. Eleven cases were reported in 2013, 10 of which were confirmed. The single probable case was epidemiologically linked by household to one of the confirmed cases; these were the only two outbreak-associated cases. Nine people were hospitalized, but no deaths were reported.
Seven cases were in women and four were in men. Five cases were in Hispanic white people, three were in non-Hispanic black people, two were in non-Hispanic Asian/Pacific Islanders, and one was in a non-Hispanic white person. Ages ranged from 3 to 93 years old (average age was 36 years, median was 32 years). Cases were reported in residents of Collier (3), Miami-Dade (3), Broward (2), Duval (1), Hendry (1), and Palm Beach (1) counties. All 11 cases were interviewed. Five infections were acquired outside of the U.S. (two each in India and Haiti, one in Nepal). Two infections were acquired in Florida (Collier and Miami-Dade county residents) with no source of infection identified for either case. The remaining four people spent time in Florida and other countries (two in Mexico, one in Haiti, one in Guatemala) during their exposure period. These infections were most likely acquired outside the U.S.

West Nile Virus Disease

West Nile virus (WNV) is a mosquito-borne flavivirus that was first introduced to the northeastern U.S. in 1999 and first detected in Florida in 2001. Since its initial detection, WNV activity has been reported in all 67 Florida counties. People with WNV infections can experience a wide range of symptoms. Approximately 80% of those infected show no clinical symptoms, 20% have mild symptoms (headache, fever, pain, fatigue), and less than 1% suffer from the neuroinvasive form of illness, which may involve meningitis and encephalitis and can cause irreversible neurological damage, paralysis, coma or death. Several species of *Culex* mosquitoes, animals (particularly wild birds and horses), and humans are all documented hosts for WNV. People become infected when they are bitten by a mosquito infected with WNV. WNV can also be transmitted to humans via contaminated blood transfusions and less frequently through organ transplantation. Since 2003, all blood donations are screened for the presence of WNV prior to transfusion. Symptoms typically appear from 2 to 14 days after the exposure. People spending much time outside (due to occupation, hobbies or homelessness) or not using insect repellant or other forms of prevention are at higher risk of becoming infected. Surveillance for WNV disease is important to identify areas where WNV is being transmitted to target public education on prevention, monitor incidence over time, and estimate the burden of illness.

The incidence of WNV disease in Florida varies greatly from year to year but the incidence consistently peaks between July and September. The largest number of cases (94) was reported in 2003; from 2006 to 2009, only three cases were reported each year. In 2012, 74 cases were reported, compared to only seven cases reported in 2013. All seven cases were sporadic; six confirmed cases and one probable were reported. Six people were hospitalized but no deaths were reported. One case

was in a woman and the remaining six cases were in men; six cases were in non-Hispanic white people and one was in a non-Hispanic black person. Ages ranged from 41 to 69 years old (average and median age was 57 years). Cases were reported in residents of Duval (3), Alachua (1), Leon (1), Nassau (1), and Polk (1) counties. Consistent with past years, cases occurred in August (2), September (3), October (1) and November (1). Six of the seven infected people were interviewed. Six infections were acquired in Florida and one infection was acquired in South Dakota.

Asymptomatic WNV infections do occur, though they do not meet the Florida surveillance case definitions; two asymptomatic infections were identified in Florida residents in 2013. One asymptomatic blood donor from Duval County was reported with donation in August 2013. In addition, a WNV-associated transplant investigation was conducted when a Texas organ donor tested positive. One of the organ recipients was a Brevard County resident, who received a liver transplant in September 2013. A subsequent serum sample was positive for WNV by polymerase chain reaction-positive, though her infection remained asymptomatic.

Section 4

Notable Outbreaks and Case Investigations

Notable Outbreaks and Case Investigations

In Florida, any disease outbreak in a community, hospital or institution, as well as any grouping or clustering of patients having similar disease, symptoms, syndromes or etiological agents that may indicate the presence of an outbreak is reportable as per Florida Administrative Code Chapter 64D-3. Selected outbreaks or case investigations of public health importance that occurred in 2013 are briefly summarized in this section.

Table of Contents

Bacterial Diseases

Notable Outbreaks and Case Investigations

Bacterial Diseases

Bordetella pertussis: Outbreak of Pertussis in a Community That is Averse to Medical Treatments and Vaccines, Columbia County

Background: On August 30, 2013, the Florida Department of Health (DOH) in Columbia County (DOH-Columbia) was notified of a positive polymerase chain reaction test for *Bordetella pertussis* from an unvaccinated child attending a local charter school in a medical- and vaccine-averse religious community. Interviews confirmed a sibling with symptoms consistent with pertussis. By September 3, another child from the same school was confirmed to have pertussis. Because of the potential for spread in this unvaccinated community, on September 12, a declaration of communicable disease emergency was instituted by DOH-Columbia; children with cough were excluded from school and re-entry required an evaluation by a health care provider. Following laboratory confirmation of a fourth patient on September 27, DOH-Columbia requested epidemiologic assistance from the DOH Bureau of Epidemiology. An investigation was conducted to control the spread of pertussis and determine disease incidence within this community.

Methods: Medical record review and household interviews were conducted for 130 children excluded or absent from the charter school for cough illness. Cases were classified using the DOH surveillance case definition for pertussis. A suspect case definition was created to capture people with a cough illness of 7 to 13 days duration or who received treatment for pertussis without additional clinical details. Cases were investigated to determine onset date, vaccination status, demographics, and attack rates by grade level.

Results: A total of 109 people were classified as confirmed (8), probable (61), or suspect (40) cases within this community. Out of 316 students and 16 teachers, 94 students (30%) and one teacher (6%) met the case definition. Fourteen of the cases were household contacts of ill charter school students. Only one confirmed and one probable case reported receiving any vaccination against pertussis. The investigation identified 14 cases with symptom onset prior to the first reported case. Students and household contacts were evaluated and treated primarily by one pediatrician who performed minimal laboratory testing and did not report clinically diagnosed pertussis cases to DOH. Attack rates were highest in the youngest students (pre-kindergarten attack rate was 57%) and decreased with increasing age (eighth grade attack rate was 14%).

Conclusions and Recommendations: In vaccine-averse communities, controlling vaccine-preventable disease outbreaks is challenging, particularly when susceptible community members have prolonged contact in multiple settings. The use of extraordinary outbreak control measures including a school-wide cough exclusion policy and a low threshold for prescribing household prophylaxis should be evaluated in communities with low pertussis immunity. Physicians need to understand the importance of reporting presumptive pertussis cases without laboratory confirmation. In medically averse communities, local public health agencies need to identify and collaborate with health care resources used by that community.

Bordetella pertussis: Outbreak in a Cohort of Recently Vaccinated 1- to 5-Year-Olds, Leon County

Background: Despite widespread childhood vaccination in the U.S., the prevalence of pertussis has increased steadily over the past few decades. On September 1, 2013, the Florida Department of Health (DOH) in Leon County was notified of a positive polymerase chain reaction (PCR) test for *Bordetella pertussis* in a 1-year-old preschool attendee, followed by two additional PCR-positive pertussis cases on December 11, 2013 and December 16, 2013, linked to the same preschool. In response to these reports, an outbreak investigation was initiated.

Methods: The DOH surveillance case definition for pertussis was used to classify cases for this outbreak. On December 19, 2013, a site visit at the preschool was conducted to query staff, identify children with pertussis-like symptoms, recommend post-exposure antimicrobial prophylaxis if indicated, and conduct school surveillance. On January 7 and 8, 2014, DOH staff administered an on-site questionnaire inquiring about cough illnesses between December 1, 2013 and January 8, 2014 to student and staff households. The survey had a 98% completion rate by January 8, 2014.

Results: Eleven people were classified as confirmed cases: five laboratory-confirmed and six epidemiologically linked household contacts. Twenty-eight people were classified as probable cases. Four of the infants and children were hospitalized. The highest attack rate (47%) was observed in the 3-year-old classroom (nine cases among 17 people). Of the 26 child cases, 24 were up-to-date on pertussis vaccine. Vaccine effectiveness amongst children attending the preschool was estimated to be 45%. The average number of days from last vaccination to onset of symptoms for the students was only 667 days and seven (27%) children were vaccinated within the past year.

Conclusions and Recommendations: The high attack rates among the cohort of recently vaccinated 1- to 5-year-olds made this an unusual outbreak. Physicians need to be aware that vaccination against pertussis does not preclude a pertussis infection, and it is imperative that county health departments and health care providers establish communications to ensure appropriate testing, treatment, and investigations for pertussis. Further monitoring of acellular pertussis vaccine performance in this preschool age group is necessary to determine if this outbreak was an isolated finding or possibly the start of a new epidemiologic trend.

Bordetella pertussis: Household Outbreak and Infant Death, Orange County

Background: On April 14, 2013, a local hospital infectious disease (ID) physician notified the Florida Department of Health in Orange County (DOH-Orange) of a suspect pertussis case in a 6-week-old boy. The infant had onset of paroxysmal cough approximately on April 8, and subsequent brief episodes of apnea beginning on April 12. Against the recommendation of the infant's pediatrician, the parents treated the infant with homeopathic remedies prior to hospitalization. The infant was hospitalized on April 14, requiring mechanical ventilation and died on April 16. The case represents the first pertussis-related death in Orange County since the early 1990's and the only pertussis-related death in Florida in 2013.

Methods: An investigation was immediately initiated, with an interview with the infant's mother and father. Health status and vaccine histories were obtained for three siblings (2-, 4-, and 7-year-olds), parents, paternal grandparents, and two additional relatives. The infant's parents were philosophically opposed to vaccination. Student immunization records and symptom assessments were conducted at one linked school.

Results: On April 16, the initial case tested positive for *Bordetella pertussis* by polymerase chain reaction. The three siblings were unvaccinated. All siblings were symptomatic, with approximate cough illness onsets from April 3 to April 5, along with paroxysmal cough, posttussive vomiting, and apnea. The parents and grandparents reported receiving no vaccines since childhood. The hospital ID physician provided prophylaxis treatment for immediate family members and two grandparents and recommended prophylaxis for two extended family members. DOH-Orange facilitated filling prescriptions as needed. At the school attended by the 4-year-old, a pertussis notification letter was distributed to parents. All other students at the school were up-to-date on vaccinations and no other cases were identified.

Conclusions and Recommendations: This household outbreak highlights the ease of transmission among susceptible people and potential severity of pertussis in infants. When pertussis is introduced into a susceptible group, transmission can occur immediately after disease onset, often before diagnosis by a physician and initiation of disease prevention interventions. To educate the community, a media release was distributed on April 19 highlighting pertussis, mentioning the infant death, and noting the importance of vaccination.

Clostridium tetani: Tetanus Mortality in Unvaccinated Woman, Duval County

Background: On April 24, 2013, the epidemiology program at the Florida Department of Health in Duval County (DOH-Duval) received a report of a wound culture presumptive positive for *Clostridium tetani* from a 79-year-old woman from Duval County. The woman had symptoms consistent with tetanus and a history of an anaphylactic reaction to a tetanus diphtheria vaccination prior to 1947. The woman had not received any further tetanus or diphtheria vaccinations or any desensitization therapy for the allergy to the vaccine throughout her life. An anaphylactic reaction to vaccines containing tetanus or diphtheria toxoids is a contraindication to further doses, unless the patient can be desensitized by an allergy specialist.

Methods: DOH-Duval initiated an investigation and coordinated information and updates through the hospital infection control nurse. Risk factor information was obtained from interviewing the patient's daughter. The hospital's referral laboratory performed laboratory testing on a specimen collected from the arm wound.

Results: The woman fell at her home in mid-March, wounded her arm, and developed malaise and headache during the last week of March. On April 13, symptoms progressed to pain in the jaw, tongue, both ears, and the back of her head, and she was not able to sleep or eat due to the pain. The severity of the jaw pain increased, and she was admitted to the hospital on April 16. Trismus (lockjaw) was present upon admission. The infected arm wound was culture-positive for *C. tetani*. The woman received tetanus immune globulin and tetanus and diphtheria toxoids vaccine within 24 hours of admission. The day after admission she experienced a respiratory code, was intubated, developed multi-system organ failure, and subsequently died 10 days after admission.

Conclusions and Recommendations: Tetanus is normally diagnosed clinically by excluding other causes of the syndrome, usually without confirmatory laboratory tests, as the culture of *C. tetani* has low sensitivity. Along with the clinical diagnosis of tetanus, the wound culture that was positive for *C. tetani*, which is rarely recovered from the infection site, excluded other causes of illness. Patients with a new wound that have unknown or no tetanus vaccine history should be evaluated by a health care provider as soon as possible for immediate administration of tetanus-containing vaccine and tetanus immune globulin, if indicated.

Clostridium tetani: A Case of Imported Tetanus, Sarasota County

Background: On Monday, March 18, 2013, the Florida Department of Health in Sarasota County (DOH-Sarasota) was notified of a 45-year-old man with sudden onset of spasms and trismus (tightening of the jaw) characteristic of tetanus. The man had arrived from Mexico on a work visa two days prior to presenting to a local emergency department on March 11. The man had been transferred to a Sarasota hospital for more comprehensive care from a hospital in an adjacent county.

Methods: DOH-Sarasota initiated an investigation to characterize the case and determine risk factors for tetanus.

Results: From March 11 to April 25, he remained comatose in the intensive care unit on a ventilator listed in guarded condition. The hospital checked with other local hospitals for tetanus immune globulin (TIG). The hospital was unable to obtain the desired 3,000 units of TIG and gave 2,750 units on March 13, as well as the first dose of tetanus vaccine. As of April 29, he was awake, alert, and removed from the ventilator. He continued to have minor symptoms attributed to tetanus toxin remaining in his body, including intermittent fevers and mild tachycardia. On May 17, he was sent to the hospital's rehabilitation facility. He continued to have some limitations with leg movement. His family came from Mexico and took him home on May 31. The case was interviewed and he had no memory of any injury leading up to this event and had worked prior to becoming ill doing general farm labor.

Conclusions and Recommendations: Tetanus is a severe disease that can cause long-term morbidity and mortality. Rapid treatment of suspected tetanus cases with airway protection, TIG, antibiotics, sedatives, wound management, and supportive therapy is important to prevent further nervous system involvement and reduce disease severity. Research suggests that a 500-unit dose of TIG is as effective as larger doses, thus physicians should consider immediately administering 500 units of TIG if available. Hospitals can order TIG for overnight delivery from the manufacturer. Note that because this case was in a non-U.S. resident, it is not included in counts elsewhere in this report.

Ehrlichia: Fatal Ehrlichiosis Acquired in Florida, Pasco County

Background: Ehrlichiosis is a reportable tick-borne illness also referred to as human monocytic ehrlichiosis (HME). In humans, disease can be caused by any of at least three species of *Ehrlichia*: *Ehrlichia chaffeensis*, *E. ewingii* and *E. muris*-like. *E. chaffeensis* is thought to be the most pathogenic of these three rickettsial bacteria. The primary tick vector in Florida is the lone star tick, *Amblyomma americanum*. The incubation period is typically 5 to 14 days after being bitten by a tick. Symptoms may include fever, headache, chills, malaise, myalgia, nausea, vomiting, encephalitis, and sometimes rash. Abnormal laboratory findings may include leukopenia, thrombocytopenia, and elevated liver enzymes. Mortality is typically less than 1-2%. Immunosuppression and delays in appropriate treatment with doxycycline can lead to more severe illness. Illness is most common in men and those over 50 years of age. On March 28, 2013, the Florida Department of Health in Pasco County (DOH-Pasco) received an electronic laboratory report (ELR) for a patient with a positive immunoglobulin G (IgG) titer for HME of 1:1024.

Methods: Medical records were requested from the hospital and a local urgent care facility that provided care for the man, and interviews were conducted with next-of-kin by DOH-Pasco to determine if the case met the national surveillance case definition for ehrlichiosis.

Results: The investigation conducted by DOH-Pasco identified that the man was a 72-year-old resident of Michigan with a history of diabetes mellitus and coronary artery disease. In early March, the man and his spouse spent time at a Florida state park in Columbia County. Following the visit to the state park, ticks were found on the man and his dogs, and one attached tick was subsequently found on the man's buttocks. Approximately one week later, the man developed fever and reported not feeling well. He sought care on March 13 at a Pasco County urgent care clinic with symptoms of fever, myalgia, nausea, and sinusitis; thrombocytopenia was also present. He was prescribed sulfamethoxazole/trimethoprim but symptoms worsened with back and knee pain and altered mental status developing. On March 18, the man presented at a Pasco hospital emergency department and was admitted. The man was found to be in atrial fibrillation, with encephalitis, thrombocytopenia, leukopenia, elevated liver enzymes, and mildly elevated creatinine. During interviews with family members, the recent tick bites were reported. Serum samples collected on March 21 were submitted for tick-borne disease testing and doxycycline treatment was initiated. On March 22, the man's condition deteriorated and he went into cardiac arrest leading to anoxic brain injury, coma, and intubation. On March 27, he was terminally extubated and he expired.

Conclusions and Recommendations: Early symptoms of ehrlichiosis are non-specific and in this case were masked by concurrent sinusitis making diagnosis more difficult. Collecting information about recent outdoor activities is important for tick-borne diseases and can facilitate earlier diagnosis and treatment. The patient died before the CHD was notified via ELR.

Escherichia coli: Cluster of *Escherichia coli* O157:H7 Gastroenteritis and Hemolytic Uremic Syndrome, Duval County

Background: The Florida Department of Health in Duval County (DOH-Duval) was notified by a local hospital on September 20, 2013 of a patient diagnosed with severe gastroenteritis and a stool test positive for *Escherichia coli* O157:H7. During the interview, the infected person mentioned routinely consuming raw food items from the Native Sun Natural Food Market. A second case with the same diagnosis was reported to DOH-Duval on September 23. An interview determined that this infected person purchased and consumed foods similar to the first case. On September 24, two siblings diagnosed with hemolytic uremic syndrome (HUS) were reported. HUS is a severe complication of *E. coli* infection that can lead to kidney failure due to destruction of red blood cells. Interviews identified that the siblings had consumed food items similar to the previous two cases. In response to these four cases, an outbreak investigation was initiated to determine the vehicle of the outbreak and prevent additional cases.

Methods: DOH-Duval notified local health care practitioners of the increase in *E. coli* and HUS reports and reminded providers to report all cases of Shiga toxin-producing *E. coli* and HUS to DOH-Duval. A request for active surveillance was also made to the local infection control practitioners. Four stool specimens were forwarded to the Bureau of Public Health Laboratories in Jacksonville (BPHL) for confirmation and pulsed-field gel electrophoresis (PFGE) analysis. All cases were interviewed using a standard questionnaire. An environmental assessment of the grocery store was conducted with outbreak investigation team members and the Florida Department of Agriculture and Consumer Services. A case was defined as a person diagnosed with *E. coli* O157 or HUS who consumed food purchased from the natural food store.

Results: Six people were identified as meeting the case definition (four *E.coli* O157:H7 and two HUS). Four cases (67%) were in women. The four people diagnosed with *E.coli* had ages ranging from 34 to 69 years with a median age of 62 years. The two HUS cases were in a 17-year-old and a 19-year-old. All six experienced diarrhea, bloody stools, and abdominal cramping. Five cases were hospitalized and no deaths were reported. Onset dates ranged from September 14 to 19. Food histories indicated that all six cases consumed kale coleslaw made at the store. PFGE analysis by BPHL found that all specimens had indistinguishable patterns. The environmental assessment identified a single supplier of the kale.

Conclusions and Recommendations: This was an outbreak of *E. coli* O157:H7 and HUS likely associated with kale from the natural food store. The store was made aware of the potential contamination issue and stopped using the identified product; no product was left in the store for additional analysis or traceback.

Legionella pneumophila: Legionellosis Outbreak Associated With a Recreational Vehicle (RV) Resort, DeSoto County

Background: The Florida Department of Health in DeSoto County (DOH-DeSoto) investigated three legionellosis cases that occurred in April 2013 in occupants of a local recreational vehicle (RV) resort. In response to these three cases associated with the facility, an outbreak investigation was initiated to determine the sources of illness, identify additional cases, and recommend control and prevention strategies.

Methods: A list of occupants was provided to DOH-DeSoto for additional case finding. A notification letter was sent to people who stayed at the RV resort during April. An environmental assessment of the RV resort, pool, and spa was conducted by DOH-DeSoto and the regional environmental epidemiologist. Samples collected from the spa and outdoor shower were sent to the Bureau of Public Health Laboratories in Jacksonville (BPHL) for *Legionella pneumophila* testing. A confirmed case was defined as laboratory-confirmed legionellosis in a resident or guest of the RV resort in April. A suspect case was defined as physician-diagnosed pneumonia in a resident or guest of the RV resort in April.

Results: Four people met the case definition (three confirmed, one suspect). Two cases (50%) were in women. Ages ranged from 64 to 73 years old, with a median age of 68.5 years old. All three confirmed cases were hospitalized. The RV resort had a 27,406-gallon outdoor pool with diatomaceous earth filter and a 1,414-gallon outdoor hot tub with two cartridge filters that were cleaned twice a month, both of which used automatic chlorine feeders. During the environmental assessments, the pool and spa were in satisfactory condition. The environmental samples tested by BPHL were negative for *Legionella pneumophila*. Three of the four cases reported regular usage of the hot tub.

Conclusions and Recommendations: Epidemiologic data indicate that the source of the legionellosis outbreak was the RV resort in DeSoto County. The only common exposure identified among the four cases was staying at this RV park in the month of April. The negative environmental samples may be due to the time lapse from exposure and sample collection and from remediation known to have occurred prior to sampling (i.e., addition of chlorine). Negative laboratory results do not rule out the possibility that *Legionella* bacteria were present at the time of exposure or intermittently during multiple exposures.

Legionella pneumophila: Hospital-Associated Legionellosis Cluster, Indian River County

Background: On October 11, 2013, the Florida Department of Health in Indian River County (DOH-Indian River) was notified of a legionellosis case who was an inpatient at a local hospital for 19 days prior to symptom onset. An investigation was initiated and on October 24, DOH-Indian River was notified of another case associated with the facility. Active case finding was initiated, and environmental assessment of the facility was conducted to determine the source and prevent additional cases.

Methods: DOH-Indian River recommended *Legionella* testing for patients who developed pneumonia while hospitalized, as well as patients readmitted within 10 days of discharge with a new diagnosis of respiratory disease or pneumonia. An environmental assessment of the facility was conducted and potable water samples were collected and submitted to the Bureau of Public Health Laboratories in Jacksonville (BPHL) for analysis. A case was defined as any person diagnosed with legionellosis who had been hospitalized at the facility for any part of the 10 days prior to symptom onset.

Results: Four people met the case definition, half of whom were women. Ages ranged from 41 to 74 years old with a median age of 70.5 years. All people had at least one medical condition that put them at a higher risk for developing *Legionella* infection after exposure. All four people stayed in the acute care wing or rehabilitation section of the facility. Multiple water samples collected from these patient rooms were analyzed by the BPHL and were positive for *Legionella pneumophila*. The acute care and rehabilitation wings have a shared recirculating hot water system. The rehabilitation wing was closed for a year for remodeling and recently reopened. During remodeling, hot water was stagnant in the unit due to non-use. When the system was brought back online, no disinfection or flushing of the hot water system was done. The rehabilitation facility requires that point-of-use hot water temperatures are between 105-115 °F. The hot water system supplied both acute care and rehabilitation rooms, resulting in a hot water temperature decrease in both units.

Conclusions and Recommendations: American Society of Heating, Refrigeration, and Air-Conditioning Engineers guidelines cite water temperatures of 77-108 °F and stagnation as factors that can contribute to amplification of *Legionella*. DOH-Indian River recommended the facility begin remediation and have a *Legionella* monitoring and control plan developed for their facility, continue active surveillance for new cases of legionellosis, and report these immediately to DOH-Indian River. No additional legionellosis cases were reported.

Multiple Bacteria: Injection-Site Abscesses Associated With Contaminated Compounded Preservative-Free Methylprednisolone Injections, Washington County

Background: On May 28, 2013, Main Street Family Pharmacy (MSFP) of Tennessee recalled all lots of sterile compounded products manufactured since December 1, 2012. On June 7, 2013, the Food and Drug Administration (FDA) reported bacterial and fungal growth from two separate lots of unopened 80 milligrams per milliliter (mg/mL) 10 milliliter (mL) vials of preservative-free methylprednisolone acetate (PF-MPA) from MSFP. As of June 27, 2013, the Centers for Disease Control and Prevention (CDC) reported 26 people in four states had an infection suspected to be associated with exposure to recalled MSFP products. The investigation objective was to identify injection-site abscesses and quantify risk factors from injections with subsequently recalled PF-MPA 10 mL single dose (not labelled as such) vials from MSFP administered to multiple patients at a single clinic in Florida.

Methods: Medical records were abstracted for people identified at the Florida clinic with an adverse event and for all people recorded as exposed to PF-MPA lots 011413dan and 120612dan. Facility records from July 2006 to August 2013 were queried for ICD-9 CM 682.5 (abscess of the buttocks) and 680.5 (carbuncle of the buttocks) codes to identify additional adverse events. Univariate analysis and logistic regression were performed to identify risk factors for adverse events and to control for demographic factors, co-morbidities, and injection-related risk factors.

Results: Sixteen of 307 exposed people developed soft tissue abscesses at the injection site, an attack rate of 5%. Twelve patients (75%) required incision and drainage of their abscesses for treatment. Most patients received injections for symptoms related to allergic rhinitis or an acute upper respiratory infection. Four of the abscesses were cultured; *Klebsiella pneumoniae* was identified in all four cultures and *Enterobacter cloacae* was identified in two cultures. Increasing body mass index (BMI) (odds ratio [OR] = 1.17; 95% confidence interval [CI]: 1.04-1.33), age of vial at injection (OR = 1.13; CI: 1.00-1.27), and receiving an injection during an 11-day period (OR = 10.01; CI: 1.49-67.11) were significant factors associated with adverse events. Query of ICD-9 CM codes identified two additional patients who received an injection with MPA prior to diagnosis of abscess of the buttocks.

Conclusions and Recommendations: Health care providers should factor BMI and potential fat pad depths for intramuscular injections to reach the muscle, and alter needle length and gauge to reach the intended injection location. A written protocol for the PF-MPA injections including needle size and gauge should be created and trainings on this protocol provided to staff administering injections. Preservative-free compounded products should only be used when absolutely necessary and should be considered single-dose products. Health care practitioners should be reminded to report any adverse events from pharmaceuticals to MedWatch, the FDA safety information and adverse event reporting program.

Mycobacterium tuberculosis: Large Contact Investigation in Response to a High School Student With Active Tuberculosis, Marion County

Background: On July 29, 2013, the Florida Department of Health (DOH) in Marion County (DOH-Marion) was notified of a 17-year-old boy hospitalized with suspected pulmonary tuberculosis. The patient was a household contact to a previous tuberculosis case, despite negative tuberculin skin tests (TST) in August and November 2012. In April 2013, he was evaluated for chest pain, and over the course of a month experienced symptoms of vomiting, abdominal pain, fever, decreased appetite, cough, night sweats, and weight loss of 14 pounds. In May, the patient was diagnosed with pneumonia. On July 25, a chest x-ray and CT without contrast were ordered to evaluate productive cough and pleuritic chest pain. The patient was diagnosed with bilateral pneumonia and admitted to the hospital. *Mycobacterium tuberculosis* was cultured from sputum collected August 9. To evaluate if *M. tuberculosis* was transmitted to close contacts and prevent active disease, a contact investigation was initiated.

Methods: Medical records were obtained and reviewed by the Tuberculosis Physician's Consultation Network. An initial case interview was conducted on July 30; close contacts, those people with a minimum of eight hours shared air space during the infectious period, were documented, education was provided, and directly observed treatment (DOT) was explained. The investigation included contacting family and social contacts, and coordinating with the local school district to obtain contacts for the 2012-2013 school year, summer school, and school bus transportation. A strike team was organized to conduct calls, mail, and hand-deliver letters to several schools and private residences. DOH, Quest Diagnostics, and Qiagen, who manufactures the Quantiferon Gold test kit, worked with a local clinic to collect blood for Quantiferon Gold-Interferon Gamma Release Assay (IGRA) testing. Contacts who were positive for *M. tuberculosis* infection were further evaluated and offered treatment for latent tuberculosis infection (LTBI). A second round of testing among identified contacts was conducted 10 weeks from last exposure.

Results: A total of 150 (88%) of 170 contacts were tested, six by tuberculin skin test (TST) and the rest by IGRA. One contact had already begun LTBI preventative therapy and was therefore not tested. The remaining contacts either refused testing or were unable to be reached despite extensive efforts. Of the people tested, 12 (8%) were diagnosed with LTBI and 11 received preventative therapy, all of whom completed their treatment course for a completion rate of 92%.

Conclusions and Recommendations: Due to the rural community and the young target population, there were challenges in reaching contacts such as non-working phone numbers, returned certified letters, difficulty in obtaining parental consent for minors, and inability to discuss the investigation with parents of contacts who had reached the age of 18 years. The juvenile contacts did not appear to comprehend the seriousness of the investigation. During the investigation, Qiagen reported an issue with the batch of testing tubes used during the investigation which caused a higher than expected number of indeterminate results. However, considering the impediment of reaching contacts and low compliance, testing by IGRA was the most effective form of testing compared to traditional TST, which requires a second visit to read the test result.

Neisseria meningitidis: Pediatric Mortality Due to Meningococcal Disease, Pasco County

Background: Meningococcal disease is caused by the bacterium *Neisseria meningitidis*. The bacteria can be transmitted through the exchange of respiratory and throat secretions and can cause severe illness. The Florida Department of Health in Pasco County (DOH-Pasco) was notified on December 8, 2013, by the medical examiner's office of a 4-year-old child that expired due to suspected meningococcal disease.

Methods: DOH-Pasco initiated an investigation to confirm the case and identify potential contacts. A confirmed case was defined as a clinically compatible illness in a person with isolation of *N. meningitidis* from a sterile site. DOH-Pasco conducted interviews with the patient's family, hospital staff and daycare personnel. A line list was used to identify close contacts for post-exposure prophylaxis (PEP). Isolates were forwarded to the Bureau of Public Health Laboratories in Jacksonville (BPHL) for serogroup analysis.

Results: The child arrived at the emergency department by ambulance with a reported history of fever, headache, and diarrhea. A purpuric rash was noted on the face, trunk, and arms. The child was intubated after becoming unresponsive and limp. Cardiopulmonary resuscitation was initiated. The child expired within an hour of arriving to the emergency department. DOH-Pasco identified over 40 close contacts who received PEP: 22 daycare attendees, 6 teachers, 10 health care workers, 3 EMS workers, and 8 family members. On December 12, DOH-Pasco was notified by the hospital that blood cultures were positive for *N. meningitidis*. The final autopsy report confirmed death due to complications from meningococcemia. BPHL later confirmed *N. meningitidis* serogroup B.

Conclusions and Recommendations: Rapid after-hours response and vigilant surveillance resulted in no additional cases during this investigation. DOH-Pasco provided educational materials to the child's family and parents of the daycare attendees. It is important for close contacts to receive post-exposure prophylaxis as soon as possible and to know the symptoms of meningococcal disease since early diagnosis and treatment can save lives.

Rickettsia africae: African Tick-Bite Fever Following South African Hunting Trip, Orange County

Background: *Rickettsia africae* is causative agent of African tick-bite fever, an exotic spotted fever rickettsiosis (SFR) closely related to Rocky Mountain spotted fever (RMSF), and endemic to Africa. All SFR were added to the nationally notifiable disease list in 2010 but were not added to Florida's reportable disease list until 2014. African tick-bite fever symptoms are similar to RMSF, but it is generally a less severe infection. Unlike RMSF, patients commonly present with one or more eschars that develop at the site of a tick bite. Treatment with doxycycline is recommended for all SFR infections. Swabs of the eschar before or within 2-3 days of treatment initiation can provide a definitive diagnosis. If serologic testing is performed, the convalescent sample should be collected at least four weeks after symptom onset. In 2013, the Centers for Disease Control and Prevention (CDC) reported an increased number of African tick-bite fever cases in travelers to southern Africa. On July 3, 2013, the Florida Department of Health (DOH) Bureau of Epidemiology received a phone call from an Orange County infectious disease physician regarding a suspect case of African tick-bite fever. DOH in Orange County (DOH-Orange) was notified and initiated an investigation.

Methods: DOH-Orange requested medical records from the physician and conducted interviews with patients to determine if the case met the national case definition for SFR. Instructions were provided regarding specimen collection and confirmatory testing at CDC.

Results: The initially identified patient (Patient 1) was a 19-year-old man. Interviews identified that the patient was part of a group of six men who traveled to a lodge south of Johannesburg, South Africa, from June 14 to June 24 for a hunting trip. Members of the group did not use tick repellant and did not take the antimalarial medication prescribed for them, but did receive recommended vaccinations. Patient 1 had onset of fever and muscle aches on July 1, and developed an eschar at the site of a tick bite on his calf. Malaria smear and blood cultures were negative, as were Lyme disease and ehrlichiosis testing results. Two travel companions experiencing similar illness were identified during the investigation. Patient 2 was an 18-year-old man who had illness onset on June 28, with fever (103.3 °F), vomiting, diarrhea, rash, and a black eschar on his mid-back. He was hospitalized from

July 2 to July 5. Patient 3 was the father of Patient 1 and per family members, became symptomatic around July 1 with fever, body aches, and an eschar on the torso. Health care providers for the three patients were alerted to the suspect diagnosis of SFR and all three were treated with doxycycline and recovered. Polymerase chain reaction results from the CDC Rickettsial Zoonoses Laboratory reported the eschars from Patient 1 and 2 as positive for *R. africae*. No confirmatory testing was conducted on Patient 3.

Conclusions and Recommendations: Travel history and activities should be routinely collected during patient interviews. Clusters of African tick-bite fever are not uncommon, therefore requesting information about fellow travelers is recommended if this disease is suspected. Consultation with a travel clinic prior to international travel and adhering to the provided travel health recommendations are important preventative actions.

Serratia marcescens: Outbreak in a Neonatal Intensive Care Unit, Orange County

Background: On November 2, 2012, the Florida Department of Health in Orange County (DOH-Orange) received notification of two infants with invasive *Serratia marcescens* infections at a local hospital's neonatal intensive care unit (NICU). On November 9, 2012, a third case of *S. marcescens* septicemia in an infant was reported and pulsed-field gel electrophoresis (PFGE) analysis facilitated through the Bureau of Public Health Laboratories (BPHL) on the initial two cases determined that the isolates had similar patterns.

Methods: An outbreak investigation was initiated, including case identification, review of medical and vital records, active surveillance cultures, PFGE, and recommendations on infection prevention. DOH-Orange conducted a site visit. As recommended, a point prevalence study of specific NICU pods and all new admissions was conducted by hospital staff during the month of January 2013. During the study, respiratory secretions and rectal swabs were collected for each infant.

Results: Between April 24 and November 5, 2012, positive *S. marcescens* cultures were collected from 12 infants. Positive cultures were collected from the eye (6), respiratory tract (5), and blood (3). Four of the infants had other bacteria detected in clinical cultures. Four of the 12 infants died. During two point prevalence surveys conducted in January 2013, 120 cultures were tested; three colonized infants were identified on January 7, 2013, and none were identified on January 21, 2013. The three positive isolates were submitted for PFGE; each had a distinct pattern and none matched the initial pattern.

Conclusions and Recommendations: This outbreak occurred among medically compromised infants at increased risk of infection and a point source was not identified. Improvements in universal precautions and cohorting decreased the number of cases. Based on these findings, DOH-Orange recommended cessation of the point prevalence surveillance, termination of isolation and cohorting of colonized infants, and enhanced surveillance for *S. marcescens* infections through November 2013.

Staphylococcus aureus: Conjunctivitis Outbreak in a Nursing Home Facility, Sarasota County

Background: On June 25, 2013, the infection prevention nurse at a nursing home contacted the Florida Department of Health in Sarasota County (DOH-Sarasota) to report an increase of conjunctivitis among residents, several of whom had cultured positive for methicillin-resistant *Staphylococcus aureus* (MRSA). Conjunctivitis outbreaks among nursing home residents are not uncommon; however MRSA has rarely been documented as the cause.

Methods: DOH-Sarasota requested active surveillance and a line list of ill residents and staff, recommended testing of clinical specimens for viruses, and conducted a site visit. Disease control measures included placing residents with conjunctivitis on contact isolation, increasing cleaning and bleach disinfection, implementing chlorhexidine gluconate towel baths for residents, evaluating potential shared exposures (e.g., speech therapy, physical and occupational therapy, personal and facial grooming, shared makeup, laundry practices), targeted education, and increasing hand hygiene among staff. Genotyping by pulsed-field gel electrophoresis (PFGE) of the three available MRSA isolates was performed at the Bureau of Public Health Laboratories in Jacksonville (BPHL).

Results: Between May 10 and June 26, 11 (24%) of 46 residents at the facility developed conjunctivitis, with more than half occurring June 24 to 26. No staff developed illness. The infected residents ranged from 84 to 100 years old with a mean age of 94 years. No common source was identified among the infected people. Although recommended, no viral testing was performed by the facility and no clinical specimens were available for testing at BPHL. Although no clinical specimens were available for testing at BPHL, eight bacterial cultures were done at the facility. Six (75%) were positive for MRSA. Five (63%) of eight people cultured had history of previous MRSA infections. PFGE results indicated that the three isolates submitted to BPHL were different genotypes.

Conclusions and Recommendations: The epidemiologic and genotyping results support the conclusion that this outbreak consisted of viral conjunctivitis among MRSA-colonized residents. DOH-Sarasota shared these results with the facility and provided education on preventing future conjunctivitis outbreaks. Recommendations included education on appropriate laundering of clothes and shared linens, routine hand hygiene, and good eye behaviors (e.g., avoid touching or rubbing eyes, avoid sharing makeup or eyewear).

Vibrio cholerae: Imported Cholera Case With Transmission to a Local Health Care Worker, Miami-Dade County

Background: On August 2, 2013, the Florida Department of Health in Miami-Dade (DOH-Miami-Dade) was notified of an imported case of suspected cholera in an 80-year-old visitor from Haiti, with subsequent transmission to a 51-year-old emergency room patient care technician (PCT). Sporadic importation of cholera cases to Florida has occurred since the start of the cholera outbreak in Haiti in 2010. Documented transmission in the health care setting is rare with no previous reports in the U.S.

Methods: Patients were interviewed using a standard gastrointestinal illness questionnaire. Specific questions addressed infection control measures used by the PCT. The infection control nurse (ICN) provided information on clinical management. DOH-Miami-Dade provided the facility with verbal and written outbreak control recommendations and verified their implementation with the ICN. Isolates were sent to the Bureau of Public Health Laboratories for confirmation and serotyping. Final strain confirmation and toxigenicity testing were performed at the Centers of Disease Control and Prevention (CDC).

Results: *Vibrio cholerae* infection was laboratory confirmed in the Haitian patient four days after admission. DOH-Miami-Dade was not notified of the case until the hospital laboratory confirmed *V. cholerae*, rather than upon initial suspicion (i.e., laboratory test order) as required. The PCT provided direct care on the day of admission and developed diarrhea and abdominal cramps the following day and worked one day while symptomatic. Appropriate personal protective equipment (PPE) was not worn by the PCT while performing an electrocardiogram that took place after bathing the patient following an episode of fecal incontinence. The PCT had no history of travel in the seven days prior to symptom onset. No new cases were reported among hospital or household contacts in the two incubation periods following the last possible date of exposure. Both patients recovered. CDC reported that both specimens were positive for toxigenic *V. cholerae* O1, serotype Ogawa, biotype El Tor, the outbreak strain circulating in Haiti.

Conclusions and Recommendations: Untimely reporting delayed provision of recommendations and demonstrated the need for education of hospital staff on current requirements to immediately report cholera cases upon initial suspicion or laboratory test order. Hospital transmission of cholera likely occurred due to lack of or inappropriate use of PPE while rendering direct patient care. To avoid transmission in the health care setting, strict compliance with contact precautions is essential when handling patients with diarrheal illnesses. Employees with diarrheal illness should be excluded from work.

Parasitic Diseases

Babesia microti: Imported Babesiosis Presenting as Suspected Local Malaria, Palm Beach County

Background: Babesiosis is a tick-borne illness caused by several different species of protozoa in the genus *Babesia*. *Babesia microti* is the most common and severe cause of human babesiosis in the U.S., and is found predominantly in the Northeast and upper midwestern states. Under the microscope, *B. microti* appears nearly identical to the malaria parasite *Plasmodium falciparum.* Treatment for babesiosis typically includes a combination of atovaquone and azithromycin, or clindamycin and quinine. In 2013, the Florida Department of Health (DOH) in Palm Beach County (DOH-Palm Beach) investigated two cases of suspected local malaria that were later identified as babesiosis. Malaria introductions have occurred in Palm Beach County in the past.

Methods: Medical records were requested from the treating health care facilities, and DOH-Palm Beach conducted interviews with patients or their proxies to determine if local introduction of malaria had occurred.

Results: DOH-Palm Beach Epidemiology was notified of the first suspected case on August 8 by a local hospital infection preventionist. The 82-year-old man was admitted with a diagnosis of pneumonia after being seen at a hospital emergency department on August 7. The patient's symptom onset was July 7, 2013 and included fever, chills, myalgia, and thrombocytopenia. *Plasmodium* species were reportedly seen on one blood smear. The patient's wife reported domestic travel to Missouri, Washington D.C., and New York in June. Outdoor activities included visiting a state park in Missouri, a coastal park in New York, and participating in an outdoor camera club. The patient did not complain of being bitten by mosquitoes, but the wife reported that mosquitoes and ticks were present in some of the areas they visited. The patient reportedly had not been outdoors in the Palm Beach County area in the four weeks prior to onset. The patient was treated with quinine and doxycycline while the lab confirmation was pending. On August 13, the Bureau of Public Health Laboratories (BPHL) in Jacksonville reported that samples were positive for *Plasmodium falciparum*. Based on the initial laboratory findings, the Palm Beach Mosquito Control District was contacted and reported no *Anopheles* mosquito activity in the area near the patient's home. Additional traps were set in the patient's neighborhood that same evening. DOH requested testing for *Babesia* at the Centers for Disease Control and Prevention (CDC) due to the discrepancy between the date of onset and travel history. On August 27, the CDC laboratory reported the specimen was positive for *B. microti* by polymerase chain reaction. The patient was discharged on August 27.

DOH-Palm Beach was notified of a second suspected case on September 10 by a different local hospital infection preventionist. The patient was a 61-year-old woman admitted with fever, cough, pancytopenia, and myalgia. *Plasmodium* species were found in blood smears, and samples were immediately forwarded to BPHL in Miami for confirmation and typing. The patient's husband was interviewed and reported that the patient had no recent international travel but did travel to New Jersey in May 2013. The patient was exposed to ticks while in a wooded area in New Jersey. On September 11, BPHL in Miami notified DOH-Palm Beach that the samples did not look like

Plasmodium; DOH-Palm Beach requested additional laboratory testing for *Babesia*. On September 12, BPHL in Miami confirmed that *Babesia* was identified. The patient was subsequently treated for babesiosis.

Conclusions and Recommendations: Travel history and activities, as well as illness onset date and sample collection date, should be routinely collected during patient interviews. This information should be included with specimens submitted to laboratories to optimize testing. Florida has a significant number of domestic and international visitors; thus, clinicians need to be aware of both endemic and non-endemic reportable conditions. This is especially important when laboratory diagnostics are challenging as in this situation where *Babesia* and *Plasmodium* are nearly indistinguishable.

Cryptosporidium Species: Cryptosporidiosis Outbreak Investigation Involving Swimming Lessons at a Local Pool, Hillsborough County

Background: On October 2, 2013, the Florida Department of Health in Hillsborough County (DOH-Hillsborough) received two positive *Cryptosporidium* laboratory reports for children. Interviews indicated that these children had two shared exposures, including a local hotel indoor pool where they took swimming lessons, and a daycare. A third symptomatic person associated with the pool was identified. In response to this cluster of illnesses, an outbreak investigation was initiated.

Methods: Interviews were conducted by DOH-Hillsborough. A list of swimming lesson attendees provided by the swimming school instructors was used to perform active case finding. A confirmed case was defined as an person who attended swimming lessons at the identified hotel pool who tested positive for *Cryptosporidium*. A probable case was defined as a person who developed diarrheal symptoms after attending swimming lessons at the identified hotel pool who did not have laboratory testing. An environmental assessment was conducted by DOH-Hillsborough on October 3 at the hotel pool.

Results: Fifteen people met the case definition (eight confirmed and seven probable). Reported symptoms included diarrhea (100%), abdominal pains (60%), fever (46%), vomiting (27%), and anorexia (13%). Cases had onset dates ranging from September 10 to October 11. Results from the pool inspection identified several deficiencies: the water was cloudy, the main drain was not visible, the flow meter was missing, and no current pool log was being maintained. Hotel management denied any recent fecal accident, however this information could not be verified. The pool had been hyperchlorinated at the time of the October 3 environmental assessment, therefore water sampling was not done. Despite instructions to wait for re-inspection, the pool opened prematurely and interviews indicated that symptomatic children attended swimming lessons after the pool had been treated. This resulted in the pool being closed a second time and retreated prior to reopening.

Conclusions and Recommendations: A recreational waterborne *Cryptosporidium* outbreak was associated with swimming lessons held at a hotel pool. Environmental field visits to the swimming pool identified several deficiencies. Inadequate pool filtration and failure to maintain a pool log may have contributed to this outbreak along with allowing symptomatic attendees to continue to participate in swim lessons. Recommendations made to the hotel management included constant monitoring of pool chemicals and conditions and maintenance of a pool log. In addition, the swimming lesson staff should exclude any identified symptomatic children and ask parents of attendees to indicate that their children have been asymptomatic for at least two weeks prior to allowing them back into the class.

Cyclospora cayetanensis: Multistate Cyclosporiasis Outbreak

Background: During July 2013, the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) began coordinating a multistate investigation into an increase in cyclosporiasis cases in Iowa and Nebraska. A number of other states also began reporting an increase in the number of cyclosporiasis cases. The CDC issued an outbreak-specific questionnaire to help identify cases associated with this multistate outbreak. FDA assisted state and local public health in traceback activities to identify the source of the outbreak.

Methods: The Florida Department of Health (DOH) began interviewing all newly reported cyclosporiasis cases using the outbreak-specific questionnaire. Questionnaires were reviewed to identify commonalities and information was shared with CDC and FDA on regularly scheduled conference calls.

Results: A total of 631 cases from 25 states were identified for this multistate outbreak. A total of 59 people were hospitalized but no deaths were reported. Cluster investigations conducted in Nebraska and Iowa identified a linkage between cases and consumption of a salad mix that was produced by Taylor Farms de Mexico. Additional investigation into Texas cases identified a link between fresh cilantro consumption and illness. DOH reported a total of 33 cases likely associated with this multistate outbreak, although a clear consumption history to either implicated product was not required for this outbreak due to the long incubation period and waxing and waning of symptoms, leading to difficulty recalling food products consumed.

Conclusions and Recommendations: Only one reported restaurant cluster involving three cases was investigated by DOH. This restaurant did not use fresh cilantro or the implicated bagged salad mix. Some Florida residents did consume the salad mix implicated by Iowa and Nebraska, which was likely the source of their infection. The implicated lot of bagged salad mix was not uniformly distributed throughout Florida. It is likely some of Florida's 33 cases were expected background cases and not actually associated with the outbreak.

Naegleria fowleri: Primary Amebic Meningoencephalitis, Glades County

Background: On August 8, 2013, the Florida Department of Health (DOH) Bureau of Epidemiology (BOE) received an email from the Centers for Disease Control and Prevention (CDC) stating they were working with the intensive care unit team at a local hospital in Miami regarding a 12-year-old boy with suspected primary amebic meningoencephalitis (PAM) caused by *Naegleria fowleri* infection. CDC was coordinating sample collection and release of the investigative drug miltefosine to the hospital. The boy was a resident of Glades County. In response to this notification, BOE notified DOH in Glades County (DOH-Glades) and an outbreak investigation was initiated.

Methods: A joint investigation was conducted by DOH in Miami-Dade County (DOH-Miami-Dade), DOH-Glades, and BOE. Medical records were reviewed by the investigation team. An environmental site assessment to collect information regarding exposure source was conducted by DOH-Glades. A cerebral spinal fluid sample was sent to the CDC reference laboratory for confirmation on August 8. A case was defined as a clinically compatible illness in a person with laboratory confirmation.

Results: According to the patient's history, the boy played in a 2-3 foot ditch filled with rainwater that was knee-high 3-4 days prior to onset of symptoms on August 4. On August 9, CDC confirmed the presence of *N. fowleri* by polymerase chain reaction. The patient was treated with a number of medications, including the investigational drug miltefosine, prior to laboratory confirmation. Neurological tests found no brain activity. Life support was withdrawn and the boy expired on August 24. During an environmental assessment conducted on August 12, the air temperature was 91-92 °F and the temperature of water in the ditch was 98 °F with depth ranging about 2-3 feet.

Conclusions and Recommendations: This is a single fatal case report of a 12-year-old boy diagnosed with PAM from *N. fowleri*. On August 12, DOH-Glades issued a press release warning that a case of PAM was reported in Glades County and highlighting the risks of swimming in freshwater lakes, ponds, and canals. *N. fowleri* can infect people when water containing the ameba enters the body through the nose and migrates to the brain. Infection is rare and typically occurs when people go swimming or diving in warm freshwater places, like lakes and rivers. Even more rarely, infections have been reported when people submerge their heads, cleanse their noses during religious practices, or irrigate their sinuses (nose) using contaminated tap or faucet water.

Viral Diseases

Dengue Virus: Outbreak Investigation Following a Cluster of Three Locally Acquired Dengue Fever Cases, Martin County

Background: A cluster of three locally acquired dengue fever cases was reported by a local hospital to the Florida Department of Health (DOH) in August 2013. Enhanced mosquito control efforts were implemented immediately. Active surveillance, including a seroprevalence survey, and outreach was initiated to identify additional cases, determine the extent of the outbreak, and to determine if transmission was continuing.

Methods: All suspect cases and serosurvey participants were interviewed to obtain symptoms, date of onset, and recent travel history. Mosquito control officials were provided relevant information for surveillance and control efforts. Local physicians and medical facilities were reminded to report suspect cases of dengue fever to the appropriate county health department (CHD), and a dengue training developed by the Centers for Disease Control and Prevention (CDC) for physicians was provided in two hospitals. The public was encouraged to drain standing water from their property, take mosquito bite precautions, and report to their health care provider if they experienced a febrile illness. Active case finding included outreach to homeless people in the impacted area, encouraging people who thought they might have dengue fever to directly contact the CHD (who were then directed to their health care provider if currently ill or offered free dengue testing if the illness was resolved), creating a query to search the DOH syndromic surveillance system for chief complaints and discharge diagnoses consistent with dengue fever, and conducting a seroprevalence survey in September. Serum samples from suspect cases and serosurvey participants were tested using dengue immunoglobulin M and immunoglobulin G enzyme-linked immunoassays, reverse transcriptase polymerase chain reaction assays and plaque reduction neutralization tests as appropriate. All testing was performed at the Bureau of Public Health Laboratories in Tampa and Jacksonville.

Results: Specimens from 140 patients submitted for diagnostic testing and 396 serosurvey participants were tested from August 2 to October 31. Testing identified 28 laboratory-positive infections of dengue virus (DENV-1). Twenty-one cases were identified through hospital submissions, self-reporting, active, and syndromic surveillance. The serosurvey identified an additional seven infections, four of which were asymptomatic and therefore did not meet the Florida surveillance case definition. Of the 28 identified infections, the four asymptomatic infections and two cases in residents of other states were not counted as Florida dengue fever cases for this report. Ages ranged from 4 to 74 years old; ten infections (36%) were in women, 18 (64%) were in men. All had outdoor exposure in at least one of two epicenters in the northern part of Martin County. Individuals with dengue infections were identified by self/family reporting directly to the CHD (11, 39%), hospital or physician reporting (9, 32%), syndromic surveillance (1, 4%), and serosurvey (7, 25%). The serosurvey determined that approximately 2.1% of the residents of Martin County were infected with DENV. In the serosurvey, individuals that used DEET-containing repellants were less likely to be infected with dengue. However, only 13% of survey participants said that they always use any mosquito repellent when outdoors.

Conclusions and Recommendations: Self/family reporting identified the highest number of cases followed by hospital or physician reporting. Effective communication and outreach to local partners and the public were critical to successful outbreak surveillance and response in Martin County. The major findings from the serosurvey and outbreak investigation reinforce "Drain and Cover" practices as the best personal prevention practices against dengue and other mosquito-borne infections.

Influenza A Virus*:* High Morbidity in Unvaccinated Pregnant Women at One Hospital, Escambia County

Background: On December 2, 2013, the Florida Department of Health (DOH) in Escambia County (DOH-Escambia) received correspondence from a local hospital-based obstetrician concerned about several severely ill pregnant women with positive influenza A laboratory results. On December 5, four severely ill pregnant women who were all positive for influenza A (2009 H1N1) all delivered prematurely. Three of these women were admitted to the intensive care unit (ICU) post-delivery due to respiratory distress and two women were transferred by air ambulance to the University of Alabama, Birmingham (UAB) Medical Center for extracorporeal membrane oxygenation (ECMO). On December 6, two additional pregnant women, both positive for influenza A, were admitted due to respiratory complications.

Methods: A case definition was established for the apparent outbreak. DOH-Escambia coordinated with the infection preventionists locally and in Alabama to gather hospital daily record updates on the mothers and their premature infants. Active surveillance was implemented to identify additional pregnant women admitted to ICUs with respiratory distress due to influenza A.

Results: Six women required hospital admission prior to expected delivery dates (average 30.4 weeks gestational age). Four delivered premature infants (average 6.9 weeks prior to due date). Two required transfer to UAB for ECMO treatment. One mother expired after several weeks of treatment. All babies survived and are reportedly doing well. All six women were unvaccinated and confirmed to have influenza A (2009 H1N1). A separate investigation confirmed that this many severe cases of influenza represented an outbreak among pregnant women in Escambia County.

Conclusions and Recommendations: Influenza is more likely to cause severe illness, hospitalization, and death in pregnant women. Pregnant women with influenza also have a greater chance for serious problems for their unborn baby. During this investigation, DOH-Escambia implemented and collaborated on multiple outreach interventions to assist with community educational efforts regarding vaccination of pregnant women. The Florida Medicaid program opened funding to provide influenza vaccine to all Medicaid-eligible pregnant women. DOH recommends that everyone six months and older should receive influenza vaccine, especially adults 65 years and older, children 5 years and younger, pregnant women, and caregivers of infants under 6 months of age. Recommendations included removing obstacles to receiving vaccine, including insurance reimbursement, access, and increased education.

Influenza A Virus: Influenza A (2009 H1N1) Outbreak in a Correctional Facility, Martin County

Background: On July 22, 2013, the Florida Department of Health in Martin County (DOH-Martin) was notified that 11 inmates and one staff member were ill with symptoms of influenza-like illness (ILI) at a correctional facility housing 1,300 inmates and employing 380 staff members. Controlling disease spread in this setting can be challenging due to population density, low vaccination rates, inmate turnover, high prevalence of people at high risk for severe disease, and lack of access to vaccines and antiviral medications. DOH-Martin collaborated with the facility to control the outbreak and identify the causative agent.

Methods: Outbreak response included review of patient records and surveillance for new cases. A case of ILI was defined as a person having a fever >100 °F plus cough or malaise. Viral transport media kits were provided to the correctional facility for nasopharyngeal sample collection. Control measures included cohorting of symptomatic inmates and exclusion from the cafeteria and gym. Isolation orders were lifted 48 hours following symptom resolution. Ill staff members were excluded from work until afebrile for 24 hours. Respiratory droplet precautions and hand hygiene were emphasized.

Results: Fifteen (1.2%) inmates and one (0.26%) staff member met the criteria for ILI; one inmate was hospitalized and died. Symptom onset dates ranged from July 19 to 23. Four nasopharyngeal and one endotracheal specimens were submitted to the Bureau of Public Health Laboratories; four were positive for influenza A (H1N1) by polymerase chain reaction. Vaccination status of inmates and staff could not be verified by the facility. Standard operating procedure was to provide influenza vaccines to high-risk inmates; staff vaccination records were not maintained. No inmates received antiviral medications.

Conclusions and Recommendations: Influenza can cause severe illness and even death in otherwise healthy people, as occurred in this outbreak. Early detection of the outbreak and institution of control measures within 48 hours were crucial for curtailing further disease transmission at this facility. Recommendations for improvement included maintaining adequate stocks of influenza vaccine and antiviral medications, offering influenza vaccinations to all inmates and staff, maintaining accessible vaccination records, and using antivirals for treatment and chemoprophylaxis per Centers for Disease Control and Prevention guidelines.

Measles Virus: Locally Acquired Household Outbreak of Measles, Orange County

Background: On January 11, 2013, the Florida Department of Health in Orange County (DOH-Orange) received notification from a teacher at an early childhood learning center regarding an unvaccinated student with suspected measles. The parent was interviewed and reported that the four children had measles-like symptoms. In response to this report, DOH-Orange immediately initiated an outbreak investigation.

Methods: The outbreak investigation included case and contact identification, review of vaccination records and other risk factor information, specimen collection, isolation and quarantine advisement, and enhanced surveillance. DOH-Orange notified administration and parents at the childhood learning center and charter school attended by the siblings. Facilities and organizations where the children participated in extracurricular activities were notified. A notification was faxed to medical providers in Orange County for enhanced surveillance efforts. Enhanced surveillance for one incubation period after the initial exposure to the case was recommended. Clinical samples were obtained from three siblings (blood [2], throat swabs [3], and urine sample [1]) and forwarded to the Bureau of Public Health Laboratories in Jacksonville for measles virus molecular and serologic analysis. Positive specimens were forwarded to the Centers for Disease Control and Prevention (CDC) for sequencing and genotyping.

Results: All four siblings met the clinical case definition for measles. Dates of illness onset ranged from December 28, 2012 to January 12, 2013. Specimens from three children were positive for measles by polymerase chain reaction. Genotyping at the CDC identified measles virus, genotype D8. The virus was identical to that found in a 20-year-old man from Brazil who visited various Florida theme parks between December 6, 2012 and December 21, 2012 and was diagnosed with measles upon returning to Brazil. The children visited a theme park on December 15, 2012, but it is unknown if the Brazilian man visited the same park as the children. Similar genotype D8 measles viruses were also detected in the United Kingdom around the same time. Three unvaccinated attendees at a daycare attended by one of the siblings underwent voluntary quarantine. No secondary measles cases were detected among the children's contacts.

Conclusions and Recommendations: This outbreak occurred among family members. Exposure is hypothesized to have occurred during a visit to a local theme park. The source case was likely a confirmed case in a Brazilian visitor who visited local theme parks around the same time. There is an ever-present threat of measles importation into Florida from travelers arriving from countries where measles is endemic. Routine childhood measles vaccination would have prevented this outbreak and the subsequent comprehensive public health investigation.

Measles Virus: Measles Case in a United Kingdom Resident, Orange County

Background: On Tuesday, July 23, 2013, the Florida Department of Health in Orange County (DOH-Orange) was notified by a medical concierge service of a 15-year-old girl visiting from the United Kingdom (U.K.) clinically diagnosed with measles. She had been exposed to a confirmed case of measles in the U.K. on July 6. After the exposure, the girl and her 19-year-old brother received their first dose of measles, mumps, and rubella (MMR) vaccine on July 11. On July 15, the case and family traveled to Florida. Symptom onset occurred on July 19 with fever, rash, sore throat, and lethargy. Recommendation for isolation by the medical concierge was disregarded by the family.

Methods: On July 23, DOH-Orange collected samples from the girl and family members and reiterated the isolation recommendation. The Centers for Disease Control and Prevention Quarantine Station was informed of an identified airline exposure.

Results: The case was positive for measles by polymerase chain reaction on July 24. Her father reported history of the disease and this was confirmed with a positive measles immunoglobulin G (IgG) test. The girl's 19-year-old brother tested negative for measles IgG. The family was scheduled to return to the U.K. on July 25; however, the brother was quarantined for 21 days after the last date of exposure to his sister. The brother had blood redrawn after the second MMR dose, but was found not be to immune and thus continued quarantine in Florida. The girl's activities during her infectious period included airline travel, theme park resort stay, and visits to various local attractions and businesses. There were two families identified in Orange County who had airline travel with close proximity to the case; they were evaluated for vaccination status, immunity status, and assessment of symptoms. No secondary cases were identified. A notification letter was provided to each exposure setting in the attractions area with recommendations for contact notification, follow-up, and exclusion. A measles health alert was sent to local health care providers on July 25 and the media was notified through a press release.

Conclusions and Recommendations: The steps taken in this response are consistent with measles control and prevention. However, the quarantine of the contact in his non-home country resulted in questions on procedures for long-term quarantine. The British Embassy was contacted to assist with housing costs and other infectious disease programs were contacted to advise on certain aspects of long-term quarantine. Since the contact purchased travel insurance, these questions on financial responsibility burden fell onto the travel insurance company.

Rabies Virus: Public Health Response to Human Rabies Associated With an Organ Transplant, Broward, Escambia, Okaloosa, and Santa Rosa Counties

Background: Cases of clinical rabies in people are rare in the U.S., with an average of 1-3 cases identified annually. Fatality rate for clinical infections approaches 100%. In 2013, a Maryland resident died from rabies 18 months after receiving a kidney transplant. The donor was a North Carolina resident currently living in Escambia County, Florida at the time of his death in 2011. Rabies was retrospectively diagnosed in the donor using archived tissues; both donor and recipient were found to be infected with raccoon rabies virus variant. These findings triggered a multi-agency public health

response to identify and provide prophylaxis to three surviving people who had received organs from the same donor, identify the likely source of donor exposure, and identify people potentially exposed to the infected donor and recipient.

Methods: Public health response involved multiple agencies including local and state health departments, public and military hospitals, the organ procurement agency, Centers for Disease Control and Prevention (CDC), and multiple branches of the military. Three surviving recipients were notified and treated by their transplant facility. Most exposure assessments involved hospital staff and were initially conducted internally, with review and follow-up questions by county and state health department staff. The organ procurement organization conducted interviews of laboratory and surgical staff involved with organ harvesting and transplant procedures. County or state health department staff conducted interviews of family, friends, and other non-hospital related contacts of the decedents. Relevant information was shared in daily multi-agency conference calls coordinated by CDC, as well as smaller Florida-specific calls. Shared press releases were coordinated by CDC. Social media was used to track contacts who could not be reached through more traditional methods.

Results: Three surviving organ recipients including a Florida resident received rabies post-exposure prophylaxis (PEP) and developed appropriate antibody response with no signs of illness. The donor likely acquired the rabies infection in North Carolina. During the 18 months prior to onset, the donor reportedly hunted and trapped raccoons in North Carolina, and had been bitten twice by raccoons without seeking medical care. PEP was recommended for 58 (10%) of 564 contacts who were assessed through the course of the investigation. Thirteen additional contacts deemed non-exposed requested and received PEP through their employers. Notification for approximately 90% of contacts was complete within six days of recipient diagnosis and ten days of donor diagnosis. No additional rabies infections occurred.

Conclusions and Recommendations: Rabies is a rare infection but should always be considered by clinicians in cases suggestive of encephalitis, particularly if organ donation is being considered. Rapid and coordinated information sharing is critical for timely and effective public health responses during multi-agency investigations.

Varicella Zoster Virus: Viral Meningitis in an Adult, Pinellas County

Background: On April 10, 2013, during routine surveillance of emergency department data using Florida's syndromic surveillance system, the Florida Department of Health in Pinellas County (DOH-Pinellas) identified a 25-year-old woman diagnosed with varicella meningitis.

Methods: DOH-Pinellas initiated an investigation and collected medical records from the hospital. An interview was conducted with the patient. Contacts were identified to provide control measures and recommend prophylaxis, as needed.

Results: Upon review of medical records, it was found that the woman was admitted to the intensive care unit (ICU) on April 9 after presenting to the emergency department with a severe headache, photophobia, and some neck stiffness. She had onset of a rash a few days prior to her visit. Physical exam identified multiple crops of erythematous lesions with scabbing and multiple stages of healing on her face, trunk, and extremities. She reported that she was diagnosed with chicken pox by her primary care provider the day before. At that time, she was prescribed an antiviral therapy; however, she was unable to fill the prescription and treatment was delayed. While in the ICU, the woman was placed on airborne droplet and contact precautions. A lumbar puncture was performed and cerebrospinal fluid collected was positive for varicella zoster virus (VZV). The patient was treated with intravenous acyclovir for a total of 14 days. The patient reported receiving the varicella vaccine as a young child. Her only possible exposure was visiting a local theme park two weeks prior to her symptom onset.

Conclusions and Recommendations: Although serious infections like this one may be uncommon, severe complications from VZV are possible. The varicella vaccine is effective in preventing illness and prompt treatment with antiviral medications can reduce the severity of symptoms. Two doses of varicella vaccine are currently recommended for children, adolescents, and adults without evidence of immunity to varicella. Close contacts of known cases should be evaluated for history of vaccination or prior infection. Varicella vaccine provided within 120 hours of exposure may prevent or modify the illness. Persons at high risk for complications from a varicella infection can be provided varicella-zoster immune globulin by their medical providers to prevent severe disease.

Non-Infectious Agents

Carbon Monoxide: A Cluster of Confirmed Carbon Monoxide Poisonings Among Warehouse Workers, Hendry County

Background: Carbon monoxide (CO) poisoning is a condition that results from inhalation and absorption of CO gas. CO is an odorless, colorless gas produced by fuel burning devices. Exposure to high levels of CO or low-level exposure for an extended period of time can cause loss of consciousness and death. On March 8, 2013, emergency personnel responded to an agricultural warehouse in Hendry County regarding multiple people complaining of headache, nausea, and vomiting. CO levels were detected at 375 parts per million (ppm) inside the warehouse, well above the recommended level of 50 ppm. Twenty-three people were transported to the hospital. On March 15, the Florida Department of Health in Hendry County (DOH-Hendry) was notified of another occurrence of CO exposures at the same facility. CO levels measuring 101 ppm were detected. Seven employees were transported to the hospital.

Methods: DOH-Hendry initiated an investigation including review of medical records, patient interviews, and assessment of the work environment. A confirmed case was defined as a person with symptoms consistent with acute CO poisoning and an elevated carboxyhemoglobin (COHb) blood level (≥9%) or a person with symptoms consistent with acute CO poisoning with supplementary evidence in the form of environmental monitoring data.

Results: From the initial incident, 22 cases of confirmed CO poisoning were identified in 14 Hispanic women and eight Hispanic men. COHb blood levels ranged from 6.4% to 21.3% (note that people with COHb levels <9% still meet the case definition due to environmental data). Symptoms included headache, nausea, dizziness, shortness of breath, vomiting, and visual disturbance. Seven additional people, six Hispanic women and one Hispanic man, were determined to meet the case definition following the second incident. The cause was determined to be a malfunctioning regulator on a propane-fueled forklift operating inside the warehouse. It was also reported that workers inside the warehouse closed all doors to keep warm as temperatures dropped.

Conclusion and Recommendations: The facility was closed until CO detectors could be installed throughout the facility and the malfunctioning forklift was repaired. CO can build up to dangerous concentrations indoors. To prevent CO poisonings from forklifts or other gas-powered equipment, it is important to consider the use of electrical equipment indoors.

Unknown Chemical: Foodborne Illness Associated With Popsicles, Orange County

Background: On August 22, 2013, the Florida Department of Health in Orange County received a complaint of two people who described symptoms consistent with a chemical exposure immediately after consuming popsicles purchased from Walmart. A public health outbreak investigation was initiated to identify the source and etiologic agent and prevent additional cases.

Methods: Cases were interviewed to elicit detailed information on clinical presentation and exposure data. Surveillance was performed via Florida Poison Information Center Network county health department foodborne illness logs. A case was defined as a person who experienced tingling, numbness, burning or a metallic taste in the mouth, throat, or lips following consumption of Budget Saver Sugar Free Popsicles. Open and unopened samples of the implicated product, banana and piña colada flavored popsicles, were collected for laboratory analysis by the Bureau of Public Health Laboratories (BPHL).

Results: No other complaints were received with similar symptoms or exposures. Both people met the case definition. Symptoms reported included a burning sensation of the mouth and lips (2), metallic taste (2), numbness (1), tingling (1), and abdominal cramps (1). Illness onset was immediately after consuming the popsicles on August 19 at 6 p.m. and symptoms lasted approximately 1.5 hours. Medical treatment was not sought. The popsicles had an expiration date of January 14, 2015. BPHL found no evidence of pesticides. The open partially consumed banana popsicle contained 134 milligrams per kilogram (mg/kg) sodium and 4,513 mg/kg calcium and the partially consumed piña colada popsicle contained 88.2 mg/kg sodium and 2,296 mg/kg calcium. The unopened popsicles contained significantly less amounts of sodium and calcium.

Conclusions and Recommendations: These two illnesses appear to be associated with the consumption of popsicles. The symptoms described by the cases are consistent with other documented chemical poisonings attributed to ingestion of popsicles. Calcium chloride is generally used in a brine to freeze popsicles during the production process. Calcium chloride is a known irritant to the skin, eyes, and respiratory tract. Care must be taken by the manufacturer to ensure that none of this brine solution comes into contact with the finished product. It is hypothesized that either the solution was not rinsed off these particular popsicles or the freezing solution was splashed onto the product after release from the molds used to shape the popsicles. The cleaning of food products and equipment must be in accordance with established procedures at all times to protect the public from accidental exposure to harmful substances.

Other or Unknown Etiology

Histamine: Scombroid Poisoning Outbreak, Hillsborough County

Background: The Florida Department of Health in Hillsborough County (DOH-Hillsborough) identified a cluster of illnesses in people with similar symptoms and exposures for scombroid poisoning through reviewing syndromic surveillance data. The cluster involved four people who dined at a local restaurant in Hillsborough County on May 1, 2013. Three people experienced histamine-type reactions within 30 minutes of consuming tuna and a fourth person who had only one bite of the fish experienced mild headache, red flushing of the face, itching, and tingling within 1.5 hours. Reporting information was also received from the Florida Poison Information Center Network. In response to this incident, DOH-Hillsborough initiated an outbreak investigation.

Methods: DOH-Hillsborough interviewed the symptomatic people. A joint environmental assessment of the restaurant was conducted with the Florida Department of Business and Professional Regulation. A case was defined as a person who dined at the identified restaurant with symptoms consistent with a histamine-type reaction after consuming tuna on May 1.

Results: Four cases met the case definition. Reported symptoms included skin flushing (100%), headache (100%), itching (100%), and diarrhea (75%). The onset of symptoms ranged from 30 minutes to 1.5 hours. Symptoms lasted an average of four hours with a range of three to eight hours. All four people took antihistamine medication to alleviate symptoms associated with this illness. None of the ill people sought medical treatment. Results from the environmental assessment identified that

all of the cold-holding food temperatures were satisfactory. The preparation of the tuna included thawing in a cooler at 39 °F, searing, and placing on a bed of lettuce with cilantro, broccoli, avocado, and wasabi.

Conclusions and Recommendations: Scombroid fish poisoning results from consuming spoiled or decaying fish. It is often associated with fish that are not adequately refrigerated or preserved after being caught. The decaying fish produce histamine which causes an illness consistent with an allergic reaction. Histamine is not destroyed by normal cooking temperatures. It appears that a foodborne outbreak occurred associated with consumption of tuna at a local restaurant in Hillsborough County on May 1. The identified onset of illness was temporally clustered indicating a common source exposure. The incubation period, symptomology, and duration of illness suggest scombroid fish poisoning. It is not clear where the temperature abuse occurred in the distribution chain of the identified product. Traceback by the Florida Department of Agriculture and Consumer Services identified that the frozen tuna was imported from Indonesia.

Saxitoxin: Summary of Three Saxitoxin Fish Poisoning Cases, Hillsborough, Indian River, and St. Lucie Counties

Background: During September and October 2013, three separate cases of saxitoxin fish poisonings (SFP) were reported to the Florida Department of Health. A review of the cases was conducted to describe the epidemiology of these three separate incidents.

Methods: Information from the county health departments was reviewed along with all records in the state reportable disease surveillance system to summarize findings.

Results: Three separate incidents of SFP were investigated during 2013. All three people were hospitalized for their illness. Two of the three cases were in women. Two of the cases were in Asians and one case was in a white person. The cases were 30, 35, and 60 years old. The three people resided in Hillsborough, Indian River, and St. Lucie counties. Time to onset was 2 hours for one person, 5.5 hours for another person, and unknown for the third person. Symptoms of cases included diarrhea, vomiting, dizziness, lightheadedness, ataxia, numbness, tingling, and nausea. Two of the people harvested puffer fish locally, one from the west side of the Indian River Lagoon and the other from a water body in Palm Beach County. The third person's mother sent her dried puffer fish from China through the mail.

Conclusions and Recommendations: These three illnesses appear to be associated with the consumption of puffer fish. The symptoms described by the cases are consistent with other documented saxitoxin poisonings. One person reported that they were unaware of the health risks associated with eating puffer fish and another person reported consuming this type of fish for 40 years with no previous issues. Continued education of Florida fisherman is needed to ensure they are aware of the risks associated with consumption of puffer fish. The Florida Fish and Wildlife Conservation Commission prohibit the taking of puffer fish from waters in Volusia, Brevard, Indian River, St. Lucie, and Martin counties.

Undetermined: Foodborne Illness Outbreak at a Local Restaurant, Pinellas County

Background: On December 2, 2013, the Florida Department of Health in Pinellas County (DOH-Pinellas) received two complaints of possible foodborne illness related to a Thanksgiving Day meal served on November 28 at a local restaurant. Early information indicated symptoms of diarrhea and abdominal pains after consuming the holiday meal. An investigation was initiated immediately to determine the potential source of infection and identify any additional cases.

Methods: Interviews were conducted with the diners. Syndromic surveillance data from local hospital emergency departments were reviewed from November 28 through December 4 to identify cases. Follow-up was conducted with any patient who presented with a chief complaint or discharge diagnosis of “food poisoning.” Stool specimen submission was requested from diners who were still ill at the time of interview. On December 4, the Florida Department of Business and Professional Regulation and DOH-Pinellas conducted a joint inspection of the restaurant. A case was defined as anyone who became ill with diarrhea or abdominal pain after consuming food from the restaurant on or after November 28.

Results: A total of 16 people were interviewed and 14 were found to meet the case definition. Cases ranged in age from 20 to 74 years old; eight (57%) of the cases were in women, and four (29%) people sought medical treatment. The most commonly reported symptoms were diarrhea (100%) and abdominal cramping (71%). The time to onset time ranged from 6.5 to 14.5 hours and illness duration ranged from 12 to 132 hours. One stool specimen was tested but was negative for norovirus and other enteric pathogens. Several food temperature violations were identified during the restaurant assessment including a 24-hour notice to fix a walk-in cooler with a temperature of 45 °F. From information obtained, the turkey preparation for the Thanksgiving Day meal began several days prior and continued until the morning of November 28. The turkey was cooked to an internal temperature of 165 °F, sliced into large pieces, and placed into large containers stored in the walk-in cooler. The turkey was not rapidly cooled as required by food code. Additionally because the walk-in cooler was not at the proper temperature, the turkey may have remained warm for an extended period of time.

Conclusions and Recommendations: It appears that a foodborne outbreak was associated with the restaurant between November 28 and December 2. The onset of illness for the cases was temporally clustered, indicating a common source exposure. The incubation period, symptomology, and duration of illness suggested a bacterium, possibly *Clostridium perfringens*. No single food item was identified as responsible for the illnesses, but the temperature violations observed at the restaurant provided the opportunity for multiple items to become contaminated.

Section 5

Antimicrobial Resistance Surveillance

Antimicrobial Resistance Surveillance

Antibiotics are one of the most impressive medical achievements of the twentieth century. Unfortunately, the continuing emergence and spread of antimicrobial resistance jeopardizes the utility of antibiotics and threatens health globally. Resistant pathogens are often associated with prolonged hospital stays, increased intensity and duration of treatment, and increased mortality.

As of 2013, the Florida Department of Health (DOH) conducts surveillance for antibiotic resistance in four microorganisms:

- Health care providers and laboratories are required to report antibiotic susceptibility testing results for isolates of *Streptococcus pneumoniae* from normally sterile sites, such as blood or cerebrospinal fluid, as well as testing results for isolates of *Staphylococcus aureus* that are not susceptible to vancomycin.
- Laboratories participating in electronic laboratory reporting are required to report antibiotic susceptibility testing results for all *S. aureus* isolates from normally sterile sites.
- *Neisseria gonorrhoeae* isolates from the first 25 men with urethral gonorrhea seen each month in one sexually transmitted disease (STD) clinic in Miami are forwarded to the Centers for Disease Control and Prevention (CDC) for susceptibility testing as part of the Gonococcal Isolate Surveillance Project (GISP).
- Samples for all suspected or confirmed tuberculosis cases are forwarded to the DOH Bureau of Public Health Laboratories for *Mycobacterium tuberculosis* testing; any sample positive for *M. tuberculosis* undergoes a rapid test for isoniazid and rifampin resistance.

A cumulative or community antibiogram can provide useful operational information for the selection of an empiric therapy for a presumptive diagnosis, help track antibiotic resistance patterns of clinically important microorganisms and detect trends toward antimicrobial resistance.

Streptococcus pneumoniae

Streptococcus pneumoniae causes 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.

A total of 1,089 *S. pneumoniae* invasive disease cases were reported to DOH in 2013 by health care providers and laboratories. Tables 1-3 and Figure 1 include data on the percent of cases with isolates that were susceptible to selected antibiotics by Clinical and Laboratory Standards Institute (CLSI) groups A-C, age group, and geography. CLSI Group A includes antibiotics that are considered appropriate for inclusion in a routine, primary testing panel, as well as for routing reporting of results for the specific organism groups. Group B includes antibiotics that may warrant primary testing but facilities can decide whether to report results based on specific conditions. Group C includes antibiotics considered to be alternative or supplemental.

Key points for *S. pneumoniae* data:

- Susceptibility by CLSI groups (Table 1, Figure 1):
    - Group A (appropriate for primary testing and routine reporting): 58 to 72% of cases had isolates that were susceptible.
    - Group B (may warrant primary testing, but reported selectively): 81 to 100% of cases had isolates that were susceptible.
    - Group C (alternative antibiotics): 85 to 99% of cases had isolates that were susceptible.
    - Note that susceptibility results for Group B and C antibiotics may underestimate the actual susceptibility rates in the community if only those isolates resistant to Group A antimicrobials are tested against Group B or C antibiotics.
    - Susceptibility to erythromycin and trimethoprim/sulfamethoxazole decreased from 2012 to 2013; susceptibility to other Group A and B antibiotics remained constant or increased.
- Susceptibility to selected antibiotics varies by region and age group with no clear trends (Tables 2, 3, Map 1).

Table 1. Number Tested and Percent of Reported *S. pneumoniae* Invasive Disease Cases With Isolates Susceptible to Selected Antibiotics by Clinical and Laboratory Standards Institute (CLSI) Antibiotic Groups[1], Florida,

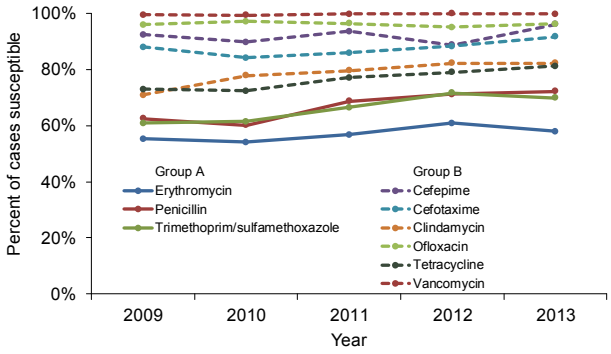
CLSI group[1]	Antibiotic name	Number of cases with isolate tested	Percent of cases with isolate tested		
			Susceptible	Intermediate	Resistant
Group A	Erythromycin	840	58%	1%	41%
	Penicillin	966	72%	11%	16%
	Trimethoprim/sulfamethoxazole	680	70%	9%	21%
Group B	Cefepime	157	96%	2%	2%
	Cefotaxime	525	92%	5%	3%
	Clindamycin	396	82%	1%	16%
	Levofloxacin	774	99%	0%	1%
	Moxifloxacin	194	99%	1%	1%
	Ofloxacin	55	96%	4%	0%
	Meropenem	338	87%	8%	5%
	Tetracycline	565	81%	1%	18%
	Vancomycin	962	100%	0%	0%
Group C	Amoxicillin/clavulanic acid	138	95%	4%	1%
	Amoxicillin	182	90%	4%	5%
	Chloramphenicol	238	96%	0%	3%
	Imipenem	27	NA	NA	NA
	Linezolid	193	99%	1%	0%
	Rifampin	42	98%	2%	0%

Note that this table includes data from cases that were reported to DOH by health care providers and laboratories as part of mandatory case-based disease reportable disease reporting.

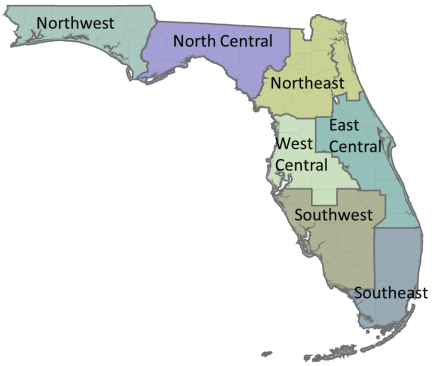
1 Group A includes antibiotics that CLSI considers appropriate for primary testing and routine reporting, Group B includes antibiotics that may warrant primary testing but should be reported selectively, and Group C includes antibiotics considered to be alternative or supplemental.

NA Percent susceptible was suppressed if <30 isolates were tested for susceptibility to a particular drug.

Figure 1. Percent of Reported *S. pneumoniae* Invasive Disease Cases With Isolates Susceptible to Selected Antibiotics by Clinical and Laboratory Standards Institute (CLSI) Antibiotic Groups A and B[1], Florida, 2009-2013



Map 1. Florida Regions (see Tables 2 and 5)



Note that this table includes data from cases that were reported to DOH by health care providers and laboratories as part of mandatory case-based disease reportable disease reporting.

1 Group A includes antibiotics that CLSI considers appropriate for primary testing and routine reporting and group B includes antibiotics that may warrant primary testing but should be reported selectively. Prior to 2010, susceptibility results are not available for levofloxacin, moxifloxacin and meropenem and they are not included on this graph.

Table 2. Percent of Reported *S. pneumoniae* Invasive Disease Cases With Isolates Susceptible to Selected Antibiotics by Clinical and Laboratory Standards Institute (CLSI) Antibiotic Groups[1] and Region (See Map 1), Florida, 2013

CLSI group[1]	Antibiotic name	Percent of cases with susceptible isolate by region (see Map 1)						
		Northwest (88 cases)	North Central (28 cases)	Northeast (144 cases)	West Central (189 cases)	East Central (193 cases)	Southwest (113 cases)	Southeast (334 cases)
Group A	Erythromycin	65%	NA	54%	64%	60%	64%	53%
	Penicillin	76%	NA	71%	73%	65%	78%	72%
	Trimethoprim/sulfamethoxazole	79%	NA	72%	69%	67%	72%	67%
Group B	Cefepime	96%	NA	97%	NA	NA	NA	NA
	Cefotaxime	97%	NA	97%	90%	89%	94%	88%
	Clindamycin	92%	NA	80%	80%	84%	NA	78%
	Levofloxacin	97%	NA	100%	100%	100%	100%	98%
	Meropenem	90%	NA	88%	84%	85%	90%	85%
	Moxifloxacin	NA	NA	NA	100%	100%	NA	100%
	Ofloxacin	NA	NA	NA	NA	94%	NA	NA
	Tetracycline	89%	NA	79%	79%	80%	88%	80%
	Vancomycin	100%	NA	99%	100%	100%	100%	100%

Note that this table includes data from cases that were reported to DOH by health care providers and laboratories as part of mandatory case-based disease reportable disease reporting.

1 Group A includes antibiotics that CLSI considers appropriate for primary testing and routine reporting and group B includes antibiotics that may warrant primary testing but should be reported selectively.

NA Percent susceptible was suppressed if <30 isolates were tested for susceptibility to a particular drug.

Table 3. Percent of Reported *S. pneumoniae* Invasive Disease Cases With Isolates Susceptible to Selected Antibiotics by Clinical and Laboratory Standards Institute (CLSI) Antibiotic Groups[1] and Age Group, Florida, 2013

CLSI group[1]	Antibiotic name	Percent of cases with susceptible isolate by age group (in years)					
		<1 (27 cases)	1-4 (68 cases)	5-14 (30 cases)	15-24 (22 cases)	25-64 (534 cases)	65+ (408 cases)
Group A	Erythromycin	NA	58%	NA	NA	58%	58%
	Penicillin	NA	71%	77%	NA	74%	70%
	Trimethoprim/sulfamethoxazole	NA	69%	NA	NA	70%	69%
Group B	Cefepime	NA	NA	NA	NA	NA	NA
	Cefotaxime	NA	NA	NA	NA	91%	94%
	Clindamycin	NA	76%	NA	NA	83%	85%
	Levofloxacin	NA	NA	NA	NA	99%	99%
	Meropenem	NA	95%	NA	NA	86%	87%
	Moxifloxacin	NA	100%	NA	NA	98%	100%
	Ofloxacin	NA	NA	NA	NA	93%	100%
	Tetracycline	NA	NA	NA	NA	NA	NA
	Vancomycin	NA	100%	NA	NA	100%	100%

Note that this table includes data from cases that were reported to DOH by health care providers and laboratories as part of mandatory case-based disease reportable disease reporting.

1 Group A includes antibiotics that CLSI considers appropriate for primary testing and routine reporting and Group B includes antibiotics that may warrant primary testing but should be reported selectively.

NA Percent susceptible was suppressed if <30 isolates were tested for susceptibility to a particular drug.

Staphylococcus aureus

Staphylococcus aureus bacteria are commonly found on the skin of healthy people, but have the potential to cause serious disease. About 20% of healthy people are persistent carriers of *S. aureus*, usually in the nose and on the skin, and over 60% of the population may be intermittent carriers. Methicillin-resistant *S. aureus* (MRSA) is a strain of *S. aureus* that is resistant to all β-lactam antibiotics (including penicillins, cephalosporins, cephamycins, and monobactams) and may also be resistant to other antibiotics. Resistance testing for oxacillin is used to detect methicillin resistance.

Health care providers and laboratories are required to report all infections due to *S. aureus* that are not susceptible to vancomycin; however, DOH does not require health care providers to report individual MRSA infections. In 2008, antibiotic susceptibility testing results for all *S. aureus* isolates became reportable for laboratories participating in electronic laboratory reporting. This electronic

laboratory data stream is still being improved and as of the time of this report, not enough data have been successfully submitted for meaningful analysis. In the interim, DOH partnered with one of the largest commercial laboratories in the state and has been receiving antibiotic susceptibility testing results for all *S. aureus* isolates tested there since 2004, which is the source of the data included in this report. Note that only the first isolate per person per 365 days was included in the analysis, per CLSI guidelines. Data collected from this one laboratory may or may not b e representative of statewide

Key points for *S. aureus* data:

- Overall resistance patterns (Table 4, Figure 2):
  - Penicillin is not recommended for treating *S. aureus* due to known resistance, and is therefore excluded here.
  - Resistance to oxacillin (i.e., MRSA) ranged from 43 to 57% depending on age, similar to other β-lactam antibiotics.
  - Empiric treatment of skin and soft tissue infections with β-lactam antibiotics is not recommended.
  - Susceptibility remained high for gentamycin, trimethoprim/sulfamethoxazole, linezolid, vancomycin, and tetracycline.

- Geographic patterns (Map 1, Map 2, Table 5):
  - North Florida county residents had the highest proportion of *S. aureus* isolates that were MRSA while south Florida county residents had the lowest. This trend has been consistently observed since surveillance started in 2006.

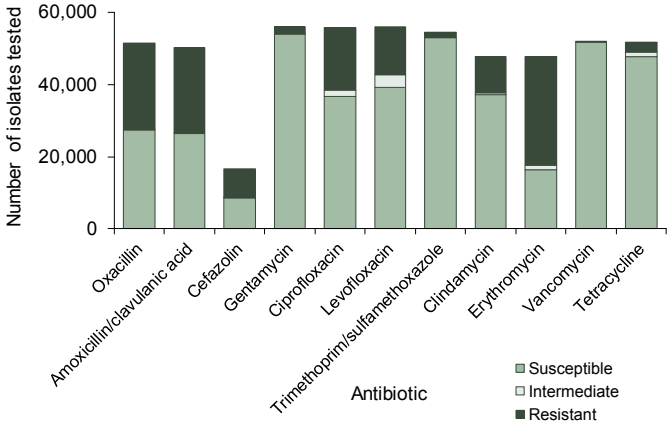
- Age patterns (Table 6):
  - Susceptibility to most antibiotics varied slightly by age group. Isolates from people aged 65 years and older have slightly reduced susceptibility to gentamicin, ciprofloxacin, levofloxacin, trimethoprim/sulfamethoxazole, and clindamycin.

Table 4. Number Tested and Percent of *S. aureus* Isolates Susceptible to Selected Antibiotics, A Commercial Outpatient Laboratory, Florida, 2009-2013

Antibiotic class	Antibiotic name	2009		2010		2011		2012		2013	
		Number tested	Percent susceptible	Number tested	Percent susceptible	Number tested	Percent susceptible	Number tested	Percent susceptible	Number tested	Percent susceptible
β-Lactams	Oxacillin	58,666	50%	56,544	49%	54,817	51%	52,949	52%	51,579	53%
	Amoxicillin/clavulanic acid	60,794	50%	58,079	49%	54,998	51%	51,665	51%	50,178	53%
	Cefazolin	60,733	50%	42,792	47%	39,156	49%	37,199	51%	16,740	52%
Non-β-Lactams	Gentamicin	63,077	97%	60,654	97%	59,084	97%	57,298	97%	56,032	97%
	Ciprofloxacin	24,722	73%	33,639	67%	44,629	68%	51,182	66%	55,714	66%
	Levofloxacin	42,917	74%	57,634	72%	56,949	72%	54,356	71%	56,151	70%
	Trimethoprim/sulfamethoxazole	61,628	98%	59,311	98%	57,573	98%	55,770	98%	54,468	97%
	Clindamycin	54,961	82%	53,166	80%	51,634	79%	49,440	78%	47,831	78%
	Erythromycin	16,493	35%	35,180	32%	51,639	34%	49,446	34%	47,843	35%
	Linezolid	38,267	100%	52,282	100%	34,210	100%	8,279	100%	189	100%
	Vancomycin	58,722	100%	56,652	100%	54,876	100%	52,996	100%	51,686	100%
	Tetracycline	58,469	94%	56,461	93%	54,872	93%	53,008	93%	51,678	93%

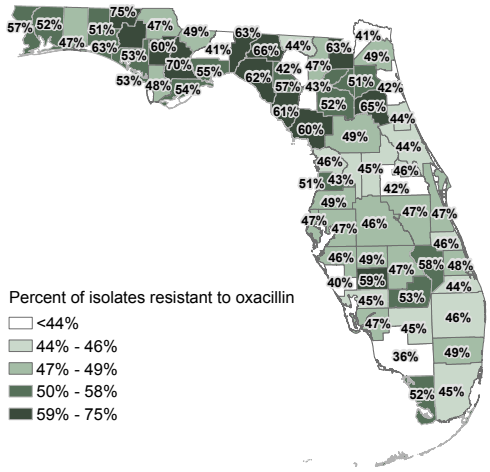
Note that this table includes data from a single commercial outpatient laboratory that receives isolates from health care providers across the state.

Figure 2. Antibiotic Resistance Patterns of *S. aureus* Isolates for Selected Antibiotics, A Commercial Outpatient Laboratory, Florida, 2013



Note that this table includes data from a single commercial outpatient laboratory that receives isolates from health care providers across the state. Linezolid is not included in this figure due to the small number of isolates with susceptibility testing.

Map 2. Percent of *S. aureus* Isolates That Were Resistant to Oxacillin (MRSA) by County of Residence, A Commercial Outpatient Laboratory, Florida, 2013



Note that this table includes data from a single commercial outpatient laboratory that receives isolates from health care providers across the state. Some counties had <30 isolates tested, so the proportion that were resistant to oxacillin is unreliable and should be interpreted with caution: Jefferson (19 isolates tested), Hamilton (27 isolates tested), Holmes (20 isolates tested), Liberty (23 isolates tested), and Washington (27 isolates tested).

Table 5. Percent of *S. aureus* Isolates Susceptible to Selected Antibiotics by Region (See Map 1), A Commercial Outpatient Laboratory, Florida, 2013

Antibiotic class	Antibiotic name	Percent of susceptible by region (see Map 1)						
		Northwest (1,463 isolates)	North Central (1,216 isolates)	Northeast (7,258 isolates)	West Central (10,649 isolates)	East Central (9,584 isolates)	Southwest (6,542 isolates)	Southeast (14,270 isolates)
β-Lactams	Oxacillin	48%	51%	51%	53%	55%	56%	54%
	Amoxicillin/clavulanic acid	48%	51%	50%	53%	55%	56%	54%
	Cefazolin	49%	52%	50%	52%	53%	54%	52%
Non-β-Lactams	Gentamicin	99%	98%	98%	97%	97%	98%	93%
	Ciprofloxacin	63%	69%	68%	66%	68%	67%	64%
	Levofloxacin	68%	74%	72%	70%	71%	71%	68%
	Trimethoprim/sulfamethoxazole	98%	98%	98%	96%	98%	97%	96%
	Clindamycin	82%	85%	79%	80%	79%	79%	73%
	Erythromycin	31%	35%	33%	36%	35%	37%	34%
	Linezolid	NA	NA	NA	NA	100%	NA	100%
	Vancomycin	100%	100%	100%	100%	100%	100%	100%
	Tetracycline	94%	93%	94%	94%	93%	94%	89%

Note that this table includes data from a single commercial outpatient laboratory that receives isolates from health care providers across the state.

NA Percent susceptible was suppressed if <30 isolates were tested for susceptibility to a particular drug.

Table 6. Percent of *S. aureus* Isolates Susceptible to Selected Antibiotics by Age Group, A Commercial Outpatient Laboratory, Florida, 2013

Antibiotic class	Antibiotic name	Percent of isolates susceptible by age group (in years)					
		<1 (1,083 isolates)	1-4 (4,113 isolates)	5-14 (6,406 isolates)	15-24 (6,042 isolates)	25-64 (23,765 isolates)	65+ (14,856 isolates)
β-Lactams	Oxacillin	51%	43%	57%	57%	54%	51%
	Amoxicillin/clavulanic acid	53%	43%	57%	56%	53%	53%
	Cefazolin	47%	39%	54%	56%	52%	53%
Non-β-Lactams	Gentamicin	98%	98%	98%	98%	97%	94%
	Ciprofloxacin	73%	67%	75%	75%	67%	55%
	Levofloxacin	77%	72%	80%	79%	71%	59%
	Trimethoprim/sulfamethoxazole	98%	99%	99%	99%	98%	94%
	Clindamycin	81%	84%	77%	81%	81%	69%
	Erythromycin	34%	27%	34%	37%	36%	34%
	Linezolid	NA	NA	NA	NA	100%	100%
	Vancomycin	100%	100%	100%	100%	100%	100%
	Tetracycline	94%	95%	93%	92%	92%	92%

Note that this table includes data from a single commercial outpatient laboratory that receives isolates from health care providers across the state.

NA Percent susceptible was suppressed if <30 isolates were tested for susceptibility to a particular drug.

Neisseria gonorrhoeae

Neisseria gonorrhoeae bacteria grow easily in the warm, moist areas of the reproductive tract, urethra, mouth, throat, eyes, and anus and cause the sexually transmitted disease (STD) gonorrhea. Resistance to several antibiotics over time has challenged the treatment and control of gonorrhea. In the 1970's, the standard treatments, penicillin and tetracycline, were abandoned due to increased resistance to these agents. As recently as 2007, an increase in fluoroquinolone-resistant isolates prompted recommendations for new treatment guidelines supporting the use of cephalosporins, including ceftriaxone and cefixime, for gonococcal infections. In some parts of the world, *N. gonorrhoeae* is now showing potential resistance to cephalosporins, which are the only recommended class of antibiotics left to treat this common infection.

The Gonococcal Isolate Surveillance Project (GISP) was established in 1986 to continuously monitor trends in antimicrobial resistance of *N. gonorrhoeae* across 30 cities in the U.S. The Miami-Dade STD clinic has served as one of 29 GISP sites since 1998. The Miami-Dade GISP site collects specimens each month from symptomatic men and the first 25 *N. gonorrhoeae* isolates are tested by the CDC for susceptibility to penicillin, tetracycline, spectinomycin, ciprofloxacin, ceftriaxone, cefixime, and azithromycin.

Key points for *N. gonorrhoeae* (Table 7):

- Susceptibility to azithromycin, penicillin, and tetracycline decreased in 2013 and remained stable for ciprofloxacin.
- All isolates were susceptible to ceftriaxone, cefixime, and spectinomycin in 2013.

Table 7. Percent of *N. gonorrhoeae* Isolates Susceptible to Selected Antibiotics, Miami-Dade Gonococcal Isolate Surveillance Project (GISP) Site, 2009-2013

Antibiotic name	2009 (219 isolates)	2010 (209 isolates)	2011 (162 isolates)	2012 (188 isolates)	2013 (187 isolates)
Penicillin	88%	79%	81%	81%	72%
Tetracycline	65%	67%	62%	63%	61%
Spectinomycin	100%	100%	100%	100%	100%
Ciprofloxacin	89%	86%	77%	78%	78%
Ceftriaxone	100%	100%	100%	100%	100%
Cefixime	100%	100%	100%	100%	100%
Azithromycin	100%	99%	100%	100%	96%

Note that this table includes data for specimens collected from the first 25 symptomatic men seen at the Miami-Dade GISP site.

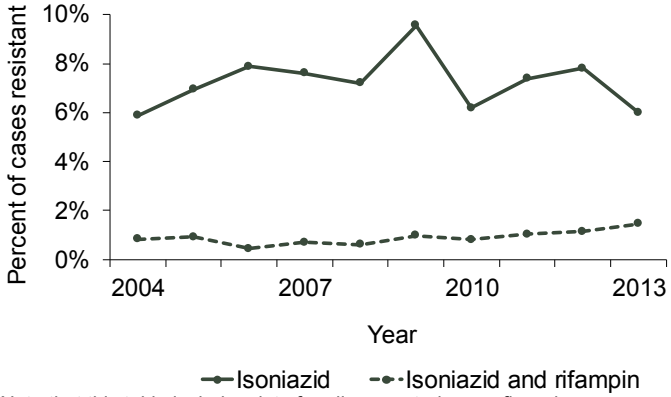
Mycobacterium tuberculosis

Mycobacterium tuberculosis bacteria cause tuberculosis (TB). The bacteria are spread through the air from one person to another and if not treated properly, infections can be fatal. *M. tuberculosis* usually attack the lungs, causing a severe cough and pain in the chest, but can attack any part of the body such as the kidney, spine, and brain. TB drug resistance is a major public health problem that threatens the progress made in TB care and control worldwide. Drug resistance arises due to improper use of antibiotics in chemotherapy of drug-susceptible TB patients. Multidrug-resistant TB is caused by *M. tuberculosis* that is resistant to at least isoniazid and rifampin, the two most potent TB drugs.

Key points for *M. tuberculosis* (Figure 3):

- Resistance to isoniazid alone ranged from 6% to 10% over the past 10 years and was 6% in 2013.
- Multidrug-resistant TB remains uncommon but increased in 2013, with 1.5% of TB cases in 2013 having isolates resistant to both isoniazid and rifampin.

Figure 3. Percent of Counted Tuberculosis Cases With Isolates Resistant to Isoniazid Alone and Isoniazid and Rifampin, Florida, 2004-2013



Note that this table includes data for all suspected or confirmed tuberculosis cases identified in Florida with specimens forwarded to the Bureau of Public Health Laboratories for additional testing.

References

Clinical and Laboratory Standards Institute. 2008. Performance Standards for Antimicrobial Susceptibility Testing; Eighteenth Informational Supplement. CLSI document M100-S18. Wayne, PA: Clinical and Laboratory Standards Institute.

Section 6

Influenza and Influenza-Like Illness Surveillance

Influenza and Influenza-Like Illness Surveillance

Background

Influenza is a respiratory disease caused by influenza viruses. An estimated 5-20% of the U.S. population develop illness from influenza every year; an estimated 3,000 to 49,000 people per year in the U.S. die from influenza, and 200,000 per year are hospitalized. Most experts believe that influenza viruses spread mainly by droplets made when infected people cough, sneeze, or talk. Less often, a person might also get influenza by touching a surface or object contaminated with influenza virus then touching their own mouth, eyes, or possibly nose.

There are two main types of influenza virus that cause human infection. Influenza A and B viruses routinely spread through the human population and are responsible for seasonal influenza epidemics each year. Influenza A viruses are more commonly associated with the ability to cause epidemics or pandemics than influenza B. Influenza A viruses can be broken down into sub-types depending on the genes that make up the surface proteins. Over the course of a flu season, different types (A and B) and subtypes (influenza A) of influenza circulate and cause illness. The best way to prevent influenza is to get vaccinated each year.

Surveillance for influenza is conducted to detect changes in the influenza virus, which is used to help determine the vaccine composition each year as well as prepare for epidemics and pandemics. Surveillance is also conducted to identify unusually severe presentations; detect outbreaks; and determine the onset, peak, and wane of influenza season to assist with influenza prevention, particularly in high-risk populations like the very young, the elderly, and pregnant women.

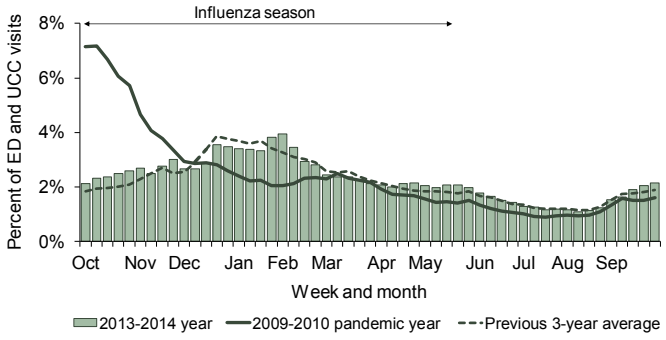
Individual cases of influenza are not reportable in Florida, with the exception of cases of novel influenza (a new subtype of influenza) and influenza-associated pediatric mortality. That means health care providers and laboratories are not required to notify the Florida Department of Health (DOH) when individual influenza cases are identified. All outbreaks, including those due to influenza or influenza-like illness, are reportable in Florida. However, DOH conducts regular surveillance of influenza and influenza-like illness using a variety of surveillance systems, including laboratory surveillance and syndromic surveillance. Florida's syndromic surveillance system, ESSENCE-FL, collects chief complaint data from emergency departments (EDs) and urgent care centers (UCCs); 203 facilities were participating in the 2013-2014 season capturing ~85% of all ED visits in Florida.

The influenza reporting year is defined by the standard reporting weeks as outlined by the Centers for Disease Control and Prevention (CDC), where every year has at least 52 reporting weeks and some years have 53; there were 52 weeks in 2013. In Florida, increased surveillance for influenza starts in week 40 (September 29 in 2013) of one year and ends in week 20 of the following year (May 17 in 2014). Florida produces a weekly report during influenza season (October through May) and a biweekly report during the rest of the year that summarizes influenza information from all surveillance systems. These reports can be found at www.FloridaHealth.gov/FloridaFlu.

General Trends

The 2013-2014 influenza season in the U.S. spanned from mid-November to early January with a peak in late December. In comparison to national trends, influenza activity in Florida increased earlier (September), peaked later (end of January) and did not decline until May (Figure 1). Florida commonly sees unique statewide and regional seasonality with peak influenza activity that is often different than national trends.

Figure 1: Percentage of Influenza-Like Illness Visits From Emergency Department (ED) and Urgent Care Center (UCC) Chief Complaints, Florida, 2013-2014 Year, 2009-2010 Pandemic Year, and Previous 3-Year Average (2010-2011, 2011-2012, 2012-2013)



Nationwide, the 2013-2014 season marked the first post-pandemic season (2009-2010) where influenza A (2009 H1N1) was the predominantly circulating strain (Figure 2). Influenza activity in the 2013-2014 season had a considerably smaller, later peak than the 2009-2010 pandemic season. The number of outbreaks reported within a season varies, with 30 outbreaks reported in the 2010-2011 season, 12 outbreaks in the 2011-2012 season, and 53 outbreaks in the 2012-2013 season. In the 2013-2014 season, 22 outbreaks were reported, with the majority occurring in schools (32%), households (23%), and jails and prisons (18%) (Figure 3, Map 1).

Figure 2: Number of Positive Influenza Specimens Tested by the Florida Bureau of Public Health Laboratories by Subtype, Florida, September 29, 2013 to September 27, 2014

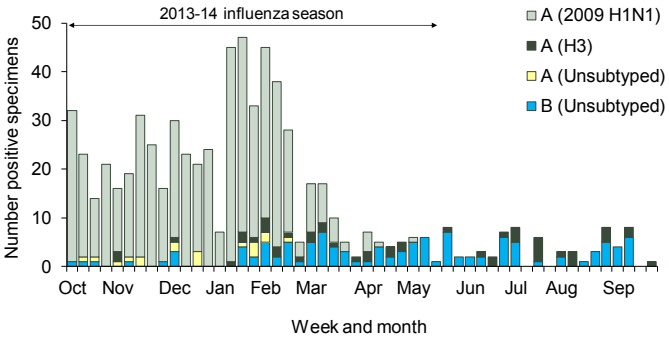
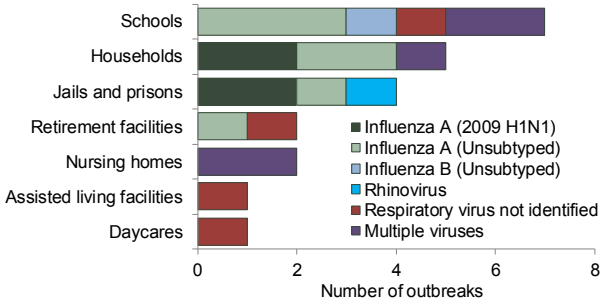
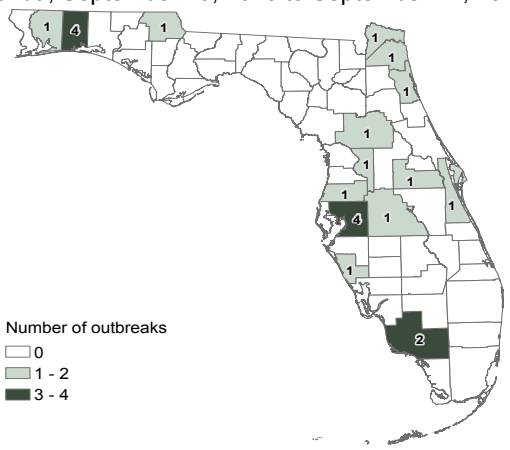


Figure 3: Number of Reported Influenza and Influenza-Like Illness Outbreaks by Facility Type and Virus Type, Florida, September 29, 2013 to September 27, 2014

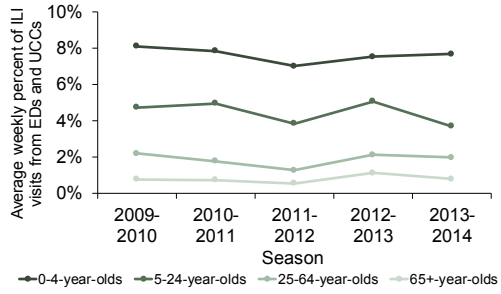


Map 1: Number of Reported Influenza and Influenza-Like Illness Outbreaks by County, Florida, September 29, 2013 to September 27, 2014



The 2013-2014 season and three preceding seasons had similar influenza activity trends in all age groups, as seen in the proportion of visits to EDs and UCCs for influenza-like illness (Figure 4). In contrast to the 2013-2014 season, the 2009-2010 pandemic season was characterized by elevated influenza-like illness activity in 5- to 24-year-olds, which suggests that disease burden decreased notably in this population from the first to the second influenza A (2009 H1N1) season and is likely the result of some acquired immunity within the population.

Figure 4. Average Weekly Percentage of Visits Due to Influenza-Like Illness From Emergency Department (ED) and Urgent Care Center (UCC) Visit Chief Complaints by Age Group, Florida, 2009-2010 to 2013-2014 Seasons



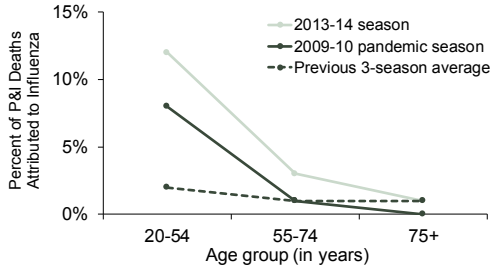
Deaths

Influenza-associated pediatric deaths are reportable in Florida. Over the past five influenza seasons, between two and eight deaths have been reported each season. In the 2013-2014 season, five influenza-associated pediatric deaths were reported. Most deaths occurred in unvaccinated children <5 years old who also had underlying health conditions.

Although not individually reportable, pneumonia and influenza deaths are monitored through review of data recorded on death certificates. In the 2013-2014 season, the proportion of pneumonia and influenza deaths that were attributed to influenza was highest in 20- to 54-year-olds and lowest in

those aged 75 years and older (Figure 5). This trend was very similar to the 2009-2010 pandemic season. In contrast, the previous three seasons had relatively similar proportions of influenza deaths across all age groups. Note that deaths in those less than 20 years old were very uncommon and are excluded here due to low counts.

Figure 5. Percentage of Pneumonia and Influenza (P & I) Deaths Attributed to Influenza by Age Group, Florida, 2013-2014 Season, 2009-2010 Pandemic Season, and Previous 3-Season Average (2010-2011, 2011-2012, 2012-2013)



Influenza in Pregnant Women

In December 2013, DOH received multiple reports of influenza infection resulting in severe presentations to EDs in pregnant women. Following investigation, DOH was able to develop and validate a query to conduct timely surveillance of pregnant women with influenza using syndromic surveillance in EDs and UCCs. Syndromic surveillance data showed a notable increase in the number of visits from pregnant women to EDs for influenza infection. DOH also reviewed hospital discharge data from the Agency for Health Care Administration and identified that Medicaid-receiving women accounted for almost half (48%) of all live births but two-thirds (66%) of hospitalizations in pregnant women in Florida. Medicaid-receiving pregnant women also required intensive care unit stays at 2.13 times the rate of non-Medicaid-receiving pregnant women and had a 16% lower vaccine coverage rate than counterparts insured by other means. Results indicating that Medicaid-receiving pregnant women are disproportionately at risk for severe morbidity due to influenza infection prompted the expansion of Medicaid coverage of influenza vaccination for all pregnant women aged 22 years and older in Florida from December 2013 to May 2014.

References

Centers for Disease Control and Prevention. 2013-2014 Influenza Season. Available at www.cdc.gov/flu/pastseasons/1314season.htm.

Centers for Disease Control and Prevention. Seasonal Influenza Q & A. Available at www.cdc.gov/flu/about/qa/disease.htm.

Chen H, Wang Y, Liu W, Zhang J, Dong B, Fan X, et al. 2009. Serologic Survey of Pandemic (H1N1) 2009 Virus, Guangxi Province, China. *Emerging Infectious Diseases*, 15(11):1849-1850. Available at wwwnc.cdc.gov/eid/article/15/11/09-0868_article.

Epperson S, Blanton L, Kniss K, Mustaquim D, Steffens C, Wallis T, et al. 2014. Influenza Activity — United States, 2013–14 Season and Composition of the 2014–15 Influenza Vaccines. *Morbidity and Mortality Weekly Report*, 63(22):483-490. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6322a2.htm.

Section 7

2013 Publications and Reports

2013 Publications With Florida Department of Health Authors

Below is a list of articles with Florida Department of Health (DOH) authors that were published in peer-reviewed journals in 2013. Note that DOH authors appear in bold font.

Abbo L, Lo K, Sinkowitz-Cochran R, **Burke AC**, **Hopkins RS**, Srinivasan A, Hooton TM. 2013. Antimicrobial Stewardship Programs in Florida's Acute Care Facilities. *Infection Control and Hospital Epidemiology,* 34(6):634-637.

Abrams B, Anderson H, **Blackmore C**, Bove FJ, Condon SK, Eheman CR, Fagliano J, Haynes LB, Lewis LS, Major J, McGeehin MA, Simms E, Sircar K, Soler J, Stanbury M, **Watkins SM**, Wartenberg D. Investigating Suspected Cancer Clusters and Responding to Community Concerns: Guidelines From CDC and the Council for State and Territorial Epidemiologists. *Morbidity and Mortality Weekly Report*, 62(RR--8):1-14. Available at www.cdc.gov/mmwr/preview/mmwrhtml/rr6208a1.htm?s_cid=rr6208a1_w.

Leapley A, **Cruze A**, **Mejia-Echeverry A**, **Stanek D**, **Quaye E**, Vento S, et al. 2013. Notes From the Field: *Strongyloides* Infection Among Patients at a Long-Term Care Facility — Florida, 2010-2012. *Morbidity and Mortality Weekly Report*, 62(42):844. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6242a5.htm.

Block SR, Watkins SM, Salemi JL, **Rutkowski R**, Tanner JP**, Correia JA**, Kirby RS. 2013. Maternal Pre-Pregnancy Body Mass Index and Risk of Selected Birth Defects: Evidence of a Dose-Response Relationship. *Paediatric Perinatal Epidemiology*, 27(6):521-531.

Cavicchia PP, Adams SA, Steck SE, Hussey JR, Lui J, Daquise VG, Herbert JR. 2013. Racial Disparities in Colorectal Cancer Incidence by Type 2 Diabetes Mellitus Status. *Cancer Causes Control,* 24(2):277-285.

Cavicchia PP, **Watkins S**, **Blackmore C, Matthias J**. 2013. Notes From the Field: Eye Injuries Sustained at a Foam Party – Collier County, Florida 2012. *Morbidity and Mortality Weekly Report*, 62(33):667-668. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6233a5.htm.

Dawson AL, Cassell CH, Riehle-Colarusso T, Grosse SD, Tanner JP, Kirby RS, **Watkins SM**, **Correia JA**, Olney RS. 2013. Factors Associated With Late Detection of Critical Congenital Heart Disease in Newborns. *Pediatrics*, 132(3):e604-e611. Available at pediatrics.aappublications.org/content/early/2013/08/07/peds.2013-1002.full.pdf+html.

Harris JR, Lockhart SR, Sondermeyer G, Vugia DJ, Crist MB, D'Angelo MT, Sellers B, Franco-Paredes C, Makvandi M, Smelser C, Greene J, **Stanek D**, et al. 2013. *Cryptococcus gattii* Infections in Multiple States Outside the USA Pacific Northwest. *Emerging Infectious Diseases*, 19 (10):1620-1626. Available at wwwnc.cdc.gov/eid/article/19/10/13-0441_article.

Hernandez MN, Voti L, **Feldman JD**, Tannenbaum SL, Scharber W, MacKinnon JA, et al. 2013. Cancer Registry Enrichment Via Linkage With Hospital-Based Electronic Medical Records: A Pilot Investigation. *Journal of Registry Management,* 40(1):40-47.

King D, Johnson B, Miller D, Landon EM, DeVries A, et al. 2013. Adenovirus-Associated Epidemic Keratoconjunctivitis Outbreaks – Four States, 2008-2010. *Morbidity and Mortality Weekly Report*, 62(32):637-641. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6232a1.htm.

Kintziger KW, Miller K, Simms E, Stanbury M, **Watkins SM**. 2013. Use of Poison Center Data Assessment Report 2012. *Council of State and Territorial Epidemiologists*, July 3, 2013. Available at c.ymcdn.com/sites/www.cste.org/resource/resmgr/EnvironmentalHealth/PoisonAssessmentreport2012.pdf.

McCall WV, **Kintziger KW**. 2013. Late Life Depression: A Global Problem With Few Resources. *Psychiatric Clinics of North America,* 36(4):475-481.

Niyonsenga T, Trepka MJ, Lieb S, **Maddox LM**. 2013. Measuring Socioeconomic Inequality in the Incidence of AIDS: Rural-Urban Considerations. *AIDS Behavior*, 17(2):700-709.

Peterson C, Dawson A, Grosse SD, Riehle-Colarusso T, Olney RS, Tanner JP, Kirby RS, **Correia JA**, **Watkins SM**, Cassell CH. 2013. Hospitalizations, Costs and Mortality Among Infants With Critical Congenital Heart Disease: How Important is Timely Detection? *Birth Defects Research Part A: Clinical and Molecular Teratology*, 97(10):664-672.

Regan J, **Matthias J**, Green-Murphy A, **Stanek D**, Bertholf M, Pritt BS, et al. 2013. A Confirmed *Ehrlichia ewingii* Infection Likely Acquired Through Platelet Transfusion. *Clinical Infectious Diseases,* 56(12):e105-107.

Schirmer PL, Lucero-Obusan CA, Benoit SR, Santiago LM, **Stanek D**, Day A, et al. 2013. Dengue Surveillance in Veterans Affairs Healthcare Facilities, 2007-2010. *PLoS Neglected Tropical Diseases,* 7(3):e2040.

Steinau MA, Unger ER, Hernandez BY, Goodman MT, Copeland G, Hopenhayn C, Cozen W, Saber MS, **Huang Y**, et al. 2013. Human Papillomavirus Prevalence in Invasive Anal Cancers in the United States Before Vaccine Introduction. *Journal of Lower Genital Tract Diseases,* 17(4):397-403.

Traxler RM, Guerra MA, Morrow MG, Haupt T, Morrison J, Saah JR, Smith CG, Williams C, Fleischauer AT, Lee PA, **Stanek D**, et al. 2013. Review of Brucellosis Cases From Laboratory Exposures in the United States, 2008-2011, and Improved Strategies for Disease Prevention. *Journal of Clinical Microbiology*, 51(9):3132-3136. Available at jcm.asm.org/content/51/9/3132.full.pdf+html.

Trepka MJ, Niyonsenga T, **Maddox LM**, Lieb S. 2013. Rural AIDS Diagnoses in Florida: Changing Demographics and Factors Associated With Survival. *Journal of Rural Health*, 29 (3):266-280.

Trepka MJ, Niyonsenga T, **Maddox LM**, Lieb S, Lutfi K, Pavlova-McCalla E. 2013. Community Poverty and Trends in Racial/Ethnic Survival Disparities Among People Diagnosed With AIDS in Florida, 1993-2004. *American Journal of Public Health,* 103(4):717-726.

Xiao H, Tan F, Goovaerts P, Adunlin G, Ali A, Gwede CK, **Huang Y**. 2013. Use of Treatment Information From a State Central Cancer Registry in Prostate Cancer Research. *Journal of Registry Management*, 40(3):127-130.

Xiao H, Tan F, Goovaerts P, Adunlin G, Ali A, **Huang Y**, Gwede CK. 2013. Factors Associated With Time-to-Treatment of Prostate Cancer in Florida. *Journal of Health Care for the Poor and Underserved*, 24(2013):132–146.

Xiao H, Tan F, Goovaerts P, Ali A, Adunlin G, **Huang Y**, Gwede CK. 2013. Construction of a Comorbidity Index for Prostate Cancer Patients Linking State Cancer Registry With Inpatient and Outpatient Data. *Journal of Registry Management*, 40(4):159-164.

Additional Reports Available Online

Florida Arboviral Disease Reports
www.FloridaHealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.html

Florida Birth Defects Registry Reports
www.FloridaHealth.gov/AlternateSites/FBDR/Data_Research/publications.html

Florida Bureau of Public Health Laboratory Reports
www.floridahealth.gov/programs-and-services/public-health-laboratories/forms-publications/index.html

Florida Cancer Reports
www.FloridaHealth.gov/diseases-and-conditions/cancer/cancer-registry/reports/annual.html

Florida Food and Waterborne Disease Reports
www.FloridaHealth.gov/diseases-and-conditions/food-and-waterborne-disease/fwdp-annual-reports.html

Florida HIV/AIDS Reports
www.FloridaHealth.gov/diseases-and-conditions/aids/surveillance/epi-slide-sets.html

Florida Influenza Reports
www.FloridaHealth.gov/FloridaFlu

Florida Sexually Transmitted Disease Reports
www.FloridaHealth.gov/diseases-and-conditions/sexually-transmitted-diseases/std-statistics/

Florida Tick-Borne Disease Reports
www.FloridaHealth.gov/diseases-and-conditions/tick-and-insect-borne-diseases/tick-surveillance.html

Florida Tuberculosis Reports
www.FloridaHealth.gov/diseases-and-conditions/tuberculosis/tb-statistics/

Florida Department of Health
Division of Disease Control and Health Protection, Bureau of Epidemiology
4052 Bald Cypress Way, Bin #A-12, Tallahassee, FL 32399-1720
www.FloridaHealth.gov

Florida Morbidity Statistics Report:
www.FloridaHealth.gov/MorbidityStatisticsReport