2011

Florida Morbidity Statistics

REPORT

Florida Department of Health
Bureau of Epidemiology

Florida Morbidity Statistics Report

2011

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Florida Morbidity Statistics Report Staff ... v

Introduction
Background ... ix
Purpose ... ix
Report Format ... ix
Data Sources ... ix
Interpreting the Data ... x
Florida County Boundaries ... xv
Table 1: Florida Population by Year, 2002-2011 ... xvi
Table 2: Florida Population by Age Group, 2011 ... xvi
Table 3: Florida Population by Gender, 2011 ... xvi
Table 4: Florida Population by Race, 2011 ... xvi
List of Reportable Diseases/Conditions in Florida, 2011 ... xvii
Selected Division of Disease Control and Health Protection Contacts ... xviii
2011 Summary of Key Disease Trends ... xix

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, 2002-2011 ... 3
Table 2: Reported Confirmed and Probable Cases of Reportable Diseases/ Conditions of Infrequent Occurrence, Florida, 2002-2011 ... 4
Table 3: Reported Confirmed and Probable Cases and Incidence Rate (per 100,000 Population) of Selected Reportable Diseases/Conditions by Age Group, Florida, 2011 ... 5
Table 4: Top 10 Reported Confirmed and Probable Cases of Reportable Diseases/Conditions by Age Group, Florida, 2011 ... 6
Table 5: Reported Confirmed and Probable Cases of Selected Reportable Diseases/Conditions by Month of Onset, Florida, 2011 ... 7

Section 2: Selected Reportable Diseases/Conditions
Arsenic Poisoning ... 11
Brucellosis ... 14
Campylobacteriosis ... 17
Carbon Monoxide Poisoning ... 19
Chlamydia ... 22
Cholera ... 25
Ciguatera Fish Poisoning ... 28
Cryptosporidiosis ... 30
Cyclosporiasis ... 32
Dengue Fever ... 34
Ehrlichiosis/Anaplasmosis ... 37
Giardiasis ... 41

Gonorrhea 43
Haemophilus influenzae, Invasive Disease 46
Hepatitis A 48
Hepatitis B, Acute 51
Hepatitis B (+HBsAg) in Pregnant Women 54
Hepatitis C, Acute 56
HIV Infection and AIDS 59
Lead Poisoning 63
Legionellosis 66
Listeriosis 69
Lyme Disease 72
Malaria 75
Measles 78
Meningococcal Disease 81
Mercury Poisoning 84
Mumps 87
Pertussis 89
Pesticide-Related Illness and Injury 91
Rabies, Animal 95
Rabies, Possible Exposure where Post-Exposure Prophylaxis was Recommended 98
Rocky Mountain Spotted Fever 100
Salmonellosis 103
Shiga Toxin-Producing *Escherichia coli* Infection 105
Shigellosis 108
Streptococcus pneumoniae, Invasive Disease 110
Syphilis 112
Tuberculosis 115
Typhoid Fever 118
Varicella 120
Vibriosis (excluding *Vibrio cholerae* O1, see Cholera) 123
West Nile Virus Disease 126

Section 3: Summary of Cancer Data, 2009 129
Section 4: Summary of Antimicrobial Resistance Surveillance 141
Section 5: Summary of Foodborne Disease Outbreaks 149
Section 6: Notable Outbreaks and Case Investigations 157
Section 7: 2011 Publications with Florida Department of Health Authors 183
Section 8: Public Health Laboratory Status Report 189

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Introduction

Background

The Florida Morbidity Statistics Report is the official record of the occurrence of reportable disease in Florida and this edition marks the fifty-sixth publication since 1945. The data contained here are final, unless otherwise noted. Florida Statutes Chapter 381 states, “The department shall conduct a communicable disease prevention and control program as part of fulfilling its public health mission.” 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. 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 in 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.

The Bureau of Epidemiology thanks all program areas within the Florida Department of Health that contributed to this report including Immunization, HIV/AIDS, Sexually Transmitted Disease, Tuberculosis, Environmental Health, and Public Health Laboratories. 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, or other essential functions.

Purpose

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

1. Summarize annual morbidity from reportable acute communicable and environmental diseases and cancer in Florida.
2. 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.
3. Provide a resource to medical and public health authorities at county, state, and national levels.

Report Format

This report is divided into eight sections:

Section 1: Summary of Reportable Diseases/Conditions
Section 2: Selected Reportable Diseases/Conditions
Section 3: Summary of Cancer Data, 2009
Section 4: Summary of Antimicrobial Resistance Surveillance
Section 5: Summary of Foodborne Disease Outbreaks
Section 6: Notable Outbreaks and Case Investigations
Section 7: 2011 Publications with Florida Department of Health Authors
Section 8: Public Health Laboratory Status Report

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. Data on the occurrence of reportable diseases in Florida were obtained through passive and active surveillance. Reporting of suspected and confirmed reportable diseases and conditions in the state of Florida is mandated under Florida Statute 381.0031 and Chapter 64D-3, Florida Administrative Code (F.A.C.). 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, Chapter 64D -3, F.A.C. 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 healthcare workers and policymakers, and would not be possible without the cooperation of the extensive network involving both private and public sector participants.

1. Passive surveillance relies on physicians, laboratories, and other healthcare providers to report diseases to the Florida Department of Health (FDOH) confidentially in one of three forms: electronically, by telephone, or by facsimile.
2. Active surveillance entails FDOH staff regularly contacting hospitals, laboratories, and physicians in an effort to identify all cases of a given disease or condition.
3. Increasingly, information about cases of reportable diseases and conditions is passed from providers, especially laboratories, to the FDOH as electronic records. This occurs automatically without the involvement of a person after the electronic transmission process has been established between FDOH and the reporting partner.

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 healthcare providers and laboratories across the state of Florida. Case reporting is most often dependent upon a person becoming ill, seeking medical attention, the healthcare provider ordering laboratory testing, and then the healthcare 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, more severe reportable diseases such as bacterial meningitis, diphtheria, polio, botulism, anthrax, tuberculosis, and congenital syphilis are more completely reported than the more common but (individually) less severe diseases such as acute hepatitis C, lead poisoning, 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. Animal rabies 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. All rates in the report based on fewer than 20 events should be considered unreliable. This translates into a relative standard error of the rate of 23% or more, which is the cut-off for rate reliability used by the National Center for Health Statistics. Based on this, rates were not generally calculated in this report when there were less than 20 events.

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 2011 may have actually had onset or been diagnosed in 2010; rarely, cases reported in 2011 may have onset or diagnosis dates prior to 2010. Additionally, cases with illness onset or diagnosis late in 2011 may not have been reported to the Bureau of Epidemiology by the end of the 2011 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. 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. <u>Case Definition</u>

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 Select Reportable Diseases in Florida, available at http://www.doh.state.fl.us/disease_ctrl/epi/surv/CaseDefinitions.html). Case classifications are reviewed at the state level for many diseases. Following Morbidity and Mortality Weekly Report (MMWR) print criteria, only confirmed and probable cases have been included for all diseases (i.e., suspect cases are excluded) in this report unless otherwise specified.

Each year case definitions are evaluated for necessary revisions. A number of changes were made to reportable disease case definitions in 2011 as a result of position statements approved by the Council of State and Territorial Epidemiologists (CSTE) in 2010.

a. Summary of case definition changes effective January 2011:

i. Acute arboviral diseases: multiple revisions to case classification criteria.

ii. Botulism: adds a probable case classification category to the wound botulism case definition and expands the confirmed case definition to include a history of injection drug use within the two weeks before onset of symptoms.

iii. Campylobacteriosis: expands the probable case definition to include a positive stool enzyme immunoassay (EIA) (see also the summary of case definition changes July 27, 2011, below).

iv. Creutzfeldt-Jakob disease: includes reformatting of the laboratory evidence section of the case definition; detection of tau protein is now included in criteria to meet the probable case definition.

v. Cryptosporidiosis: includes reformatting of the laboratory evidence section of the case definition; detection of *Cryptosporidium* antigen has been removed from the criteria to meet the confirmed case definition; antigen detection is used as criteria to meet the probable case definition.

vi. Giardiasis: includes a reformatting and expansion of the laboratory evidence section of the case definition and revisions to the confirmed case definition. The laboratory evidence section now includes DNA. The confirmed case definition requires a case to be clinically compatible in addition to meeting the laboratory criteria; the 2010 confirmed case definition required laboratory evidence only.

vii. Lyme disease: includes a reformatting and expansion of the laboratory evidence section of the case definition. The laboratory evidence section now includes cerebrospinal fluid (CSF) antibody positive for *B. burgdorferi* by EIA or immunofluorescence assay (IFA) when the titer is higher than it was in serum.

viii. Viral hemorrhagic fever (VHF): adds viruses included in the VHF surveillance case definition. VHF case definition includes Crimean-Congo, Ebola, Guanarito, Junin, Lassa, Lujo, Machupo, Marburg, and Sabia viruses. In addition, the clinical presentation criteria and the criteria for epidemiologic linkage in the case definition have been revised.

A number of additional changes to the reportable disease case definitions were implemented mid-2011 as a result of the increase in use of non-culture based laboratory methods and position statements approved by CSTE in 2011.

b. Summary of case definition changes effective July 27, 2011:

i. Campylobacteriosis: revised the confirmed case definition, eliminating the need for clinically compatible illness for confirmed cases. Revised the probable case definition: only those cases that are epidemiologically linked to a confirmed case will continue to meet the probable case definition. Added a suspect case definition that includes all positive non-culture based laboratory results (including antigen detection) regardless of symptoms.

ii. Salmonellosis: added a suspect case definition that includes cases with positive non-culture based laboratory results regardless of symptoms.

iii. Shigellosis: added a suspect case definition that includes cases with positive non-culture based laboratory results regardless of symptoms.

iv. *Escherichia coli*, Shiga toxin-producing (STEC): updated the note section to add clarification to current procedures; all Shiga toxin positive specimens should be sent to the Bureau of Public Health Laboratories for confirmation and additional testing.

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.

5. <u>Assigning Cases to Counties</u>
Cases are assigned to Florida counties based on the county of residence at the time of the disease. Cases are assigned to their county of residence 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 exposed or infected in Florida are not counted as Florida cases and are not included in this report. These cases are referred through an interstate reciprocal notification system to the state where the person resides.

6. <u>Population Estimates</u>
All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS). CHARTS receives estimates from the Florida Department of Health Office of Health Statistics and Assessment in consultation with the Florida Legislature's Office of Economic and Demographic Research (EDR). Estimates are updated once per year. 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 cases are stored in Merlin, Florida's web-based reportable disease surveillance system. When entering a case 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 are listed below.

California serogroup virus
CALIFORNIA SEROGROUP, NEUROINVASIVE - 06250
CALIFORNIA SEROGROUP, NON-NEUROINVASIVE - 06251

Dengue fever
DENGUE FEVER - 06100
DENGUE HEMORRHAGIC FEVER - 06101

Eastern equine encephalitis
EASTERN EQUINE ENCEPHALITIS, NEUROINVASIVE - 06220
EASTERN EQUINE ENCEPHALITIS, NON-NEUROINVASIVE - 06221

E. coli, Shiga toxin-producing
ENTEROHEMORRHAGIC E. COLI (EHEC) O157:H7 - 41601 (EXPIRED)
E. COLI SHIGA TOXIN + (SEROGROUP NON-O157) - 41602 (EXPIRED)
E. COLI SHIGA TOXIN + (NOT SEROGROUPED) - 41603 (EXPIRED)
ESCHERICHIA COLI, SHIGA TOXIN PRODUCING - 00800

Ehrlichiosis/anaplasmosis
EHRLICHIOSIS, HUMAN - 08380 (EXPIRED)
EHRLICHIOSIS/ANAPLASMOSIS, E. EWINGII - 08383,
EHRLICHIOSIS/ANAPLASMOSIS, HGE, A. PHAGOCYTOPHILUM - 08381,
EHRLICHIOSIS/ANAPLASMOSIS, HME, E. CHAFFEENSIS - 08382,
EHRLICHIOSIS/ANAPLASMOSIS, UNDETERMINED - 08384

Encephalitis, other
ENCEPHALITIS, CHICKENPOX - 05200 (EXPIRED)
ENCEPHALITIS, HERPES - 05430 (EXPIRED)
ENCEPHALITIS, INFLUENZA - 48780 (EXPIRED)
ENCEPHALITIS, MEASLES - 05500 (EXPIRED)
ENCEPHALITIS, MUMPS - 07220 (EXPIRED)
ENCEPHALITIS, OTHER - 32390 (EXPIRED)
ENCEPHALITIS, OTHER (NON-ARBOVIRAL) - 03236

Haemophilus influenzae, invasive disease
H. INFLUENZAE CELLULITIS - 69290 (EXPIRED)
H. INFLUENZAE EPIGLOTTITIS - 46430 (EXPIRED)
H. INFLUENZAE MENINGITIS - 32000 (EXPIRED)
H. INFLUENZAE SEPTIC ARTHRITIS - 71100 (EXPIRED)
HAEMOPHILUS INFLUENZAE (INVASIVE DISEASE) - 03841

Listeriosis
LISTERIOSIS - 02700
MENINGITIS, LISTERIA MONOCYTOGENES – 32070 (EXPIRED)

Meningococcal disease
MENINGITIS, MENINGOCOCCAL - 03600 (EXPIRED)
MENINGOCOCCAL DISEASE - 03630
MENINGOCOCCEMIA, DISSEMINATED - 03620 (EXPIRED)
PNEUMONIA N.MENING - 03689 (EXPIRED)

Plague
PLAGUE, BUBONIC - 02000
PLAGUE, PNEUMONIC - 02050

Poliomyelitis
POLIOMYELITIS - 04590
POLIOMYELITIS, NONPARALYTIC - 04520

Q fever
Q FEVER - 08300 (EXPIRED)
Q FEVER ACUTE - 08301
Q FEVER CHRONIC - 08302

St. Louis encephalitis
ST. LOUIS ENCEPHALITIS VIRUS, NEUROINVASIVE - 06230
ST. LOUIS ENCEPHALITIS VIRUS, NON-NEUROINVASIVE - 06231

Typhus fever
TYPHUS FEVER - 08190 (EXPIRED)
TYPHUS FEVER, ENDEMIC (MURIN) - 08100
TYPHUS FEVER, EPIDEMIC (LOUSE) - 08000

Venezuelan equine encephalitis
VENEZUELAN EQUINE ENCEPHALITIS VIRUS, NEUROINVASIVE - 06620
VENEZUELAN EQUINE ENCEPHALITIS VIRUS, NON-NEUROINVASIVE - 06621

Vibrio infections
VIBRIO ALGINOLYTICUS - 00195
VIBRIO CHOLERAE NON-O1 - 00198
VIBRIO FLUVIALIS - 00194
VIBRIO HOLLISAE - 00196
VIBRIO MIMICUS - 00197
VIBRIO PARAHAEMOLYTICUS - 00540
VIBRIO VULNIFICUS - 00199
VIBRIO, OTHER - 00193

West Nile virus
WEST NILE VIRUS, NEUROINVASIVE - 06630
WEST NILE VIRUS, NON-NEUROINVASIVE - 06631

Western equine encephalitis
WESTERN EQUINE ENCEPHALITIS, NEUROINVASIVE - 06210
WESTERN EQUINE ENCEPHALITIS, NON-NEUROINVASIVE - 06211

Florida County Boundaries

Florida Population Estimates

Table 1. Florida Population by Year, 2002-2011

Year	Population
2002	16,772,201
2003	17,164,199
2004	17,613,368
2005	18,018,497
2006	18,440,700
2007	18,731,287
2008	18,812,155
2009	18,819,000
2010	18,788,795
2011	18,934,287

Table 2. Florida Population by Age Group, 2011

Age Group	2011 Population
<1	209,739
1-4	861,809
5-9	1,089,617
10-14	1,131,815
15-19	1,213,606
20-24	1,245,246
25-34	2,327,217
35-44	2,399,046
45-54	2,716,012
55-64	2,397,657
65-74	1,786,874
75-84	1,107,266
85+	448,383
Total	18,934,287

Table 3. Florida Population by Gender, 2011

Gender	2011 Population
Female	9,675,000
Male	9,259,287
Total	18,934,287

Table 4. Florida Population by Race, 2011

Race	2011 Population
White	14,164,982
Black	3,040,498
Other	1,728,807
Total	18,934,287

List of Reportable Diseases/Conditions in Florida, 2011

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; or any laboratory licensed under chapter 483 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) provides 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 listed in subsection (2)…". This list reflects diseases and conditions that were reportable in 2011. Updates may be made in future years; Morbidity Statistics Reports for subsequent years will reflect changes in the list.

Acquired Immunodeficiency Syndrome (AIDS)
Amebic encephalitis
Anthrax
Arsenic poisoning
Botulism
Brucellosis
California serogroup virus disease (neuroinvasive and non-neuroinvasive)
Campylobacteriosis
Cancer (except non-melanoma skin cancer, and including benign and borderline intracranial and CNS tumors)
Carbon monoxide poisoning
Chancroid
Chlamydia
Cholera
Ciguatera fish poisoning
Congenital anomalies
Conjunctivitis (in neonates ≤14 days old)
Creutzfeldt-Jakob disease
Cryptosporidiosis
Cyclosporiasis
Dengue
Diphtheria
Eastern equine encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Ehrlichiosis/anaplasmosis
Encephalitis, other (non-arboviral)
Enteric diseases due to:
- *Escherichia coli*, O157:H7
- *Escherichia coli*, other pathogenic E. coli including entero-toxigenic, invasive, pathogenic, hemorrhagic, aggregative strains and Shiga toxin-producing strains

Giardiasis
Glanders
Gonorrhea
Granuloma inguinale
Haemophilus influenzae, invasive disease
Hansen's Disease (Leprosy)
Hantavirus infection
Hemolytic uremic syndrome
Hepatitis A
Hepatitis B, C, D, E, and G
Hepatitis B surface antigen in pregnant women or children ≤24 months old
Herpes simplex virus in infants ≤6 months old, anogenital in children ≤12 years old
Human immunodeficiency virus (HIV) infection
Human papillomavirus in children ≤6 years old, anogenital in children ≤12 years old, cancer associated strains
Influenza due to novel or pandemic strains
Influenza-associated pediatric mortality (in children <18 years old)
Lead poisoning
Legionellosis
Leptospirosis
Listeriosis
Lyme disease
Lymphogranuloma venereum
Malaria
Measles
Melioidosis
Meningitis (bacterial, cryptococcal, mycotic)
Meningococcal disease
Mercury poisoning
Mumps
Neurotoxic shellfish poisoning
Pertussis
Pesticide-related illness and injury
Plague
Poliomyelitis
Psittacosis
Q Fever
Rabies (human, animal, possible exposure)
Ricin toxicity
Rocky Mountain spotted fever
Rubella (including congenital)
St. Louis encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Salmonellosis
Saxitoxin poisoning (including paralytic shellfish poisoning)
Severe acute respiratory syndrome-associated *Coronavirus* (SARS-CoV) disease
Shigellosis
Smallpox
Staphylococcus aureus (with intermediate or full resistance to vancomycin)
Staphylococcus aureus, methicilin resistant (MRSA), community associated mortality
Staphylococcus enterotoxin B poisoning
Streptococcal invasive disease (Group A)
Streptococcus pneumoniae, invasive disease
Syphilis
Tetanus
Toxoplasmosis (acute)
Trichinosis
Tuberculosis
Tularemia
Typhoid fever
Typhus fever (epidemic and endemic)
Vaccinia disease
Varicella mortality
Venezuelan equine encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Vibriosis
Viral hemorrhagic fevers (Ebola, Marburg, Lassa, Machupo)
West Nile virus disease (neuroinvasive and non-neuroinvasive)
Western equine encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Yellow fever
Any disease outbreak
Any grouping or clustering of disease

Selected Division of Disease Control and Health Protection Contacts

Bureau of Epidemiology
(850) 245-4401 (accessible 24/7/365)
http://www.doh.state.fl.us/disease_ctrl/epi/

Bureau of Communicable Disease
http://www.doh.state.fl.us/disease_ctrl/communicable/index.html

HIV/AIDS and Hepatitis Prevention Program
(850) 245-4334
http://www.doh.state.fl.us/disease_ctrl/aids/

Immunization Program
(850) 245-4342
http://www.doh.state.fl.us/disease_ctrl/immune/index.htm

Sexually Transmitted Disease Program
(850) 245-4303
http://www.doh.state.fl.us/disease_ctrl/std/index.html

Tuberculosis Program
(850) 245-4350
http://www.doh.state.fl.us/disease_ctrl/tb/index.html

2011 Summary of Key Disease Trends

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 76,000 cases reported in Florida in 2011. As chlamydia has increased, the number of gonorrhea cases has consistently decreased in past years. A shift in treatment guidelines and recommendations for screening of women under the age of 25 contributed to the decrease in gonorrhea cases. The incidence of HIV and AIDS has also decreased over the last 10 years, though both diseases increased slightly in 2011 compared to 2010. Syphilis incidence has remained relatively stable for the past 10 years, with only a 5.8% increase in 2011 compared to the previous 5-year average.

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. 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. The incidence in 2011 decreased 18.4% from the previous 5-year average.

Florida consistently has one of the highest rates of enteric disease in the nation, with 10,000 to 12,000 cases reported annually. Incidence continued to be high in 2011. Shigellosis activity increased statewide starting in June 2010 and remained high throughout 2011. An increase in non-culture diagnostic laboratory testing and a change in case definition for campylobacteriosis in 2011 contributed to a 68.4% increase in cases compared to 2010. Incidence of other enteric diseases remained relatively stable in 2011.

Despite high vaccine coverage in Florida, vaccine-preventable diseases (VPDs) continued to occur. VPD incidence decreased slightly overall in Florida in 2011 compared to 2010. Acute hepatitis A and hepatitis B incidence has declined drastically over the past decade, likely due to increased vaccination coverage. In contrast, pertussis has been increasing over the past decade, though fewer cases were reported in 2011 than in 2010. More measles cases were reported in 2011 than in any other year since 1997. Eight measles cases were reported; five (62.5%) of these infections were acquired outside the U.S. and seven (87.5%) were in unvaccinated children (vaccination status was unknown for one case in an adult).

Overall, reported tick-borne disease incidence increased by more than 60% in 2011 compared to the previous 5-year average. Lyme disease and ehrlichiosis/anaplasmosis accounted for the increase (largely due to changes in the surveillance case definition), while Rocky Mountain spotted fever incidence actually declined by 27.7%. While most people with ehrlichiosis/anaplasmosis and Rocky Mountain spotted fever continue to acquire their infections in Florida, most people with Lyme disease continue to acquire infections in other states (primarily Northeast and upper Midwest U.S.).

Mosquito-borne disease continued to be a threat in Florida. The number of reported malaria and dengue fever cases decreased in 2011, after both diseases had large increases in activity in 2010. The large number of dengue fever cases in 2010 was partially due to infections acquired in Florida (primarily Monroe County), as well as epidemics in areas with high volumes of travelers to the U.S., such as Puerto Rico. Isolated cases of locally-acquired dengue fever were also identified in south Florida counties in 2011. The increase in malaria cases reported in 2010 was primarily due to cases imported from Haiti following a large earthquake at the beginning of the year. After several years of drought, West Nile virus illness cases began increasing in 2010 and continued to increase in 2011. While most exposures in 2010 occurred in counties located in the central and southern part of the state, cases occurring in 2011 were focused in Duval County.

Chronic hepatitis continues to account for a large bulk of infectious disease burden in Florida with over 25,000 cases reported annually. In 2011, the rate of newly diagnosed chronic hepatitis C cases was the highest it has been since 2008. Overall, the highest rates occurred among people 45 to 64 years old, with stable rates since 2008. 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. While the overall rate of acute hepatitis C remained level in 2011, for the first time the number of cases diagnosed in young adults (aged 20 to 34 years) outpaced those in older adults. The 2011 rate of newly diagnosed chronic hepatitis B cases was the lowest it has been since 2007, with the majority of cases occurring in people 30 to 54 years old.

For additional information on disease-specific trends, refer to the full 2011 Florida Morbidity Statistics Report, available online at http://www.doh.state.fl.us/disease_ctrl/epi/Morbidity_Report/amr.html.

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, 2002-2011

Reportable Disease/Condition	2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
AIDS	4,638	27.7	4,394	25.6	5,365	30.5	4,646	25.8	4,850	26.3	3,690	19.7	4,653	24.7	4,062	21.6	3,188	17.0	3,442	18.2
Campylobacteriosis	995	5.9	1,056	6.2	1,009	5.7	894	5.0	941	5.1	1,017	5.4	1,118	5.9	1,120	6.0	1,211	6.4	2,039	10.8
Carbon Monoxide Poisoning	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	43	0.2	172	0.9	85	0.4
Chlamydia	41,958	250.2	41,849	243.8	43,295	245.8	43,324	240.4	49,816	270.1	60,010	320.4	69,344	368.6	72,937	387.6	74,823	398.2	76,035	401.6
Cryptosporidiosis	106	0.6	128	0.7	149	0.8	350	1.9	717	3.9	738	3.9	549	2.9	497	2.6	408	2.2	437	2.3
Cyclosporiasis	32	0.2	14	NA	9	NA	524	2.9	31	0.2	32	0.2	59	0.3	40	0.2	63	0.3	58	0.3
Giardiasis	1,318	7.9	1,132	6.6	1,126	6.4	987	5.5	1,165	6.3	1,268	6.8	1,391	7.4	1,981	10.5	2,139	11.4	1,255	6.6
Gonorrhea	21,348	127.3	18,974	110.5	18,580	105.5	20,225	112.2	23,961	129.9	23,366	124.7	23,238	123.5	20,880	111.0	20,164	107.3	19,694	104.0
Haemophilus influenzae, Invasive Disease[1]	82	0.5	99	0.6	99	0.6	117	0.6	142	0.8	127	0.7	161	0.9	222	1.2	191	1.0	232	1.2
Hepatitis A	1,056	6.3	399	2.3	295	1.7	289	1.6	233	1.3	171	0.9	165	0.9	191	1.0	178	0.9	110	0.6
Hepatitis B (+HBsAg) in Pregnant Women[2]	631	19.2	555	16.5	599	17.5	530	15.2	448	12.7	643	18.0	599	16.9	598	17.1	438	12.6	481	13.5
Hepatitis B, Acute	543	3.2	631	3.7	527	3.0	510	2.8	446	2.4	368	2.0	358	1.9	318	1.7	315	1.7	234	1.2
Hepatitis C, Acute	76	0.5	69	0.4	53	0.3	39	0.2	49	0.3	46	0.2	53	0.3	77	0.4	105	0.6	100	0.5
HIV Infection	8,678	51.7	7,871	45.9	7,808	44.3	7,032	39.0	6,738	36.5	6,952	37.1	7,999	42.5	5,640	30.0	4,983	26.5	6,046	31.9
Lead Poisoning	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	916	4.9	742	3.9
Legionellosis	85	0.5	147	0.9	141	0.8	119	0.7	167	0.9	153	0.8	148	0.8	193	1.0	172	0.9	185	1.0
Listeriosis[1]	28	0.2	36	0.2	28	0.2	59	0.3	46	0.3	34	0.2	50	0.3	25	0.1	54	0.3	38	0.2
Lyme Disease	77	0.5	43	0.3	46	0.3	47	0.3	34	0.2	30	0.2	88	0.5	110	0.6	84	0.4	115	0.6
Malaria	76	0.5	92	0.5	93	0.5	68	0.4	61	0.3	56	0.3	65	0.3	93	0.5	139	0.7	99	0.5
Meningitis (Bacterial, Cryptococcal, Mycotic)	131	0.8	158	0.9	128	0.7	127	0.7	162	0.9	135	0.7	199	1.1	210	1.1	183	1.0	192	1.0
Meningococcal Disease[1]	126	0.8	106	0.6	107	0.6	84	0.5	79	0.4	67	0.4	51	0.3	52	0.3	60	0.3	51	0.3
Mercury Poisoning	8	NA	7	NA	10	NA	30	0.2	33	0.2	24	0.1	69	0.4	21	0.1	12	NA	7	NA
Pertussis	53	0.3	113	0.7	132	0.7	208	1.2	228	1.2	211	1.1	314	1.7	497	2.6	328	1.7	312	1.6
Pesticide-Related Illness and Injury	130	0.8	174	1.0	91	0.5	154	0.9	460	2.5	449	2.4	455	2.4	405	2.2	392	2.1	451	2.4
Rabies, Animal	181	NA	188	NA	205	NA	201	NA	176	NA	128	NA	138	NA	161	NA	121	0.6	120	0.6
Rabies, Possible Exposure	1,082	6.5	1,051	6.1	1,128	6.4	1,215	6.7	1,244	6.8	1,474	7.9	1,618	8.6	1,853	9.9	2,114	11.3	2,410	12.7
Salmonellosis	4,651	27.7	4,669	27.2	4,276	24.3	5,552	30.8	4,928	26.7	5,022	26.8	5,312	28.1	6,741	35.8	6,281	33.4	5,923	31.3
Shiga Toxin-Producing *Escherichia coli* Infection[1]	89	0.5	79	0.5	84	0.5	130	0.7	60	0.3	156	0.8	122	0.6	94	0.5	85	0.5	103	0.5
Shigellosis	2,538	15.1	2,845	16.6	965	5.5	1,270	7.0	1,646	8.9	2,288	12.2	801	4.2	461	2.5	1,212	6.5	2,635	13.9
Streptococcal Disease, Invasive Group A	201	1.2	229	1.3	219	1.2	260	1.4	312	1.7	309	1.6	275	1.5	279	1.5	268	1.4	248	1.3
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	610	3.6	606	3.5	581	3.3	614	3.4	774	4.2	726	3.9	792	4.2	779	4.1	816	4.3	645	3.4
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	NR	NR	201	1.2	606	3.4	598	3.3	620	3.4	622	3.3	704	3.7	701	3.7	693	3.7	679	3.6
Syphilis	3,372	20.1	3,227	18.8	2,953	16.8	2,908	16.1	2,963	16.1	4,092	21.8	4,370	23.2	3,858	20.5	4,078	21.7	4,143	21.9
Toxoplasmosis	45	0.3	31	0.2	24	0.1	2	NA	4	NA	9	NA	14	NA	4	NA	10	NA	7	NA
Tuberculosis	1,086	6.5	1,046	6.1	1,076	6.1	1,094	6.1	1,038	5.6	980	5.2	953	5.1	822	4.4	835	4.4	753	4.0
Varicella	NR	NR	NR	NR	NR	NR	NR	NR	59	0.3	1,321	7.1	1,735	9.2	1,125	6.0	977	5.2	861	4.5
Vibriosis[1]	87	0.5	115	0.7	107	0.6	103	0.6	99	0.5	97	0.5	94	0.5	112	0.6	130	0.7	155	0.8
West Nile Virus Disease[1]	36	0.2	93	0.5	45	0.3	22	0.1	3	NA	3	NA	3	NA	3	NA	12	NA	23	0.1

1 For information on what is included in this disease category, see Interpreting the Data section.
2 Rate is per 100,000 women aged 15-44 years.
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 able to be included in this table.
NR Not Reportable.
Note that Tables 1 and 2 exclude the following reportable diseases and conditions: cancer, chancroid, congenital anomalies, conjunctivitis in neonates ≤14 days old, granuloma inguinale, herpes simplex virus in infants and children, human papillomavirus in children, lymphogranuloma venereum, novel influenza, influenza-associated pediatric mortality, *Staphylococcus aureus* community-associated mortality, and varicella mortality.

Table 2. Reported Confirmed and Probable Cases of Reportable Diseases/Conditions of Infrequent Occurrence, Florida, 2002-2011

Reportable Disease/Condition	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Amebic Encephalitis	NR	NR	NR	NR	NR	NR	0	3	0	1
Anthrax	0	0	0	0	0	0	0	0	0	1
Arsenic Poisoning	NR	NR	NR	NR	NR	NR	1	9	14	7
Botulism, Foodborne	0	0	0	0	1	0	0	0	0	0
Botulism, Infant	0	0	1	1	0	1	1	1	1	0
Botulism, Other	0	0	2	0	0	0	0	0	0	0
Botulism, Wound	0	0	0	0	0	0	0	0	0	0
Brucellosis	6	10	8	3	5	10	10	9	9	6
California Serogroup Virus Disease[1]	0	0	4	0	1	1	1	0	0	1
Cholera	0	0	0	0	0	0	0	0	4	11
Ciguatera	7	7	4	10	32	29	53	49	20	48
Creutzfeldt-Jakob Disease	NR	4	14	17	14	12	23	15	13	16
Dengue Fever[1]	21	16	13	19	20	46	33	55	195	71
Diphtheria	0	0	0	0	0	0	0	0	0	0
Eastern Equine Encephalitis Virus Disease[1]	1	2	1	5	0	0	1	0	4	0
Ehrlichiosis/Anaplasmosis[1]	5	13	7	5	6	21	12	14	14	26
Encephalitis, Other (Non-Arboviral)[1]	20	10	8	8	5	18	12	27	15	24
Glanders	NR	0	0	0	0	0	0	0	0	0
Hantavirus Infection	0	0	0	0	0	0	0	0	0	0
Hemolytic Uremic Syndrome	5	6	6	20	5	6	5	5	8	4
Hepatitis B, Perinatal	6	2	0	2	6	2	3	0	1	0
Hepatitis D	NR	NR	NR	NR	NR	1	0	1	0	0
Hepatitis E	NR	NR	NR	NR	NR	1	0	2	1	7
Hepatitis G	NR	NR	NR	NR	NR	0	0	1	0	2
Leprosy (Hansen's disease)	4	9	5	2	7	10	10	7	12	11
Leptospirosis	0	1	1	2	2	1	0	1	2	4
Measles	3	0	1	0	4	5	1	5	1	8
Melioidosis	NR	0	0	1	1	0	0	0	0	0
Mumps	7	7	9	8	15	21	16	18	10	11
Neurotoxic Shellfish Poisoning	0	0	0	4	16	1	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	3	3	1	0	1	0	2	0	0	0
Q Fever[1]	2	6	2	1	8	2	1	1	2	3
Rabies, Human	0	0	1	0	0	0	0	0	0	0
Ricin Toxin	NR	0	0	0	0	0	0	0	0	0
Rocky Mountain Spotted Fever	15	17	22	14	21	19	19	10	13	12
Rubella	5	0	0	0	1	0	3	0	0	0
Rubella, Congenital	0	0	0	0	0	0	0	0	0	0
Saxitoxin Poisoning	0	0	1	0	0	0	0	0	0	0
Severe Acute Respiratory Syndrome-Associated Coronavirus	NR	NR	0	0	0	0	0	0	0	0
Smallpox	0	0	0	0	0	0	0	0	0	0
St. Louis Encephalitis Virus Disease[1]	1	0	0	0	0	0	0	0	0	0
Vancomycin-Intermediate *Staphylococcus aureus* (GISA/VISA)	0	0	0	0	0	1	3	6	1	3
Vancomycin-Resistant *Staphylococcus aureus* (GRSA/VRSA)	0	0	0	0	0	0	0	0	0	0
Staphylococcus Enterotoxin B	NR	0	0	0	0	0	2	0	0	0
Tetanus	3	3	4	3	2	5	2	0	5	3
Trichinosis	0	0	0	1	1	0	1	0	0	0
Tularemia	0	0	0	1	0	0	0	1	0	0
Typhoid Fever	19	15	10	11	16	15	18	19	22	8
Typhus Fever[1]	0	0	1	0	2	1	0	1	0	2
Vaccinia Disease	0	0	0	0	0	0	0	0	0	1
Venezuelan Equine Encephalitis Virus Disease[1]	0	0	0	0	0	0	0	0	0	0
Viral Hemorrhagic Fever	0	0	0	0	0	0	0	0	0	0
Western Equine Encephalitis Virus Disease[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 Interpreting the Data section.
NR Not Reportable.
Note that Tables 1 and 2 exclude the following reportable diseases and conditions: cancer, chancroid, congenital anomalies, conjunctivitis in neonates ≤14 days old, granuloma inguinale, herpes simplex virus in infants and children, human papillomavirus in children, lymphogranuloma venereum, novel influenza, influenza-associated pediatric mortality, *Staphylococcus aureus* community-associated mortality, and varicella mortality.

Table 3. Reported Confirmed and Probable Cases and Incidence Rate (per 100,000 Population) of Selected Reportable Diseases/ Conditions by Age Group, Florida, 2011

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	
	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
AIDS	0	NA	0	NA	1	NA	7	NA	50	4.1	211	16.9	640	27.5	960	40.0	1,034	38.1	392	16.3	120	6.7	24	2.2	3	NA
Arsenic Poisoning	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	2	NA	2	NA	3	NA	0	NA	0	NA	0	NA
Brucellosis	0	NA	0	NA	0	NA	0	NA	1	NA	0	NA	1	NA	1	NA	2	NA	1	NA	0	NA	0	NA	0	NA
Campylobacteriosis	74	35.3	278	32.3	128	11.7	75	6.6	95	7.8	119	9.6	158	6.8	156	6.5	236	8.7	237	9.9	225	12.6	183	16.5	75	16.7
Carbon Monoxide Poisoning	1	NA	1	NA	6	NA	4	NA	0	NA	2	NA	13	NA	19	NA	13	NA	9	NA	6	NA	8	NA	3	NA
Chlamydia*	27	12.9	0	NA	3	NA	703	62.1	23,873	1,967.1	29,609	2,377.8	17,120	735.6	3,297	137.4	985	36.3	260	10.8	40	2.2	11	NA	4	NA
Cholera	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	2	NA	3	NA	3	NA	1	NA	2	NA	0	NA	0	NA
Ciguatera Fish Poisoning	0	NA	2	NA	4	NA	1	NA	1	NA	2	NA	7	NA	9	NA	10	NA	9	NA	2	NA	1	NA	0	NA
Cryptosporidiosis	4	NA	49	5.7	21	1.9	18	NA	16	NA	22	1.8	49	2.1	55	2.3	60	2.2	38	1.6	43	2.4	43	3.9	19	NA
Cyclosporiasis	0	NA	3	NA	0	NA	0	NA	1	NA	1	NA	9	NA	10	NA	7	NA	14	NA	9	NA	2	NA	2	NA
Dengue Fever	0	NA	0	NA	3	NA	1	NA	5	NA	2	NA	11	NA	16	NA	15	NA	10	NA	5	NA	3	NA	0	NA
Ehrlichiosis/Anaplasmosis	0	NA	0	NA	1	NA	0	NA	0	NA	1	NA	3	NA	3	NA	4	NA	6	NA	4	NA	4	NA	0	NA
Giardiasis	12	NA	247	28.7	151	13.9	93	8.2	56	4.6	50	4.0	114	4.9	154	6.4	144	5.3	106	4.4	77	4.3	42	3.8	9	NA
Gonorrhea*	0	NA	5	NA	5	NA	160	14.1	5,036	415.0	6,849	550.0	5,095	218.9	1,485	61.9	758	27.9	235	9.8	30	1.7	9	NA	1	NA
Haemophilus influenzae , Invasive Disease[1]	12	NA	11	NA	1	NA	1	NA	0	NA	5	NA	11	NA	21	0.9	16	NA	34	1.4	41	2.3	33	3.0	46	10.3
Hepatitis A	0	NA	0	NA	7	NA	5	NA	12	NA	12	NA	17	NA	15	NA	14	NA	6	NA	7	NA	11	NA	4	NA
Hepatitis B (+HBsAg) in Pregnant Women[2]	0	NA	0	NA	0	NA	0	NA	12	NA	72	11.8	284	24.6	110	9.1	3	NA	0	NA	0	NA	0	NA	0	NA
Hepatitis B, Acute	0	NA	1	NA	0	NA	0	NA	2	NA	5	NA	43	1.8	76	3.2	60	2.2	25	1.0	15	NA	6	NA	1	NA
Hepatitis C, Acute	0	NA	0	NA	0	NA	1	NA	4	NA	12	NA	46	2.0	14	NA	16	NA	6	NA	1	NA	0	NA	0	NA
HIV Infection	5	NA	5	NA	5	NA	11	NA	227	18.7	749	60.1	1,420	61.0	1,459	60.8	1,418	52.2	572	23.9	145	8.1	28	2.5	2	NA
Lead Poisoning	9	NA	160	18.6	32	2.9	47	4.2	29	2.4	42	3.4	95	4.1	117	4.9	100	3.7	74	3.1	27	1.5	7	NA	3	NA
Legionellosis	0	NA	1	NA	0	NA	1	NA	0	NA	1	NA	6	NA	18	NA	35	1.3	38	1.6	42	2.4	25	2.3	18	NA
Listeriosis[1]	2	NA	0	NA	0	NA	0	NA	0	NA	0	NA	5	NA	3	NA	1	NA	4	NA	11	NA	7	NA	5	NA
Lyme Disease	0	NA	2	NA	8	NA	6	NA	10	NA	4	NA	12	NA	14	NA	11	NA	17	NA	21	1.2	9	NA	1	NA
Malaria	1	NA	1	NA	0	NA	2	NA	1	NA	11	NA	26	1.1	17	NA	21	0.8	12	NA	6	NA	1	NA	0	NA
Measles	0	NA	3	NA	0	NA	2	NA	2	NA	0	NA	1	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
Meningococcal Disease[1]	1	NA	4	NA	4	NA	0	NA	2	NA	5	NA	12	NA	2	NA	6	NA	2	NA	6	NA	3	NA	4	NA
Mercury Poisoning	0	NA	0	NA	0	NA	0	NA	0	NA	1	NA	1	NA	1	NA	2	NA	2	NA	0	NA	0	NA	0	NA
Mumps	0	NA	1	NA	0	NA	0	NA	3	NA	1	NA	3	NA	0	NA	0	NA	3	NA	0	NA	0	NA	0	NA
Pertussis	91	43.4	42	4.9	40	3.7	31	2.7	25	2.1	11	NA	19	NA	23	1.0	12	NA	12	NA	5	NA	1	NA	0	NA
Pesticide-Related Illness and Injury*	3	NA	30	3.5	20	1.8	21	1.9	33	2.7	74	5.9	68	2.9	80	3.3	18	NA	61	2.5	25	1.4	9	NA	1	NA
Rabies, Possible Exposure*	15	NA	95	11.0	139	12.8	140	12.4	182	15.0	211	16.9	349	15.0	349	14.5	359	13.2	267	11.1	182	10.2	91	8.2	29	6.5
Rocky Mountain Spotted Fever	0	NA	0	NA	0	NA	0	NA	1	NA	0	NA	0	NA	2	NA	6	NA	1	NA	1	NA	0	NA	1	NA
Salmonellosis	1,143	545.0	1,341	155.6	481	44.1	263	23.2	174	14.3	192	15.4	372	16.0	348	14.5	425	15.6	423	17.6	404	22.6	244	22.0	113	25.2
Shiga Toxin-Producing *Escherichia coli* Infection[1]	8	NA	30	3.5	12	NA	13	NA	13	NA	6	NA	10	NA	1	NA	4	NA	3	NA	2	NA	1	NA	0	NA
Shigellosis*	65	31.0	925	107.3	797	73.1	174	15.4	50	4.1	86	6.9	186	8.0	130	5.4	92	3.4	49	2.0	40	2.2	26	2.3	14	NA
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	21	10.0	70	8.1	22	2.0	2	NA	8	NA	17	NA	28	1.2	45	1.9	92	3.4	115	4.8	91	5.1	80	7.2	54	12.0
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	12	NA	35	4.1	23	2.1	5	NA	4	NA	11	NA	33	1.4	65	2.7	127	4.7	131	5.5	111	6.2	65	5.9	57	12.7
Syphilis*	31	14.8	1	NA	0	NA	4	NA	197	16.2	612	49.1	1,003	43.1	1,050	43.8	845	31.1	269	11.2	94	5.3	29	2.6	6	NA
Tuberculosis	5	NA	16	NA	9	NA	13	NA	21	1.7	38	3.1	104	4.5	113	4.7	178	6.6	113	4.7	70	3.9	54	4.9	19	NA
Typhoid Fever	0	NA	1	NA	1	NA	1	NA	1	NA	0	NA	4	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
Varicella	66	31.5	166	19.3	199	18.3	169	14.9	76	6.3	23	1.8	73	3.1	47	2.0	23	0.8	10	NA	5	NA	4	NA	0	NA
Vibriosis[1]	0	NA	5	NA	10	NA	6	NA	9	NA	6	NA	17	NA	14	NA	20	0.7	31	1.3	18	NA	15	NA	4	NA
West Nile Virus Disease[1]	0	NA	0	NA	0	NA	0	NA	0	NA	1	NA	2	NA	4	NA	6	NA	6	NA	2	NA	1	NA	1	NA

* Cases that were missing age are excluded from this table: chlamydia (n=103); gonorrhea (n=26); pesticide-related illness and injury (n=8); rabies, possible exposure (n=2); shigellosis (n=1); and syphilis (n=1).

1 For information on what is included in this disease category, see Interpreting the Data section.

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

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

Note that Tables 3 and 5 include only diseases summarized in Section 2: Selected Reportable Diseases and Conditions (as appropriate).

Table 4. Top 10 Reported Confirmed and Probable Cases of Reportable Diseases/Conditions by Age Group

	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 (1,143)	Salmonellosis (1,341)	Shigellosis (797)	Chlamydia (703)	Chlamydia (23,873)	Chlamydia (29,609)	Chlamydia (17,120)	Chlamydia (3,297)	HIV (1,418)	HIV (572)	Salmonellosis (404)	Salmonellosis (244)	Salmonellosis (113)
2	Pertussis (91)	Shigellosis (925)	Salmonellosis (481)	Salmonellosis (263)	Gonorrhea (5,036)	Gonorrhea (6,849)	Gonorrhea (5,095)	Gonorrhea (1,485)	AIDS (1,034)	Salmonellosis (423)	Campylobacteriosis (225)	Campylobacteriosis (183)	*Streptococcus pneumoniae,* Invasive Disease (111)
3	Campylobacteriosis (74)	Campylobacteriosis (278)	Varicella (199)	Shigellosis (174)	HIV (227)	HIV (749)	HIV (1,420)	HIV (1,459)	Chlamydia (985)	AIDS (392)	*Streptococcus pneumoniae,* Invasive Disease (202)	*Streptococcus pneumoniae,* Invasive Disease (145)	Campylobacteriosis (75)
4	Varicella (66)	Giardiasis (247)	Giardiasis (151)	Varicella (169)	Syphilis (197)	Syphilis (612)	Syphilis (1,003)	Syphilis (1,050)	Syphilis (845)	Syphilis (269)	Rabies, Possible Exposure (182)	Rabies, Possible Exposure (91)	*Haemophilus influenzae,* Invasive Disease (46)
5	Shigellosis (65)	Varicella (166)	Rabies, Possible Exposure (139)	Gonorrhea (160)	Rabies, Possible Exposure (182)	AIDS (211)	AIDS (640)	AIDS (960)	Gonorrhea (758)	Rabies, Possible Exposure (267)	HIV (145)	Tuberculosis (54)	Rabies, Possible Exposure (29)
6	Meningitis, Other (43)	Lead Poisoning (160)	Campylobacteriosis (128)	Rabies, Possible Exposure (140)	Salmonellosis (174)	Rabies, Possible Exposure (211)	Salmonellosis (372)	Rabies, Possible Exposure (349)	Salmonellosis (425)	Chlamydia (260)	AIDS (120)	Cryptosporidiosis (43)	Cryptosporidiosis (19)
7	*Streptococcus pneumoniae,* Invasive Disease (33)	*Streptococcus pneumoniae,* Invasive Disease (105)	*Streptococcus pneumoniae,* Invasive Disease (45)	Giardiasis (93)	Campylobacteriosis (95)	Salmonellosis (192)	Rabies, Possible Exposure (349)	Salmonellosis (348)	Rabies, Possible Exposure (359)	*Streptococcus pneumoniae,* Invasive Disease (246)	Syphilis (94)	Giardiasis (42)	Tuberculosis (19)
8	Syphilis (31)	Rabies, Possible Exposure (95)	Pertussis (40)	Campylobacteriosis (75)	Varicella (76)	Campylobacteriosis (119)	Hepatitis B (+HBsAg In Pregnant Women) (284)	Campylobacteriosis (156)	Campylobacteriosis (236)	Campylobacteriosis (237)	Giardiasis (77)	*Haemophilus influenzae,* Invasive Disease (33)	Legionellosis (18)
9	Chlamydia (27)	Cryptosporidiosis (49)	Lead Poisoning (32)	Lead Poisoning (47)	Giardiasis (56)	Shigellosis (86)	Shigellosis (186)	Giardiasis (154)	*Streptococcus pneumoniae,* Invasive Disease (219)	Gonorrhea (235)	Tuberculosis (70)	Streptococcal Invasive Disease Group A (30)	Shigellosis (14)
10	Rabies, Possible Exposure (15)	Pertussis (42)	Cryptosporidiosis (21)	Pertussis (31)	AIDS (50)	Hepatitis B (+HBsAg In Pregnant Women) (72)	Campylobacteriosis (158)	Shigellosis (130)	Tuberculosis (178)	Tuberculosis (113)	Cryptosporidiosis (43)	Syphilis (29)	Streptococcal Invasive Disease Group A (11)

Table 4 includes the top ten 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 Selected Reportable Diseases/Conditions by Month of Onset*, Florida 2011

Selected Reportable Diseases	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arsenic Poisoning	1	0	0	1	1	0	0	0	0	0	4	0
Brucellosis	0	0	1	1	1	0	1	0	1	0	0	1
Campylobacteriosis	147	143	189	200	234	211	216	163	137	127	135	137
Carbon Monoxide Poisoning	3	7	5	3	4	16	14	12	6	4	3	8
Cholera	4	1	0	0	0	1	1	0	1	1	0	2
Ciguatera Fish Poisoning	2	6	0	4	4	4	8	9	4	7	0	0
Cryptosporidiosis	36	33	27	36	27	56	56	51	29	33	21	32
Cyclosporiasis	9	6	1	5	1	12	13	1	3	1	4	2
Dengue Fever[1]	3	2	1	4	1	0	8	19	11	8	9	5
Ehrlichiosis/Anaplasmosis[1]	1	0	0	5	9	2	2	3	1	2	1	0
Giardiasis	115	71	96	60	93	110	129	142	93	121	102	123
Haemophilus influenzae , Invasive Disease[1]	26	18	27	26	27	15	11	18	10	15	16	23
Hepatitis A	6	9	8	8	5	6	9	12	17	10	4	16
Hepatitis B, Acute	20	11	21	24	19	18	23	23	19	17	17	22
Hepatitis C, Acute	10	7	5	5	12	8	7	8	13	8	5	12
Legionellosis	13	15	11	10	11	14	10	24	20	31	16	10
Listeriosis[1]	6	0	3	1	2	2	4	6	5	2	3	4
Lyme Disease	6	1	4	7	9	19	27	18	8	5	9	2
Malaria	7	8	8	5	10	8	10	19	6	6	7	5
Measles	0	1	2	1	2	0	1	0	0	0	0	1
Meningococcal Disease[1]	3	3	5	10	4	6	4	2	5	2	4	3
Mercury Poisoning	1	0	1	0	2	0	0	0	0	1	2	0
Mumps	0	0	2	0	0	0	3	0	2	1	2	1
Pertussis	25	29	14	16	16	39	53	31	25	17	22	25
Pesticide-Related Illness and Injury	28	29	98	36	36	24	37	44	30	49	25	15
Rabies, Animal[2]	3	9	17	9	4	8	12	11	11	13	15	8
Rabies, Possible Exposure[3]	156	167	205	175	239	231	200	208	179	201	247	202
Rocky Mountain Spotted Fever	1	0	1	3	0	0	0	1	1	1	2	2
Salmonellosis	236	173	227	359	435	515	792	743	751	773	567	352
Shiga Toxin-Producing *Escherichia coli* Infection[1]	5	4	13	8	14	13	15	9	8	7	4	3
Shigellosis	135	136	174	215	323	347	232	234	173	254	238	174
Streptococcus pneumoniae , Invasive Disease, Drug-Resistant	114	83	78	57	41	36	22	20	36	44	43	71
Streptococcus pneumoniae , Invasive Disease, Drug-Susceptible	115	90	79	53	41	40	25	24	43	45	60	64
Typhoid Fever	1	1	1	1	0	1	2	1	0	0	0	0
Varicella	84	74	98	125	81	33	43	57	66	62	80	58
Vibriosis[1]	6	6	13	24	22	16	20	16	9	13	8	2
West Nile Virus Disease[1]	0	0	0	0	0	1	8	7	5	2	0	0

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

1 For information on what is included in this disease category, see Interpreting the Data section.

2 Month of onset is based on the month of laboratory report.

3 Month of onset is based on the month of exposure.

Note that Tables 3 and 5 include only diseases summarized in Section 2: Selected Reportable Diseases and Conditions (as appropriate).

Section 2

Selected Reportable Diseases/Conditions

Arsenic Poisoning

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

Description

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

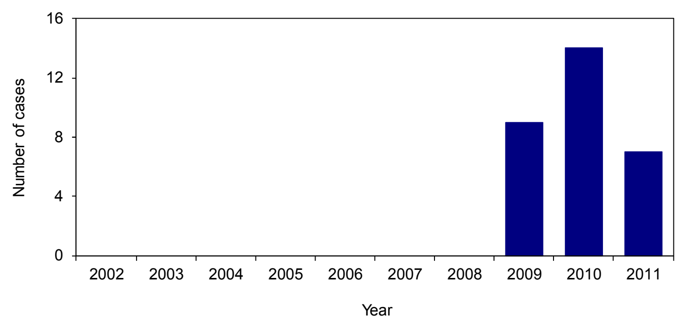
Acute ingestion of toxic amounts of arsenic typically causes severe gastrointestinal signs and symptoms, which can rapidly lead to dehydration and shock. Different clinical manifestations might follow, including dysrhythmias, altered mental status, and multisystem organ failure leading to death.

Common sources of potential arsenic exposure are chromated copper arsenate (CCA)-treated wood, tobacco smoke, certain agricultural pesticides, and some homeopathic and naturopathic preparations and folk remedies. In addition, arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting (unregulated) private drinking wells.

Disease Abstract

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

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



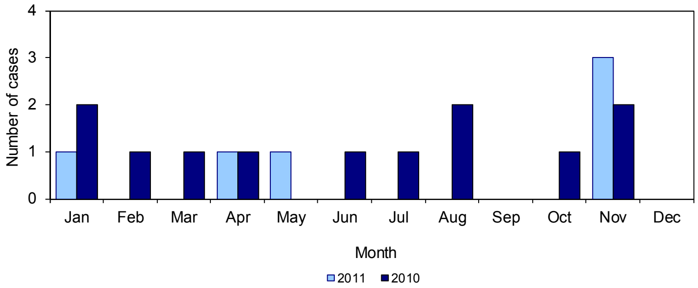
Note: Arsenic was not reportable prior to 2009.

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

Prevention

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

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



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

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

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

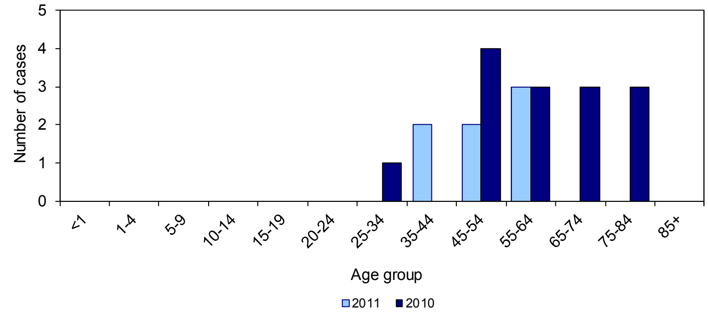
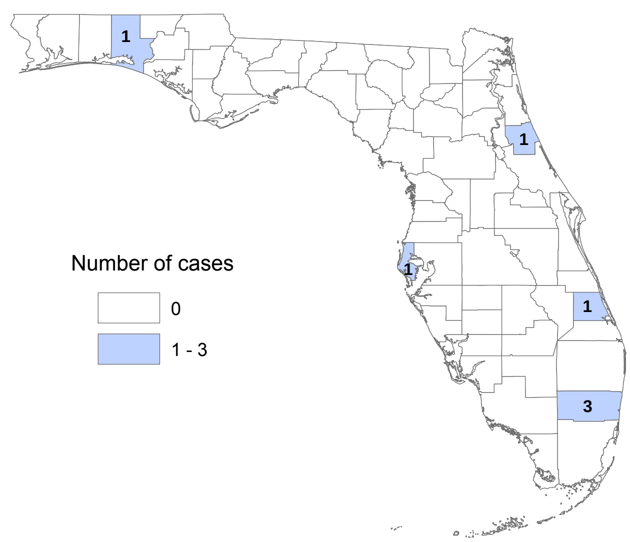


Figure 4. Reported Arsenic Poisoning Cases by County, Florida, 2011



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

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

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

References

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

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

Additional Resources

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

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

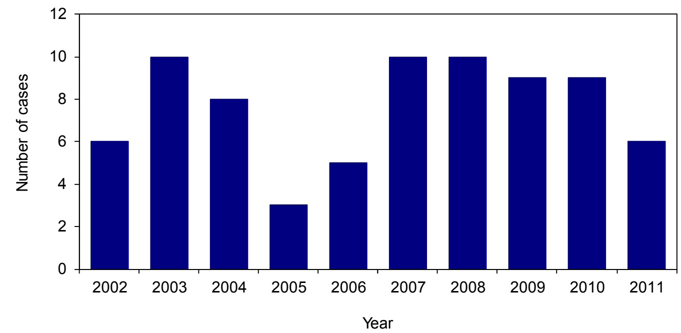
Brucellosis

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

Disease Abstract

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

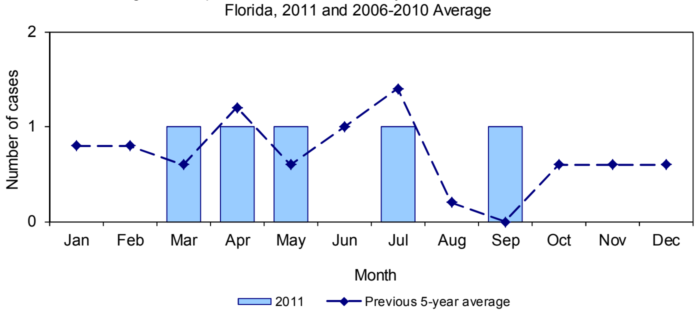
Figure 1. Reported Brucellosis Cases by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

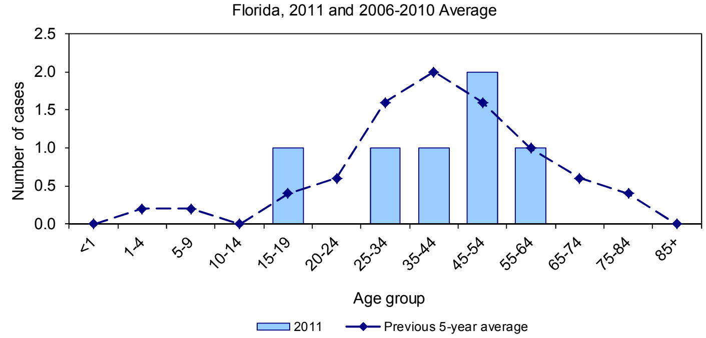
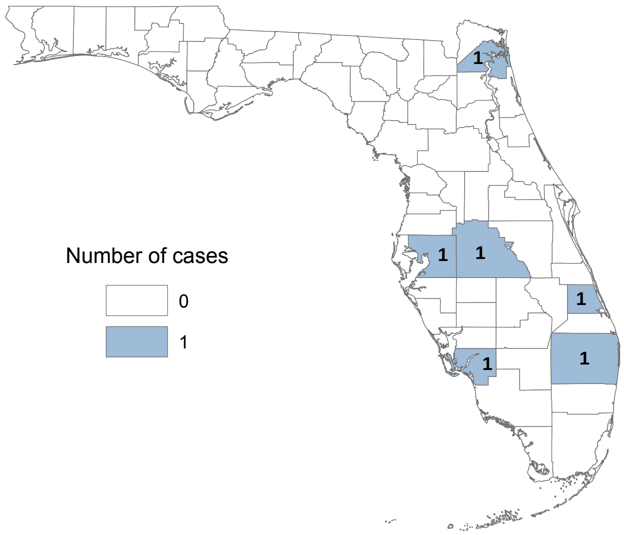


Figure 4. Reported Brucellosis Cases by County, Florida, 2011



Prevention

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

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

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

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

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

References

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

Additional Resources

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

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

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

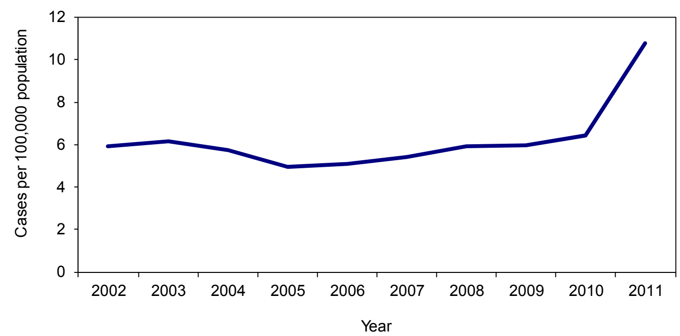
United States Department of Agriculture, Animal and Plant Health Inspection Services. Brucellosis Disease Information. Available at http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/.

Campylobacteriosis

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

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

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



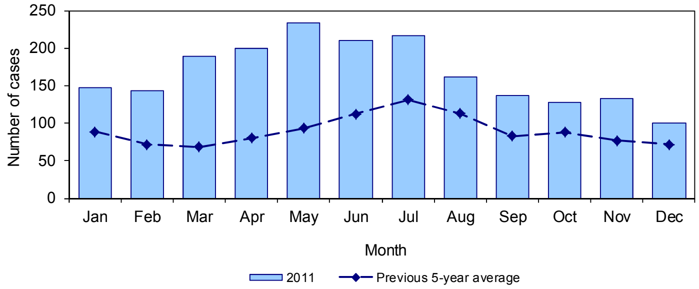
The incidence rate for campylobacteriosis has remained generally stable since 2001 but increased significantly in 2011 (Figure 1) due to a change in the surveillance case definition. Use of non-culture diagnostic testing for *Campylobacter* has increased significantly in recent years. To adapt to this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

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

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

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

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



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

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

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

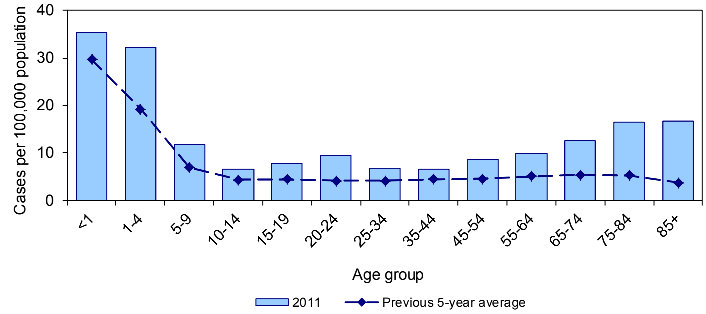
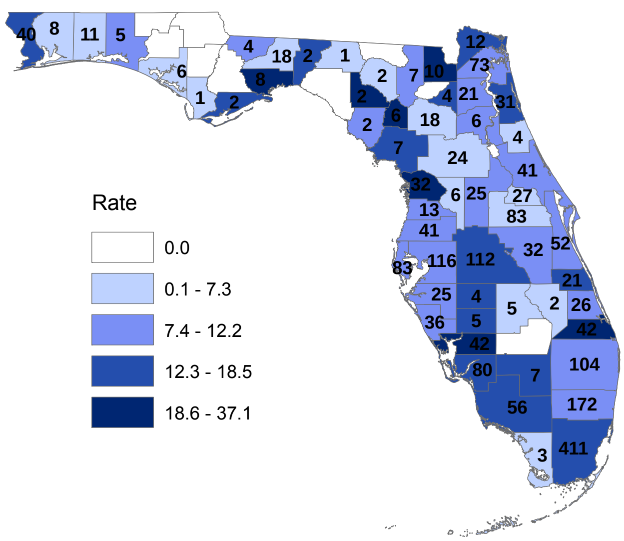


Figure 4. Reported Campylobacteriosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

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

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

Additional Resources

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

Carbon Monoxide Poisoning

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

Description

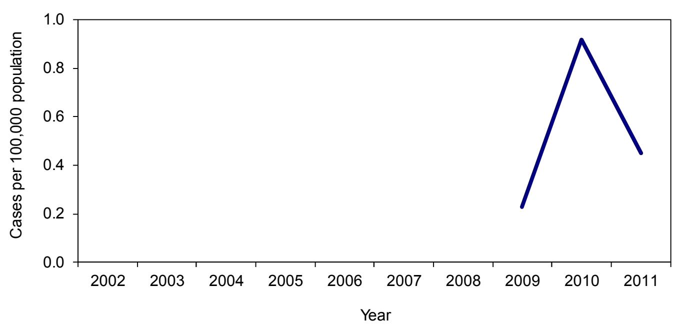
Carbon monoxide (CO) is an odorless, colorless gas that can cause headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO inhalation can cause loss of consciousness and death. CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline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

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

Disease Abstract

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

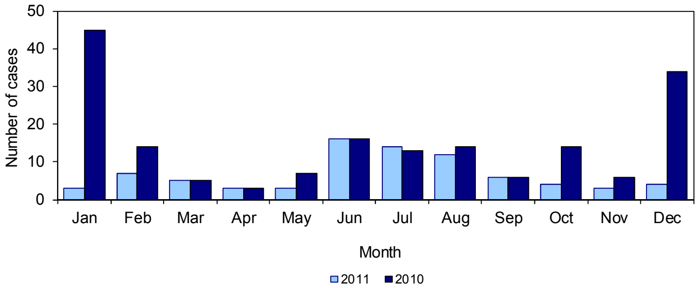
Figure 1. Reported Carbon Monoxide Poisoning Incidence Rate by Year Reported, Florida, 2002-2011



Note: Carbon monoxide poisoning was not reportable prior to 2009

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

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



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

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

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

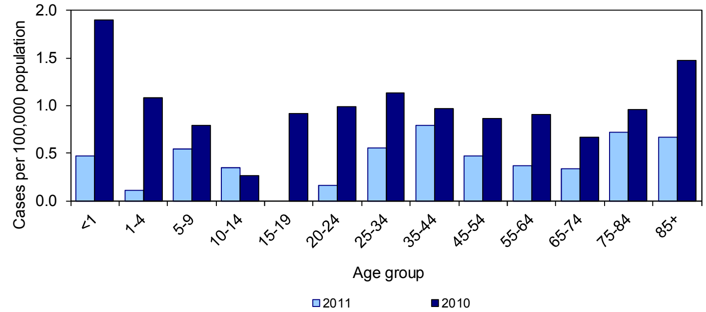


Figure 4. Reported Carbon Monoxide Poisoning Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

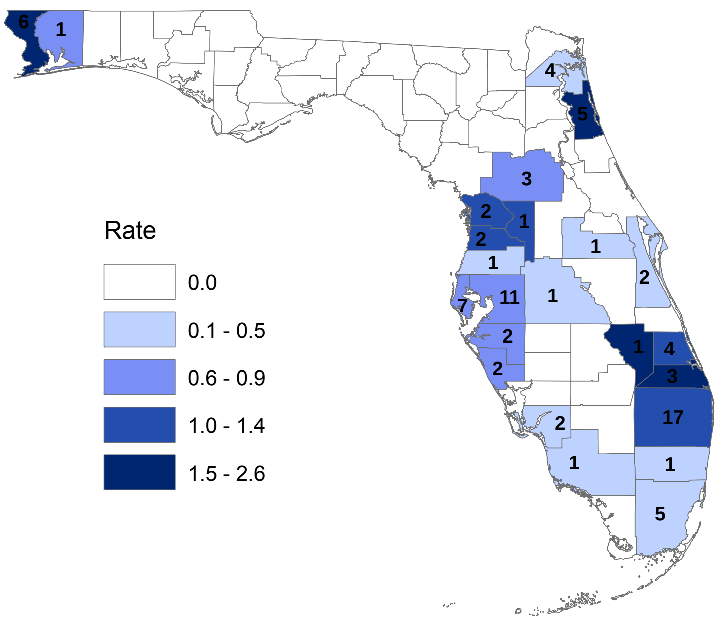
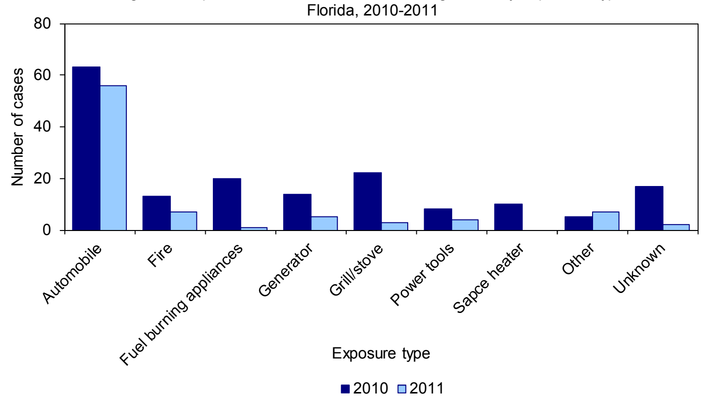


Figure 5. Reported Carbon Monoxide Poisoning Cases by Exposure Type, Florida, 2010-2011



Prevention

Prevention tips for CO poisoning are listed below.

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

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

References

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

Additional Resources

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

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

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

Chlamydia

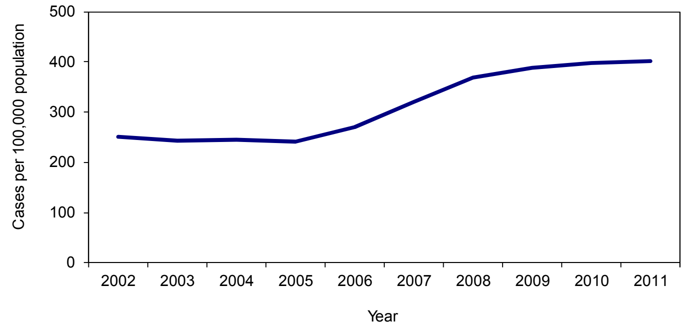
Chlamydia		
Number of cases		76,035
2011 incidence rate per 100,000 population		401.6
Percent change from 5-year average (2006-2010) reported incidence rate		15.1%
Age		Years
Mean		23.0
Median		21
Min-Max		0 - 88
Sex	Number (Percent)	Rate
Male	21,688 (28.6%)	234.2
Female	54,263 (71.4%)	560.9
Unk	84	

Disease Abstract

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

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

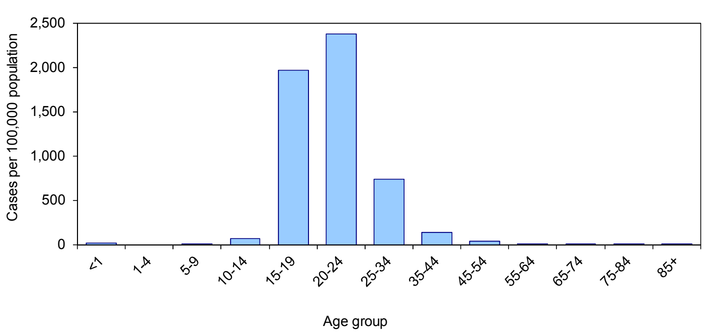
Figure 1. Reported Chlamydia Incidence Rate, Florida, 2002-2011



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

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

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



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

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

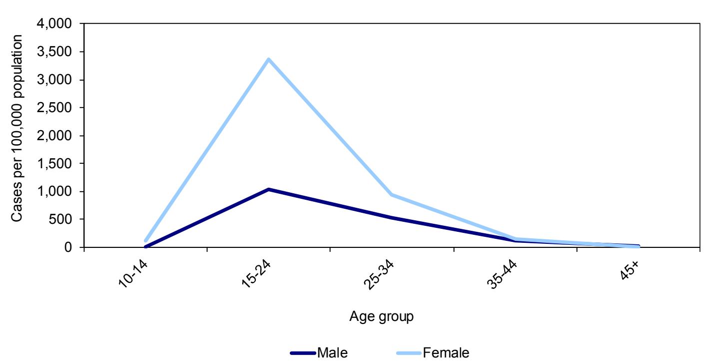
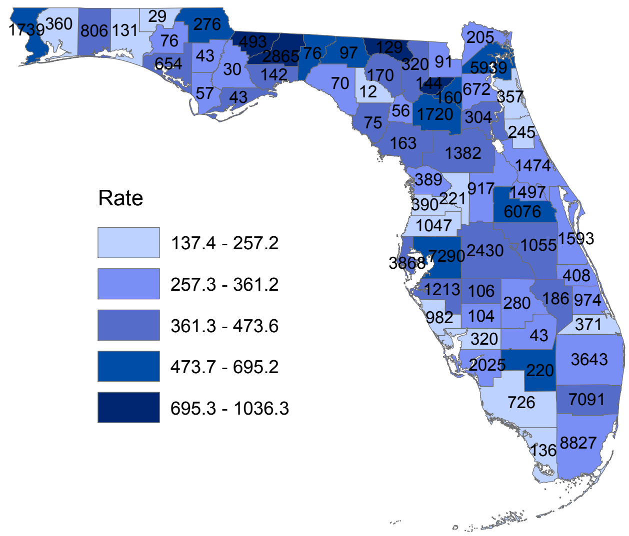


Figure 4. Reported Chlamydia Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



Subsequent Infections

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

Prevention

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

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

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

References

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

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

Cholera

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

Description

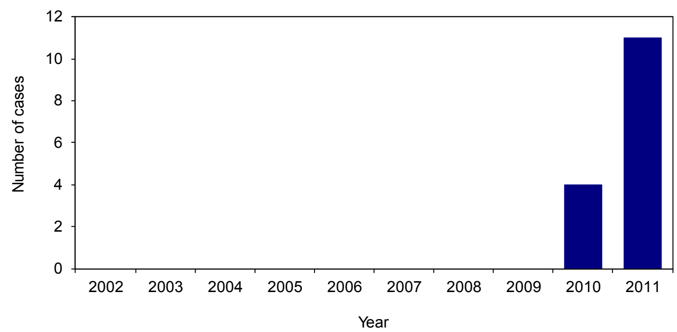
Cholera is an acute intestinal infection caused by toxigenic *Vibrio cholerae* serogroups O1 and O139. It is a major cause of epidemic diarrhea in developing countries and causes an estimated 3–5 million cases and 100,000–120,000 deaths annually. Clinically, cholera ranges from asymptomatic infection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

Disease Abstract

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

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

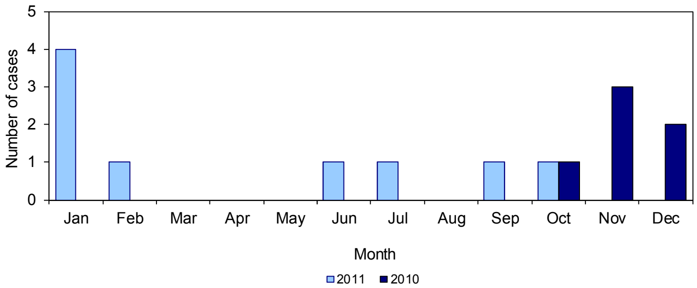
Figure 1. Reported Cholera Cases by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

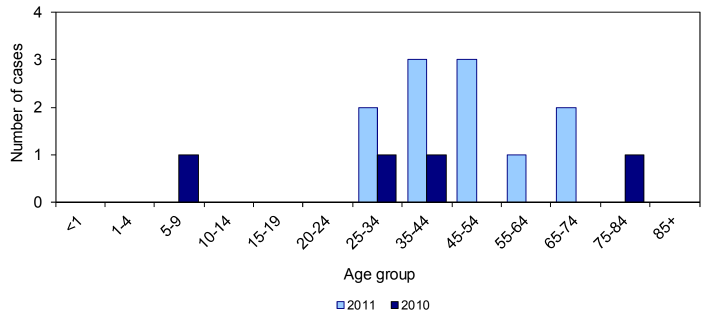
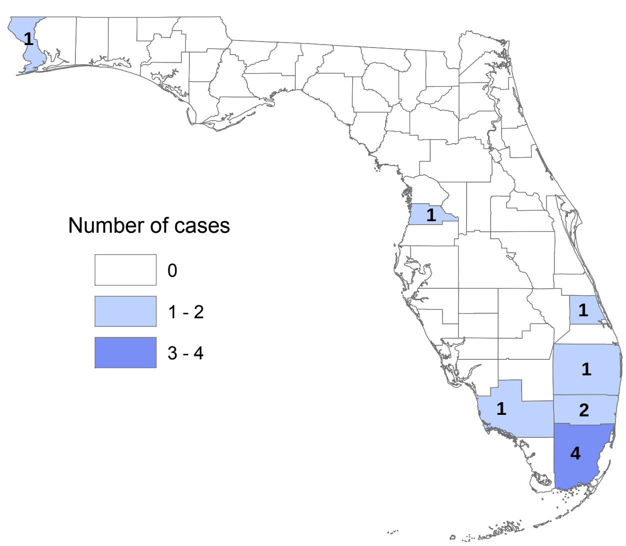


Figure 4. Reported Cholera Cases by County, Florida, 2011



Prevention

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

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

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

References

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

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

Additional Resources

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

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

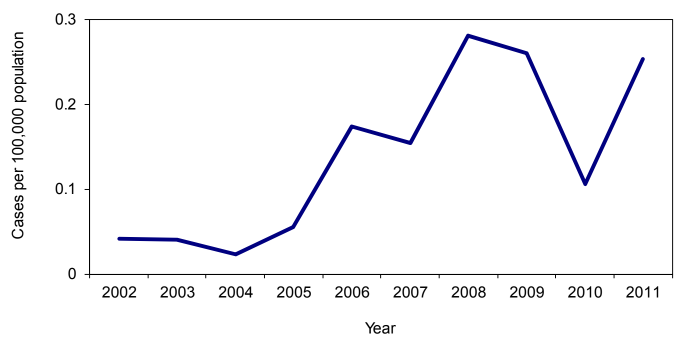
Ciguatera Fish Poisoning

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

Disease Abstract

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

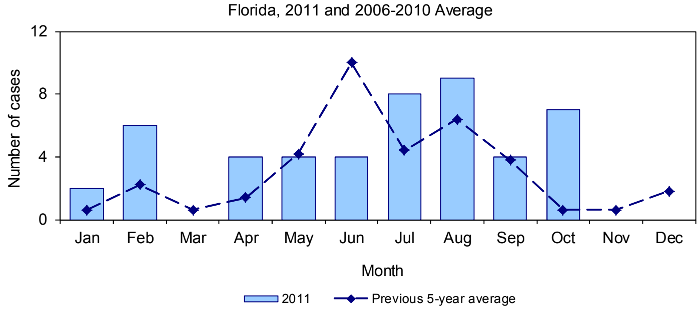
Figure 1. Reported Ciguatera Fish Poisoning Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

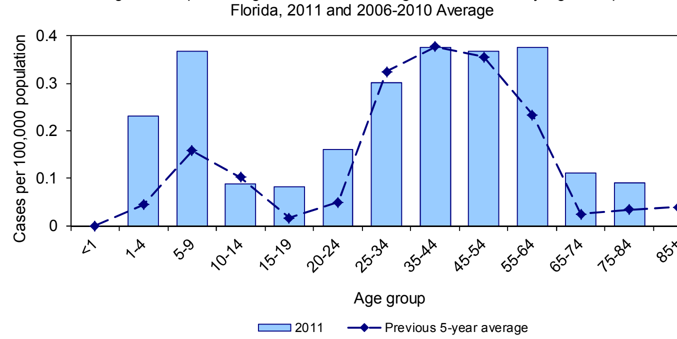
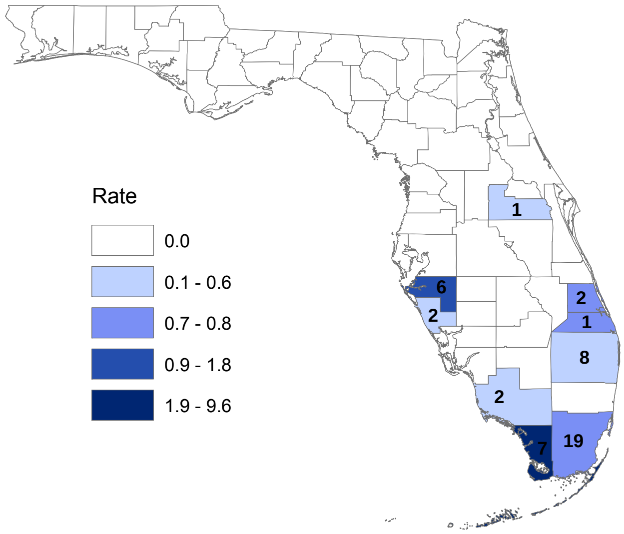


Figure 4. Reported Ciguatera Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



References

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

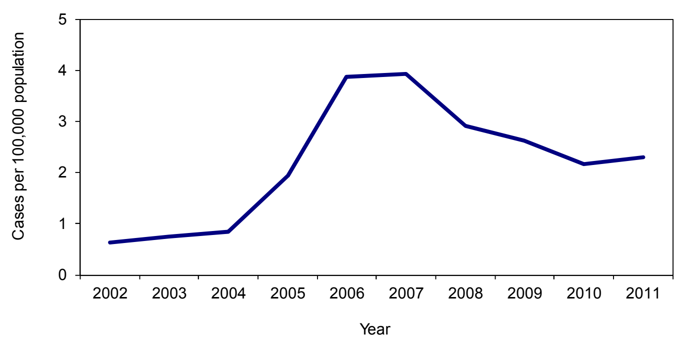
Cryptosporidiosis

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

Disease Abstract

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

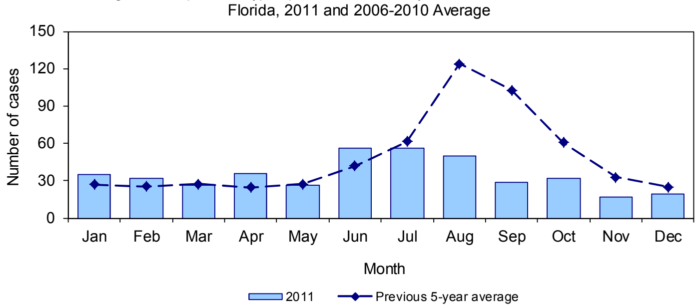
Figure 1. Reported Cryptosporidiosis Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

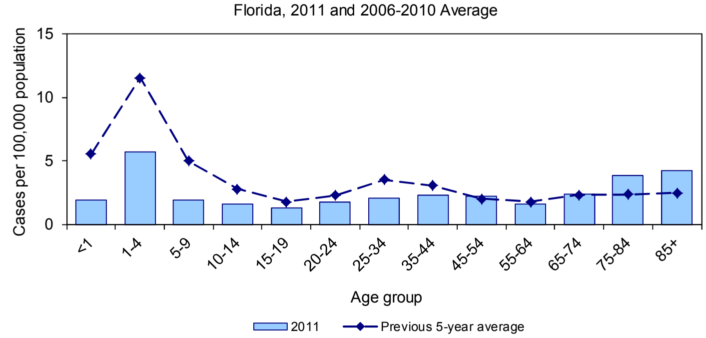
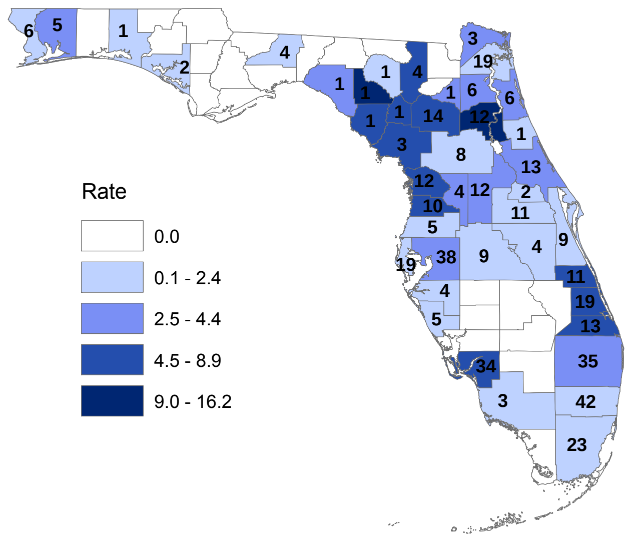


Figure 4. Reported Cryptosporidiosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

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

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

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

Additional Resources

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

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

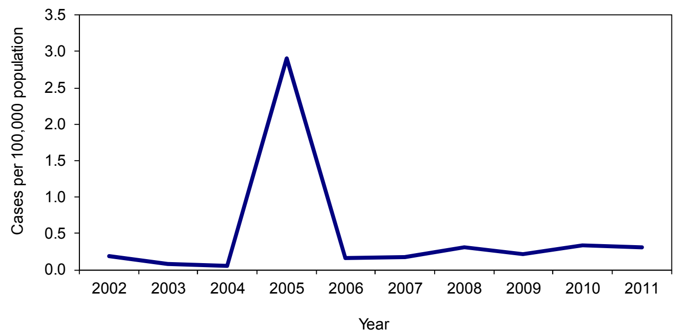
Cyclosporiasis

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

Disease Abstract

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

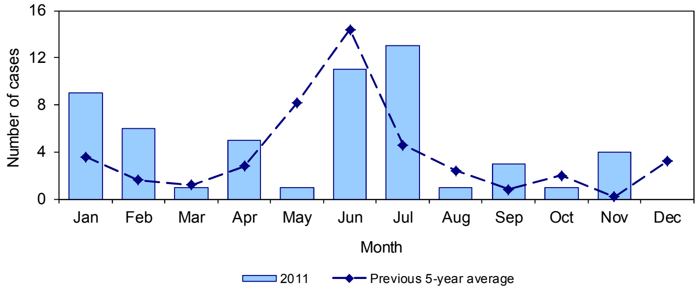
Figure 1. Reported Cyclosporiasis Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

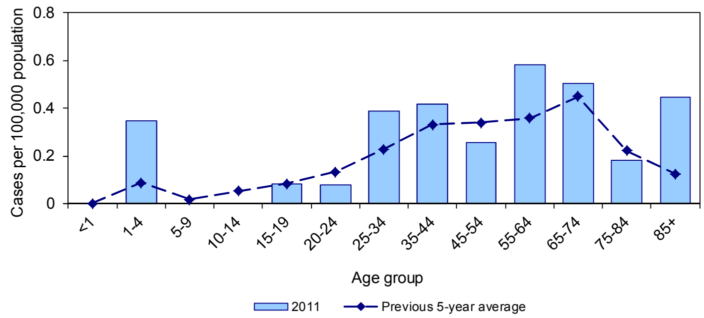
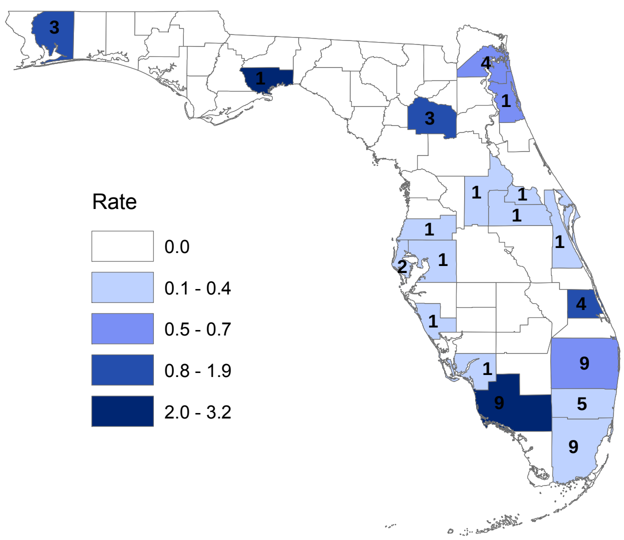


Figure 4. Reported Cyclosporiasis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

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

Additional Resources

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

Dengue Fever

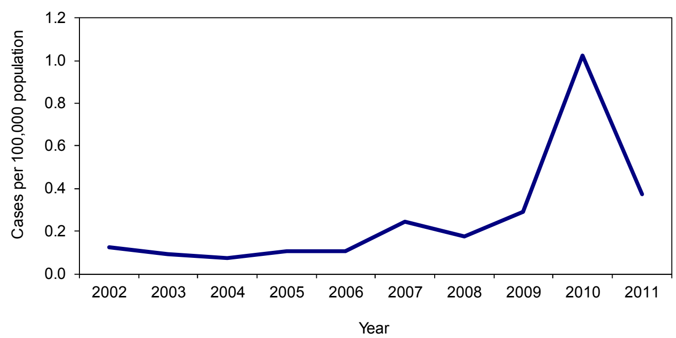
Dengue Fever			
Number of cases			71
2011 incidence rate per 100,000 population			0.4
Percent change from 5-year average (2006-2010) reported incidence rate			1.7%
Age			Years
Mean			42.5
Median			43.0
Min-Max			5 - 80
Race	Number	(Percent)	Rate
White	48	(69.6%)	0.3
Black	12	(17.4%)	NA
Other	9	(13.0%)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

Disease Abstract

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

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

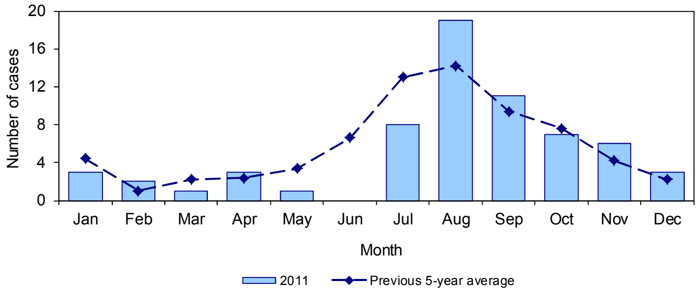
Figure 1. Reported Dengue Fever Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

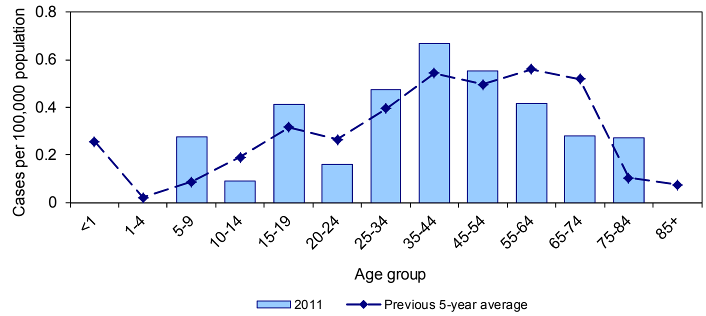


Figure 4. Reported Dengue Fever Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

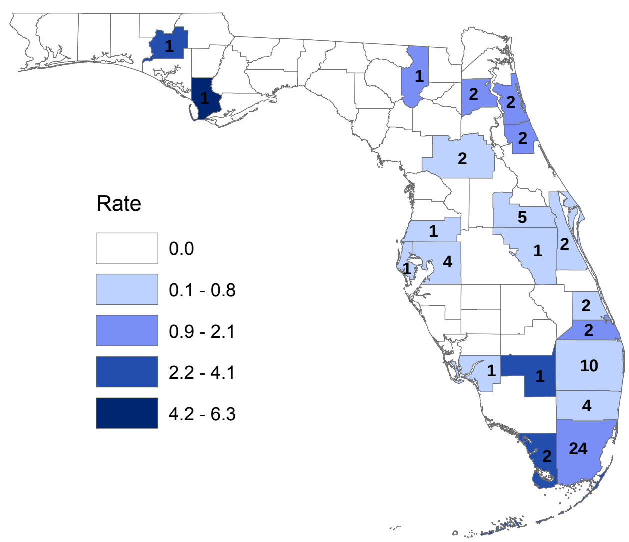


Table 1. Reported Dengue Fever Cases by Country/Region of Origin, Florida 2011

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

Prevention

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

Drain standing water to stop mosquitoes from multiplying

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

Cover skin with clothing or repellent

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

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

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

Additional Resources

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

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

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

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

Ehrlichiosis/Anaplasmosis

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

Description

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

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

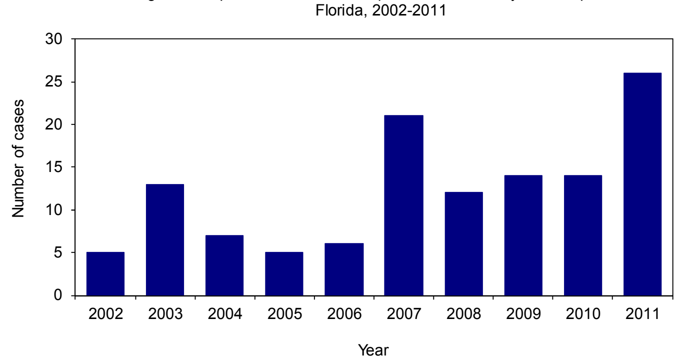
Anaplasmosis is a tickborne disease caused by *Anaplasma phagocytophilum*. It was previously known as human granulocytic ehrlichiosis (HGE) and thought to be caused by another species of *Ehrlichia*, but was later renamed human granulocytic anaplasmosis (HGA) when the bacterium was reclassified as *A.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

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

Disease Abstract

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

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

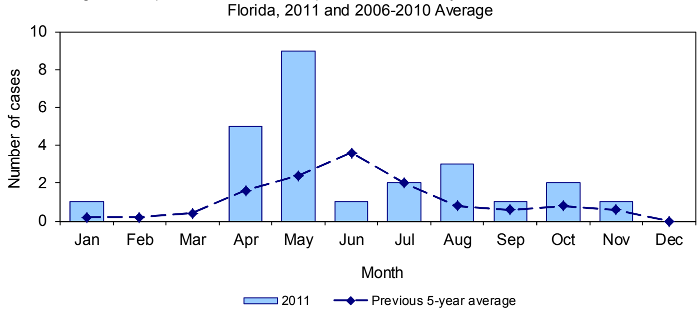


Ehrlichiosis and anaplasmosis are primarily seen among adults (Figure 3). The average age of ehrlichiosis cases in 2011 was 60 years, which is similar to historic trends, but higher than the average age of 45 for anaplasmosis cases. Ehrlichiosis and anaplasmosis cases were reported in 16 (23.8%) of 67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

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

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

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



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

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

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

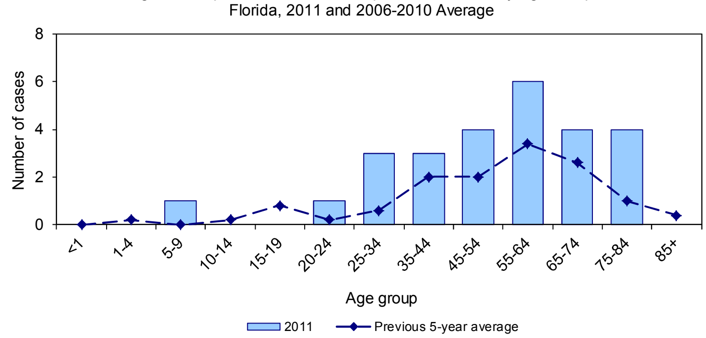
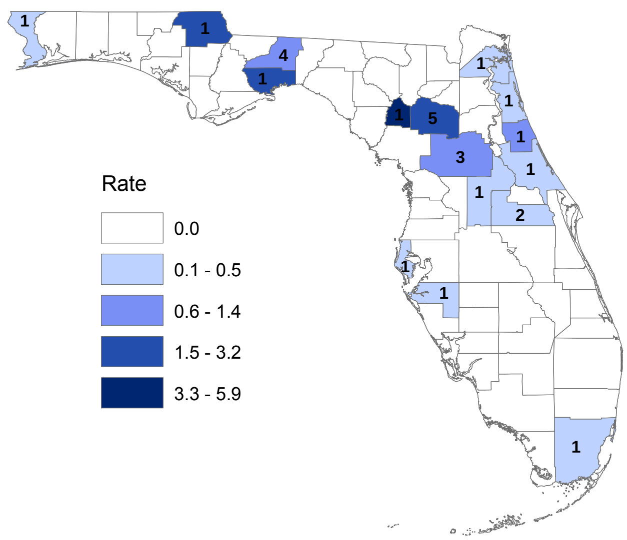


Figure 4. Reported Ehrlichiosis/Anaplasmosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

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

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

References

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

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

Additional Resources

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

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

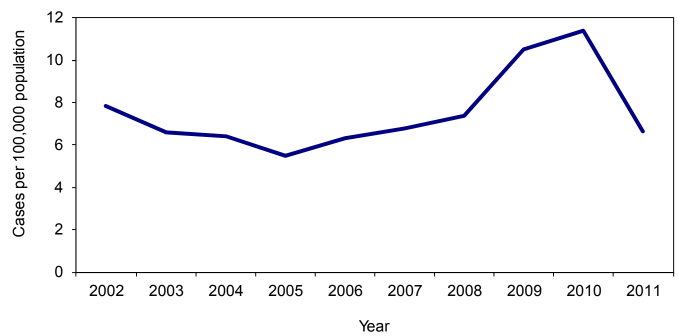
Giardiasis

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

Disease Abstract

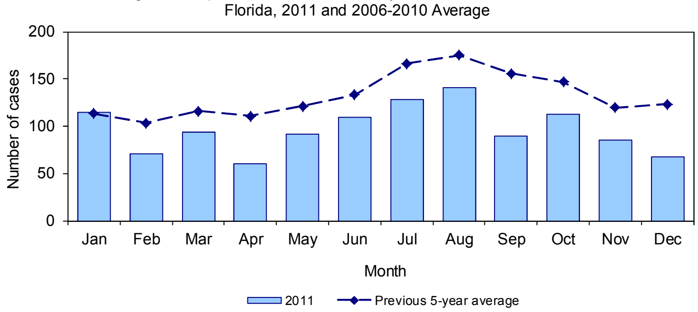
Giardiasis is a diarrheal illness caused by the parasite *Giardia*. The incidence rate for giardiasis remained relatively stable from 2002 to 2008 (Figure 1). Prior to August 2008, laboratory-confirmed cases had to be symptomatic to meet the case definition. Starting in August 2008, laboratory-confirmed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

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



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

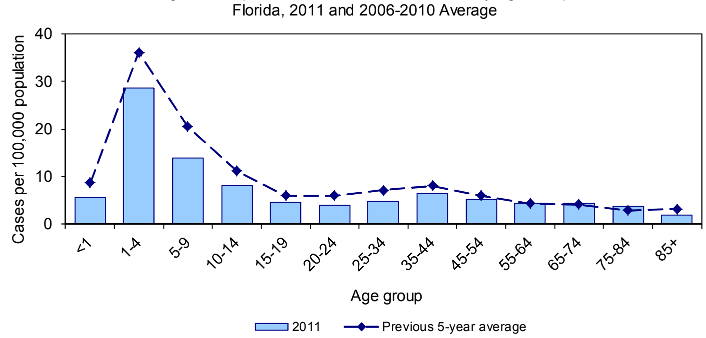
Figure 2. Reported Giardiasis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



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

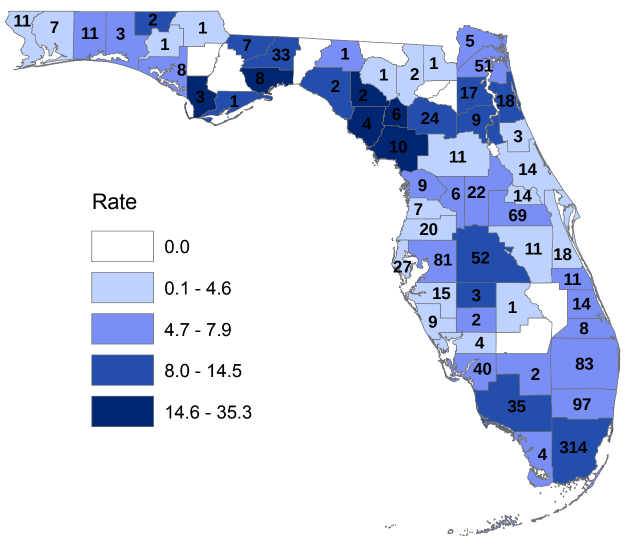
Note: Eighty-nine cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

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



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

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



Prevention

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

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

Additional Resources

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

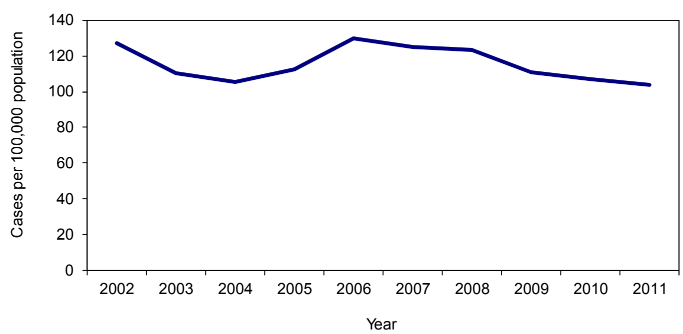
Gonorrhea

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

Disease Abstract

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

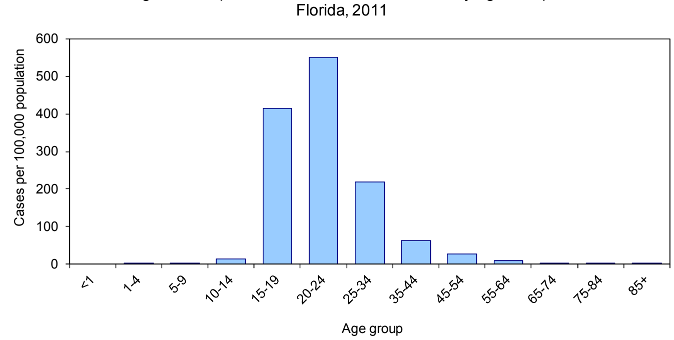
Figure 1. Reported Gonorrhea Incidence Rate, Florida, 2002-2011



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

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

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



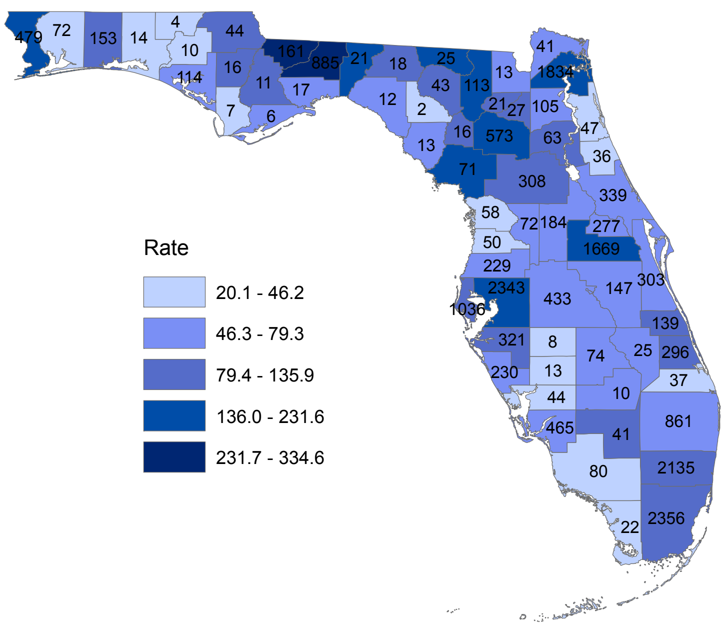
Note: 26 cases from 2011 were missing data on age and are not included.

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

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

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

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



Co-infection and Subsequent Infections

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

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

Prevention

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

References

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

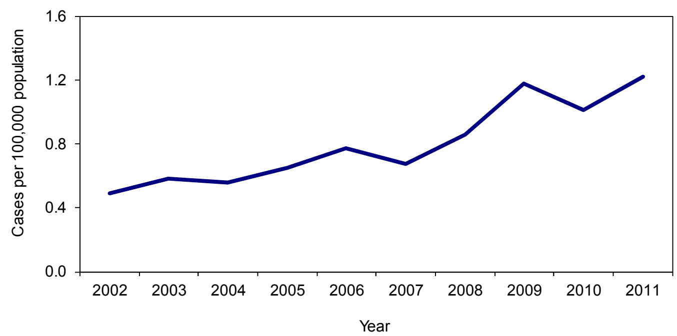
Haemophilus influenzae, Invasive Disease

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

Disease Abstract

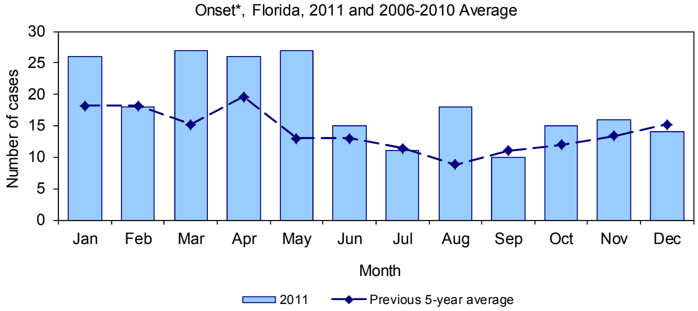
Invasive disease caused by *Haemophilus influenzae* bacteria can manifest as pneumonia, bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, or purulent pericarditis; less common infections include endocarditis and osteomyelitis. The incidence rate for all invasive diseases caused by *H.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

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



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

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



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

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

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

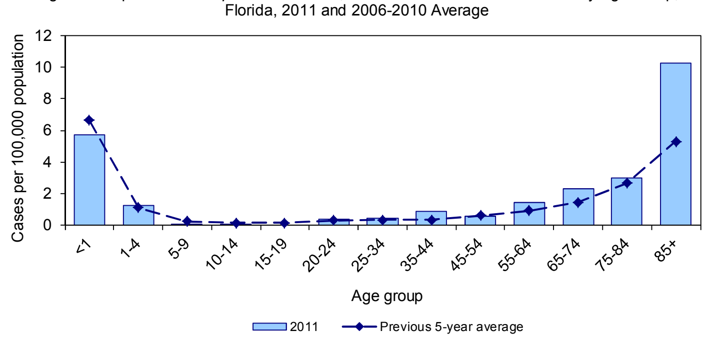
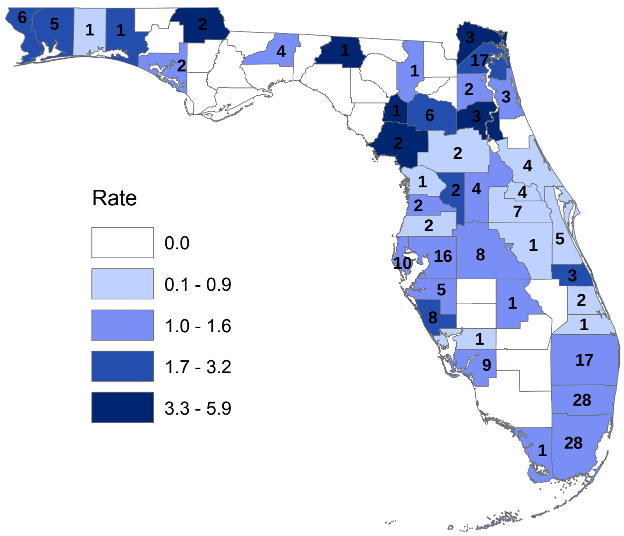


Figure 4. Reported *Haemophilus influenzae*, Invasive Disease Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



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

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

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

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

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

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

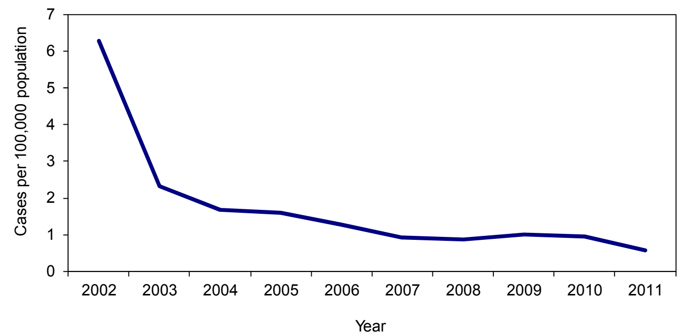
Hepatitis A

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

Disease Abstract

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

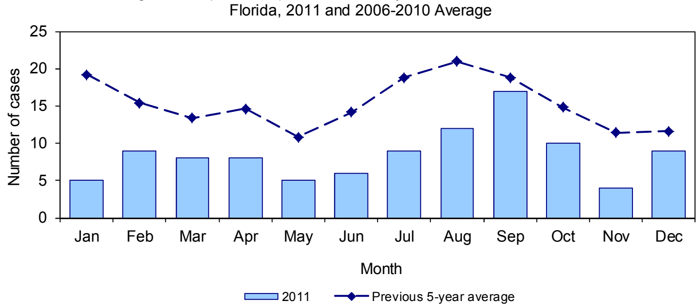
Figure 1. Reported Hepatitis A Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

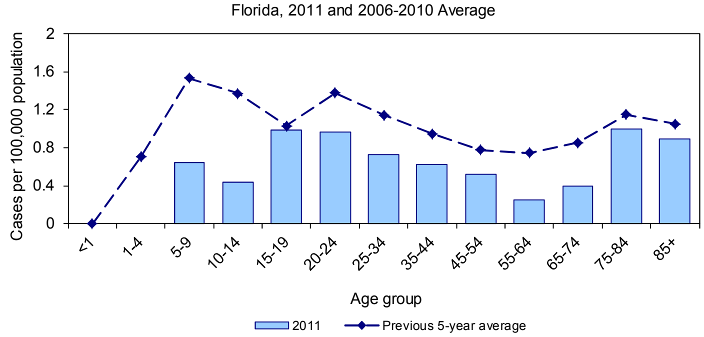
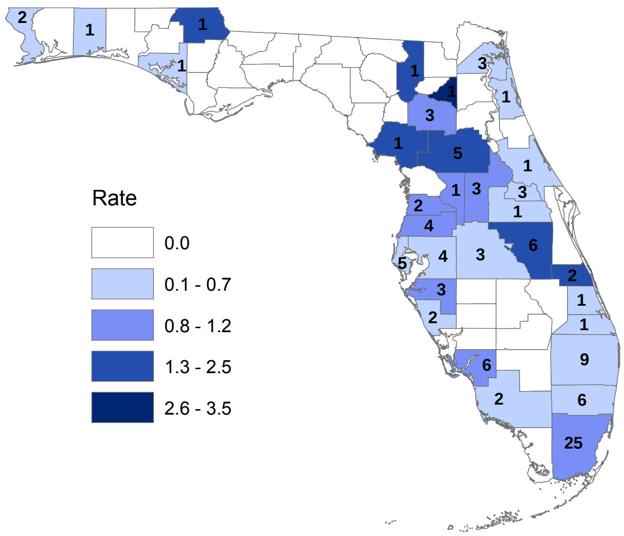


Figure 4. Reported Hepatitis A Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



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

Prevention

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

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

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

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

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

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

References

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

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

Additional Resources

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

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

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

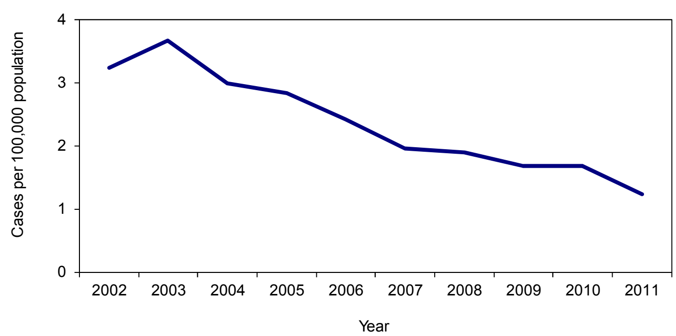
Hepatitis B, Acute

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

Disease Abstract

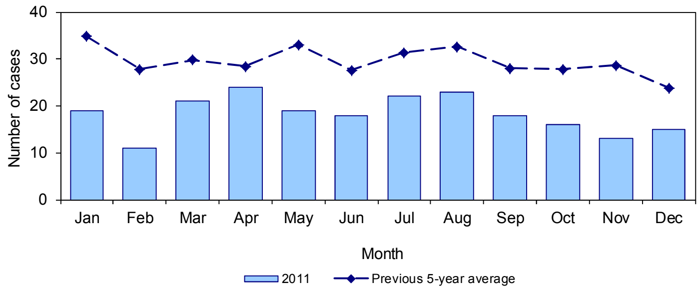
Hepatitis B is a vaccine-preventable disease caused by infection with the hepatitis B virus (HBV) that leads to inflammation of the liver. Symptoms may include loss of appetite, vague abdominal discomfort, nausea, and vomiting, often progressing to jaundice. The incidence rate for acute hepatitis B has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

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



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

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



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

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

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

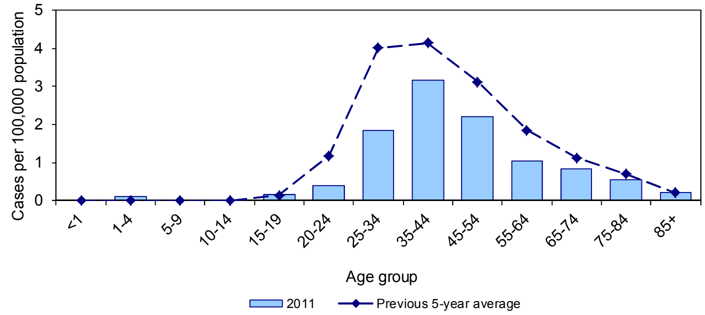


Figure 4. Reported Acute Hepatitis B Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

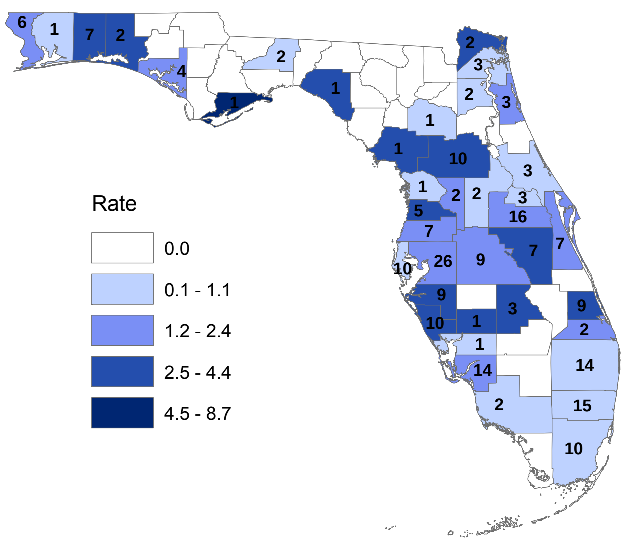


Table 1. Distribution of the Number of Sexual Partners in the Six Months Prior to Symptom Onset for People with Reported Acute Hepatitis B, Florida 2011

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

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

Prevention

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

High-risk groups for infection are listed below.

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

References

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

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

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

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

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

Additional Resources

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

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

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

Hepatitis B (HBsAg+) in Pregnant Women

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

Disease Abstract

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

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

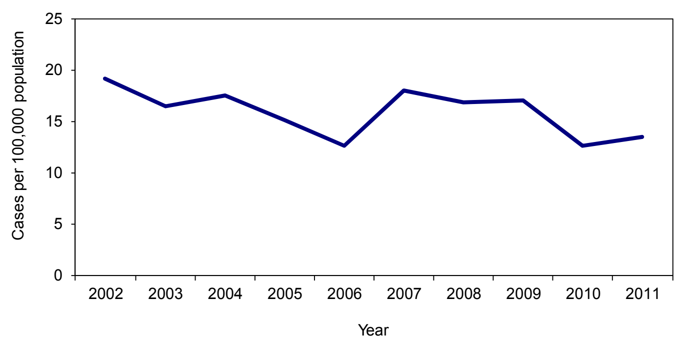
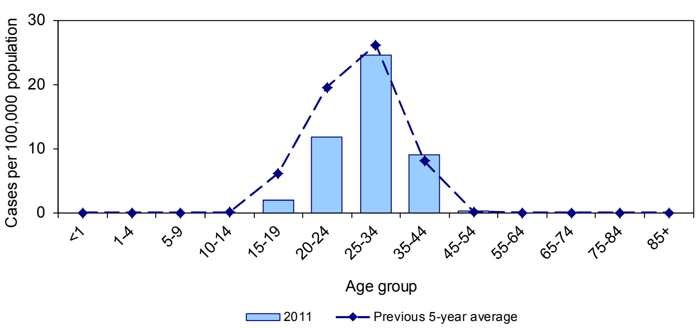


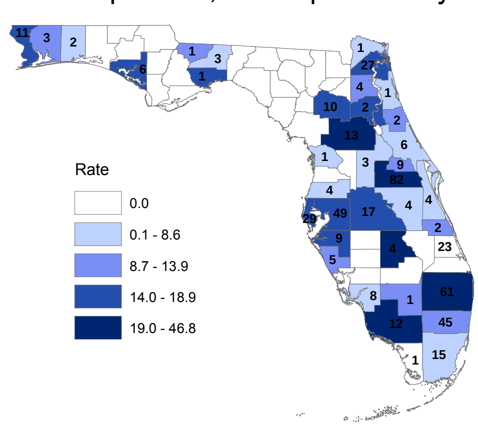
Figure 2. Reported Hepatitis B (+HBsAg) in Pregnant Women Incidence Rate in Age Group, Florida, 2011 and 2006-2010 Average



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

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

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



Prevention

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

References

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

Centers for Disease Control and Prevention. 2006. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults. *Morbidity and Mortality Weekly Report*, 55(RR16);1-25.
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Centers for Disease Control and Prevention. 2012. *Manual for the Surveillance of Vaccine-Preventable Diseases*, 5th ed.
Available at http://www.cdc.gov/vaccines/pubs/surv-manual/index.html.

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

Additional Resources

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

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

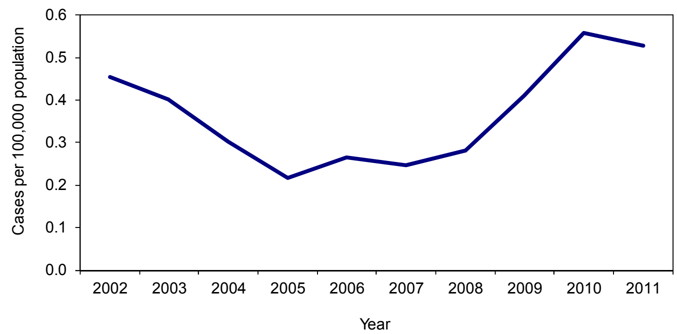
Hepatitis C, Acute

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

Disease Abstract

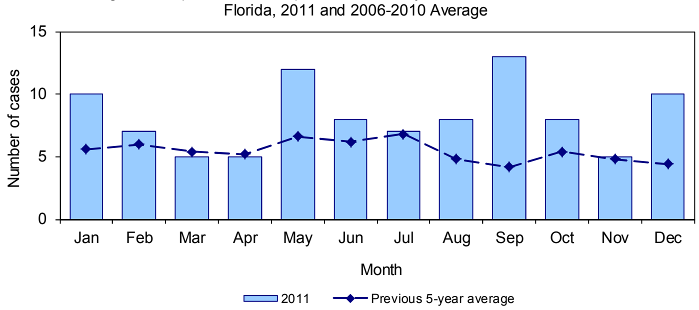
Hepatitis C is a viral disease that leads to inflammation of the liver. Infection with hepatitis C virus (HCV) is a leading cause of chronic liver disease, ranging from mild to severe, including cirrhosis and liver cancer. Approximately 75-85% of persons infected with HCV will develop chronic infection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

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



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

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



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

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

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

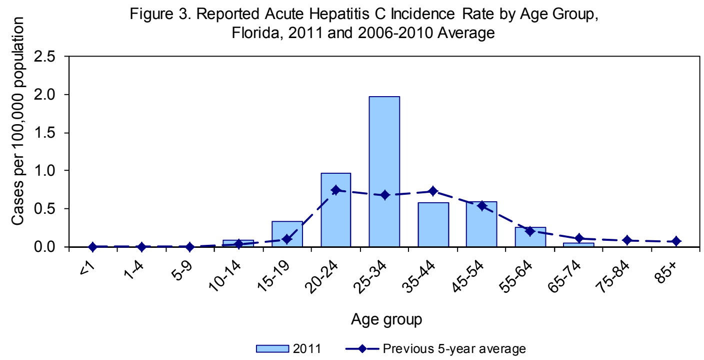
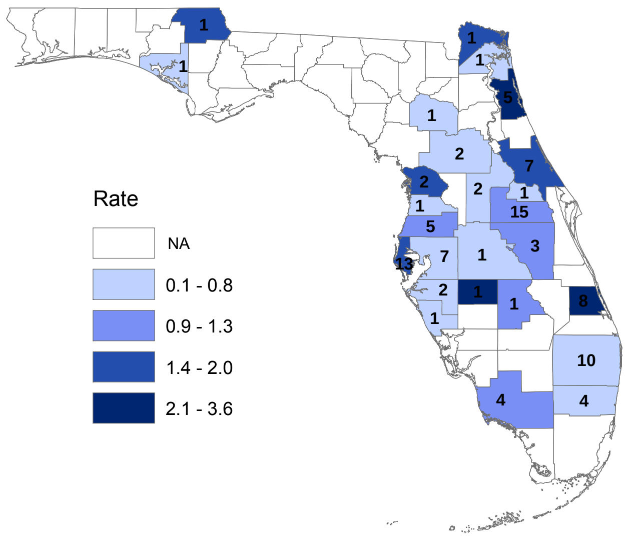


Figure 4. Reported Acute Hepatitis C Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



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

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

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

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

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

Prevention

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

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

References

Centers for Disease Control and Prevention. 1998. Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease. *Morbidity and Mortality Weekly Report,* 47(RR19);1-39.
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Centers for Disease Control and Prevention. 2011. Hepatitis C Virus Infection Among Adolescents and Young Adults --- Massachusetts, 2002—2009. *Morbidity and Mortality Weekly Report*, 60(17);537-541.
Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6017a2.htm.

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

Additional Resources

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

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

HIV Infection and AIDS

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

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

Disease Abstract

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

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

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

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

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

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

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

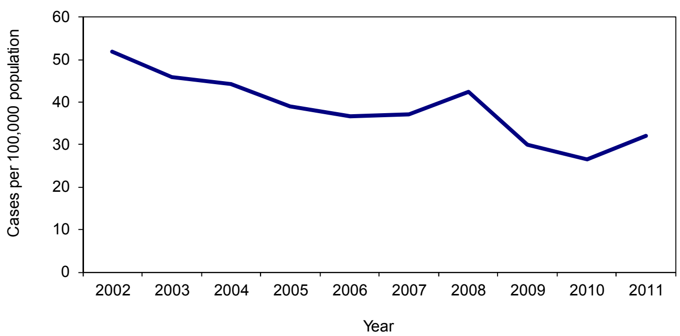


Figure 2. Reported AIDS Incidence Rate, Florida, 2002-2011

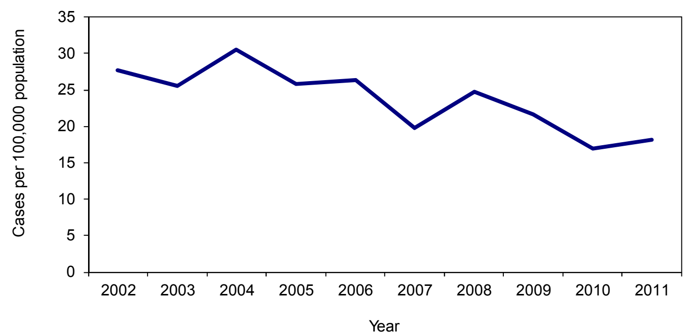
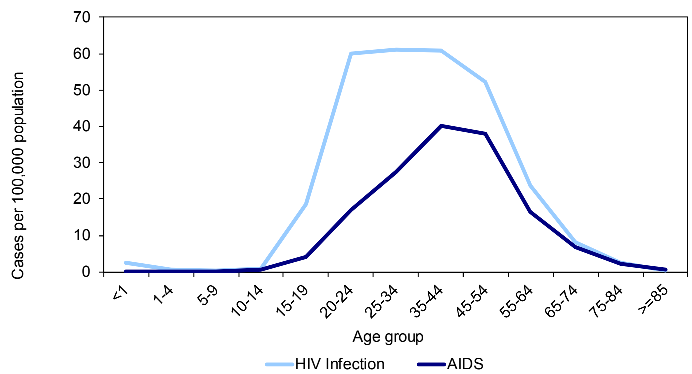


Figure 3. Reported HIV Infection and AIDS cases by Age Group, Florida, 2011



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

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

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

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

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

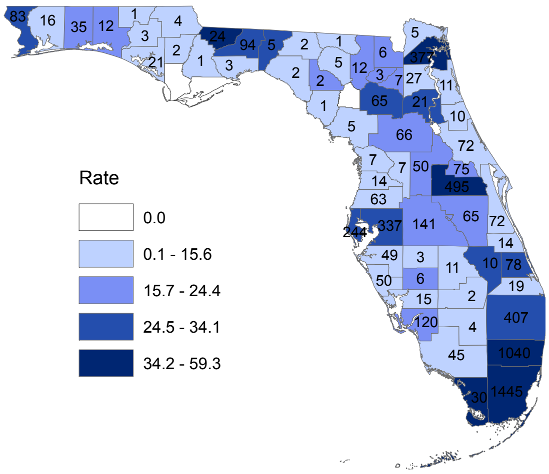


Figure 5. Reported AIDS Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

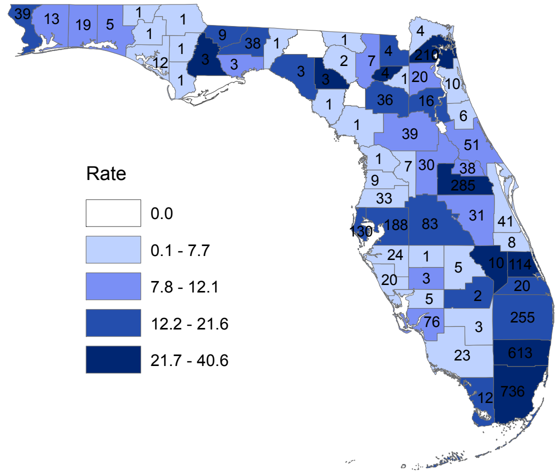


Table 1. Risk Factors for Reported Adult (13 Years and Older) HIV Infection Cases by Gender, Florida 2011

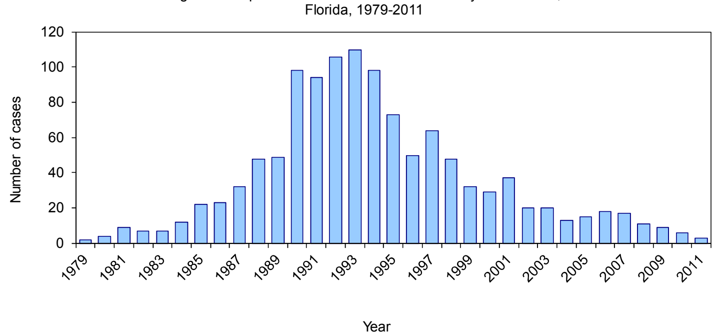
Risk Factor	Male cases (N=4,608)	Female cases (N=1,419)
	Number (percent)	Number (percent)
Men who have sex with men (MSM)	3,255 (70.6)	N/A
Heterosexual	1,057 (22.9)	1,295 (91.3)
Injection drug user (IDU)	192 (4.2)	110 (7.8)
MSM and IDU	94 (2.0)	N/A
Other	10 (0.2)	14 (1.0)
Total	4,608 (100.0)	1,419 (100.0)

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

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

Perinatal HIV/AIDS Cases

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



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

Prevention

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

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

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

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

References

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

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

Lead Poisoning

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

Disease Abstract

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

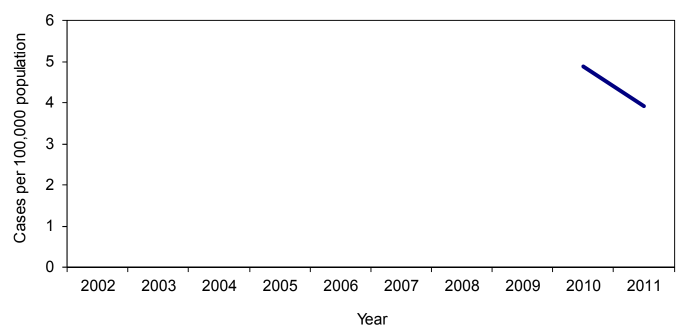
The Florida Department of Health recommends blood lead screening among children less than 6-years-old who are at high risk for lead poisoning. Children under the age of six are considered to be at risk because they tend to put their hands or other objects into their mouths, they absorb a greater percentage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

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

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

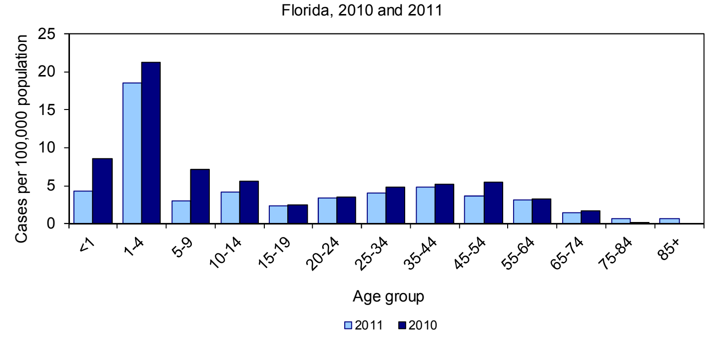
Prior to 2010, lead poisoning case data were primarily stored outside of the state's reportable disease surveillance system; for this reason, only data for 2010 and 2011 are presented in this report. The incidence in 2011 was less than 2010 (Figure 1). Lead poisoning cases were reported in all age groups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

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



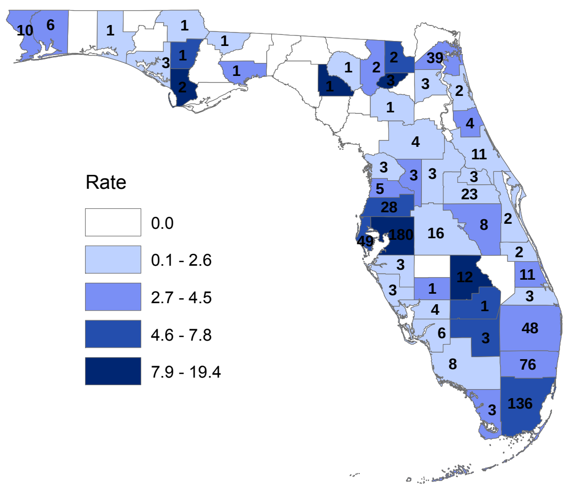
Note: Lead poisoning was not captured consistently in Merlin prior to 2010

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



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

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



Prevention

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

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

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

References

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

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

Additional Resources

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

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

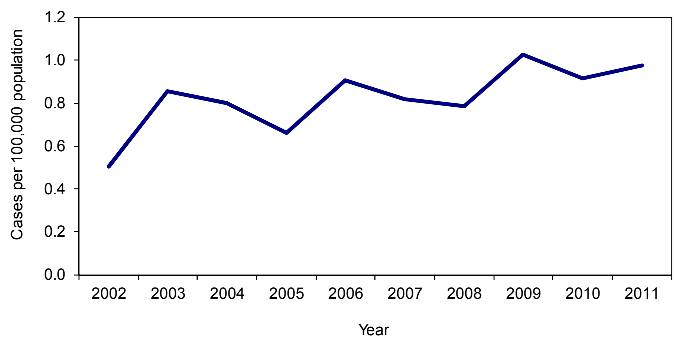
Legionellosis

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

Disease Abstract

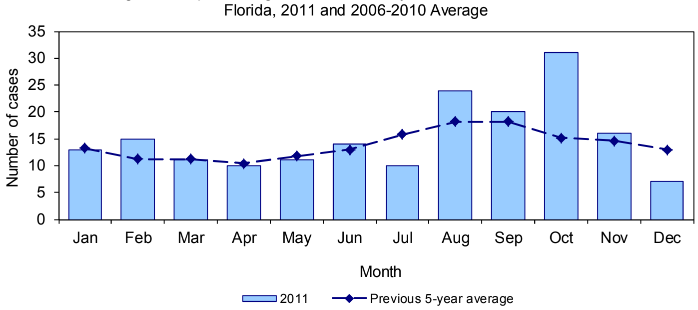
Legionellosis is associated with two clinically and epidemiologically distinct illnesses that are caused by *Legionella* bacteria. Legionnaires' disease is characterized by fever, muscle pain, cough, and clinical or radiographic pneumonia. Pontiac fever is a milder illness without pneumonia. The Florida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

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



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

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



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

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

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

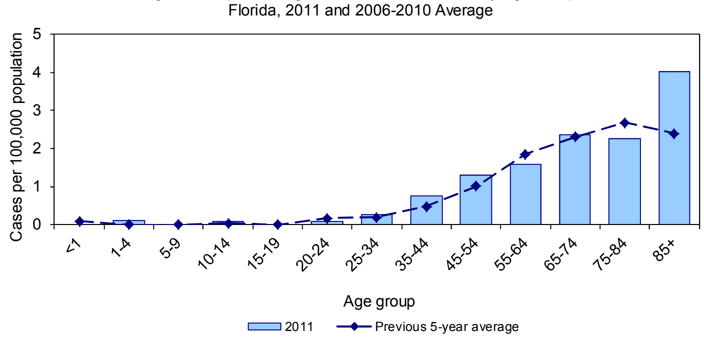
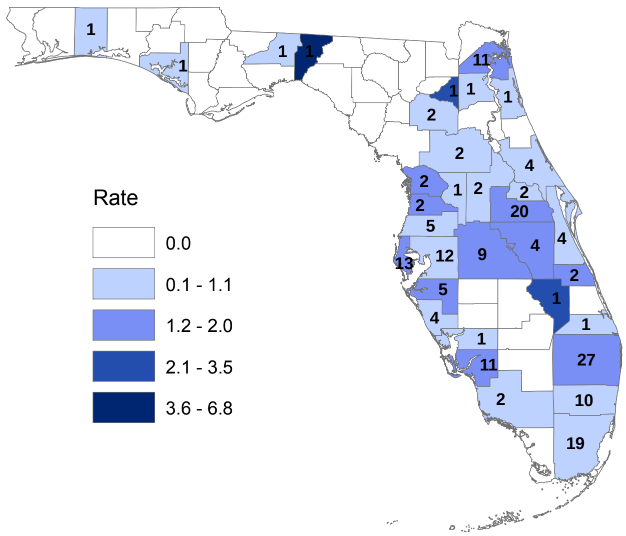


Figure 4. Reported Legionellosis Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



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

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

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

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

Prevention

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

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

References

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

Additional Resources

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

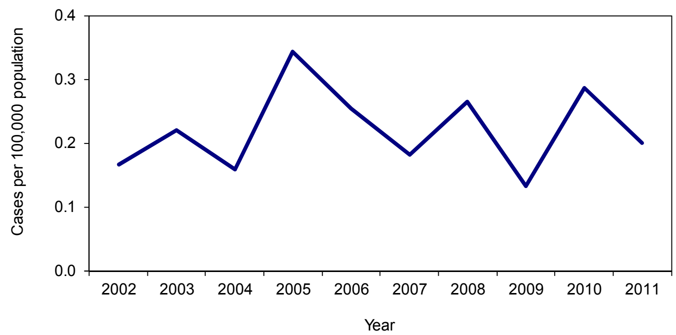
Listeriosis

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

Disease Abstract

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

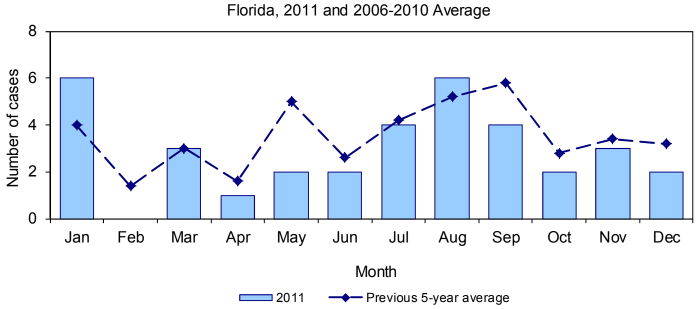
Figure 1. Reported Listeriosis Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

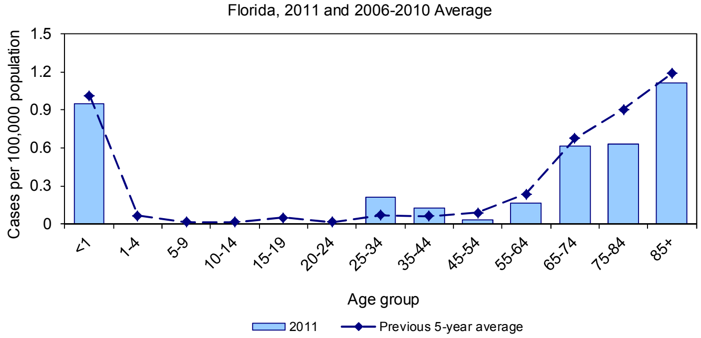
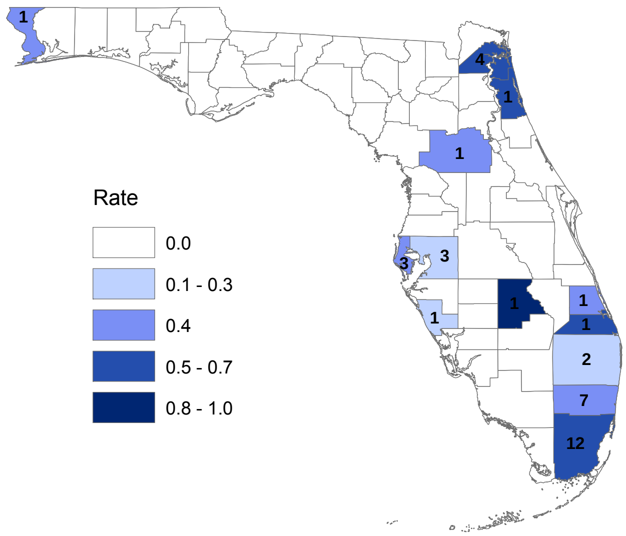


Figure 4. Reported Listeriosis Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



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

Prevention

General guidelines for the prevention of listeriosis:

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

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

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

Additional Resources

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

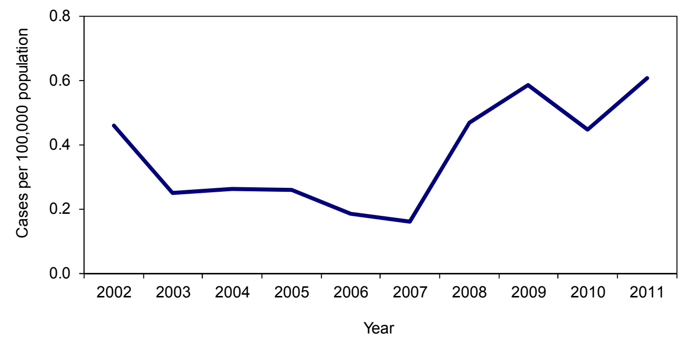
Lyme Disease

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

Disease Abstract

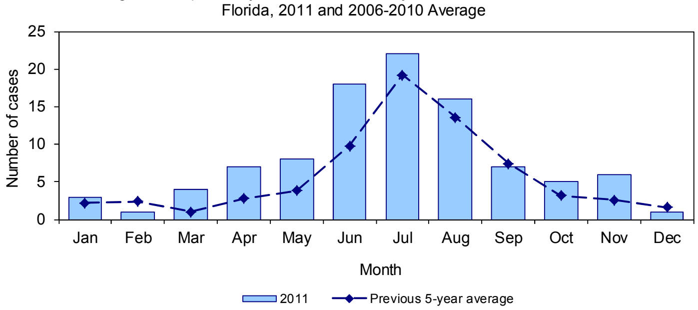
Lyme disease is caused by infection with *Borrelia burgdorferi* bacteria following the bite of an infected tick. Typical symptoms include fever, headache, fatigue, and a characteristic skin rash called erythema migrans. After declines in the reported incidence of Lyme disease in the early part of the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

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



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

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



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

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

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

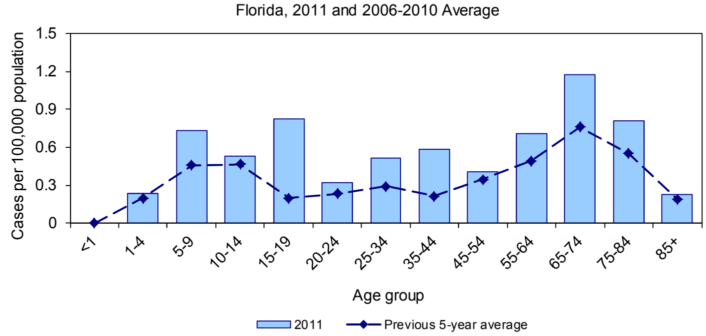
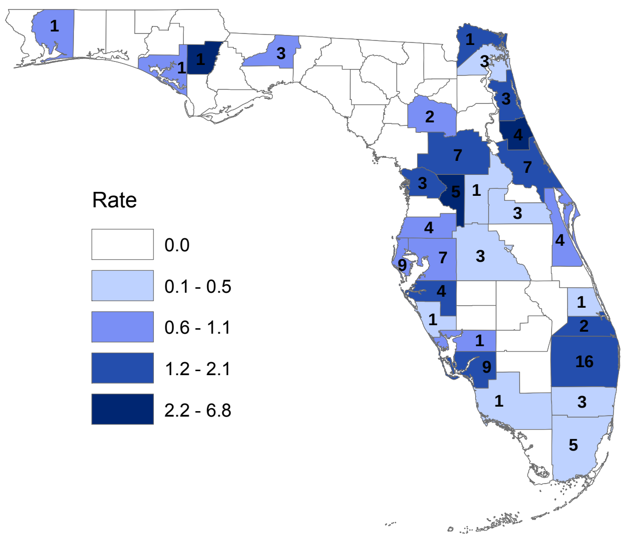


Figure 4. Reported Lyme Disease Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



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

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

Prevention

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

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

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

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

Additional Resources

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

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Malaria

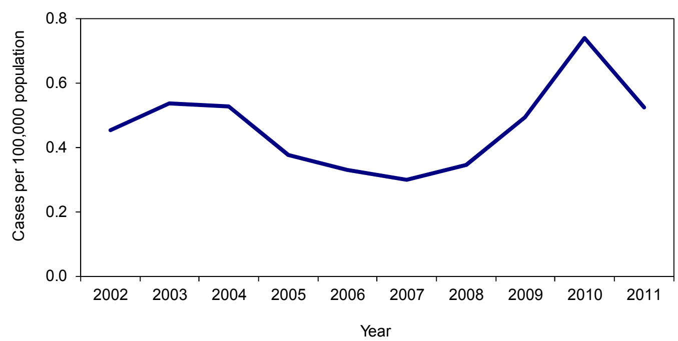
Malaria			
Number of cases			99
2011 incidence rate per 100,000 population			0.5
Percent change from 5-year average (2006-2010) reported incidence rate			18.3%
Age			Years
Mean			39.9
Median			40.0
Min-Max			0 - 80
Race	Number	(Percent)	Rate
White	28	(28.6%)	0.2
Black	53	(54.1%)	1.7
Other	17	(17.3%)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

Disease Abstract

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

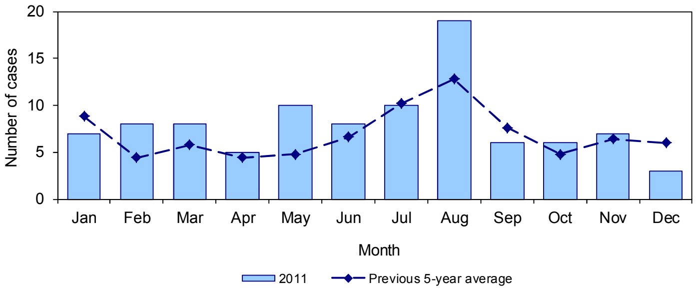
Malaria was endemic in Florida until the 1940s. In 2011, all cases were in travelers returning to Florida from malaria-endemic regions of the world; however, competent vectors do exist in the state, providing the potential for local transmission. The incidence rate for malaria in Florida declined for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

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



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

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



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

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

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

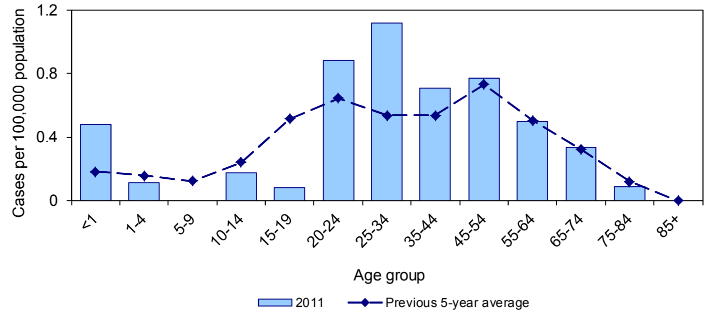
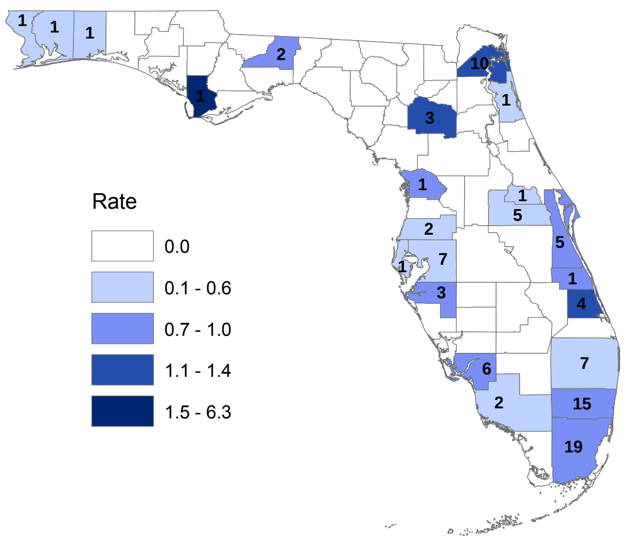


Figure 4. Reported Malaria Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



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

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

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

Prevention

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

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

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

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Measles

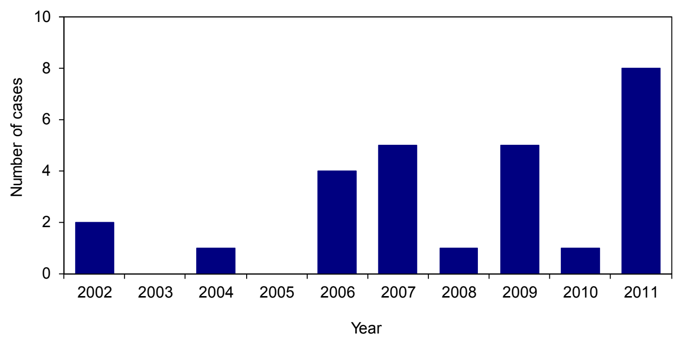
Measles			
Number of cases			8
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) number of reported cases			150.0%
Age			Years
Mean			12.4
Median			13.0
Min-Max			1 - 34
Race	Number	(Percent)	Rate
White	7	(100.0%)	NA
Black	0	(0.0%)	NA
Other	0	(0.0%)	NA
Unk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

Disease Abstract

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

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

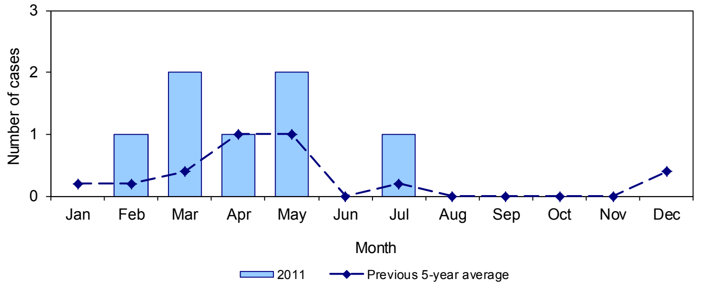
Figure 1. Reported Measles Cases by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

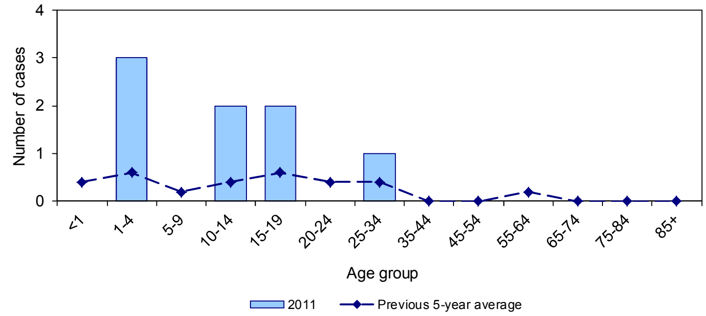
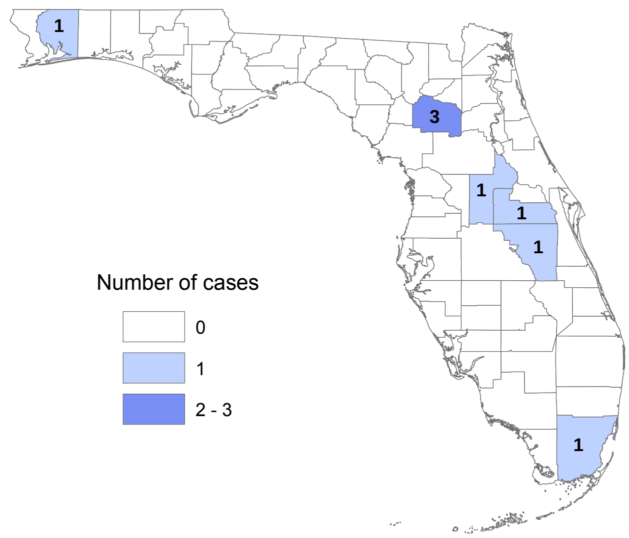


Figure 4. Reported Measles Cases by County, Florida, 2011



Prevention

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

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Meningococcal Disease

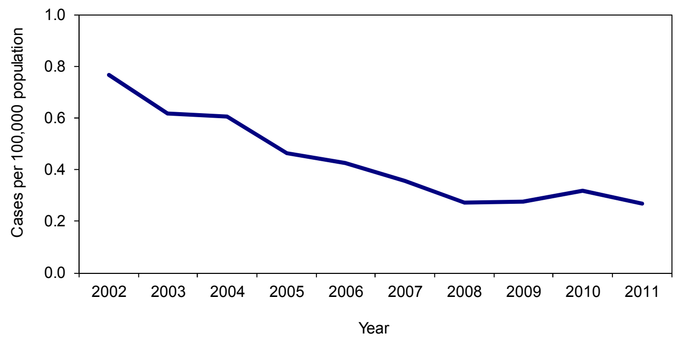
Meningococcal Disease		
Number of cases		51
2011 incidence rate per 100,000 population		0.3
Percent change from 5-year average (2006-2010) reported incidence rate		-18.5%
Age		Years
Mean		40.2
Median		32.0
Min-Max		0 - 89
Race	Number (Percent)	Rate
White	36 (72.0%)	0.3
Black	13 (26.0%)	NA
Other	1 (2.0%)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

Disease Abstract

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

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

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

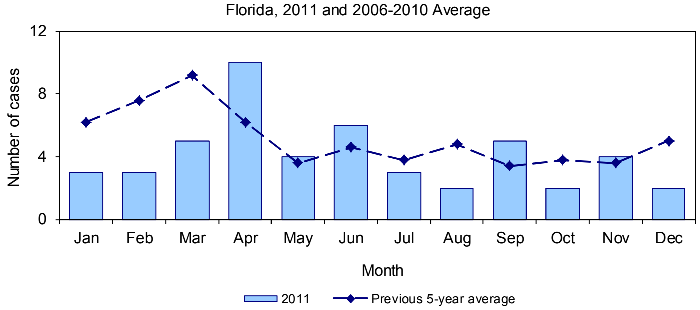


There is a general seasonal increase in cases in late winter and early spring (Figure 2). Unlike previous years, the highest incidence rates occurred in those over 85 years of age (Figure 3). In 2011, the incidence rates were lower than or equal to the previous 5-year average in all age groups except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

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

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

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



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

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

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

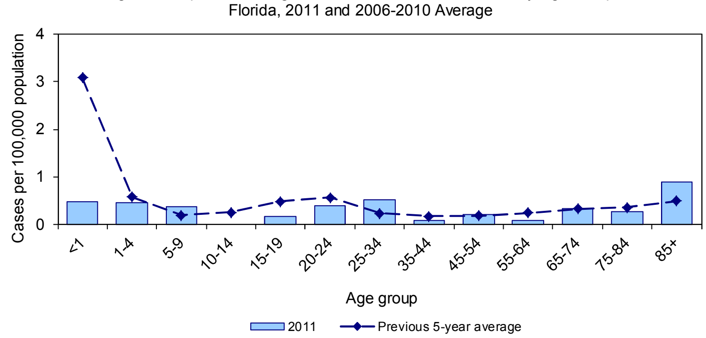


Figure 4. Reported Meningococcal Disease Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

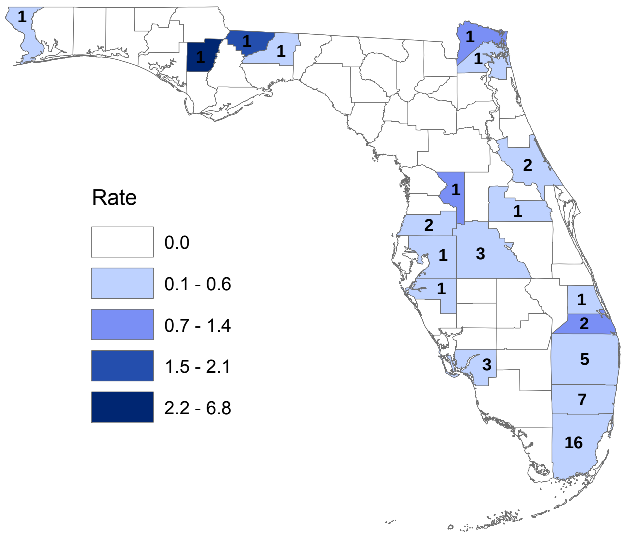


Table 1. Reported Meningococcal Cases by Serogroup, Florida 2011

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

Prevention

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

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

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Mercury Poisoning

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

Description

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

Common sources of each of the mercury categories are below.

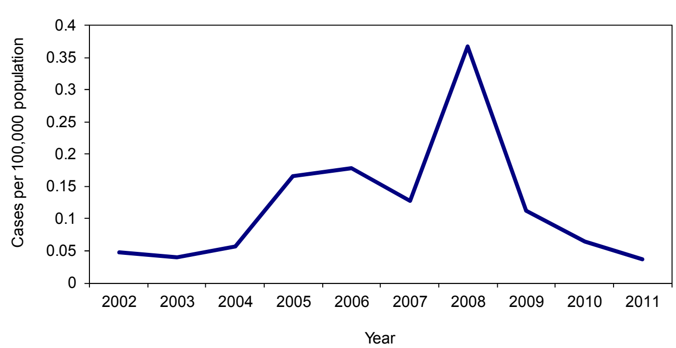
- Elemental or metallic mercury: broken mercury thermometers, blood pressure monitors, fluorescent light bulbs, dental amalgam, neon signs, outdoor lighting, cameras, electrical switches, batteries, and some folk medicines.
- Organic mercury compounds: certain freshwater and saltwater fish and marine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

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

Disease Abstract

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

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

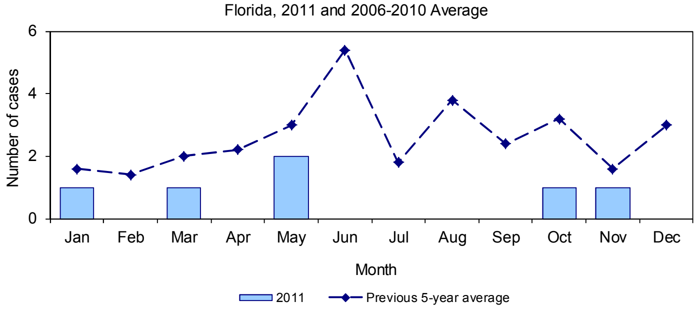


classification was added for symptomatic people with a high index of suspicion (based on the person's exposure history) or an epidemiologic link to a laboratory-confirmed case.

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

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

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



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

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

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

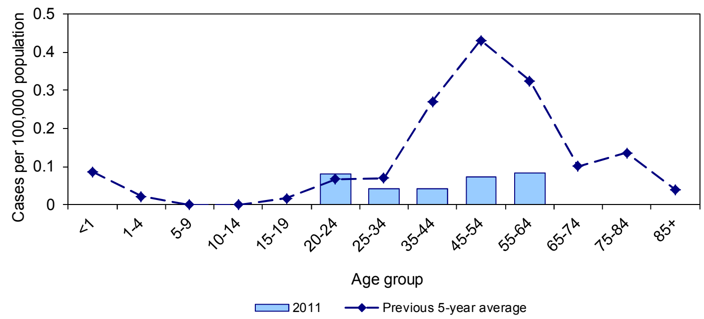
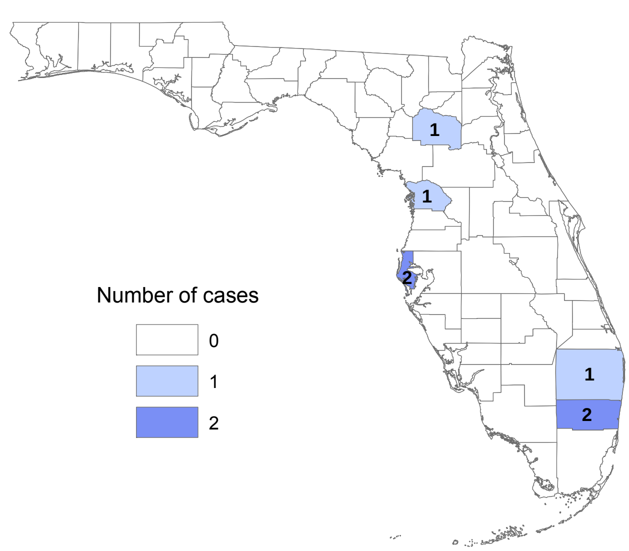


Figure 4. Reported Mercury Poisoning Cases by County, Florida, 2011



Prevention

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

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

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

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U.S. Environmental Protection Agency. Mercury.
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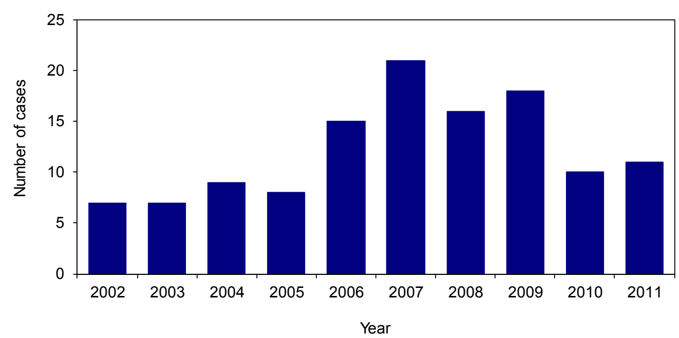
Mumps

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

Disease Abstract

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

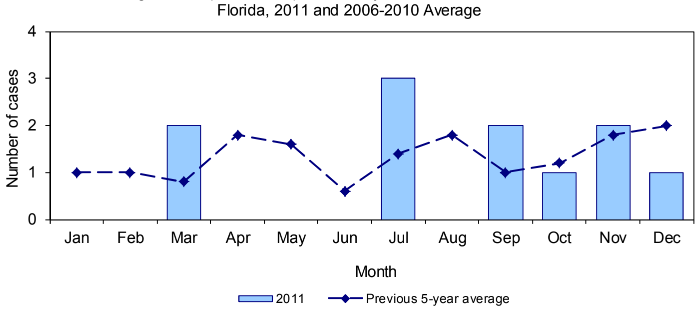
Figure 1. Reported Mumps Cases by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

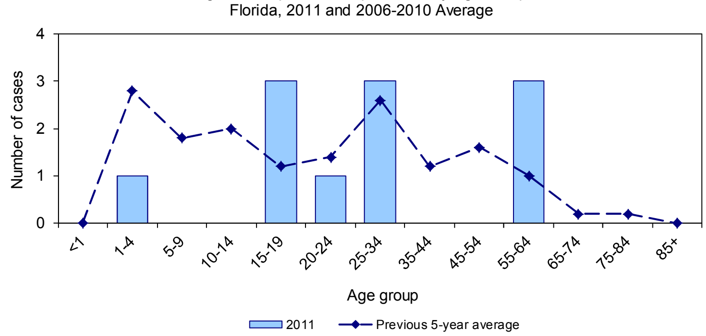
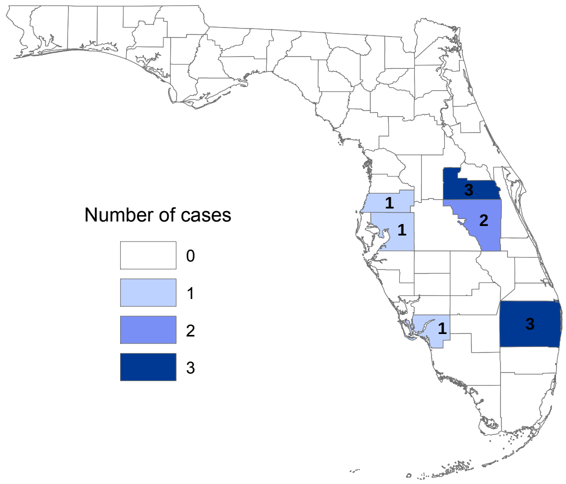


Figure 4. Reported Mumps Cases by County, Florida, 2011



Prevention

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

References

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

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

Additional Resources

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

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

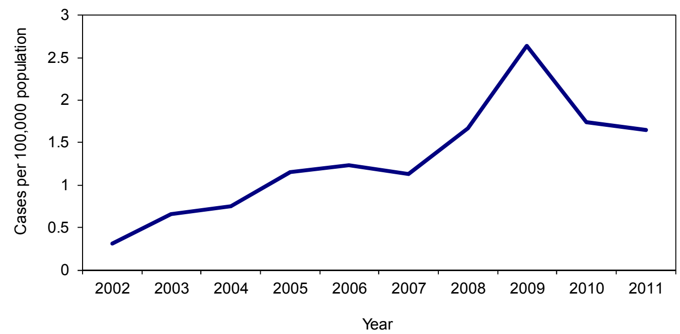
Pertussis

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

Disease Abstract

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

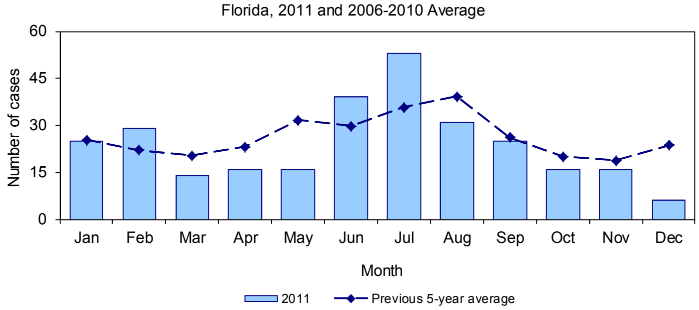
Figure 1. Reported Pertussis Incidence Rate by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

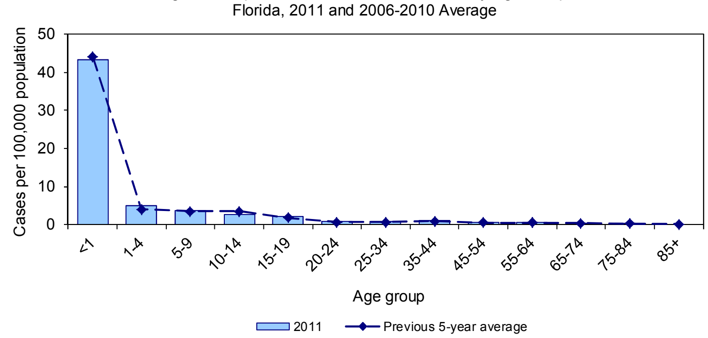


Figure 4. Reported Pertussis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

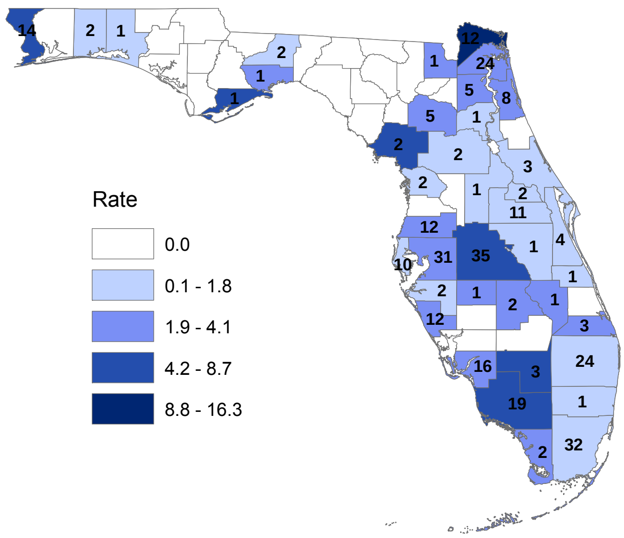


Table 1. Number of Pertussis-Containing Vaccinations Received by Reported Pertussis Cases, Florida 2011

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

Prevention

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

References

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

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

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

Additional Resources

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

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

Pesticide-Related Illness and Injury

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

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

Disease Abstract

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

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

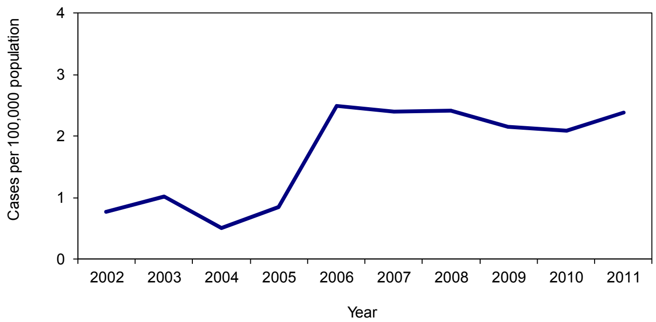
The Florida Department of Health (FDOH) uses a standard protocol based on the National Institute of Occupational Safety and Health (NIOSH) surveillance guidelines for classifying cases of pesticide-related illness and injury. Confirmed, probable, and possible case classifications meet the reportable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

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

Description

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

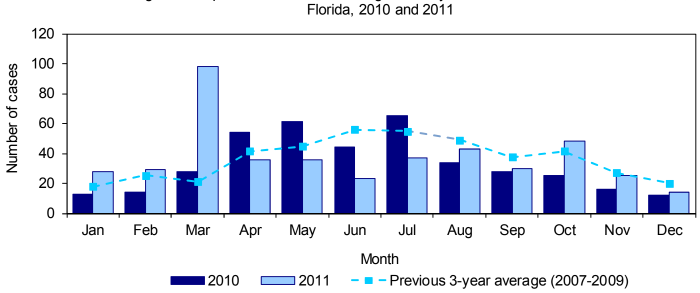
Figure 1. Reported Pesticide Poisoning Cases by Year Reported, Florida, 2002-2011



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

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

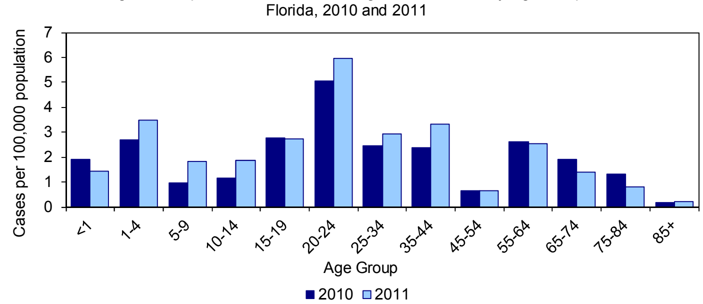
Figure 2. Reported Pesticide Poisoning Cases by Estimated Month of Onset*, Florida, 2010 and 2011



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

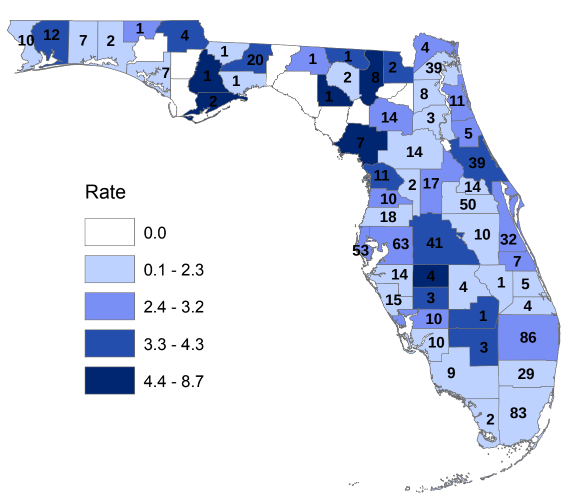
Note: Cases with onset date in 2010 but reported in 2011 are included in the 2010 counts in the month in which onset occurred. Cases with onset date in 2011 but reported in 2012 are not included.

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



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

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



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

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

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

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

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

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

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

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

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

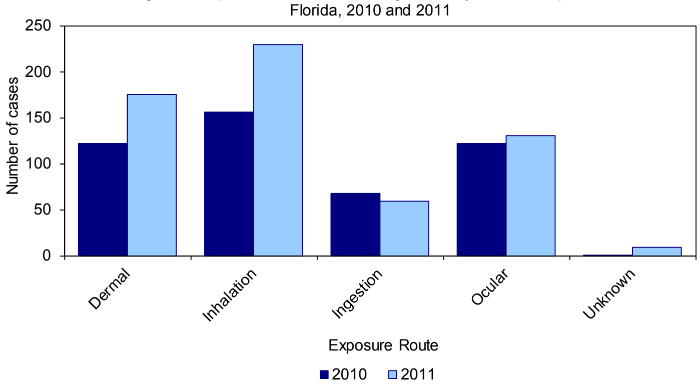
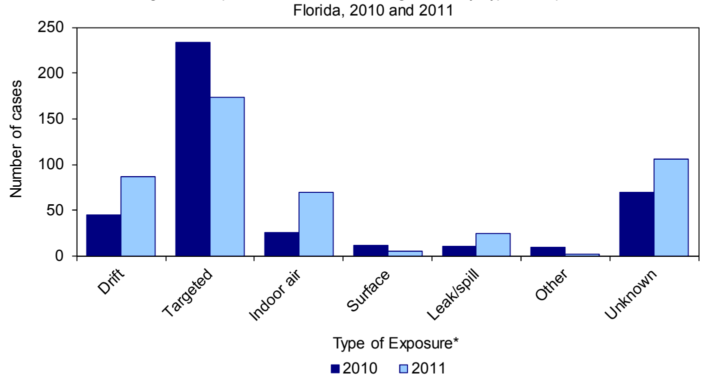


Figure 6. Reported Pesticide Poisoning Cases by Type of Exposure*, Florida, 2010 and 2011



***Definitions of exposure types**

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

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

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

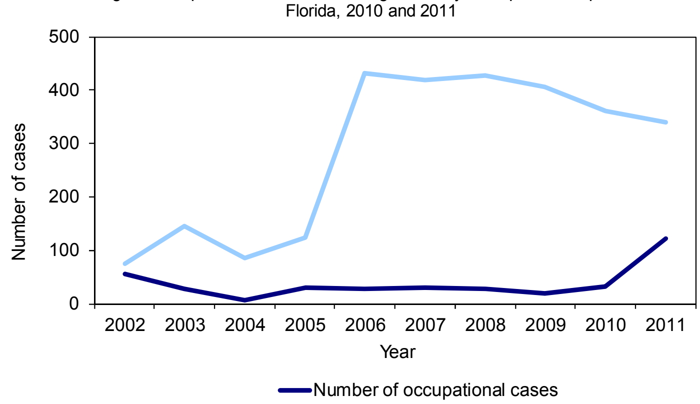
There has been an increase in non-occupational case identification since 2006 due to direct access to FPICN data (Figure 7). However, this additional data set did not result in an increase in the number of reported occupational cases during 2010 (31, 7.9%). The increase in occupational cases in 2011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

Prevention

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

- When using pesticides, always read the label first and strictly follow the directions.
- Use pesticide products only for pests indicated on the label and use only the minimum amount of pesticide as directed by the label (twice the amount will not do twice the job).
- Use protective measures when handling pesticides as directed by the label, change clothes after applying pesticides, and wash your hands immediately after applying pesticides.
- Before applying a pesticide (indoors or outdoors), remove children, their toys, and pets from the area to be sprayed. Do not put items back until the pesticide has dried or as specified by label instructions.

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



Additional Resources

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

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

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

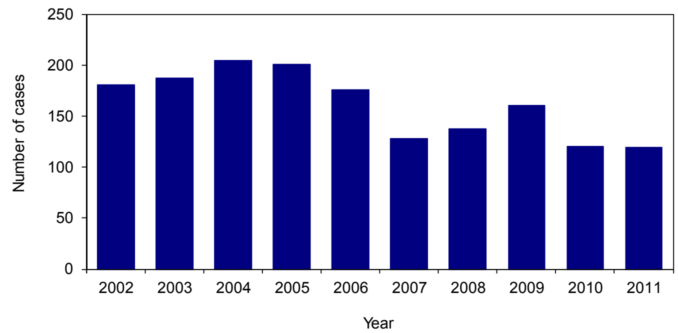
Rabies, Animal

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

Disease Abstract

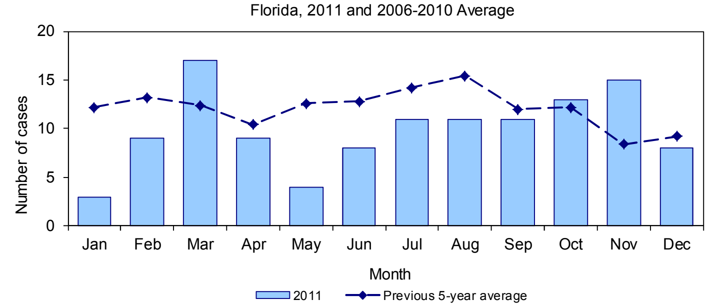
Rabies is a vaccine-preventable viral disease of mammals most often transmitted through the bite of a rabid animal via infected saliva. The vast majority of rabies infections occur in wild animals like raccoons, skunks, bats, and foxes.

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



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

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



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

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

Raccoons accounted for the majority of rabid animals in 2011 (79, 66.4%) (Table 1); rabies was identified in 18 bats (15.1%) and 11 cats (9.2%). Feline rabies was above the 20-year average, while rabies in raccoons, bats, and foxes were at or below their respective 20-year averages. This may represent increased rabies activity in cats or increased likelihood of human and domestic animal contact with rabid cats compared to rabid wildlife. In at least three cases, Bay (2) and Duval (1), rabid cats were part of a larger colony, ranging from 15 to 80 cats residing on a residential property. In one of these cases, the homeowner also had a pet wild raccoon. Since 1997, rabid cats have continued to outnumber rabid dogs, although rabies vaccination is compulsory for both. Two particularly challenging bat cases investigated by the Pinellas County Health Department occurred in 2011. One involved a student who brought a live bat to school where the bat was used as a hands-on educational tool; the bat was later confirmed to have rabies at the state public health laboratory. A second case involved a birthday party in a large apartment complex where children played with a live bat for several hours and then placed the live bat in a bag and presented it to the birthday child. In this situation, the bat escaped and was not tested; however, rabies post-exposure prophylaxis was recommended for all potentially exposed persons.

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

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

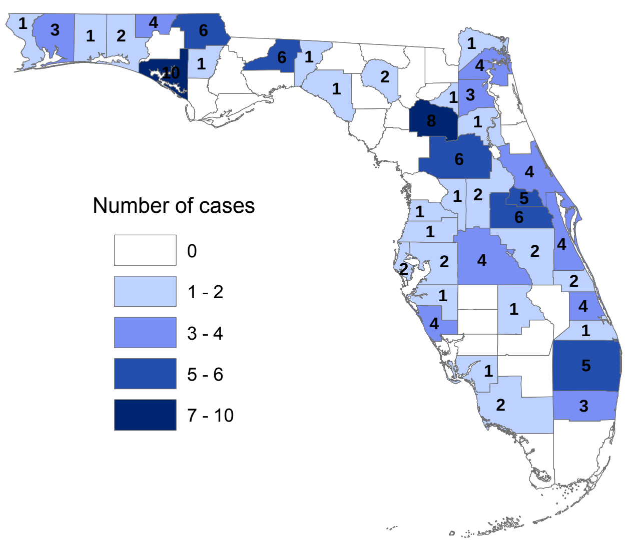


Table 1. Reported Animal Rabies Infections by Type of Animal, Florida 2011*

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

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

Prevention

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

Prevention measures include the following strategies:

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

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

Additional Resources

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

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

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

Rabies, Possible Exposure where Post-Exposure Prophylaxis was Recommended

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

Disease Abstract

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

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

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

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

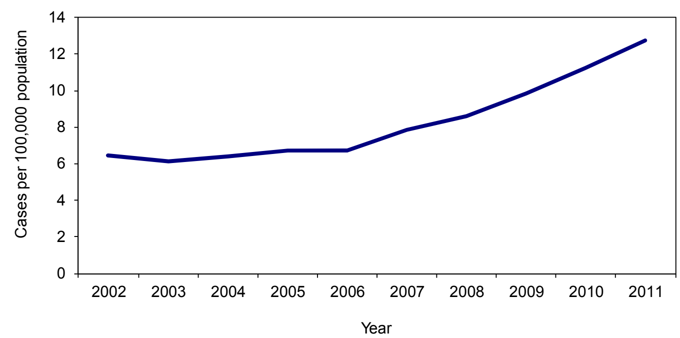
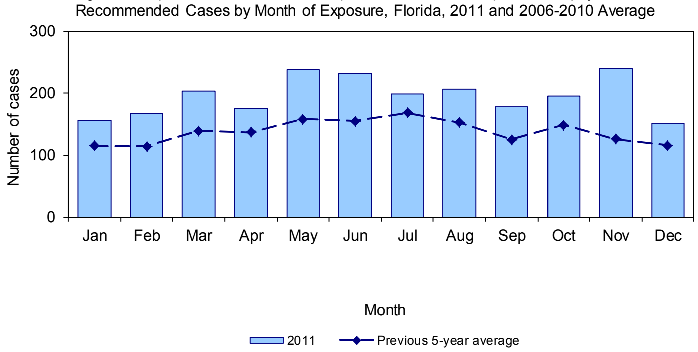
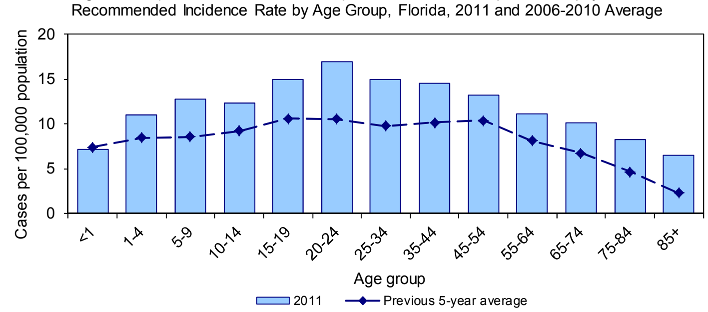


Figure 2. Reported Possible Rabies Exposure where Post-Exposure Prophylaxis was Recommended Cases by Month of Exposure, Florida, 2011 and 2006-2010 Average



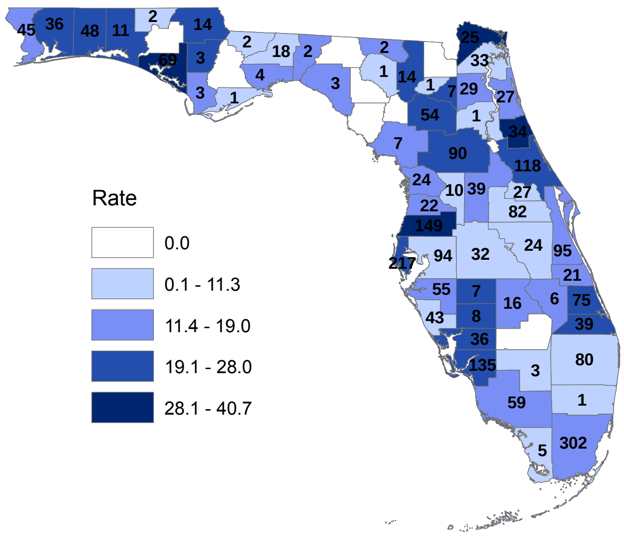
Note: Sixty-nine cases were reported in 2011 with exposure date in earlier years; these are included in the 2006-2010 average. Cases with exposure date in 2011 but reported in 2012 are not included.

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



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

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



Prevention

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

Additional Resources

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

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

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

Rocky Mountain Spotted Fever

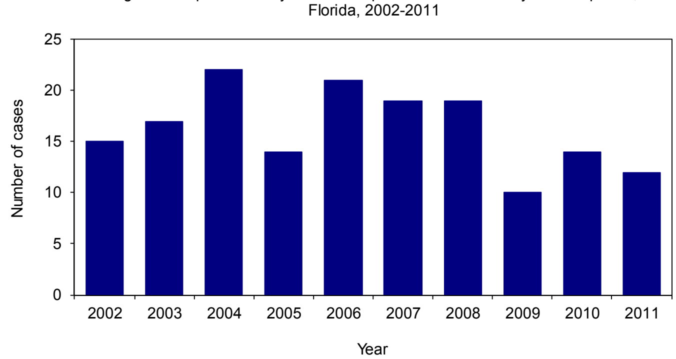
Rocky Mountain Spotted Fever			
Number of cases			12
2011 incidence rate per 100,000 population			NA
Percent change from 5-year average (2006-2010) number of reported cases			-27.7%
Age			Years
Mean			50.1
Median			48.0
Min-Max			15 - 86
Race	Number	(Percent)	Rate
White	9	(100.0%)	NA
Black	0	(0.0%)	NA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

Description

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

Disease Abstract

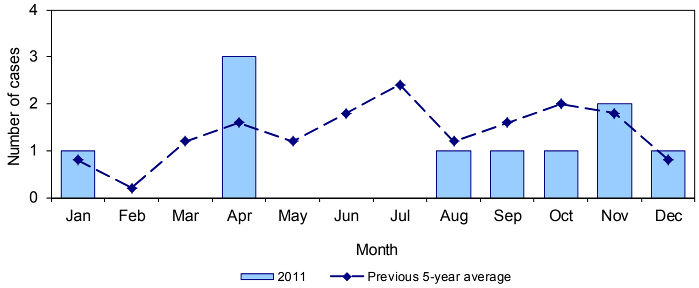
Figure 1. Reported Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 2002-2011



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

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

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



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

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

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

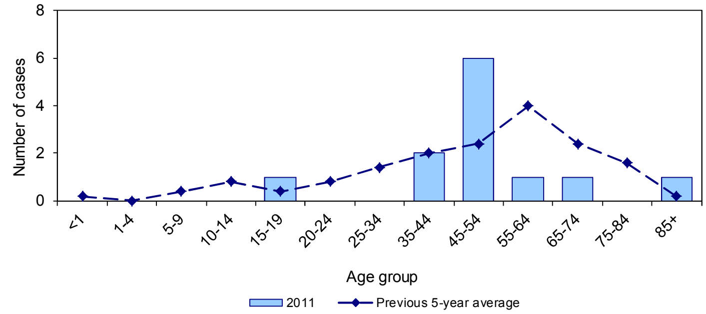
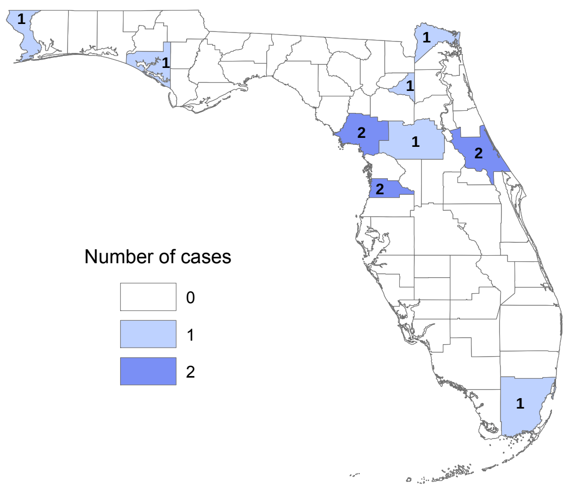


Figure 4. Reported Rocky Mountain Spotted Fever Cases by County, Florida, 2011



Prevention

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

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

Additional Resources

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

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

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

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

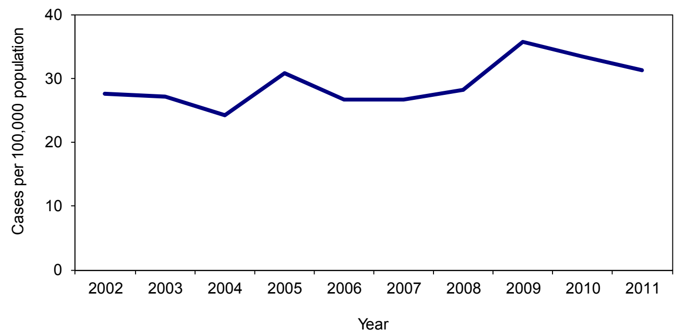
Salmonellosis

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

Disease Abstract

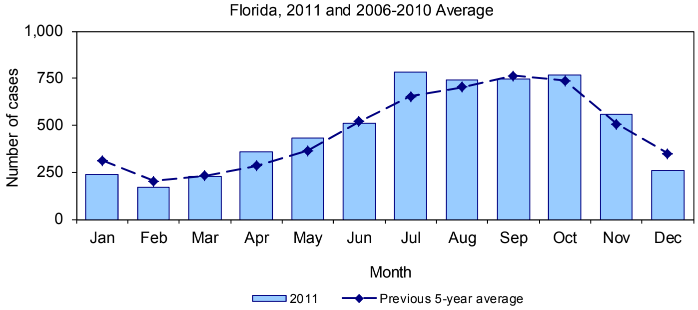
Salmonellosis is a diarrheal illness caused by infection with *Salmonella* bacteria (excluding *Salmonella* serotype Typhi, which causes typhoid fever). There are more than 2,500 serotypes of Salmonella. Of isolates forwarded to the Florida Bureau of Public Health Laboratories, serotypes Javiana, Flint,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

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



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

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



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

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

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

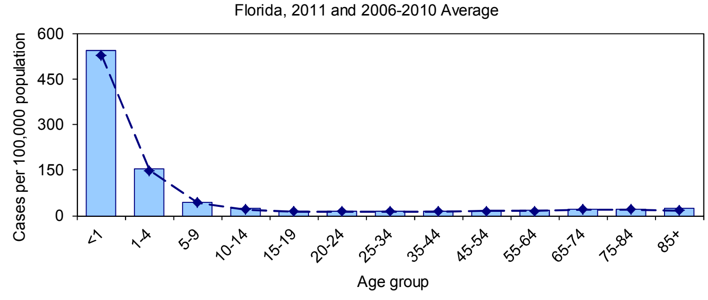
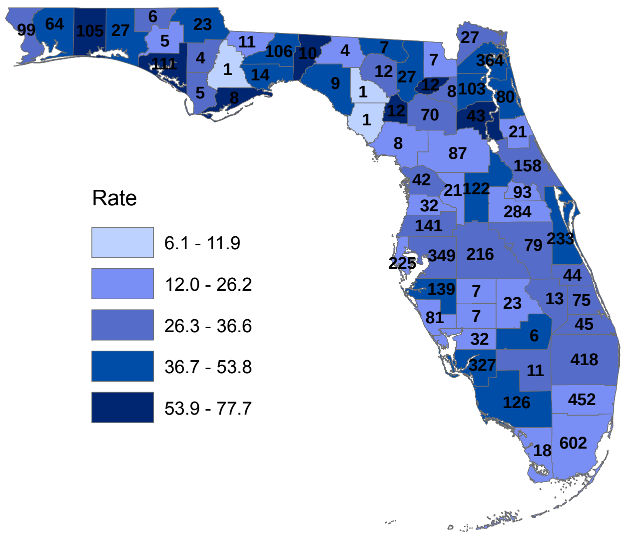


Figure 4. Reported Salmonellosis Cases and Incidence Rates
per 100,000 Population by County, Florida, 2011



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

Prevention

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

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

Additional Resources

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

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

Shiga Toxin-Producing *Escherichia coli* Infection

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

Description

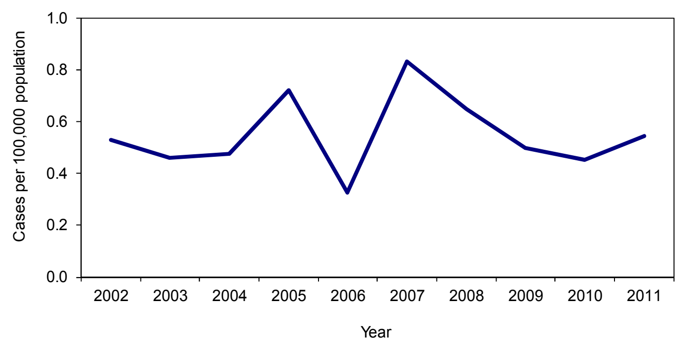
Shiga toxin-producing *Escherichia coli* (STEC) bacteria cause a diarrheal illness, which can be severe and occasionally results hemolytic uremic syndrome (HUS). The most commonly identified serogroup of STEC in the U.S. is O157:H7; however, many other serogroups can cause disease due to STEC. Serogroups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

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

Disease Abstract

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

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

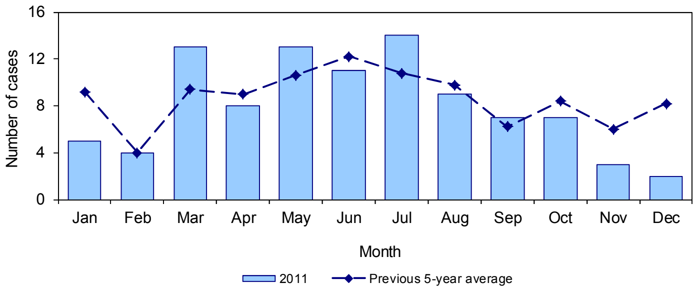


STEC infection incidence is highest in children <5 years old (Figure 3). Incidence in 2011 was above the previous 5-year average in all age groups below 35 years, and was below the average in all age groups 35 years and above. STEC infection cases were reported in 30 (44.8%) of the 67 counties in Florida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

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

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

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



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

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

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

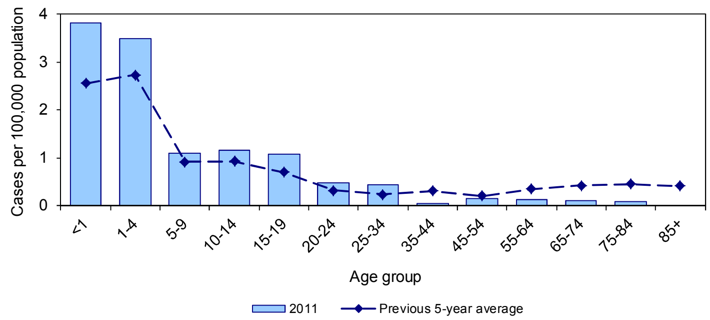


Figure 4. Reported Shiga Toxin-Producing *Escherichia coli* Infection Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

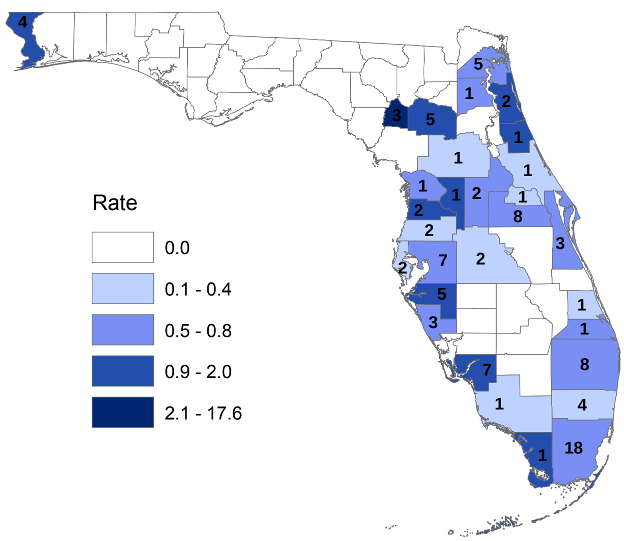


Table 1. Serotypes for Reported Confirmed* Shiga Toxin-Producing *Escherichia coli* Infection Cases, Florida 2011

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

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

Prevention

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

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

Additional Resources

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

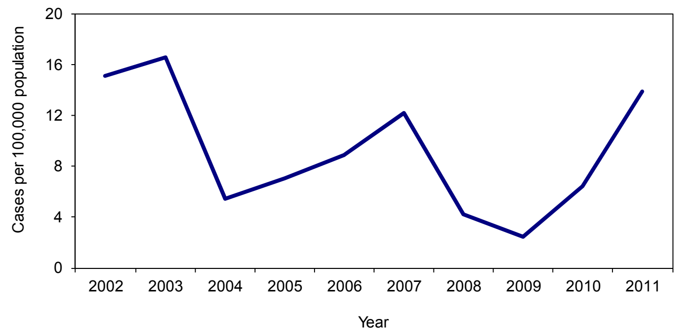
Shigellosis

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

Disease Abstract

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

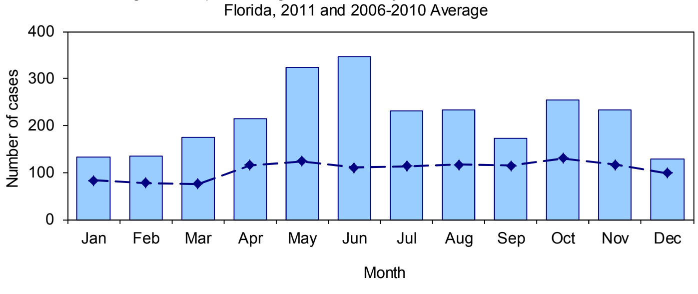
Figure 1. Reported Shigellosis Incidence Rate by Year Reported, Florida, 2002-2011



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

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

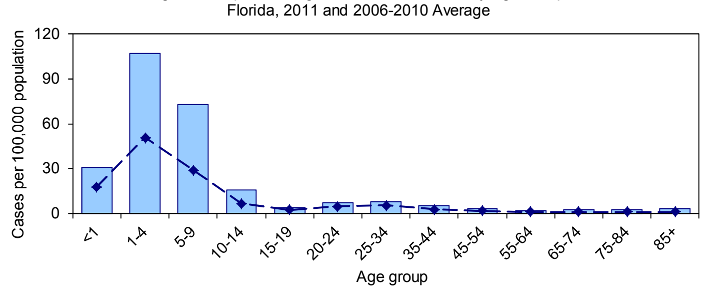
Figure 2. Reported Shigellosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



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

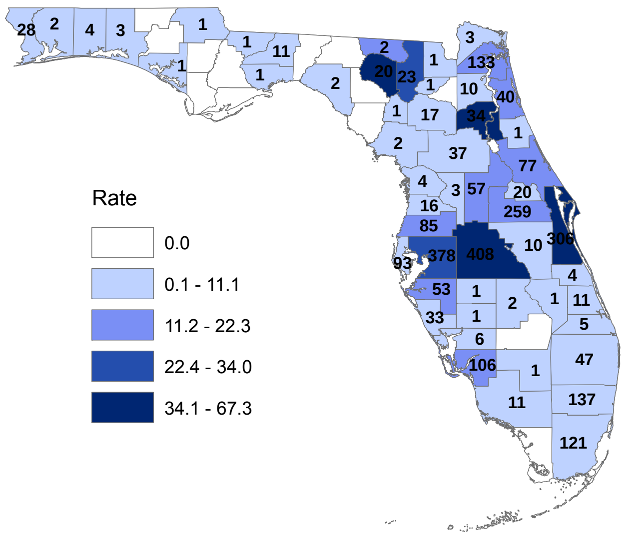
Note: Fifty-one cases were reported in 2011 with onset date in earlier years; these are included in the 2006-2010 average. Cases with onset date in 2011 but reported in 2012 are not included.

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



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

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



Prevention

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

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

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

Additional Resources

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

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

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

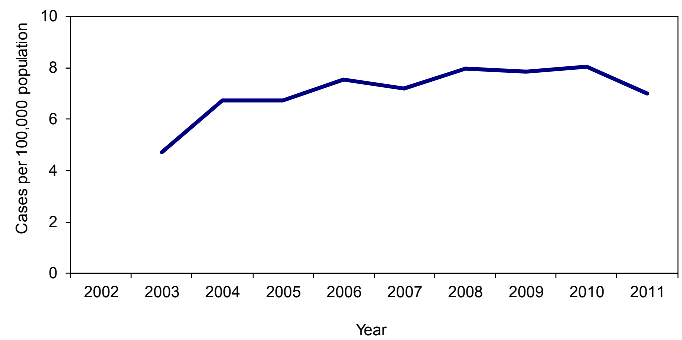
Streptococcus pneumoniae, Invasive Disease

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

Disease Abstract

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

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

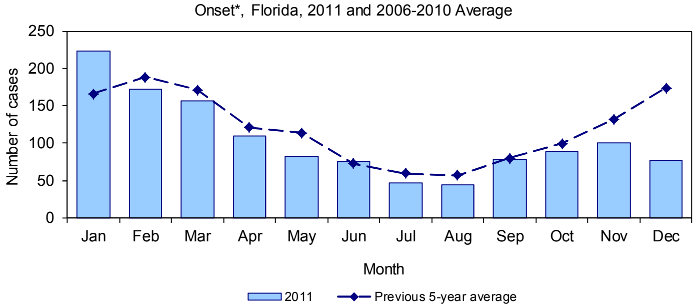


Note: Drug-Susceptible *S. pneumoniae* was not reportable until 2003.

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

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

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



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

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

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

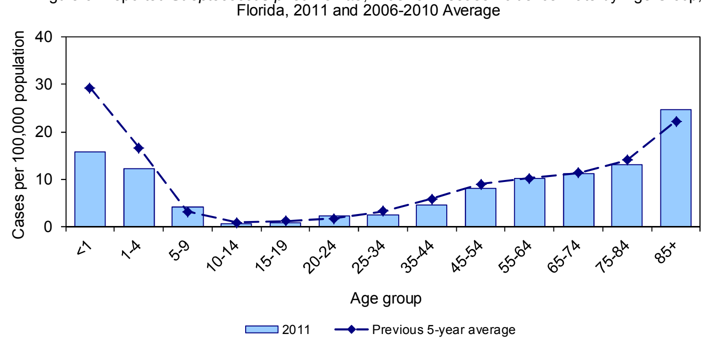
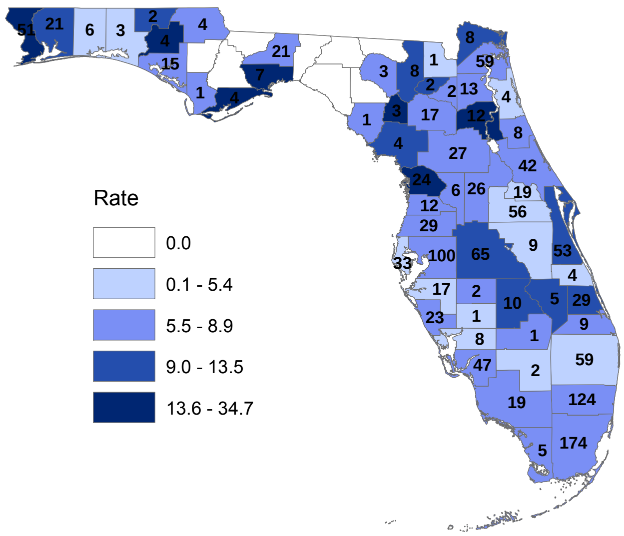


Figure 4. Reported *Streptococcus pneumoniae*, Invasive Disease Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



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

Prevention

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

Additional Resources

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

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

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

Syphilis

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

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

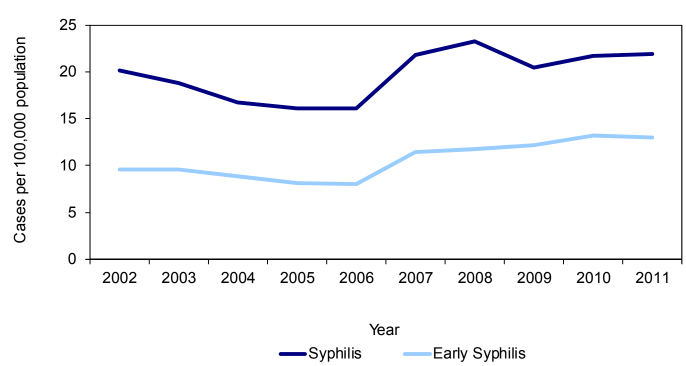
Disease Abstract

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

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

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

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

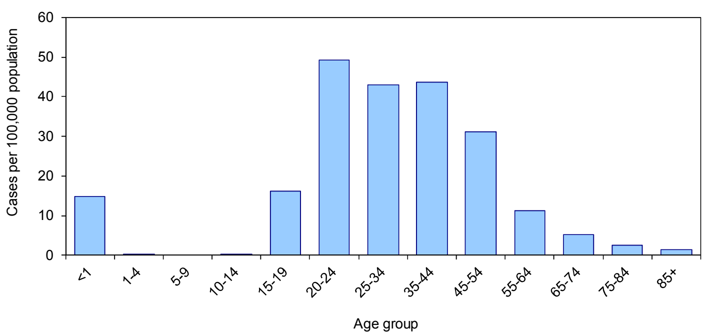


The rate of syphilis cases among blacks (54.3 cases per 100,000 population) was more than three times the rate in whites (15.2 cases per 100,000 population); this difference was slightly less pronounced for early syphilis cases (31.4 cases per 100,000 population in blacks compared to 9.7 cases per 100,000 population for whites). Rates of syphilis and early syphilis were much higher in men than women (3.8 times higher for syphilis and 6.2 times higher for early syphilis). This gender disparity increased from 2010 with the largest gender differences seen among Hispanics.

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

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

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



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

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

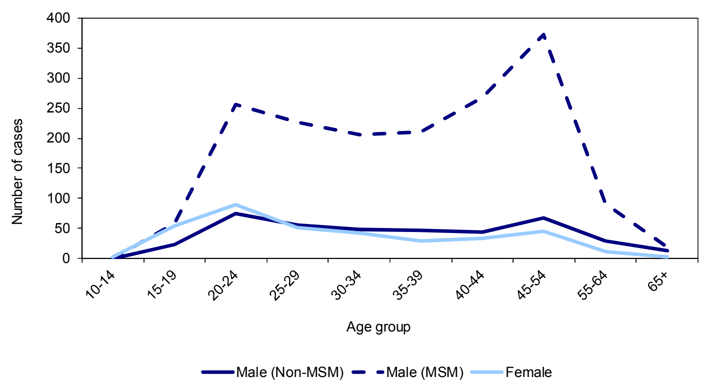
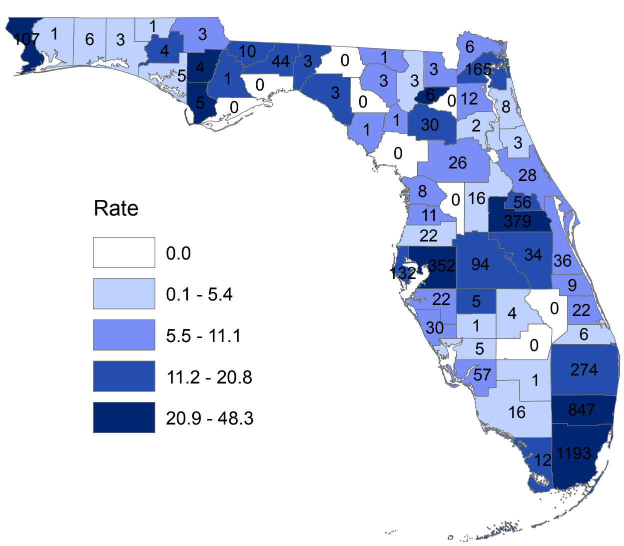


Figure 4. Reported Syphilis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



Prevention

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

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

References

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

Tuberculosis

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

Description

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

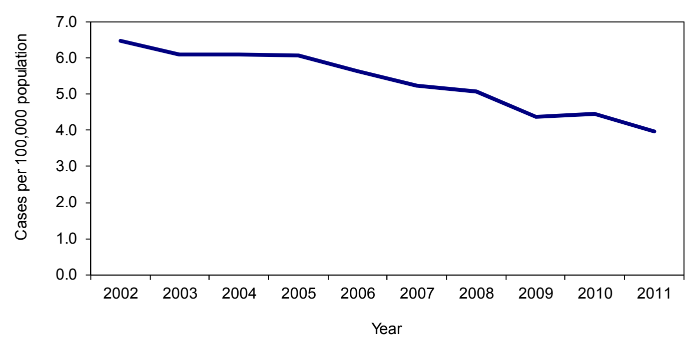
Each year, over nine million infections and 1.7 million deaths are caused by this disease worldwide. Only 10% of healthy individuals infected with TB bacteria will ever get the active form of the disease. However, this risk increases dramatically with specific risk factors and co-morbid conditions.

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

Disease Abstract

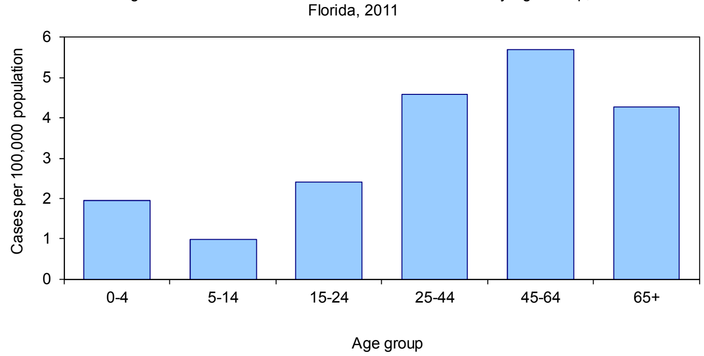
TB has been decreasing over the past decade in Florida (Figure 1). In 2011, 753 TB cases were counted in Florida; a 10.0% decrease in cases from 2010, when 835 cases were counted. Case counts reported in other sources may vary due to inclusion of cases collected after the reporting period.

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



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

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



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

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

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

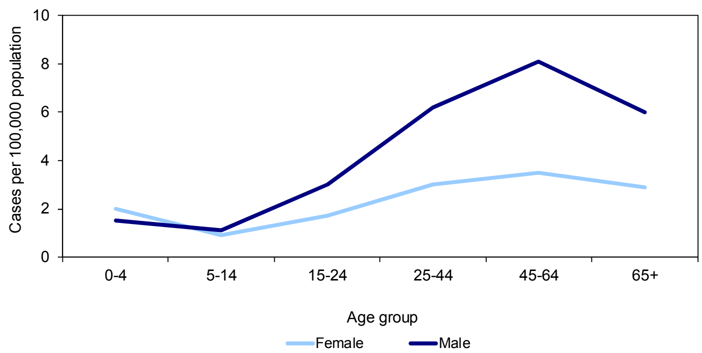


Figure 4. Percent of Counted Tuberculosis Cases in Children <15 Years Old by Year Counted, Florida, 2002-2011

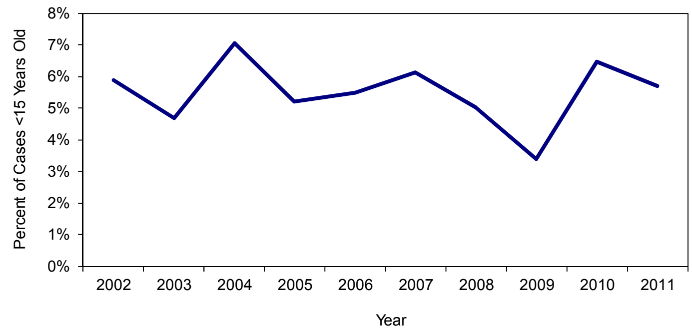
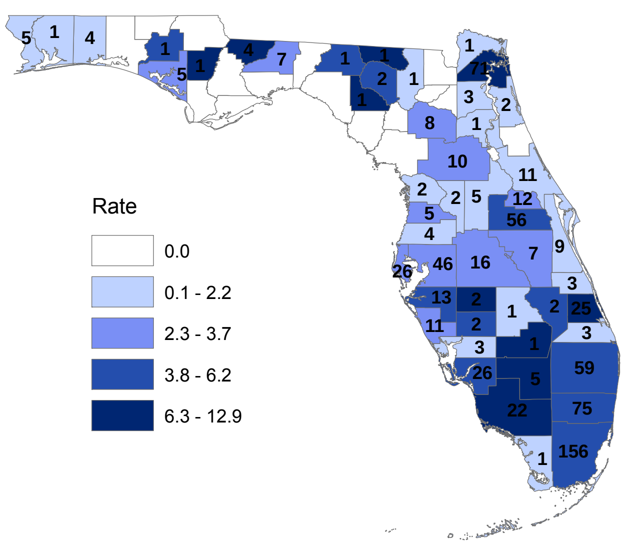


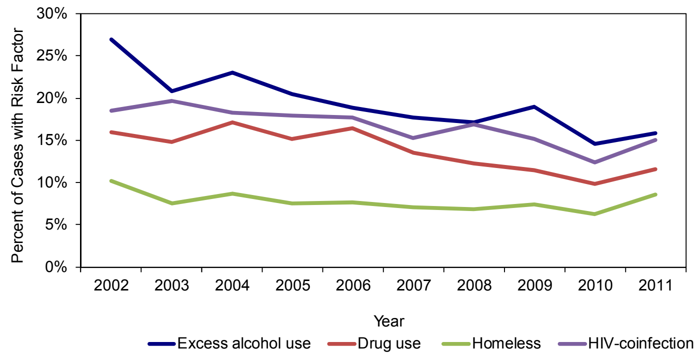
Figure 5. Counted Tuberculosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011



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

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

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



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

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

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

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

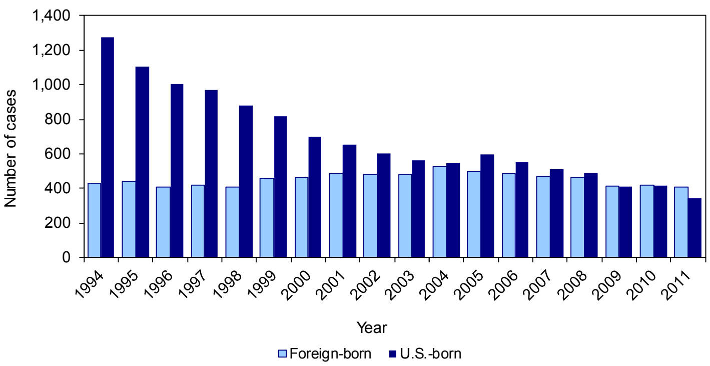
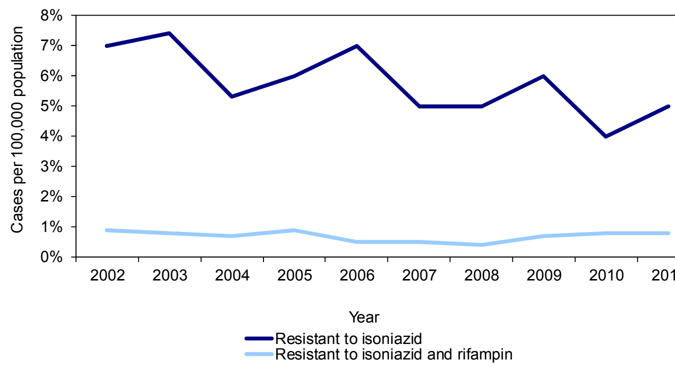


Figure 8. Percentage of Counted Tuberculosis Cases with Isoniazid and Rifampin Resistance on Initial Susceptibility Testing, Florida, 2002-2011



Prevention

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

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

References

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

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

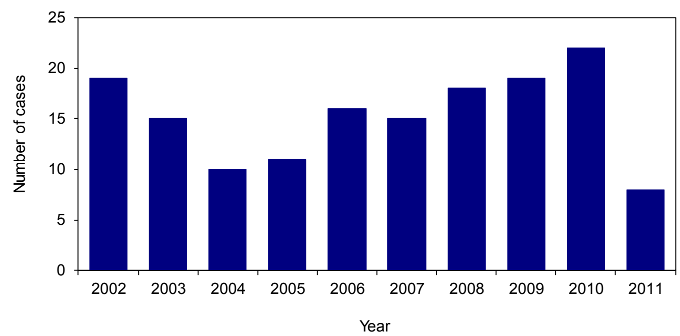
Typhoid Fever

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

Disease Abstract

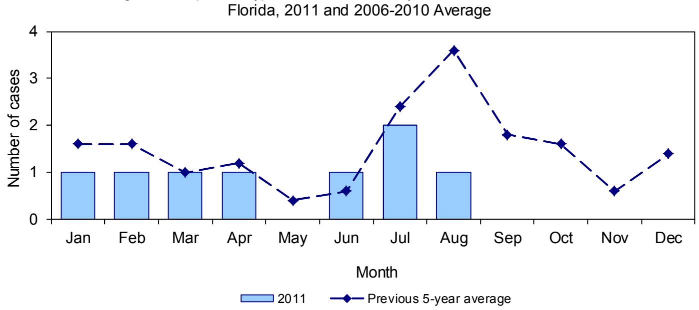
Typhoid fever is a systemic illness caused by *Salmonella enterica* serotype Typhi (*Salmonella* Typhi) bacteria. People with typhoid fever typically have a sustained high fever and may also experience weakness, stomach pains, headache, loss of appetite, or rash. The number of typhoid fever cases reported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

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



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

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



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

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

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

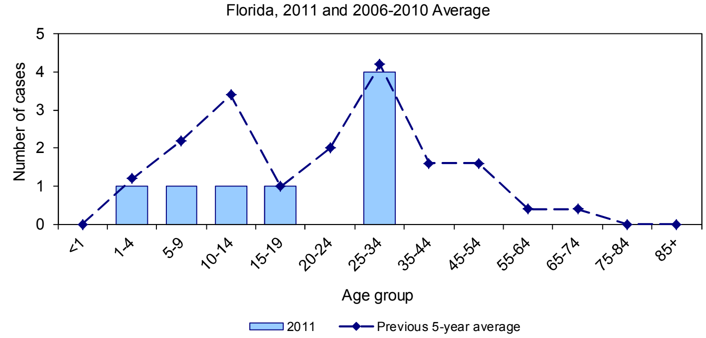
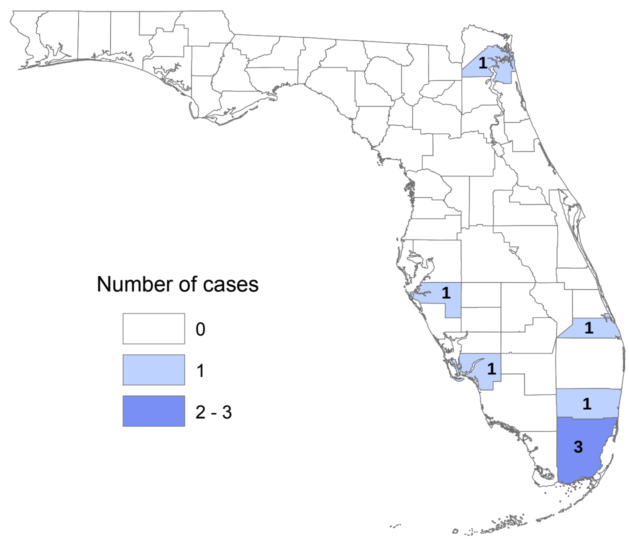


Figure 4. Reported Typhoid Fever Cases by County, Florida, 2011



Prevention

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

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

References

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

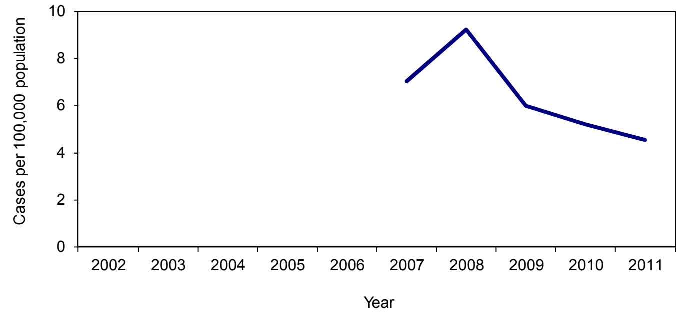
Varicella

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

Disease Abstract

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

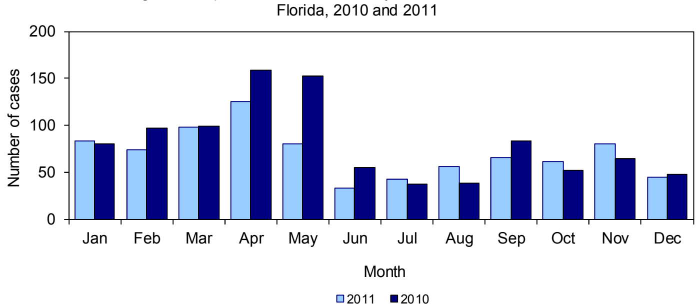
Figure 1. Reported Varicella Incidence Rate by Year Reported, Florida, 2002-2011



Note: Varicella was not reportable prior to 2007

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

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



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

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

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

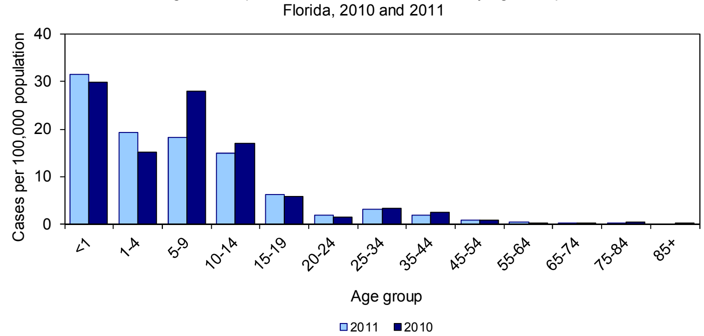
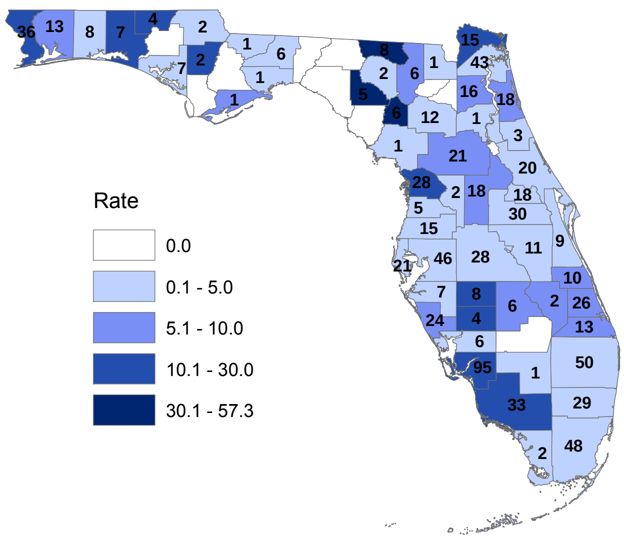


Figure 4. Reported Varicella Cases and Incidence Rates per 100,000
Population by County, Florida, 2011



Prevention

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

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

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

References

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

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

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

Additional Resources

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

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

Vibriosis

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

Disease Abstract

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

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

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

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

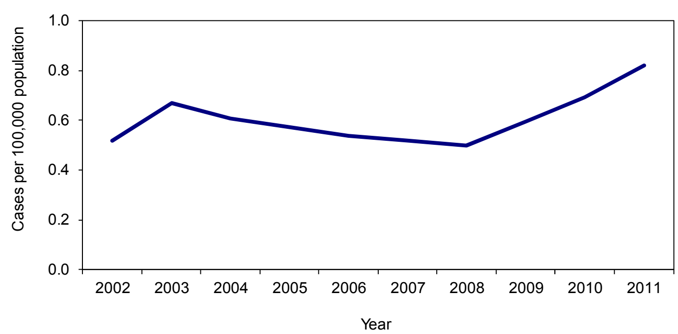
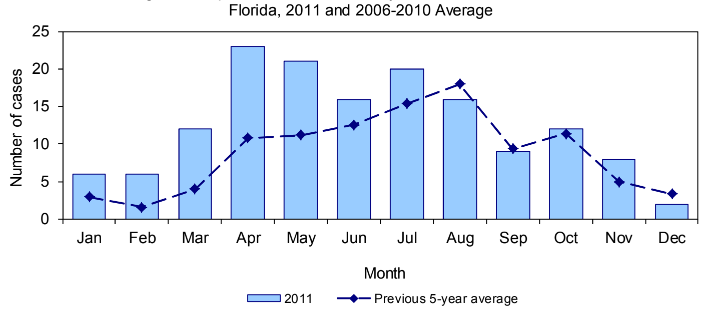


Figure 2. Reported Vibriosis Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



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

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

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

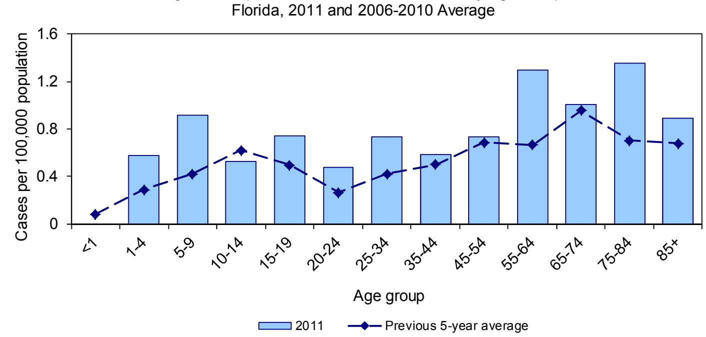


Figure 4. Reported Vibriosis Cases and Incidence Rates per 100,000 Population by County, Florida, 2011

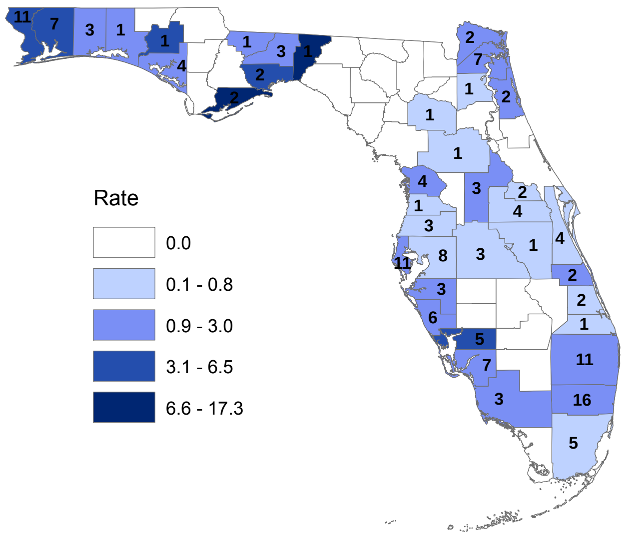


Table 1 presents vibriosis cases by species. The majority of reported vibriosis cases were confirmed (153, 98.7%). Most cases (138, 89.0%) were acquired in Florida; though seven (4.5%) were acquired in other U.S. states and four (2.6%) were acquired in other countries. Location of exposure could not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

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

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

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

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

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

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

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

V. vulnificus infections

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

Prevention

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

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

Additional Resources

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

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

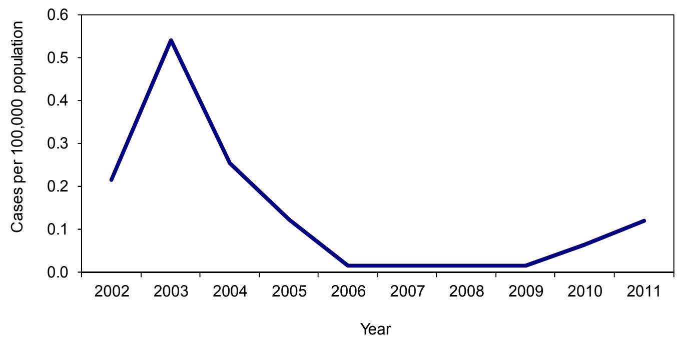
West Nile Virus Disease

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

Disease Abstract

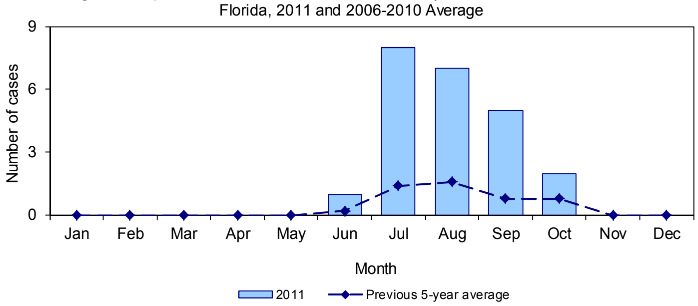
West Nile virus (WNV) disease is spread by mosquitoes. Most infections are asymptomatic, though clinical disease ranges from mild febrile illness to severe encephalitis. The incidence rate of WNV disease peaked in Florida in 2003 (Figure 1). It remained stable and near zero from 2006 until 2010; in 2010,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

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



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

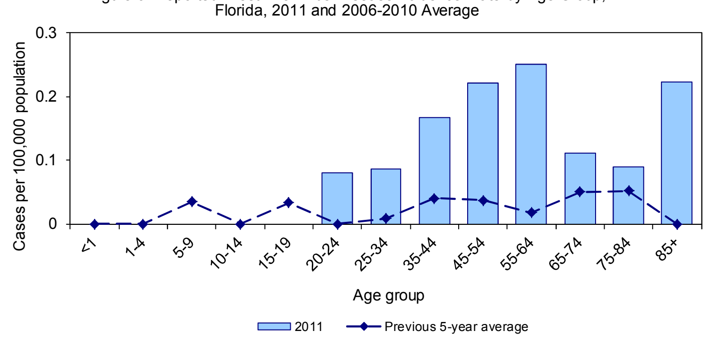
Figure 2. Reported West Nile Virus Disease Cases by Estimated Month of Onset*, Florida, 2011 and 2006-2010 Average



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

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

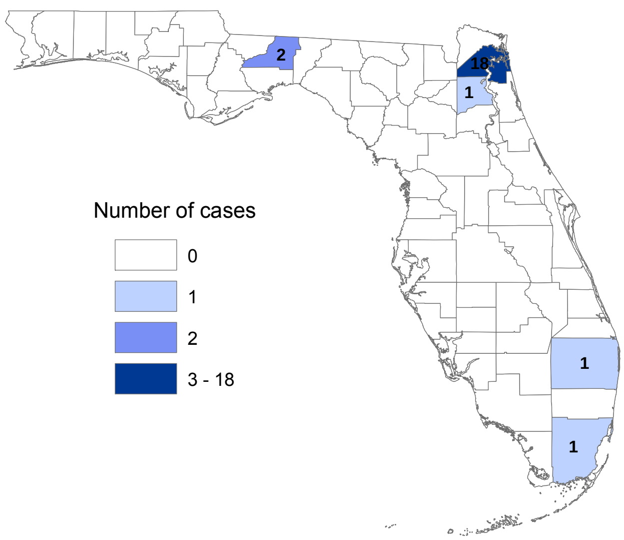
Figure 3. Reported West Nile Virus Disease Incidence Rate by Age Group, Florida, 2011 and 2006-2010 Average



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

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

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



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

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

Drain standing water to stop mosquitoes from multiplying

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

Cover skin with clothing or repellent

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

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

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

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

References

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

Additional Resources

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

Section 3

Summary of Cancer Data, 2009

Cancer incidence data are collected, verified, and maintained by the Florida Cancer Data System (FCDS), Florida's statewide cancer registry. The FCDS is administered by the Florida Department of Health, Bureau of Epidemiology and operated by the Sylvester Comprehensive Cancer Center at the University of Miami Leonard M. Miller School of Medicine.

The FCDS began operation with a pilot project for cancer registration in 1980 and commenced statewide collection of cancer incidence data from all Florida hospitals in 1981. The FCDS now collects incidence data from hospitals, freestanding ambulatory surgical centers, radiation therapy facilities, pathology laboratories, and private physician offices. Each facility, laboratory, and practitioner is required to report to the FCDS within six months of each diagnosis and within six months of the date of each treatment. In addition, FCDS data are linked annually to mortality and hospital discharge databases respectively to find any missed cancer report. Consequently, a complete diagnosis year file is not available for surveillance activities and analysis until approximately two years after the close of the year (i.e., 2009 cancer diagnosis file is available at the earliest January 1, 2012).

During 2009, physicians diagnosed 103,783 primary cancers among Floridians, an average of 284 cases per day (Table 1). The statewide age-adjusted rate for all cancers was 432.2 per 100,000 population (Table 2). Cancer occurs predominantly among older people, as age is the top risk factor. Approximately 59.2% of the newly diagnosed cancers in 2009 occurred in persons age 65 and older; this age group accounts for 17.8% of Florida's population. The four most common cancers in Floridians were lung and bronchus (16,181 cases), prostate (13,743 cases), female breast (13,829 cases), and colorectal (9,593 cases), which accounted for 51.4% of all new cases in Florida (Table 1). Slightly more than half (54,489, 52.5%) of new cancers were diagnosed in males (Table 1). Age-adjusted rates by sex and race are presented in Table 2. The number of new cancer cases in Florida's five most populous counties (Broward, Miami-Dade, Hillsborough, Palm Beach, and Pinellas) accounted for 38.9% of the new cancer cases in Florida (Table 3). Age-adjusted rates by county are presented in Table 4.

Over the 29-year period from 1981 to 2009, males had a higher age-adjusted incidence rate than females (Figure 1, Figure 2). Among blacks, the age-adjusted incidence for males was 46.2% higher than for females in 2009. Among whites, the age-adjusted incidence for males was 22.6% higher than for females in 2009. White females had higher age-adjusted incidence rates than black females in all 28 years. Black males had higher age-adjusted incidence rates than white males in all years, except in 1987, 1988, and 2006. Age-specific incidence rates for all cancers by sex and race are presented in Figure 3.

More information about the burden of cancer in Florida is provided in the *Florida Annual Cancer Report,* an epidemiological series available on the department's web site at http://www.doh.state.fl.us/disease_ctrl/epi/cancer/CancerIndex.htm or the FCDS web site at http://www.fcds.med.miami.edu.

Table 1. Number of New Cancer Cases by Gender and Race[1], Florida, 2009

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder	Head & Neck	Non-Hodgkin[2]	Melanoma	Cervix	Ovary
Florida	**103,783**	**16,181**	**13,743**	**13,836**	**9,593**	**4,985**	**4,009**	**4,118**	**4,107**	**941**	**1,407**
Female	49,250	7,527	-	13,829	4,662	1,164	976	1,868	1,514	941	1,407
Male	54,489	8,643	13,741	-	4,922	3,817	3,031	2,250	2,446	-	-
Black	10,150	1,134	2,060	1,490	1,034	199	332	359	-	181	102
White	90,350	14,737	11,273	11,869	8,210	4,627	3,554	3,647	3,962	721	1,258
Black Female	4,796	477	-	1,490	505	60	81	174	-	181	102
White Female	42,847	6,923	-	11,869	3,985	1,069	861	1,646	1,514	721	1,258
Black Male	5,353	657	2,060	-	529	139	251	185	-	-	-
White Male	47,466	7,805	11,273	-	4,217	3,555	2,691	2,001	2,446	-	-

Source of data: Florida Cancer Data System

1 Florida incidence totals include new cancers in persons of "other" races, cases with unknown race, cases with unknown or unspecified gender, and cases with unknown age. Totals by gender include cases with unknown or other race and unknown age. Totals by race include cases with unknown gender and unknown age.

2 Non-Hodgkin refers to Non-Hodgkin's lymphoma.

Table 2. Age-Adjusted Incidence Rates by Gender and Race[1], Florida, 2009

	All Cancers Rate (CI[2])	Lung & Bronchus Rate (CI[2])	Prostate Rate (CI[2])	Breast Rate (CI[2])	Colorectal Rate (CI[2])	Bladder Rate (CI[2])
Florida	**432.2 (429.5, 434.9)**	**64.5 (63.5, 65.5)**	**120.4 (118.3, 122.4)**	**113.5 (111.6, 115.5)**	**38.7 (37.9, 39.5)**	**19.4 (18.9, 20.0)**
Female	389.4 (385.9, 393.0)	55.2 (54.0, 56.5)	-	113.5 (111.6, 115.5)	34.1 (33.1, 35.1)	8.2 (7.7, 8.7)
Male	487.4 (483.3, 491.6)	75.9 (74.3, 77.5)	120.3 (118.3, 122.4)	-	44.0 (42.8, 45.2)	33.3 (32.2, 34.4)
Black	410.6 (402.5, 419.0)	48.4 (45.5, 51.4)	191.5 (183.0, 200.4)	104.2 (98.9, 109.7)	43.4 (40.7, 46.2)	9.0 (7.7, 10.3)
White	428.2 (425.4, 431.1)	66.0 (64.9, 67.1)	110.7 (108.7, 112.8)	112.8 (110.7, 115.0)	37.3 (36.5, 38.1)	20.1 (19.5, 20.7)
Black Female	344.0 (334.2, 354.1)	35.5 (32.4, 39.0)	-	104.2 (98.9, 109.7)	37.4 (34.1, 40.9)	4.7 (3.6, 6.1)
White Female	390.0 (386.1, 393.9)	57.5 (56.1, 58.9)	-	112.8 (110.7, 115.0)	32.9 (31.8, 34.0)	8.5 (8.0, 9.0)
Black Male	503.0 (488.9, 517.5)	66.5 (61.2, 72.1)	191.5 (183.0, 200.4)	-	51.3 (46.8, 56.2)	15.3 (12.8, 18.3)
White Male	478.0 (473.6, 482.3)	76.3 (74.6, 78.0)	110.7 (108.7, 112.8)	-	42.2 (40.9, 43.5)	34.2 (33.1, 35.4)

	Head & Neck Rate (CI[2])	Non-Hodgkin[3] Rate (CI[2])	Melanoma Rate (CI[2])	Cervix Rate (CI[2])	Ovary Rate (CI[2])
Florida	**16.9 (16.4, 17.5)**	**17.3 (16.7, 17.8)**	**19.6 (19.0, 20.3)**	**9.4 (8.8, 10.1)**	**11.3 (10.7, 11.9)**
Female	7.7 (7.2, 8.2)	14.3 (13.6, 15.0)	15.2 (14.4, 16.0)	9.4 (8.8, 10.1)	11.3 (10.7, 11.9)
Male	27.4 (26.4, 28.4)	20.7 (19.9, 21.6)	25.2 (24.2, 26.3)	-	-
Black	12.9 (11.5, 14.4)	13.8 (12.4, 15.4)	-	12.5 (10.7, 14.6)	7.2 (5.9, 8.9)
White	17.3 (16.7, 17.9)	17.3 (16.8, 17.9)	19.6 (19.0, 20.3)	8.9 (8.2, 9.6)	11.7 (11.1, 12.4)
Black Female	5.8 (4.6, 7.3)	12.3 (10.5, 14.3)	-	12.5 (10.7, 14.6)	7.2 (5.9, 8.9)
White Female	7.8 (7.3, 8.4)	14.3 (13.6, 15.0)	15.2 (14.4, 16.0)	8.9 (8.2, 9.6)	11.7 (11.1, 12.4)
Black Male	21.8 (19.1, 24.9)	15.8 (13.4, 18.5)	-	-	-
White Male	27.8 (26.7, 28.9)	20.8 (19.9, 21.7)	25.2 (24.2, 26.3)	-	-

Source of data: Florida Cancer Data System

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population. Florida incidence rates include new cancers in persons of "other" races, cases with unknown race, and cases with unknown or unspecified gender. Rates calculated by gender include cases with unknown or other race. Rates by race include cases with unknown gender. By definition, age-adjusted incidence rates cannot include cases with unknown age.

2 95% confidence interval.

3 Non-Hodgkin refers to Non-Hodgkin's lymphoma.

Table 3. Number of New Cancer Cases by County, Florida, 2009

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder	Head & Neck	Non-Hodgkin[1]	Melanoma	Cervix	Ovary
Florida	**103,783**	**16,181**	**13,743**	**13,836**	**9,593**	**4,985**	**4,009**	**4,118**	**4,107**	**941**	**1,407**
Alachua	1,099	167	148	172	92	37	42	37	48	10	13
Baker	123	30	11	13	^	^	^	^	^	^	^
Bay	983	185	157	133	65	46	44	34	42	^	10
Bradford	134	26	25	15	17	^	^	^	^	^	^
Brevard	3,719	681	434	447	319	207	159	172	166	29	44
Broward	9,041	1,184	1,162	1,301	849	415	324	379	324	93	126
Calhoun	68	15	^	^	^	^	^	^	^	^	^
Charlotte	1,276	221	196	139	127	81	45	48	63	^	^
Citrus	1,266	227	197	155	115	72	45	39	52	^	25
Clay	878	142	122	108	70	51	26	34	28	14	15
Collier	1,959	295	343	237	150	114	71	70	114	12	21
Columbia	364	73	68	29	38	13	19	12	^	^	^
DeSoto	179	31	32	16	21	^	^	^	13	^	^
Dixie	99	26	^	^	^	^	^	^	^	^	^
Duval	4,364	692	631	634	372	164	174	154	145	48	56
Escambia	1,502	299	177	200	152	76	62	52	51	^	17
Flagler	663	113	59	99	52	36	27	24	36	^	^
Franklin	77	19	13	^	^	^	^	^	^	^	^
Gadsden	212	24	31	36	15	^	^	11	^	^	^
Gilchrist	104	23	14	11	10	^	^	^	^	^	^
Glades	55	^	^	^	^	^	^	^	^	^	^
Gulf	89	20	^	11	^	^	^	^	^	^	^
Hamilton	67	^	15	10	^	^	^	^	^	^	^
Hardee	114	12	10	10	14	^	^	^	^	^	^
Hendry	145	23	11	^	17	^	11	^	^	^	^
Hernando	1,283	241	154	141	91	87	48	59	55	11	27
Highlands	722	157	55	76	68	24	16	40	44	^	10
Hillsborough	5,832	873	720	805	561	225	250	229	227	59	88
Holmes	62	15	^	^	^	^	^	^	^	^	^
Indian River	1,048	183	118	111	110	68	34	38	63	^	14
Jackson	174	22	26	14	24	^	^	^	^	^	^
Jefferson	94	^	19	13	^	^	^	^	^	^	^
Lafayette	37	10	^	^	^	^	^	^	^	^	^
Lake	2,381	407	388	266	230	141	62	94	94	18	25
Lee	3,734	608	583	473	322	208	152	145	175	34	51
Leon	915	117	161	138	89	19	28	24	30	^	20
Levy	287	68	34	37	29	16	15	^	^	^	^
Liberty	23	^	^	^	^	^	^	^	^	^	^
Madison	77	18	13	^	15	^	^	^	^	^	^
Manatee	1,911	311	177	262	179	102	64	76	116	13	21
Marion	2,523	461	372	321	247	123	91	95	83	24	40
Martin	1,100	181	196	151	88	66	36	31	62	^	12
Miami-Dade	11,462	1,228	1,763	1,537	1,250	470	426	475	228	153	168
Monroe	420	60	42	64	34	17	23	15	21	^	10
Nassau	408	69	49	62	33	16	12	12	20	10	^
Okaloosa	906	147	116	140	75	44	41	37	42	^	^
Okeechobee	229	49	24	23	17	12	^	^	15	^	^
Orange	4,603	623	645	648	434	162	164	185	169	43	52
Osceola	1,060	131	141	141	117	48	42	36	37	14	10
Palm Beach	8,159	1,257	938	1,125	702	462	281	404	362	58	108
Pasco	2,868	481	369	348	254	161	101	119	140	30	36
Pinellas	5,874	1,011	641	855	535	328	255	207	211	38	78
Polk	3,796	644	508	402	371	163	170	146	161	38	53
Putnam	479	93	73	56	35	14	31	17	20	^	^
Santa Rosa	620	119	66	96	56	14	32	26	30	^	^
Sarasota	3,004	508	360	436	254	170	94	119	143	13	40
Seminole	1,723	229	222	264	142	75	63	71	80	18	35
St. Johns	1,061	160	132	170	71	44	52	45	49	^	15
St. Lucie	1,436	249	191	192	139	89	42	34	72	11	24
Sumter	910	174	159	95	72	61	26	38	43	^	10
Suwannee	243	45	26	30	27	^	^	12	11	^	^
Taylor	112	24	12	22	^	^	^	^	^	^	^
Union	216	30	42	15	16	^	21	12	^	^	^
Volusia	2,964	527	252	411	295	138	153	120	116	27	50
Wakulla	134	30	16	20	15	^	^	^	^	^	^
Walton	214	46	24	22	17	^	17	^	^	^	^
Washington	99	19	18	^	10	^	^	^	^	^	^

Source of data: Florida Cancer Data System
1 Non-Hodgkin refers to Non-Hodgkin's lymphoma.
^ Statistics for cells with fewer than 10 cases are not displayed.

Table 4. Age-Adjusted Incidence Rates[1] by County, Florida, 2009

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder
	Rate (CI[2])	Rate (CI)	Rate (CI)	Rate (CI)	Rate (CI)	Rate (CI)
Florida	**432.2 (429.5, 434.9)**	**64.5 (63.5, 65.5)**	**120.4 (118.3, 122.4)**	**113.5 (111.6, 115.5)**	**38.7 (37.9, 39.5)**	**19.4 (18.9, 20.0)**
Alachua	484.0 (455.3, 514.2)	74.9 (63.8, 87.5)	138.2 (116.4, 163.3)	144.9 (123.7, 169.0)	40.2 (32.3, 49.7)	16.8 (11.8, 23.4)
Baker	478.0 (395.6, 574.0)	116.7 (78.0, 169.7)	77.9 (38.0, 157.8)	102.8 (54.1, 181.8)	^	^
Bay	474.3 (444.6, 505.7)	87.6 (75.3, 101.6)	153.7 (130.3, 180.6)	125.7 (104.8, 150.3)	30.1 (23.1, 38.8)	21.5 (15.7, 29.2)
Bradford	416.1 (348.1, 495.1)	81.7 (53.1, 122.1)	162.3 (104.4, 243.8)	85.6 (47.3, 153.8)	53.3 (30.9, 87.7)	^
Brevard	448.6 (433.8, 464.0)	76.8 (71.0, 83.0)	106.3 (96.5, 117.2)	106.9 (96.7, 118.2)	37.4 (33.3, 42.2)	23.2 (20.0, 26.8)
Broward	455.7 (446.2, 465.4)	59.0 (55.7, 62.6)	130.1 (122.7, 138.0)	124.1 (117.3, 131.2)	42.0 (39.2, 45.0)	20.3 (18.3, 22.4)
Calhoun	407.8 (315.8, 520.8)	91.5 (51.0, 154.6)	^	^	^	^
Charlotte	370.3 (347.0, 395.6)	57.8 (49.8, 67.9)	112.8 (97.0, 132.9)	83.4 (67.5, 104.0)	34.8 (28.3, 43.5)	20.0 (15.5, 26.8)
Citrus	435.7 (408.9, 465.0)	71.4 (61.8, 83.5)	132.3 (113.9, 155.9)	117.0 (95.7, 144.1)	37.2 (30.1, 47.1)	23.2 (17.4, 32.1)
Clay	458.8 (428.4, 491.0)	74.5 (62.5, 88.3)	132.9 (109.8, 159.9)	104.8 (85.7, 127.4)	36.8 (28.5, 46.8)	27.8 (20.5, 37.0)
Collier	365.9 (348.9, 383.8)	50.0 (44.3, 56.5)	126.0 (112.8, 140.8)	96.3 (83.4, 111.3)	27.2 (22.8, 32.5)	19.1 (15.6, 23.4)
Columbia	442.1 (397.2, 491.7)	89.1 (69.6, 113.4)	164.7 (127.6, 210.8)	66.4 (43.9, 100.2)	45.3 (32.0, 63.6)	15.5 (8.2, 28.2)
DeSoto	412.4 (352.1, 482.1)	66.8 (45.2, 98.4)	146.5 (99.4, 212.1)	84.0 (44.9, 151.4)	50.9 (30.8, 81.9)	^
Dixie	430.8 (347.6, 533.0)	105.9 (68.5, 163.4)	^	^	^	^
Duval	484.0 (469.5, 498.9)	78.6 (72.7, 84.8)	154.5 (142.4, 167.5)	127.0 (117.1, 137.5)	41.2 (37.1, 45.7)	18.9 (16.1, 22.2)
Escambia	418.0 (396.8, 440.1)	82.3 (73.2, 92.5)	104.7 (89.7, 121.8)	106.3 (91.7, 123.1)	42.2 (35.7, 49.8)	20.6 (16.2, 26.1)
Flagler	396.8 (363.9, 433.3)	58.0 (47.5, 72.3)	70.5 (53.1, 96.0)	129.3 (101.1, 165.9)	26.4 (19.6, 37.3)	18.7 (12.8, 28.9)
Franklin	433.9 (340.7, 549.4)	97.8 (58.5, 160.5)	132.0 (69.7, 234.5)	^	^	^
Gadsden	379.0 (329.0, 435.3)	41.0 (26.2, 62.6)	118.9 (80.5, 172.2)	122.2 (85.0, 172.0)	26.9 (15.0, 45.9)	^
Gilchrist	472.3 (384.4, 578.7)	101.3 (63.6, 158.7)	125.5 (68.1, 223.6)	97.0 (47.3, 189.6)	45.4 (21.7, 90.3)	^
Glades	362.6 (270.6, 480.9)	^	^	^	^	^
Gulf	400.9 (321.3, 496.5)	87.5 (53.2, 138.6)	^	120.4 (56.0, 247.6)	^	^
Hamilton	439.4 (339.3, 562.1)	^	198.2 (109.4, 335.3)	153.8 (72.3, 295.7)	^	^
Hardee	409.6 (337.3, 494.3)	42.5 (21.8, 76.6)	74.1 (35.5, 137.4)	76.4 (35.4, 150.7)	49.7 (27.1, 85.6)	^
Hendry	415.9 (350.6, 490.5)	67.3 (42.6, 101.8)	60.8 (30.3, 111.1)	^	47.7 (27.6, 77.5)	^
Hernando	433.6 (407.2, 461.9)	73.5 (64.0, 84.9)	99.6 (84.1, 119.1)	95.5 (78.1, 117.2)	27.8 (21.8, 36.0)	25.9 (20.4, 33.5)
Highlands	399.3 (365.9, 436.1)	76.4 (63.8, 92.7)	59.3 (44.2, 81.9)	92.9 (69.2, 125.1)	36.2 (26.9, 49.4)	9.6 (6.0, 17.7)
Hillsborough	473.4 (461.2, 485.8)	71.6 (66.9, 76.6)	125.9 (116.7, 135.6)	123.1 (114.7, 132.1)	45.7 (41.9, 49.7)	18.3 (16.0, 20.9)
Holmes	259.3 (198.0, 336.4)	57.8 (32.1, 99.8)	^	^	^	^
Indian River	408.4 (382.0, 437.0)	69.6 (59.3, 82.1)	97.0 (80.1, 118.6)	84.7 (68.6, 105.5)	42.3 (34.0, 53.1)	22.8 (17.4, 30.6)
Jackson	271.9 (232.3, 317.5)	34.0 (21.2, 53.4)	82.9 (54.0, 124.8)	42.4 (22.0, 79.2)	40.0 (25.4, 61.3)	^
Jefferson	480.4 (386.3, 593.8)	^	202.5 (120.6, 324.2)	131.8 (69.2, 247.0)	^	^
Lafayette	438.6 (307.7, 610.9)	121.1 (57.6, 229.4)	^	^	^	^
Lake	482.9 (462.3, 504.4)	76.2 (68.7, 84.7)	158.9 (143.0, 176.7)	111.3 (97.1, 127.6)	45.8 (39.7, 52.9)	25.0 (21.0, 30.0)
Lee	385.1 (372.1, 398.7)	56.9 (52.3, 61.9)	118.3 (108.7, 128.8)	104.6 (94.5, 115.8)	31.5 (27.9, 35.5)	19.5 (16.8, 22.6)
Leon	391.9 (366.1, 419.1)	52.4 (43.0, 63.3)	142.8 (120.8, 168.2)	109.6 (91.6, 130.3)	40.1 (32.1, 49.8)	8.1 (4.8, 13.1)
Levy	489.9 (432.9, 554.3)	110.3 (85.2, 142.9)	110.1 (75.8, 161.0)	123.3 (85.8, 176.5)	47.6 (31.6, 71.6)	27.1 (15.2, 47.8)
Liberty	295.4 (186.8, 447.2)	^	^	^	^	^
Madison	335.4 (264.2, 422.8)	81.3 (48.6, 131.5)	115.1 (60.9, 202.7)	^	64.6 (35.8, 111.1)	^
Manatee	402.2 (383.4, 422.0)	61.1 (54.3, 68.9)	75.8 (64.9, 88.6)	113.1 (98.9, 129.3)	35.7 (30.4, 41.8)	18.6 (15.1, 23.1)
Marion	476.2 (456.7, 496.7)	80.8 (73.4, 89.2)	140.5 (126.4, 156.4)	124.9 (110.5, 141.4)	44.6 (38.9, 51.3)	19.8 (16.3, 24.1)
Martin	423.1 (396.2, 452.2)	62.6 (53.5, 74.0)	153.2 (132.1, 178.7)	136.1 (112.5, 165.3)	30.9 (24.3, 40.1)	21.2 (16.2, 28.8)
Miami-Dade	420.1 (412.4, 428.0)	44.3 (41.8, 46.9)	143.1 (136.4, 150.0)	105.3 (100.0, 110.8)	45.3 (42.8, 47.9)	16.9 (15.4, 18.5)
Monroe	369.2 (333.6, 408.6)	49.9 (37.9, 66.1)	65.6 (46.9, 92.5)	118.7 (90.3, 155.8)	29.9 (20.5, 43.7)	14.6 (8.4, 25.5)
Nassau	445.0 (401.7, 492.7)	73.4 (56.8, 94.4)	101.5 (74.4, 137.7)	125.3 (95.4, 163.9)	37.4 (25.4, 54.0)	17.7 (10.0, 30.2)
Okaloosa	411.9 (385.2, 440.1)	66.5 (56.1, 78.4)	105.8 (87.2, 127.7)	121.7 (102.1, 144.5)	33.8 (26.5, 42.7)	19.9 (14.5, 27.1)
Okeechobee	481.8 (420.3, 551.5)	97.7 (71.9, 131.8)	99.2 (63.5, 150.5)	118.2 (73.2, 185.8)	33.4 (19.3, 56.4)	22.8 (11.8, 43.0)
Orange	476.2 (462.3, 490.5)	67.4 (62.1, 73.0)	143.6 (132.4, 155.6)	121.7 (112.4, 131.6)	46.4 (42.1, 51.1)	18.3 (15.5, 21.4)
Osceola	413.0 (388.1, 439.2)	52.4 (43.7, 62.5)	114.4 (96.0, 135.8)	101.7 (85.5, 120.4)	46.4 (38.3, 55.9)	20.0 (14.6, 26.7)
Palm Beach	432.2 (422.4, 442.2)	61.3 (57.8, 64.9)	111.0 (103.9, 118.5)	121.0 (113.6, 128.9)	34.7 (32.0, 37.6)	21.0 (19.0, 23.1)
Pasco	433.3 (416.6, 450.8)	67.3 (61.2, 74.1)	113.0 (101.5, 125.8)	108.1 (96.2, 121.4)	35.5 (31.0, 40.7)	21.9 (18.5, 26.0)
Pinellas	424.4 (413.2, 436.0)	68.6 (64.4, 73.2)	97.8 (90.3, 105.9)	123.9 (115.3, 133.2)	36.2 (33.1, 39.6)	21.5 (19.2, 24.1)
Polk	500.2 (484.0, 516.9)	80.3 (74.1, 86.9)	137.6 (125.8, 150.4)	104.8 (94.3, 116.2)	48.7 (43.7, 54.1)	20.3 (17.3, 23.9)
Putnam	453.5 (412.6, 498.8)	86.6 (69.4, 108.4)	135.4 (106.0, 174.0)	104.9 (77.9, 141.3)	30.6 (21.3, 44.7)	12.8 (6.9, 23.9)
Santa Rosa	395.7 (364.6, 428.9)	77.5 (63.9, 93.2)	79.5 (61.0, 102.8)	120.2 (96.9, 147.8)	35.9 (27.0, 47.1)	9.3 (5.0, 16.0)
Sarasota	399.7 (383.6, 416.7)	60.0 (54.5, 66.3)	99.3 (89.0, 111.3)	121.0 (108.0, 135.7)	31.4 (27.1, 36.5)	19.0 (16.0, 22.8)
Seminole	396.2 (377.4, 415.8)	55.7 (48.6, 63.5)	104.7 (91.1, 120.1)	108.9 (96.0, 123.2)	33.7 (28.3, 39.9)	17.6 (13.8, 22.3)
St. Johns	454.3 (426.8, 483.5)	67.6 (57.4, 79.5)	113.6 (94.7, 135.8)	137.5 (117.1, 161.3)	29.6 (23.0, 37.9)	18.3 (13.3, 25.2)
St. Lucie	354.6 (335.7, 374.7)	56.0 (49.2, 64.0)	97.5 (84.0, 113.3)	102.9 (87.7, 120.6)	32.5 (27.2, 39.0)	20.2 (16.2, 25.5)
Sumter	475.5 (442.7, 511.3)	82.8 (70.5, 98.3)	168.6 (142.8, 200.9)	105.7 (83.2, 136.7)	36.7 (28.1, 48.8)	27.8 (21.0, 38.3)
Suwannee	439.2 (384.2, 501.8)	79.6 (57.8, 109.3)	91.8 (59.9, 139.1)	105.8 (70.4, 159.1)	53.8 (34.6, 81.7)	^
Taylor	406.5 (333.9, 491.7)	86.2 (54.8, 130.6)	92.5 (47.0, 168.2)	170.3 (105.0, 269.2)	^	^
Union	1358.1 (1,178.4, 1,562.4)	201.1 (133.7, 296.1)	473.7 (333.9, 675.5)	253.3 (139.8, 439.9)	100.0 (56.1, 171.9)	^
Volusia	397.2 (382.4, 412.6)	66.8 (61.1, 73.1)	70.0 (61.5, 79.7)	109.1 (98.1, 121.4)	37.2 (33.0, 42.1)	16.4 (13.7, 19.7)
Wakulla	372.6 (310.1, 445.5)	84.6 (56.1, 124.2)	85.3 (47.2, 147.9)	113.0 (67.8, 182.1)	43.2 (23.7, 74.3)	^
Walton	269.2 (233.6, 309.8)	54.7 (40.0, 74.7)	57.6 (36.9, 88.6)	52.7 (32.6, 84.7)	22.1 (12.6, 37.4)	^
Washington	327.4 (265.3, 401.6)	61.6 (36.9, 99.3)	116.4 (68.6, 187.1)	^	30.8 (14.7, 60.3)	^

Source of data: Florida Cancer Data System

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population.
2 95% confidence interval.
3 Non-Hodgkin refers to Non-Hodgkin's lymphoma.

Table 4. (Continued) Age-Adjusted Incidence Rates[1] by County, Florida, 2009

	Head & Neck	Non-Hodgkin[3]	Melanoma	Cervix	Ovary
	Rate (CI[2])	Rate (CI)	Rate (CI)	Rate (CI)	Rate (CI)
Florida	**16.9 (16.4, 17.5)**	**17.3 (16.7, 17.8)**	**19.6 (19.0, 20.3)**	**9.4 (8.8, 10.1)**	**11.3 (10.7, 11.9)**
Alachua	17.3 (12.4, 23.7)	16.0 (11.1, 22.4)	25.8 (18.9, 34.9)	9.3 (4.4, 17.6)	10.7 (5.7, 19.1)
Baker	^	^	^	^	^
Bay	21.7 (15.7, 29.7)	17.8 (12.2, 25.3)	24.2 (17.3, 33.3)	^	9.7 (4.6, 19.1)
Bradford	^	^	^	^	^
Brevard	21.2 (17.9, 25.1)	21.1 (17.9, 24.8)	24.1 (20.4, 28.6)	8.9 (5.8, 13.4)	11.1 (7.8, 15.6)
Broward	16.4 (14.7, 18.3)	19.1 (17.2, 21.2)	20.1 (17.9, 22.5)	9.5 (7.6, 11.7)	12.3 (10.2, 14.7)
Calhoun	^	^	^	^	^
Charlotte	16.1 (11.1, 23.9)	14.2 (10.1, 20.9)	17.7 (12.7, 25.6)	^	^
Citrus	15.3 (10.9, 22.8)	17.9 (11.5, 27.7)	18.7 (13.5, 27.4)	^	16.1 (9.9, 29.2)
Clay	13.6 (8.8, 20.3)	18.1 (12.5, 25.7)	15.7 (10.4, 23.1)	14.6 (7.9, 25.1)	14.8 (8.2, 25.1)
Collier	13.9 (10.7, 18.0)	13.3 (10.2, 17.5)	21.7 (17.6, 26.8)	6.5 (3.1, 12.6)	8.4 (4.8, 14.3)
Columbia	22.6 (13.4, 36.9)	14.5 (7.3, 27.1)	^	^	^
DeSoto	^	^	34.5 (17.7, 64.6)	^	^
Dixie	^	^	^	^	^
Duval	18.6 (15.9, 21.7)	17.5 (14.8, 20.5)	21.3 (17.9, 25.3)	10.3 (7.6, 13.8)	11.5 (8.7, 15.1)
Escambia	17.1 (13.0, 22.2)	14.3 (10.7, 19.1)	18.4 (13.6, 24.8)	^	8.6 (5.0, 14.6)
Flagler	16.3 (10.3, 26.9)	14.2 (8.8, 24.1)	27.2 (17.8, 42.1)	^	^
Franklin	^	^	^	^	^
Gadsden	^	20.9 (10.3, 39.0)	^	^	^
Gilchrist	^	^	^	^	^
Glades	^	^	^	^	^
Gulf	^	^	^	^	^
Hamilton	^	^	^	^	^
Hardee	^	^	^	^	^
Hendry	33.8 (16.8, 61.1)	^	^	^	^
Hernando	18.0 (12.8, 25.4)	19.0 (13.9, 26.5)	20.2 (14.5, 28.4)	12.7 (5.7, 25.5)	17.4 (10.8, 28.7)
Highlands	10.7 (5.4, 20.8)	20.7 (13.8, 31.8)	25.1 (17.1, 38.1)	^	10.0 (4.7, 25.3)
Hillsborough	19.8 (17.4, 22.5)	18.3 (16.0, 20.9)	21.5 (18.7, 24.6)	9.5 (7.2, 12.3)	13.8 (11.1, 17.1)
Holmes	^	^	^	^	^
Indian River	14.1 (9.5, 21.4)	13.6 (9.4, 20.5)	28.5 (20.8, 39.4)	^	9.6 (5.0, 20.2)
Jackson	^	^	^	^	^
Jefferson	^	^	^	^	^
Lafayette	^	^	^	^	^
Lake	13.8 (10.4, 18.3)	19.1 (15.2, 24.2)	20.5 (16.1, 26.1)	11.2 (6.2, 19.0)	9.6 (5.9, 15.8)
Lee	16.2 (13.6, 19.4)	16.1 (13.4, 19.3)	19.7 (16.5, 23.4)	11.7 (7.9, 16.8)	11.2 (8.1, 15.3)
Leon	12.0 (7.9, 17.8)	9.9 (6.2, 15.2)	12.3 (7.5, 19.4)	^	13.5 (8.1, 21.8)
Levy	25.0 (13.8, 45.0)	^	^	^	^
Liberty	^	^	^	^	^
Madison	^	^	^	^	^
Manatee	13.7 (10.4, 17.9)	15.2 (11.7, 19.7)	28.5 (23.1, 35.1)	7.3 (3.6, 13.4)	8.5 (5.1, 14.1)
Marion	18.2 (14.5, 22.9)	17.5 (13.9, 22.1)	18.9 (14.5, 24.5)	14.9 (9.2, 23.2)	15.3 (10.5, 22.2)
Martin	14.9 (10.3, 22.2)	11.4 (7.6, 18.0)	19.8 (14.4, 28.1)	^	8.3 (4.1, 19.4)
Miami-Dade	15.5 (14.0, 17.1)	17.5 (16.0, 19.2)	9.1 (7.9, 10.5)	11.2 (9.4, 13.1)	11.5 (9.8, 13.4)
Monroe	19.6 (12.3, 31.5)	13.2 (7.3, 23.7)	18.1 (10.8, 30.5)	^	20.1 (9.3, 41.4)
Nassau	13.1 (6.6, 24.6)	14.6 (7.4, 26.9)	23.7 (13.9, 39.0)	25.1 (11.6, 49.2)	^
Okaloosa	18.2 (13.0, 25.1)	17.6 (12.3, 24.6)	21.5 (15.3, 29.5)	^	^
Okeechobee	^	^	36.0 (19.7, 63.2)	^	^
Orange	16.6 (14.1, 19.4)	19.2 (16.5, 22.2)	21.0 (17.9, 24.6)	8.0 (5.8, 10.9)	10.0 (7.4, 13.2)
Osceola	16.4 (11.7, 22.4)	13.8 (9.6, 19.3)	16.3 (11.4, 22.8)	10.7 (5.8, 18.4)	7.1 (3.4, 13.5)
Palm Beach	15.6 (13.8, 17.7)	20.4 (18.4, 22.7)	23.8 (21.2, 26.8)	8.4 (6.3, 11.0)	11.0 (8.9, 13.5)
Pasco	16.5 (13.2, 20.5)	19.0 (15.5, 23.2)	24.0 (19.8, 29.0)	13.3 (8.7, 19.7)	10.5 (7.1, 15.5)
Pinellas	19.8 (17.4, 22.6)	15.1 (13.0, 17.5)	17.6 (15.1, 20.4)	6.9 (4.7, 9.8)	10.6 (8.2, 13.7)
Polk	23.2 (19.7, 27.1)	19.1 (16.1, 22.7)	26.0 (22.0, 30.8)	12.3 (8.6, 17.3)	13.8 (10.2, 18.5)
Putnam	28.6 (19.3, 42.7)	19.1 (10.7, 33.1)	22.2 (13.0, 38.0)	^	^
Santa Rosa	18.8 (12.8, 27.1)	16.0 (10.4, 24.0)	21.1 (14.1, 30.7)	^	^
Sarasota	13.4 (10.5, 17.1)	15.7 (12.6, 19.7)	19.1 (15.5, 23.8)	5.8 (2.8, 11.3)	10.3 (7.1, 15.6)
Seminole	14.7 (11.2, 19.0)	16.9 (13.2, 21.5)	20.1 (15.8, 25.3)	7.7 (4.6, 12.5)	14.0 (9.7, 19.7)
St. Johns	21.1 (15.6, 28.3)	19.2 (13.9, 26.3)	22.7 (16.5, 30.9)	^	11.7 (6.4, 20.8)
St. Lucie	11.0 (7.8, 15.5)	8.1 (5.5, 12.1)	18.4 (14.0, 24.2)	6.0 (2.8, 12.2)	11.9 (7.4, 19.2)
Sumter	13.8 (8.6, 23.1)	19.4 (13.2, 29.5)	24.4 (16.6, 36.9)	^	10.5 (4.8, 27.4)
Suwannee	^	21.6 (10.8, 41.5)	24.3 (11.5, 47.8)	^	^
Taylor	^	^	^	^	^
Union	125.3 (77.0, 200.4)	67.7 (35.0, 128.1)	^	^	^
Volusia	20.5 (17.3, 24.4)	16.3 (13.4, 19.9)	17.6 (14.3, 21.7)	10.0 (6.3, 15.3)	12.7 (9.3, 17.6)
Wakulla	^	^	^	^	^
Walton	21.1 (12.1, 35.7)	^	^	^	^
Washington	^	^	^	^	^

Source of data: Florida Cancer Data System

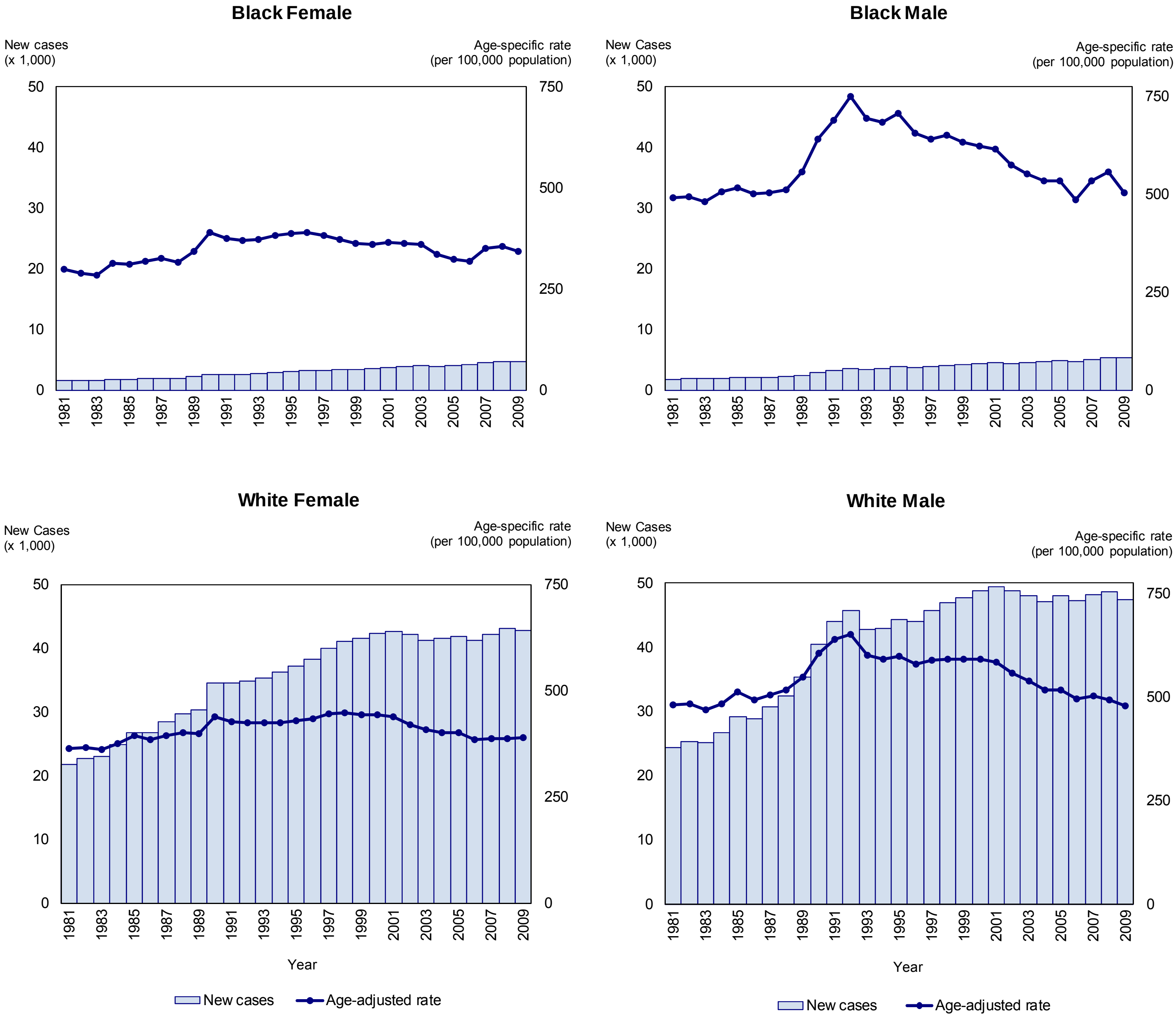
1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population.

2 95% confidence interval.

3 Non-Hodgkin refers to Non-Hodgkin's lymphoma.

^ Statistics for cells with fewer than 10 cases are not displayed.

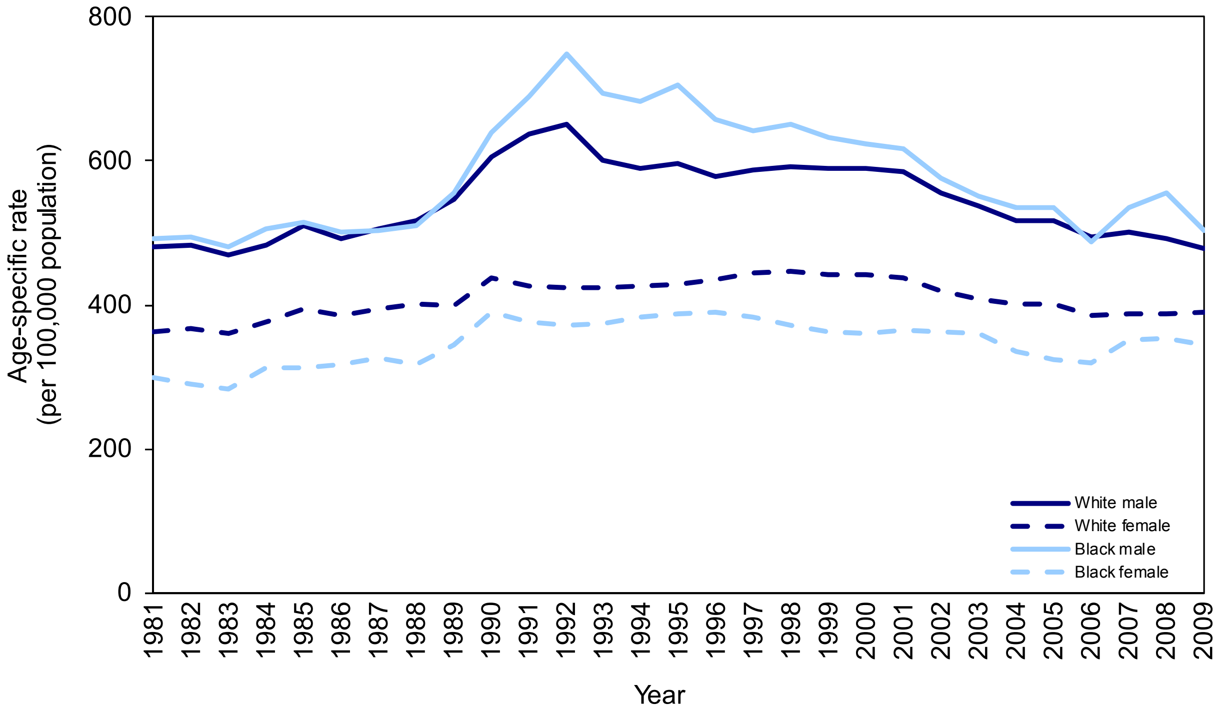
Figure 1. New Cases and Age-Adjusted Incidence Rates for All Cancers by Gender and Race[1], Florida, 1981-2009



Source of data: Florida Cancer Data System

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population. Florida incidence rates include new cancers in persons of "other" races, cases with unknown race, and cases with unknown or unspecified gender. Rates calculated by gender include cases with unknown or other race. Rates by race include cases with unknown gender. By definition, age-adjusted incidence rates cannot include cases with unknown age.

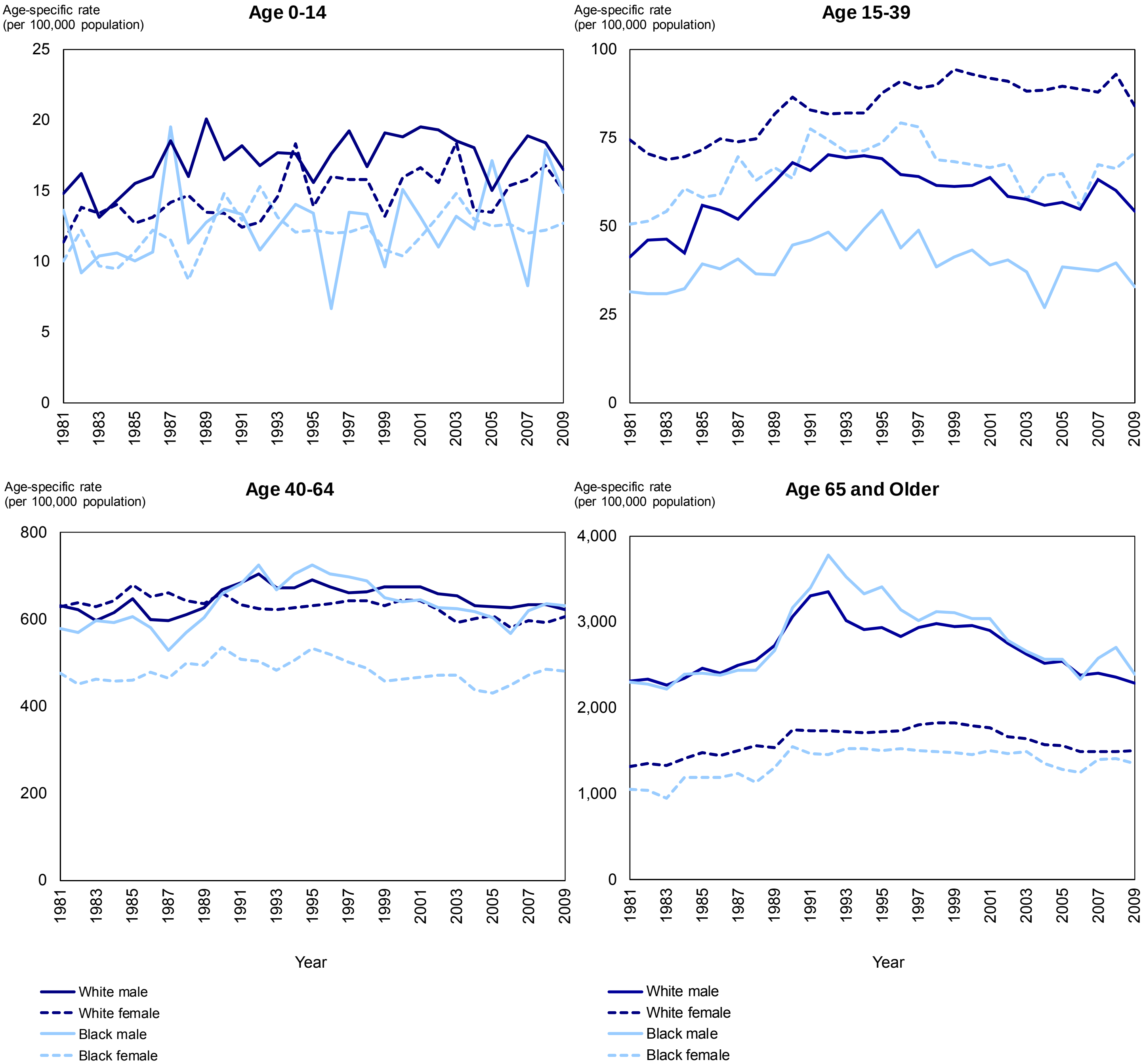
Figure 2. Age-Adjusted Incidence Rates for All Cancers by Gender and Race[1], Florida, 1981-2009



Source of data: Florida Cancer Data System

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population. Florida incidence rates include new cancers in persons of "other" races, cases with unknown race, and cases with unknown or unspecified gender. Rates calculated by gender include cases with unknown or other race. Rates by race include cases with unknown gender. By definition, age-adjusted incidence rates cannot include cases with unknown age.

Figure 3. Age-Specific Incidence Rates for All Cancers by Gender, Race, and Age Group[1], Florida, 1981-2009



Source of data: Florida Cancer Data System

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population. Florida incidence rates include new cancers in persons of "other" races, cases with unknown race, and cases with unknown or unspecified gender. Rates calculated by gender include cases with unknown or other race. Rates by race include cases with unknown gender. By definition, age-adjusted incidence rates cannot include cases with unknown age.

Section 4

Summary of Antimicrobial Resistance Surveillance

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

The Florida Department of Health (FDOH) conducts surveillance for antibiotic resistance in five microorganisms. Practitioners, hospitals, and laboratories are required to report people infected with *Streptococcus pneumoniae* at a normally sterile site, including antibiotic susceptibility testing results. Practitioners, hospitals, and laboratories are required to report people infected with vancomycin non-susceptible *Staphylococcus aureus*. Laboratories participating in electronic laboratory reporting are required to report all *S. aureus* isolates from a normally sterile site with antibiotic susceptibility testing results. Isolates of *Neisseria meningitidis* from cases of meningococcal disease are sent to the Centers for Disease Control and Prevention (CDC) for additional laboratory testing as part of MeningNet. *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 CDC for susceptibility testing as part of the Gonococcal Isolate Surveillance Project (GISP).

Ideally, each patient presenting with an infection suspected to be caused by any of these organisms would be treated based on antimicrobial resistance testing of their own isolate conducted prior to the determination of an antimicrobial regimen. As that is not always possible, a cumulative or community aggregate antibiogram can provide useful operational information for the selection of an empiric therapy for a presumptive diagnosis. The selection of an antibiotic for empiric treatment should not be based solely on the community antibiogram. The community antibiogram should be considered in conjunction with factors such as the pharmacology of the antibiotic, its toxicity, the patient's hypersensitivity, the potential for interaction of the drug with other drugs the patient may be taking, the effectiveness of the patient's defense mechanisms, and the cost of the drug. Community antibiograms are also useful for tracking the antibiotic resistance patterns of clinically important microorganisms and for detecting trends towards antimicrobial resistance.

Streptococcus pneumoniae

Background

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. Drug-resistant *S. pneumoniae* invasive disease (DRSP) was added to Florida's list of notifiable diseases in mid-1996. Drug-susceptible *S. pneumoniae* invasive disease (DSSP) was added to Florida's list of notifiable diseases in mid-1999 to permit the assessment of the proportion of pneumococcal isolates that are drug-resistant; however, electronic data capture of resistance testing results was not fully implemented until 2005. When analyzing susceptibility testing results for *S. pneumoniae*, only one susceptibility result per case was included, in accordance with Clinical Laboratory Standards Institute (CLSI) guidelines. If there was more than one susceptibility result per case, results were then ranked on date of specimen collection (earliest to latest), date of report (latest to earliest), and the number of antibiotics tested (most to least), with the top ranking result selected for inclusion. The decision to include the first result was based on the goal of this report, which is to guide clinicians in the selection of empirical antimicrobial therapy for initial infections.

Not every specimen was tested for resistance to every antibiotic included in this report. When calculating percent susceptibility to an antibiotic, the denominator is the number of cases with an isolate tested for that particular antibiotic. Susceptibility results are presented for only those antibiotics which are recommended for routine testing and reporting, per 2008 CLSI guidelines. The CLSI guidelines split antibiotics into three groups for the purposes of reporting susceptibility testing results. Groups are based on clinical efficacy, prevalence of resistance, minimizing emergence of resistance, cost, FDA clinical indications for usage, and current consensus recommendations for first-choice and alternative drugs. Group A includes antibiotics that

CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing but which CLSI recommends only selective reporting; Group C includes agents considered to be alternative or supplemental. Please note that cumulative aggregate susceptibility results for antimicrobials in Group B and C 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 agents.

Data Summary
There were a total of 679 DSSP cases and 645 DRSP cases in 2011. Of the 679 DSSP cases, seven (1.0%) did not have antibiotic susceptibility data, most often because the patient died and further testing was not done.

The aggregate percent susceptibility for Group A agents were between 56% and 69% (Table 1). Aggregate percent susceptibility among Group B agents were more variable, ranging from 77% susceptibility to tetracycline to greater than 99% susceptibility to the fluoroquinolones (levofloxacin, moxifloxacin, and ofloxacin). Aggregate percent susceptibility for Group C agents ranged from 71% to 100%, although susceptibility percentages for Group C agents should be interpreted carefully, as often only isolates with specific susceptibility profiles against Group A or B agents are tested for susceptibility to Group C agents.

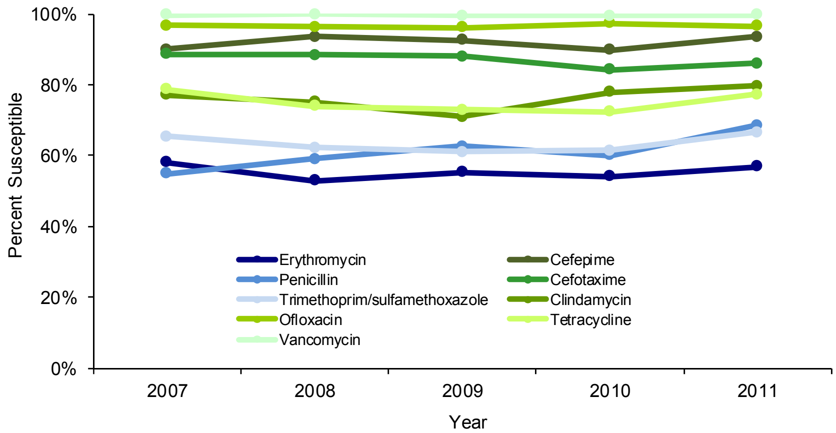
Table 1. Reported *Streptococcus pneumoniae*, Invasive Disease, Cumulative Antibiogram by CLSI Antibiotic Groups*, Florida, 2011

CLSI group	Antibiotic name	Number of cases tested	Percent of cases tested		
			Susceptible	Intermediate	Resistant
Group A*	Erythromycin	1,019	57	1	42
	Penicillin	1,166	69	14	17
	Trimethoprim/sulfamethoxazole	843	67	7	27
Group B*	Cefepime	157	94	5	2
	Cefotaxime	608	86	8	6
	Clindamycin	439	80	2	19
	Levofloxacin	901	99	1	0
	Moxifloxacin	298	100	0	0
	Ofloxacin	87	97	3	0
	Meropenem	317	82	11	7
	Tetracycline	703	77	1	21
	Vancomycin	1,180	100	0	0
Group C*	Amoxicillin/clavulanic acid	214	88	6	6
	Amoxicillin	222	91	6	4
	Chloramphenicol	335	99	0	1
	Imipenem	45	71	27	2
	Linezolid	255	100	0	0
	Rifampin	78	100	0	0

*Group A includes antibiotics that CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing but which CLSI recommends only selective reporting; Group C includes agents considered to be alternative or supplemental.

S. pneumoniae susceptibility to most Group A and Group B antibiotics stayed relatively stable from 2007 to 2011 (Figure 1). There was a slight increase in susceptibility to penicillin.

Figure 1. Reported *Streptococcus pneumoniae*, Invasive Disease, Cumulative Percent Susceptibility to Select CLSI Group A* and Group B* Antibiotics, Florida 2007-2011



*Group A includes antibiotics that CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing but which CLSI recommends only selective reporting. Group A antimicrobial agents are depicted on this graph with solid lines while Group B agents are depicted with dashed lines. Note: In 2010, FDOH revised the antimicrobial agents for which susceptibility testing results were collected. Prior to 2010, cumulative susceptibility results are not available for these antimicrobials (levofloxacin, moxifloxacin, and meropenem) and they are not included on this graph.

In general, the lowest cumulative susceptibility was seen among young children and youth (Table 2). For example, only 40% of cases in infants and young children (less than 4 years old) and 39% of cases in youth (15 to 24-year-olds) tested for resistance to erythromycin were susceptible, versus over 55% in all other age groups. Fewer than 63% of cases in young children (1 to 4-year-olds) and youth (15 to 24-year-olds) were susceptible to penicillin, versus more than 69% in all other age groups. Likewise, less than 56% of cases in young children and youth were susceptible to trimethoprim/sulfamethoxazole, versus more than 62% in other age groups.

Table 2. Reported *Streptococcus pneumoniae*, Invasive Disease, Cumulative Percent Susceptibility to CLSI Group A* and Group B* Antibiotics by Age Group, Florida, 2011

Age Group	Number of cases	Cumulative Percent of Cases Susceptible to Antibiotic											
		Group A*			Group B*								
		Erythromycin	Penicillin	Trimethoprim/ sulfamethoxazole	Cefepime	Cefotaxime	Clindamycin	Levofloxacin	Moxifloxacin	Ofloxacin	Meropenem	Tetracycline	Vancomycin
<1 (infant)	33	40**	55**	56**	**	83**	80**	100**	**	**	62**	91**	100
1-4 (young child)	105	40	57	46	**	75	58	100	100**	**	60	51	98
5-14 (child)	52	56	74	62	**	69**	81**	100	100**	**	70**	77	100
15-24 (youth)	40	39**	63	42**	**	76**	54**	100**	**	**	83**	44**	100
25-64 (adult)	636	62	71	71	93	89	80	98	99	93	86	78	100
65+ (senior)	458	55	69	68	97	89	88	99	100	100**	87	82	100

*Group A includes antibiotics that CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing but which CLSI recommends only selective reporting.

**Too few cases (<30) were tested to produce reliable estimates of resistance. Results of age group/drug combinations where there were less than 10 cases tested were suppressed.

Resistance patterns were also summarized by Florida Regional Domestic Security Task Force Regions (map available at http://dohiws.doh.ad.state.fl.us/Divisions/DEMO/BPR/PDFs/rdstf-map.pdf). The southwest region tended to have the lowest cumulative susceptibility for the majority of the antimicrobials, while the northern regions (northeast, north central, and northwest) tended to have the highest cumulative susceptibility (Table 3).

Table 3. Reported *Streptococcus pneumoniae*, Invasive Disease, Cumulative Percent Susceptibility to CLSI Group A* and Group B* by Regional Domestic Security Task Force Region, Florida, 2011

Region	Number of cases	Cumulative Percent of Cases Susceptible to Antibiotic											
		Group A*			Group B*								
		Erythromycin	Penicillin	Trimethoprim/ sulfamethoxazole	Cefepime	Cefotaxime	Clindamycin	Levofloxacin	Moxifloxacin	Ofloxacin	Meropenem	Tetracycline	Vancomycin
East Central	247	49	59	63	**	77	78	98	100	98	77	74	100
North Central	44	77	88	64**	**	92**	90	100	**	**	**	83**	100
North East	160	69	71	75	96	89	81	100	100**	**	88	85	99
North West	107	49	74	71	95	96	91	100	100	**	90	86	100
South East	362	59	76	67	96**	88	74	98	100	100**	73	72	100
South West	133	50	72	67	**	91	76**	98	100	100**	84	72	100
West Central	271	57	59	63	87**	83	77	99	99	83**	78	78	100

*Group A includes antibiotics that CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing but which CLSI recommends only selective reporting.

**Too few cases (<30) were tested to produce reliable estimates of resistance. Results of age group/drug combinations where there were less than 10 cases tested were suppressed.

Neisseria meningitidis

Background

N. meningitidis is a bacterium that is a leading cause of bacterial meningitis in the U.S. and may also cause overwhelming sepsis, purpura fulminans, or (rarely) benign meningococcemia. The emergence of quinolone-resistant *N. meningitidis* in the U.S. has raised important questions regarding current chemoprophylaxis guidelines and highlights the expanding threat of antimicrobial resistance in bacterial pathogens. The CDC responded to this concern by forming MeningNet, an enhanced meningococcal surveillance system to monitor antimicrobial susceptibility. As part of MeningNet, the Bureau of Public Health Laboratories (BPHL) began forwarding all *N. meningitidis* isolates to the CDC for antibiotic susceptibility testing in late 2008. All isolates are tested for susceptibility to penicillin, ceftriaxone, ciprofloxacin, rifampin, and azithromycin. Results are interpreted as susceptible, intermediate, or non-susceptible for penicillin, ciprofloxacin, rifampin, and susceptible or non-susceptible for ceftriaxone and azithromycin.

Data Summary

Of the 51 cases of meningococcal disease reported in Florida in 2011, 42 had isolates submitted to CDC for testing as part of MeningNet. One isolate was contaminated upon arrival at CDC, so a total of 41 isolates were tested for antibiotic susceptibility.

Statewide, there were 17 serogroup W-135, 12 serogroup B (one was contaminated and susceptibility was not tested), eight serogroup C, and five serogroup Y isolated from Florida cases (Table 4). All 41 isolates were susceptible to ceftriaxone, ciprofloxacin, and rifampin. One isolate was non-susceptible to azithromycin, six isolates exhibited intermediate susceptibility to penicillin, and one isolate was non-susceptible to azithromycin and showed intermediate susceptibility to penicillin.

Table 4. 2011 *Neisseria meningitidis* susceptibility to select antibiotics

Serogroup	Total cases tested	Antibiotic name	Cases tested		
			Susceptible	Intermediate	Non-susceptible
B	11*	Penicillin	7	4	0
		Ceftriaxone	11	NA	0
		Ciprofloxacin	11	0	0
		Rifampin	11	0	0
		Azithromycin	11	NA	0
C	8	Penicillin	6	2	0
		Ceftriaxone	8	NA	0
		Ciprofloxacin	8	0	0
		Rifampin	8	0	0
		Azithromycin	7	NA	1
W-135	17	Penicillin	16	1[†]	0
		Ceftriaxone	17	NA	0
		Ciprofloxacin	17	0	0
		Rifampin	17	0	0
		Azithromycin	16	NA	1[†]
Y	5	Penicillin	5	0	0
		Ceftriaxone	5	NA	0
		Ciprofloxacin	5	0	0
		Rifampin	5	0	0
		Azithromycin	5	NA	0

*12 serogroup B cases; one was contaminated and susceptibility was not tested.
[†]Same case.

Two cases were epidemiologically linked and their isolates demonstrated intermediate susceptibility to penicillin. Five cases had a history of travel: Cuba (two cases); Sweden (one case); Tampa, FL (one case); and Orlando, FL (one case). All five cases with travel history had isolates that were susceptible to all five antibiotics screened. Seven cases were linked by pulsed-field gel electrophoresis patterns; all were part of an ongoing Miami-Dade outbreak of the W-135 strain and were susceptible to all five antibiotics screened.

Neisseria gonorrhoeae

Background

N. gonorrhoeae is a bacterium that can grow easily in the warm, moist areas of the reproductive tract, urethra, mouth, throat, eyes, and anus and causes the 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 in Florida has served as one of 29 GISP sites since 1998. The Miami GISP site collects specimens each month from symptomatic males. If the Gram stain indicates the presence of diplococci, the specimen is forwarded to BPHL for culture, and the isolate is shipped to the CDC until 25 viable isolates are reached for the month. At the CDC, all isolates are tested for susceptibility to cefixime, cefpodoxime, ceftriaxone, tetracycline, spectinomycin, ciprofloxacin, penicillin, and azithromycin.

Data Summary

In the past five years, 1,119 viable isolates were collected from the Miami GISP site. In 2011, 166 specimens were submitted in which resistance to penicillin and tetracycline remained high and resistance to ciprofloxacin increased (Table 5). There were no isolates resistant to azithromycin observed in 2011. Recommendations to only use cephalosporins in 2007 have been credited with the steady decline of gonorrhea in Florida. Currently, ceftriaxone and cefixime (the cephalosporin antibiotics) have not shown any signs of resistance in isolates submitted by Florida.

Table 5. Cumulative Percent Susceptibility of *Neisseria gonorrhoeae* Isolates, Miami-Dade Gonococcal Isolate Surveillance Project Site, 2007-2011

Year	Number of isolates tested	Cumulative Percent of Isolates Susceptible to Antibiotic						
		Penicillin	Tetracycline	Spectinomycin	Ciprofloxacin	Ceftriaxone	Cefixime	Azithromycin
2007	266	79	62	100	81	100	N/A*	100
2008	259	87	61	100	84	100	N/A*	100
2009	219	88	65	100	88	100	100	100
2010	209	79	67	100	85	100	100	99
2011	166	81	63	100	77	100	100	100

*Isolates were not tested for cefixime susceptibility in 2007 and 2008.

For treatment of uncomplicated urogenital, anorectal, and pharyngeal gonorrhea, CDC recommends combination therapy with a single intramuscular dose of ceftriaxone 250 mg plus either a single dose of azithromycin 1 g orally or doxycycline 100 mg orally twice daily for seven days.

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Section 5

Summary of Foodborne Disease Outbreaks

Description
Foodborne disease surveillance, investigation, and reporting are essential public health activities. Globalization of the food supply, changes in eating habits and behaviors, and newly emerging pathogens and vehicles of transmission have impacted the risk of contracting foodborne diseases. The Centers for Disease Control and Prevention (CDC) estimates foodborne diseases from unspecified agents account for approximately 38.4 million illnesses, 71,878 hospitalizations, and 1,686 deaths per year in the U.S. An additional estimated 9.4 million illnesses, 55,961 hospitalizations, and 1,351 deaths are accounted for by confirmed foodborne pathogens. Florida has had a unique program in place since 1994 to conduct foodborne and waterborne disease surveillance, investigation, and reporting functions for the state with the intent to better detect and investigate related diseases, complaints, and outbreaks. This assists public health officials, the medical community, and the food industry in acquiring the knowledge and public health practices to prevent morbidity and mortality from contaminated food and water supplies throughout the harvesting, processing, distribution, and human consumption continuum.

Foodborne disease outbreaks, as defined by the Florida Department of Health's (FDOH) Food and Waterborne Disease Program, are incidents in which two or more people have the same disease, have similar symptoms, or excrete the same pathogens; and there is a person, place, or time association between these people along with ingestion of a common food. A single case of suspected botulism, mushroom poisoning, ciguatera, paralytic shellfish poisoning, or other rare disease, or a case of a disease that can be definitively linked to ingestion of a food, is considered an incident of foodborne illness and warrants further investigation.

Overview
FDOH identified 51 foodborne disease outbreaks with 407 associated cases in 2011 (Table 1).

Table 1. Summary of Reported Foodborne Disease Outbreaks, Florida 2002-2011

Year	Number of outbreaks	Number of cases	Number of outbreaks per 100,000 population	Number of cases per 100,000 population	Average cases per outbreak
2002	237	1,443	1.4	8.6	6.1
2003	185	1,564	1.1	9.1	8.5
2004	173	1,911	1	10.9	11.1
2005	128	1,944	0.7	10.8	15.2
2006	142	1,141	0.8	6.2	8
2007	122	852	0.7	4.6	7
2008	96	1,218	0.5	6.5	12.7
2009	65	715	0.4	3.8	11
2010	64	805	0.3	4.3	12.6
2011	51	407	0.3	2.2	8

Trends
Over the last ten years in Florida, there has been a general decreasing trend in the total number of reported foodborne disease outbreaks and number of reported foodborne disease outbreaks per 100,000 population (Figures 1 and 2).

Figure 1. Total Number of Reported Foodborne Disease Outbreaks, Florida, 2002-2011

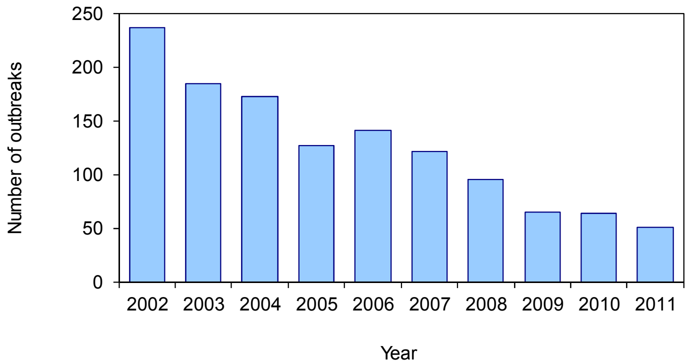
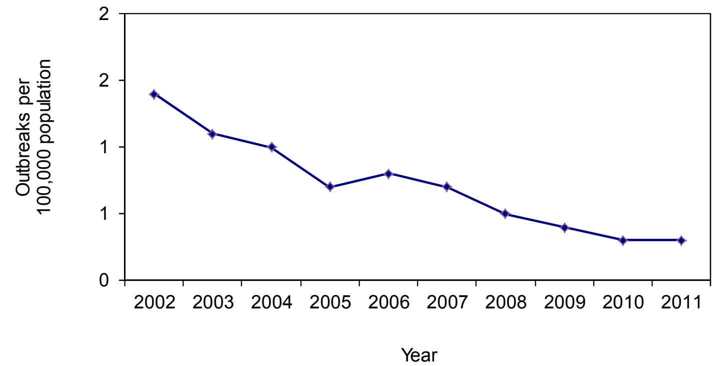


Figure 2. Number of Reported Foodborne Disease Outbreaks per 100,000 Population, Florida, 2002-2011



Over the last ten years, the number of reported foodborne illness cases and the incidence per 100,000 population has declined (Figures 3 and 4).

Figure 3. Total Number of Reported Foodborne Disease Outbreak-Related Cases, Florida, 2002-2011

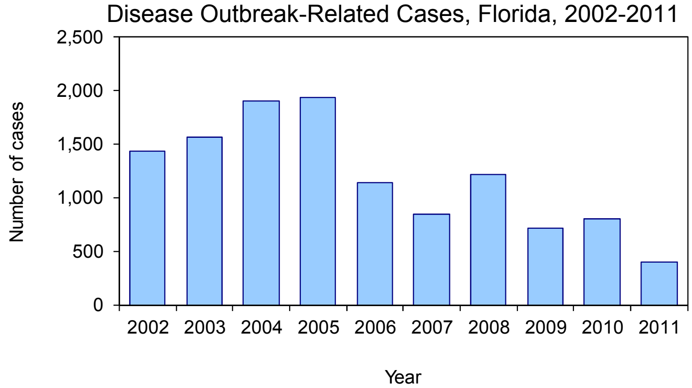
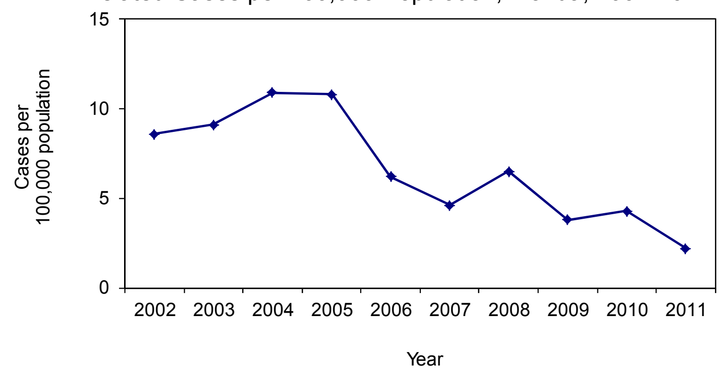


Figure 4. Number of Reported Foodborne Outbreak-Related Cases per 100,000 Population, Florida, 2002-2011



Seasonality

There was no seasonal trend in reported outbreaks. July and April had the highest number of outbreaks (eight) and November the lowest (none) (Figure 5). Similarly, there was no trend in the number of outbreak-related cases reported monthly, with the highest number of cases (94) reported in May (Figure 6).

Figure 5. Total Number of Reported Foodborne Disease Outbreaks by Month, Florida, 2011

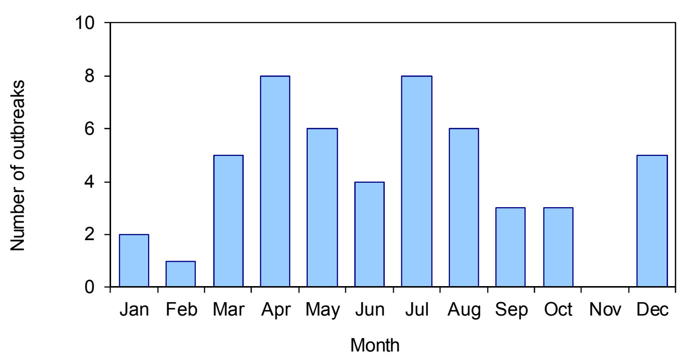
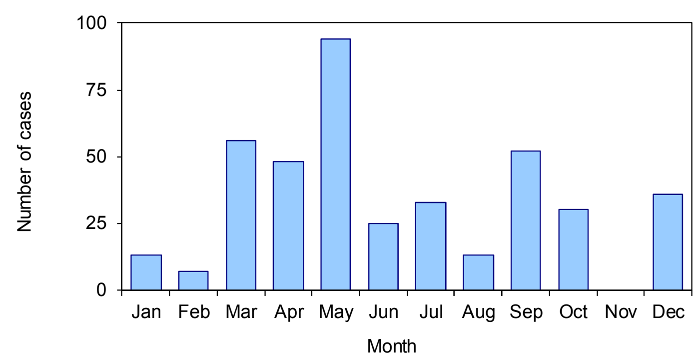


Figure 6. Total Number of Reported Foodborne Disease Outbreak-Related Cases by Month, Florida, 2011



Etiology
Foodborne disease outbreaks caused by bacteria (39.2%) and marine toxins (23.5%) accounted for most of the 2011 total reported foodborne disease outbreaks with a known etiology (Table 2). Viral pathogens (norovirus) contributed 19.6% of the outbreaks. Foodborne disease outbreaks caused by norovirus accounted for the most reported cases (50.1%). Bacterial pathogens accounted for 25.3% of reported outbreak cases while marine toxins accounted for 10.1% of cases. Pathogen type was unknown for 15.7% of the reported foodborne disease outbreaks accounting for 11.5% of the reported outbreak-related cases.

Among foodborne disease outbreaks with a suspected or confirmed etiology, *Vibrio vulnificus* was the most frequently reported etiology for 2011 accounting for 11 (21.6%) outbreaks followed by norovirus and ciguatera, accounting for ten (19.6%) and nine (17.7%) outbreaks respectively (Table 2).

Table 2. Frequency of Reported Foodborne Outbreaks and Cases
by Confirmed or Suspected Etiology, Florida, 2011

Pathogen	Outbreaks Number (percent)	Cases Number (percent)
Bacteria		
Vibrio vulnificus	11 (21.6)	11 (2.7)
Salmonella	3 (5.9)	40 (9.8)
Clostridium perfringens	3 (5.9)	33 (8.1)
Bacillus cereus	2 (3.9)	9 (2.2)
Vibrio cholerae 075	1 (2.0)	10 (2.5)
Total Bacteria	**20 (39.2)**	**103 (25.3)**
Viruses		
Norovirus	10 (19.6)	204 (50.1)
Total Viral	**10 (19.6)**	**204 (50.1)**
Marine Toxins		
Ciguatera	9 (17.7)	32 (7.9)
Scombroid	3 (5.9)	9 (2.2)
Total Marine Toxins	**12 (23.5)**	**41 (10.1)**
Parasites		
Cyclospora	1 (2.0)	12 (3.0)
Total Parasites	**1 (2.0)**	**12 (3.0)**
Unknown		
Total Unknown	**8 (15.7)**	**47 (11.5)**
Total	**51 (100.0)**	**407 (100.0)**

Implicated Food Vehicles
Fish, molluscan shellfish, and multiple items were the most frequently reported general vehicles contributing to foodborne disease outbreaks in Florida that occurred in 2011 (Table 3).

Table 3. Frequency of Reported Foodborne Illness Outbreaks and Cases by General Vehicle, Florida, 2011

Food vehicle	Outbreaks Number (percent)	Cases Number (percent)
Fish	13 (25.5)	45 (11.1)
Shellfish-mollusks	12 (23.5)	27 (6.6)
Multiple items*	11 (21.6)	142 (34.9)
Multiple ingredients**	4 (7.8)	19 (4.7)
Produce-vegetables	4 (7.8)	100 (24.6)
Rice	3 (5.9)	17 (4.2)
Unknown	2 (3.9)	50 (12.3)
Shellfish-crustaceans	1 (2.0)	1 (0.2)
Beverage	1 (2.0)	6 (1.5)
Total	51 (100.0)	407 (100.0)

*Multiple items are food vehicles in which several foods are individually prepared or cooked and more than one food is suspected or confirmed to be contaminated (e.g. buffet, salad bar, chicken and shrimp, etc.).

**Multiple ingredients are food vehicles in which several foods are combined during preparation or cooking and the entire food product is suspected or confirmed to be contaminated (e.g. casseroles, soups, sandwiches, salads, etc.).

Contributing Factors

The top contributing factors associated with reported foodborne disease outbreaks in Florida for 2011 are displayed in Table 4. There are three categories of contributing factors (contamination factor, proliferation factor, survival factor). Up to three contributing factors per category can be attributed in an outbreak; as such, the reported numbers may not match the actual number of reported outbreaks and cases.

Table 4. Most Commonly Reported Foodborne Contamination Factors, Florida, 2011

Contamination factors	Number of outbreaks	Number of cases
Toxic substance part of the tissue	12	41
Contaminated raw product - food was intended to be consumed after a kill step	2	13
Contaminated raw product - food was intended to be consumed raw or undercooked/under-processed	14	42
Cross-contamination of ingredients (cross contamination does not include ill food workers)	4	19
Bare-handed contact by a food handler/worker/preparer who is suspected to be infectious	4	136
Glove-hand contact by a food handler/worker/preparer who is suspected to be infectious	2	46
Other mode of contamination (excluding cross-contamination) by a food worker who is suspected to be infectious	3	63
Storage in contaminated environment	3	28
Other source of contamination	1	3
Proliferation factors	**Number of outbreaks**	**Number of cases**
Food preparation practices that support proliferation of pathogens (during food preparation)	2	7
No attempt was made to control temperature of implicated food or length of time food was out of temperature	1	3
Improper cold holding due to malfunctioning refrigeration equipment	1	6
Improper cold holding due to an improper procedure or protocol	4	16
Improper hot holding due to malfunctioning equipment	1	3
Improper hot holding due to improper procedure or protocol	2	24
Improper/slow cooling	1	22
Other situations that promoted or allowed microbial growth or toxin production	1	10
Proliferation/amplification factors not applicable	16	192
Survival factors	**Number of outbreaks**	**Number of cases**
Insufficient time and/or temperature control during initial cooking/heat processing	2	24
Other process failures that permit pathogen survival	1	6
Survival factors not applicable	24	184

Regulatory Agency
FDOH investigates foodborne outbreaks in all public facilities regardless of the regulatory agency responsible for doing routine inspections and issuing permits and citations. Agencies which regulate facilities with foodborne outbreaks are provided in Table 5.

Table 5. Frequency of Reported Foodborne Disease Outbreaks and Cases by Agency with Regulatory Authority, Florida, 2011

Agency	Outbreaks Number (percent)	Cases Number (percent)
Department of Business and Professional Regulation	32 (62.7)	320 (78.6)
Other	11 (21.6)	47 (11.5)
Department of Agriculture and Consumer Services	6 (11.8)	21 (5.2)
Department of Health	2 (3.9)	19 (4.7)
Total	51 (100.0)	407 (100.0)

Outbreak Location
Most reported foodborne disease outbreaks and outbreak-related cases were restaurant-associated (see Table 6).

Table 6. Foodborne Illness Outbreaks and Cases by Site, Florida, 2011

Agency	Outbreaks Number (percent)	Cases Number (percent)
Restaurant	33 (64.7)	332 (81.6)
Home	10 (19.6)	32 (7.9)
Other	4 (7.8)	27 (6.6)
Grocery	3 (5.9)	9 (2.2)
Caterer	1 (2)	7 (1.7)
Total	51 (100)	407 (100)

FDOH is dedicated to the detection and investigation of foodborne-related diseases, complaints, and outbreaks. The scientific knowledge generated from these public health activities greatly assists the medical community, regulatory officials, public health officials, and the food industry to implement food safety policies and procedures to ensure a safe food supply for our citizens and visitors.

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Section 6

Notable Outbreaks and Case Investigations

Contents

Bacterial Diseases

Bacillus anthracis — Imported Inhalation Anthrax — Pinellas County 161

Bordetella pertussis — Fatal Pertussis Infection in a 6-Week-Old Infant — Palm Beach County 161

Bordetella pertussis — Pertussis Outbreak among Unvaccinated Children in an Extended Family — Escambia County 162

Capnocytophaga canimorsus — Fatal *Capnocytophaga canimorsus* Infection in a 39-Year-Old Man — Sarasota County.. 162

Clostridium tetani — Fatal Tetanus Case — Citrus County.. 163

Ehrlichia ewingii —Infection Acquired from Leukoreduced Platelet Transfusion, July 2011 — Multistate 163

Klebsiella pneumoniae — Outbreak of Carbapenem-Resistant Enterobacteriaceae at a Long-Term Acute Care Hospital — Pinellas County.. 164

Klebsiella pneumoniae — Outbreak of Carbapenem-Resistant *Klebsiella pneumoniae* at a Long-Term Acute Care Hospital — Broward County.. 165

Legionella pneumophila — An Outbreak of Legionnaires' Disease Linked to an Outside Decorative Fountain — Hillsborough County 165

Mycobacterium leprae — Leprosy in a Man with No International Travel History — Osceola County 166

Mycobacterium tuberculosis — A Complex Tuberculosis Investigation in an Assisted Living Facility — Volusia County.. 167

Rickettsia typhi — Imported Flea Rickettsiosis in a Resident with Travel to Texas — Hillsborough County.. 167

Streptococcus species — Outbreak of Streptococcal Endophthalmitis Associated with Intravitreal Injection of Bevacizumab — Miami-Dade and Broward Counties.................. 168

Vibrio cholerae — Domestic Cholera Transmission from Conch Imported from Haiti — Collier County 169

Vibrio cholerae O75 — Toxin Producing *Vibrio cholerae* O75 Outbreak — Multistate, Escambia and Nassau Counties 169

Parasitic Diseases

Cyclospora cayetanensis — Confirmed *Cyclospora* Outbreak Linked to a Restaurant — Collier County... 170

Naegleria fowleri — Primary Amebic Meningoencephalitis — Brevard County....................... 170

Sarcoptes scabiei — Scabies in a Skilled Nursing Facility — Seminole County..................... 171

Viral Diseases

Adenovirus — Viral Conjunctivitis Linked to an Ophthalmic Care Center — Osceola County 172

Dengue Virus — Locally-Acquired Dengue Cases — Hillsborough, Martin, Miami-Dade, and Palm Beach Counties 172

Hepatitis B Virus — Perinatal Hepatitis B Case -— Hillsborough County 173

Measles Virus — Confirmed Measles Case Acquired in India — Alachua County 174

Measles Virus — Measles Transmission at an International Trade Show — Multistate, Orange County 174

Norovirus — Foodborne Norovirus Outbreak at a Family Restaurant March 2011 — Hernando County 175

Norovirus — Norovirus Outbreak Associated With Swimming in a Recreational Spring-Fed Lake — Glades County 176

Varicella-Zoster Virus — Varicella in a Daycare Infant Room — Seminole County 176

West Nile Virus — A Review of the West Nile Virus Disease Outbreak — Duval County 177

Non-Infectious Agents

Carbon Monoxide — Vehicle-Related Carbon Monoxide Poisoning Cluster — Hillsborough County 178

Ciguatoxin — Ciguatera Outbreak Associated with Commercially Purchased Amberjack — St. Lucie County 178

Ciguatoxin — Ciguatera Outbreak in a Charter Fishing Boat Group who Traveled to Great Harbour Cay, Bahamas — Multistate, Miami-Dade, and Monroe Counties 179

Pesticides — Aerial Pesticide Application and Drift Impacting an Elementary School — Palm Beach County 179

Radioactive Strontium — Investigation of Internal Contamination with Radioactive Strontium Following a Cardiac PET Scan — Multistate, Orange County 180

Undetermined — Investigation of a Cluster of Illnesses Initially Attributed to a Chemical Exposure — Seminole County 180

Bacterial Diseases

Bacillus anthracis — Imported Inhalation Anthrax — Pinellas County

Background: Inhalation anthrax is a rare, frequently fatal infection. On August 6, 2011, the Minnesota Department of Health (MN DOH) identified *Bacillus anthracis* isolated from the blood of a Florida resident who had vacationed in five northern Midwestern states.

Methods: The patient and his wife were interviewed, environmental samples were tested for *B. anthracis*, and the patient's isolate was genotyped. Enhanced surveillance for veterinary and human cases was performed in states visited by the patient, consisting of queries of veterinary diagnostic and reference laboratories for anthrax cases in animals and queries of the National Animal Health Lab Network (NAHLN) and the Laboratory Response Network (LRN) for *Bacillus* species isolates for the period June 1, 2011 to August 31, 2011.

Results: The patient was successfully treated with antimicrobials and anthrax immunoglobulin and was discharged home after a 25-day hospitalization. Possible exposures to anthrax spores in areas where *B. anthracis* is naturally endemic included inhaling dust stirred up by American bison or during rock collecting, preparing fishing flies using hair from hoofed animals, and handling antlers. No *B. anthracis* was detected from environmental samples submitted for testing, including samples collected from the patient's home in Pinellas County, Florida. The *B. anthracis* strain was identified as GT-59; no animal cases with this strain or other human cases were identified.

Conclusions: Rapid identification of the organism and aggressive treatment likely contributed to patient survival. Although he had visited areas where anthrax is enzootic and had multiple exposures to soil and animal products, specific causal exposure was not able to be determined. Comprehensive surveillance through multiple networks and systems was useful to assess for missed animal and human cases. Utilizing a "One Health" approach, which incorporated veterinary and human health, and investment in the LRN and NAHLN made this investigation possible.

Editorial Note: Although anthrax is not considered endemic to Florida, clinicians should be aware of clinical presentation and public health reporting requirements in cases of travel, contact with imported goods such as drum skins, and bioterrorist events as occurred in Florida in 2001. This summary was modified from the abstract of an article submitted for publication by the MN DOH and the multistate anthrax investigations team.

Bordetella pertussis — Fatal Pertussis Infection in a 6-Week-Old Infant — Palm Beach County

On August 15, 2011, a 1-month-old premature infant boy developed a paroxysmal cough with apnea. The baby was seen by his pediatrician and was also taken to a local emergency room where he was diagnosed with an upper respiratory infection. Due to continued cough, the infant was referred for admission to the hospital by the pediatrician and azithromycin was started on August 29, 2011. A nasopharyngeal swab was polymerase chain reaction positive for *B. pertussis* on September 2, 2011. A chest x-ray was negative for pneumonia. The infant's condition continued to deteriorate and he died on September 1, 2011. During the case investigation by the Palm Beach County Health Department, two other family members were found to have a similar illness. The mother also met the Florida surveillance case definition for a confirmed case. She had a cough illness onset on August 8, 2011, and did not have a history of Tdap vaccination. The father's cough onset was more recent, starting on August 29, 2011 but he did not meet case definition. They both received treatment. Two other family members and two healthcare workers received prophylaxis.

Editorial Note: Pertussis is a potentially serious, highly contagious bacterial respiratory disease. Pertussis is transmitted by direct contact with respiratory droplets from an infected person. Infected people are contagious for up to four weeks without appropriate antibiotic therapy. During outbreaks, attack rates of up to

80% among susceptible contacts are common. Although pertussis vaccination rates are high in Florida, pertussis continues to circulate. When pertussis is introduced into a susceptible group, wide-scale transmission can occur within a few days after onset, often before diagnosis by a physician and initiation of disease prevention interventions. During this period, infants may be infected. Among infants, complications and hospitalization resulting from pertussis infection are common and antibiotic treatment may not reduce the severity of the disease. Routine childhood, adolescent, and adult vaccination reduces the risk of infection among infants, therefore preventing the most common severe cases of pertussis.

***Bordetella pertussis* — Pertussis Outbreak among Unvaccinated Children in an Extended Family — Escambia County**

Background: The Escambia County Health Department conducted an investigation following a physician's report of a suspected pertussis outbreak among two related families in July 2011.

Methods: Interviews were conducted and medical records were reviewed to collect demographic, clinical, laboratory, vaccination, and close contact information. The Florida surveillance case definition was used to classify cases.

Results: Nine confirmed cases of pertussis were identified. All cases were in unvaccinated children ranging from 1 to 18 years old (median age was 4 years old). Seven cases occurred among two related families consisting of eight children and four adults. All eight children were unvaccinated and seven (87.5%) were infected, while all four adults reported a history of pertussis vaccination and were not infected. Two unvaccinated children that attended the same church as the families were also infected. An unvaccinated 7-year-old boy from one of the families, with disease onset on June 15, 2011, was the first detected case. He infected at least seven of the other cases, with disease onsets from July 1 to July 6, 2011. The last case had disease onset on July 10, 2011. Seven of the cases tested positive for *B. pertussis* by polymerase chain reaction. None of the cases were hospitalized. Antibiotic treatment and prophylaxis was provided to all cases and close contacts. Tdap vaccination was recommended when appropriate. Following the public health and medical response, no additional cases were reported.

Conclusion: This outbreak clearly demonstrates the infectiousness of *B. pertussis* among a susceptible population. Groups of people with low vaccine coverage are at constant risk of pertussis introduction and rapid transmission.

***Capnocytophaga canimorsus* — Fatal *Capnocytophaga canimorsus* Infection in a 39-Year-Old Man — Sarasota County**

On October 12, 2011, a previously healthy 39-year-old white man with asplenia presented to a local hospital complaining of nausea, vomiting, fever, and pain two days after being bitten on the arm by a dog. A physical examination conducted at the time of admission documented a fever (104.9°F), systolic blood pressure in the low 100s, mild conjunctival infection, and tachycardia. A chest x-ray identified increasing interstitial markings and oxygen saturation was 99%. Laboratory studies performed at admission had the following abnormal hematological values: white blood cell count 3,000, platelets 92,000, hemoglobin 12.8, creatinine 1.8, and bilirubin 3.6. He was admitted to the intensive care unit with a diagnosis of sepsis syndrome. Antibiotics (vancomycin, cefepime, and clindamycin) were ordered pending cultures. Blood cultures grew *Capnocytophaga* species on October 15, which was later identified as *Capnocytophaga canimorsus* by the hospital laboratory. Antimicrobial susceptibility testing was not performed. No purulence or fasciitis was noted upon surgical exploration of the wound. He subsequently developed acute hepatitis and pulmonary infiltrates which progressed to acute respiratory distress syndrome. Ventilator support was provided. The illness progressed to multiple organ failure and the patient died on October 16.

Editorial Note: C. canimorsus *is a zoonotic bacterium that is found in the normal oral flora of dogs and cats. It is a fastidious organism, often difficult to isolate and identify. The organism can cause rare but severe illness including septicemia, meningitis, and endocarditis. Transmission to people is via bites or licks from healthy-appearing animals. People at increased risk of developing* C. canimorsus *infections include patients who are asplenic, immunosuppressed, or abuse alcohol. Medical attention and proper wound care following a dog bite may prevent infection.*

Lion C, Escande F, Burdin JC. 1996. *Capnocytophaga canimorsus* Infections in Humans: Review of the Literature and Cases Report. *European Journal of Epidemiology*, 12(5);521-533.

Clostridium tetani **— Fatal Tetanus Case — Citrus County**

On April 29, 2011, an 89-year-old woman presented to the emergency department with a 2-day history of difficulty opening her mouth (trismus, also called lockjaw), and painful muscular contractions in her left arm. One week prior to illness onset, she sustained scratches on her left arm when several of her dogs jumped up to greet her, but she did not seek medical care. Prior tetanus vaccination history was unavailable. Probable tetanus was diagnosed and she was admitted to the hospital for further evaluation and treatment. Initial medical management was complicated by difficulty obtaining tetanus immune globulin (TIG). On May 2, she received 500 units of TIG and she was transferred to a tertiary care facility where an additional 500 units of TIG were administered. She died the following day.

Editorial Note: Three cases of tetanus were reported in 2011; this was the only fatal case. From 2001 to 2010, there were 30 cases (zero to five per year); four (13.3%) were fatal. Almost all reported cases of tetanus are in people who have never been vaccinated with a tetanus toxoid-containing vaccine, or who completed a primary series but have not had a booster in the preceding 10 years as is recommended. A primary series consists of three or four injections of tetanus toxoid-containing vaccines. A booster dose is necessary every 10 years due to waning antitoxin levels. People with wounds that are neither clean nor minor, and who have had zero to two prior doses of tetanus toxoid or have an uncertain history of prior doses should receive TIG as well as Td or Tdap. A single intramuscular dose of 3,000 to 5,000 units of TIG is generally recommended for children and adults, with part of the dose infiltrated around the wound. Intravenous immune globulin contains tetanus antitoxin and may be used if TIG is not available.

Atkinson W, Wolfe S, Hamborsky J, eds. 2011. *Epidemiology and Prevention of Vaccine- Preventable Diseases*. 12th ed. Atlanta, GA: Centers for Disease Control and Prevention; 291-300.

Lee DC, Lederman HM. 1992. Anti-Tetanus Toxoid Antibodies in Intravenous Gamma Globulin: An Alternative to Tetanus Immune Globulin. *Journal of Infectious Disease*, 166(3);642-645.

Ehrlichia ewingii **— Infection Acquired from Leukoreduced Platelet Transfusion, July 2011 — Multistate**

Background: A Georgia patient with acute lymphoblastic leukemia presented to a local hospital with acute fever, malaise, and neutropenia following three blood transfusions and was diagnosed with *Ehrlichia ewingii* infection. The man had no known tick exposure. Transfusion products originated at a Florida blood bank.

Methods: The Florida Department of Health, the Centers for Disease Control and Prevention (CDC), and the Florida blood bank conducted traceback of transfusion product donors. Testing of the recipients and donors was conducted by a local hospital, Mayo Clinic (Rochester), or CDC.

Results: The recipient was diagnosed with *E. ewingii* infection based on detection of *Ehrlichia* morulae in blood smears and positive reverse transcription polymerase chain reaction testing of whole blood. The recipient received multiple transfusions originating from three donors, including two who donated leukoreduced single donor platelets and one who donated irradiated and leukoreduced red blood cells. The blood bank performed a traceback on the three donors and obtained whole blood and serum from each. Follow-up of *Ehrlichia* serology was positive for one Florida donor, who had a titer of 1:512. This donor had regularly donated platelets and plasma one or two times per month. During the investigation, the donor was found to have recent known tick exposures at his home in Florida and at a wooded property in South Carolina. He reported no febrile illnesses in the two months prior to and following the suspect donation. Routine complete blood counts performed at the time of each donation were within normal limits. Further investigation identified eight additional recipients receiving blood products from the positive donor. Five recipients received leukoreduced platelets and three recipients received plasma from the donor. Three of the recipients died within one to two days of transfusion due to unrelated causes. The remaining five recipients reported no symptoms of illness associated with *E. ewingii* and all tested negative for *Ehrlichia* antibodies.

Conclusion: This is the first known transmission of any *Ehrlichia* species via blood transfusion. Leukoreduction of platelets likely reduces the risk of transmission of intracellular white blood cell pathogens, but this case demonstrates risk is not entirely eliminated.

Editorial Note: Successful transfusion-acquired infection traceback investigations require strong partnerships with blood banks, healthcare providers, and public health officials.

Klebsiella pneumoniae — Outbreak of Carbapenem-Resistant Enterobacteriaceae at a Long-Term Acute Care Hospital — Pinellas County

Background: In July 2010, the Florida Department of Health became aware of carbapenem-resistant Enterobacteriaceae (CRE) detected in clinical cultures from long-term acute care hospital (LTACH) A. As a result, the county and state health department and LTACH A developed an infection prevention plan to assess and reduce CRE transmission at the facility.

Methods: Microbiology records at LTACH A from March 2009 to February 2011 were reviewed to identify CRE transmission cases and cases admitted with CRE. CRE bacteremia episodes were identified from March 2009 to July 2011. Biweekly CRE prevalence surveys were conducted from July 2010 to July 2011 and interventions to prevent transmission were implemented, including education and auditing of staff and isolation and cohorting of CRE patients with dedicated nursing staff and shared medical equipment. Trends were evaluated using weighted linear or Poisson regression. CRE transmission cases were included in a case-control study to evaluate risk factors for acquisition. A real-time polymerase chain reaction assay was used to detect the *bla*KPC gene, and pulsed-field gel electrophoresis was performed to assess the genetic relatedness of isolates.

Results: Ninety-nine CRE transmission cases, 16 admission cases (from seven acute care hospitals), and 29 CRE bacteremia episodes were identified. From July 2010 through July 2011, significant reductions were observed in CRE prevalence (49% vs. 8%), percentage of patients screened with newly detected CRE (44% vs. 0%), and CRE bacteremia episodes (2.5 vs. 0.0 per 1,000 patient-days). Cases were more likely to have received β-lactam antibiotics, have diabetes, and require mechanical ventilation. All tested isolates were *Klebsiella pneumoniae* carbapenemase-producing *K. pneumoniae* and nearly all isolates were genetically related.

Conclusion: CRE transmission can be reduced in LTACHs through surveillance testing and targeted interventions. Sustainable reductions within and across healthcare facilities may require a regional public health approach.

Chitnis AS, Caruthers PS, Rao AK, Lamb J, Lurvey R, Beau De Rochars VM, Kitchel B, Cancio M, Török TJ, Guh A, Gould CV, Wise ME. 2012. Outbreak of Carbapenem-Resistant Enterobacteriaceae at a Long-Term Acute Care Hospital: Sustained Reductions in Transmission through Active Surveillance and Targeted Interventions. *Infection Control and Hospital Epidemiology*, 33(10);984-992.

***Klebsiella pneumoniae* — Outbreak of Carbapenem-Resistant *Klebsiella pneumoniae* Infection at a Long-Term Acute Care Hospital — Broward County**
Background: Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) infections have limited treatment options and are associated with increased risk of death. In July 2011, a long-term acute care hospital (LTACH) reported four patients with CRKP to the Broward County Health Department. An investigation was conducted to describe the outbreak and develop recommendations for enhanced infection control.

Methods: Microbiology records from January 2010 to November 2011 were reviewed to identify CRKP cases. CRKP was identified in one of three ways: clinical cultures of ill patients, surveillance cultures of newly admitted patients, and periodic surveillance cultures of all patients without a history of CRKP. Point prevalence surveys were conducted from July 2011 to September 2012. The Bureau of Public Health Laboratories performed pulsed-field gel electrophoresis (PFGE) on available CRKP isolates. The facility implemented interventions to prevent transmission, including education of staff and administration, ensuring appropriate contact isolation procedures, and cohorting of CRKP patients with dedicated nursing staff and medical equipment.

Results: Thirty-two CRKP cases were detected by clinical culture (25) or by inpatient surveillance culture (7) from March 2010 to November 2011. The 25 ill patients' first CRKP-positive cultures occurred during one of two time periods; Period 1, March 2010–November 2010 (n=12), or Period 2, March 2011–November 2011 (n=13). Of these 25 cases, 14 were only identified by retrospective microbiology record review. Positive clinical culture sites included respiratory sites (10), blood (6), urine (5), and other sites (4). PFGE results of CRKP isolates from 15 patients collected during Period 2 indicated that 12 were >97% similar (Group 1); eight of these were indistinguishable. A second group of isolates (Group 2) was indistinguishable from each other and different from Group 1. One isolate, from an admission surveillance culture, was not similar to either group. CRKP prevalence was reduced from 17% in July 2011 to 4.5% in December 2011.
Conclusion: The combination of enhanced laboratory surveillance and infection control interventions was successful in controlling this long-term outbreak of CRKP. It is important that hospital and laboratory staff work together to confirm that carbapenem-resistant Enterobacteriaceae (CRE) are promptly recognized to ensure that appropriate precautions are taken.

Editorial Note: Carbapenems are a class of broad-spectrum β-lactam antibiotics used for treating severe infections caused by gram-positive, gram-negative, and anaerobic bacteria. Because they are more resistant to β-lactamase than other β-lactam antibiotics, carbapenems have been used as a drug of last resort for resistant organisms. However, healthcare-associated spread of carbapenem-resistant organisms is an increasing problem in Florida. CRE incidence and prevalence can be reduced in LTACHs through implementation of targeted infection prevention interventions. As a result of the success of the interventions put in place during the Pinellas County outbreak (above), a similar approach was replicated during the Broward County response resulting in a rapid end to a prolonged outbreak. Point prevalence studies through 2012 have demonstrated prolonged reductions in CRKP within the facility.

***Legionella pneumophila* — An Outbreak of Legionnaires' Disease Linked to an Outside Decorative Fountain — Hillsborough County**
Background: From October 14, 2011 to October 16, 2011, three cases of community-acquired Legionnaires' disease, or legionellosis, were reported to the Hillsborough County Health Department (HCHD). The cases resided in the same retirement community in Plant City, Florida. Epidemiologic and environmental investigations were conducted to identify the source of the outbreak.

Methods: A case was identified by a positive urine antigen for *Legionella pneumophila* serogroup 1 and pneumonia confirmed by chest x-ray. Case interviews, including one proxy, were conducted using the Legionellosis Investigation Worksheet. Information was provided about planned community activities and risk factors were identified after assessment of possible exposures on the property. On October 18, 2011, HCHD staff collected environmental samples from six sites at the retirement community. An independent environmental company hired by the management company also collected 12 environmental samples on November 4, 2011. In addition, HCHD inspected the potable water system and the Hillsborough Environmental Protection Commission inspected the wastewater treatment and reclaimed water systems.

Results: Interviews identified the main clubhouse, the decorative fountain outside the main clubhouse, showers with detachable nozzles, and community-operated sprinklers as the only common exposures among all three cases during the ten days before illness onset. All six environmental samples taken by the HCHD failed to grow *Legionella*. Inspections of the potable water, reclaimed water, and wastewater systems found them to be satisfactory. Of the 12 samples tested through independent environmental testing, only the decorative fountain outside of the main clubhouse was positive for *L. pneumophila* serogroup 1; however, the fountain had been drained prior to collection of this sample, and the sample taken was from rainwater that had since accumulated in the fountain.

Conclusion: The results of the investigation suggested that the outdoor decorative fountain at the main clubhouse was the source of the community outbreak of legionellosis. Warm water and presence of biofilm and algae in the fountain provided ideal environmental conditions for *Legionella* growth. HCHD worked closely with the community management company to ensure that all pools, hot tubs, and drinking water systems are maintained in accordance with Florida Administrative Code.

Editorial Note: Legionella pneumophila *is a common cause of community-acquired pneumonia, with an estimated 8,000 to 18,000 cases in the United States each year.* Legionella *bacteria can be found in low concentrations in the natural environment such as the slime, sediments, or biofilms that exist in lakes, rivers, and streams. Humans have coexisted with Legionella for a very long time. Ironically, the advent of industrial technology has created man-made water systems capable of harboring, growing, and transmitting* Legionella *bacteria via aerosolized pathways to humans. Examples of such systems include warm water found in whirlpool spas, indoor and outdoor decorative fountains, hot water tanks, large plumbing systems, and parts of large air conditioning systems of large buildings such as cooling towers. They do not seem to grow in car or window air conditioners. The infection of human cells by the bacteria is thought to be opportunistic. While* Legionella *pneumophila is the most common species, causing 80-90% of illness in humans, 22 species have been associated with human disease. People who are susceptible become infected with* Legionella *when they breathe in a mist or aerosol that contains the bacteria. For instance, water contaminated with* Legionella *bacteria in a whirlpool spa that is not properly cleaned, disinfected, and maintained could be aerosolized in the form of mist. Person-to-person transmission does not occur.*

***Mycobacterium leprae* — Leprosy in a Man with No International Travel History — Osceola County**

Background: On August 12, 2011, the Osceola County Health Department received a call from a local doctor reporting a suspect case of leprosy in a 46-year-old man who had been seen previously by a dermatologist in October 2010 with a quarter-sized lesion that emerged on his right thigh.

Methods: A biopsy was performed in 2010, but results were negative for acid-fast bacilli. On July 25, 2011, a second biopsy was performed by another doctor due to significant spread of the lesion.

Results: The patient reported no international travel within the past few years and multiple exposures to armadillos and hunting. Numerous acid-fast bacilli were present in the granulomatous inflammatory infiltrate within the dermis from the second biopsy. Results confirmed borderline tuberculoid leprosy. The patient was prescribed dapsone 100mg daily, rifampicin 600mg daily, and clofazimine 50mg daily.

Conclusion: The source of the infection is uncertain. Transmission from armadillos is likely because documented case reports have implicated them as a source of infection in U.S. patients.
Editorial Note: Leprosy, or Hansen's disease, is a chronic disease affecting the skin, peripheral nerves, and upper respiratory tract. The disease, caused by Mycobacterium leprae*, appears to be transmitted primarily through prolonged contact with respiratory droplets from infected people. The incubation period is nine months to 20 years after exposure. Leprosy has been reportable in Florida since 1921. Sixty-seven cases of leprosy were reported to the Florida Department of Health between 2001 and 2010; 17 (25.4%) of these reported no travel. Autochthonous cases of leprosy among native-born Americans have been observed in several southern U.S. states in recent years. Bacterial strains isolated from a number of these patients match* M. leprae *strains isolated from wild nine-banded armadillos (*Dasypus novemcinctus*) collected in the region. The route of transmission is unclear.*

Mycobacterium tuberculosis — A Complex Tuberculosis Investigation in an Assisted Living Facility — Volusia County

Background: In June 2011, the Volusia County Health Department (VCHD) was notified of a 60-year-old white man residing at an assisted living facility (ALF) with laboratory-confirmed tuberculosis (TB). The man was hospitalized and left the hospital against medical advice, after which it was recommended the man be admitted to A.G. Holley State Hospital (AGH). The conventional contact investigation approach was challenging due to the medical and social characteristics of the residents at the ALF.

Methods: On June 23, 2011, the VCHD conducted an active TB case-finding activity at the ALF. Ninety-four ALF residents and staff were screened for active TB disease and latent TB infection (LTBI). Screening was conducted on-site at the ALF and included nursing assessment, interferon gamma release assay (IGRA) testing, chest x-ray (CXR) imaging, and sputum specimen collection. The Bureau of Public Health Laboratories performed smears to detect acid-fast bacilli, mycobacterium direct tests (MTD), and cultures on sputum specimens. An AGH physician reviewed CXR images in real-time online.

Results: Two suspected cases of TB were detected among residents, one of whom was sent to a local hospital for isolation, although TB infection was not confirmed after further evaluation and testing. Eight (8.5%) of the 94 IGRA tests were positive; 90 were repeated. Four people with LTBI were identified and completed preventative therapy. Thirty-eight sputum specimens were collected, all of which were negative for acid-fast bacilli, MTD negative, and culture negative.

Conclusions: The excellent collaborative efforts of all participants in the TB system of care resulted in rapid case detection, efficient contact evaluation, and prevention of further TB transmission in the facility and the community.

Rickettsia typhi — Imported Flea Rickettsiosis in a Resident with Travel to Texas — Hillsborough County

The Hillsborough County Health Department investigated a suspected case of flea rickettsiosis in a 17-year-old woman with a history of travel to Texas. The patient adopted a stray kitten while in Corpus Christie, TX, and then spent 10 days traveling in a car with the kitten and two friends, arriving back in Florida around April 1. The day after returning, the patient developed a febrile illness of 28 days duration, swelling of the left side of the neck, generalized rash, and had elevated liver enzymes. Diagnosis was fever of unknown etiology. Fever resolved in May but the patient continued to report malaise. On June 21, the patient presented to the hospital with symptoms of headache, fever, and stiff neck and was diagnosed with aseptic meningitis. Symptoms resolved until June 28 when the patient had episodes of slurred speech, loss of sensation in one hand, unfocused stare, vomiting, photophobia, diarrhea, and confusion. Serum samples collected on June 29 were strongly positive for *Rickettsia typhi* antibody. The patient made a full recovery following treatment with doxycycline. The patient's fellow travelers also reported febrile illness following the car trip. One, a 25-year-old man, became ill on April 16; a serum sample collected July 6 tested positive for *R. typhi* antibody. No serum samples were available from the other traveler.

*Editorial Note: Southern Texas is endemic for both murine typhus (*R. typhi*) and cat flea rickettsiosis (*R. felis*). The cat flea,* Ctenocephalides felis*, is a vector for both agents, and antibodies for* R. felis *strongly cross-react on R. typhi serologic assays. Flea rickettsiosis is typically a self-limited illness with fever, headache, and rash of less than two weeks duration. Meningoencephalitis is uncommon. Chronic infection with* R. typhi *or* R. felis *is unusual. Veterinary-approved flea treatment for pets can help prevent flea rickettsiosis and other flea associated illnesses.*

***Streptococcus* species — Outbreak of Streptococcal Endophthalmitis Associated with Intravitreal Injection of Bevacizumab — Miami-Dade and Broward Counties**

Background: Bacterial endophthalmitis is a rare but serious complication following intravitreal bevacizumab injection. On July 11, 2011, Miami-Dade County Health Department was notified of six cases of streptococcal endophthalmitis treated at an ophthalmology referral center during the previous two days. All patients had received intravitreal bevacizumab injections one to two days previously.

Methods: A case of bevacizumab-associated endophthalmitis was defined as a clinically-compatible illness following intravitreal bevacizumab injection with illness onset from June 1 to July 15 in a resident of Miami-Dade or Broward counties. Cases were solicited using county and statewide health advisories. Medical records from patients receiving intravitreal injections at three affected practices were reviewed to determine medication type and source, and patient outcome. The Centers for Disease Control and Prevention performed multilocus sequence typing to speciate streptococcal isolates.

Results: Twelve cases of bevacizumab-associated endophthalmitis were identified. Ages ranged from 68 to 89 years old with a mean age of 78.5 years. Outcomes were poor. All but one case had worse visual acuity and seven (58.3%) required eye removal. Cases were injected over a 4-day period, from July 5 to July 8, by four different ophthalmologists at four clinics. Four batches of prefilled bevacizumab syringes prepared by one compounding pharmacy over a 4-week period were associated with cases. There were no cases among patients receiving bevacizumab from other sources ($p<0.0001$). Vitreous from 10 cases and 12 unused syringes yielded four streptococcal species (nine strains); two strains were common to cases and syringes. Pharmacy records review and inspection identified numerous deficiencies in sterile compounding practices at the preparation pharmacy.

Conclusions: This outbreak was caused by contamination of bevacizumab syringes during preparation (repackaging) at a compounding pharmacy. Multiple errors in sterile compounding practices at the pharmacy could have contributed to product contamination.

Editorial Note: Age-related macular degeneration (AMD) is a leading cause of blindness in the U.S. and worldwide. Bevacizumab is a U.S. Food and Drug Administration (FDA) approved drug used off-label (since 2005) by ophthalmologists to treat patients with AMD and other eye conditions associated with neovascularization. A related medication, ranibizumab, is FDA approved (2006) for treatment of AMD, but costs about 40 times more than bevacizumab. Both drugs represent a major advancement in treatment of AMD and use of both has increased rapidly. The reported incidence of endophthalmitis after intravitreal injection is 0.02%–0.05%.

*The severity of illness in this outbreak was typical for endophthalmitis caused by streptococci. There is a poor prognosis even when treatment is initiated promptly as occurred in this outbreak. The species of streptococci (*S. infantis, S. oralis, S. sanguinis*, and* S. salivarius*) recovered from patients and unused syringes are typically part of normal mouth flora. Aerosols containing mouth flora could have been generated in the production area if, for example, personnel did not wear face masks consistently or spoke while syringes*

were being prepared. Mouth flora could have been introduced into sterile bevacizumab vials if the device used to access vials was removed and reinserted or replaced. Once contaminated, there were insufficient safeguards to detect and discard contaminated syringes before distribution to physician offices.
In recent years, many outbreaks in Florida and elsewhere have been linked to inappropriate use of medications labeled as "single dose" or "single use." These vials typically lack antimicrobial preservatives and can be a source of infection if use is not limited to a single patient and for a single injection or procedure. When necessary because of drug shortage (or high drug cost in the case of bevacizumab) single use vials can be "repackaged" by qualified healthcare personnel in accordance with United States Pharmacopeia General Chapter 797, Pharmaceutical Compounding — Sterile Preparations. Unfortunately, this outbreak was caused by of lack of adherence to these quality assurance standards by the implicated compounding pharmacy. Increasing clinical use of bevacizumab and related drugs may lead to increased use of compounding pharmacies and this increased reliance may result in outbreaks like the one described here. Additional information about how to safely repackage bevacizumab is provided in the reference cited below.

Lim LS, Mitchell P, Seddon JM, Holz FG, Wong TY. 2012. Age-Related Macular Degeneration. *Lancet*, 379 (9827);1728-1738.

Vibrio cholerae — Domestic Cholera Transmission from Conch Imported from Haiti — Collier County
Cholera cases identified by the Florida Department of Health following confirmation of the outbreak in Hispaniola in October 2010 have predominantly been associated with a recent history of travel. On January 21, 2011, the Collier County Health Department was notified by a local hospital that a member of their staff had tested positive for *Vibrio cholerae.* Interview identified no history of travel or known contact with a cholera case; however, two asymptomatic family members had recently returned from a trip to Haiti. On January 11, one of these travelers bought conch from a vendor in Haiti and transported leftover baked conch into Florida using a carry-on cooler with ice. On January 12, the patient consumed the baked conch after reheating in the microwave; onset of symptoms was three days later. Further testing by the Bureau of Public Health Laboratories and the Centers for Disease Control and Prevention confirmed that this case was positive for toxigenic *V. cholerae* O1, making this the first instance of domestic cholera transmission associated with the outbreak in Hispaniola. Isolated cases of cholera related to imported food have been associated with travelers to countries with epidemic cholera. If cholera is suspected in the absence of a history of travel, the collection of a food history should include questions specific for imported food items. The transport of perishable souvenir seafood from countries with epidemic cholera should be discouraged.

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

Vibrio cholerae O75 — Toxin-Producing _Vibrio cholerae_ O75 Outbreak — Multistate, Escambia and Nassau Counties
Background: Non-O1/non-O139 *Vibrio cholerae* strains have been associated with sporadic cases of gastroenteritis. On April 15, 2011, the Escambia County Health Department (ECHD) notified the Florida Department of Health Food and Waterborne Disease Program (FWDP) of a possible case of *Vibrio cholerae* non-O1/non-O139 in a man who developed cramps, fever, watery diarrhea, and nausea on April 12. The case had consumed raw oysters at a restaurant on April 6. On April 18, the Nassau County Health Department (NCHD) reported two cases of gastrointestinal illness after consumption of steamed shell stock oysters on April 10. On April 19, the FWDP was notified of a Louisiana resident who had consumed raw oysters in Okaloosa County on April 7 and was diagnosed with *V. cholerae* non-O1/non-O139.

Methods: ECHD began investigating their case and forwarded the *V. cholerae* specimen to the Bureau of Public Health Laboratories for typing and toxin testing. NCHD collected stool specimens from ill people for analysis and began investigating the source of the oysters. The FWDP began working with the Florida

Department of Agriculture and Consumer Services (DOACS), the agency with regulatory oversight of the oyster industry, and posted EpiCom and Epi-X messages to find additional cases.
Results: Laboratory results yielded *V. cholerae* O75. Ten cases (eight confirmed, one probable, and one suspect) were identified in this outbreak. Seven were Florida residents, the three other cases were from Indiana, Georgia, and Louisiana. Cases ranged in age from 22 to 74; six of the 10 cases were men. Cases reported symptoms of nausea (7), vomiting (4), diarrhea (9), chills (8), cramps (1), and fever (1). None required hospitalization. The oysters had been harvested in the same area, Apalachicola Bay 1642. The harvest area was closed on April 30 and dealers and retailers were asked to recall any implicated product still in commerce. The harvest area was reopened on May 11 after oysters from the area tested negative through the Food and Drug Administration laboratory in Dauphin Island, Louisiana.

Conclusion: This was the first recorded outbreak of *V. cholerae* O75 associated with oyster consumption. In response to this outbreak, DOACS continues to monitor the harvesting environment and investigate factors that may have promoted the growth of this pathogen.

Parasitic Diseases

***Cyclospora cayetanensis* — Confirmed *Cyclospora* Outbreak Linked to a Restaurant — Collier County**
Background: On July 29, 2011, the Collier County Health Department (CCHD) and the Florida Department of Health Food and Waterborne Disease Program (FWDP) began investigating three cases of cyclosporiasis that were linked to a restaurant.

Methods: CCHD interviewed other patrons of the restaurant and posted an EpiCom message alerting other counties of the potential exposure. The FWDP conducted a joint environmental assessment of the restaurant with the Florida Department of Business and Professional Regulation.

Results: Thirteen people were interviewed and 12 met the case definition. Cases ranged from 18 to 64 years old; the median age was 51 years, and 66.7% of the cases were women. Duration of symptoms ranged from 5 to 29 days with a median of 15 days. Three cases sought medical care; none were hospitalized. From the patient interviews and the joint environmental assessment, cilantro and onions were identified as common ingredients used in all food dishes prepared at the restaurant. Traceback of the cilantro and onions was not completed because the restaurant did not have the necessary invoices and receipts.

Conclusion: This outbreak of cyclosporiasis was associated with dining at a restaurant in Collier County and was likely caused by contaminated onions or cilantro.

Editorial Note: Cyclosporiasis is an intestinal illness caused by the microscopic parasite Cyclospora cayetanensis. People can become infected with Cyclospora by consuming food or water contaminated with the human parasite. Symptoms of cyclosporiasis begin an average of seven days after ingestion of the parasite. Symptoms may include watery diarrhea, nausea, loss of appetite, abdominal pain, fatigue, and weight loss. Previous outbreaks of cyclosporiasis have been associated with various types of imported fresh produce. Future recommendations are to have restaurants store receipts and invoices for products that they receive in a systematic way to aid in the potential traceback of a contaminated product. The parasite is killed by cooking. Human-to-human transmission is unlikely since Cyclospora *parasites shed in human stool require a few days to weeks in the environment before becoming infectious.*

***Naegleria fowleri* — Primary Amebic Meningoencephalitis — Brevard County**
Background: On Wednesday, August 10, 2011, the Brevard County Health Department (BCHD) epidemiology department was notified of a possible case of bacterial meningitis in a 16-year-old woman.

Methods: BCHD conducted an epidemiologic investigation of the case and the hospital collected cerebrospinal fluid (CSF) from the woman for laboratory testing.

Results: Motile amebas were found in CSF samples taken from the patient on August 10. On August 15, the Centers for Disease Control and Prevention confirmed the presence of *Naegleria fowleri* by culture and polymerase chain reaction. The woman expired on August 13. The investigation identified that the woman swam (including diving) in a body of freshwater on August 3 and 4 with four other people. The body of freshwater is adjacent to man-made canals on a tributary of a river that is very slow moving. The specific area of exposure was slow moving and stagnant in some places and the water temperature on August 12 was 88°F and air temperature was 99°F.

Conclusion: On August 12, 2011, a health advisory was issued by the BCHD warning of the presence of amebas in bodies of freshwater and the precautions to take when swimming in such waters. This release was also posted on the BCHD website.

Editorial Note: Primary amebic meningoencephalitis (PAM) is an infection caused by N. fowleri*. Initial signs and symptoms of PAM start 1 to 14 days after exposure. Symptoms include headache, fever, nausea, vomiting, and stiff neck.* N. fowleri *is found worldwide. Most commonly, the ameba is found in warm bodies of freshwater, such as lakes and rivers; geothermal water, such as hot springs; warm water discharge from industrial plants; poorly maintained and minimally-chlorinated swimming pools; and soil. Although* Naegleria *is commonly found in the environment, infections rarely occur. PAM has only been reportable in Florida since 2008, however 33 infections were documented from 1962 to 2011.*

Sarcoptes scabiei — Scabies in a Skilled Nursing Facility — Seminole County

Background: An outbreak investigation of scabies in a skilled nursing facility (SNF) in Seminole County was conducted by the Seminole County Health Department (SCHD) epidemiology staff. A case was defined as any resident or staff with a clinical diagnosis of scabies.

Methods: The facility enhanced its rash illness surveillance of residents and staff. SCHD reviewed control measures with their Director of Nursing, including guidelines from the Centers for Disease Control and Prevention.

Results: Twelve cases were identified, which included one resident (1.0% of facility residents) and 11 staff members (6.2% of facility staff). The onset date for the resident was August 8; onset dates for staff ranged from August 12 to August 15. The resident case, a 100-year-old woman, had a microscopically-confirmed infection. The patient had dementia and was not ambulatory. Scabies-like illness among staff was clinically diagnosed. The affected resident lived on the second floor of the facility, while the majority of the staff cases worked only on the first floor. Prophylactic treatment was recommended and implemented for all residents and staff in the facility.

Conclusion: Prompt recognition and treatment of scabies in SNF residents and staff is essential to control transmission. No additional cases were identified.

Editorial Note: Scabies is a contagious parasitic dermatosis caused by an infestation of the skin by the human scabies mite, Sarcoptes scabiei var. hominis*. Individual cases of scabies are not reportable to the Florida Department of Health, although outbreaks of this or any other disease are reportable. Symptoms of scabies develop two to six weeks after initial infestation, and one to three days following re-infestation. Classic scabies manifests as generalized intensive pruritus (i.e. severe itching) with nocturnal predominance. Lesions appear as burrows or tiny raised and crooked grayish-white or skin-colored lines on the skin surface, often on the hands, wrists, elbows, genitalia, axillae, umbilicus, buttocks, and nipples. During suspected* *scabies outbreaks, it is beneficial to get microscopic confirmation of the diagnosis in a few affected people, including staff and residents. It is not uncommon for staff to feel itchy after scabies has been detected among SNF residents. Simultaneous prophylactic treatment of exposed people is one of the most effective interventions in response to scabies cases in institutional settings. Unfortunately, facilities may be hesitant to provide prophylactic treatment due to the expense. It is not uncommon for outbreaks to persist for several weeks when prophylaxis is incomplete.*

Viral Diseases

Adenovirus — Viral Conjunctivitis Linked to an Ophthalmic Care Center — Osceola County
Background: On January 7, 2011, the Osceola County Health Department (OsCHD) was contacted by a person diagnosed with viral conjunctivitis by a local ophthalmologist who suspected that the source of the infection was a local optical facility.

Methods: OsCHD queried local syndromic surveillance data and compiled a list of additional people presenting to hospital emergency departments with complaints related to eye infections. Hospitals were then contacted for additional information on these patients and the OsCHD contacted each patient to gather additional information. An inspection of the optical facility was conducted and infection control measures were assessed. Two specimens were obtained from two patients and sent to the Bureau of Public Health Laboratories.

Results: Six additional patients reported associations with the same optical facility before their eye infections developed for a total of seven identified cases. Onset dates ranged from December 17, 2010 to January 24, 2011. The optical facility had two locations; four patients were seen at one location and three patients were seen at the other. The majority of cases reported symptoms primarily affecting the left eye following eye examinations at the optical facility. Five (71.4%) patients were seen for an eyeglasses examination and the remaining two (28.6%) had a contact lens exam. Duration of symptoms was between 14 and 33 days. No eye infections were reported among facility employees. Both patient specimens collected tested positive for adenovirus by polymerase chain reaction.

Conclusion: Antibiotics or antibacterial eye drops were given to most patients to help alleviate symptoms. Ongoing surveillance for additional cases was recommended and the 2009 American Academy of Ophthalmology Infection Prevention in Eye Care Services and Operating Areas guidelines were provided to the facility. The exposure source remains unknown.

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Dengue Virus — Locally-Acquired Dengue Cases — Hillsborough, Martin, Miami-Dade, and Palm Beach Counties
Background: From 2009 to 2010, an outbreak of locally-acquired dengue fever with 93 cases occurred in Key West, Florida, after more than 60 years with no local dengue transmission detected in the state. Subsequent

enhanced surveillance identified at least six additional dengue virus introductions in 2011. Epidemiologic, ecologic, and laboratory findings from these introductions and associated prevention efforts are discussed.

Methods: Data were collected by the Florida Department of Health (FDOH) Vectorborne Disease Surveillance Program from county health departments and local mosquito control programs. Laboratory testing was performed at FDOH Bureau of Public Health Laboratories.

Results: Introductions occurred in four of Florida's 67 counties: Hillsborough (1), Martin (1), Miami-Dade (3 or 4), and Palm Beach (2). Two cases in Miami-Dade County may have been linked or individual introductions. In all other instances, virus typing and epidemiological data confirmed that cases were isolated. In two instances, autochthonous infections followed international travel by another household member. Imported dengue infections in Florida are commonly identified in Hillsborough, Miami-Dade, and Palm Beach counties, but not in Martin County. The outbreak area in Miami-Dade County included a popular domestic and international tourist destination. Likely sites of exposure include the residence (4 or 5), outdoor occupation (1), and socializing outside a popular restaurant (1). *Aedes albopictus* was believed to be the primary vector in Martin County and for at least one of the Palm Beach County introductions. *Aedes aegypti* appeared to be the most likely vector in the other introductions.

Conclusions: Prevention efforts targeting travelers and international ports of exit and entry are needed. Emphasis should also be placed on using prevention practices when travelers become sick after returning home. Outreach is particularly important in counties with high numbers of imported dengue infections or that have robust populations of *A. aegypti*.

Editorial Note: Local dengue transmission with limited sustained transmission has likely gone undetected in the past. Factors required for sustained transmission as occurred in Monroe County are complex and could occur in future Florida introductions.

Hepatitis B Virus — Perinatal Hepatitis B Case — Hillsborough County

On December 10, 2010, the Hillsborough County Health Department (HCHD) Epidemiology Program received a positive hepatitis B surface antigen (HBsAg) electronic laboratory result for a 1-year-old girl. The infant, born September 2009, was already enrolled in the Perinatal Hepatitis B Prevention Program due to the mother's positive HBsAg status documented during her pregnancy. The mother was born in Thailand, where the prevalence of hepatitis is very high. The infant received hepatitis B immune globulin prophylaxis and the first and second dose of hepatitis B vaccine on schedule. The infant received the third dose of vaccine at nine months of age instead of the recommended six months of age for at-risk infants, potentially leaving the child susceptible to hepatitis B infection. At fourteen months of age, the pediatrician tested only for hepatitis B surface antibody, which was detected. HCHD recommended that the pediatrician also test for hepatitis B virus (HBV) viral load and HBsAg. Upon report of the positive HBsAg, the mother was contacted and advised to retest and follow-up with a specialist. In January 2011, the infant was seen by a pediatric infectious disease specialist and again tested positive for HBsAg and hepatitis B viral DNA. At this time, the mother refused all follow-up care, stating that everyone in her family had hepatitis B and they had remained healthy.

Editorial Note: As a result of routine HBV screening of pregnant women and the availability of effective immunoprophylaxis, perinatal transmission of HBV is rare in Florida. The last perinatal hepatitis B case was reported in 2008. This case illustrates the importance of following recommended hepatitis B vaccination and testing guidelines for at-risk infants. hepatitis B vaccine and hepatitis B immunoglobulin administered within 12 to 24 hours after birth, followed by completion of the three dose vaccine series at 0, 1 to 2, and 6 months, has been shown to be 89-98% effective in preventing acute and chronic HBV infection in infants born to women who are positive for HBsAg. Hepatitis B is endemic in China and other parts of Asia as well as in the Amazon and southern parts of eastern and central Europe. Sensitivity to cultural attitudes could increase the likelihood that people infected with HBV receive appropriate follow-up and medical management.

Measles Virus — Confirmed Measles Case Acquired in India — Alachua County
Background: On Friday April 8, 2011, the Alachua County Health Department (ACHD) received notification of a mother presenting at an ACHD clinic and reporting measles in her 12-year-old son.

Methods: The child received a medical evaluation. Blood, urine, and throat specimens were collected and sent to the Bureau of Public Health Laboratories. ACHD contacted the mother for additional information and she was advised to isolate her son until further information was received. A notification was distributed to local healthcare providers as well as school and religious sector contacts. Surveillance for rash illness was enhanced.

Results: Three measles cases were identified. The 12-year-old boy visited India along with his mother, 16-year-old sister, and a friend (14-year-old girl) from November 10, 2010 to March 31, 2011. The 16-year-old sister was diagnosed with measles while in India; her rash onset was on March 23. The 12-year-old boy's rash onset was April 4. Serologic testing for the 12-year-old boy was positive for measles IgM on April 11 and measles-virus-specific nucleic acid was detected by polymerase chain reaction on April 12. Following laboratory confirmation, it was reported that the 14-year-old friend also had illness compatible with measles; her rash onset was on April 5. All three cases were unvaccinated due to religious beliefs but all parents reported previous vaccinations.

Conclusions: No additional cases among close contacts associated with the trip to India were identified.

Measles Virus — Measles Transmission at an International Trade Show — Multistate, Orange County
Background: On March 24, 2011, Minnesota reported a laboratory-confirmed case of measles (rash onset March 21) in a 34-year-old who was likely exposed during a March 1 to March 10 business trip to Orlando, Florida. From March 1 to March 8, he set up and worked at a booth at an international aviation trade show that featured more than 600 exhibitors and had more than 17,000 attendees.

Methods: To identify additional cases associated with the trade show, the Orange County Health Department (OCHD) posted an alert on EpiCom, notified community healthcare providers, and worked with trade show organizers. OCHD and state partners enhanced emergency department syndromic surveillance through the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) for rash illness, notified national public health partners, and developed a questionnaire to collect detailed information about Orlando activities during the exposure period.

Results: Five cases of laboratory-confirmed measles were reported among attendees; four had a professional affiliation with a common exhibitor and the fifth was an infant of an unaffected adult. Cases resided in Michigan (1), Minnesota (1), and Texas (3). Adults were 28, 34, 37, and 49 years old; the infant was 11 months old. Two adult cases reported receiving one dose of measles-containing vaccine as children, two adults were unvaccinated, and vaccination status of the infant was unknown. Fever onset ranged from March 12 to March 19 and rash onset ranged from March 18 to March 23. The infected people attended the trade show between March 1 and March 8, but there was no single date or event when all were in attendance. Infected people stayed at different hotels and no common activities except for the trade show were identified among cases. At least 20 other people from the U.S., France, and Germany were affiliated with the same exhibitor; none were reported ill. Laboratory testing at the Centers for Disease Control and Prevention of one case isolate identified measles virus genotype D4, a strain in wide circulation in Europe. A sixth case (rash onset April 1) was exposed in Texas when the spouse returned from the trade show. No additional measles cases were identified among the 1,946 registered attendees from Florida or in the community at large.

Conclusions: These five cases acquired measles at the trade show over several days, most likely in the vicinity of their booth, and subsequently became ill in their home states. The source of the outbreak was not determined, but the D4 genotype suggests importation from Europe, possibly from a visitor or exhibitor at the trade show. Measles outbreaks were widespread in Europe in 2011, with the greatest number of cases occurring among unvaccinated children and young adults. Lack of transmission to Florida attendees likely reflects higher measles vaccination rates in the U.S.

Editorial Note: This outbreak highlights the ongoing and underappreciated burden of measles importation into Florida. None of the five cases exposed at the trade show are included as measles cases in the 2011 Florida Morbidity Statistics Report because their official residences are outside of the state. Nevertheless, OCHD led, in cooperation with state and federal officials, a complex, time consuming and costly response effort to limit the possible spread of measles in Orange County and statewide. Endemic transmission of measles ended in the U.S. in the late 1990s, but as a major tourist destination, Florida will always remain a destination for measles until measles is eradicated worldwide. Healthcare providers should suspect measles in people with febrile rash illness and clinically compatible signs and symptoms who have traveled abroad or who have had contact with travelers. Providers should isolate suspected measles cases immediately, report to their local county health department, and obtain appropriate specimens for measles testing.

Centers for Disease Control and Prevention. Measles — United States, 2011. 2012. *Morbidity and Mortality Weekly Report*, 61(15);253-257.

Norovirus — Foodborne Norovirus Outbreak at a Family Restaurant March 2011 — Hernando County
Background: On March 11, 2011, the Florida Department of Business and Professional Regulation (DBPR) and the Hernando County Health Department (HeCHD) received numerous calls from people who had dined at the same restaurant in Hernando County during a six-day period from March 6 to March 11, 2011. Initial reports indicated the patrons had developed gastrointestinal symptoms approximately 30 hours after dining at the restaurant.

Methods: HeCHD and the Florida Department of Health Food and Waterborne Disease Program (FWDP) developed a questionnaire to assess food exposure and symptoms. A case was defined as anyone who visited and consumed food items served at the restaurant between March 6 and March 11 and reported diarrhea or vomiting and an additional gastrointestinal symptom. Four stool specimens were collected and analyzed by the Bureau of Public Health Laboratories. A joint environmental assessment of the restaurant was conducted by DBPR and FWDP.

Results: Seventy-eight ill people met the case definition. Onset of symptoms ranged from seven to 48 hours after the consumed meal with a mean of 27.5 hours. Predominate symptoms included vomiting (83%), nausea (77%), diarrhea (76%), abdominal pains (65%), chills (60%) and fever (30%). Four stool specimens were positive for norovirus genotype II. A case-control study identified iceberg lettuce as statistically significant with an odds ratio of 3.31 and a 95% confidence interval of 1.25 to 11.91. The environmental assessment identified a norovirus-positive food handler with vomiting on March 6. The implicated food handler’s primary responsibility was to prepare food items for the salad bar.

Conclusion: This was a classic foodborne norovirus outbreak associated with fresh produce handled by an ill food worker.

Editorial Note: Although transmission of norovirus can be limited by good hand hygiene, people who become sick with vomiting or diarrhea should refrain from preparing food for others until two to three days after symptoms have resolved. Food handlers should inform managers if they have symptoms of norovirus and adequate sick leave should be permitted for the food handler to ensure they do not spread the illness to others.

Norovirus — Norovirus Outbreak Associated With Swimming in a Recreational Spring-Fed Lake — Glades County

Background: On Monday, April 25, 2011, the Glades County Health Department (GCHD) received calls from several groups of concerned citizens because some people from their groups had become ill with symptoms of diarrhea and vomiting after camping in a local campground over the Easter holiday weekend. Preliminary interviews with these different groups did not identify any food items in common or other interaction between groups.

Methods: GCHD and the Florida Department of Health Food and Waterborne Disease Program developed a questionnaire to assess water exposure and symptoms. A case was defined as a person who visited the campground between April 21 and April 24, 2011 and became ill with vomiting or diarrhea (defined as three or more loose stools within 24 hours) within 72 hours. Two stool specimens were collected and analyzed by the Bureau of Public Health Laboratories. GCHD interviewed 78 people as part of a case-control study and an environmental assessment of the campground was conducted. Water samples from the swimming area were collected and the swim area was temporarily closed.

Results: Twenty-nine (37.2%) people met the case definition. Seventeen (58.6%) of the cases were men, ages ranged from 8 months to 43 years old with a median of 12 years. The incubation period ranged from 24 to 72 hours. Two people reported having gastrointestinal symptoms in the two weeks prior to visiting the campground. An incident of someone vomiting in the water was reported and one person reported having diarrhea prior to swimming. None of the cases were hospitalized and three (10.3%) sought medical care. The case-control study identified swimming as a statistically significant risk factor with an odds ratio of 20.7, a 95% confidence interval of 2.60 to 165.49, and p-value of 0.0001. One stool specimen was positive for norovirus genogroup II. Swimming area water samples were satisfactory for total enterococci levels and the swim area was reopened.

Conclusion: This outbreak was most likely caused by norovirus associated with swimming in a lake at a campground. Reports of people swimming while ill suggest that they may have contaminated the swimming area.

Editorial Note: Norovirus is a highly contagious pathogen with a very low infectious dose, estimated to be between 10 and 100 viral particles. Transmitted primarily through the fecal-oral route, norovirus particles may be spread through direct contact or through consuming fecally-contaminated food or water. People should refrain from swimming for at least two weeks after the cessation of a diarrheal illness, avoid getting water in their mouths while swimming, and practice good hygiene to reduce the possibility of developing or transmitting a recreational water illness.

Varicella-Zoster Virus — Varicella in a Daycare Infant Room — Seminole County

Background: On February 24, 2011, a local daycare director reported a clinically diagnosed case of varicella in an 8-month-old boy to the Seminole County Health Department (SCHD). By March 9, six additional cases were reported.

Methods: The SCHD initiated an investigation to gather additional information. Ill cases were excluded from the daycare, and parents were informed about the cases and were provided educational and preventative information. The SCHD conducted active surveillance for an additional two weeks following the last reported case.

Results: A total of eight cases were identified. Seven cases were among infant attendees and one case was in an adult employee. Disease onset for the initial case was February 13 with subsequent case onsets ranging from February 27 to March 6. All cases were clinically diagnosed without any laboratory confirmation.

The outbreak occurred in one of two infant rooms at the daycare facility. The attack rate was 64% among infants in this room.

Conclusion: All attendees in the affected infant room were less than 12 months old, too young to receive the varicella vaccine; however, they did not intermingle with the general student body or aftercare program. The vaccination status of the adult case is unknown. All other employees assigned to the infant room were vaccinated.

Editorial Note: Rapid case identification and public health action are important to prevent varicella infection of susceptible people. Although varicella vaccination coverage has increased and disease incidence has declined, outbreaks continue to occur. Elementary schools are now the most common sites for varicella outbreaks, although they are also commonly identified in daycare settings and in middle and high schools.

West Nile Virus — A Review of the West Nile Virus Disease Outbreak — Duval County
Background: In 2011, Duval County had a resurgence of West Nile virus (WNV) activity and reported the highest number of WNV illness cases in Florida. Twenty locally-acquired WNV infections with onsets ranging from June 23 to October 4, 2011 were identified and three additional asymptomatic blood donors were identified via routine screening.

Methods: Data were collected on cases reported to the Duval County Health Department (DCHD) and included demographics, laboratory information, medical history, and risk factors for infection. Cases were classified using the Florida surveillance case definition for WNV illness. Rates were calculated overall and stratified by age, ZIP code, smoking status, and homelessness using Florida census data for population estimates, Behavioral Risk Factor Surveillance System data for smoking rates, and the University of North Florida Homeless Report.

Results: Sixteen (80.0%) cases had neuroinvasive illness and four (20.0%) had WNV fever. Two neuroinvasive illnesses were fatal. Ages ranged from 38 to 85 years old with a median age of 55 years. Reported risk factors for exposure included smoking (55.0%), spending time outdoors (75.0%), and being homeless (20.0%). Eleven cases (55.0%) had pre-existing medical conditions. Twelve cases (60.0%) and three asymptomatic blood donors resided within two ZIP codes; the rate in these two ZIP codes (17.9 cases per 100,000 population) was higher than for the remainder of Duval County (1.3 cases per 100,000 population). The rate for adult smokers in this area (6.8 cases per 100,000 population) was higher than that for adult non-smokers in Duval County (1.3 cases per 100,000 population). The rate in the homeless population in Duval County was 97.4 cases per 100,000 population.

Conclusion: WNV disease outbreaks can occur in intense focal clusters as in this event. The risk factors associated with this outbreak mirror those seen nationally. Sentinel chicken surveillance did not predict the outbreak. Flock locations were adjusted to improve future surveillance efforts.

Editorial Note: It is important to engage healthcare providers, mosquito control, advocacy groups for vulnerable populations such as the homeless, and the public in the response to arboviral disease outbreaks. Immediately after the 2011 WNV disease outbreak began, the Duval County Health Department, in collaboration with the City of Jacksonville's Mosquito Control Division, focused their control efforts in targeted ZIP codes. The response included enhanced mosquito light trap and sentinel chicken surveillance, property inspections, source reduction, biological and chemical control, and community education. Aggressive outreach to healthcare providers was conducted via advisories to the medical community and participation in medical rounds to ensure reporting of arbovirus cases. The homeless coalition was also engaged to help provide insect repellants for the homeless population.

Non-Infectious Agents

Carbon Monoxide — Vehicle-Related Carbon Monoxide Poisoning Cluster — Hillsborough County
Background: On June 13, 2011, eight adults had a party in an apartment residence and left their car running in the garage overnight. When they woke up at noon the following day, they did not feel well. They called 911 and helped each other out of the apartment.

Methods: The Hillsborough County Health Department conducted an investigation which included hospital record reviews and patient interviews. All cases were classified based on the Florida surveillance case definition for carbon monoxide (CO) poisoning. Environmental testing of the apartment was performed by a hazmat team. Environmental levels of CO were assessed using an MSA Altair device.

Results: The eight affected people were men ranging from 22 to 52 years old. Following the exposure, they experienced headache, fatigue, dizziness, confusion, vomiting, and weakness. Seven of eight cases visited the hospital following the incident. All recovered from their illness. Environmental testing detected CO levels of 60 parts per million (ppm) in the apartment. Based on U.S. Environmental Protection Agency (EPA) estimates, average CO levels in homes without gas stoves vary from 0.5 to 5 ppm. Levels near properly adjusted gas stoves are often 5 to 15 ppm and those near poorly adjusted stoves may be 30 ppm or higher. All eight people at the party were classified as confirmed cases of CO poisoning.

Conclusion: Eight cases of CO poisoning were identified due to exposure to car exhaust. All cases were Asian and seven only communicated in Mandarin, making communication and follow-up challenging.

Editorial Note: CO is an invisible, odorless, tasteless gas, and is highly poisonous. Vehicle-related CO poisonings and deaths were observed throughout 2011. Reported cases increase slightly in summer months, highlighting the importance of prevention messaging at the beginning of the summer. Data collected from Florida cases indicate that people rely on their automobile air conditioning and stay inside the car or run the car inside the garage during hot weather.

Ciguatoxin — Ciguatera Outbreak Associated with Commercially Purchased Amberjack — St. Lucie County
On August 25, 2011, the St. Lucie County Health Department was notified of a possible ciguatera outbreak involving three people. The cases became ill after consuming smoked amberjack on August 14. Initial symptoms included vomiting, diarrhea, abdominal pain, and nausea within 5.5 to 10 hours of consumption and were soon followed by temperature reversal, pain in teeth and body joints, breathing difficulties, headache, rash, and itching. Two cases visited healthcare providers (one primary care and one emergency department physician), but neither was able to diagnose their illnesses. The third case visited his dentist as he thought he had a dental problem. After interviewing the cases, it was determined that these people had ciguatera fish poisoning based on their symptoms and type of fish consumed. The smoked amberjack was purchased at a local seafood market. The Florida Department of Agriculture and Consumer Services was notified and a joint investigation was conducted. A sample of the amberjack obtained from one of the cases tested positive for ciguatoxin at the U.S. Food and Drug Administration Gulf Coast Seafood Laboratory in Dauphin Island, Alabama. The environmental health assessment of the seafood market established that the amberjack was caught by a commercial fisherman in approved Florida Atlantic waters. The amberjack was filleted and processed by the market and some of it was sent to a local meat smoking facility where it was smoked and returned to the seafood market.

Editorial Note: In 2011, 48 ciguatera fish poisoning cases were reported to the Bureau of Epidemiology. Of the 20 cases who acquired their illness outside the U.S., 11 (55.0%) consumed fish from the Bahamas, two (10.0%) reported eating fish from Cuba and one (5.0%) ate fish from St. Thomas, USVI. The source of the *fish consumed by the remaining seven cases was not known. Starting in 2006, an overall increase in the incidence of ciguatera cases was observed with the incidence peaking in 2008, when 53 cases were reported. Although this increase may be attributable to an increase in reporting, it is possible that a true increase in ciguatera poisonings has occurred in recent years.*

Ciguatoxin — Ciguatera Outbreak in a Charter Fishing Boat Group who Traveled to Great Harbour Cay Bahamas — Multistate, Miami-Dade, and Monroe Counties

A ciguatera outbreak among a group of Florida travelers who visited Great Harbour Cay in the Central Bahamas in July 2011 was investigated by the Monroe and Miami-Dade county health departments. The group commissioned a private charter boat captain to transport them to the Bahamas from the Florida Keys. On July 12, while in the Bahamas, they caught an 86-pound black grouper and froze the fish. Seven people from Monroe County (2), Miami-Dade (2), South Carolina (2), and the Bahamas (1) consumed the grouper upon returning home. All reportedly became ill. The two residents from Monroe County, who were reached for an interview, consumed their portion of the grouper on August 1. Symptoms began 4.5 to 5 hours later and included nausea/vomiting; diarrhea; abdominal pain; loss of appetite; metallic taste; itching or rash; joint or muscle pain or weakness; dizziness or vertigo; tingling, numbness, or pain in hands, feet, gums, or mouth; temperature reversal; attention or concentration problems; anxiety; insomnia; lack of sex drive; excessive salivation; headaches; and irritability. Fish samples tested positive for Caribbean ciguatoxin (C-CTX-1 and C-CTX-2) at the U.S. Food and Drug Administration Gulf Coast Seafood Laboratory in Dauphin Island, Alabama. Snapper caught during the same fishing trip tested negative for ciguatoxin.

Pesticides — Aerial Pesticide Application and Drift Impacting an Elementary School — Palm Beach County

Background: As students were arriving for classes at an elementary school in Palm Beach County on March 31, 2011, an agricultural applicator airplane was spraying a nearby corn field with pesticides (included a pyrethroid insecticide, a bisdithiocarbamate fungicide, and fertilizer). Students and school staff began to notice an odor and complained of eye and skin irritation.

Methods: A survey was conducted using a standard questionnaire to identify symptomatic people and collect additional information. The case definition for this incident was based on the Florida surveillance case definition for pesticide exposure. Environmental sampling and investigation details surrounding the pesticide application were obtained from a Florida Department of Agriculture and Consumer Services investigation.

Results: Interviews indicated that 22 of 813 (2.7%) students and 45 of 85 (52.9%) staff present developed symptoms. Common symptoms were skin itching, burning eyes, and vomiting. Students were 5 to 14 years old and staff ranged from 25 to 65 years old. Of the 67 symptomatic people, 57 (85.0%) were classified as probable cases, of which 27 (47.4%) had low severity of illness and 30 (52.6%) had moderate severity of illness. People with pre-existing conditions were more likely to experience moderate rather than low severity of illness. Similarly, people with moderate versus low severity of illness were more likely to receive medical care. Environmental sampling could not confirm that pesticide misuse had occurred.

Conclusion: Investigation findings indicate that the health effects following the drift incident at the elementary school are consistent with exposure to the pesticides used.

Editorial Note: Past studies indicate that aerial pesticide applications are the most common application method where drift events occur. This event highlights the importance of identifying and preventing contributing factors for drift incidents through investigation, regulation, and education related to aerial pesticide spraying.

Radioactive Strontium — Investigation of Internal Contamination with Radioactive Strontium Following a Cardiac PET Scan — Multistate, Orange County

Background: In the spring of 2011, three people (two from Florida) were identified by U.S. Customs and Border Protection to have internally elevated levels of radioactive strontium (Sr-82/Sr-85). Interviews found that all three people had received a cardiac positron emission tomography (PET) scan using a specific type of generator in the preceding months. To assess the extent of internal contamination with radioactive strontium, the Florida Department of Health (including the Orange County Health Department), along with the U.S. Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention, carried out a study in Florida as part of a larger nationwide study (including Alabama, Pennsylvania, and Tennessee).

Methods: Patients that had a cardiac PET scan between February 17 and July 26, 2011 were randomly selected for recruitment among participating facilities that used the same type of generator in their practice. A clinic was held in Orange County from October 3 to October 6, 2011. Participants were interviewed; onsite radiation, height, and weight measurements were recorded; and a urine sample was collected. Whole body count (WBC) was performed by Oak Ridge National Laboratory in Tennessee on nine patients with the highest strontium above background. Background was established by doing 10-minute counts at the fixed geometry on staff that had not had any medical radioisotope imaging.

Results: Of the 119 patients that participated, five (4.2%) had strontium levels more than twice background levels. Results for all nine participants with a WBC found no increased risk of adverse health effects associated with the amount of strontium received during their cardiac PET scan. Of 101 urine samples available for analysis, strontium levels were either below the minimum detectable activity of 2.5 Becquerel/liter or if they were measurable, levels detected were very low.

Conclusion: The findings of this investigation indicate that none of the study participants received breakthrough of strontium at levels that would lead to adverse health effects.

Editorial Note: Cardiac PET myocardial perfusion imaging is used to diagnose coronary artery disease and myocardial viability. Before sales of new generator units were stopped and existing units were recalled by the manufacturer, this generator was used in clinic settings across the U.S. During this procedure, rubidium-82 (Rb-82) is administered intravenously. The half-life is short, 76 seconds; Rb-82 breaks down quickly. The parent isotope, Sr-82, has a much longer half-life of 26 days. "Breakthrough" of small amounts of Sr-82/Sr-85 is allowable under specific trace level limitations. Exposure to a higher dose of radiation can cause harm. These products are regulated by the FDA.

Undetermined — Investigation of a Cluster of Illnesses Initially Attributed to a Chemical Exposure — Seminole County

Background: On August 17, 2011, the Seminole County Health Department (SCHD) was notified that the Seminole County Fire and Rescue (SCFR) had evacuated an office building in response to a sudden onset of illnesses. Symptoms among five employees included difficulty breathing, dizziness, and burning of the eyes and throat, possibly attributable to a chemical exposure. SCFR assessed eight additional ill employees on site, but found no likely agents during monitoring.

Methods: SCHD conducted an outbreak investigation to identify a possible common exposure source among affected employees. A case was defined as any illness in a worker who presented to either the company nurse or SCFR at the time of the incident.

Results: A total of 13 people were identified that met the case definition. Six cases, including the initial five symptomatic employees, reported smelling a substance in the air that might have triggered their symptoms; however, descriptions of the odor varied widely. No evidence of another possible common exposure was identified.

Conclusion: The lack of identified exposure source, the number of employees becoming ill after evacuation, and the large number of people working in close proximity to each other suggest the possibility that mass psychogenic illness may have been a factor among many of the cases involved in this incident.

Editorial Note: Mass psychogenic illness, also referred to as epidemic hysteria or sociogenic illness, and transient situational disturbance has been discussed for hundreds of years and in many different settings. As described in this investigation, mass psychogenic illness can be difficult to differentiate from acute exposure to toxic substances. Mass psychogenic illness is best managed by providing a credible explanation for symptoms, separating symptomatic from non-symptomatic people, and minimizing unnecessary medical response.

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Section 7

2011 Publications with Florida Department of Health Authors

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Section 8

Public Health Laboratory Status Report

The Florida Department of Health (DOH) Bureau of Public Health Laboratories (BPHL) is a network of four laboratories located in Jacksonville, Miami, Pensacola, and Tampa that provides population-based diagnostic, screening, monitoring, reference, emergency, and research laboratory services. BPHL collects epidemiologic and demographic information to support the core public health functions of DOH. Technical services, based upon evolving community requirements, include screening and confirmatory testing for biological and chemical threats, disease outbreak investigations, sexually transmitted diseases, tuberculosis, HIV, mosquito-borne viruses, animal rabies, and parasitology. Accurate and timely laboratory data are critical to support informed public health decisions. BPHL also provides training for healthcare providers and laboratory scientists; tests samples from potable, environmental, and recreational water sources, pollution spills, and suspect contaminated foods; and certifies environmental and water testing laboratories. BPHL provides laboratory screening of all newborns in Florida for 34 genetic disorders, which can lead to death or severe physical and mental disabilities without detection and early treatment.

BPHL supports all 67 county health departments, other DOH programs, physicians, hospitals, and numerous state and federal agencies by providing public health diagnostic, screening, and reference laboratory services.

History

The Florida Legislature established the State Board of Health in Jacksonville in 1889. In 1903, the Legislature established the State Public Health Laboratory, also located in Jacksonville. Seven years later, in 1910, the Tampa and the Pensacola Laboratories were established. Like the Jacksonville Laboratory, the Pensacola and Tampa Laboratories were responsible for providing diagnostic testing to the State Board of Health and to private physicians. With three laboratories up and running, BPHL was able to provide vital services to what were then the most populous areas of Florida. The Miami Laboratory was established in 1914 and the Tallahassee Laboratory in 1915. The Tallahassee Laboratory closed in 1917, was re-opened in 1921, and closed permanently in 1992. The Orlando Laboratory was opened in 1948 and operated until 1992. The West Palm Beach/Lantana Laboratory was opened in 1953 in the basement at the A.G. Holley State Tuberculosis Hospital; since 1982, it had its own separate building on the campus. The West Palm Beach/Lantana Laboratory ceased accepting specimens on September 5, 2011 and closed entirely on September 29, 2011.

Preparedness

Phil Lee, of the BPHL Jacksonville Laboratory, was invited by the Trust for America's Health (TFAH) and the Robert Wood Johnson Foundation to write an article concerning his experience in confirming the identification of *Bacillus anthracis* in the index patient during the anthrax incident of 2001 entitled *Anthrax Events in 2001- 10 Years After: Firsthand Story from Phil Lee, BPHL-Jacksonville*. The article, published in September 2011 in *Remembering 9/11 and Anthrax: Public Health's Vital Role in National Defense* (http:// healthyamericans.org/assets/files/TFAH911Anthrax10YrAnnvFINAL.pdf), also includes the activities of BPHL at that time and will be used to recognize the efforts of public health professionals and demonstrate the ongoing importance and the continued need to support public health preparedness. TFAH shared these stories with members of Congress, governors, other state and local officials, and members of the media during commemoration activities for the ten year anniversaries of the September 11 and anthrax tragedies. The lessons learned from the anthrax incident of 2001 and the subsequent injection of additional state and federal funding has greatly increased Florida's capability and capacity to respond to public health emergencies, whether due to terrorism, natural disasters, outbreaks, or emerging infectious diseases such as SARS and 2009 H1N1 pandemic influenza.

Public Health Laboratory Interoperability Project (PHLIP) Initiative

The Informatics Program Manager for the Association of Public Health Laboratories (APHL), speaking on behalf of APHL and their contractors working on the Public Health Laboratory Interoperability Project (PHLIP) initiative, recognized the work that BPHL staff continues to provide at the national level. BPHL staff and their electronic messaging team from the DOH Division of Information Technology provided PHLIP and the Laboratory Technical Implementation Assistance for Public Health (LTIAPH) with important expertise and assistance contributing to the ongoing success of these projects.

Out of all of the project participants across the nation, Florida is the only state that has successfully participated in all project activities:

- PHLIP influenza result reporting to the Centers for Disease Control and Prevention (CDC), known as the Electronic Laboratory Surveillance Message (ELSM),
- H1N1 pandemic influenza electronic test order and result (ETOR) messaging with the Texas Public Health Laboratory to ensure surge capacity and mutual assistance,
- Electronic order and result messaging to CDC for the *Salmonella* phase 1 implementation (first to send an order message for validation), and
- HITECH Cooperative Agreement to help create Electronic Laboratory Reporting (ELR) HL7 v2.5.1 message to Public Health (LTIAPH).

In addition, the DOH electronic messaging team is one of only two teams in the country supporting a technical route-not-read hub to support national laboratory data sharing. In conclusion, the contributions, expertise, technical prowess, and collaborative approach of DOH teams have been invaluable to the ongoing success of APHL's informatics projects.

Tuberculosis

In August 2011, BPHL staff surveyed all licensed clinical laboratories in Florida to identify the laboratories that provide testing for *Mycobacterium tuberculosis* (TB) and determine the scope of testing that is performed. Florida laboratories that perform TB testing were sent a copy of the most recent CDC guidelines for Nucleic Acid Amplification Testing (NAAT) for TB. These laboratories were also sent information about the Hain Genotype® MTBDR*Plus* (Hain test), a NAAT for the detection of common mutations resulting in resistance to rifampin and/or isoniazid. BPHL performed this test on all clinical specimens that are both acid-fast bacilli (AFB) smear-positive and positive for TB with the *Mycobacterium tuberculosis* Direct (MTD) NAAT test. The communication of current guidelines, coupled with information obtained during the survey process and data on the number and types of TB samples submitted to the BPHL from Florida laboratories, were part of a systems approach to ensure that the appropriate tests are ordered on patients suspected of infection with TB. This will enable BPHL to continue to offer the highest quality testing services to the citizens of Florida, while avoiding costs associated with redundant or unnecessary testing. In 2010, the BPHL performed 23,074 TB cultures, 10,746 MTD tests, and 288 Hain tests. In 2011, BPHL performed 21,736 TB cultures, 9,618 MTD tests, and 255 Hain tests.

Since July 2009, the BPHL Jacksonville Laboratory has performed a molecular rapid test (Hain) automatically on all initial sputum AFB smear and nucleic acid amplification test positive specimens (i.e., highly infectious patients). By conventional methods, drug susceptibility results are available within four to eight weeks. The early detection of multidrug-resistant tuberculosis (MDR TB) cases allows for patients to be placed on appropriate anti-TB therapy much sooner and results in cost savings for the public health system in Florida. DOH has been recognized by the Association of State and Territorial Health Officials (ASTHO) with the 2012 Vision Award for the Florida Multidrug-Resistant (MDR) Tuberculosis (TB) Screening Program. ASTHO's annual award program recognizes best practices at state health departments that demonstrate creative and innovative approaches to addressing public health needs and challenges. Applications are judged and scored by experts and leaders in state public health through a peer-reviewed process, and are evaluated on background information, innovation, effectiveness, and potential for replication.

Sentinel Chicken Viral Surveillance
Throughout Florida, sentinel chickens are used to identify mosquito-transmitted encephalitis viruses currently circulating in the environment. For 26 years, BPHL has assayed weekly serum samples from sentinel chickens located throughout the state for antibody development to St. Louis encephalitis virus (SLEV), eastern equine encephalitis virus (EEEV), Highlands J virus (HJV), and, since 2000, West Nile virus (WNV). Over time, improvement of the assays and the information distribution system allow for more effective use of test results by our partners in environmental health, epidemiology, county health departments and mosquito control in order to better control the risk of disease from these viruses.

Florida uses sentinel chickens to help assess the risk of large-scale transmission of these viruses. Flocks of four to six chickens were maintained in 27 counties in 2011, either by the county mosquito control agency or the county health department. The number and distribution of these flocks is determined by the county; it is important to have enough flocks to provide good geographic coverage. Chickens are used because they do not become ill from these viruses and, if infected with the virus, are not able to infect another mosquito to perpetuate the transmission cycle. Since blood samples from the sentinel chickens are tested weekly, the detection of antibody in a chicken that had no antibody previously (seroconversion from antibody negative to antibody positive) indicates recent transmission of virus at the bird's location.

During 2011, 44,356 sera from 2,898 chickens were assayed; 234 seroconverted to WNV (8.1%), 65 to SLEV (2.2%), 44 to EEEV (1.5%), and 12 to Highlands J virus (HJV) (0.4%). In 2011, more sentinels seroconverted to SLEV antibody than in any year since WNV first appeared in Florida (2001), indicating the continued potential risk for SLEV activity and outbreaks.

Because of Florida's climate, there is mosquito activity and virus transmission year round. The historical county sentinel seroconversion data is used to determine when significant levels of seroconversion are detected. At that time, our partners take action, adjusting mosquito control activities to meet the situation and announcing the need for personal protection activities. Although we cannot prevent every case of infection, these activities do serve to reduce the risk of widespread outbreaks with large numbers of cases.

Chromium-6 (Hexavalent Chromium) in Drinking Water
In 1974, Congress passed the Safe Drinking Water Act. The maximum contaminant level goal (MCLG) in water for chromium (total) is 0.1 milligrams per liter (mg/L) or 100 parts per billion (ppb). The most common forms of chromium in the environment are trivalent (chromium-3), hexavalent (chromium-6), and the metal form, chromium-0. Chromium-3 occurs naturally in many vegetables, fruits, meats, grains, and yeast. Chromium-6 and 0 are generally produced by industrial processes. In a September 2010 draft human health assessment for chromium-6, the U.S. Environmental Protection Agency proposed to classify chromium-6 via ingestion as likely to be carcinogenic to humans. According to the BPHL Environmental Laboratory Certification Program, many laboratories in Florida and out of state are certified to test for chromium (total) in non-potable (168) and potable water (90), and are certified to test for chromium-6 in non-potable (88) and potable water (1). The BPHL Jacksonville Laboratory implemented the assay for chromium-6 in potable water in September 2011.

Severe Combined Immunodeficiency (SCID)
Severe Combined Immunodeficiency (SCID), also known as bubble boy disease, is a treatable illness in which an infant fails to develop a normal immune system. After successful treatment, infants with SCID can lead a normal life. The U.S. Department of Health and Human Services (HHS) includes SCID in the national core panel of disorders for newborn screening to protect infants with this disorder. In January 2011, the Florida Genetic Testing and Newborn Screening Advisory Council endorsed the addition of the screening test for SCID to the Florida Newborn Screening test panel, which was implemented October 1, 2012.

Genetic Screening Processor for Newborn Screening Laboratory
The transfer of testing from the old instrument (AutoDelfia) to Genetic Screening Processor (GSP) for congenital hypothyroidism (T4 - thyroxine and TSH - thyroid stimulating hormone), congenital adrenal hyperplasia (17OHP – 17-alpha hydroxyprogesterone) and cystic fibrosis (IRT – immunoreactive trypsinogen) was completed on September 1, 2011. GSP provides automation and ensures higher quality results. All reagents and consumables are barcoded and scanned by the instruments, which can significantly reduce potential errors.

2010 Newborn Screening Morbidity Data
The DOH Children's Medical Services Newborn Screening Follow-up Program, in collaboration with BPHL, manages the Newborn Screening (NBS) program for Florida. BPHL performs screening tests for the core disorders as recommended by the HHS Secretary's Advisory Committee on Heritable Disorders in Newborns and Children (SACHDNC). BPHL performs screening tests for additional disorders for a total of 35 diseases and conditions (including a hearing screen). Table 1 shows the newborn screening morbidity counts for 2009 and 2010, the most recent years for which data are available.

Table 1. Newborn Screening Morbidity Counts, Florida 2009 and 2010

Conditions	Morbidity Counts	
	2009	2010
Live births	221,632	214,934
Confirmed diagnosis by Florida referral centers		
Biotinidase deficiency	0	1
Partial	6	3
Congenital adrenal hyperplasia	5	11
Congenital hypothyroidism	68	68
Cystic fibrosis		
2 mutations	25	43
1 mutation	10	20
Ultra-high IRT/No mutations	1	1
Galactosemia (G/G)	1	4
Variant	NA	21
Sickle cell		
Sickle cell anemia (SS)	140	135
Hemoglobin SC disease (SC)	82	91
Sickle beta thalassemia (SA)	9	9
Disorders detected by tandem mass spectrometry	32	29
Hearing loss recognized through NBS follow-up program	249	238

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