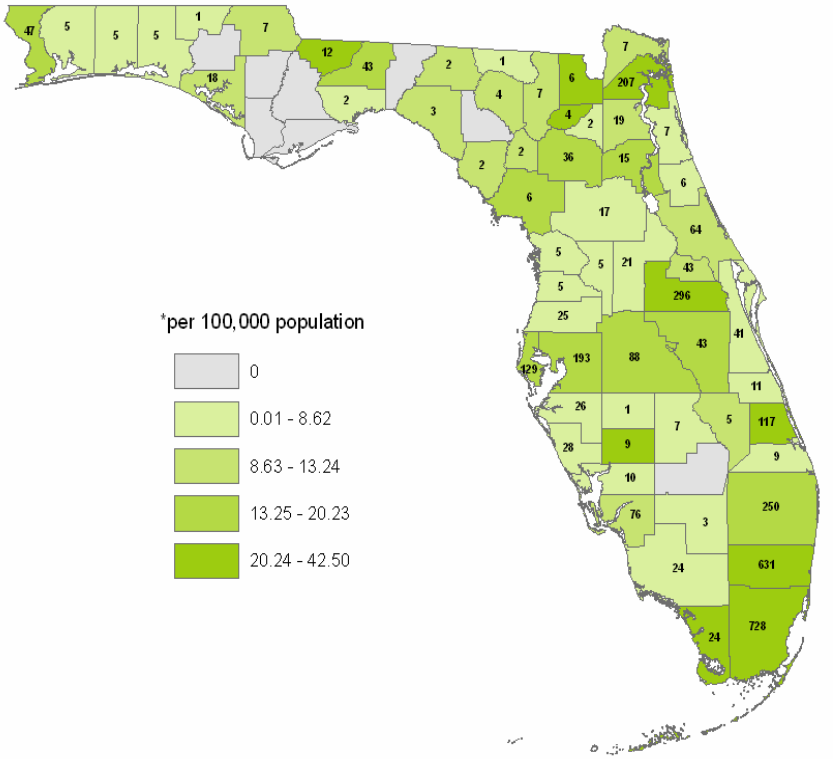
Section 2

Selected Notifiable Diseases and Conditions

Acquired Immune Deficiency Syndrome and Human Immunodeficiency Virus

Florida ranked second among states in the estimated number of acquired immune deficiency syndrome (AIDS) cases diagnosed in 2009, the most recent year for which data is available nationally. That year, a total of 4,799 (14% of the U.S. total) AIDS cases were diagnosed in New York, followed by 4,392 (13%) in Florida and 3,760 (11%) in California. Cumulatively, however, Florida ranks third behind New York and California. In 2010, at least one AIDS case was reported in all but eight counties (Figure 1). 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, all reporting over 100 cases in 2010. These eight counties reported a combined total of 2,551 cases, or 74% of Florida's total reported cases in 2010 (N=3,461). The greatest numbers of AIDS cases were reported from two counties located in the southeastern part of the state, Broward (N=631) and Miami-Dade (N=728). These two counties reported a combined total of 1,359 cases in 2010, 39% of the statewide total.

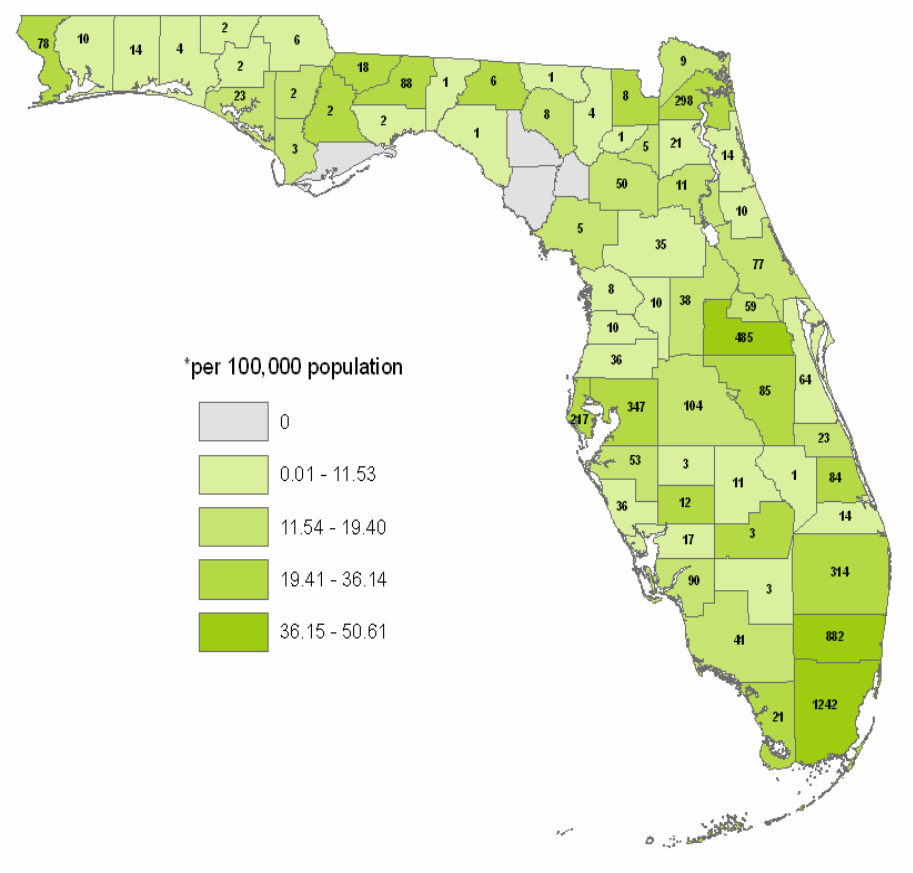
Figure 1. AIDS Cases and Rate* by County of Residence†, Florida, 2010



†County totals exclude Department of Corrections cases (N=46)

Florida ranked first among states in the number of Human Immunodeficiency Virus (HIV) cases reported in 2009, which is the most recent year data is available nationally. That year, a total of 5,755 (13% of the U.S. total) HIV cases were reported in Florida, followed by 4,886 (11%) in California and 4,291 (10%) in New York. In 2010, at least one HIV case was reported in all but four counties and eight counties reported 100 or more cases (Figure 2). These eight counties were Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, Pinellas and Polk. They reported a combined total of 3,889 cases, or 75% of Florida's total reported cases in 2010 (N=5,211). The greatest numbers of HIV cases were reported from Miami-Dade (N=1,242), Broward (N=882), and Orange (N=485). These three counties reported a combined total of 2,609 cases in 2010, or 50% of the statewide total.

Figure 2. HIV Cases and Rate* by County of Residence†, Florida, 2010



†County totals exclude Department of Corrections cases (N=79)

Reported HIV cases increased in 2002 due to increased HIV testing statewide as part of the "Get to Know Your Status" campaign. Since that time, newly reported HIV cases have decreased each year until 2007. Enhanced reporting laws were implemented in November 2006, leading to an artificial peak in HIV cases in 2007 and 2008, followed by an artificial decrease in 2009 with an expected leveling in 2010 (Figure 3).

Figure 3. HIV Cases, by Year of Report, Florida, 2001-2010

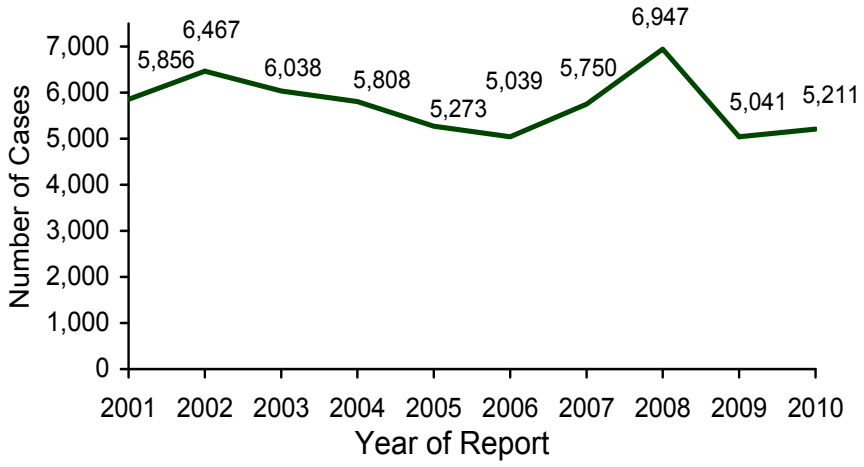
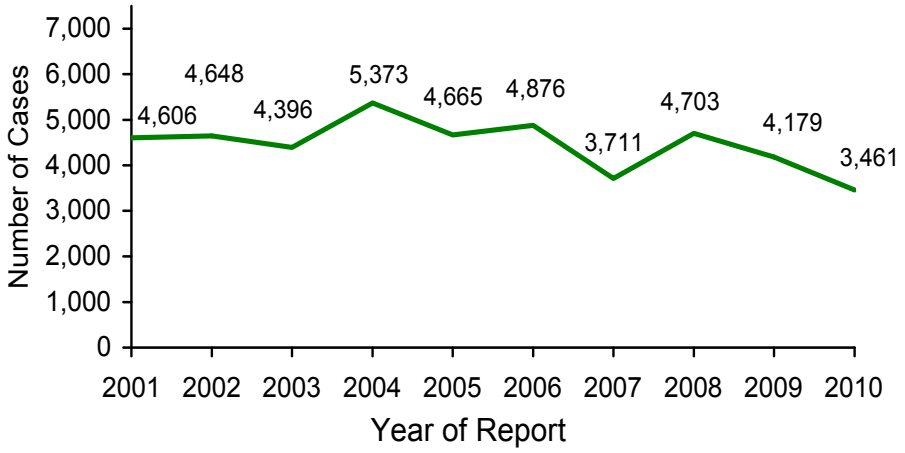


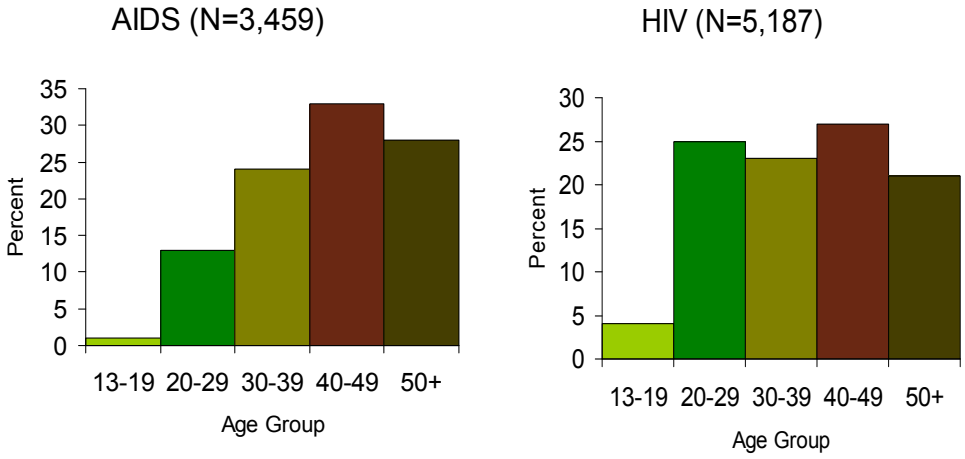
Figure 4. AIDS Cases, by Year of Report, Florida, 2001-2010



Adult AIDS and HIV Cases by Selected Demographics

As in previous years, the greatest proportion of AIDS cases reported in 2010 was among persons aged 40-49 years old (33%) (Figure 5). This year, the 50+ age group was second, with 28% of the reported AIDS cases, followed by the 30-39 age group with 24%. As with AIDS cases, a greater proportion of HIV cases in 2010 were also reported among those aged 40-49 (27%) followed by those aged 20-29 (25%) and aged 30-39 (23%). Adult cases for both AIDS and HIV are defined as those occurring in people 13 years of age and older. The analysis shown below includes only adult cases.

Figure 5. Age Distribution of Florida's Adult* AIDS and HIV Cases, 2010

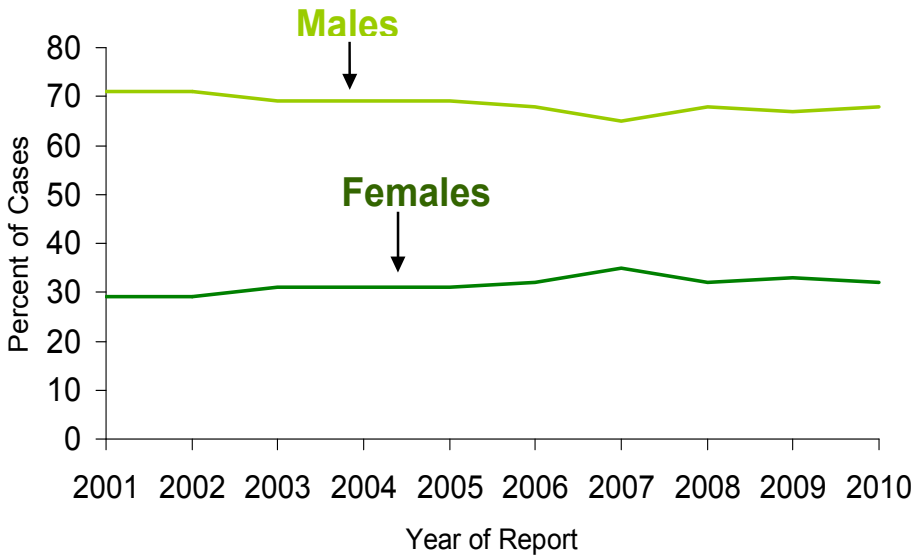


*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

AIDS cases tend to represent HIV transmission that occurred many years ago. The relative increase in female cases reflects the changing face of the AIDS epidemic over time. In 2001, 29% of the AIDS cases reported in Florida were female (Figure 6). Over the past ten years, the proportion of AIDS cases among men and women has remained fairly level. The male-to-female ratio declined slightly from 2.4 to 1 in 2001 to 2.1 to 1 in 2010.

In 2010, the AIDS case rate per 100,000 population was 30.6 among adult males and 13.5 among adult females, indicating that AIDS cases in this period were still more likely to be reported among males than females in Florida.

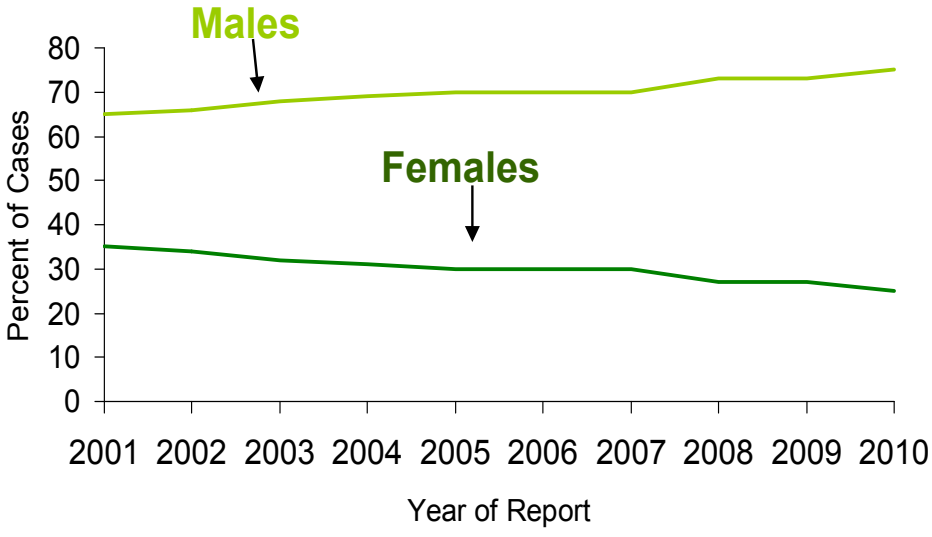
Figure 6. Percent of Adult* AIDS Cases by Sex and Year of Report, Florida, 2001-2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

The trend for HIV cases by sex is the opposite of that for AIDS cases. The relative increase in male HIV cases might be attributed to proportional increases in HIV transmission among men who have sex with men (MSM), which may influence future AIDS trends. In 2001, 35% of the HIV cases reported in Florida were female (Figure 7). Over the past ten years, the proportion of HIV cases among men has increased while the proportion among women has decreased. The result is an increase in the male-to-female ratio, from 1.9 to 1 in 2001 to 3.0 to 1 in 2010. This pattern differs from that seen for AIDS cases during the same time period. In 2010, the HIV case rate per 100,000 population was 50.2 among adult males and 16.2 among adult females, higher than the rates seen in AIDS cases.

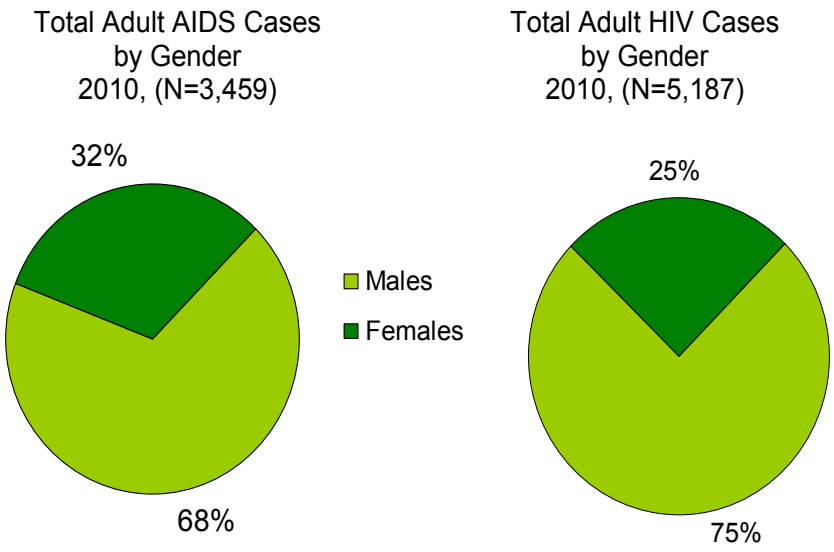
Figure 7. Percent of Adult* HIV Cases by Sex and Year of Report, Florida, 2001-2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

In 2010 a total of 2,362 adult men and 1,097 adult women were reported with AIDS, representing 68% and 32% of cases, respectively (Figure 8). Also in 2010, a total of 3,873 adult males and 1,314 adult females were reported with HIV infection, representing 75% and 25% of cases, respectively. Florida's adult population is 49% male and 51% female; therefore, men are disproportionately impacted.

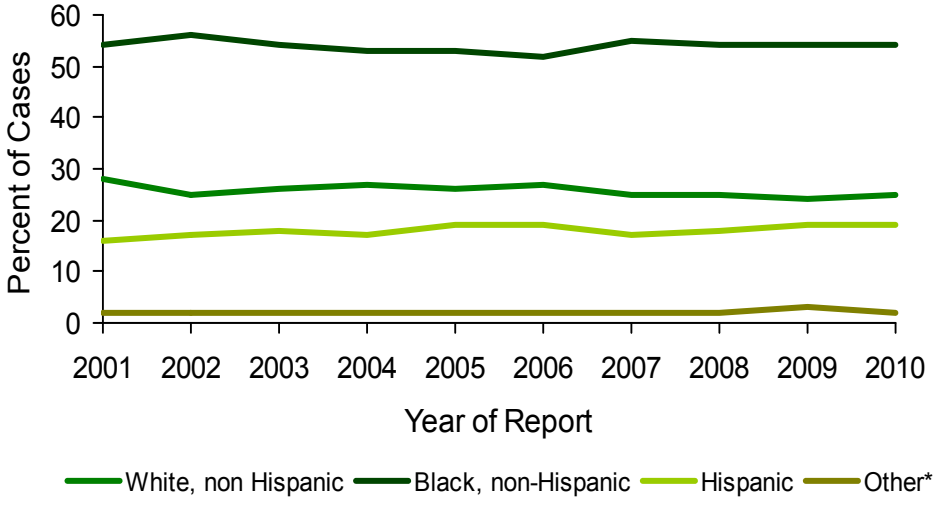
Figure 8. Proportion of Adult* AIDS and HIV Cases by Sex, Florida, 2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

Over the past 10 years, the proportion of AIDS cases has decreased among whites by 11% while increasing by 19% among Hispanics (Figure 9). The proportion of AIDS cases among blacks has remained fairly constant.

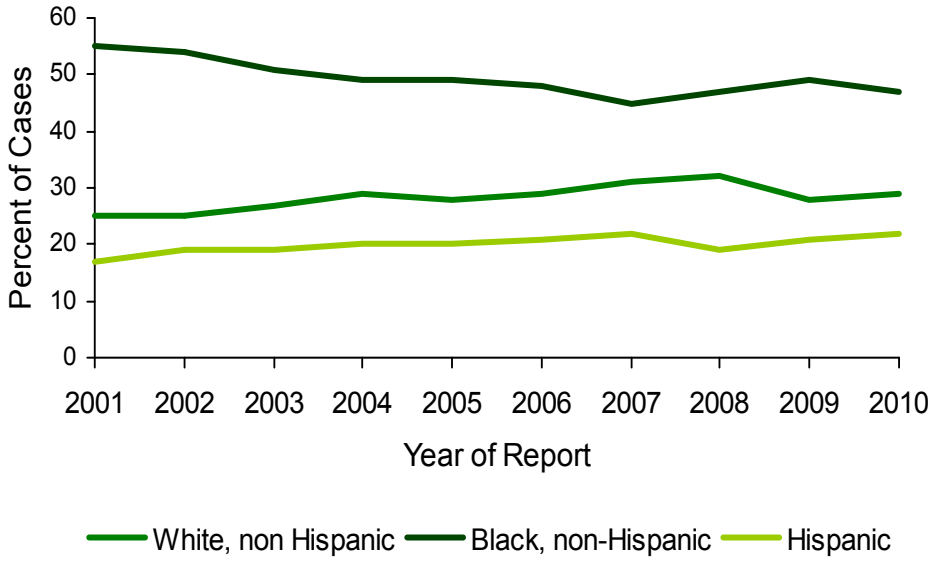
Figure 9. Percent of Adult* AIDS Cases by Race and Ethnicity, by Year of Report, Florida, 2001-2010



*Other includes American Indian/Alaska Native, Asian/Pacific Islander, and multi-racial.

HIV case reporting, which was implemented in mid-1997, reflects more recent trends in the epidemic with respect to the distribution of cases by race/ethnicity. The proportion of black HIV cases has decreased by 15% from 2001 to 2010. In contrast, increases were observed among both white (16%) and Hispanic (29%) HIV cases over this same time period (Figure 10).

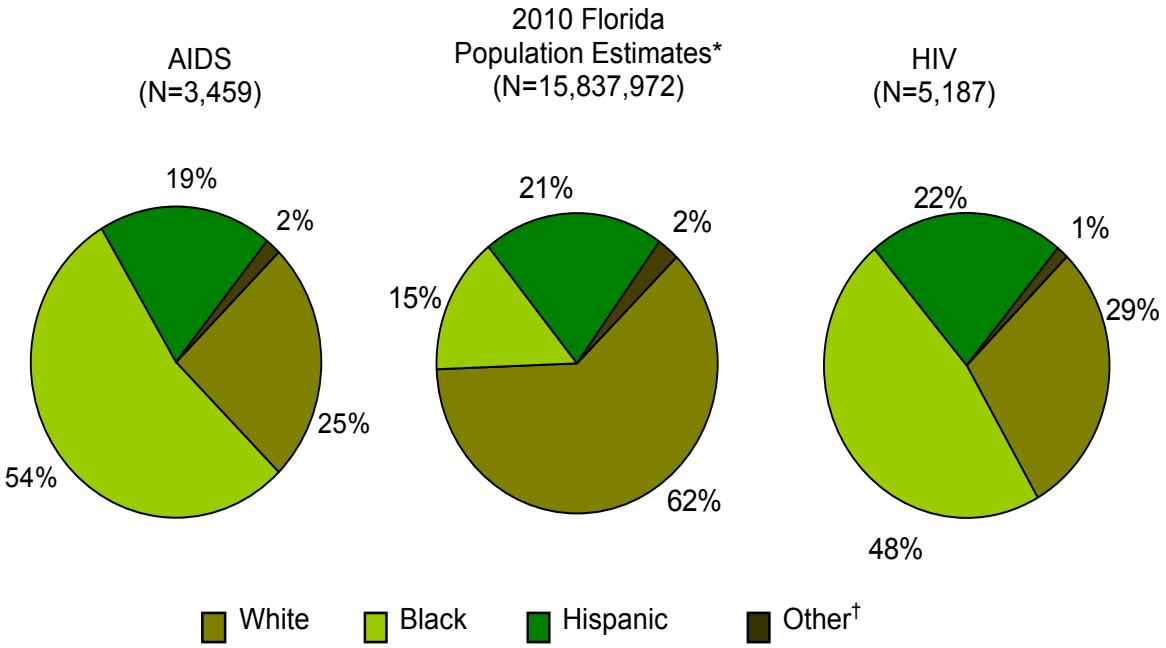
Figure 10. Percent of Adult* HIV Cases by Race and Ethnicity, by Year of Report, Florida, 2001-2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

In 2010, blacks were over-represented among AIDS and HIV cases, accounting for 54% of adult AIDS cases and 48% of adult HIV cases, but only 15% of the Florida adult population (Figure 11). Hispanics represent 21% of the adult population and account for 19% of the adult AIDS cases and 22% of the adult HIV cases.

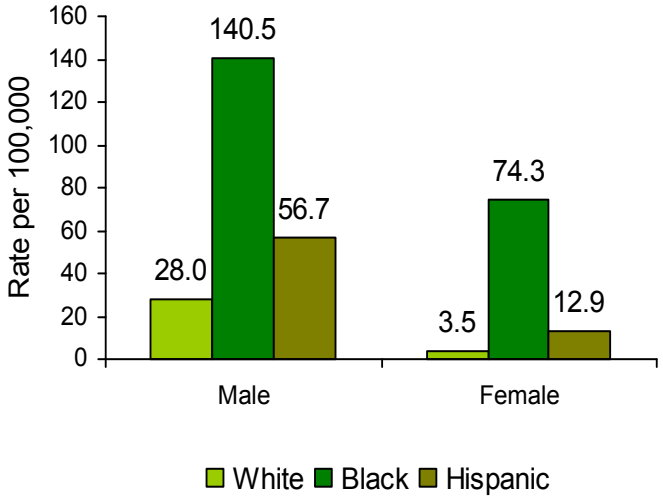
Figure 11. Proportion of Adult AIDS and HIV Cases by Race and Ethnicity, Florida, 2010



* 2010 Florida Population Estimates, Adults (Ages 13+), DOH, Office of Planning, Evaluation & Data Analysis
† Other includes Asian/Pacific Islanders, Native Alaskans/American Indians and mixed races.

Black men and, to an even greater extent, black women are over-represented in the HIV epidemic (Figure 12). The HIV case rate for 2010 is five times higher among black men than among white men. Among black women, the HIV case rate is 15 times higher than among white women. Hispanic male and Hispanic female rates are twice as high as the rates among their white counterparts.

Figure 12. Adult* HIV Cases and Rate per 100,000 Population, by Sex, Race, and Ethnicity, Florida, 2010

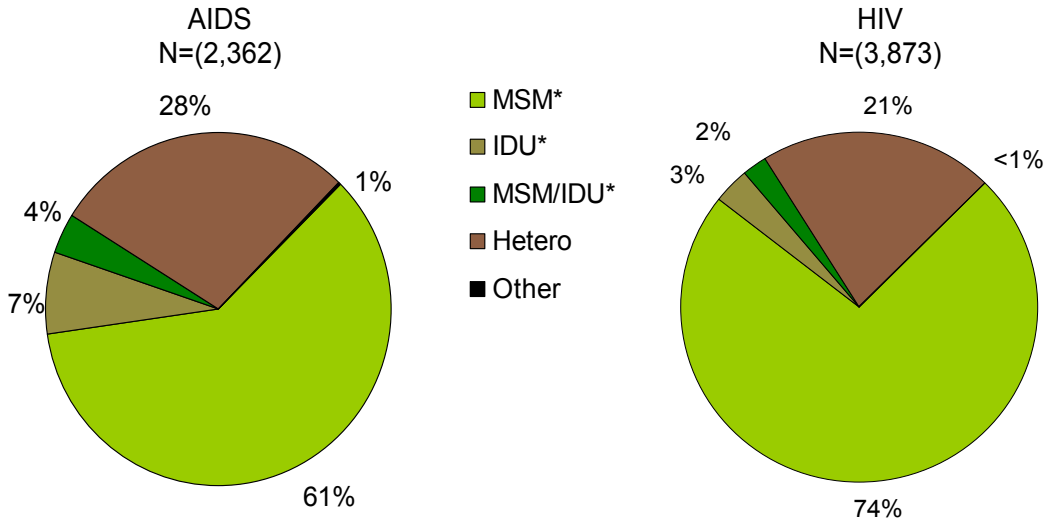


*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

HIV/AIDS Cases by Transmission Category

Among the male AIDS and HIV cases reported for 2010, men who have sex with men (MSM) was the most common risk factor (61% and 74% respectively) followed by cases with a heterosexual risk (28% for AIDS and 21% for HIV) (Figure 13). Recently, transmission among MSM has increased as indicated by the higher percent of MSM among HIV cases compared to AIDS cases, as HIV cases tend to represent a more recent picture of the epidemic.

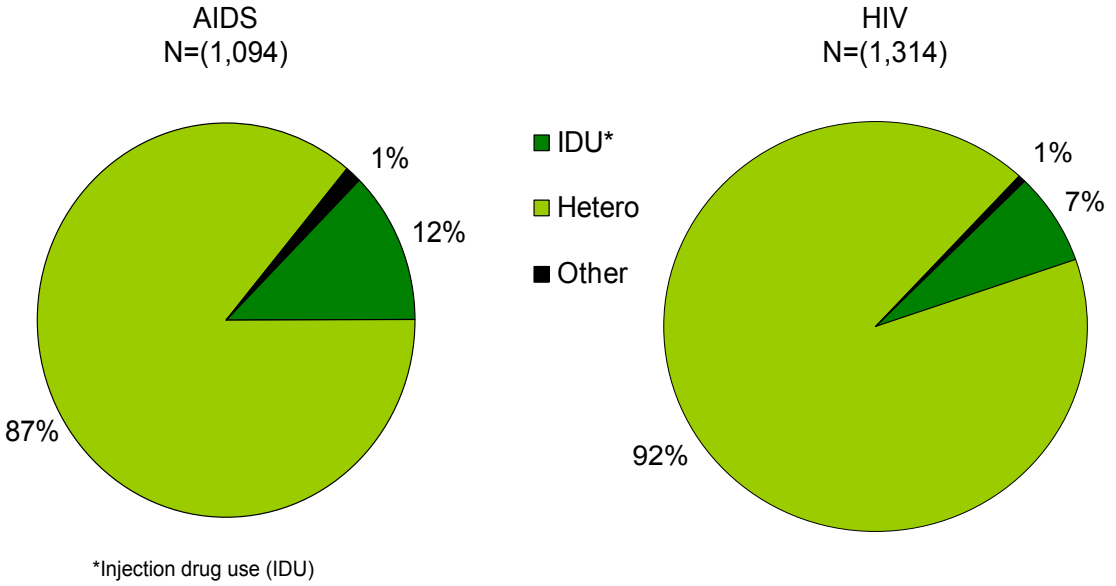
Figure 13. Adult Male AIDS and HIV Cases by Mode of Exposure, Florida, 2010



*Men who have sex with men (MSM), injection drug use (IDU)

Among the female AIDS and HIV cases reported for 2010, heterosexual contact was the highest risk (87% and 89% respectively) (Figure 14).

Figure 14. Adult Female AIDS and HIV Cases by Mode of Exposure, Florida, 2010



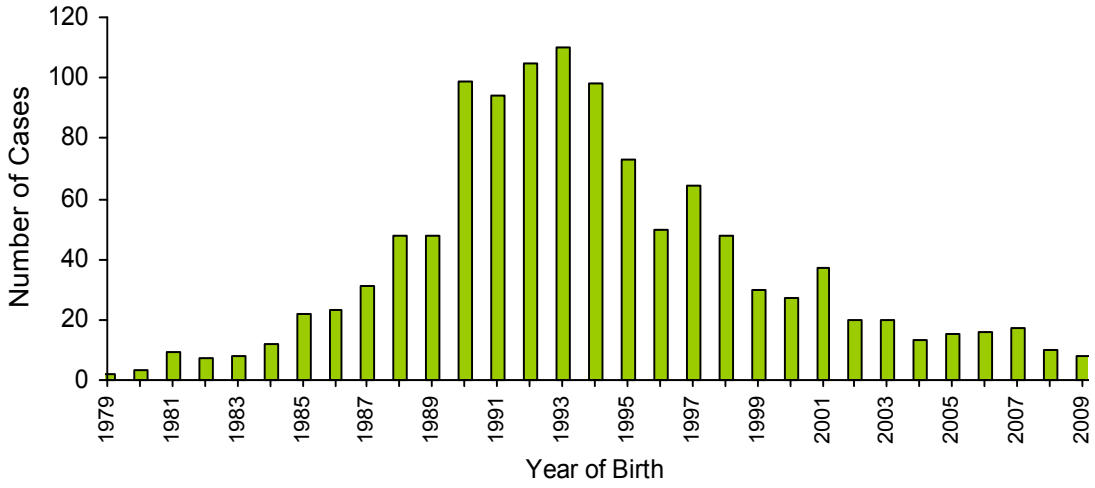
*Injection drug use (IDU)

Perinatal HIV/AIDS Cases

Of the 1,167 perinatally infected babies born in Florida from 1979 through 2009 (most complete year), two were born as early as 1979 (Figure 15). Since that time, the birth of HIV-infected babies continued to rise through 1993. In April 1994, the U.S. Public Health Service released guidelines for zidovudine (ZDV) also known as azidothymidine (AZT), used to reduce perinatal HIV transmission, and in 1995 recommendations for HIV counseling and voluntary testing for pregnant women were published. The mandatory offering of HIV testing to pregnant women became law in Florida in October 1996. Since then, the percent of perinatally infected children who received ZDV or whose mothers received ZDV has increased markedly. Through enhanced perinatal surveillance systems, it has been documented that ZDV use among exposed infants and mothers of HIV-infected children has increased at the prenatal, intrapartum, delivery and neonatal stages.

Prevention of perinatal HIV remains a very high priority in Florida. 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. Furthermore, numerous initiatives have contributed to the reduction in these cases. Major initiatives include: seven Targeted Outreach to Pregnant Women Act (TOPWA) programs, three perinatal nurses located in the most heavily impacted counties, social marketing, and provider education. These initiatives have helped to further educate local providers in the importance of testing pregnant women for HIV and then offering effective treatment during the pregnancy and at delivery to further decrease the chances of vertical transmission. As a result, significant decreases in annual perinatal HIV-infected births have been observed in Florida since 1997, with a leveling trend from 2002 through 2007 followed by another sharp decrease in 2008 and 2009. In summary, these successful initiatives have resulted in a 94% decline in HIV-perinatally infected births in Florida from 1993 (N=110) to 2009 (N=8).

Figure 15. Perinatal HIV/AIDS Cases by Year of Birth, Born in Florida, 1979-2009 (N=1,167)



Prevalence Estimate of HIV Infection in the U.S. and Florida

Assessment of the extent of the HIV epidemic is an important step in community planning for HIV prevention and HIV/AIDS patient care. The HIV prevalence estimate, the estimated number of persons living with HIV infection, includes those living with a diagnosis of HIV or AIDS and those who may be infected but are unaware of their serostatus. Approximately 1,039,000-1,185,000 persons are currently living with HIV infection in the U.S. Florida has consistently reported 10-12% of the national AIDS morbidity and currently accounts for 11% of all persons living with AIDS in the U.S. (Table 1). The Department of Health now estimates that approximately 135,000 persons, or roughly 11.7% of the national total, are currently living with HIV infection in Florida as of the end of 2009.

As compared to national data, Florida has a slightly higher proportion of women infected with HIV (30%) compared to the U.S. (27%). Florida has similar patterns of HIV-infected cases among blacks (49%) compared to the U.S. (48%) and among MSM (44% vs. 46%). However, Florida has a far higher proportion of HIV-infected cases among heterosexuals (39% vs. 28%) and a much lower proportion among injection drug users (IDU) (11% vs. 19%) compared to the U.S.

Table 1. Persons Living with HIV Infection in the U.S. (2008)* and Florida (2009)

	U.S.	Florida
Total Cases	663,084	93,053
Male	73%	70%
Female	27%	30%
White	33%	30%
Black	48%	49%
Hispanic	17%	19%
Other	3%	2%
MSM†	46%	44%
IDU†	19%	11%
MSM/IDU†	5%	4%
Heterosexual	28%	39%
Other	2%	2%

Source: U.S. Data: CDC, HIV Surveillance Report, 2009, Vol. 21, Table 15a
Florida Data: eHARS, alive and reported cases through 2009, as of 06/03/10
*Estimated for the 40 states with confidential name-based HIV infection reporting
† Men who have sex with men (MSM), injection drug use (IDU)

Prevention

Because the most common ways HIV is transmitted are through anal or vaginal sex, or sharing drug injection equipment with a person infected with HIV, it is important to take steps to reduce the risks associated with these. They include:

- Know your HIV status. Everyone between the ages of 13 and 64 should be tested for HIV at least once. If you are at increased risk for HIV, you should be tested for HIV at least once a year.
  - o If you have HIV, you can get medical care, treatment, and supportive services to help you stay healthy and reduce your ability to transmit the virus to others.
  - o If you are pregnant and find that you have HIV, treatments are available to reduce the chance that your baby will have HIV.
- Abstain from sexual activity or be in a long-term mutually monogamous relationship with an uninfected partner.
- Limit your number of sex partners. The fewer partners you have, the less likely you are to encounter someone who is infected with HIV or another STD.
- Correct and consistent condom use. Latex condoms are highly effective at preventing transmission of HIV and some other sexually transmitted diseases. "Natural" or lambskin condoms do not provide sufficient protection against HIV infection.
- Get tested and treated for STDs and insist that your partners do too.
- Male circumcision has also been shown to reduce the risk of HIV transmission from women to men during vaginal sex.
- Do not inject drugs. If you inject drugs, you should get counseling and treatment to stop or reduce your drug use. If you cannot stop injecting drugs, use clean needles and works when injecting.
- Obtain medical treatment immediately if you think you were exposed to HIV. Sometimes, HIV medications can prevent infection if they are started quickly. This is called post-exposure prophylaxis.
- Participate in risk reduction programs. Programs exist to help people make healthy decisions, such as negotiating condom use or discussing HIV status.

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.

Additional Resources

Additional information about HIV and AIDS can be found on the CDC's website in English and Spanish at: http://www.cdc.gov/hiv/topics/basic/index.htm.

Please visit the Bureau of HIV/AIDS's website to access additional reports as well as locate services across the state at: http://www.doh.state.fl.us/disease_ctrl/aids/index.html.

Arsenic Poisoning

Disease Abstract

Arsenic poisoning became a reportable condition in Florida on November 24, 2008. There were twelve cases of arsenic poisoning reported during 2010. Counties that reported cases are Bay (1), Broward (2), Brevard (1), Charlotte (1), Marion (1), Martin (1), Pasco (1), Pinellas (2), Polk (1), and St. Lucie (1). Cases were predominantly in males (8 of 12). Cases ranged from 33 to 79 years of age. The mean and median age of cases was 59.3 and 58.5 respectively. Among the twelve reported cases, eight were among whites and three non-whites, and one was of unknown race. Only six cases had ethnicity information recorded, of which two were reported as Hispanic.

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 diagnosis.

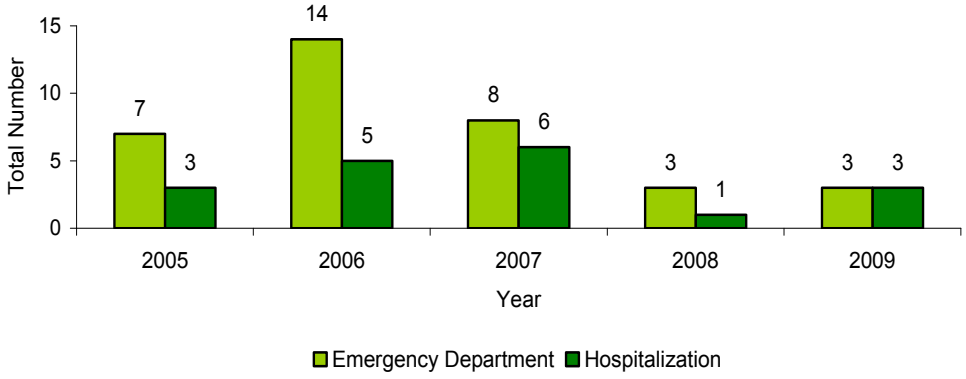
Common sources of potential inorganic arsenic exposure in Florida are chromated copper arsenate (CCA)-treated wood, tobacco smoke, certain agricultural pesticides, and some homeopathic and naturopathic preparations, and folk remedies. In addition, arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting (unregulated) private drinking wells in particular. Nine cases had unintentional exposure, one was intentional, and two were of unknown intent. The source of arsenic exposure was unknown for two cases (16.67%). The sources reported for the remaining cases were exposure to agricultural pesticides (3), vitamin supplements (2), CCA-treated wood (1), well water (1), cigarette smoke (1), spray paint (1), and work in the mining industry (1). Among the 12 cases only two were hospitalized.

Analysis of Varied Data Sources for Arsenic Poisoning Events 2005 – 2009

In order to better estimate the burden of arsenic related poisonings, de-identified hospitalization and emergency department (ED) visit data from the Agency for Healthcare Administration, and mortality data from the Office of Vital Statistics were searched for arsenic-related poisonings using relevant International Classification of Disease (ICD) codes. Selected codes were E985.1, E950.8, E980.8, E866.3 for ED visits and T57.0 for deaths. The data was extracted for one or more ICD codes present in the primary or secondary diagnosis fields from years 2005 through 2009 (the most recent year for which data was available).

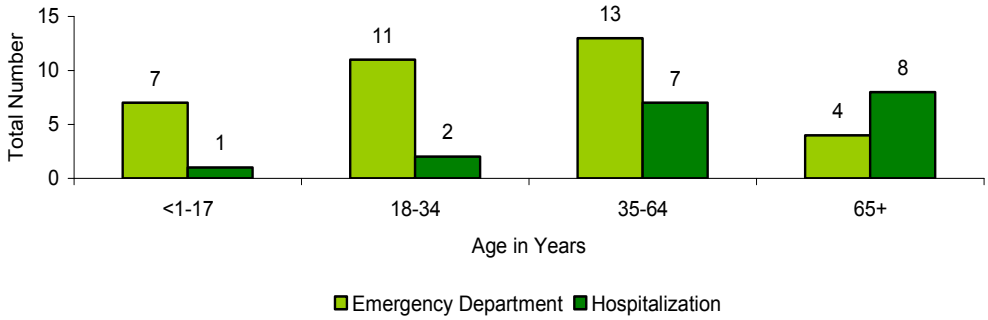
There were a total of 35 ED visits and 18 hospitalizations from 2005 through 2009 where information about arsenic poisoning was present in the record (Figure 1). No arsenic-related deaths were recorded during this time. Due to the lack of personal identifiers, reports identified in ED visit, and hospitalization data were not matched with cases identified in Merlin data and may not be unduplicated.

Figure 1. Emergency Department Visits and Hospitalizations for Arsenic Poisoning by Year, Florida, 2005 to 2009



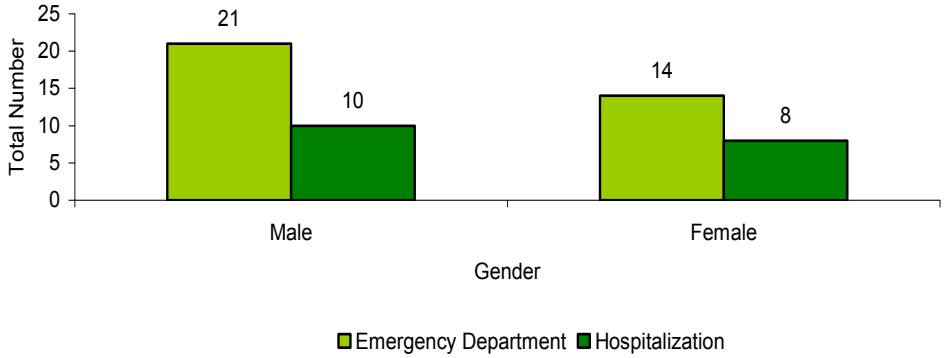
The majority of the ED visits were among adults aged 18 to 34 years (31.4%, N=11) and aged 35 to 64 years (37.1%, N=13). The majority of hospitalizations were also among adults, with 80% of all cases among those aged 35 to 64 years (38.9%, N=7) and those aged 65 years and above (44.4%, N=8) (Figure 2).

Figure 2. Emergency Department Visits and Hospitalizations for Arsenic Poisoning by Age Group, Florida, 2005 to 2009



Patients were primarily white, with only two ED visits and two hospitalizations among Black/African Americans. Hispanic ethnicity was reported for six individuals (three ED visits and three hospitalizations). Males represent 60% (N=21) of all ED visits and 55.6% (N=10) of hospitalizations.

Figure 3. Emergency Department Visits and Hospitalizations for Arsenic Poisoning by Gender, Florida, 2005 to 2009



Prevention

The Florida Department of Health performs surveillance for arsenic poisoning and provides education regarding exposure 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 micrograms per liter (µg/L). Drinking water from private wells, particularly in areas with known high arsenic concentrations in ground or well water, should be tested by the homeowner specifically for arsenic.

Prevention tips for arsenic exposure:

- If your drinking water source is a private well, and you suspect higher arsenic concentrations, have your well water tested. Use bottled water for drinking until the well is shown to be safe or until appropriate water filtration systems are put in place to remove the arsenic.
- Stop smoking. Cigarettes contain arsenic.
- Ensure a well balanced diet rich in selenium, other antioxidants, and folate.
- When using chromated copper arsenate (CCA)-treated lumber, follow the warnings regarding the wearing of personal protective equipment such as gloves, eye, and respiratory protection.
- Have children wash their hands after playing on CCA-treated lumber play equipment.
- Consider annual application of a sealant on any existing CCA-treated lumber surfaces.
- 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.
- Discuss your concerns regarding arsenic and prevention of hazardous exposures at the workplace with your employer and/or workplace health and safety representative.
- If you think arsenic is making you sick, contact your physician to seek medical assistance and contact your county health department to report arsenic poisoning.

Additional Resources

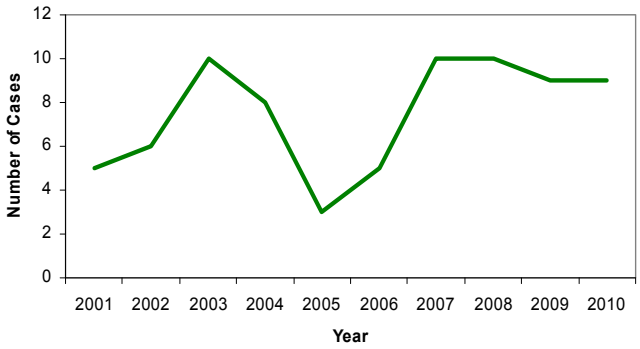
Disease information is available from the Center for Disease Control and Prevention (CDC) at: http://www.bt.cdc.gov/agent/arsenic/.

The Chemical Disease Surveillance Program collects arsenic poisoning data as a part of our disease reporting system. For more information about the program, please visit: http://www.myfloridaeh.com/medicine/arsenic.html.

Brucellosis

Brucellosis: Crude Data	
Number of Cases	9
2010 incidence rate per 100,000	0.05
% change from average 5 year (2005-2009) reported cases	21.6%
Age (yrs)	
Mean	40.9
Median	35
Min-Max	3 - 65

Figure 1. Brucellosis Cases by Year Reported, Florida, 2001-2010



Disease Abstract

From 2001 through 2010, 82 cases of human brucellosis were reported in Florida. Nine cases were reported in 2010, eight confirmed and one probable. The person meeting the probable case definition had illness onset and exposure in 2009 but was not reported until 2010. The individual was epidemiologically linked to a family member whose blood culture tested positive for *Brucella suis*. In addition to the 82 reported cases in Florida, there were investigations associated with non-Florida residents: a *B. abortus* infected patient from Nicaragua identified while visiting Miami-Dade County, an Alabama resident diagnosed with *B. suis* in Escambia County, as well as a Michigan resident and a Maine resident each diagnosed with brucellosis in their states of residence after hunting feral hogs in Monroe and Brevard counties respectively.

Speciation was available for eight of nine cases. Six *B. suis* and two *B. melitensis* isolates were identified. Location of exposure was determined to be in Florida for all except for one child infected with *B. melitensis* whose illness was associated with travel to visit family in Syria. A second person with *B. melitensis* was suspected to have sexually acquired the infection from their spouse. The spouse's infection was likely acquired during travel to Greece, where *B. melitensis* is endemic. He visited a rural village and reportedly had febrile symptoms since returning to the U.S., but refused to be tested. Risk factors for the other infected people included eating unpasteurized milk products (imported *B. melitensis*), hunting feral hogs in Florida (six *B. suis* cases), or handling uncooked meat from feral hogs (one *B. suis* case). For three cases, time from onset to diagnosis was greater than six months. Cases occurred throughout the year, as might be expected with a disease with extended incubation periods and a capacity to cause chronic illness (Figure 2). Men accounted for all six infections associated with hunting feral hogs (67%); both *B. melitensis* cases were in females, as was the case associated with handling raw meat from feral hogs. Six cases were in whites (67%), two in blacks (22%), and one was listed as of other race (11%). All cases were in non-Hispanic persons. Affected people ranged in age from 3 to 65 years. Incidence was highest in those aged 25 to 34 years, representing three of the nine cases (Figure 3).

Fifty-eight private laboratory workers or orthopedic surgery personnel in 11 Florida hospitals or laboratories were exposed to *Brucella* in 2010, including 55 high-risk and three low-risk exposures. Of the 11 cases with *Brucella* positive cultures in 2010 (including cases in non-residents mentioned above), eight resulted in at least one laboratory or orthopedic surgery exposure. Rapid communication of suspect culture results to a laboratory by the Sarasota County Health Department likely prevented exposures to personnel in one laboratory. Two of the exposed persons were pregnant; one miscarried but this did not appear to be linked to the *Brucella* exposure. Reasons for laboratory exposures include: *Brucella* was not suspected as the cause of illness (five

cases); the clinician suspected *Brucella* but neglected to warn the testing laboratory (two cases); the *Brucella* culture stained Gram positive rather than Gram negative (two cases affecting three laboratories); and the laboratory worker lacked room in the biologic safety cabinet (BSC) to work with the culture, so they worked outside the BSC (one case). Most of the exposed persons accepted the recommended antibiotic prophylaxis and none seroconverted or reported illness.

Figure 2. Brucellosis Cases by Month of Onset, Florida, 2010

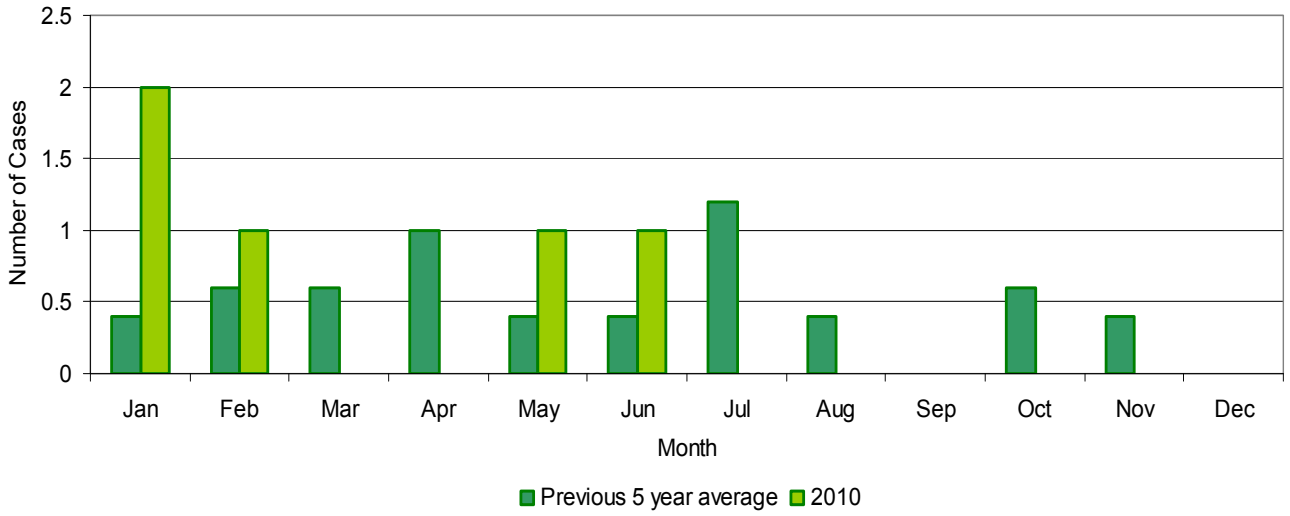
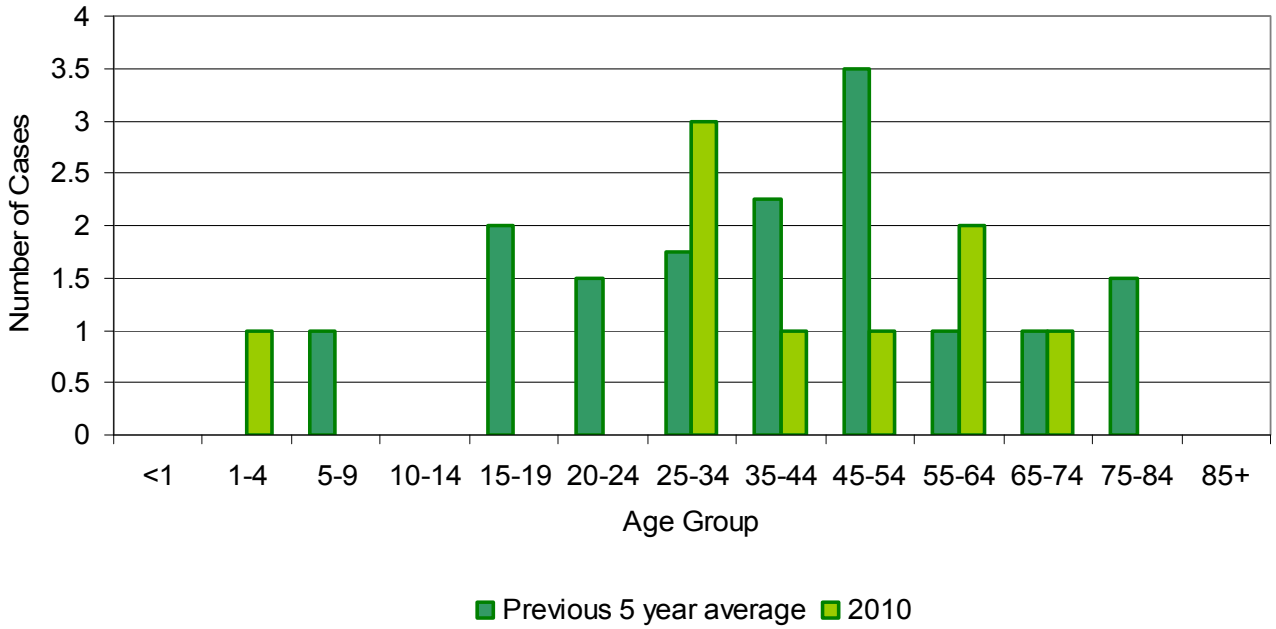


Figure 3. Brucellosis Cases by Age Group, Florida, 2010



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 include the following strategies:

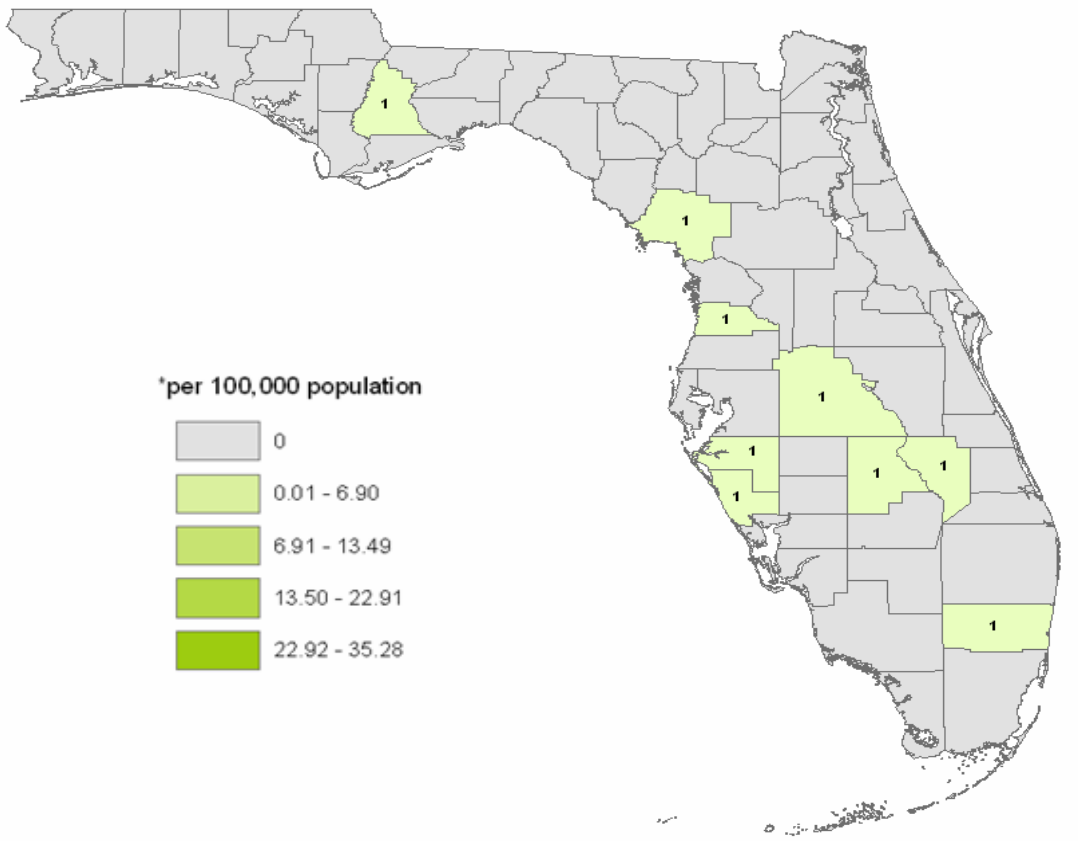
- Wear gloves and other protective clothing.
- Work in properly ventilated areas.
- Dispose of animal carcasses and tissues properly.
- Disinfect contaminated areas.
- Handle modified live vaccines properly.

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 select agent.

Continued surveillance and management programs for *Brucella* spp. in domestic livestock will reduce exposure risk from domestic animals in Florida. Surveillance is also important because *Brucella* has the potential for use as a bioterrorism agent.

Brucellosis Cases by County, Florida, 2010



References

Lt. Col. Jon B. Woods (ed.), USAMRIID, *Medical Management of Biological Casualties Handbook*, 6th ed., U.S. Army Medical Research Institute of Infectious Diseases, 2005.

M.J. Corbel, *Brucellosis in Humans and Animals*, World Health Organization Press, Geneva, Switzerland, 2006.

Additional Resources

Centers for Disease Control and Prevention, "*Brucella suis* Infection Associated with Feral Swine Hunting --- Three States, 2007 -- 2008," *MMWR* 2009; 58 (22):618-21.

Information on human brucellosis in Florida can be found at the Florida Department of Health website at: http://myfloridaeh.com/medicine/arboviral/Zoonoses/Zoonotic-brucellosis.html.

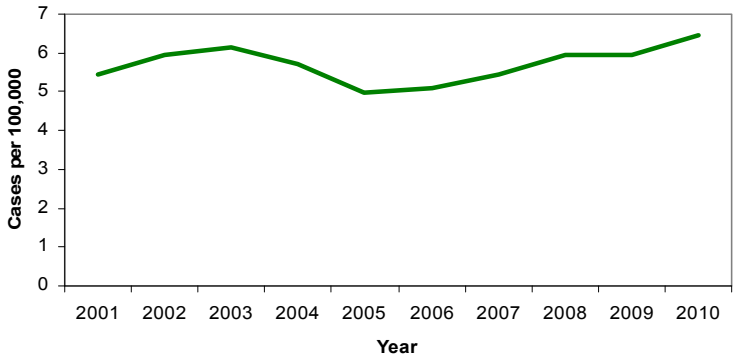
Additional information can also be found at the United States Department of Agriculture, Animal and Plant Health Inspection Services website at: http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/.

As well as the CDC website at: http://www.cdc.gov/nczved/divisions/dfbmd/diseases/brucellosis/.

Campylobacteriosis

Campylobacteriosis: Crude Data	
Number of Cases	1,211
2010 incidence rate per 100,000	6.5
% change from average 5 year (2005-2009) reported incidence rate	17.7%
Age (yrs)	
Mean	35.6
Median	34
Min-Max	0 - 98

Figure 1. Campylobacteriosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for campylobacteriosis has remained generally stable since 2001 but has had a slight upward trend since 2005 (Figure 1). In 2010, there was a 17.7% increase in comparison to the average incidence from 2005 to 2009. A total of 1,211 cases were reported in 2010, of which 95.5% were classified as confirmed. The number of cases reported tends to increase in the summer months. In 2010, the number of cases reported exceeded the previous five-year averages for the same time period in all months except May (Figure 2). The highest incidence occurs among infants under one year old and children aged one to four years (Figure 3). Overall, 7.4% of the campylobacteriosis cases reported in 2010 were classified as outbreak-associated, as compared to 7.1% in 2009. The majority (85.7%) of cases were acquired within Florida, though 10.2% were acquired outside of the U.S.

Figure 2. Campylobacteriosis Cases by Month of Onset, Florida, 2010

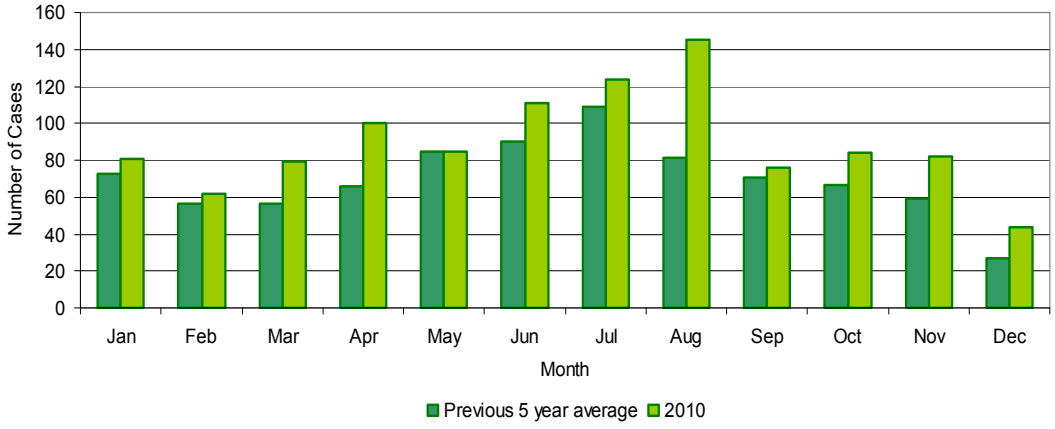
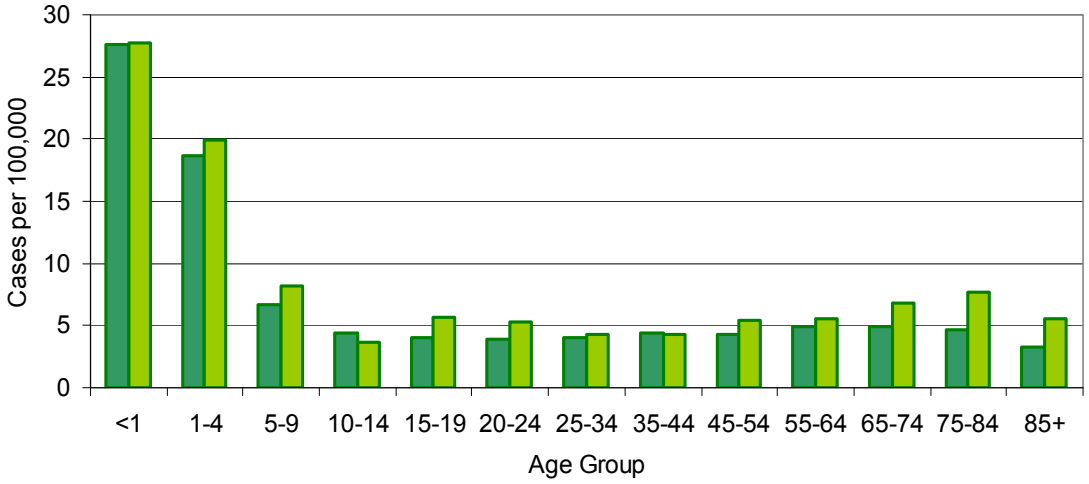


Figure 3. Campylobacteriosis Incidence Rate by Age Group, Florida, 2010



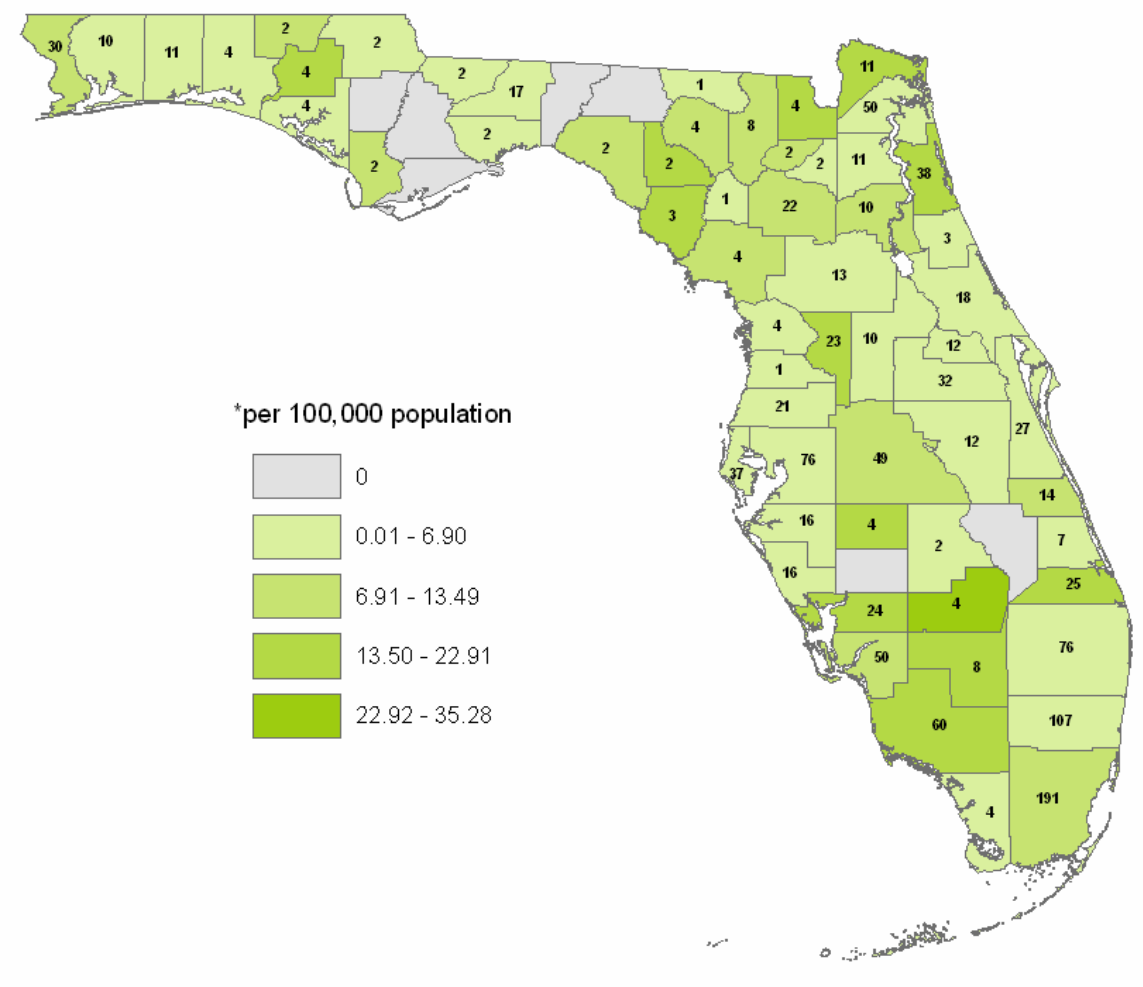
Campylobacteriosis was reported in 60 of 67 counties in Florida (Figure 4).

Prevention

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

- Cook all meat products thoroughly, particularly poultry.
- Avoid cross-contamination by making sure utensils, counter tops, cutting boards, and sponges are cleaned or do not come in contact with raw poultry or other meat.
- Do not allow fluids from raw poultry or meat to drip on or touch other foods.
- Wash your hands thoroughly before, during, and after food preparation.
- Consume only pasteurized milk, milk products, or juices. Additionally, it is important to wash your hands after coming into contact with any animals or their environment.

Figure 4: Campylobacteriosis Cases and Incidence Rates* by County, Florida, 2010



Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/.

Carbon Monoxide Poisoning

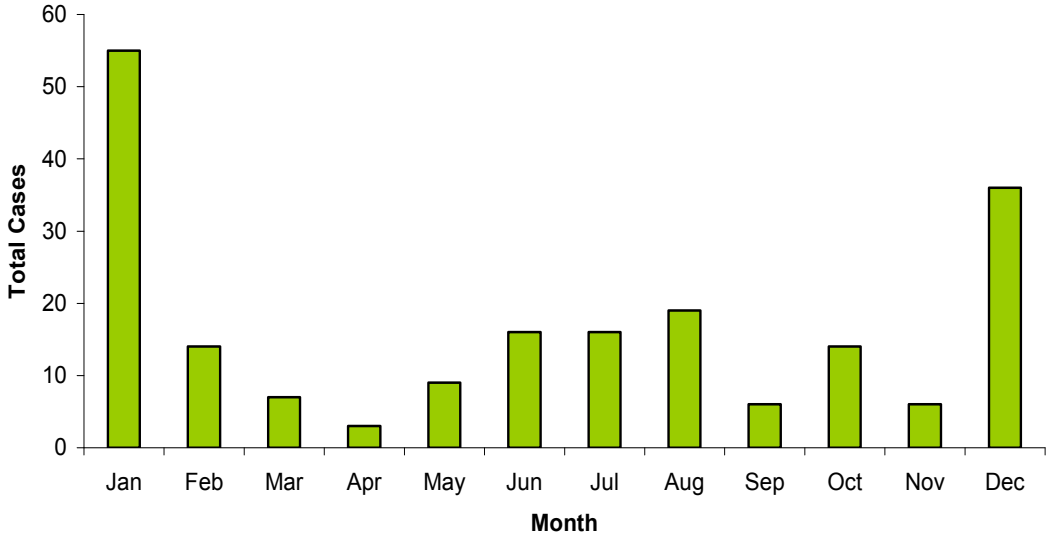
Disease Abstract

Carbon monoxide (CO) poisoning became a reportable condition in Florida on November 24, 2008. All laboratory results of patients with volume fractions ≥ 0.09 (9%) of carboxyhemoglobin (COHb) in blood are also reportable.

Exposure to CO and CO poisonings are routinely monitored in Florida using two main sources of data, the Florida Poison Information Center (FPIC) database and chief complaint data from hospitals participating in the Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE). When a potential case of CO poisoning is identified in either of these data streams, the county health departments (CHD) conduct case follow-up and investigation including the collection of additional situational and risk-related information.

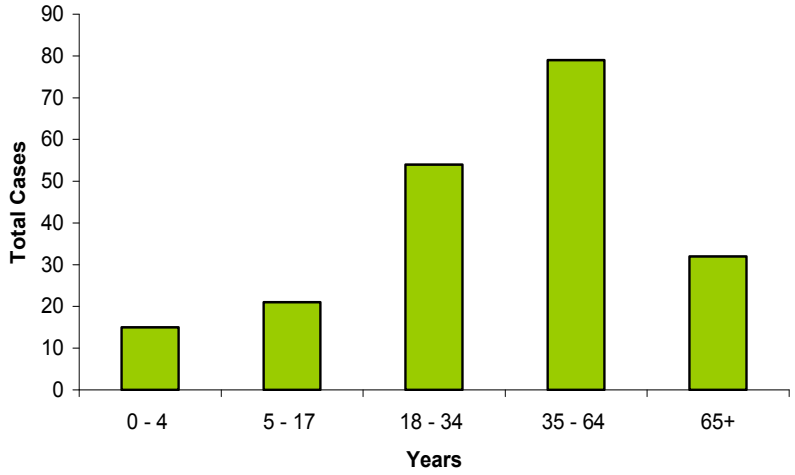
In 2010, there were 201 CO poisoning cases reported: confirmed (161), probable (16) and suspected (24). This is more than four times as many cases as reported in 2009 (43). Cases were not evenly distributed throughout the year. January (55 cases) and December (36 cases) had the highest numbers (Figure 1).

Figure 1. Reported Cases of Carbon Monoxide Poisoning by Month of Exposure, Florida, 2010



The majority of the CO poisonings were reported among those 35 to 64 years of age (N=79, 39.3%). Cases ranged in age from <1 to 92 years, with 39.7 and 38 as the mean and median age respectively. Males represent 55.7% (N=112) of all cases (Figure 2).

Figure 2. Reported Cases of Carbon Monoxide Poisoning by Age Group, Florida, 2010



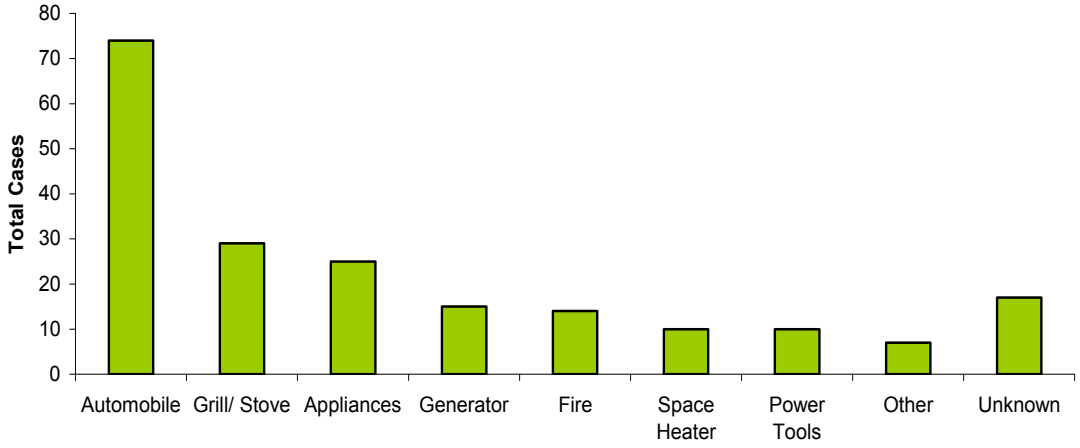
Reported cases were primarily white (N=137, 68.2%), followed by blacks (N=38, 18.9%) and Asian/Pacific Islander (N=11, 5.5%). Thirty-three cases (16.4%) were reported as Hispanic. Among all cases, the majority of CO poisoning cases were unintentional (86.1%, N=173). Only 22 cases (10.9%) were recorded as intentional poisonings.

A cluster is defined as any two or more related cases of CO exposure. Approximately 71.6% (N=144) of the cases were associated with 54 clusters of exposure. More than 773 people were involved in these 54 clusters; but after review, only 144 matched the case definition and were considered reportable. The most common relationship among people involved in CO clusters was family and friends (N=115, 79.9%), followed by neighbors and coworkers (N=21, 14.6%). The relationship between cases was unknown for eight cases (5.6%).

Most of the exposures occurred in residential areas (N=158, 78.6%) followed by the workplace (N=15, 7.5%), commercial dwelling (N=9, 4.5%), lake/river/ocean (N=5, 2.5%), and motel room (N=5, 2.5%). Other locations reported include an auto-shop, vehicle, tent, and parking lot. Exposure site was unknown for three cases. About 8% (N=16) of the cases were work-related and half of them (N=8) involved food handlers. One work-related case reported being a health care worker.

The majority of cases were a result of exposures to exhaust from an automobile (N=74, 36.8 %), portable fuel burning grill/stove (N=29, 14.4%) or fuel burning appliances (N=25,12.4%) (Figure 3). About 75% of the automobile related CO poisoning cases occurred during May, June, July, August, and December. The cases that occurred in Florida's cold weather months were primarily due to inappropriate use of devices for heating. In January, cases were predominantly related to portable fuel burning grills or stoves (N=26), as well as fuel burning appliances (N=13). Similarly, 19.4% of the cases in December were related to space heaters (N=7). This demonstrates that during cold winter months, Floridians used improper heating methods or did not use equipment properly. Past studies show that generator-related CO poisonings increased during hurricane season in Florida. The number of generator-related CO poisoning cases (N= 15) was low in 2010 which correlates to the absence of hurricane land-falls in Florida.

Figure 3. Reported Cases of Carbon Monoxide Poisoning by Exposure Type, Florida, 2010



Among all the cases, 81.6 % received medical care (N=164). Among those who received medical care, 62.2% were hospitalized (N=102). The majority of the cases survived (N=164, 81.6%), 15.4% died and 3% were associated with unknown outcome.

The results of carboxyhemoglobin (COHb) analysis were known for 88% of the cases (N=177). Among all the individuals with COHb levels reported, 83.6% were positive (defined as COHb level greater than or equal to 9%), 3.4% were negative (COHb level less than 1.2%), and 13% were equivocal (COHb level from 1.2% to 9%).

The majority of the confirmed cases were reported from Palm Beach (N=39, 19.4%), Miami-Dade (N=17, 8.5%), Broward (N=15, 7.5%), and Pinellas (N=13, 6.5%) counties.

Prevention

The Florida Department of Health (FDOH) addresses CO exposure and poisoning through surveillance and education.

Prevention tips for CO poisoning:

- Install a CO alarm in your home if you have combustion appliances or an attached garage.
- Be sure all appliances are properly installed and used according to the manufacturer's instructions.
- Have fireplace and combustion heating and ventilation systems, including chimneys, flues, and vents, professionally inspected every year.
- Don't burn charcoal inside a house, garage, vehicle, tent or fireplace.
- Don't 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.
- 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.

FDOH posted an educational video on CO poisoning prevention courtesy of the California Air Resources Board at: http://www.youtube.com/watch?v=t5rlyN6LuoU.

Section 553.885, F.S., and 509.211, F.S., require that every building for which a building permit is issued for new construction on or after July 1, 2008 and, which has an enclosed space or room that contains a boiler, shall have an approved operational carbon monoxide alarm installed.

References

"Carbon Monoxide Poisonings after Two Major Hurricanes--Alabama and Texas, August - October 2005," *MMWR* Mar 10 2006; 55 (9):236-239.

"Carbon Monoxide Exposures after Hurricane Ike - Texas, September 2008," *MMWR* Aug 14 2009; 58 (31):845-849.

Sauvageau A, Racette S, Yesovitch R, "Suicide by Inhalation of Carbon Monoxide in a Residential Fire," *J Forensic Sci.,* Jul 2005; 50 (4):937-938.

Goldfrank, Lewis R.; Flomenbaum, Neal E.; Lewin, Neal A.; Howland, Mary Ann; Hoffman, Robert S.; Nelson, Lewis S., *Goldfrank's Toxicologic Emergencies* (7th Edition), pp: 1610 & 1480, McGraw-Hill, 2002.

Additional Resources

Chemical Disease Surveillance Program at:
http://www.myfloridaeh.com/medicine/Chemical_Surveillance/index.html.

CO Hospitalization and Death Data available at Florida Charts at:
http://www.floridatracking.com/HealthTrackFL/DealIndicator.aspx?PageId=11200.

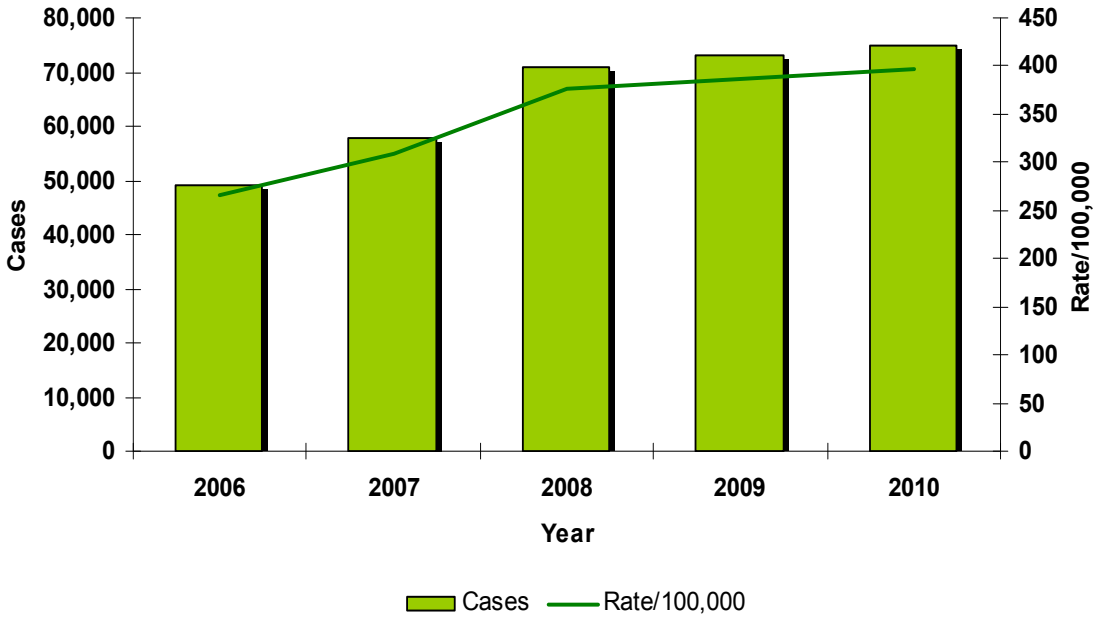
CO Brochures in English, Spanish and Creole available at:
http://www.myfloridaeh.com/community/indoor-air/carbon.htm.

Chlamydia

Disease Abstract

Chlamydia, caused by the bacterium *Chlamydia trachomatis*, became reportable in Florida in 1993. Trends show that since the disease became reportable, it is now the most common reported sexually transmitted disease (STD) in Florida and the nation. The prevalence of chlamydia is highest among those under 25 years of age and in specific populations such as women and minorities. Chlamydia infection can be asymptomatic. Because of this, annual testing for chlamydia is recommended for all sexually active adolescents and young women up to age 25. Chlamydial infections are geographically widespread and continue to increase each year. In Florida, chlamydia accounts for 75% of all reportable STDs. The 2010 case rate of 397.8 per 100,000 population is the highest of the past five years. In 2010, 74,745 chlamydia cases were reported.

Figure 1. Reported Cases of Chlamydia by Year, Florida, 2006-2010



The most prominent risk factor for chlamydial infection is age. Persons between the ages of 15-24 years represent only 13% of Florida's population in 2010 yet account for 71% (53,012) of all reported chlamydia cases in Florida. Also, 29% (215 of 746) of youth and young adults with a known HIV positive status had a new chlamydia infection in 2010.

Table 1. Reported Chlamydia Case Court and Rate per 100,000 Population, by Selected Age Groups, Florida, 2010

Age Group	Cases Reported	Rate
15-19	24,424	2,046.8
20-24	28,588	2,362.9
25-29	11,783	1,003.4
30-34	4,613	416.4
35-39	2,184	188.2
40-44	1,122	91.7

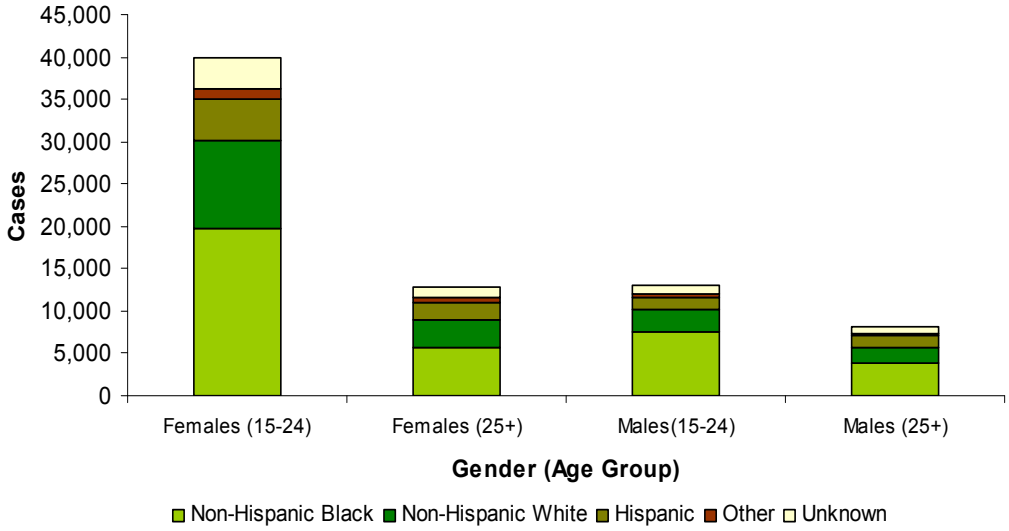
The vast differences in the distribution of chlamydia infections by age are caused by higher biological susceptibility to STD infections, prevalence of risky sexual behaviors, and a combination of other factors, which leave adolescents and young adults disproportionately affected with chlamydia compared to older populations. Therefore, greater prevention and education emphasis has been placed on adolescents and young adults.

Older people are also susceptible to contracting a STD due to perceived decreased susceptibility coupled with an actual increase in risk due to less effective immune systems and biological vulnerability after menopause. People in older age groups are also less likely to be screened for these diseases and therefore, might pass on the disease to more people before becoming aware of their disease status. From 2006 to 2010, chlamydia cases among individuals over the age of 55 have increased by 84.5%. The number of cases reported between 2006-2010 (N=1,153) in people 55 years and older is much less than for the 15-24 age group. As people age the immune system becomes less effective, putting older adults at high risk for STDs that may cause other health problems. More than 60% of people 55 years and older are sexually active at least once a month, and yet, they are rarely considered to be at risk for an STD. People who are no longer sexually active may still have chronic infection with an STD for which they were never treated or screened, which could be mistaken for other diseases of aging.

In 2010, women accounted for more than 70% of reported chlamydia cases. National trends indicate chlamydia infections are most often detected in women under the age of 25. Florida statistics mimic this trend; women under the age of 25 account for half of reported morbidity. In 2010 and previous years, the highest number of cases in women were reported in those between the ages of 15 to 24 years (Figure 2). The highest rate among women was in the 20 to 24 year age group (3,432.2 per 100,000) and the rate for women in the 15 to 19 year age group was slightly lower at 3,347.9 per 100,000 population. The high rates of chlamydia seen in women may be due in part to improved recognition of the disease because of more frequent screenings for chlamydia in women than in men.

Chlamydia rates in men were lower overall than in women, but similar age distributions are seen in both genders. Adolescents and young adults account for the majority of reported cases by age (men 61%, women 75%). Among men, those aged 20 to 24 years had the highest rate (1,334.4 per 100,000), followed by men between the ages of 15 to 19 years with a rate of 797.8 per 100,000 population. Men between the ages of 25 to 29 years accounted for 20% of chlamydia cases reported among men, whereas women in the same age cohort accounted for 15% of chlamydia cases.

Figure 2. Reported Cases of Chlamydia by Selected Age Groups, Gender, and Race/Ethnicity, Florida, 2010



Non-Hispanic blacks account for 50% of all reported chlamydia cases in 2010, non-Hispanic whites accounted for 24.3%, Hispanics accounted for 13.5%, and people who self reported as other or unidentified accounted for 12.1% of cases. Compared to non-Hispanic whites and Hispanics, non-Hispanic black female adolescents had the highest rates of chlamydia in Florida. The case rate (6,948.4 per 100,000) for non-Hispanic black women 15 to 24 years old was four times as high as the second highest rate (1,723.4 per 100,000) in non-Hispanic white females 15 to 24 years old. Cases of chlamydia have increased in both non-Hispanic blacks (15.2%) and non-Hispanic whites (31.4%) from 2009 to 2010, whereas cases with unidentified race or ethnicity data decreased by 54.8%. These changes were likely due to improved reporting practices rather than an actual change in demographics of cases.

Prevention

According to the Centers for Disease Control and Prevention (CDC), 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. CDC 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. When used consistently and correctly, a latex condom can reduce the risk of transmission of chlamydia. If there are any genital symptoms such as an unusual sore, discharge with odor, burning during urination, or bleeding between menstrual cycles could mean 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 immediately. Treating chlamydia early 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 see a health care provider and be evaluated for any possible STD exposure. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

References

The American College of Obstetricians and Gynecologists, *Primary and Preventive Care: Periodic Assessments - Routine Screening Recommendations*, 2011.

Lindau ST et al., (2007), "A Study of Sexuality and Health Among Older Adults in the United States," *N England J Med,* 357 (8):762-74.

Cholera

Disease Abstract

In 2010, four laboratory-confirmed cases of cholera were reported, for a statewide incidence rate of 0.02 cases per 100,000 population. A confirmed case of cholera is defined as a clinically compatible illness in a person from whom toxigenic *Vibrio cholerae* O1 or O139 has been isolated from stool or vomitus, or who has serologic evidence of recent infection. *V. cholerae* O1 serotype Ogawa was isolated from stool specimens of all four patients. Pulsed-field gel electrophoresis at the Centers for Disease Control and Prevention linked these cases to the outbreak of cholera in Haiti that was confirmed on October 21, 2010. All cases in Florida were associated with recent travel from Haiti. Approximately 45% of all Haitian immigrants to the U.S. reside in Florida. One patient was a resident of Haiti relocating to Florida and three patients traveled to Haiti to visit family and friends. Two patients reported exposure to lake water and one of these also drank water and bathed at a community well. Dates of illness onset ranged from October 23 to November 29, 2010. Patients ranged in age from 9 to 84 years; all were female. Symptoms included diarrhea, abdominal pain or cramping, nausea, and vomiting. All patients were treated with antibiotics and intravenous rehydration. Three of four patients were hospitalized; none died. In 2010, cases were reported in Broward (2), Collier (1), and Orange (1) counties. No local transmission was identified among household contacts in Florida.

Please see the "Cholera" section in the Summary of Notable Outbreaks and Case Investigations, 2010 for additional descriptions of two of the 2010 cases. Additional information can be accessed through the Morbidity and Mortality Weekly Report article listed in the Additional Resources section.

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 United States and CDC does not recommend cholera vaccines for most travelers.

References

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

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/cholera/index.html.

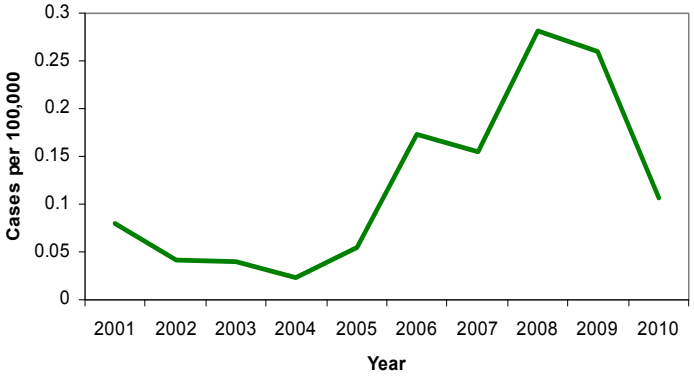
Five prevention messages were taken from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/cholera/prevention.html.

A summary of the 2010 disease activity in Haiti, the Dominican Republic, and Florida can be found at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5950a1.htm.

Ciguatera Fish Poisoning

Ciguatera: Crude Data	
Number of Cases	20
2010 incidence rate per 100,000	0.1
% change from average 5 year (2005-2009) reported incidence rate	-42.5%
Age (yrs)	
Mean	40.4
Median	40
Min-Max	23 - 62

Figure 1. Ciguatera Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Little is known about the epidemiology of ciguatera fish poisoning (CFP) in the U.S. as a whole. This may be due to lack of recognition among the medical community, the non-fatal nature of the disease, and the short duration. Case-finding in Florida is thought to be more complete, although it is likely that there is significant under-reporting.

In 2010, a total of 20 CFP cases (annual rate = 0.1 per 100,000) were reported, which was a decrease in cases compared to 2009 when 49 cases (rate = 0.26) were reported and 2008 when 53 cases (rate=0.3) were reported. Seventy percent (14) of cases were male and 30% (6) were female. Additionally, 70% (14) were of a white Hispanic race/ethnicity and 30% (6) were of a white non-Hispanic race/ethnicity. The counties where cases were reported included: Miami-Dade (15), Leon (3), Brevard (1), and Broward (1). The three cases from Leon County were a part of a single outbreak associated with a local restaurant where the affected people consumed escolar. In Miami-Dade, multiple CFP outbreaks were reported, which included two cases in people who consumed a 60-pound grouper caught near Salt Cay, three who consumed a barracuda caught near Marathon Key, and four who consumed a 12-pound barracuda. The remaining cases were not associated with an outbreak. The implicated fish associated with all single and outbreak-associated CFP cases in 2010 included barracuda (12), escolar (3), grouper (3), snapper (1), and multiple fish (grouper and snapper) (1). All 20 cases were acquired in Florida, although the implicated fish originated from many different locations.

Note: The number of outbreak-related cases summarized in the Bureau of Environmental Public Health Medicine summaries may not match Merlin case report numbers. This is due to the fact that outbreaks often include ill people who are not residents of the State of Florida (i.e., visitors who were exposed and got sick while in Florida), or people whose illnesses did not meet the surveillance case definition and were therefore not posted in Merlin. Also, outbreak cases may not match with Merlin across counties (often people cross county boundaries to eat in other counties). Outbreaks are generally reported by county and state of exposure; individual reportable diseases are reported by county and state of residence.

Figure 2. Ciguatera Cases by Month of Onset, Florida, 2010

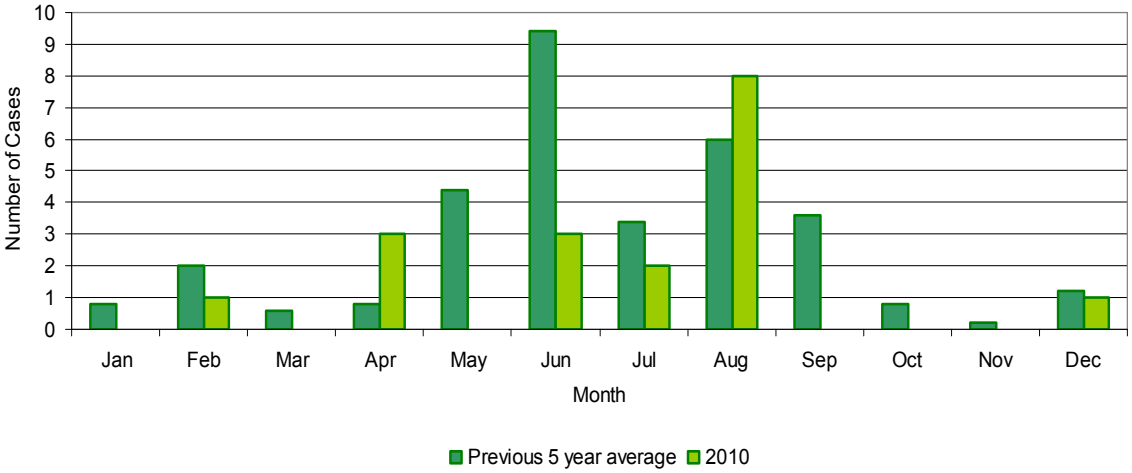
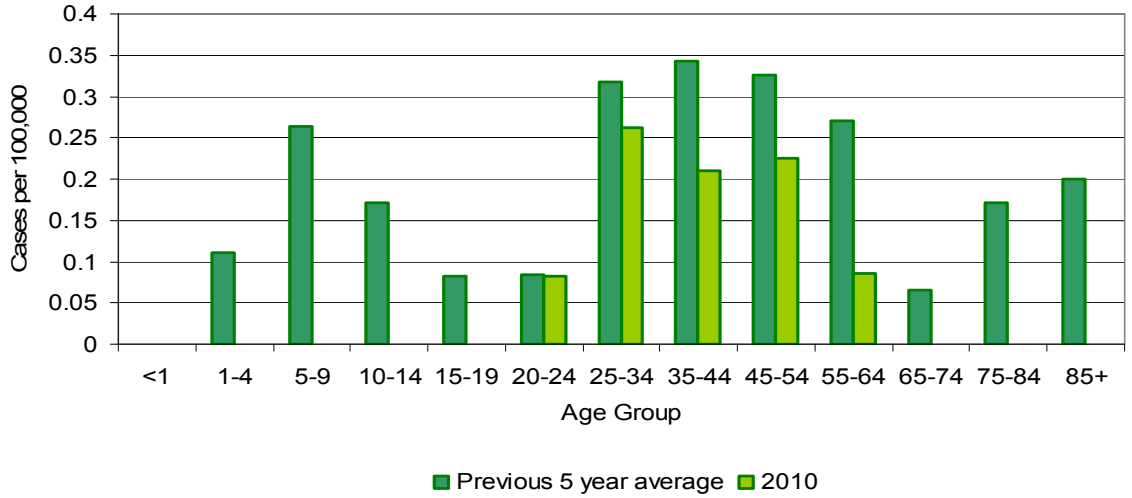


Figure 3. Ciguatera Incidence Rate by Age Group, Florida, 2010



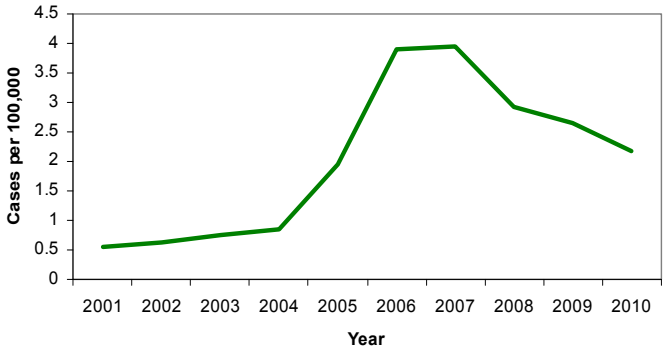
References

Walderhaug M, "Ciguatera," *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook*, U.S. Food and Drug Administration, 1992, available at: http://www.cfsan.fda.gov/~mow/chap36.html.

Cryptosporidiosis

Cryptosporidiosis: Crude Data	
Number of Cases	408
2010 incidence rate per 100,000	2.2
% change from average 5 year (2005-2009) reported incidence rate	-29.2%
Age (yrs)	
Mean	45.8
Median	47
Min-Max	0 - 95

Figure 1. Cryptosporidiosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Cryptosporidiosis is a diarrheal disease caused by the organism *Cryptosporidium parvum*. A total of 408 cases of cryptosporidiosis were reported in 2010, of which 94.6% were classified as confirmed. Just over 7% of all reported cases were classified as outbreak-related, which is a decrease from 10% the previous year; 6.1% of cases were acquired outside the U.S. The incidence rate for cryptosporidiosis increased sharply from 2004 to 2006 (Figure 1), was stable through 2007, and since has fallen somewhat to a level well above that before 2005. Increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water is more common. In 2010, the number of cases occurring each month during the summer was lower than the five-year average for July through October (Figure 2). The overall increase in cryptosporidiosis over the past decade is consistent with national trends, but whether the increase is due to increased reporting and diagnostic practices or an increase in disease burden is unclear. What is clear is that outbreak-related case reporting has influenced yearly rates although it does not explain the entire increase. The introduction of nitazoxanide in 2004, the first licensed treatment for the disease, may have influenced clinical practice because diagnostic testing for *Cryptosporidium* now can lead to specific treatment.

Figure 2. Cryptosporidiosis Cases by Month of Onset, Florida, 2010

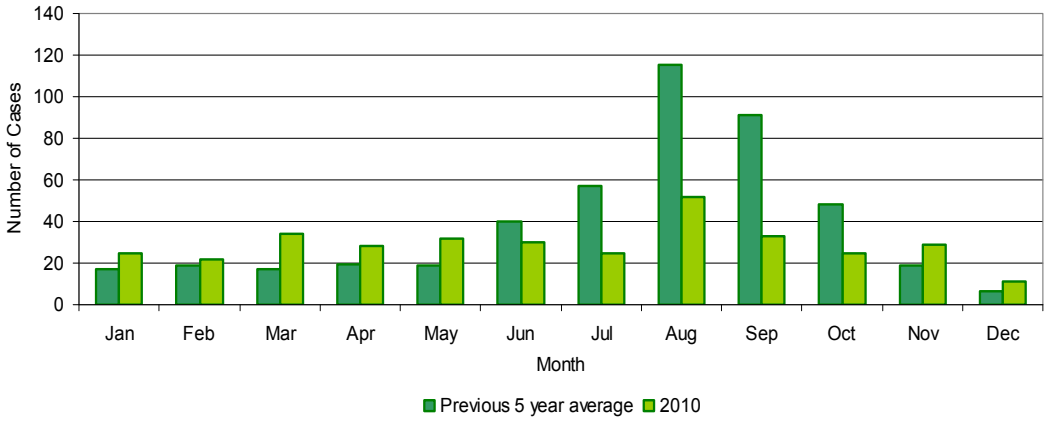
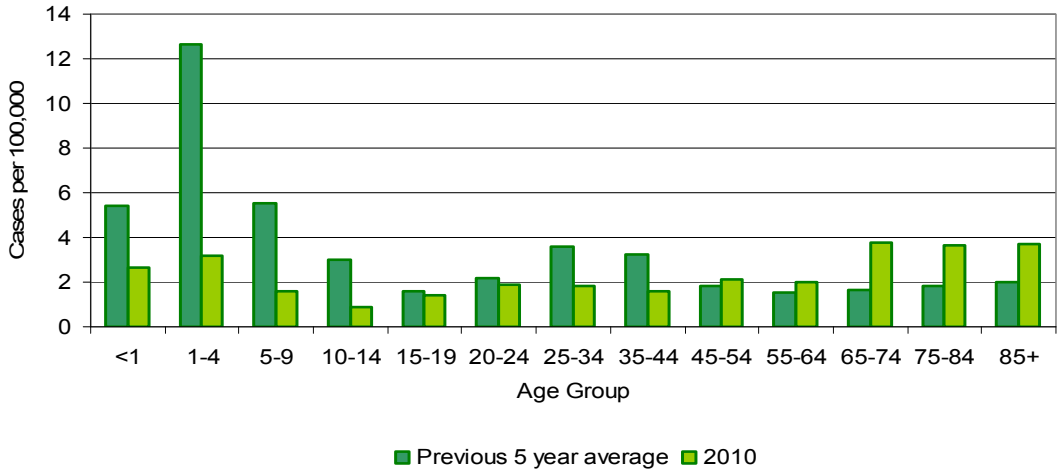


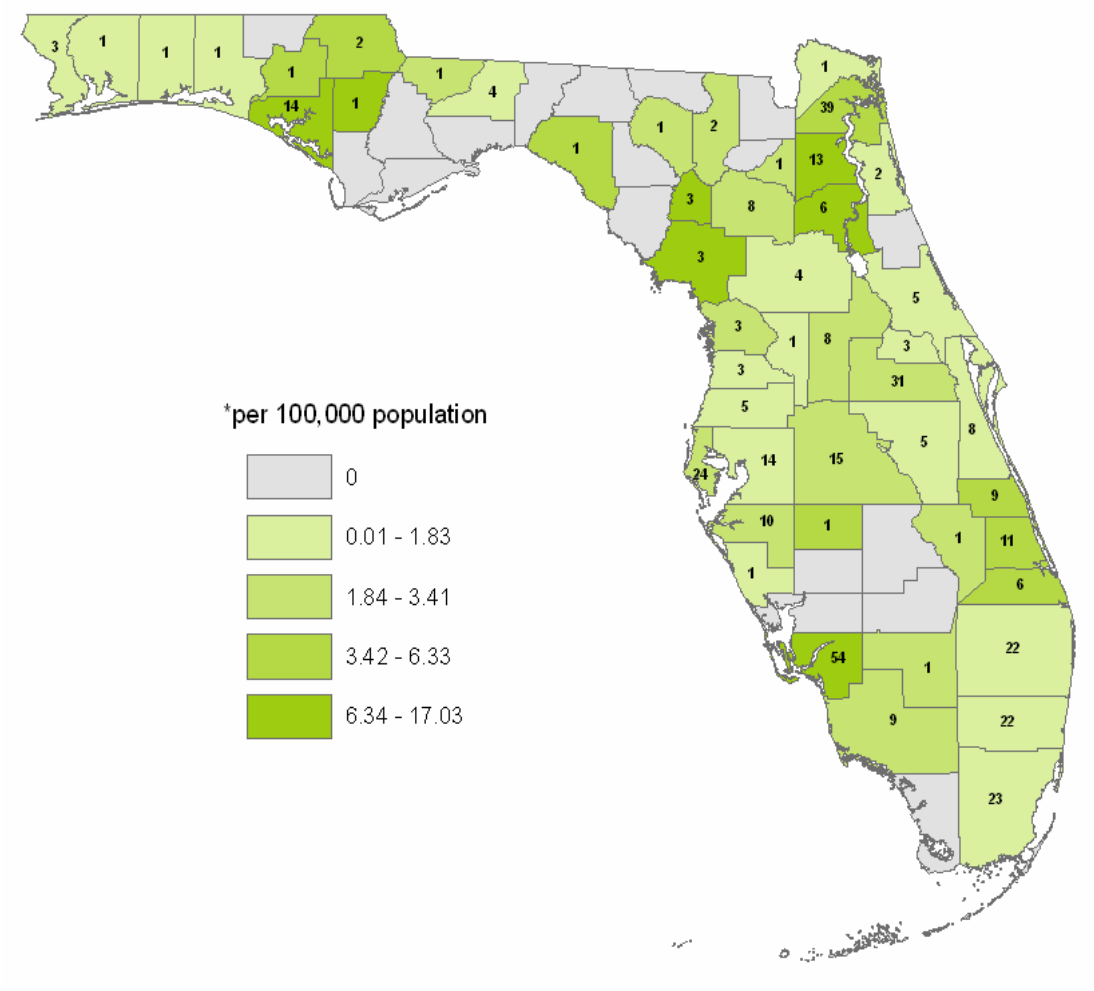
Figure 3. Cryptosporidiosis Incidence Rate by Age Group, Florida, 2010



Historical rates are higher among children aged <10 years, with the highest rates occurring in the one to four age group (3.19 per 100,000) (Figure 3). However, there has been an increase in incidence among those aged >65 years, almost doubling the previous five-year averages. In 2010, approximately 37% of reported cases were in children aged < five years who attended daycare centers. The smaller second peak in incidence among adults aged 20 to 44 years may be attributable to family contact with infected children (Figure 3).

Cases of cryptosporidiosis were reported in 49 of the 67 counties in Florida (Figure 4). Gilchrist County, with the highest incidence, reported no cases as outbreak-associated. Manatee County had a lower incidence rate, but 60.0% of their cases were associated with an outbreak in a foster home. Additional counties with a high proportion of outbreak-associated cases include Collier (22.2%) and Duval (20.5%).

Figure 4. Cryptosporidiosis Cases and Incidence Rates* by County, Florida 2010



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 ingested or 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 Health 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 pool 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.

References

Centers for Disease Control and Prevention, "Outbreak of Gastroenteritis Associated with an Interactive Water Fountain at a Beachside Park – Florida, 1999," *MMWR*, Vol. 49, No. 25, 2000, pp. 565-8.

Centers for Disease Control and Prevention, "Summary of Notifiable Diseases – United States, 2006," *MMWR*, Vol. 55, No. 53, 2006.

Centers for Disease Control and Prevention, "Surveillance for Waterborne Disease and Outbreaks Associated with Recreational Water Use and Other Aquatic Facility- Associated Health Events - United States, 2005-2006," *MMWR*, Vol. 57, No. SS-9, 2009.

Centers for Disease Control and Prevention, "Cryptosporidiosis Surveillance - United States, 2006-2008 and Giardiasis Surveillance - United States, 2006-2008," *MMWR*, Vol. 59, No. SS-6, 2010.

L.M. Fox, et al., "Nitazoxanide: A New Thiazolide Antiparasitic Agent," *Clinical Infectious Diseases*, Vol. 40, 2005, pp. 1173-80.

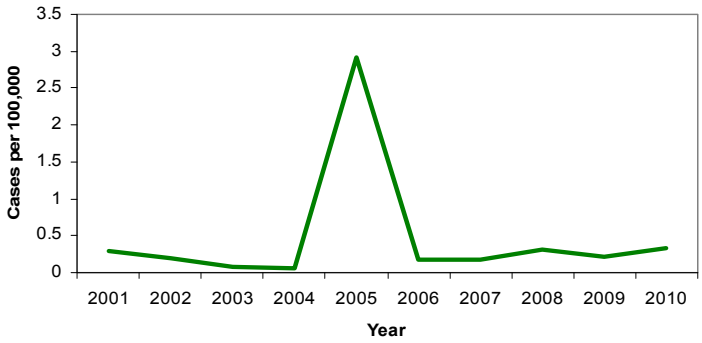
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dpd/parasites/cryptosporidiosis/factsht_cryptosporidiosis.htm.

Cyclosporiasis

Cyclosporiasis: Crude Data	
Number of Cases	63
2010 incidence rate per 100,000	0.3
% change from median 5 year (2005-2009) reported incidence rate	57.6%
Age (yrs)	
Mean	48.3
Median	48
Min-Max	1 - 86

Figure 1. Cyclosporiasis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Cyclosporiasis is a parasitic diarrheal disease caused by the organism *Cyclospora cayetanensis*. With the exception of a large outbreak of cyclosporiasis in 2005 (493 cases from Florida; see the notable outbreaks section of the *Florida Morbidity Statistics Report 1997-2006* for more details), the incidence rate for cyclosporiasis has remained stable in recent years (Figure 1). In comparison to the median incidence for the last five years, the incidence in 2010 increased by 57.6%, with a total of 63 cases reported compared to 40 cases in 2009. Only 9.5% of the cases reported in 2010 were considered outbreak-associated. In 2010, the number of cases by month of disease onset met or exceeded the previous five-year median during all months of the year when cases were reported, except for April, July, August, and November (Figure 2). Of the cases reported with onset dates in June, only four were listed as outbreak associated. Two were a household cluster with no identified risk factors. The other two were also household contacts who also had recent travel history to Mexico. All other cases were listed as sporadic, only 11% of those cases were listed as being acquired outside of the U.S. 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.

Figure 2. Cyclosporiasis Cases by Month of Onset, Florida, 2010

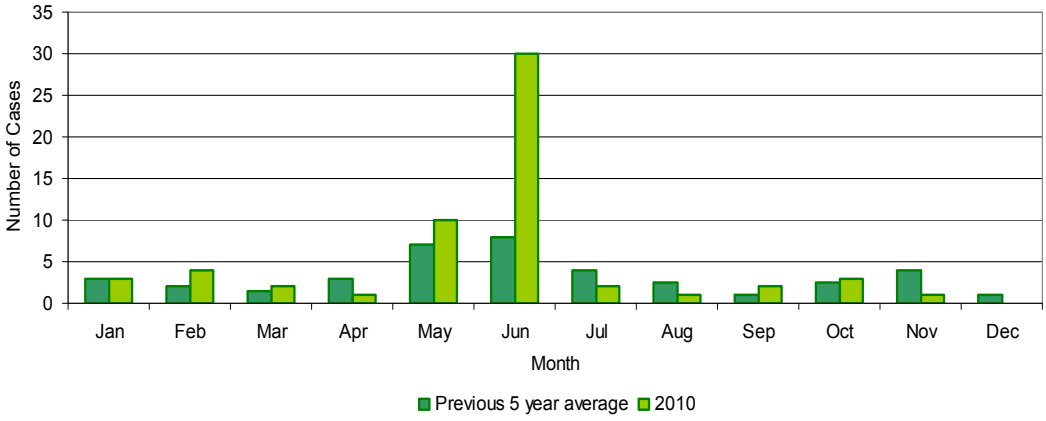
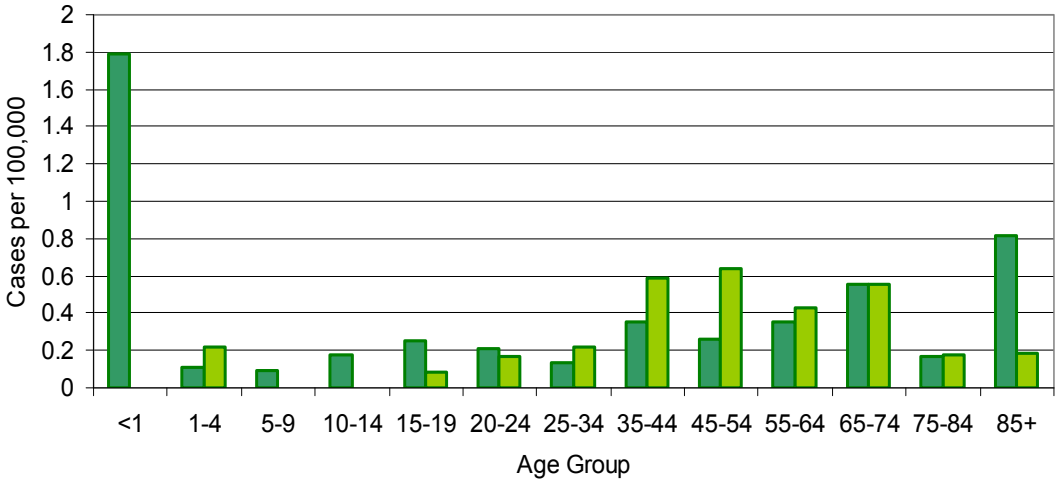
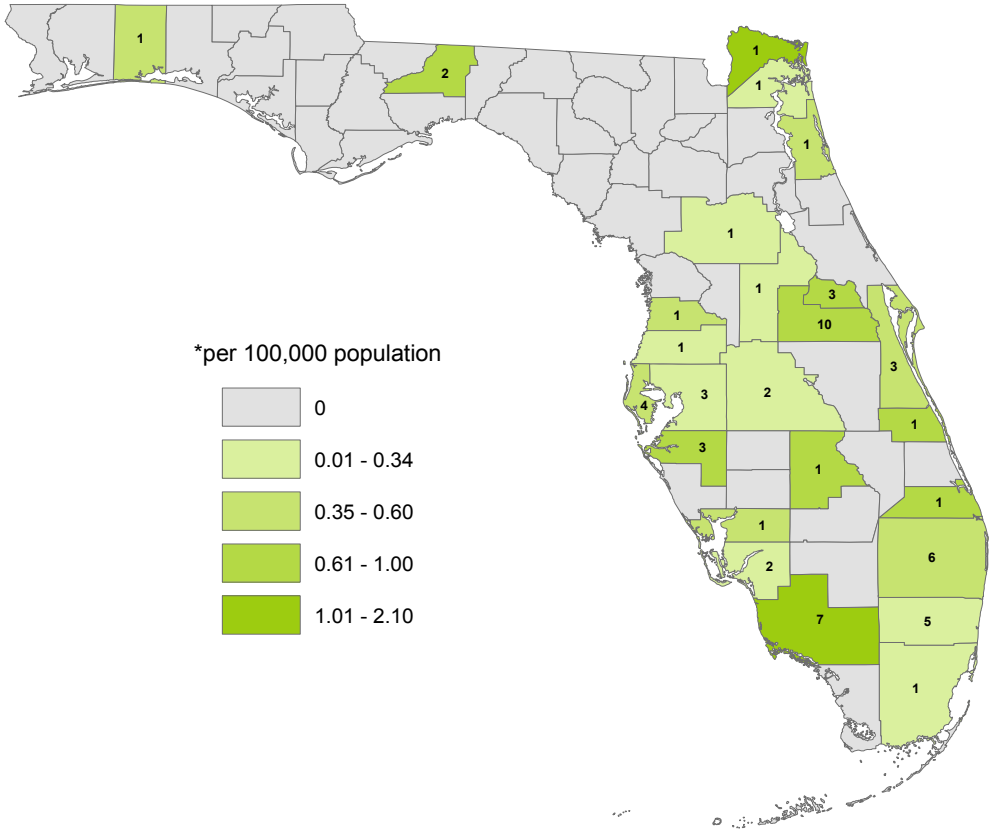


Figure 3. Cyclosporiasis Incidence Rate by Age Group, Florida, 2010



Cyclosporiasis was reported in 25 of the 67 counties in Florida (Figure 4), with the largest number of cases occurring in Orange County.

Figure 4. Cyclosporiasis Cases and Incidence Rates* by County, Florida, 2010



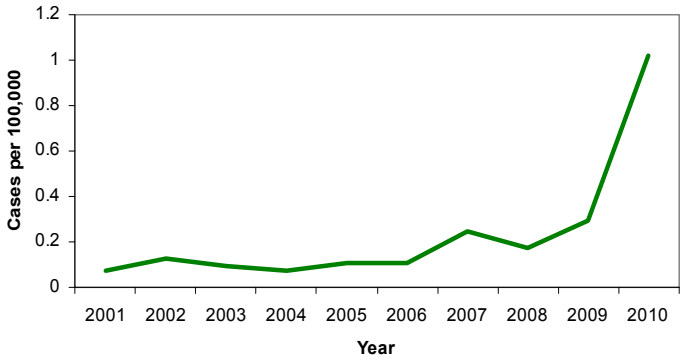
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dpd/parasites/cyclospora/default.htm.

Dengue

Dengue Fever: Crude Data	
Number of Cases	195
2010 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	451.1%
Age (yrs)	
Mean	46.8
Median	49
Min-Max	2 - 89

Figure 1. Dengue Fever Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Dengue virus (DENV) is now the most frequent cause of acute febrile illness among returning U.S. travelers from the Caribbean, South America, and Asia. It is also the most common mosquito-borne viral infection in the world. Since 1998, imported dengue cases have been reported in Florida each year. The number of cases reported typically ranged from 10 to 20 per year until 2007, when 46 cases were reported (Figure 1). After 2007, the case counts have remained elevated, with 33 cases reported in 2008, 55 in 2009, and 195 cases reported in 2010. Of those cases reported in 2010, three were categorized as dengue hemorrnagic fever, which is a more severe presentation of DENV infection. This increase is due in part to illness acquired in Florida (primarily Key West), and due to greater prevalence of dengue worldwide and epidemics in areas with high volume of travelers to the U.S., such as Puerto Rico. Increased activity is especially of concern because of the potential for introduction to Florida mosquitoes via infected symptomatic or asymptomatic travelers, which could lead to the virus' re-establishment 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 elsewhere. The establishment of endemic foci in Florida is hampered due in part to the high proportion of residents who have screens and air conditioning in their homes, schools, and workplaces.

Unfortunately, the potential for re-emergence was demonstrated in 2009 when an outbreak of dengue fever occurred in Key West, Monroe County. Illness was first identified in a New York resident who traveled to the area and became ill upon her return home. Once she was diagnosed with dengue fever and reported, a medical advisory was issued for Key West and active surveillance was implemented. Twenty-two cases meeting the confirmed or probable case definitions were identified; 21 were Florida residents and are included in Figure 1. Onset dates of these cases ranged from early July to mid-October 2009. More information about this outbreak can be found in the Summary of Notable Outbreaks and Case Investigations Section of the 2009 report. There were 64 additional cases with exposure in Monroe County in 2010.

Typically, disease onset for travelers returning to Florida peaks during mid-summer and fall, though cases are reported year-round (Figure 2). The unusual increase in August through October 2009 is primarily due to the Key West outbreak. There were a large number of cases with onset in January 2010 as well as in 2009, which may have been due to holiday travel.

Figure 2. Dengue Fever Cases by Month of Onset, Florida, 2010

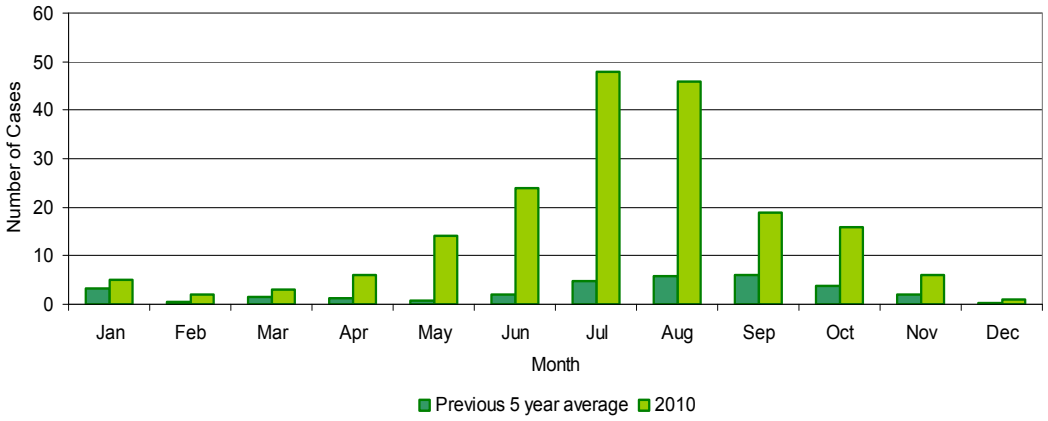
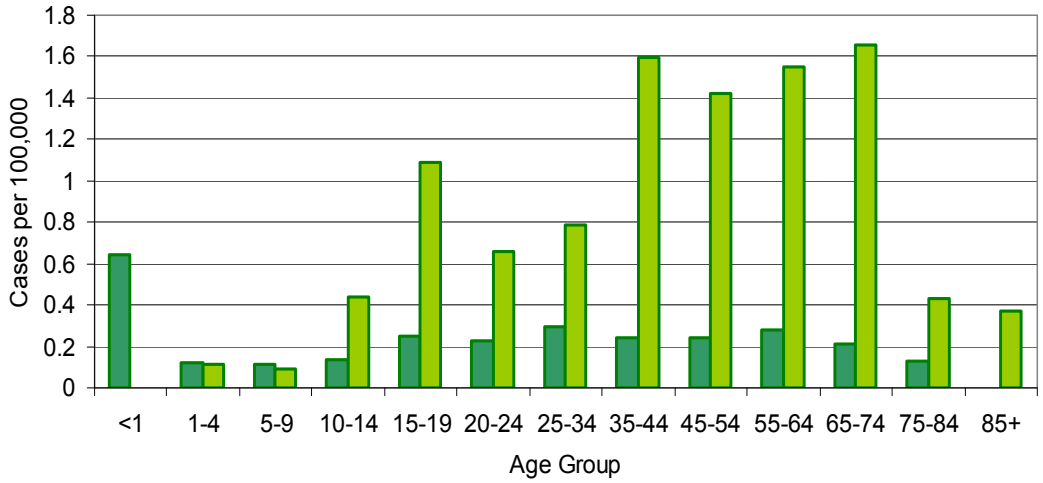


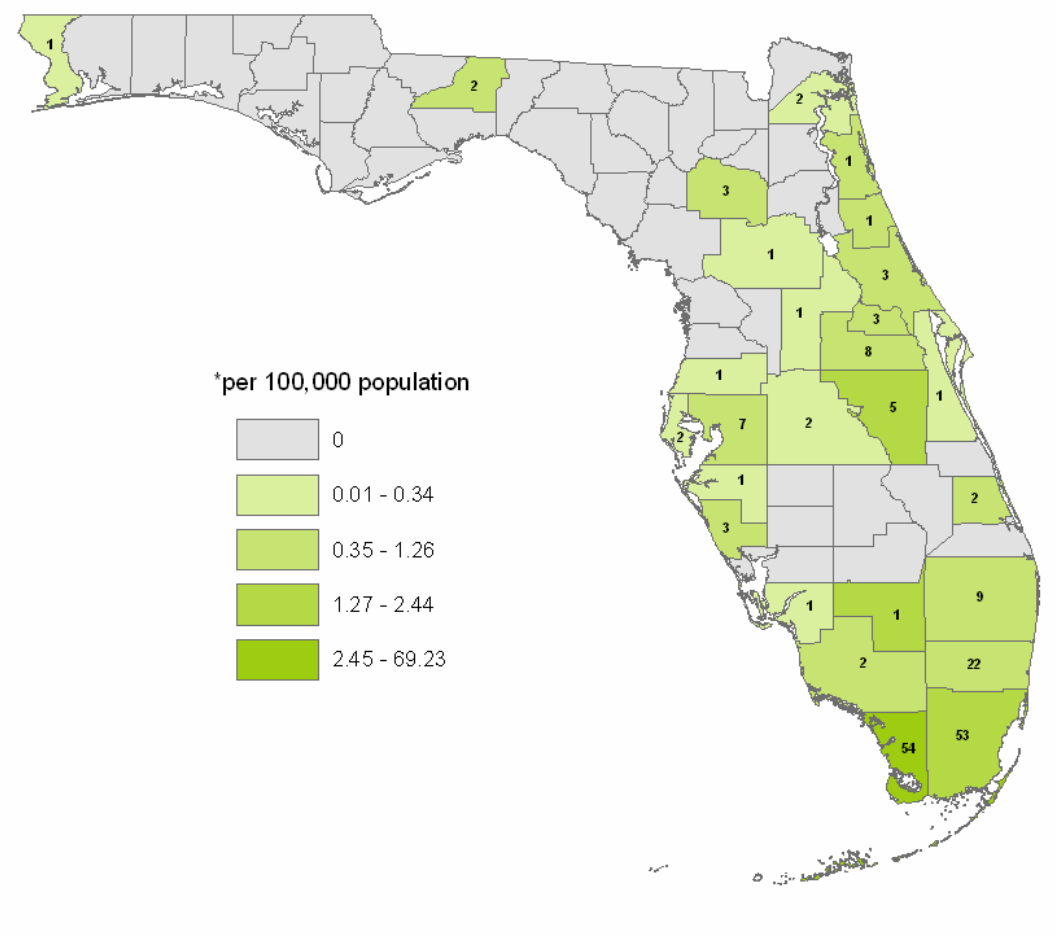
Figure 3. Dengue Fever Incidence Rate by Age Group, Florida, 2010



In 2010, 66 cases of locally-acquired dengue were reported as acquired in Broward (1), Miami-Dade (1) and Monroe (64) counties. There were two additional cases that had illness onset in 2010 but were not reported until 2011, both of which were acquired in Monroe County bringing the total number of cases acquired there to 66 in 2010. Of the cases acquired in Monroe County in 2010 (66), there were 55 Key West residents, one from Monroe County (not a Key West resident), eight cases were residents of other Florida counties, and two were from other states (and were reported by their respective states). Onset dates ranged from March 17 to November 30, 2010. The mean age of reported dengue cases acquired in Florida is 53 years (range: 22-86). Ninety-two percent of cases were white and 61% were male.

In 2010, 131 cases of imported dengue were reported. Of those, two had onset dates in 2009. In addition to the 131 imported dengue cases for 2010, five cases had onset dates in 2010 but were not reported until 2011. Therefore, the total number of cases reported as being imported with onset dates in 2010 was 134 cases. Travel history in the two weeks prior to onset for those cases indicated as imported include: Puerto Rico 27%, other Caribbean countries 27%, Central America 21%, South America 20%, and Asian and African countries 5% combined. Most cases (54%) occurred in people aged 35 to 64 years. The mean age of reported imported dengue cases in Florida was 44 years (range: 3-89). Seventy-five percent of cases were white and 53% were male.

Dengue Fever Cases and Incidence Rates* by County, Florida 2010



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 avoid mosquito bites. People should take the following precautions to protect themselves from mosquitoes.

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 aren't being used.
- Empty and clean birdbaths and pet's water bowls at least once or twice a week.
- Protect boats and vehicles from rain with tarps that don't accumulate water.
- Maintain swimming pools in good condition and appropriately chlorinated. 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

Gill J, Stark LM, Clark GG, "Dengue Surveillance in Florida, 1997-1998," *Emerg Infect Dis*., 2000; 1:30-5.

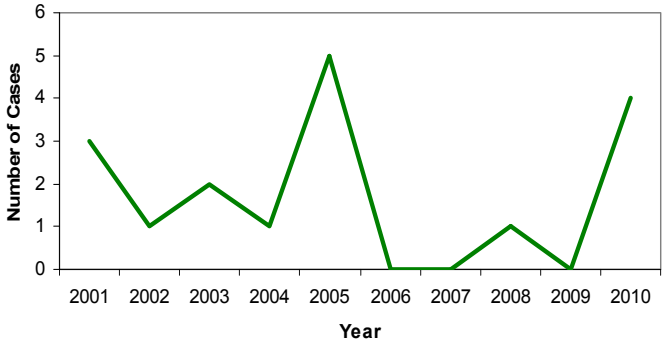
Additional Resources

Additional information on DENV and other mosquito-borne diseases can be found in the *Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook*, online at:
http://www.doh.state.fl.us/environment/medicine/arboviral/pdf_files/2009MosquitoGuide.pdf.

Disease information is also available from the Centers for Disease Control and Prevention (CDC) website at:
http://wwwn.cdc.gov/travel/yellowBookCh4-DengueFever.aspx.

Eastern Equine Encephalitis

Figure 1. Eastern Equine Encephalitis Cases by Year Reported, Florida, 2001-2010



Disease Abstract

Eastern equine encephalitis virus (EEEV) is a mosquito-borne alphavirus that was first identified in the 1930s. EEEV occurs in natural cycles involving birds and *Culiseta melanura* mosquitoes in freshwater swampy areas. Peak activity occurs between May and August, but transmission can occur year-round. In the usual cycle of transmission (enzootic cycle), EEEV remains in the swampy areas, as the mosquito involved prefers to feed upon birds and does not usually bite humans or other mammals. Most human cases are thought to occur when the virus occasionally moves into other mosquito species that are more likely to bite people and act as bridge vectors. Horses are more likely to live in swampy environments than humans; therefore, infections in unvaccinated horses can sometimes be used as indicators for focal EEEV activity.

All evidence indicates that human eastern equine encephalitis (EEE) does not have epidemic potential in Florida, but it can cause severe disease in those infected. Continuous surveillance since 1957 has documented 82 human cases (average 1.5 cases per year, range: 0-5), including four in 2010.

In 2010, EEEV antibodies were also detected in a fatality deemed to be due to other unrelated causes and in an elderly patient with no previously reported encephalitic illness. In the past, EEEV antibodies have only been detected in two other asymptomatic Florida residents, one of which reportedly had survived a previous EEE infection (history not available for the other individual). The cases reported each year from 1999 to 2010 suggest that EEE remains infrequent (Figure 1).

In 2010, one case was reported in June and three in July. The majority of EEE cases involve those aged <15 years. However, in 2010, one case involved a one year old child and the other three cases were aged 50-58 years. Of the 17 cases reported between 2001 and 2010, eight (47%) resulted in death. All four cases in 2010 were fatal. This is a higher mortality rate than the rate typically reported in the U.S. (33%). Two cases were female and two male. Three of the cases were white and one was black; all were non-Hispanic. All four cases reportedly either did not use or rarely used mosquito repellants and two regularly smoked outside. Two of the adults also had underlying disease conditions. Between 2001 and 2010, 10 cases (59%) were reported in individuals residing in counties in the panhandle or northern region of the state, and six cases (35%) were reported from the central region. In 2010, there were two cases from Hillsborough County and one each in Wakulla and Leon counties.

Prevention
Prevention of the disease is a necessity, as there is no cure for EEE; only supportive care is available. Measures should be taken to avoid being bitten by mosquitoes including: using EPA-approved insect repellents that contain DEET, Picaridin, or oil of lemon eucalyptus; avoiding spending time outdoors during dusk and dawn or other times when disease-carrying mosquitoes are active; and covering skin with long sleeves and long pants to protect skin from mosquito bites. In addition, screens on doors and windows should be well maintained to ensure mosquitoes cannot enter the home. Draining areas of standing water from around the home to eliminate mosquito breeding sites is also recommended. Horses are quite susceptible to this virus and vaccination is strongly recommended.

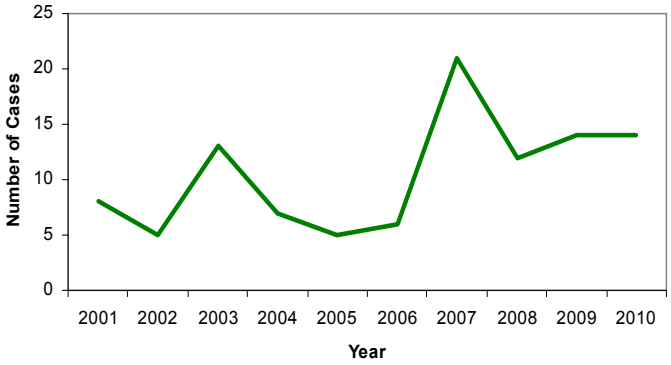
Additional Resources
Additional information on EEE and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at: http://www.doh.state.fl.us/environment/medicine/arboviral/pdfs/2011/MosquitoGuide_2011.pdf.

Disease information is also available from the Centers for Disease Control and Prevention (CDC) website at: http://www.cdc.gov/ncidod/dvbid/arbor/eeefact.htm.

Ehrlichiosis/Anaplasmosis

Ehrlichiosis: Crude Data	
Number of Cases	14
2010 incidence rate per 100,000	0.07
% change from average 5 year (2005-2009) reported cases	20.7%
Age (yrs)	
Mean	51.9
Median	52.5
Min-Max	26 - 79

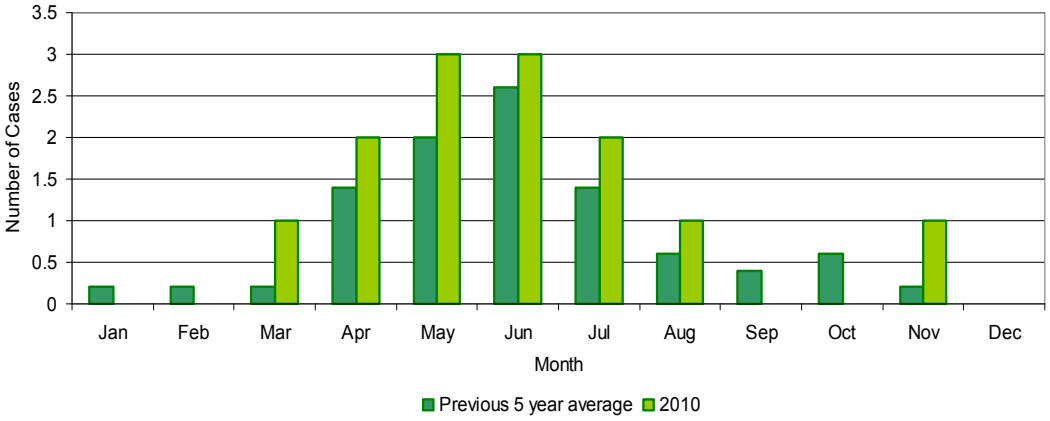
Figure 1. Ehrlichiosis Cases by Year Reported, Florida, 2001-2010



Disease Abstract
Ehrlichia chaffeensis, discovered in 1987, causes human monocytic ehrlichiosis (HME). *Ehrlichia 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*. The principal vector for both agents is the Lone Star tick, *Amblyomma americanum*. Due to testing limitations, *E. ewingii* is not as well characterized as *E. chaffeensis*; however, it has most frequently been identified in immunocompromised patients. *Ehrlichia* cases are reported most frequently in the Midwestern and middle-Atlantic states. Human granulocytic ehrlichiosis (HGE) was originally thought to be caused by another species of *Ehrlichia*, but was later reclassified as *Anaplasma phagocytophilum,* with the associated illness renamed human granulocytic anaplasmosis (HGA). The principal vector for *A. phagocytophilum* is *Ixodes scapularis* and most cases are reported from the Northeast and Midwestern U.S. HGA became nationally notifiable in 1999.

Between 1998 and 2009, the total number of combined cases of HME and HGA reported annually ranged from two to thirteen cases, except in 2007 when 21 cases were reported (18 HME and three HGA) (Figure 1). In 2010, ten cases of HME, three cases of HGA, and one case due to an undetermined species were reported. White-tailed deer is an important reservoir species for *E. chaffeensis.* Less is known regarding other potential wildlife reservoirs. In addition, there is no standardized tick disease surveillance program in Florida. These gaps in knowledge make 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. In 2010, HME cases were 50% male and 50% female, 67% of HGA cases were female, and the single undetermined case was reported as male. The average age of HGA cases was 36 years, which is younger than historic trends. The average age of HME cases was 56 years with a median age of 59, which was slightly older than historic trends. One HME case in a man aged 36 years was fatal. Nine cases (90%) of HME were non-Hispanic whites; the remaining case was of Hispanic ethnicity. Two of the HGA cases were white with one being Hispanic and the other non-Hispanic ethnicity; the race and ethnicity of the third case were unknown. The case due to an undetermined species was white and non-Hispanic. Eighty percent of HME cases were reported as being acquired in Florida, and 20% were acquired in other states in the U.S. Most cases were reported in the north and central parts of the state; three of 10 HME cases were reported from Alachua County. HGA is more likely to be acquired outside Florida; however, all three cases reported in 2010 were acquired in Florida. Though cases of both HME and HGA are reported year-round, peak transmission occurs during the late spring and early summer months (Figure 2).

Figure 2. Ehrlichiosis Cases by Month of Onset, Florida, 2010

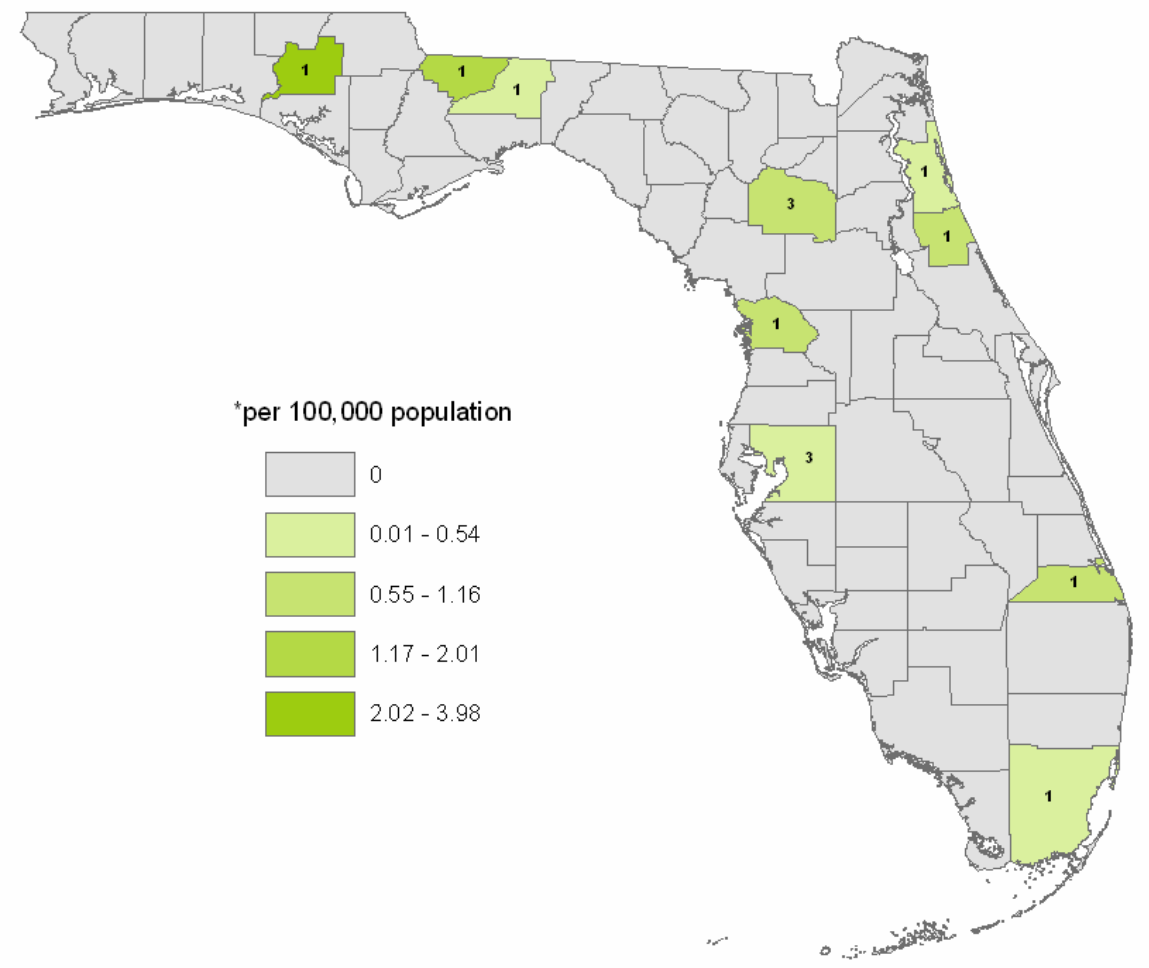


Prevention

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 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.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

Ehrlichiosis/Anaplasmosis Cases and Incidence Rates* by County, Florida 2010



References

Center of Disease Control and Prevention, "Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever, Ehrlichiosis, and Anaplasmosis-United States," *MMWR*. 2006; 55 (RR04); 1-27.

Additional Resources

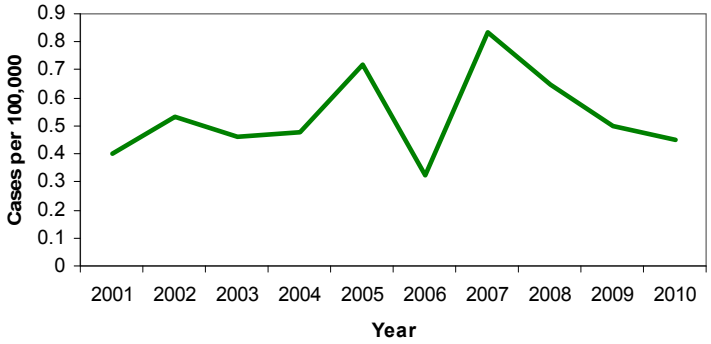
Disease information is also available from the Florida Department of Health at: http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

Disease information is available from the CDC at: http://www.cdc.gov/ncidod/dvrd/ehrlichia/Index.htm.

Escherichia coli, Shiga Toxin-Producing

Escherichia coli, Shiga Toxin-Producing: Crude Data	
Number of Cases	85
2010 incidence rate per 100,000	0.5
% change from average 5 year (2005-2009) reported incidence rate	-25.3%
Age (yrs)	
Mean	23.3
Median	15
Min-Max	0 - 86

Figure 1. *Escherichia coli*, Shiga Toxin-Producing Incidence Rate by Year Reported, Florida, 2001-2010



Description

The most commonly identified serogroup of Shiga toxin-producing *Escherichia coli* (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 people 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 was 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 reported over the past 10 years, not just serogroup O157:H7; therefore, they cannot be compared to E. coli O157:H7 numbers in reports prior to 2008.

Disease Abstract

A total of 85 confirmed and probable cases were reported in 2010, of which 72 (84.71%) were confirmed. An additional 154 suspected cases were reported in 2010, but are not included in this summary. Of those 154 suspected cases, 57 (37.01%) were pending final Centers for Disease Control and Prevention (CDC) results when the 2010 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. In 2009, only one case was pending final CDC result when the database closed.

Twenty-one cases (24.71%) were classified as outbreak-associated. Three cases were acquired in states other than Florida and 10 were acquired outside the U.S. Approximately one-third (24) of the confirmed cases were caused by serogroup O157:H7, three were caused by O157:H unknown, and one was caused by O157:non-motile. Non-O157 serogroups included O103:H2 (11), O26:H11 (5), O111:H8 (4), O rough:non-motile (2), O undetermined:H8 (2), O111:NM (2), O145:NM (2), O153:H2 (2), O rough:H11 (1), O undetermined:H14 (1), O undetermined:H16 (1), O undetermined:H27 (1), O103:H25 (1), O115:H10 (1), O128:H2 (1), O174:H21 (1), O45:H2 (1), O6:H34 (1), O69:H11 (1), O76:NM (1), O91:H14 (1), and one unknown strain.

Figure 2. *Escherichia coli,* Shiga Toxin-Producing Cases by Month of Onset, Florida, 2010

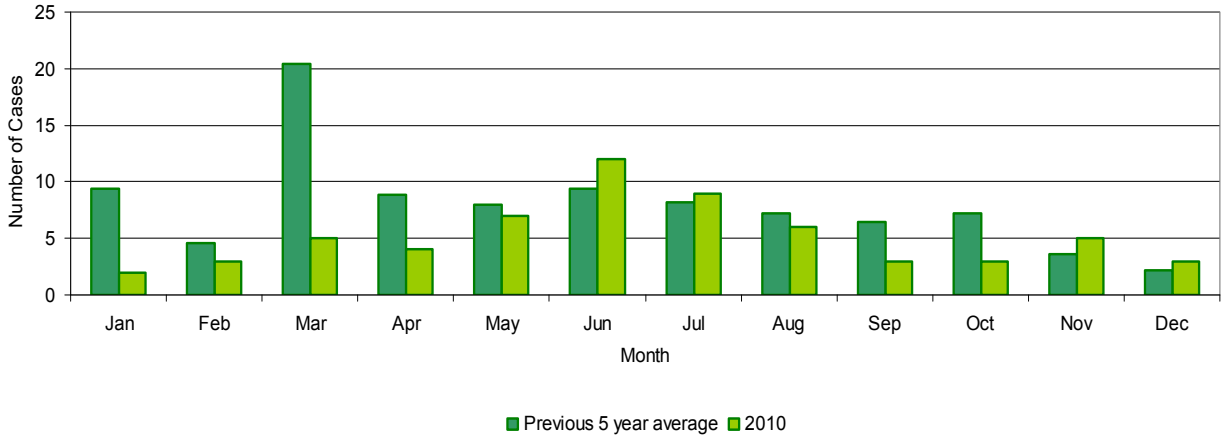
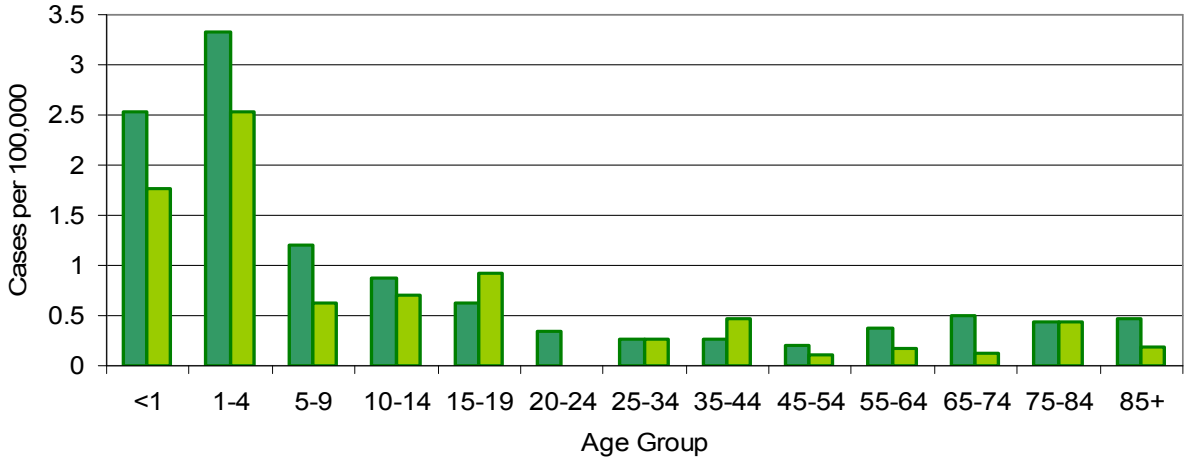


Figure 3. *Escherichia coli,* Shiga Toxin-Producing Incidence Rate by Age Group, Florida, 2010

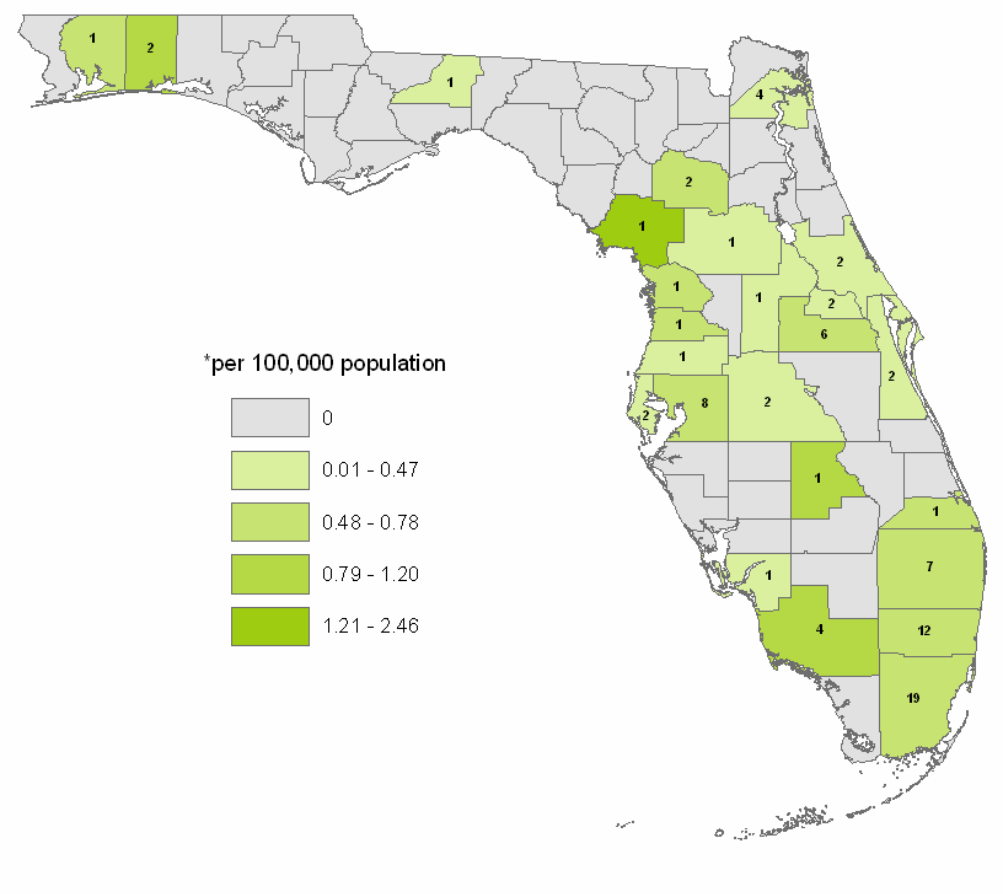


The incidence rate for STEC has varied over the last ten years (Figure 1). One source of variation is large outbreaks involving food products distributed across multiple states or other common source exposures such as petting zoos. In 2010, there was a 25.3% decrease in incidence of new cases in comparison to the average incidence from 2005 to 2009.

In 2010, the number of cases reported was highest in the early summer months (Figure 2). Incidence was greatest among children and teenagers (Figure 3). Incidence was at or below the previous five-year average in all age groups except those aged 15 to 19 years and those aged 35-44 years (Figure 3).

STEC cases were reported in 25 of 67 counties in Florida (Figure 4).

Figure 4. *Escherichia coli* Shiga Toxin-Producing Cases and Incidence Rates* by County, Florida, 2010



Prevention

To reduce the likelihood of becoming infected with STEC, observe the following guidelines:

- Cook all meat products thoroughly, particularly ground beef.
- Avoid cross-contamination by ensuring utensils, counter tops, cutting boards, and sponges are cleaned, or do not come in contact with raw meat.
- Do not allow the fluids from raw meat to come in contact with other foods.
- Wash your hands thoroughly before, during, and after food preparation and after toilet use.
- Wash your hands after coming into contact with any animals or their environment. Take special precautions with young children in petting zoos or with farm animals, as these settings may harbor the organism.

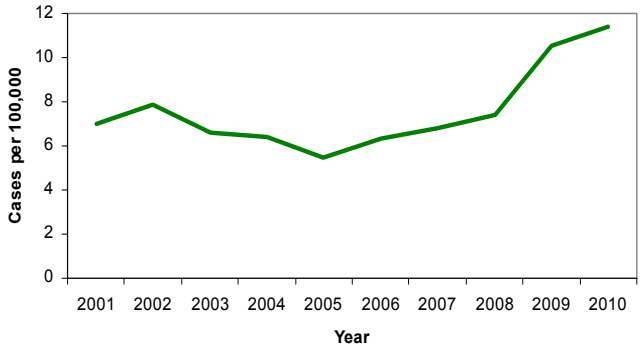
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ecoli/.

Giardiasis

Giardiasis: Crude Data	
Number of Cases	2,139
2010 incidence rate per 100,000	11.4
% change from average 5 year (2005-2009) reported incidence rate	56.0%
Age (yrs)	
Mean	25.2
Median	17
Min-Max	0 - 95

Figure 1. Giardiasis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for giardiasis declined by about half over the years from 1999 to 2005 but increased slightly starting in 2006 (Figure 1). In 2010, there was a 56.01% increase in comparison to the five-year average incidence from 2005 to 2009, at least partly due to a case definition change (see below). A total of 2,139 cases were reported in 2010, higher than the number reported in 2009 (1,981 cases). Of the 2,139 cases reported in 2010, 98.8% were classified as confirmed. Each year, the number of cases increase in the summer and early fall months (Figure 2). The month of August historically has the largest number of reported cases; in 2010, the largest number of cases (144) in fact occurred in August. In 2010, all months except January exceeded the previous five-year average number of cases. Among the 2,139 giardiasis cases reported in 2010, 106, or 5.0%, were reported as outbreak-associated. Over 60.6% of all reported cases indicated infection had been acquired in Florida. There were 776 cases that were reported as acquired outside of the U.S., with 548 of these cases, or 70.6%, indicating infection was acquired in Cuba. The giardiasis case definition was changed in August 2008 to include asymptomatic laboratory-confirmed infection. Previously, only symptomatic laboratory-confirmed cases met the case definition. It is likely the large increase in reported cases of giardiasis in 2009 and again in 2010 was due to the change in case definition. In particular, there are certain populations, such as refugee populations, that are regularly screened for giardiasis, in whom asymptomatic cases are identified. In 2009, 43.0% of cases were reported without an onset date and that proportion rose to 47.5% in 2010. Note: In 2011, the giardiasis case definition was changed again, to require symptoms as well as clinical illness, and the number of reported cases is expected to decline as a result.

Figure 2. Giardiasis Cases by Month of Onset, Florida, 2010

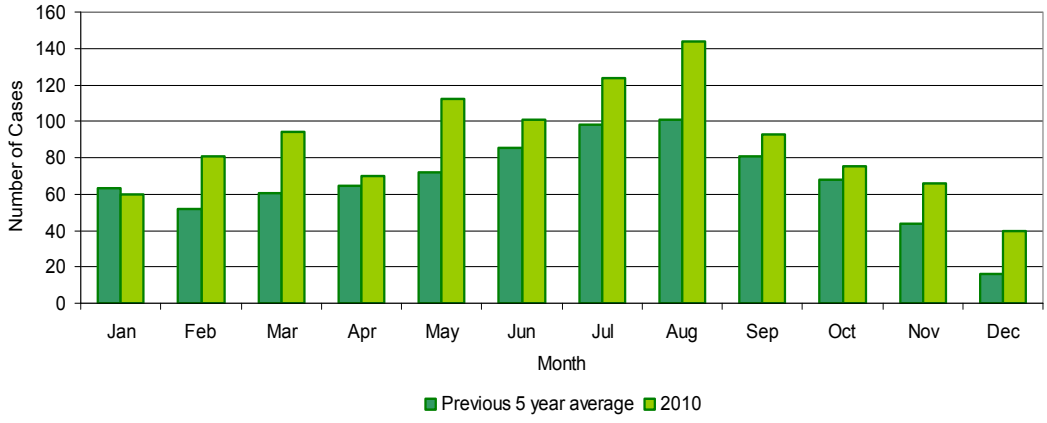
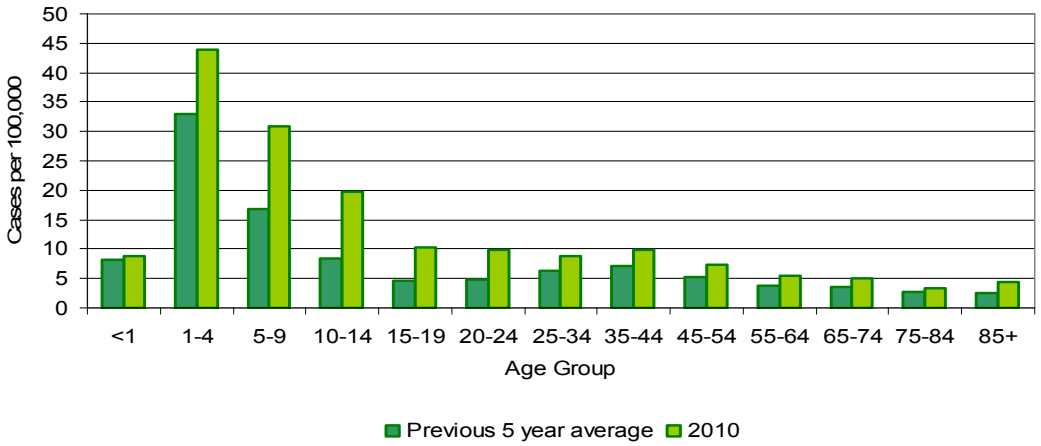


Figure 3. Giardiasis Incidence Rate by Age Group, Florida, 2010

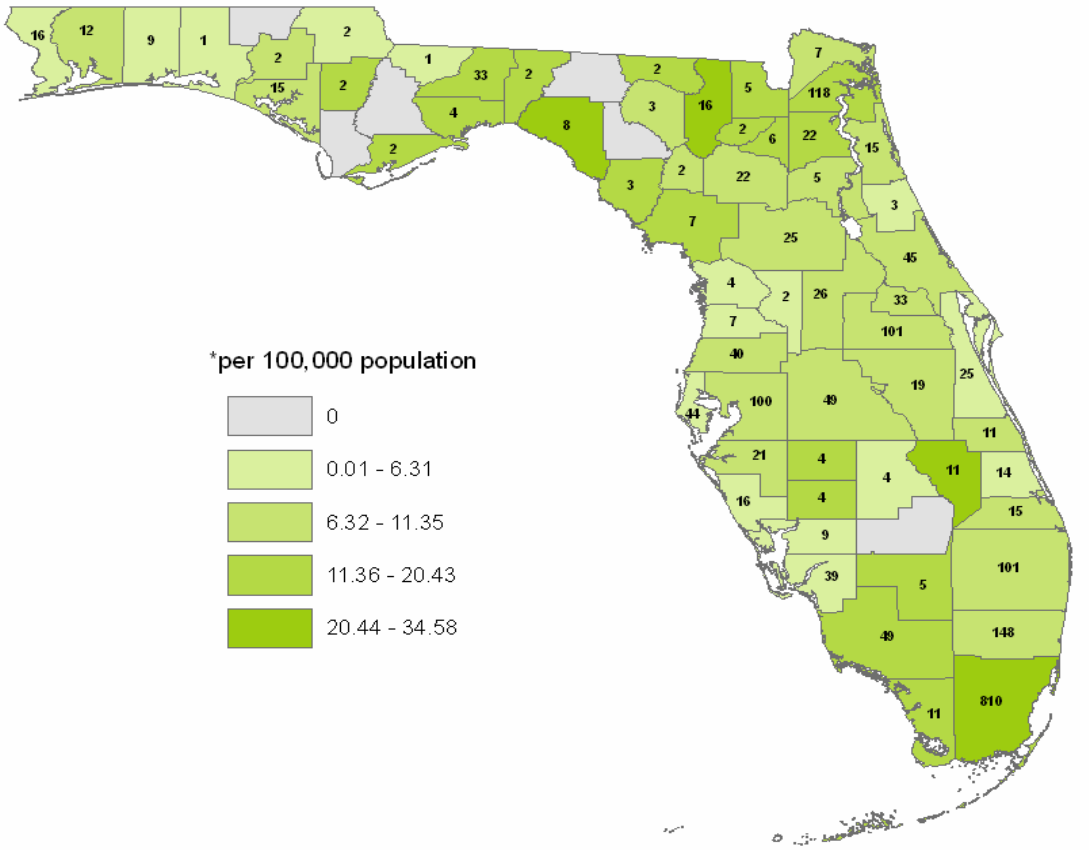


The highest reported incidence rates continue to occur in children aged one to four years (44.0 cases per 100,000) and five to nine years (31.0 cases per 100,000) (Figure 3). There were 421 cases reported among children aged one to four years. Approximately 20.7 percent of the 421 cases aged one to four years attended daycare.

Overall, males continue to have a higher reported incidence than females (13.1 and 9.6 per 100,000, respectively). Following previous annual trends, incidence rates in whites are greater than those in non-whites.

In 2010, giardiasis was reported in 61 counties in Florida (Figure 4).

Figure 4. Giardiasis Cases and Incidence Rate* by County, Florida, 2010



Prevention

Most *Giaridia* infections can be avoided or reduced by practicing good hand hygiene. This is particularly important in childcare centers and after toilet use, before handling food, and before eating. Additional cases can be avoided when children with diarrhea are kept home from child care centers. Other ways to prevent *Giaridia* include the following strategies:

- Avoid eating food and swallowing water from recreational water sources (such as ponds and lakes) that might be contaminated.
- Avoid drinking untreated water from shallow wells, lakes, rivers, springs, ponds, streams, or untreated ice.
- Avoid drinking tap water when traveling in countries where the water may not be adequately filtered and treated.
- 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, but 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.

References

L.K. Pickering, C.J. Baker, S.S. Long, and J.A. McMillan (eds.), *Red Book: 2009 Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, 2009.

Additional Resources

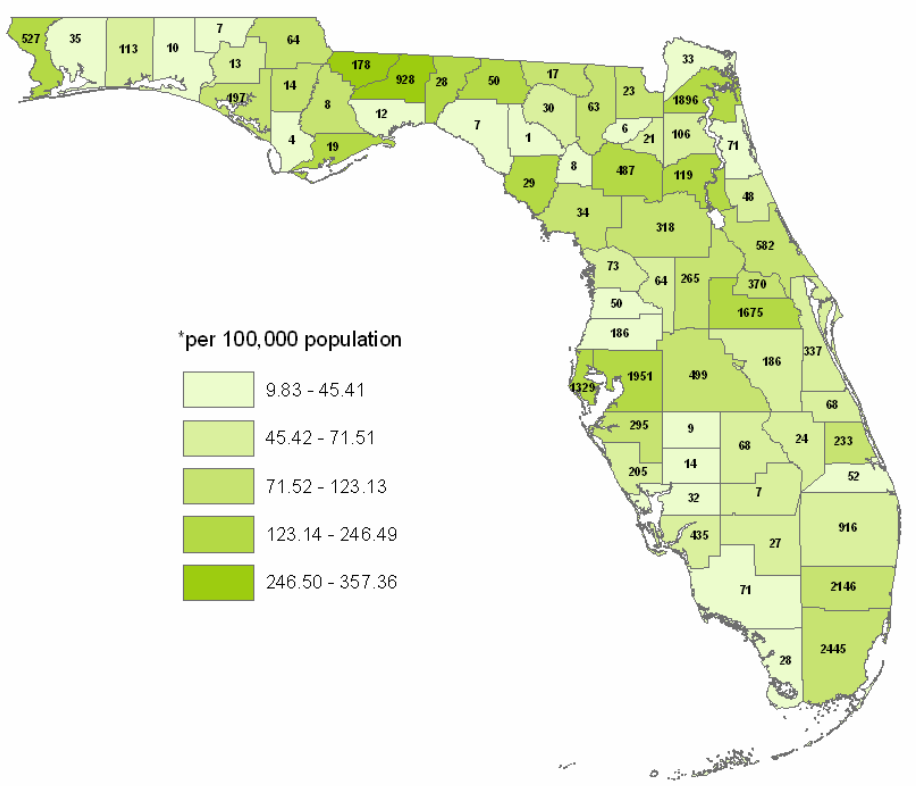
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dpd/parasites/giardiasis/default.htm.

Gonorrhea

Disease Abstract

The number of cases and rate of gonorrhea have steadily declined nationally and within the state of Florida in the past five years. Nationally, the rate decreased from 119.7 to 99.1 (per 100,000 population) from 2006-2009. From 2008 to 2009, there was a dramatic decline (11.2%) in gonorrhea cases in Florida and an additional decrease of 3.5% from 2009 to 2010. However, even with these decreases in disease incidence, 20,164 cases of gonorrhea were reported in Florida for a rate of 106.0 cases per 100,000 population, which is more than five times higher than the Healthy People 2010 goal of 19.0 per 100,000 population. Two congenital cases were reported in 2010.

Figure 1. Gonorrhea Cases and Rate* By County, Florida, 2010



Gonorrhea remains the second most commonly reported sexually transmitted disease (STD) in Florida. Ten counties reported over 1,000 cases, yet 16 counties reported less than 20 cases of gonorrhea (Figure 1). Several smaller, less populated areas of the state have very high rates per 100,000 each year (Table 1). Gadsden County has consistently ranked number one in the rate of cases per 100,000 population. Half of all gonorrhea cases were reported from the larger, more populous counties of Miami-Dade (2,445), Broward (2,146), Hillsborough (1,951), Duval (1,896), Orange (1,675), and Pinellas (1,329).

Table 1. Counties With The Highest Rate of Gonorrhea per 100,000 Population, Florida, 2010

County	Rank	Population	Cases	Rate/100,000
Gadsden	1	52,040	178	581.4
Leon	2	275,862	928	355.2
Madison	3	20,353	50	248.5
Duval	4	919,645	1,895	233.1
Alachua	5	256,349	487	215.2

Among reportable infections, gonorrhea remains the second most prevalent sexually transmitted bacterial infection in 15-24 year olds in Florida. The age-specific case rate for 15-24 year olds in 2010 (528.3 per 100,000) was slightly lower than the rate in 2009 (535.5 per 100,000). However, this rate was three times higher than the second highest age-adjusted rate, which was in 25-34 year olds. Females infected with gonorrhea, on average, were younger than males, 22.5 years old and 26.9 years old respectively. The disease distribution reveals that an additional 16% of all reported cases of gonorrhea are reported in populations between the ages of 25-29; whereas those under 25 account for 64% of reported infection. More cases of gonorrhea have been reported in the 20-24 age group consistently since 1998, when compared to other five-year age groups.

Trends indicate gender differences in prevalence are less apparent than for other sexually transmitted diseases. Males and females each account for about half of cases reported (49.3% and 50.7%, respectively). Reported cases of gonorrhea in females decreased by 17.5% from 2006 to 2010. Female cases of gonorrhea decreased by 5% from 2009 to 2010. Among females, the highest rate (634.6 per 100,000) and number of cases (3,716) was reported in persons aged 15-19 years. The second highest rate was among females aged 20-24 years (621.3 per 100,000). Approximately 6% of infected women were pregnant at the time of the disease diagnosis.

The highest number of male cases was reported in the 20-24 years age group, 3,332 cases, for a rate of 537.4 cases per 100,000 population. The 2009 data showed an almost identical rate of 536.6 cases per 100,000 population. The overall number of cases and rate per 100,000 for males increased in 2010. Young men aged 15-19 years had the second highest rate (325.7) among their gender.

Non-Hispanic blacks account for approximately two thirds of reported gonorrhea cases in Florida. The rate was 389.4 per 100,000 population for non-Hispanic blacks compared to 30.7 per 100,000 for non-Hispanic whites. In 2010, non-Hispanic blacks aged 15-24 years had a case rate of 1,887.1 per 100,000. This rate was 13 times higher than the second highest rate, which was in non-Hispanic whites aged 15-24 years (150.62 per 100,000). Increases in cases from 2009 to 2010 were noted in black males and females, white males, and Hispanic females.

Table 2. Cases and Rate per 100,000 Population of Gonorrhea By Race/Ethnicity and Gender, Florida, 2010

	Males		Females	
Race and Ethnicity	Cases	Rate per 100,000	Cases	Rate per 100,000
Black, Non-Hispanic	6,048	366.9	6,229	351.7
White, Non-Hispanic	1,324	24.1	1,726	31.4
Hispanic	880	42.4	723	34.9

Co-infection and/or subsequent infections

Gonorrhea was the second most prevalent sexually transmitted infection among persons with a Human Immunodeficiency Virus (HIV) infection. In 2010, 3.5% (698) of new cases of gonorrhea were coinfected with HIV. One percent of these infections occurred in heterosexual populations, while 71% occurred among those who identified as men who have sex with men (MSM). Of those who reported a gonorrhea and chlamydia infection within the same year, 58.9% were female and 39.2% were heterosexual males. Conversely, those who reported a gonorrhea and syphilis infection in the same period were primarily identified as MSM risk behavior.

Prevention

According to the Centers for Disease Control and Prevention (CDC), 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. The American Congress of Obstetricians and Gynecologists (ACOG) and CDC recommends annual gonorrhea screening for all sexually active women aged <25 years or younger, as well as for older women with risk factors such as new or multiple sex partners. When used consistently and correctly, latex condom can reduce the risk of transmission of gonorrhea. Symptoms of gonorrhea may not be noticed or present and may vary from person to person. Common symptoms for women are pain or burning during urination, increased vaginal discharge, and/or bleeding between periods. Common symptoms for men are pain or burning during urination, penile discharge, or painful or swollen testicles. Women and men who are told they have a gonorrhea infection and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can see a health care provider and be evaluated for any possible STD exposure. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

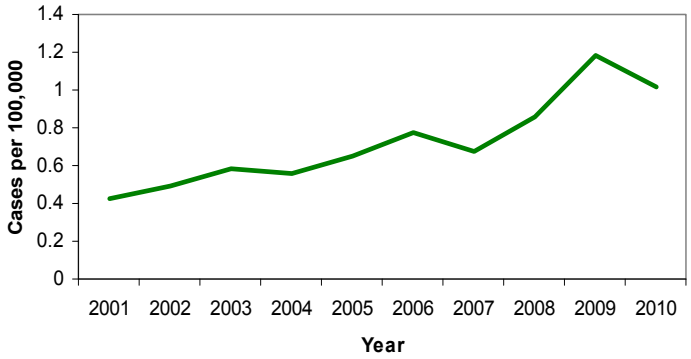
References

The American College of Obstetricians and Gynecologists, *Primary and Preventive Care: Periodic Assessments,* “Routine Screening Recommendations,” 2009.

Haemophilus influenzae (Invasive Disease)

Hemophilus influenzae, Invasive Disease: Crude Data	
Number of Cases	191
2010 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	22.7%
Age (yrs)	
Mean	54.9
Median	64
Min-Max	0 - 99

Figure 1. *Haemophilus influenzae*, Invasive Disease Incidence Rate by Year of Report, Florida, 2001-2010



Disease Abstract

The incidence rate for all invasive diseases caused by *Haemophilus influenzae* has gradually increased over the past ten years (Figure 1). In 2010, the incidence rate was 22.7% higher than the average incidence from 2005 to 2009. In 2010, 191 cases were reported; all were confirmed. The number of cases reported is typically highest in the winter during the months of December through February, but there was significant disease through April 2010 and an early start in September 2010 (Figure 2). In 2010, the number of cases exceeded the previous five-year average in summer and fall (July-December), but in the spring exceeded the five-year average only in March and April. Nearly all cases of invasive disease caused by *Haemophilus influenzae* are sporadic.

The highest reported incidence rates occur in those aged under one year or in those aged >85 years (Figure 3). In 2010, the incidence rates met or exceeded the previous five-year average in all age groups except those aged 45 to 54 years. The incidence of disease in males and females does not differ significantly (0.9 per 100,000 and 1.2 per 100,000 population, respectively).

Invasive disease caused by *Haemophilus influenzae* was reported in nearly 80% (54) of the 67 counties in Florida. Counties with the highest incidence rates were distributed throughout the state.

Figure 2. *Haemophilus influenzae*, Invasive Disease Cases by Month of Onset, Florida, 2010

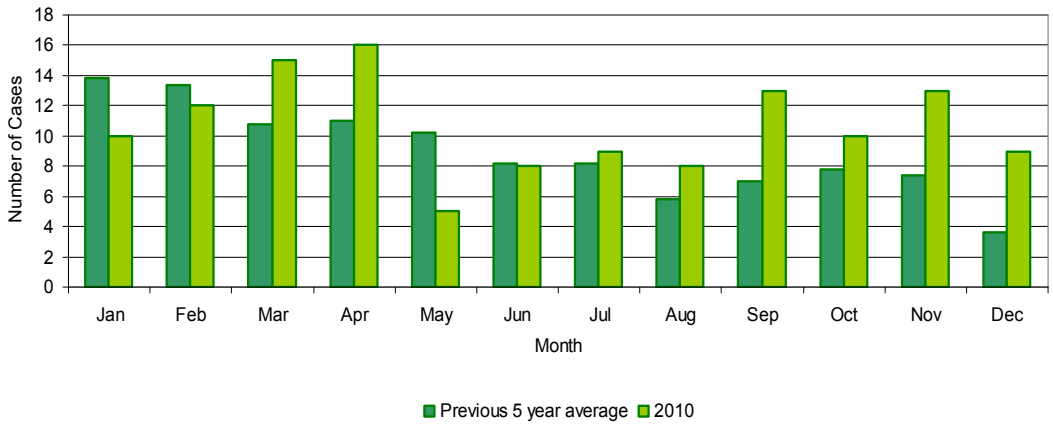
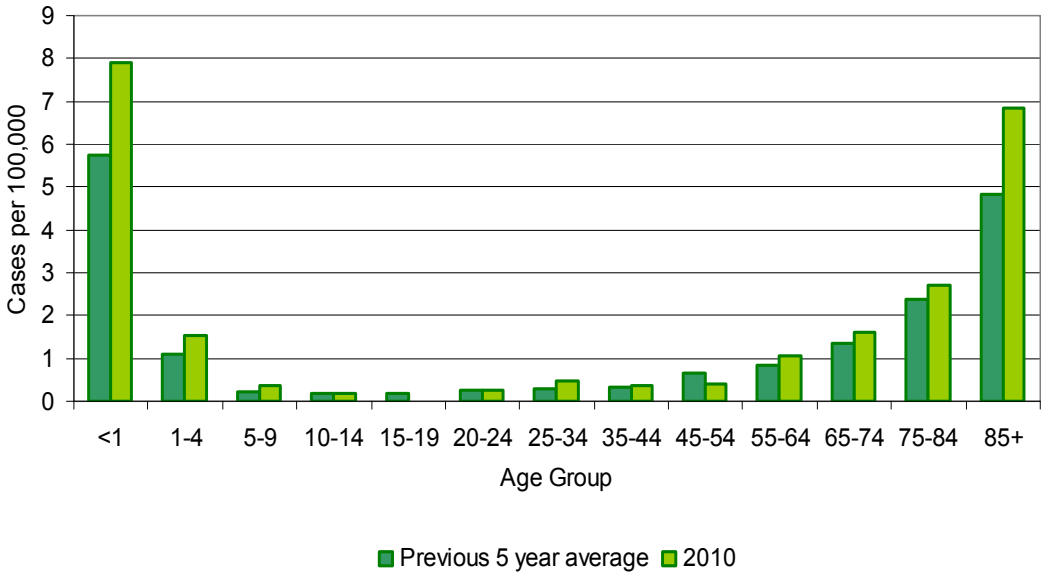


Figure 3. *Haemophilus influenzae*, Invasive Disease Incidence Rate by Age Group, Florida, 2010

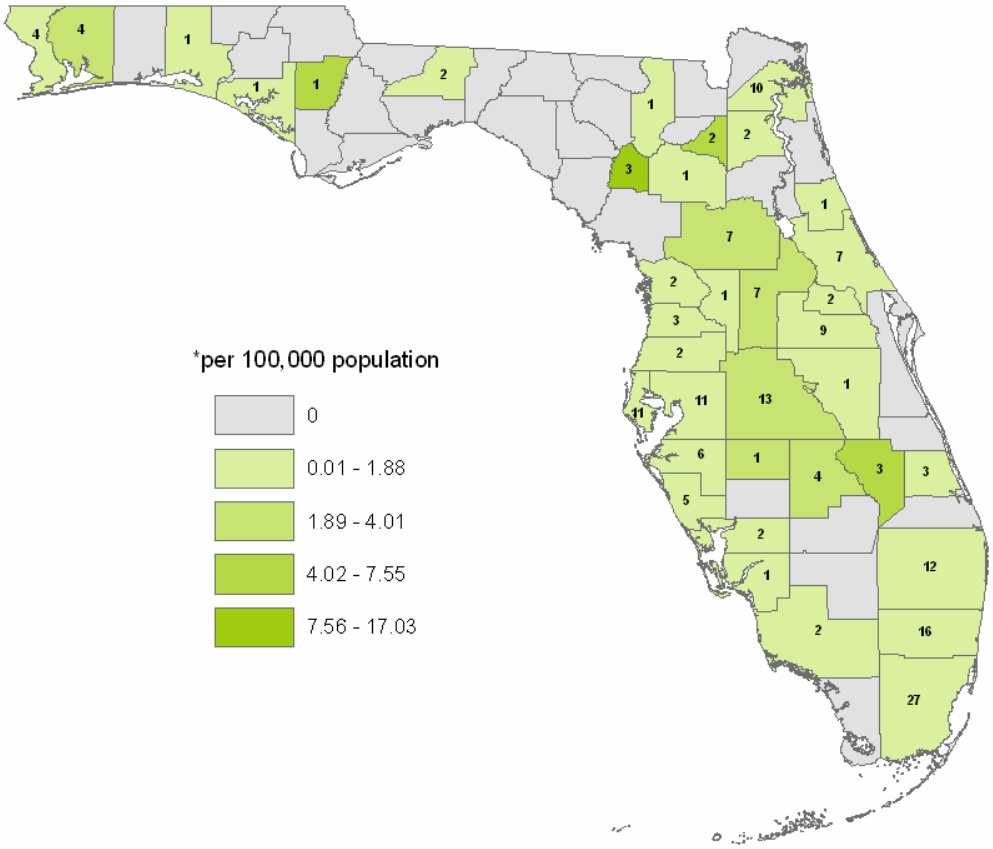


Invasive Disease in Those Under Age Five

Since serotype b represents the portion of *H. influenzae* disease that is vaccine-preventable, infections in children under age five continue to be carefully tracked to evaluate vaccination status and disease breakthrough. Meningitis and septicemia due to *Hemophilus influenzae* type b, formerly very common in preschool-age children, have almost been eradicated.

In 2010, there were four (unrelated) cases of invasive disease caused by *Haemophilus influenzae* serotype b in children under age five, all of whom were hospitalized and recovered. This represents an increase from the previous year where there was one case. The children ranged in age from 4 months – 13 months; two were white boys, one was a white girl and one was a black boy. The four-month-old child had not received any Hemophilus influenzae type b (Hib) vaccine, while the other three children were reported to have received three doses each of this vaccine.

Haemophilus influenzae Invasive Disease Cases and Incidence Rate* by County, Florida, 2010



Prevention

Conjugate vaccines against *Haemophilus influenzae* type b (Hib) for infants and children are recommended by the Advisory Committee on Immunization Practices. Additional information may be found at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm and http://www.cdc.gov/vaccines/ recs/schedules/downloads/child/2007/child-schedule-colorprint.pdf.

Additional Resources

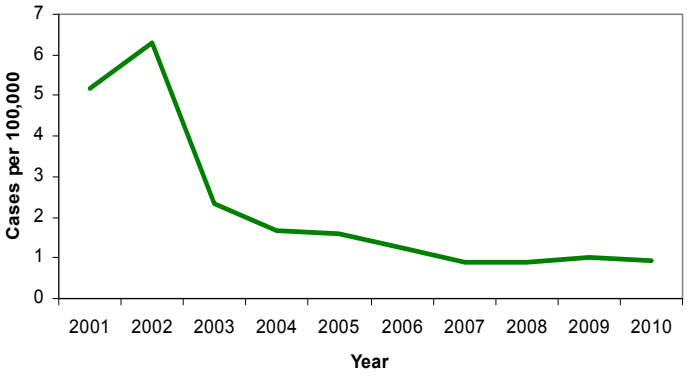
Additional information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/haeminfluserob_t.htm and http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm.

Immunization Recommendations are available from Centers for Disease Control and Prevention, "*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," *MMWR*, Vol. 40, (RR01), 1991; pp.1-7, at: http://www.cdc.gov/mmwr/preview/mmwrhtml/00041736.htm.

Hepatitis A

Hepatitis A: Crude Data	
Number of Cases	178
2010 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	-16.5%
Age (yrs)	
Mean	43.2
Median	43.5
Min-Max	1 - 90

Figure 1. Hepatitis A Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

In 2010, 178 cases of hepatitis A were reported in Florida. This represents a slight decrease from the 191 cases reported in 2009. In 2010, 78% of hepatitis A cases were classified as confirmed, 62% of cases were in males, 76% of cases were in whites, and 41% were in Hispanics. Most cases were apparently isolated events and only 10% of people with cases reported contact with a person with confirmed or suspected hepatitis A infection in the two to six weeks prior to their illness. Approximately 33% of cases reported a travel history outside the U.S. and Canada in the two to six weeks prior to their illness. Additionally, 19% of cases reported that a household member had traveled outside of the U.S. or Canada. Less than 1% of cases were either a child or an employee in a daycare center, preschool, or nursery and only 3% of reported cases were employed as a food-handler during the two weeks prior to symptom onset.

The incidence rate for hepatitis A in Florida has declined markedly since 2002 (Figure 1), which mirrors a similar decline observed nationally. The annual incidence in Florida from 2007 to 2010 was near one case per 100,000. This is a substantial decrease from the annual incidence of four to six cases per 100,000 observed between 1998 and 2002. 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. However, there has been little if any further decline in incidence since 2007.

Figure 2. Hepatitis A Cases by Month of Onset, Florida, 2010

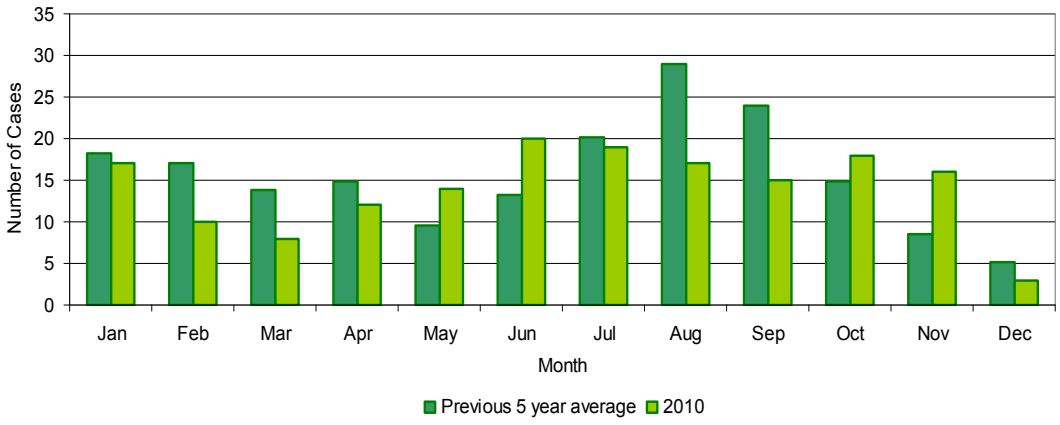
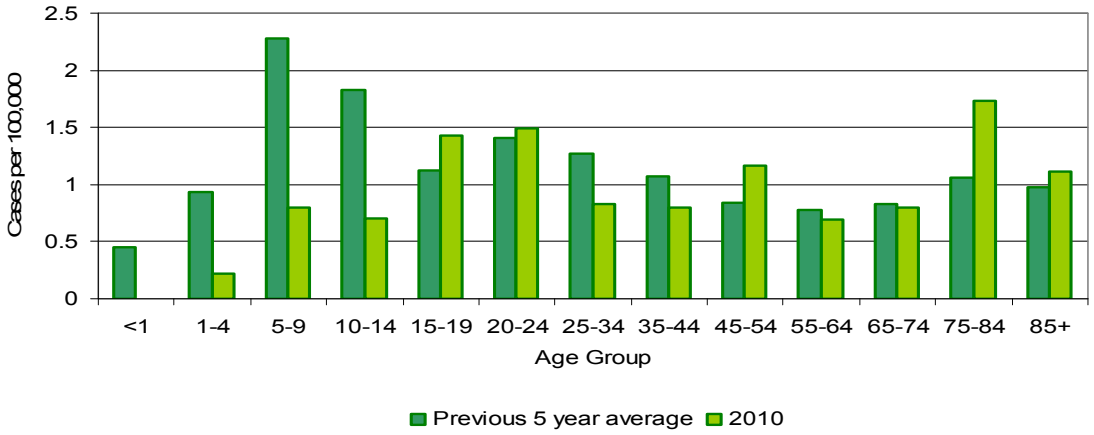


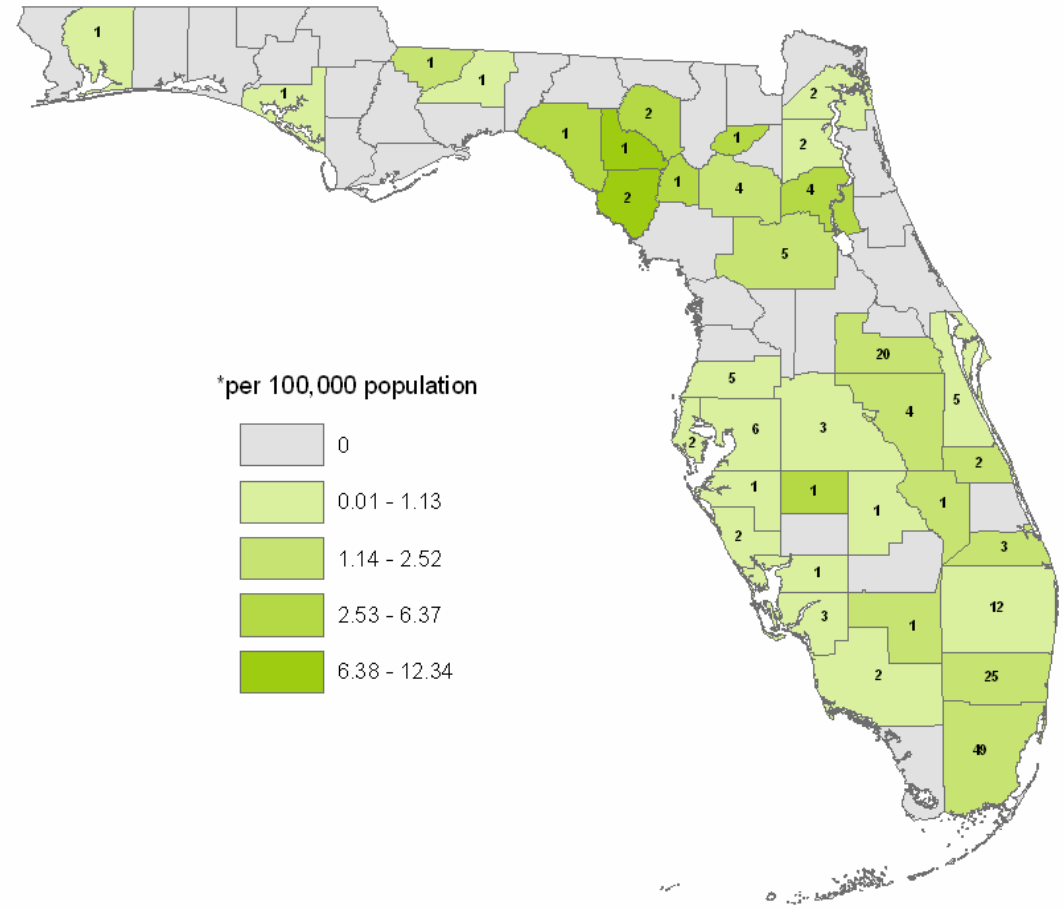
Figure 3. Hepatitis A Incidence Rate by Age Group, Florida, 2010



Hepatitis A occurs throughout the year (Figure 2) with slightly higher rates in late summer. In 2010, incidence rates were lower than the previous five-year average in many age groups but the rate increased in persons aged 15-24 years, those aged 45-54 years, as well as those aged >75 years (Figure 3). The largest decrease in incidence was observed among children aged <15 years, which is consistent with an effect of wide use of the vaccine in children. The incidence in 2010 was higher among Hispanics than among non-Hispanics (1.8 and 0.7 per 100,000, respectively).

During 2010, hepatitis A was reported in 36 of 67 counties in Florida (Figure 4).

Figure 4. Hepatitis A Cases and Incidence Rates* by County, Florida, 2010



Prevention

Currently, the single antigen, two-dose hepatitis A vaccine is recommended as part of the routine immunization schedule for all children, starting at age one. 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 aged >18 years, 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 vaccine or past disease who are at increased risk of infection, including:

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

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

- good personal hygiene,
- hand washing after use of the toilet and before preparing food for others, and
- washing fruits and vegetables before eating.

Illness among food-handlers or persons in a childcare setting should be promptly identified and reported to allow prompt action to be taken to prevent further spread of the disease in those settings. In outbreak settings, immune-globulin may be administered to at-risk contacts of infected individuals, particularly children under one year and adults aged >40 years. 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 between 1 and 40 years. All post-exposure prophylaxis should be administered within two weeks of exposure.

References

Centers for Disease Control and Prevention, "Prevention of Hepatitis A through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR* 2006, 55 (RR07) pp1-23.

Centers for Disease Control and Prevention, "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)," *MMWR* 2007, 56 (41) pp1080-84.

Centers for Disease Control and Prevention, "Updated Recommendations from the Advisory Committee on Immunization Practices (ACIP) for Use of Hepatitis A Vaccine in Close Contacts of Newly Arriving International Adoptees," *MMWR* 2009; 58(36): pp1006-7.

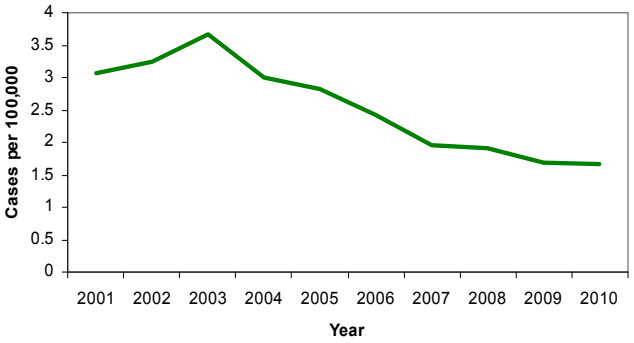
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/NCIDOD/diseases/hepatitis/a/index.htm.

Hepatitis B, Acute

Hepatitis B, Acute: Crude Data	
Number of Cases	315
2010 incidence rate per 100,000	1.7
% change from average 5 year (2005-2009) reported incidence rate	-22.4%
Age (yrs)	
Mean	44.8
Median	43
Min-Max	16 - 85

Figure 1. Hepatitis B, Acute Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for acute hepatitis B has declined gradually over the last ten years (Figure 1). The 2010 rate was 22.4% lower than the average from 2005 to 2009. In 2010, 94% of the 315 reported cases were confirmed. There is no seasonal trend for acute hepatitis B infection (Figure 2). Overall, 97% of the acute hepatitis B cases were classified as sporadic.

The highest historical incidence rates occurred in the group aged 25 to 34 years. During 2010, the incidence rate in this group was still high, but the highest incidence was among those aged 35 to 44 years, which was also true for 2007-2009. In 2010, the incidence rates were lower than the previous five-year average in all age groups except those aged 65-74 years (Figure 3). The incidence of hepatitis B is lowest in people aged < 19 years. Rates have always been low in children, and are even lower with widespread immunization. Males continue to have a higher incidence than females (2.1 and 1.2 per 100,000, respectively). The age-specific infection rates suggest that a cohort with high levels of immunity due to immunization has reached age 25 years.

Figure 2. Hepatitis B, Acute Cases by Month of Onset, Florida, 2010

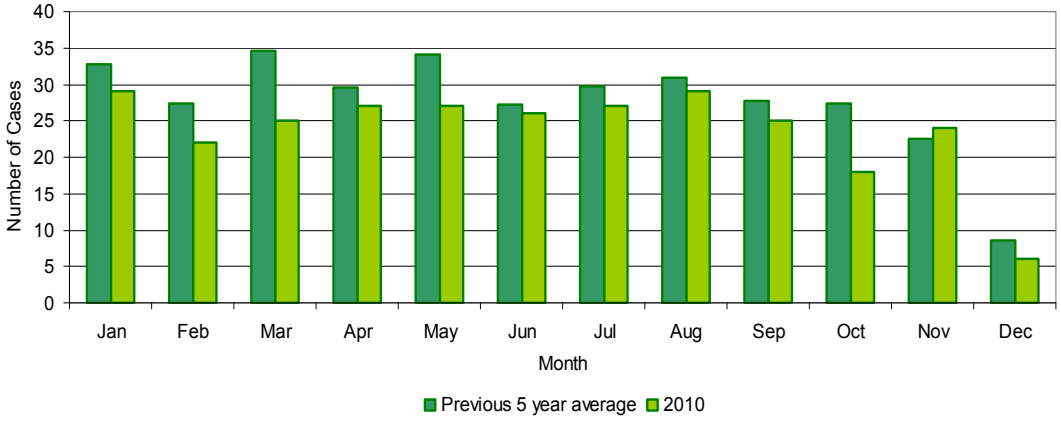
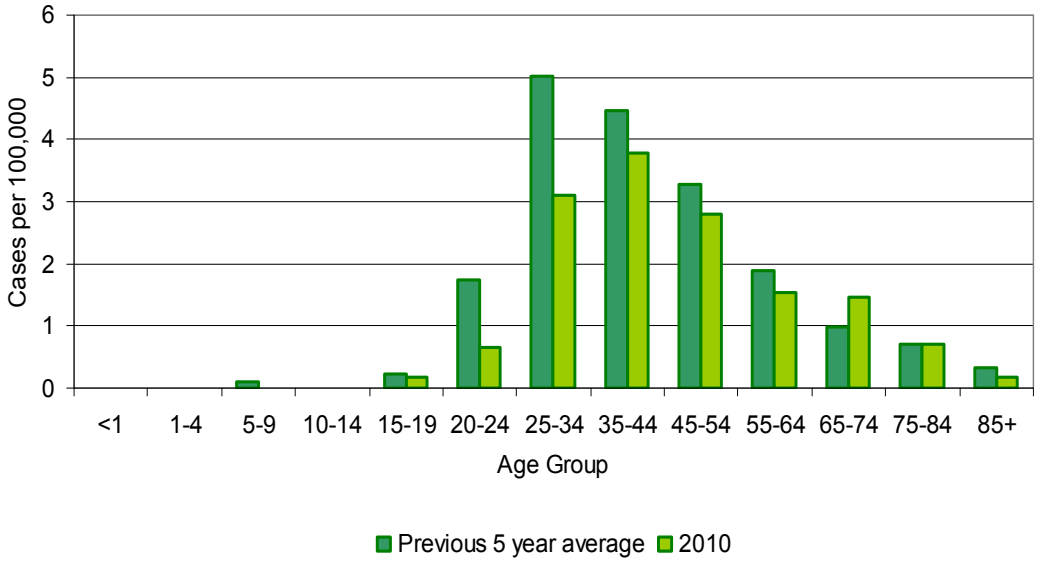


Figure 3. Hepatitis B, Acute Incidence Rate by Age Group, Florida, 2010



Hepatitis B is a vaccine-preventable disease. The symptoms of acute viral hepatic illness may prompt individuals to seek immediate medical attention. Approximately 57.5% of those diagnosed with acute hepatitis B were hospitalized. In 2010, death occurred in five of the 315 people with acute hepatitis B infection. Thirty-three people with cases reported having had contact with someone confirmed or suspected of having a hepatitis B infection, and of these, 61% reported the ill person was a sexual partner. Drug use has also been associated with hepatitis B infection. Of the 315 acute hepatitis B cases, 9% reported injection drug use and 21% reported using street drugs but not injection drug use. Hepatitis B infection has also been associated with improper sterilization or sharing of needles to create tattoos. In 2010, 13% of those with an acute hepatitis B infection had recently received a tattoo.

Sexual behavior may place an individual at risk for hepatitis B infection. However, individuals may often decline to comment on the frequency of sexual partners and/or their sexual preference. For 2009, sexual preference and frequency of sexual partnerships are summarized in Table 2. Individuals risk factors may change over time.

Acute hepatitis B was reported in 46 of the 67 counties in Florida (Figure 4). Clusters of high-rate counties can be seen in the center of the state and along the northern border.

Table 2. Distribution of the Number of Sexual Partners in the Six Months Prior to Symptom Onset for People with Acute Hepatitis B Reported in 2010

Sexual Behavior Risk Factors†	Number of male sexual partners for men *	Number of female sexual partners for men *	Number of male sexual partners for women*	Number of female sexual partners for women *
1 Sexual Partner	6%	30%	48%	1%
2-5 Sexual Partners	4%	14%	12%	1%
More than 5 Sexual Partners	2%	7%	6%	1%
No Reported Sexual Partners	59%	21%	13%	70%
Not Answered	4%	2%	0%	3%
Unknown	26%	26%	21%	25%
Total	100%	100%	100%	100%
% of Cases reporting at least one sexual partner of this gender	11%	51%	66%	3%

* Total number of acute hepatitis B positive males is 195 and females is 119. One person identified themselves as unknown. In 2010, one of the 315 Acute Hepatitis B acute cases was in a person under the age of 18.
† Sexual history is collected by asking about the number of sexual partnerships in the last 6 months prior to having symptoms, regardless of gender.

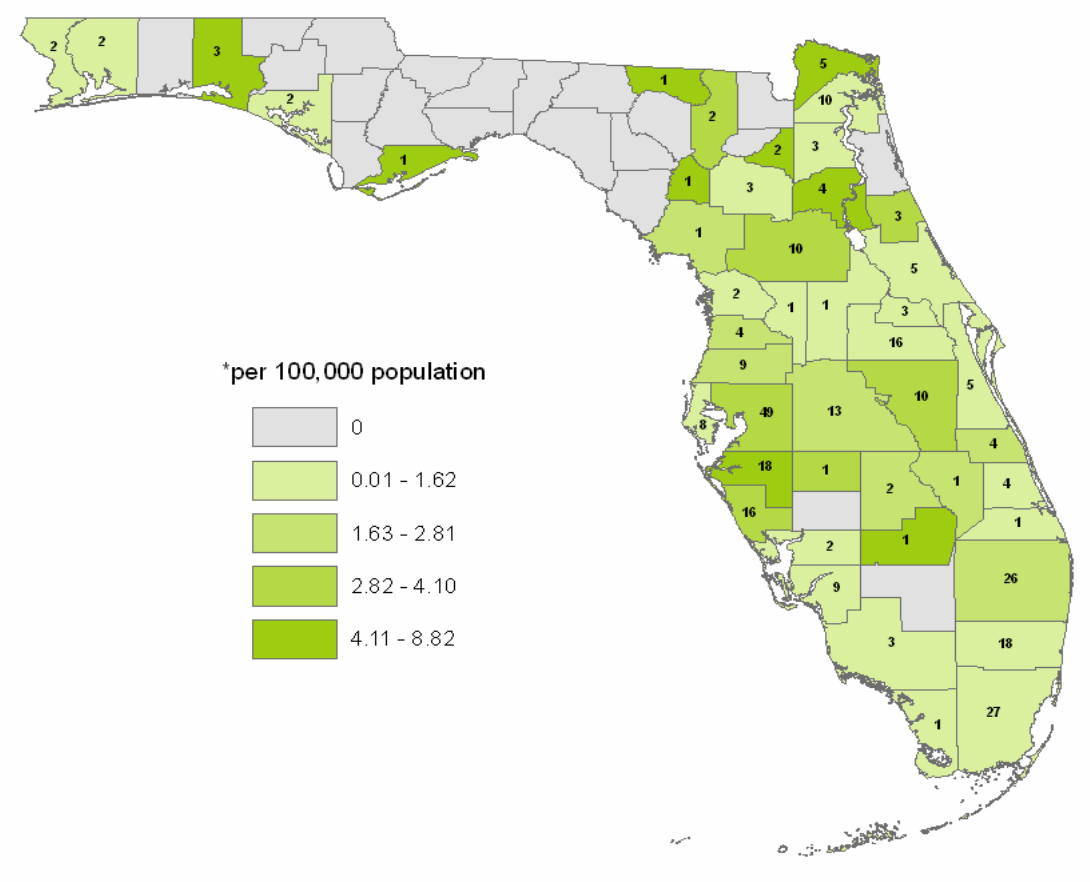
Prevention

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

High-risk groups for infection include:

- drug users who share needles,
- healthcare workers who have contact with infected blood,
- MSM (men who have sex with men),
- people who have multiple sexual partners,
- household contacts of infected persons, and
- infants born to mothers who are hepatitis B carriers.

Figure 4. Hepatitis B, Acute Cases and Incidence Rate* by County, Florida, 2010



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Centers for Disease Control and Prevention, "Update: Recommendations to Prevent Hepatitis B Virus Transmission-United States," *MMWR*, Vol. 48, 1999, pp. 33-34.

Centers for Disease Control and Prevention, "Hepatitis B Vaccination-United States, 1982- 2002," *MMWR* Report, Vol. 51, 2002, pp. 549-52, 563.

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

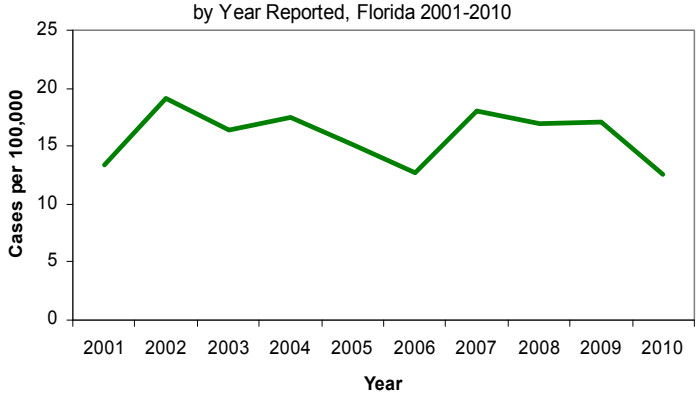
Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at: http://www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm and http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm.

Disease information is also available from the World Health Organization (WHO) website at: http://www.who.int/mediacentre/factsheets/fs204/en/.

Hepatitis B (HBsAG+) Pregnant Women

Hepatitis B (HBsAg+) Pregnant Women: Crude Data	
Number of Cases	438
2010 incidence rate per 100,000	12.6
% change from average 5 year (2005-2009) reported incidence rate	-20.9%
Age (yrs)	
Mean	29.4
Median	29
Min-Max	14 - 44

Figure 1. Hepatitis B (HBsAg+) Pregnant Women Incidence Rate by Year Reported, Florida 2001-2010



Disease Abstract
There were 438 pregnant women who tested positive for the hepatitis B surface antigen (HBsAg+) in 2010, which is a decrease from 598 women in 2009. During 2010, there was one Florida-born infant identified as a perinatal case of hepatitis B (disease code 07744). The child had received all three recommended doses of hepatitis B-containing vaccine and also received hepatitis B immune globulin after birth. In 2009, there were no Florida-born infants identified as perinatal cases of hepatitis B.

Prevention
Prevention begins with early identification of HBsAg-positive pregnant women. When a pregnant woman enters the hospital for delivery, the accompanying prenatal record alerts the hospital's maternity staff of the mom's positive HBsAg status and the subsequent need for prophylactic treatment for the infant within the 12-hour time period following birth. 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 9 to 18 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 zero, one to two, four to six month schedule, and have the HBsAg and anti-HBs blood tests repeated to determine response. Vaccine for children and adults is also available in combination vaccines.

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Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 4th ed., 2008, Chapter 4.

Centers for Disease Control and Prevention, "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," *MMWR*, Vol. 54, No. RR-16, 2005.

Centers for Disease Control and Prevention, "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," *MMWR*, Vol. 55, No. RR-16, 2006.

Additional Resources

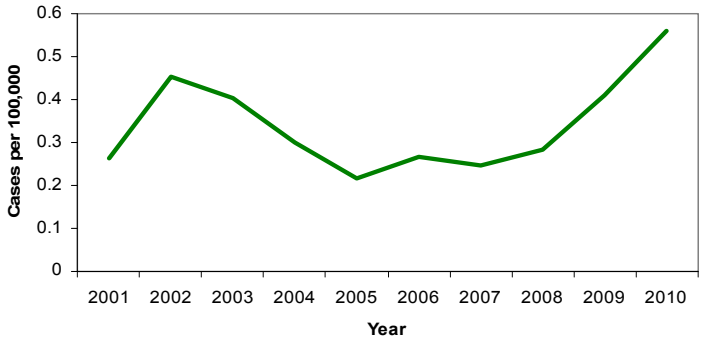
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/vaccines/vpd-vac/hepatitis/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Hepatitis C, Acute

Hepatitis C, Acute: Crude Data	
Number of Cases	105
2010 incidence rate per 100,000	0.6
% change from average 5 year (2005-2009) reported incidence rate	97.0%
Age (yrs)	
Mean	37.9
Median	36
Min-Max	11 - 89

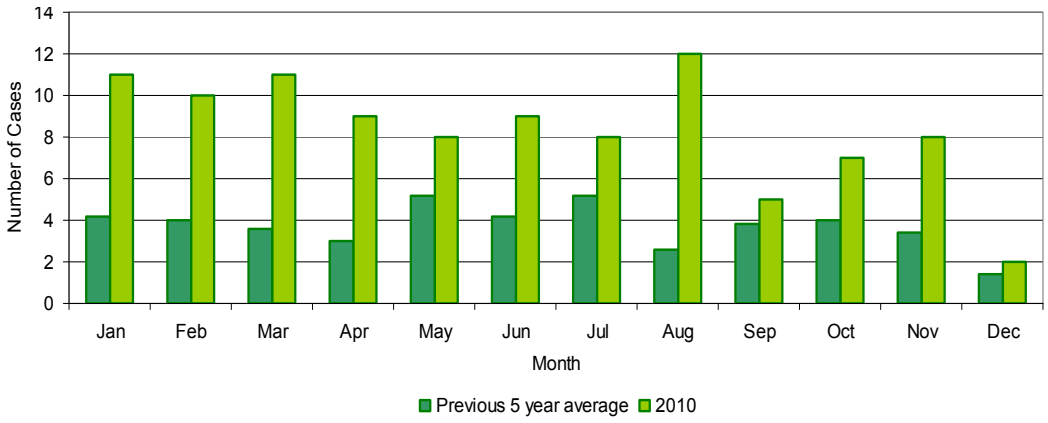
Figure 1. Hepatitis C, Acute Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

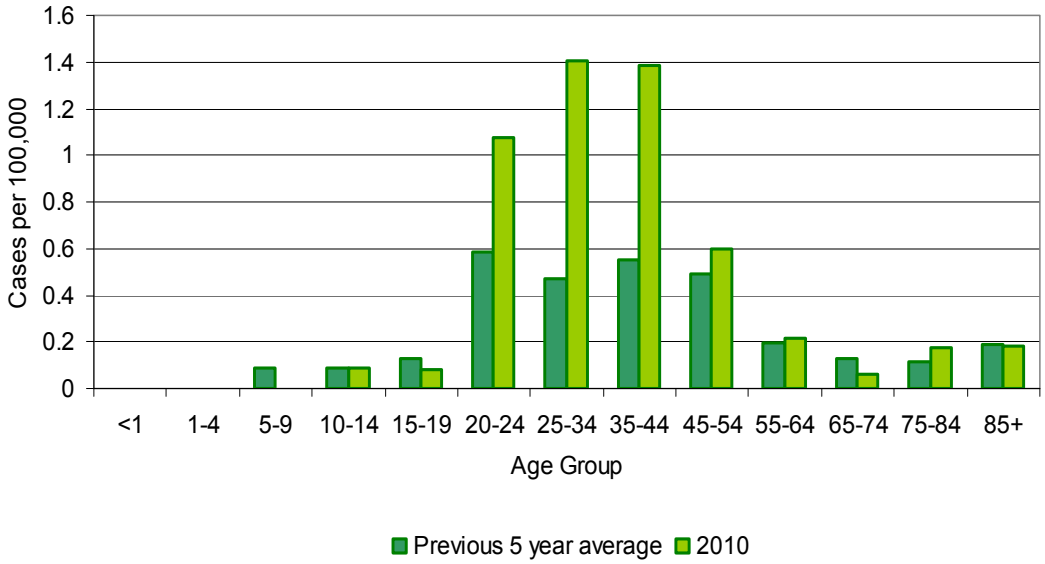
The incidence rate for acute hepatitis C has been variable over the last ten years. It was low from 2005 to 2008 but has been increasing since 2008 (Figure 1). In 2010, there was a 97.0% increase in comparison to the average incidence from 2005 to 2009. A total of 105 cases were reported in 2010. Fifty-three percent of the cases were classified as confirmed. The hepatitis C acute surveillance case definition changed in 2008, leading to more cases being classified as confirmed compared to previous reporting years (2006: 36%; 2007: 34.7%; 2008: 60.4%; 2009: 68.8%; 2010: 53.3%). There is no seasonal trend for acute hepatitis C infection (Figure 2). In 2010, no acute hepatitis C cases were classified as outbreak-associated and no deaths were reported. Some acute infections may have been erroneously reported or classified as chronic infections. Newly recognized chronic infections in young adults share many risk factors and other characteristics with acute cases.

Figure 2. Hepatitis C, Acute Cases by Month of Onset, Florida, 2010



Overall, the highest incidence rates for 2010 occurred among persons aged 20 to 44 years, 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 2010, the incidence rates were higher than the previous five-year average in all age groups in which cases were reported except for those aged 15 to 19 years, 65 to 74 years, and >84 years old (Figure 3).

Figure 3. Hepatitis C, Acute Incidence Rate by Age Group, Florida, 2010



The passive transfer of maternal Hepatitis C Virus (HCV) antibodies may be present in infants up to 18 months of age. A positive Anti-HCV result in an infant under 18 months of age is not a true indicator of hepatitis C infection. In 2010, men and women had similar incidences of acute hepatitis C (0.6 and 0.5 per 100,000, respectively). The incidence rates in whites are greater than those in non-whites.

Prevention

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

- 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, and
- infants born to mothers who are hepatitis C carriers.

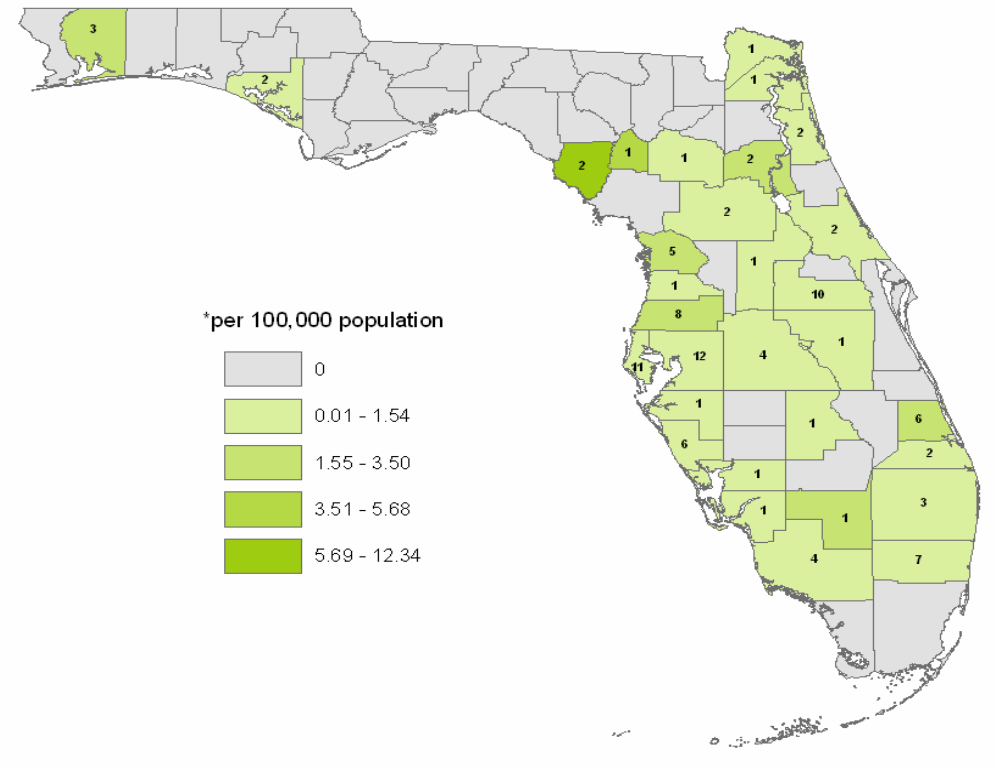
Selected risk factors for acute hepatitis C infections in 2010 are summarized in Table 1.

Table 1. Hepatitis C, Acute Cases and Risk Factors, Florida, 2010

	Male (N=57)	Female (N=48)
Body piercing	5.26%	4.17%
Tattoo	17.54%	27.08%
Injection drug use	38.60%	29.17%
Street drug use	42.11%	29.17%

Acute hepatitis C cases were reported in 31 of 67 counties in Florida (Figure 4).

Figure 4. Hepatitis C, Acute Cases and Incidence Rate* by County, Florida, 2010



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Centers for Disease Control and Prevention, "Sexually Transmitted Diseases Treatment Guidelines, 2010," *MMWR*, Vol. 59, No. RR-12, 2010, pp. 1-110.

J.L. Dienstag, "Sexual and Perinatal Transmission of Hepatitis C," *Hepatology*, Vol. 26, No. 66S - 70S, 1997.

American Academy of Pediatrics, *Red Book 2009*: *Report of the Committee on Infectious Diseases,* 28th ed., Elk Grove Village, IL, American Academy of Pediatrics Press, 2009.

Centers for Disease Control and Prevention, *Frequently Asked Questions About Hepatitis C*, accessed at: http://www.cdc.gov/ncidod/diseases/hepatitis/c/faq.htm#1a.

Additional Resources

Additional information on hepatitis prevention in Florida can be accessed via the Hepatitis Prevention Program at: http://www.doh.state.fl.us/disease_ctrl/aids/hep/index.html.

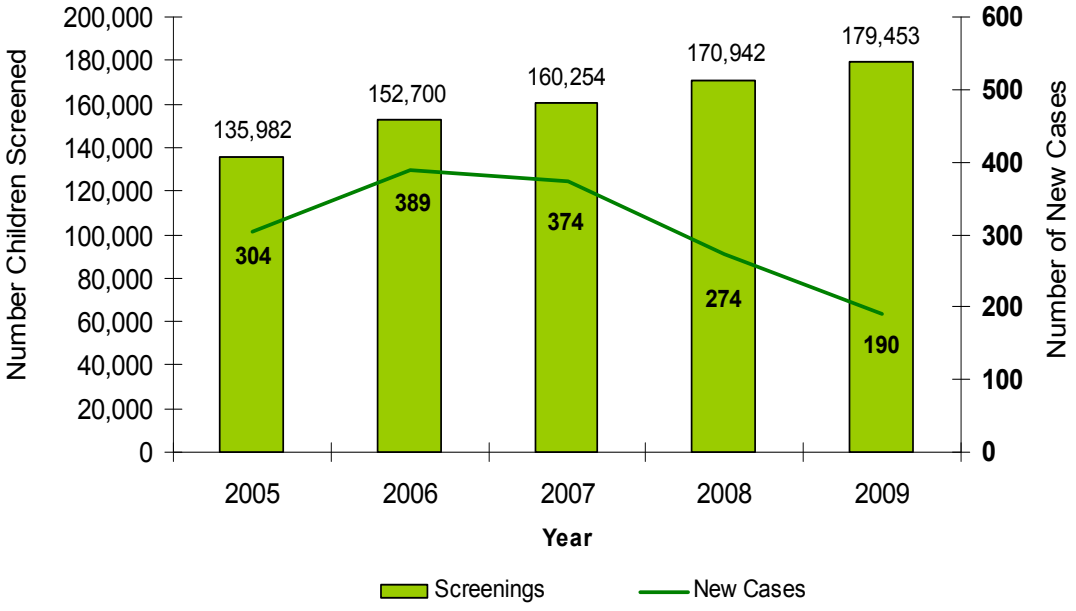
Lead Poisoning, 2009

Disease Abstract

Clinically, lead poisoning is defined as a blood lead concentration of 10 µg/dL or greater. Lead can cause adverse effects at blood levels with no clinical detectable symptoms. However, the long-term effects of the disease may be severe and include neurological defects and cognitive impairments. Adverse health effects are more pronounced and more clinically evident at higher levels of blood lead. Deterioration of lead-based paint in housing built before 1978 continues to be the most important lead source for children in Florida. There are an estimated 1.4 million homes in Florida with lead-based paint. Lead tainted dust can be ingested or inhaled. Children aged <6 years (72 months) are at highest risk for lead poisoning because they are more likely to place lead contaminated hands and toys in their mouth. Over the last three decades, blood levels among U.S. children have been declining due to the removal of lead from residential paint, and especially removal of lead from gasoline. Despite these policy changes, lead exposure continues to be of public health concern for young children.

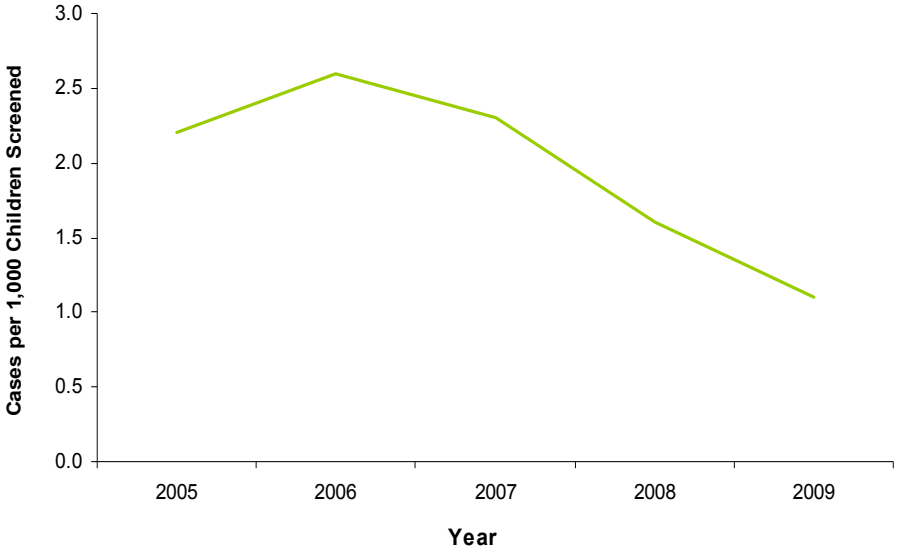
The Florida Lead Poisoning Prevention and Healthy Homes (LPPHH) program recommends blood lead screening among children aged <72 months who are at high risk for lead poisoning. Children at high risk include children living in pre-1978 housing, Medicaid-eligible children, children adopted outside of the U.S., refugees, and immigrants. There were 34% more children screened for lead poisoning in Florida in 2009 than in 2005 (Figure 1). The increase in screening numbers and rates over the five-year period may be partially due to the increase in the number of testing facilities that are routinely conducting blood lead screening of children. Conversely, the number of reported lead poisoning cases declined by 39% between 2005 and 2009. This reduction in the number of cases from 2005 to 2009 does not necessarily mean that lead poisoning prevalence rates among Florida children aged <72 months are declining. The population screened each year may not consistently represent the population at high risk for lead poisoning. To get a better understanding of trends in lead poisoning, the LPPHH program is planning to perform analyses to determine screening rates (from 2008 to 2010) among Medicaid-eligible children, the largest high risk group for lead poisoning in Florida.

Figure 1. Reported Blood Lead Screenings and Newly Identified Cases of Lead Poisoning, Florida, 2005 to 2009



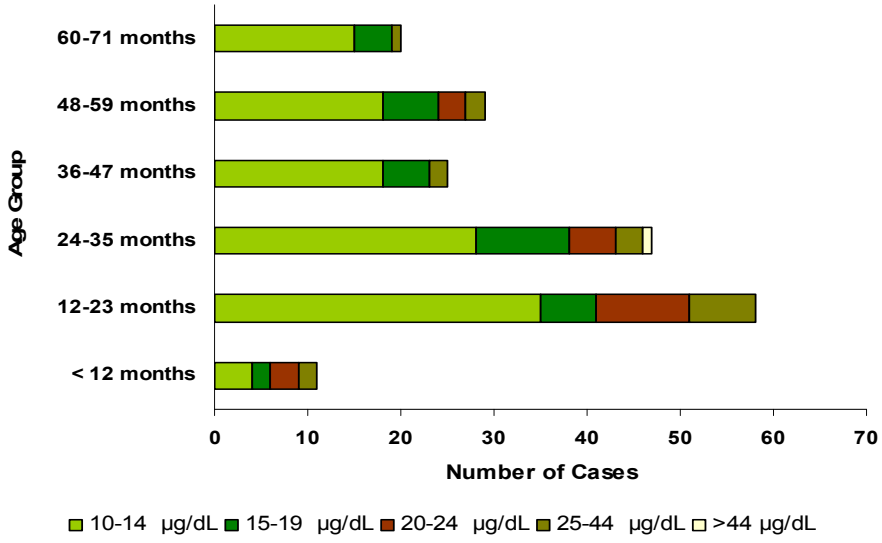
The statewide rate of reported new cases per 1,000 children screened is illustrated in Figure 2. Over the five year period 2005-2009, a 50% decline in the number of new cases per 1,000 children screened was observed.

Figure 2. Rate of Newly Identified Cases of Lead Poisoning per 1,000 Children Screened, Florida, 2005 to 2009



In 2009, 31% (N=58) of identified lead poisoned children were among children aged 12 to 23 months (Figure 3). Children in this age group are at increased risk for lead poisoning and the Centers for Disease Control and Prevention (CDC) and Florida Medicaid Services highly recommend that they receive initial blood lead screening. Over the past five years, most new cases were reported with blood lead levels (BLLs) ranging from 10 to 14 µg/dL. In 2009, 60% of reported new cases in children aged 12 to 23 months had BLLs within this range.

Figure 3. Number of Newly Identified Cases of Lead Poisoning by Age and Blood Lead Level, Florida, 2009



In 2009, information on race was captured on blood lead test reports for three distinct categories: Asian/ Pacific Islander, black, and white. Of the number of new cases with reported race, the majority were either white or black (Figure 4). For 43% (N=82) of the blood lead test data reported in 2009, race was not reported. Therefore, the 2009 data may not clearly portray the distribution of lead poisoned children by race.

Figure 4. Number of Newly Identified Cases of Lead Poisoning by Race, Florida, 2009

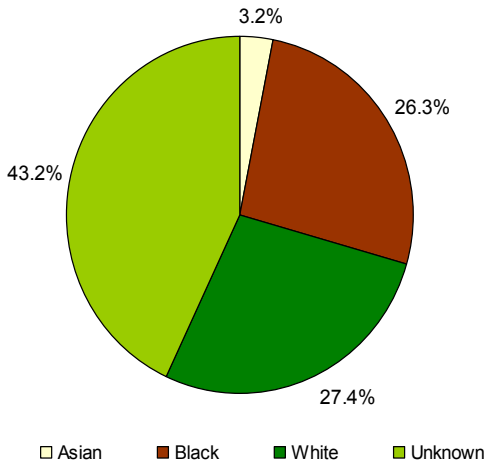


Figure 5. Number of Newly Identified Cases of Lead Poisoning by Gender, Florida, 2009

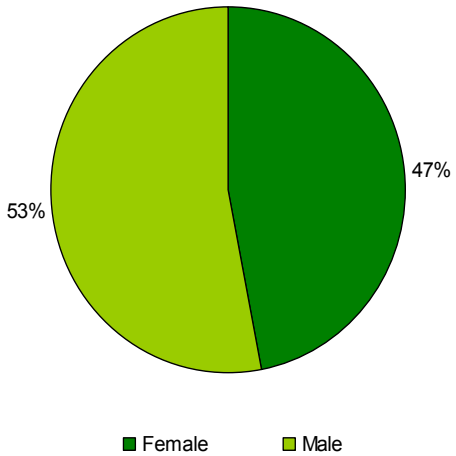
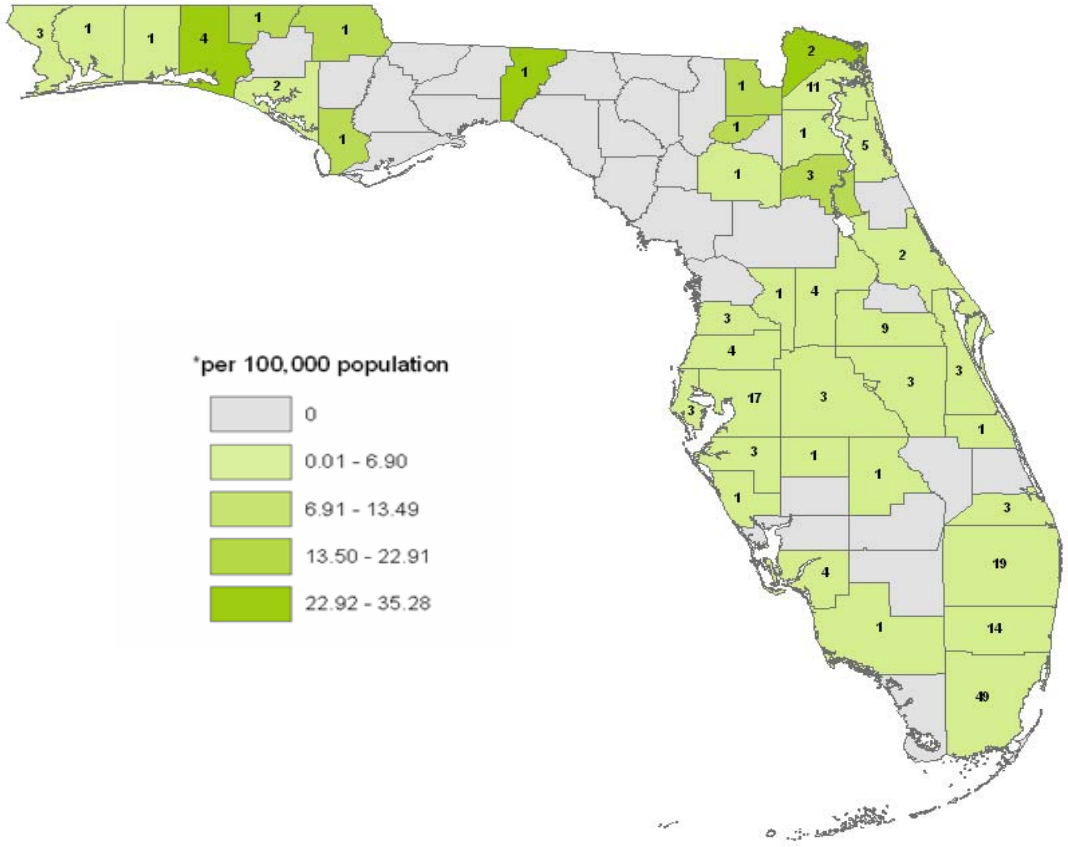


Figure 5 illustrates the number of reported new cases of lead poisoning in Florida by gender for 2009. Of the 190 reported new cases, there were 89 (47%) females and 101 (53%) males. There were a slightly larger proportion of elevated BLLs in males versus females. There was a larger gender difference among whites (12%) than among blacks.

The case rate, defined as the number of reported new cases divided by the number of children screened, was computed for each county. In 2009, the case rate for lead poisoning was higher in some rural counties such as Nassau, Jefferson and Walton (8.9 to 16.6 cases per 1,000 children screened) than in urban counties such as Miami-Dade, Palm Beach, and Hillsborough. The case rates in these three urban counties with active screening programs varied from 0.5 to 1.4 cases per 1,000 children screened. However, comparing the case rate between counties may be misleading since rates will be highly affected by the proportion of the population screened. Smaller counties tend to have lower numbers of at-risk children compared to larger counties. Furthermore, a small number of cases detected among a small group of children screened for the disease may result in a higher case rate. For example, twenty-five times as many lead poisoning cases were identified in Miami-Dade County (N=49) in 2009 than in Nassau County (N=2) during this time period. However, the Miami-Dade case rate (1.2 cases per 1,000 children screened) was lower than Nassau County (12.2 cases per 1,000 children screened), partly because more than 200 times as many children were screened for lead poisoning in Miami-Dade County (N=41,518) than in Nassau County (N=164).

Lead Poisoning Cases and Case Rates* in Those under 72 Months of Age by County, Florida, 2009



Prevention

Lead poisoning is a preventable disease. The most effective method for preventing lead poisoning is to eliminate lead sources, especially from homes or areas that are frequently visited by children. Children who are at high risk for lead exposures should be tested and follow-up care should be provided for those who test positive for lead poisoning. Providers, parents, caregivers, and household members should be educated on the risks associated with lead poisoning. The LPPHH program provides guidance to county health department case managers on screening requirements and medical management for children aged <72 months. Environmental inspections are recommended for those children with BLL ≥15µg/dL to identify the source of lead. Mitigation strategies are recommended to prevent further exposures to lead.

Additional Information

The Florida LPPHH program website also includes additional information and disease statistics at: http://www.doh.state.fl.us/environment/medicine/lead/index.

Additional statistics are available from the Centers for Disease Control and Prevention website at: http://www.cdc.gov/nceh/lead/faq/about.htm.

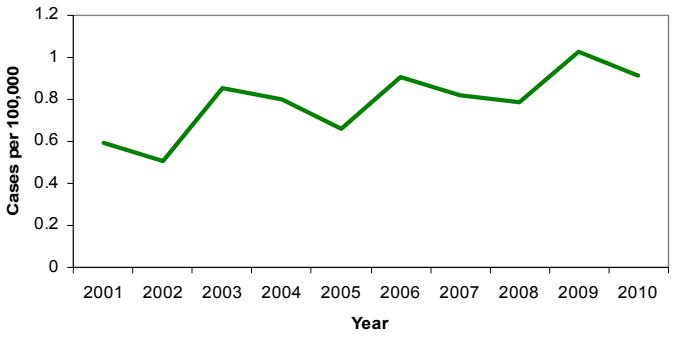
Florida Childhood Lead Poisoning Screening and Case Management Guide is available at: http://www.doh.state.fl.us/environment/medicine/lead/pdfs/ChildhoodLeadPoisoningScreeningandCaseManagementGuide.pdf.

The U.S. Census Bureau's 2009 American Community Survey has additional information about lead sources in homes in Florida at: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=04000US12&-qr_name=ACS_2009_1YR_G00_DP4&-context=adp&-ds_name=&-tree_id=309&-_lang=en&-redoLog=false&-format=.

Legionellosis

Legionellosis: Crude Data	
Number of Cases	172
2010 incidence rate per 100,000	0.9
% change from average 5 year (2005-2009) reported incidence rate	9.1%
Age (yrs)	
Mean	62.6
Median	63
Min-Max	10 - 98

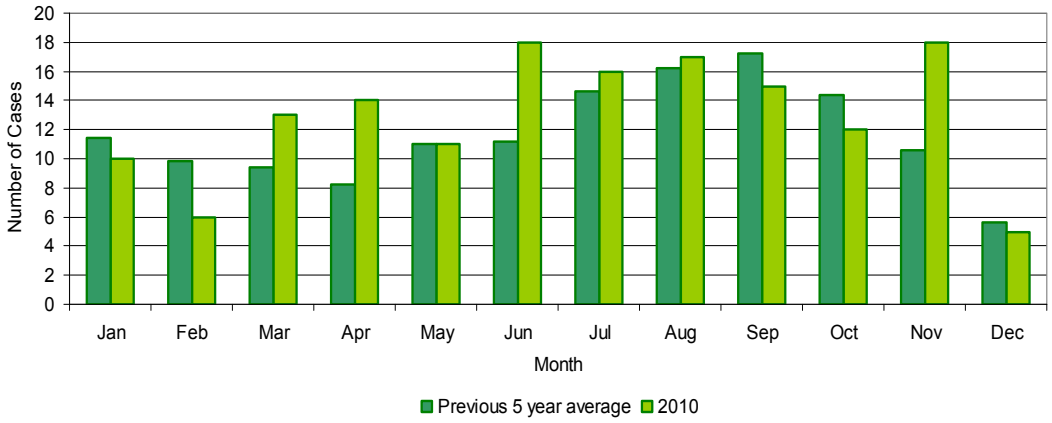
Figure 1. Legionellosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

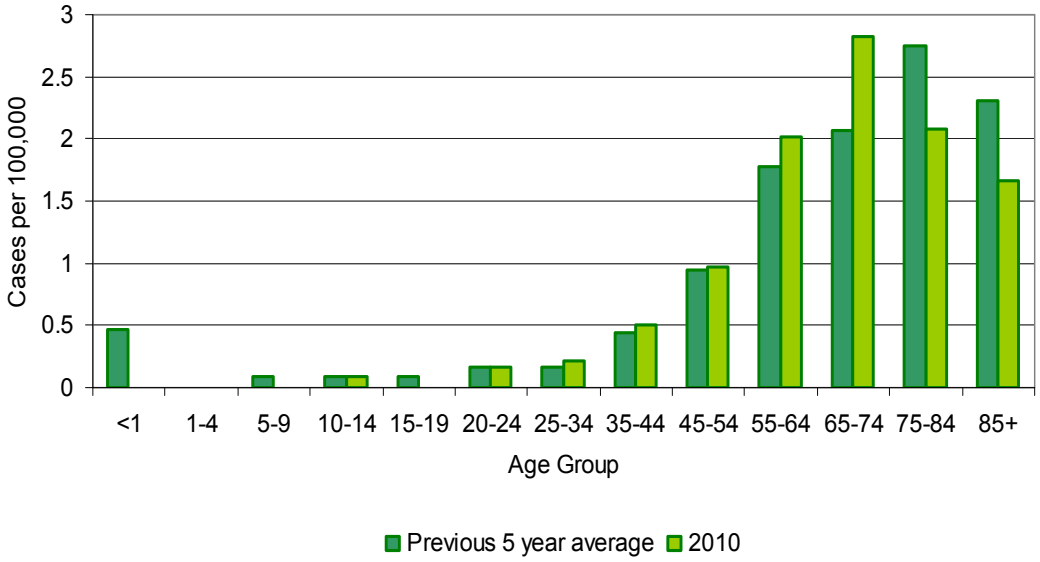
The Florida incidence rate for legionellosis has steadily increased over the last ten years (Figure 1). In 2010, the incidence rate was 9.1% higher than the average from 2005 to 2009. In 2010, 172 cases were reported, of which 100% were classified as confirmed cases and 5.8% were acquired outside of Florida. The number of cases reported tends to increase in the summer months. In 2010, the number of cases exceeded the previous five-year average for many of the months, most notably March, April, June, and November (Figure 2). Only one legionellosis case in a Florida resident in 2010 was associated with an outbreak. This case was associated with staying at a hotel in Miami-Dade County where an investigation involving 10 cases occurred, beginning in 2009. Additional cases were detected, but were all in foreign or out-of-state persons. (See the Summary of Notable Outbreaks and Case Investigations section of the 2009 report.)

Figure 2. Legionellosis Cases by Month of Onset, Florida, 2010



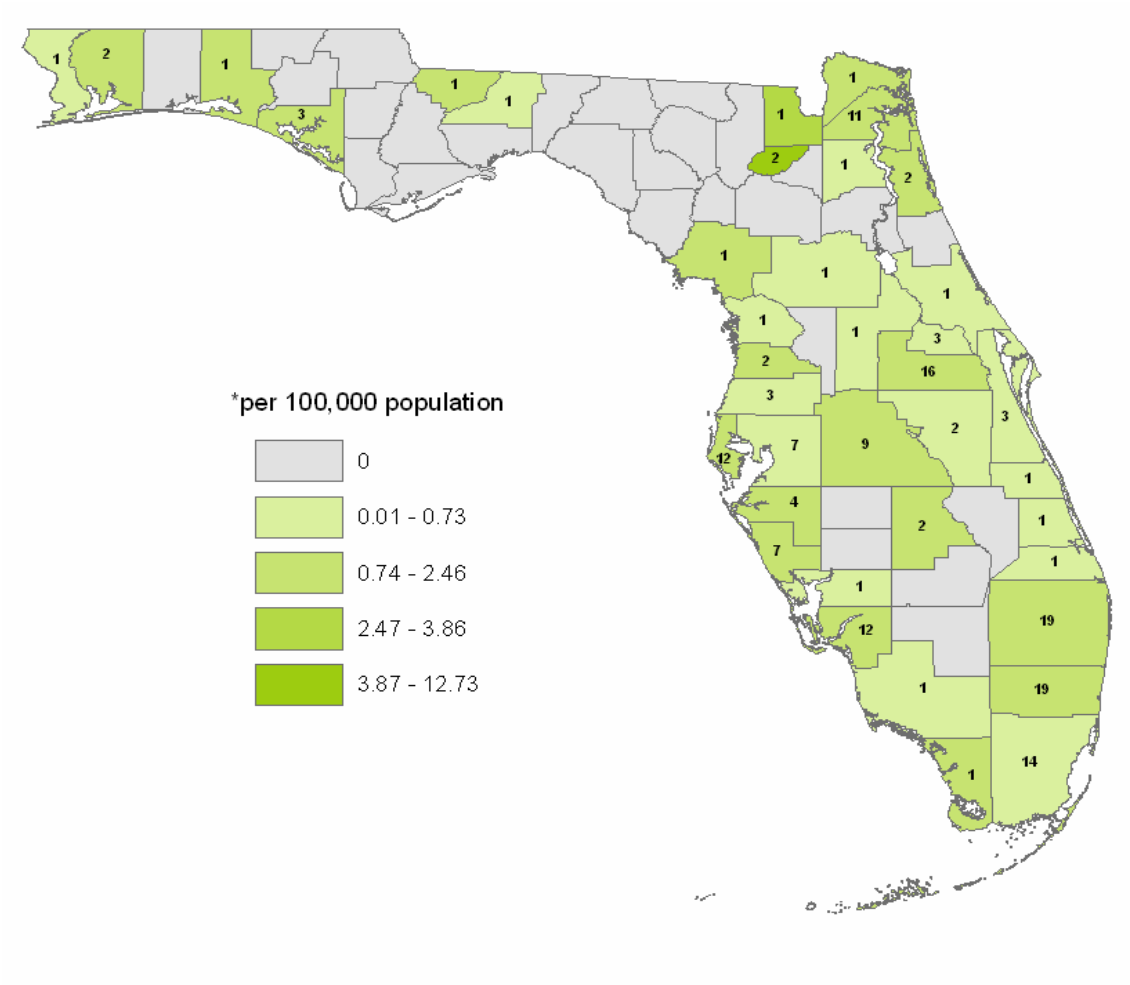
The highest incidence rates continue to occur among adults aged 45 years and older with rates ranging from 1.0 per 100,000 in the 45-54 age group to 2.8 per 100,000 in the 65-74 age group. In 2010, the incidence rates were higher than the previous five-year average in most age groups. Males continue to have a higher incidence than females and this gap widened in 2010 (1.3 and 0.6 per 100,000, respectively).

Figure 3. Legionellosis Incidence Rate by Age Group, Florida, 2010



Legionellosis cases were reported in 39 of 67 counties in Florida (Figure 4). Counties in the central, south-western, and southeastern regions of Florida reported the highest incidence rates.

Figure 4. Legionellosis Cases and Incidence Rates* by County, Florida 2010



Prevention

Recommendations to decrease the proliferation of or exposure to *Legionella* bacteria include:

- 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.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/legionellosis_g.htm.

Leptospirosis

Description

Leptospirosis is caused by the spirochete *Leptospira interrogans*, with over 250 pathogenic serovars identified. Common serovars found in the U.S. include *Icterohaemorrhagiae, Australis, Sejroe, Canicola, Tarassovi, Gryppotyphosa*, and *Bataviae*. The organisms are maintained in the kidneys of many wild and domestic animal reservoirs. Organisms are shed in the urine, amniotic fluid and placenta, and can survive for weeks to months in water or moist environments. At greatest risk are those working with animals, or those exposed to wet (freshwater) conditions, such as sewer or sugarcane field workers, military personnel, and outdoor enthusiasts. The disease is more common in males, primarily because of occupational or recreational related exposures. The disease appears to be emerging in peri-urban areas, and flood conditions have also led to outbreaks in urban environments in other countries. In 2010, the case definition was updated to add a probable category so that people with a single serum microagglutination (MAT) titer >200, a positive EIA IgM, or detection of pathogenic *Leptospira* by nucleic acid test (NAT) may be classified as having cases.

Disease abstract

Two probable cases of leptospirosis were reported in 2010. One case involved a black man aged 72 years who was exposed and became ill while traveling in Jamaica. The second case involved a white man aged 17 years who is believed to have been exposed while hog hunting in North Carolina when he splashed creek water onto his face and may have swallowed some of the water. Both were treated and recovered.

Prevention

At-risk workers should use appropriate personal protective equipment including boots, gloves and aprons; rodent populations should be controlled; and contact with potentially infectious animal urine, water, and other materials should be avoided.

References

Control of Communicable Diseases Manual. 19th ed. Ed. David L. Heymann. American Public Health Association, 2008.

Red Book: 2009 Report of the Committee on Infectious Diseases. 28th ed. Eds. Pickering LK, Baker CJ, Long SS, McMillan JA. American Academy of Pediatrics, 2009.

Additional Resources

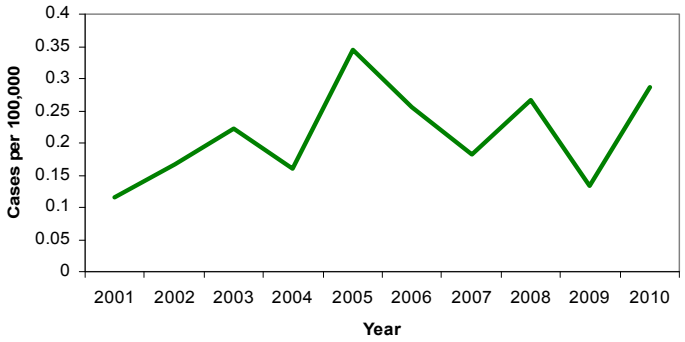
Information regarding leptospirosis in Florida can be obtained at the Florida Department of Health website at: http://www.doh.state.fl.us/Environment/medicine/arboviral/Zoonoses/Zoonotic-index.html.

Additional information can be found at the CDC website at: http://www.cdc.gov/nczved/divisions/dfbmd/diseases/leptospirosis.

Listeriosis

Listeriosis: Crude Data	
Number of Cases	54
2010 incidence rate per 100,000	0.3
% change from average 5 year (2005-2009) reported incidence rate	21.9%
Age (yrs)	
Mean	57.4
Median	66
Min-Max	0 - 90

Figure 1. Listeriosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The reported incidence rate for listeriosis has shown no clear trend over the last ten years (Figure 1). In 2010, there was a 21.9% increase in comparison to the previous five-year average incidence. A total of 54 cases were reported in 2010, which is more than double what was reported in 2009 (24 cases). Historically, the number of cases reported tends to increase slightly in the late summer months with a high number of cases in August, September, and October. In 2010, a similar trend was observed but with notably early peaks in January, as well as in May and June (Figure 2). These peaks do not appear to be outbreak-related and all cases were classified as sporadic.

Figure 2. Listeriosis Cases by Month of Onset, Florida, 2010

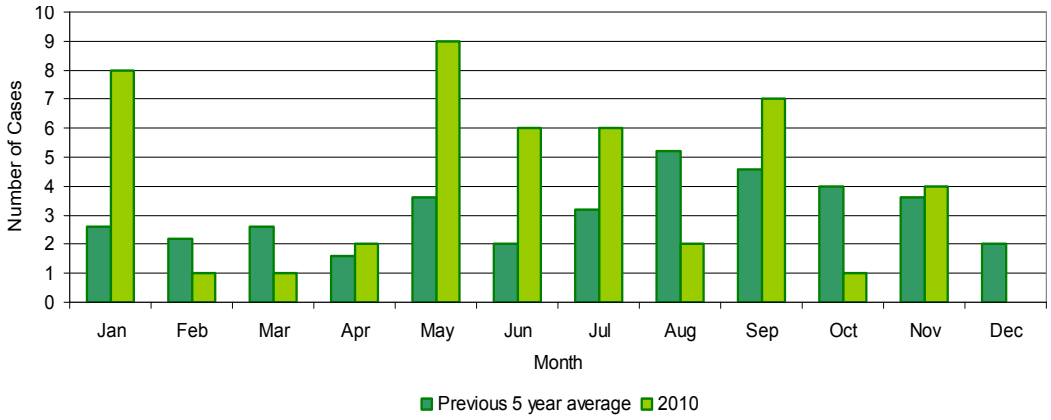
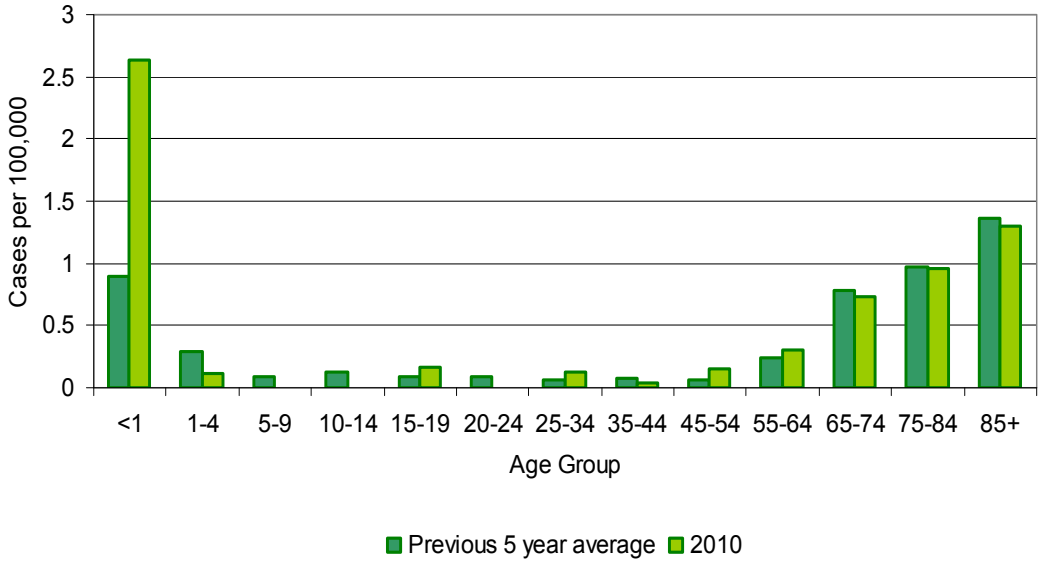


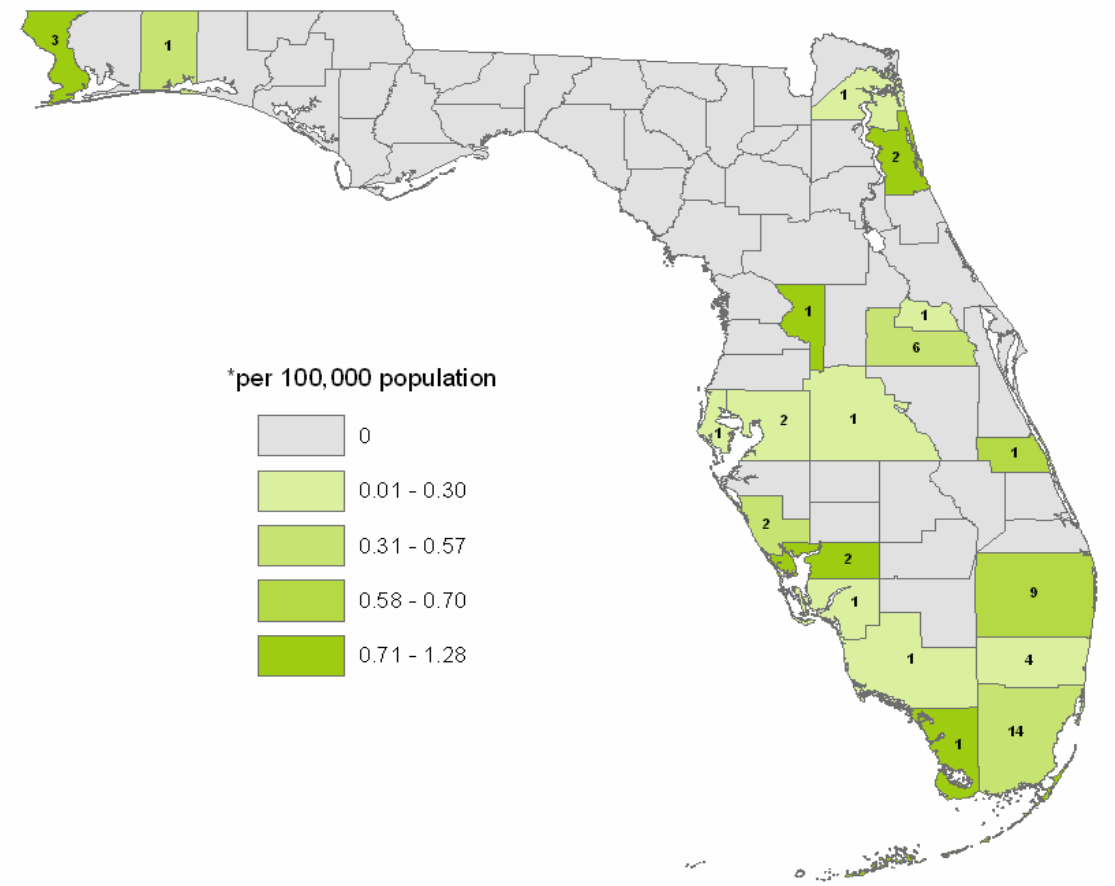
Figure 3. Listeriosis Incidence Rate by Age Group, Florida, 2010



Newborns and the elderly are at increased risk of disease (Figure 3). In 2010, the incidence rate was higher than the previous five-year average for newborns and lower in those aged >65 years. The incidence rate in males was similar to that in females (0.27 and 0.30 per 100,000 population, respectively) for 2010, which is different than the historical pattern where there are more cases in females.

Listeriosis was reported in 19 of 67 counties in Florida (Figure 4).

Figure 4. Listeriosis Cases and Incidence Rates* by County, Florida 2010



Prevention

Generally, to prevent listeriosis:

- Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.
- Wash raw vegetables before eating.
- Keep uncooked meats separate from vegetables, cooked foods, and ready-to-eat foods.
- Avoid unpasteurized milk or foods made from unpasteurized milk.
- Wash hands, knives, and cutting boards after handling uncooked foods.

Those at high risk for listeriosis (the elderly, pregnant women, those with cancer, HIV, diabetes, or weakened immune systems) should follow additional recommendations:

- Avoid soft cheeses such as feta, brie, camembert, blue-veined, and Mexican-style cheese.
- Cook leftover foods as well as ready-to-eat foods, such as hot dogs or cold cuts, until steaming hot before eating.

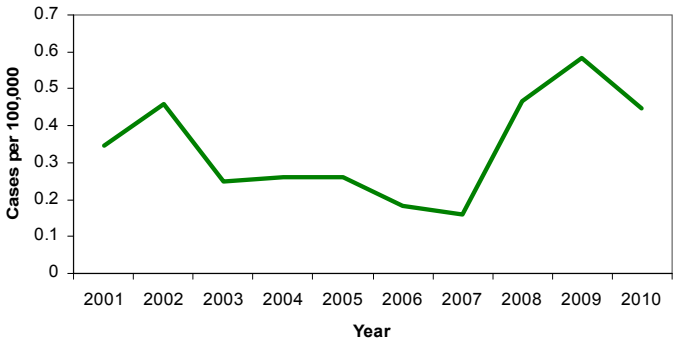
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/listeriosis_g.htm.

Lyme Disease

Lyme Disease: Crude Data	
Number of Cases	84
2010 incidence rate per 100,000	0.5
% change from average 5 year (2005-2009) reported incidence rate	34.9%
Age (yrs)	
Mean	49.5
Median	53
Min-Max	3 - 89

Figure 1. Lyme Disease Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Lyme disease is caused by infection with *Borrelia burgdorferi* following the bite of an infected tick. After declines in the reported incidence of Lyme disease for most of the decade, there has been an overall increasing incidence since 2007, although incidence dropped slightly from 2009 to 2010 (Figure 1). In 2010, 84 imported and Florida-acquired cases were reported, which represented a 34.9% increase over the average incidence from 2005 to 2009. This may be partly attributed to a change in the case definition in 2008, as well as to a true increase in cases.

Sixty-seven percent of cases were classified as confirmed in 2010 and 33% as probable. Almost three-quarters of cases were acquired outside Florida, with 74% (62 cases) reported as imported. However, the proportion of Florida-acquired cases has increased in recent years from 13% (11 cases) reported in 2008, to 20% (22 cases) reported in 2009, to 26% (22 cases) reported in 2010. Exposures in the northeast and upper Midwest U.S., particularly New York, Massachusetts, Pennsylvania, New Jersey, Connecticut, and Wisconsin accounted for the largest number of cases. Highest case incidence was in the summer with peak incidence in July, but cases occurred year round (Figure 2). Winter is a period of decreased tick activity in most northern states. Thirty-seven percent of imported cases (23 cases) presented with early disease manifestations compared with 55% (12 cases) of Florida acquired cases. Eighty-six percent (12 cases) of all imported cases with early disease manifestations reported erythema migrans (EM), compared with 50% (6 cases) of those that were Florida-acquired.

Figure 2. Lyme Disease Cases by Month of Onset, Florida, 2010

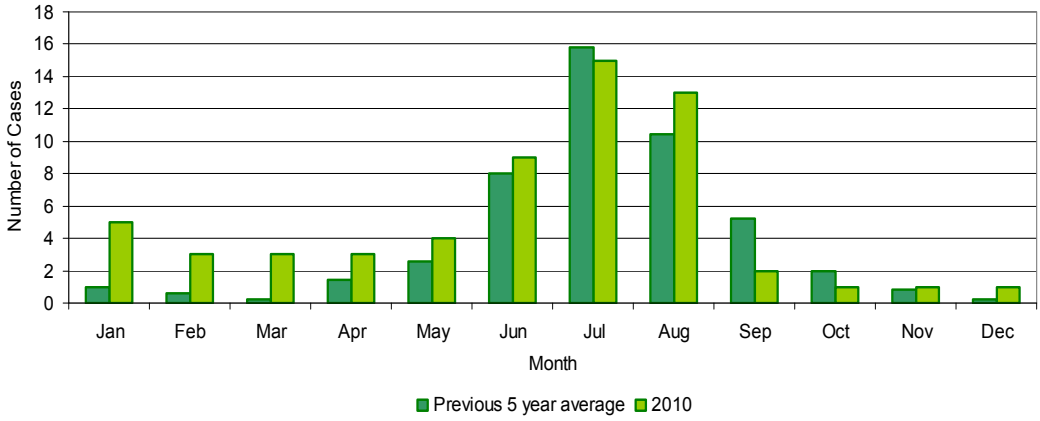
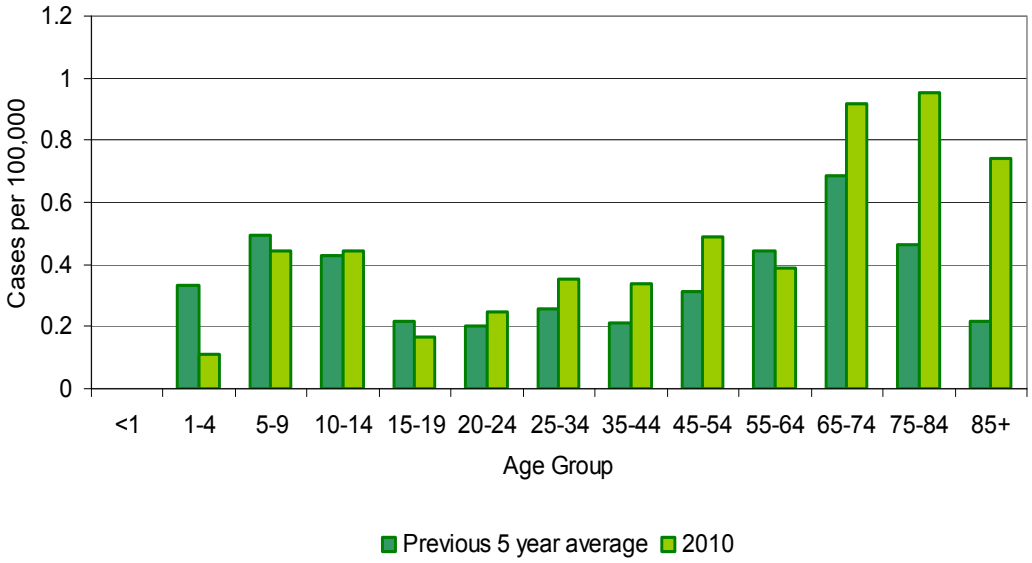
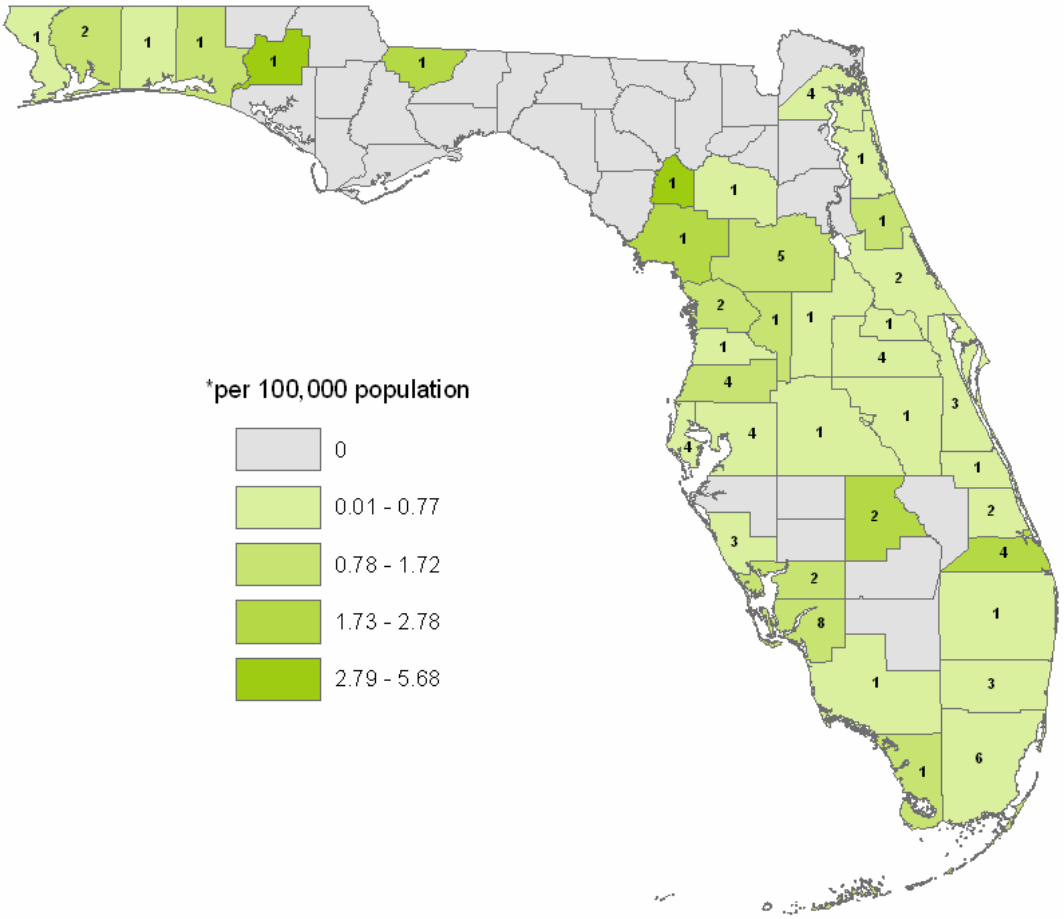


Figure 3. Lyme Disease Incidence Rate by Age Group, Florida, 2010



In 2010, the highest incidence of Lyme disease was in those aged >65 years. This general trend is consistent with the previous five-year average for age; however, the age groups primarily affected by Lyme disease tend to be older than the nationally reported peak incidence group of those aged 45-54 years. The median age for Florida-acquired cases is age 44 years, but it is age 52 years for non-Florida-acquired cases. One reason age may be higher for cases where illness was acquired outside the state is that more are identified later in the course of the disease, with 63% of imported cases demonstrating late manifestations compared to 45% of locally-acquired cases. The peak in children aged between five and 14 years is consistent with national trends (Figure 3). Women and girls represented 72% of Florida-acquired cases compared with 55% of imported cases. Lyme disease continues to be most frequently identified in whites (86%). Individuals of Hispanic ethnicity make up 7% of cases. Lyme disease was reported in residents of 38 Florida counties, but only 16 counties reported cases as acquired in Florida. Most Florida-acquired cases were reported in the north and central parts of the state (Figure 4).

Figure 4. Lyme Disease Cases and Incidence Rates* by County, Florida 2010



Prevention

The most effective prevention for individuals is to avoid human and pet exposure to ticks by using the following strategies:

- Avoid tick infested areas.
- Cover exposed skin as much as possible.
- Wear light-colored clothing to better see ticks.
- Tuck in pant legs and button sleeves.
- Apply permethrin to clothing and DEET to skin (per CDC recommendations).
- Inspect children, pets, and adults for ticks immediately following likely exposure.
- Use appropriate veterinary products as recommended by a veterinarian to prevent tick exposure to pets.
- Use landscaping measures around the home to reduce ground cover to reduce contact with ticks and use any type of fencing around a home.
- Bathe soon after being in tick habitats to decrease risk of infection in endemic areas.
- Promptly remove any ticks found attached to children, adults, or pets. Use 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.

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

References

L.K. Pickering, C.J. Baker, S.S. Long, and J.A. McMillan (eds.), *Red Book: 2009 Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, 2009.

Connecticut Agricultural Experiment Station, 2007, Tick Management Handbook, Bulletin 1010, at: http://www.cdc.gov/ncidod/dvbid/lyme/resources/handbook.pdf.

Additional Resources

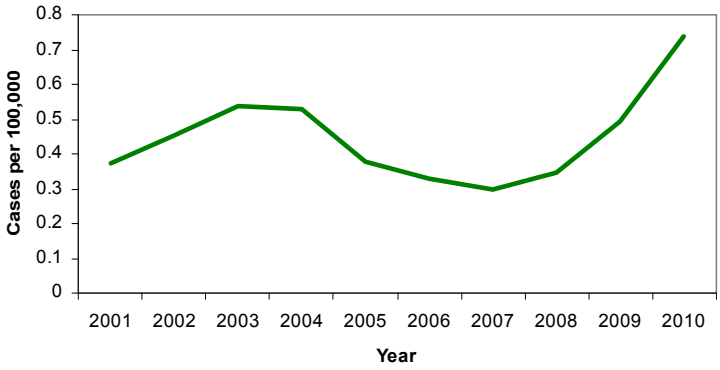
Disease information is available from the Centers for Disease Control and Prevention at: http://www.cdc.gov/ncidod/dvbid/lyme/ and http://www.cdc.gov/healthypets/diseases/lyme.htm.

Disease information is available from the Florida Department of Health at: http://myfloridaeh.com/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

Malaria

Malaria: Crude Data	
Number of Cases	139
2010 incidence rate per 100,000	0.7
% change from average 5 year (2005-2009) reported incidence rate	100.3%
Age (yrs)	
Mean	42.5
Median	44
Min-Max	6 - 78

Figure 1. Malaria Incidence Rate by Year Reported, Florida, 2001-2010



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 except *P. knowlesi* are transmitted from people to people via the bite and blood-feeding behavior of mosquitos of the genus *Anopheles*. Non-human primates act as the reservoir for *P. knowlesi*. Malaria was endemic in Florida up until the 1940s. Currently, nearly all cases are travelers returning to the state from malaria endemic regions of the world, though competent vectors do exist in the state, providing the potential for local transmission. The incidence rate for malaria in Florida declined for several years (Figure 1) until 2008; 139 cases were reported in Florida residents in 2010. In 2010, the number of cases more than doubled as compared to the average incidence from 2005 to 2009. Of the 139 cases reported in 2010, four had onset dates in 2009. An additional two cases reported in 2011 had onset dates in 2010 bringing the total of cases with onset dates in 2010 to 137 cases.

More cases are reported during the summer and early fall months, which correlates with the rainy season in source countries such as Haiti, as well as the summer travel season for Florida residents, but cases in Florida are reported year-round (Figure 2). High incidence rates have been consistent among those in the 20 to 34 age group, and this trend persisted during 2010 (Figure 3). The mean age of reported malaria cases in Florida is 44 years (range: 6-78). For 136 cases with onset dates in 2010, 114 (84%) were diagnosed with *P. falciparum,* 16 (12%) with *P. vivax*, 2 (1%) with *P. ovale*, 1 with *P. malariae* (<1%), and 3 (2%) with undetermined species. Eighty-one percent of cases were non-white and 60% were male.

Figure 2. Malaria Cases by Month of Onset, Florida, 2010

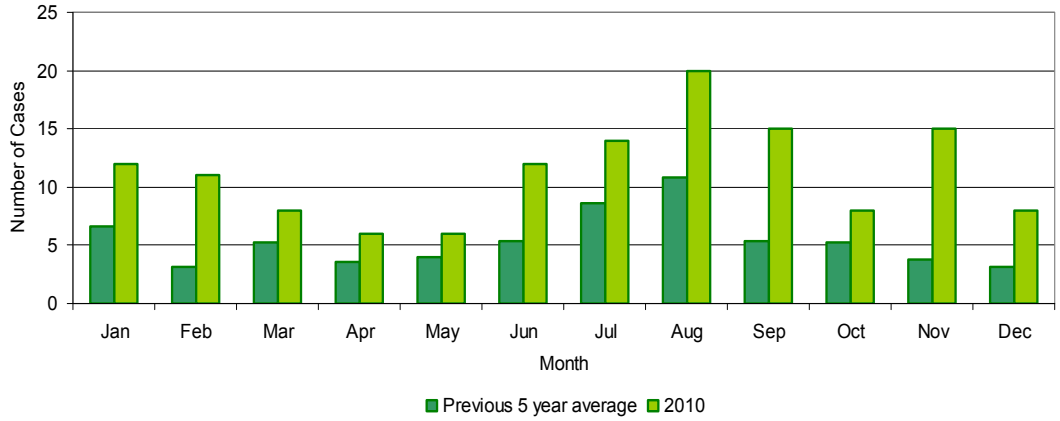
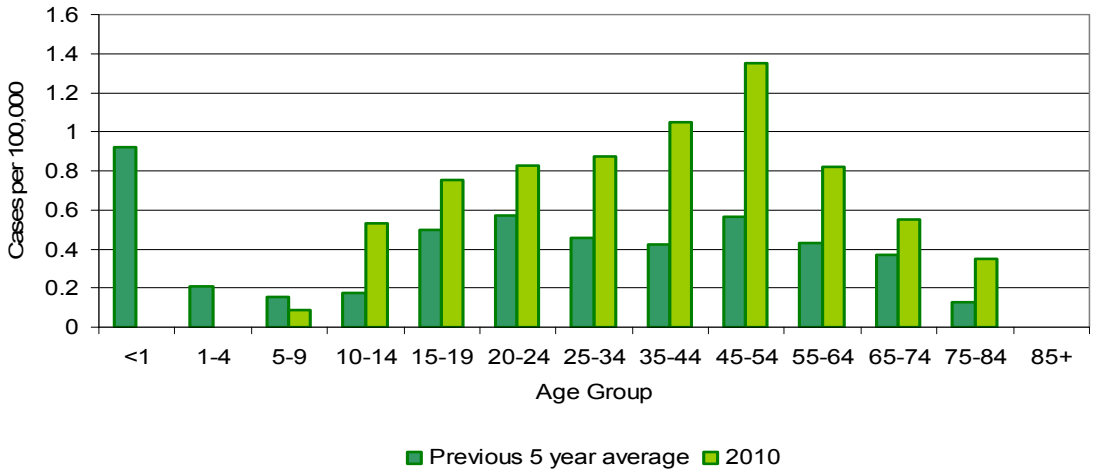


Figure 3. Malaria Incidence Rate by Age Group, Florida, 2010



One case of *P. falciparum* malaria with cryptic origin (suspected to be Florida-acquired) was reported in Duval County during November 2010. The ill person had extensive U.S. travel but had not recently been in any airports that provided direct flights to malaria endemic countries. Sixty percent of cases with onset in 2010 were in people who had recent travel history to Caribbean countries (Haiti, Dominican Republic and Jamaica), 26% traveled to Africa, 9% to Asia, 3% to South America, and 2% to Central America. Of those for whom additional data were available (84 out of 136 total cases with onset in 2010), the largest proportion (62%) acquired malaria while visiting relatives or friends. Persons "visiting friends and relatives" or VFRs are considered a high-risk group since any prior immunity may have waned and they tend not to take proper malaria prevention precautions. Other reasons for travel to malaria endemic areas were missionary/volunteer work (11%), tourism (7%), and business (10%). Immigrants to Florida made up 10% of the cases. Eighty-six percent of cases reported not using anti-malarial chemoprophylaxis, 6% reported missing doses, and 8% reported taking all doses as scheduled.

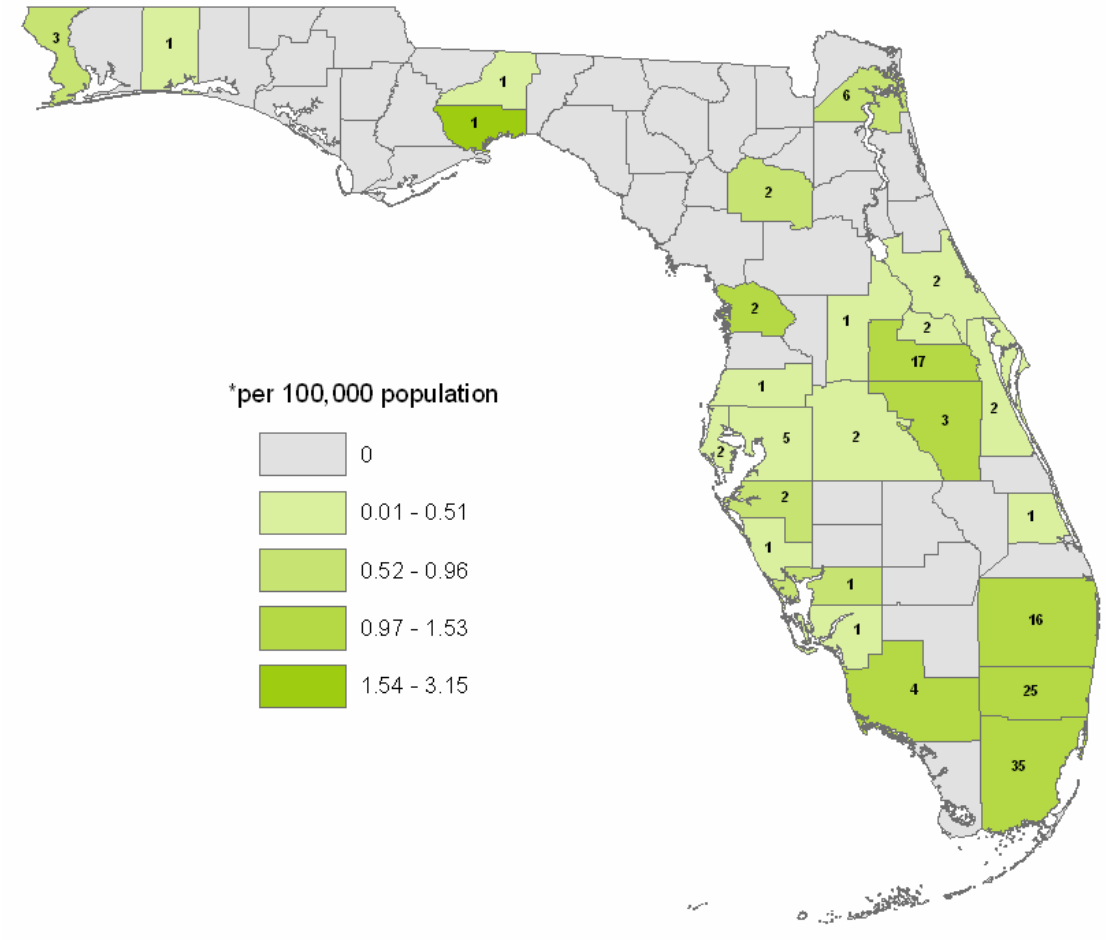
Prevention

No vaccine is currently available. Travelers to malaria-endemic countries should consult with their doctors to make sure they receive an appropriate preventative chemoprophylactic regimen and should also 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, drug resistance, and how well the drug is tolerated.

Following these personal protection measures 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.

Malaria Cases and Incidence Rates* by County, Florida 2010



References

Centers for Disease Control and Prevention, “Traveler’s Health: Yellow Book, Health Information for International Travel, 2010,” June 22 2009, http://wwwn.cdc.gov/travel/contentYellowBook.aspx.

Additional Resources

A table containing drugs used in malaria prophylaxis can be found in the CDC Yellow Book, online at: http://wwwn.cdc.gov/travel/yellowBookCh4-Malaria.aspx#404.

Additional information on malaria and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at: http://www.doh.state.fl.us/environment/medicine/arboviral/pdf_files/2009MosquitoGuide.pdf.

Malaria fact sheets for immigrants are available at: http://www.doh.state.fl.us/Environment/medicine/arboviral/Malaria.html.

Measles

Disease Abstract

In 2010, one laboratory-confirmed case of measles was reported, for a statewide incidence rate of 0.01 cases per 100,000 population. The person with measles, a resident of Florida, reported travel throughout two European countries approximately three weeks prior to symptom onset. The person's vaccination history was unknown, though immunity to mumps and varicella was reported. The person was born before 1957 and reported living abroad until 1960. This case was classified as internationally imported given the exposure was outside the country, with rash onset within 21 days after entering the U.S., and the case was not linked to local transmission. 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.

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 infection due to the 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.

Prevention

Vaccination against measles is recommended for all children after their first birthday. Two doses of measles vaccine (preferably as MMR) 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 during or after 1957.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed., 2008, Chapter 7.

Muscat M, "Who Gets Measles in Europe?," *Journal of Infectious Diseases,* 2011 Jul; 204 Suppl 1:S353-65.

Additional Resources

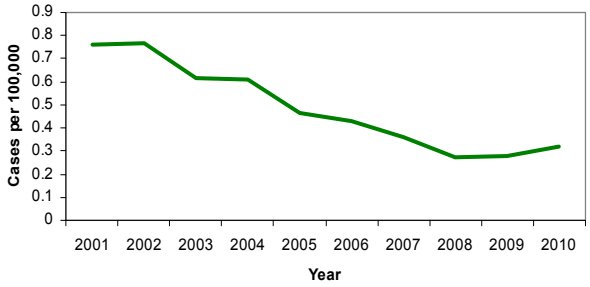
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: www.cdc.gov/vaccines/vpd-vac/measles/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Meningococcal Disease

Meningococcal Disease: Crude Data	
Number of Cases	60
2010 incidence rate per 100,000	0.3
% change from average 5 year (2005-2009) reported incidence rate	-11.3%
Age (yrs)	
Mean	37.0
Median	30
Min-Max	0 - 88

Figure 1. Meningococcal Disease Incidence Rate by Year Reported, Florida 2001-2010



Disease Abstract

Meningococcal disease includes both meningitis and septicemia due to the bacteria *Neisseria meningitidis*. There are many different serogroups of *Neisseria meningitidis*. The common ones in the United States include A, B, C, W-135, and Y. The reported incidence rate for meningococcal disease has declined gradually over the previous 10 years, and in 2010 was less than half of what it was 10 years ago (Figure 1). The long-term downward trend has reversed in 2009 and 2010, mostly because of an increase in W-135 infections in South Florida. In 2010, 60 cases were reported, of which 59 were confirmed. There is a general seasonal increase in cases in late winter and early spring (Figure 2). There were 16 cases related to a PFGE laboratory-confirmed cluster of serogroup W-135 in southeast Florida that had been previously reported (additional information is available in the article cited in the references section.) Ten cases resulted in death.

Figure 2. Meningococcal Disease Cases by Month of Onset, Florida, 2010

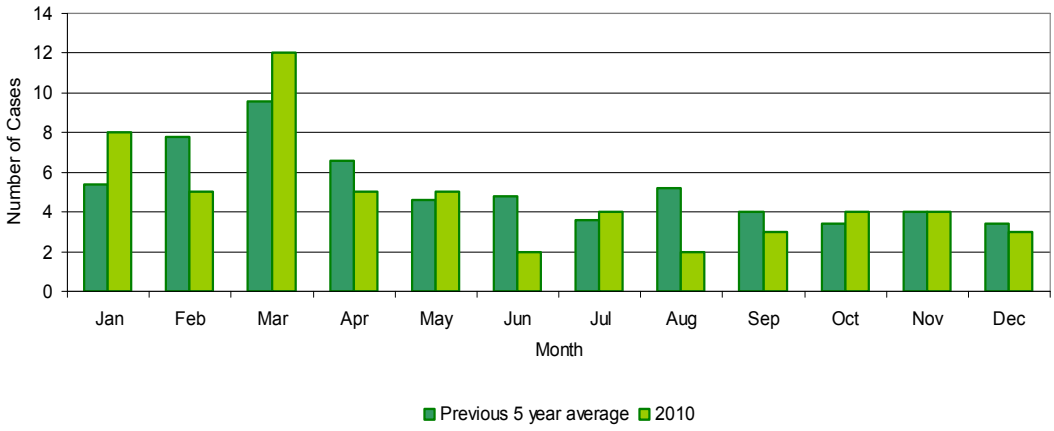
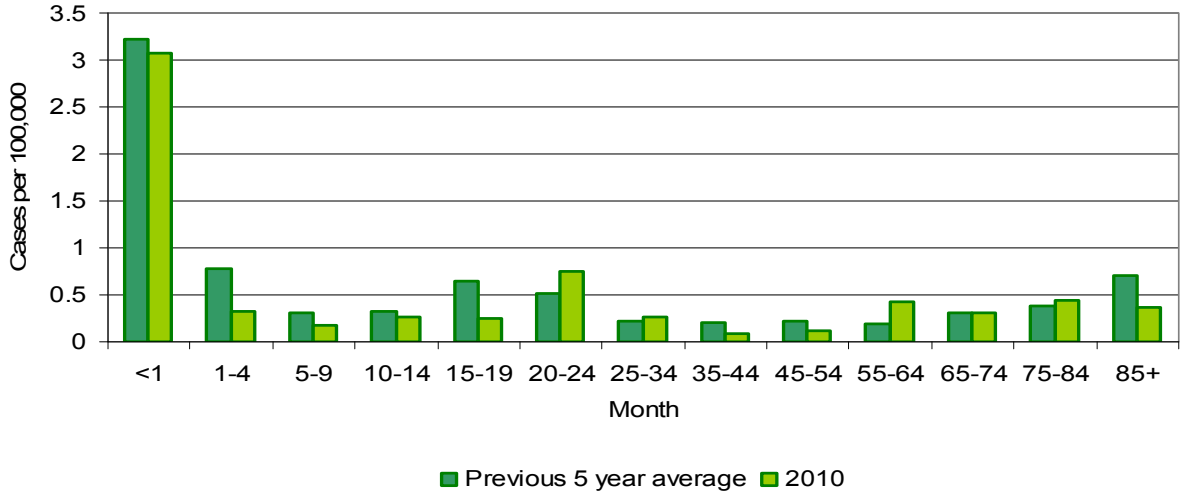


Figure 3. Meningococcal Disease Incidence Rate by Age Group, Florida, 2010



The highest incidence rates continue to occur in infants aged <1 year. As of October 2010, vaccination recommendations have been updated to include recommended meningococcal vaccination using the conjugate vaccine starting at age two for individuals with medical risk factors. Additionally, the polysaccharide vaccine has been recommended for use in children aged three months to two years under special circumstances such as impending travel to an endemic area. In 2010, the incidence rates were lower than or equal to the previous five-year average in all age groups except those aged 20-24 years, 55-64 years, and those aged 75-84 years (Figure 3). Fifty-eight of the 60 cases had specimens submitted to the Bureau of Laboratories for serogrouping (Table 1).

Meningococcal disease was reported in 21 of 67 counties in Florida (Figure 4). Counties in central and southeastern Florida reported the highest incidence rates.

Figure 4. Meningococcal Disease Cases and Incidence Rates* by County, Florida 2010

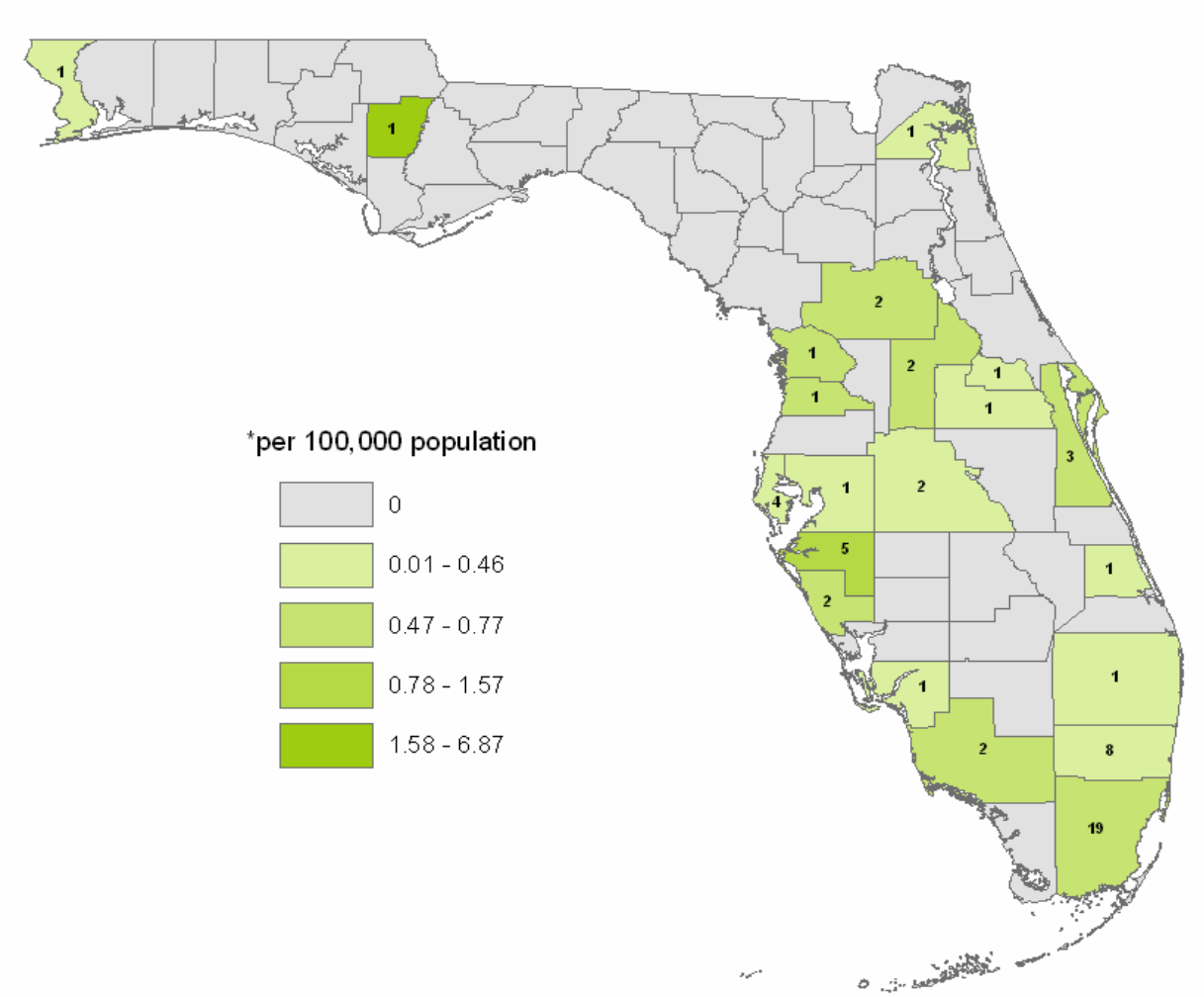


Table 1. Cases of Meningococcal Disease by Serogroup, Florida, 2010

Serogroup	Number of Cases
Group A	0
Group B	14
Group C	8
Group Y	15
Group W-135	19
Non-Groupable	1
Other	1
Isolate not submitted for serogrouping	2
Total	60

Prevention
Meningococcal vaccines are available to reduce the likelihood of contracting *Neisseria meningitidis*. Two vaccines, licensed in 1978 and 2005, provide protection against four serogroups (A, C, Y, and W-135). Droplet precautions should be implemented if the 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).

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

References
American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases,* 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

Centers for Disease Control and Prevention, "Prevention and Control of Meningococcal Disease," *MMWR*, Vol. 54, No. RR07, 2005, pp.1-21.

Centers for Disease Control and Prevention, "Meningococcal Disease and College Students: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR*, Vol. 49, No. RR-7, 2000, pp. 11-20.

Doyle TJ, Mejia-Echeverry A, Fiorella P, Leguen F, Livengood J, Kay R, et al, "Cluster of Serogroup W135 Meningococci, Southeastern Florida, 2008–2009," *Emerg Infect Dis*., 2010 Jan, available at: http://www.cdc.gov/EID/content/16/1/113.htm.

Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/meningococcal_g.htm and http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/mening.pdf.

Mercury Poisoning

Disease Abstract
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. The organic mercury compound methyl mercury is the most likely to cause adverse health effects in the general population.

Common sources of mercury include:

- 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. Ethyl mercury and methyl mercury 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. 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 micrograms per liter (µg/L) of whole blood, or >5 micrograms per gram (µg/g) of hair. However, urine mercury levels are not useful in evaluating suspected organic mercury poisoning.

There were 12 confirmed cases of mercury poisoning reported in Merlin during 2010. However, there were 13 cases where the exposure incident occurred during 2010. All 13 cases with their exposure incident occurring during 2010 will be included in the following analysis. The primary potential source of mercury exposure was identified to be fish consumption. Twelve out of thirteen cases had eaten fish within a month of reporting, while one patient had an unknown source of exposure. Three of the affected people reported eating less than 12 ounces of fish in a week; six cases reported eating 12 to 30 ounces, and two cases ate 30 to 60 ounces per week. Two cases did not report the amount of fish consumed.

For 2010, a majority of the confirmed cases were reported from Miami-Dade (N=7, 53.8%) and Pinellas (N=2, 15.4%) counties. Other counties that reported one case are Brevard, Broward, Hillsborough, and Leon. Cases were predominantly male (N=9, 69.2%). The majority of mercury poisoning cases were reported among those aged 35 to 64 years (N=11, 84.9%). Cases ranged from age 4 to 64 years; the mean and median age was 46.3 and 48 years respectively.

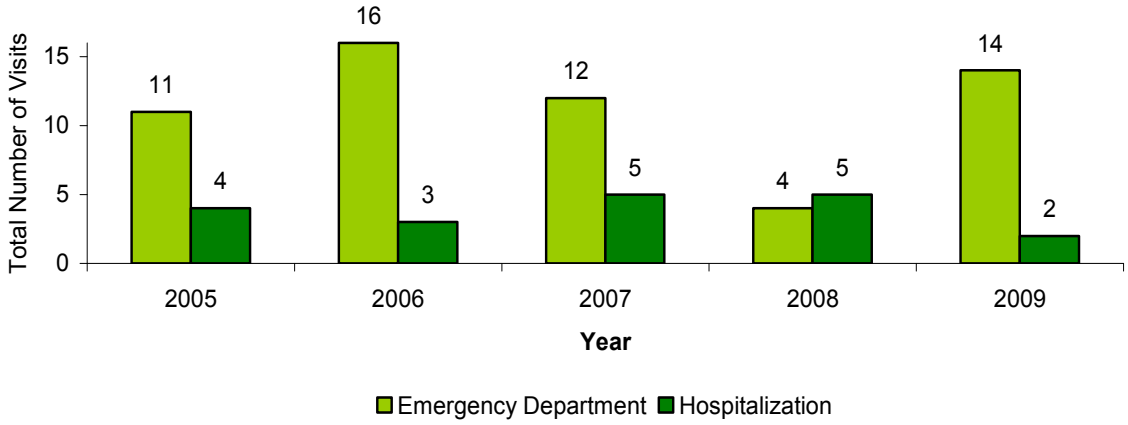
Approximately 62% (N=8) of the reported cases of mercury poisoning were among whites (both Hispanic and non-Hispanic), while 31% (N=4) reported unknown race and ethnicity. Among cases with known race and ethnicity, 15.4% were Hispanic (N=2).

Analysis of Varied Data Sources for Mercury Poisoning Events 2005 – 2009

In order to better estimate the burden of mercury-related poisonings, de-identified hospitalization and emergency department (ED) visit data from the Agency for Healthcare Administration, and mortality data from the Office of Vital Statistics were searched for mercury-related poisonings using relevant International Classification of Disease (ICD) codes. Selected codes were 985.0, E866.1 for ED visits and hospital admissions, and T56.1 for deaths. The data were extracted for one or more ICD codes present in the primary or secondary diagnosis fields from years 2005 through 2009 (the most recent year for which data was available).

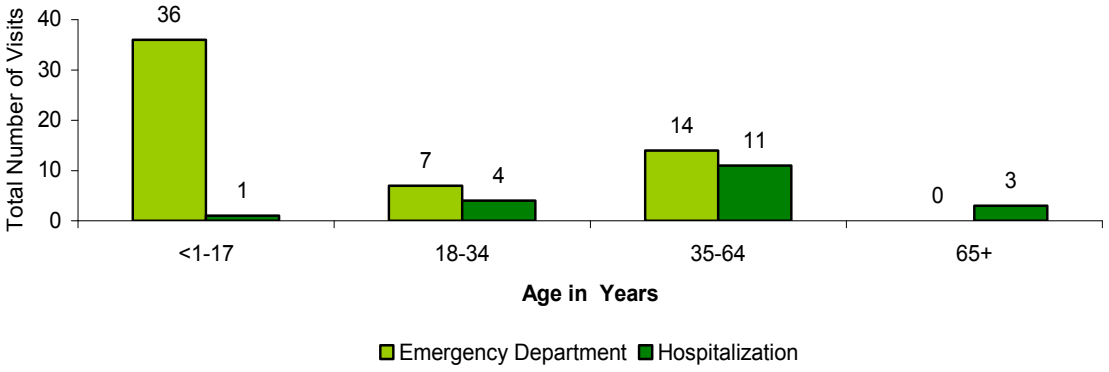
There were a total of 57 ED visits and 19 hospitalizations related to mercury poisoning reported from 2005 through 2009 in Florida. No mercury-related deaths were recorded during this time. Due to lack of personal identifiers in the hospitalization data, reports identified in ED visit and hospitalization data were not matched with cases identified in Merlin data and are not unduplicated.

Figure 1. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Year, Florida, 2005 to 2009



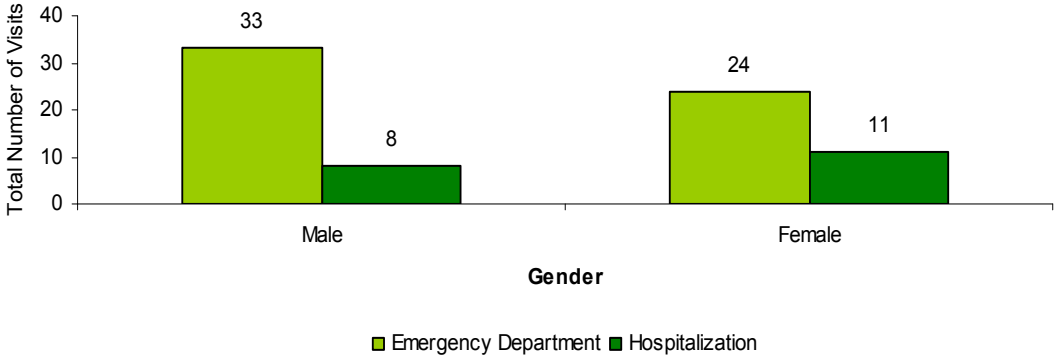
ED visits were predominantly among young people aged <17 years old (N=36, 63.2%), whereas hospitalizations were predominantly among adults aged >35 years (N=14, 3.7%).

Figure 2. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Age Group, Florida, 2005 to 2009



Males made up a larger proportion of the ED visits (N=33, 57.9%), whereas females made up a larger proportion of the hospitalizations (N=11, 57.9%).

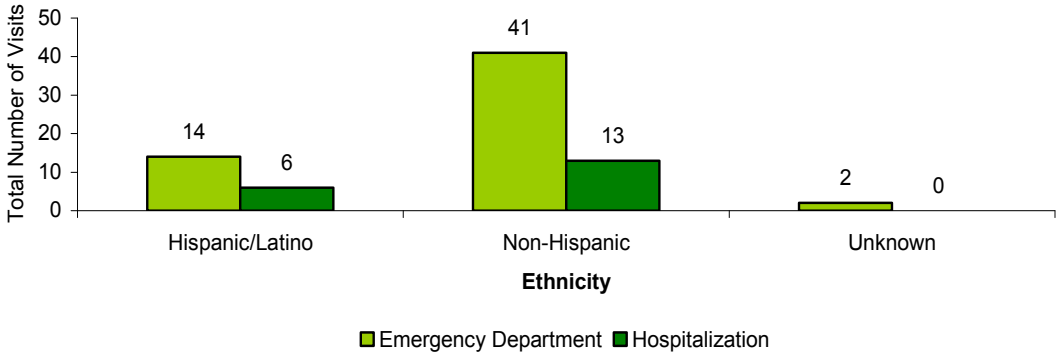
Figure 3. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Gender, Florida, 2005 to 2009



Patients were primarily white (86% among ED visits, 89.5% among hospitalizations), with only six visits of any kind among Black/African Americans. Three patients were recorded as unknown race. Approximately 26% of the visits or hospitalizations reported Hispanic ethnicity.

Neither the source of mercury related to the poisoning nor the type of mercury (elemental versus organic) is available in the hospital ED or inpatient records, but it is not presumed to be primarily related to fish consumption. Given the young age of those presenting at the ED, there may be more cases related to exposure to elemental forms of mercury such as broken devices or through other exposure routes such as fungicides or home remedies, although the data are not available to explore these concerns.

Figure 4. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Ethinicity, Florida, 2005 to 2009



Prevention

The Florida Department of Health provides health advisories related to fish consumption in Florida. The Florida Commercial Fish Wallet Card for Women of Child-Bearing Age has been 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.

The Division of Environmental Health has created a brochure and one page fact sheet about mercury to educate Floridians about risk and prevention of mercury exposure.

Additional Resources

For more information about the Chemical Disease Surveillance Program please visit the website at: http://www.myfloridaeh.com/medicine/Mercury_Poisoning.html.

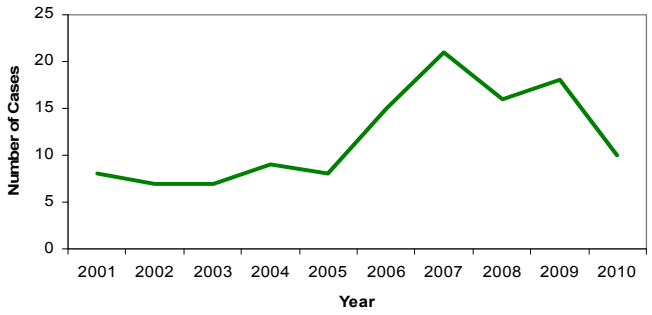
Florida Fish Consumption Advisories are posted at: http://www.doh.state.fl.us/floridafishadvice/.

“Don’t Mess with Mercury” videos (English and Spanish versions) are available at: http://www.dontmesswithmercury.org/.

Mumps

Mumps: Crude Data	
Number of Cases	10
2010 incidence rate per 100,000	0.05
% change from average 5 year (2005-2009) reported cases	-35.9%
Age (yrs)	
Mean	21.1
Median	17.5
Min-Max	4 - 52

Figure 1. Mumps Cases by Year Reported, Florida, 2001-2010

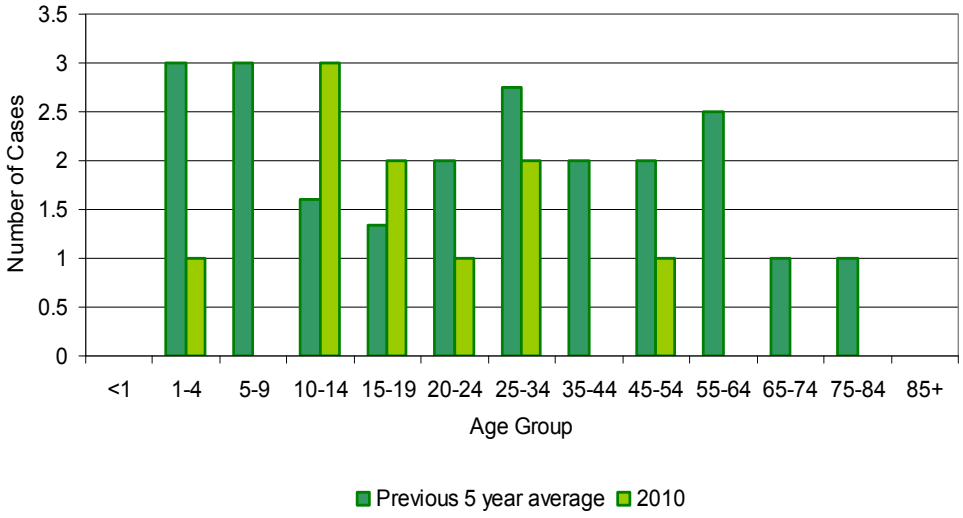


Disease Abstract

The 2010 statewide incidence rate for mumps was 0.05 per 100,000 population. Cases in 2010 ranged from persons aged 4 to 52 years (Figure 2). Of the ten cases, eight were reported as confirmed and two as probable. One case was acquired outside of the U.S. and one was hospitalized. Five of the cases received mumps-containing vaccine, two had no history of vaccination, and three had unknown immunization status.

The 10 confirmed cases represent a decrease from 18 confirmed cases in 2009. 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 activity occurred in 2007 and has declined since, decreasing in 2010 to 35.9% below the previous five-year average. One case in the 10-14 year age group was a household contact of the case in the 1-4 year age group.

Figure 2. Mumps Cases by Month of Onset, Florida, 2010



Prevention

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 between the ages four to six years (prior to kindergarten entry). 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. After 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. Two doses of MMR vaccine also are recommended for students attending colleges and other post-high school institutions.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed., 2010, Chapter 9.

Additional Resources

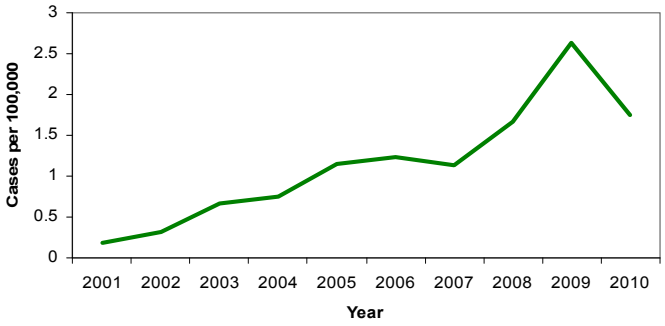
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/vaccines/vpd-vac/mumps/default.htm#clinical.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Pertussis

Pertussis: Crude Data	
Number of Cases	328
2010 incidence rate per 100,000	1.8
% change from average 5 year (2005-2009) reported incidence rate	11.5%
Age (yrs)	
Mean	18.0
Median	9
Min-Max	0 - 86

Figure 1. Pertussis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Pertussis is a severe respiratory disease caused by *Bordetella pertussis*. It is also known as whooping cough. Florida pertussis rates increased steadily from 2001 through 2009 and fell slightly in 2010 (Figure 1). Case numbers went from 30 cases in 2001 (22 confirmed and 8 probable) to a peak of 497 cases in 2009 (376 confirmed and 121 probable). There were 328 cases reported in 2010 (239 confirmed and 89 probable). In the previous five years and in 2010, most cases occurred during the summer months (Figure 2). In the previous years, pertussis cases were consistent between gender and race. However, in 2010, rates were higher in whites than in non-whites.

As in the previous five years, most pertussis cases were identified in infants and young children. Of the 328 reported cases in 2010, 100 were reported in infants aged <12 months, too young to have completed the vaccination series (Figure 3). Of the reported people with the disease, 77 were hospitalized, and acute encephalopathy was reported in three. Two deaths occurred in infants aged <12 months who had confirmed cases. There was no record of vaccination for 196 (59.8%) cases. Ninety-one (27.74%) cases in 13 counties were outbreak-associated. Cases in adolescents and adults are often not recognized, but can be sources of infection for young children.

Figure 2. Pertussis Cases by Month of Onset, Florida, 2010

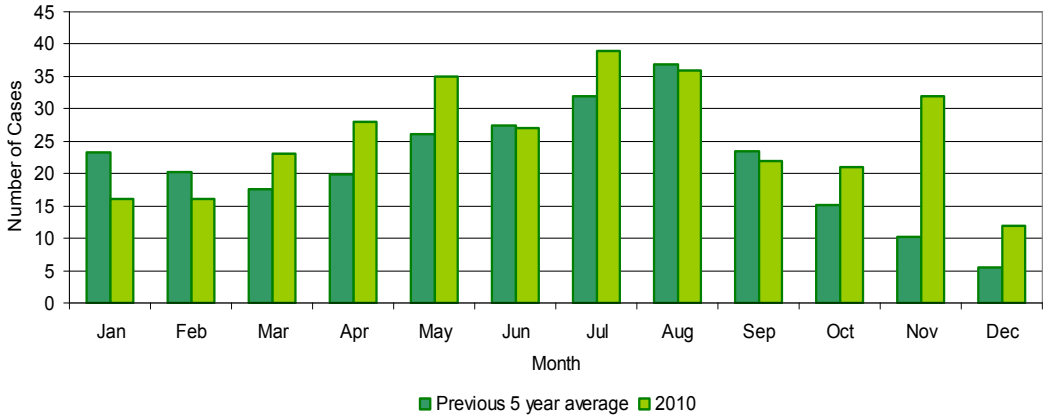
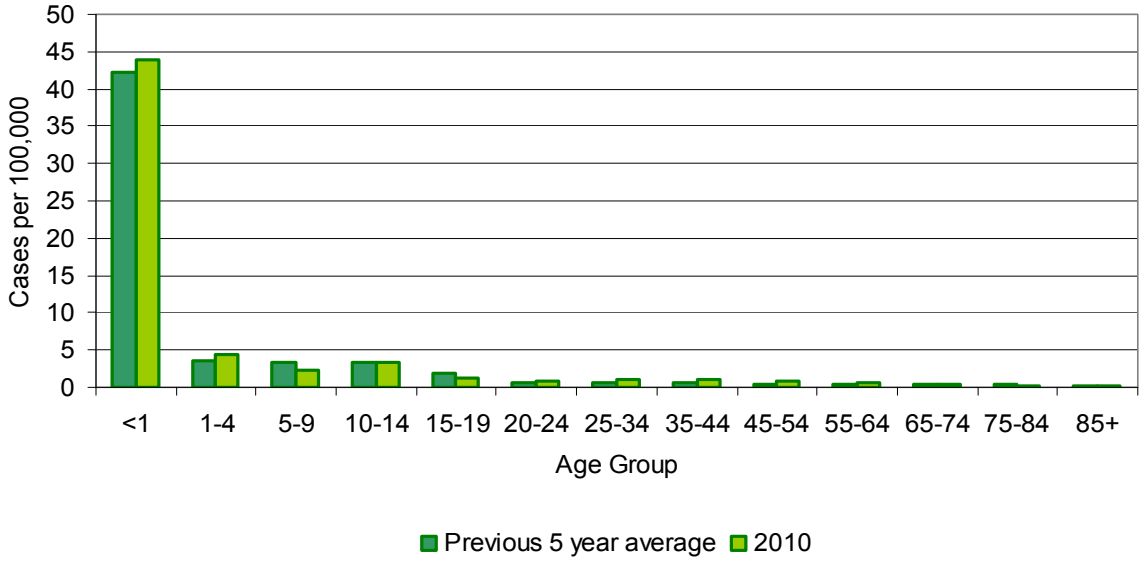
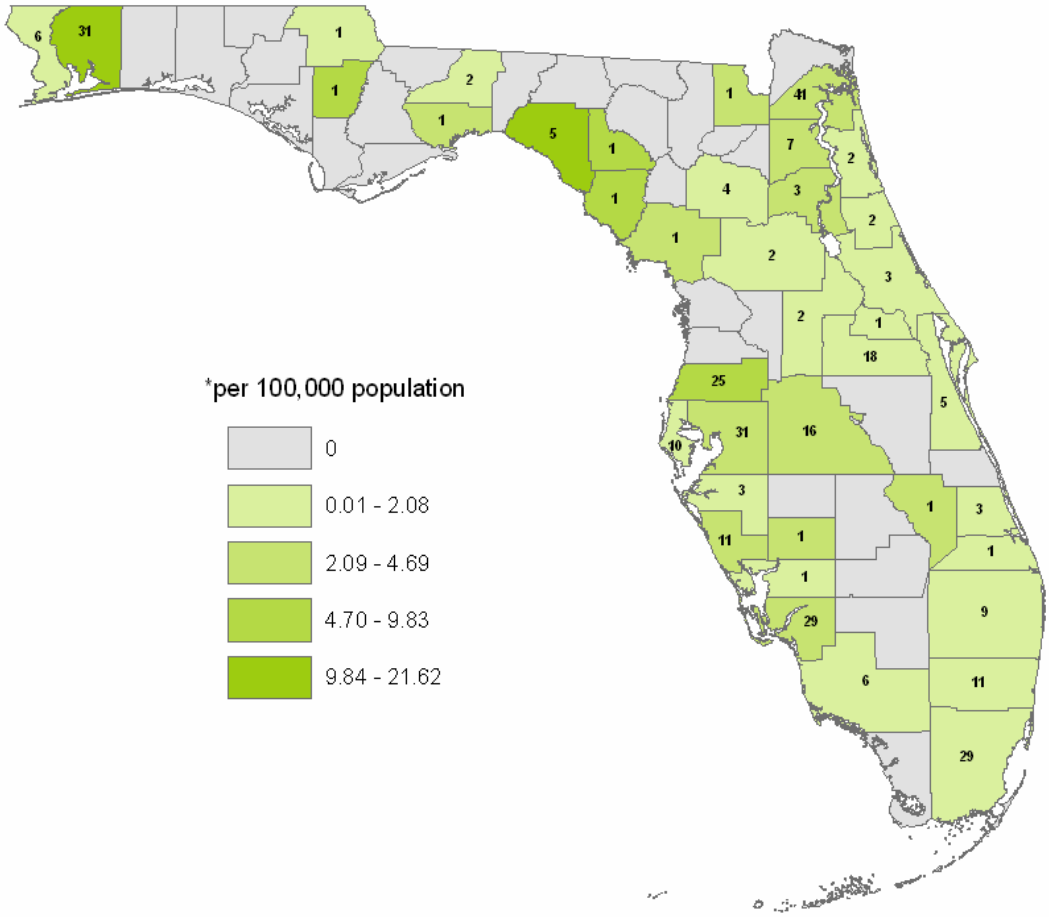


Figure 3. Pertussis Incidence Rate by Age Group, Florida, 2010



Pertussis was reported in 39 of 67 counties in Florida (Figure 4).

Figure 4. Pertussis Cases and Incidence Rates* by County, Florida 2010



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 to 18 months, and four to six years. This vaccine is also available in combination with other childhood vaccines. The increase in disease in the early teenage years indicates that immunity decreases over time. One dose of Tdap vaccine is now recommended to be given between age 10 and 64 years. As of school year 2009-2010, Tdap vaccine is required for children entering seventh grade. 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, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 4th ed., 2008, Chapter 10.

Centers for Disease Control and Prevention, *Guidelines for the Control of Pertussis Outbreaks*. Centers for Disease Control and Prevention: Atlanta, GA, 2000.

Centers for Disease Control and Prevention, Pertusis, 2010, website at: http://www.cdc.gov/vaccines/pubs/pertussis-guide/guide.htm.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Pesticide-Related Illness and Injury, 2009

Disease Abstract

The Department of Health (DOH) uses a standard protocol based on the National Institute of Occupational Safety and Health (NIOSH) surveillance guidelines for classifying cases. Only 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. The case definition for pesticide-related illness and injury is available at http://www.doh.state.fl.us/disease_ctrl/epi/surv/CaseDefinitions/Pesticide-Related_Illness.pdf. Cases are reported to the Chemical Disease Surveillance Program (CDSP) from multiple sources including: electronic laboratory reports, the Florida Poison Information Center Network (FPCIN), emergency department (ED) chief complaint data, as well as self-reports from ill individuals, co-workers, family members, and others.

Recent incorporation of FPICN and ED chief complaint data into Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) has provided an additional tool for all trained county health department (CHD) users to access clinical pesticide poisoning reports.

Data on pesticide-related illness and injury are currently available through 2009. From 1998 through 2009, 2,944 cases of pesticide-related illness and injuries were reported to the CDSP; 430 were identified as work-related. The CDSP received 405 case reports of acute pesticide-related illness and injuries in 2009 (Figure 1). The increase in cases seen since 2006 is related to additional cases identified as a result of direct access to the FPICN by the CDSP which has led to more complete case ascertainment. Case distribution is not uniform throughout the year with more cases reported during summer months (Figure 2).

Figure 1. Number of Pesticide-Related Illness and Injury Cases by Year, Florida, 1998-2009

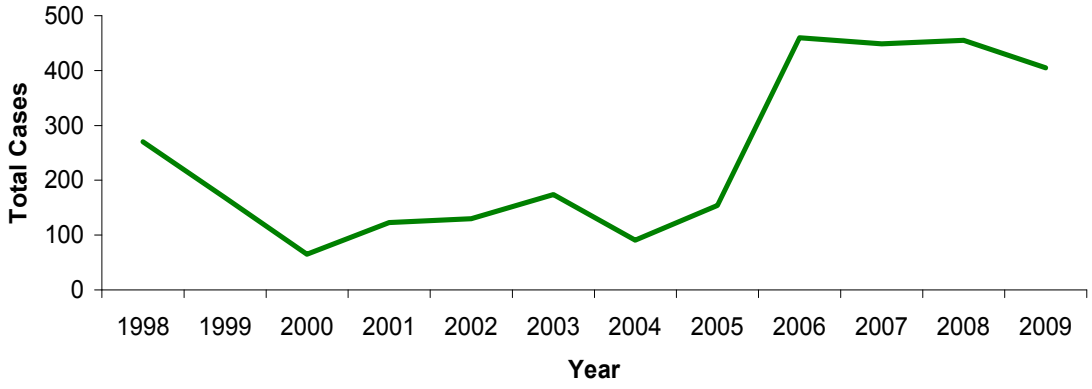
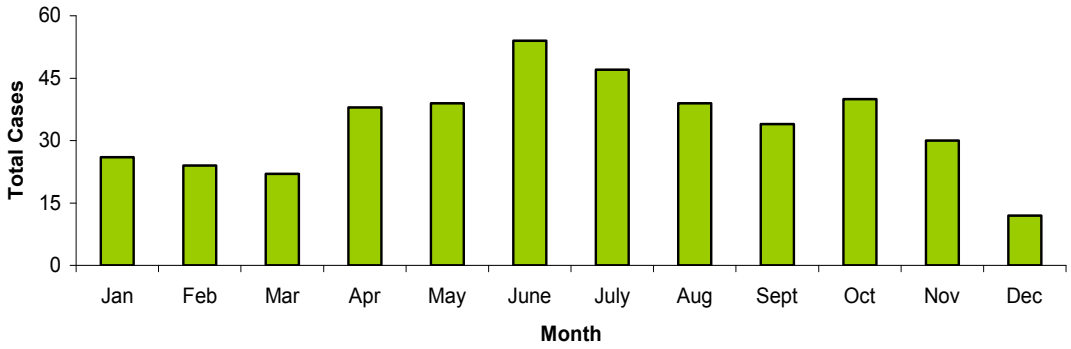
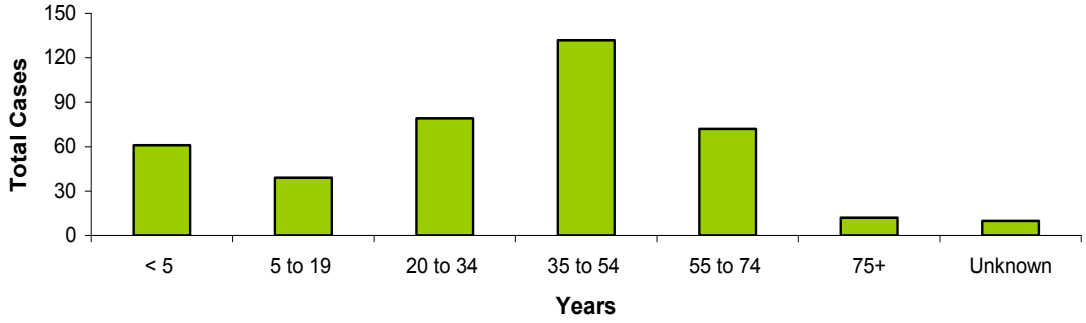


Figure 2. Pesticide Poisoning Cases by Month of Exposure, Florida, 2009



The majority of the cases during 2009 were classified as possible (N=277, 68.4%) followed by confirmed (N=78, 19.3%), and probable (N=50, 12.3%). The FPICN has become the major data reporting source since 2006. In 2009, 285 (70.4%) of cases were identified through the FPICN. Other common sources of reporting were self report (N=42, 10.4%), friends and relatives (N=35, 8.6%), physician and other health care providers (N=35, 8.6%), and co-worker (N=6, 1.5%). About 7.9% of cases were reported from more than one source (N=32). Cases ranged from less than two months of age to 95 years, with 36.3 and 38 as the mean and median ages respectively. The majority of cases were aged 35 to 54 years (N=132, 32.6%) (Figure 3). There were slightly more females reported with pesticide poisoning (53.3%) than males.

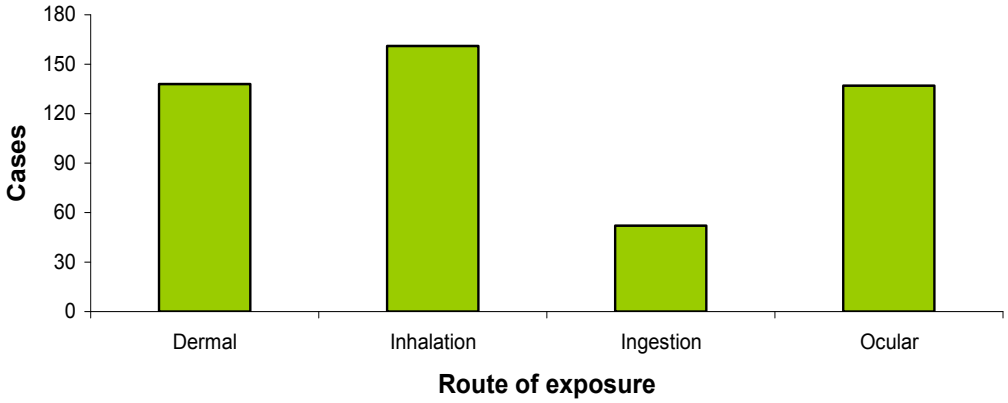
Figure 3. Pesticide-Related Illness and Injury Cases by Age Group, Florida, 2009



To meet the disease reporting criteria for pesticide-related illness and injury, patients must report two or more acute pesticide-related health effects. The majority of patients reported ocular (N=152, 37.5%), respiratory (N=126, 31.1%), gastrointestinal (N=115, 28.4%), dermal (N=104, 25.7%), and neurological (N=90, 22.2%) health effects during 2009. Other health effects reported were general (N=47, 11.6%) and craniological (N=37, 9.1%). Most cases reported were considered to have experienced low severity of illness (N=340, 84%) followed by moderate (N=54, 13.3%) and high (N=11, 2.7%) severity of illness. No deaths were reported to the chemical disease surveillance program related to pesticides during 2009. Race and ethnicity was not collected for the cases reported during 2009.

During 2009, inhalation (n=161), followed by dermal (n=138), and ocular (n=137) were the most frequent routes of pesticide exposures (Figure 4).

Figure 4. Pesticide-Related Illness and Injury Cases by Route of Exposure, Florida, 2009



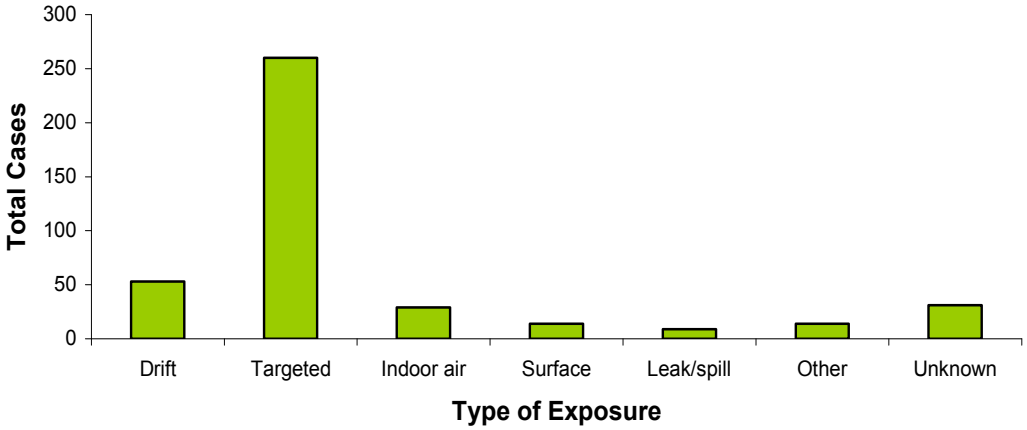
Most of the cases during 2009 occurred in the home (N=310, 76.5%). Other sites of exposure reported include farms, forests, schools, private vehicles and service establishments. About 17.8% of cases had an unknown site of exposure (N=72). The majority of cases reported that they were applying pesticides at the time of exposure (Table 1).

Table 1. Activity at the Time of Pesticide Exposure for Pesticide-Related Illness and Injury Cases, Florida, 2009

Activity at the time of exposure	Count	%
Direct pesticide contact activities		
Applying pesticides	175	43.2
Mixing or loading pesticides	1	0.2
Transport or disposal of pesticides	3	0.7
Any combination of above three	7	1.7
Non-direct pesticide contact activities		
Emergency response	5	1.2
Routine work/not application	9	2.2
Routine indoor living	48	11.9
Routine outdoor living	20	4.9
Not applicable	69	17.0
Unknown	68	16.8
Total	**405**	**100.00**

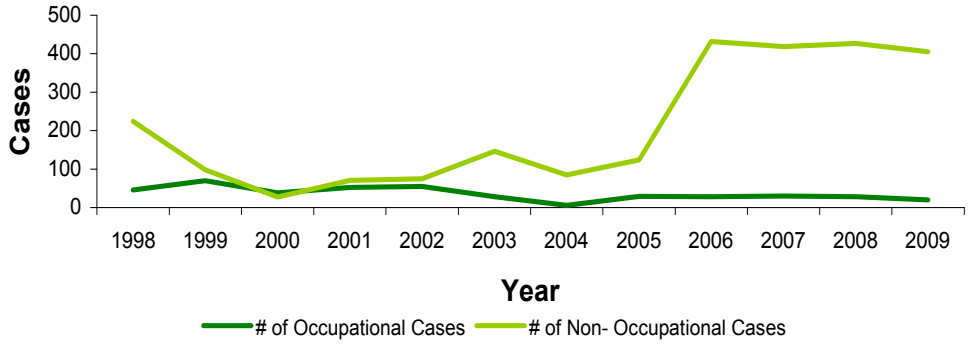
Applications of a pesticide material released at the intended location (target site) and not carried from that location to another area by air are considered to be targeted applications. Pesticide exposure occurred during targeted application for 260 cases in 2009 (64.2%) (Figure 5). Pesticide drift accounted for only 13.1% of all cases.

Figure 5. Pesticide-Related Illness and Injury Cases by Type of Exposure, Florida, 2009



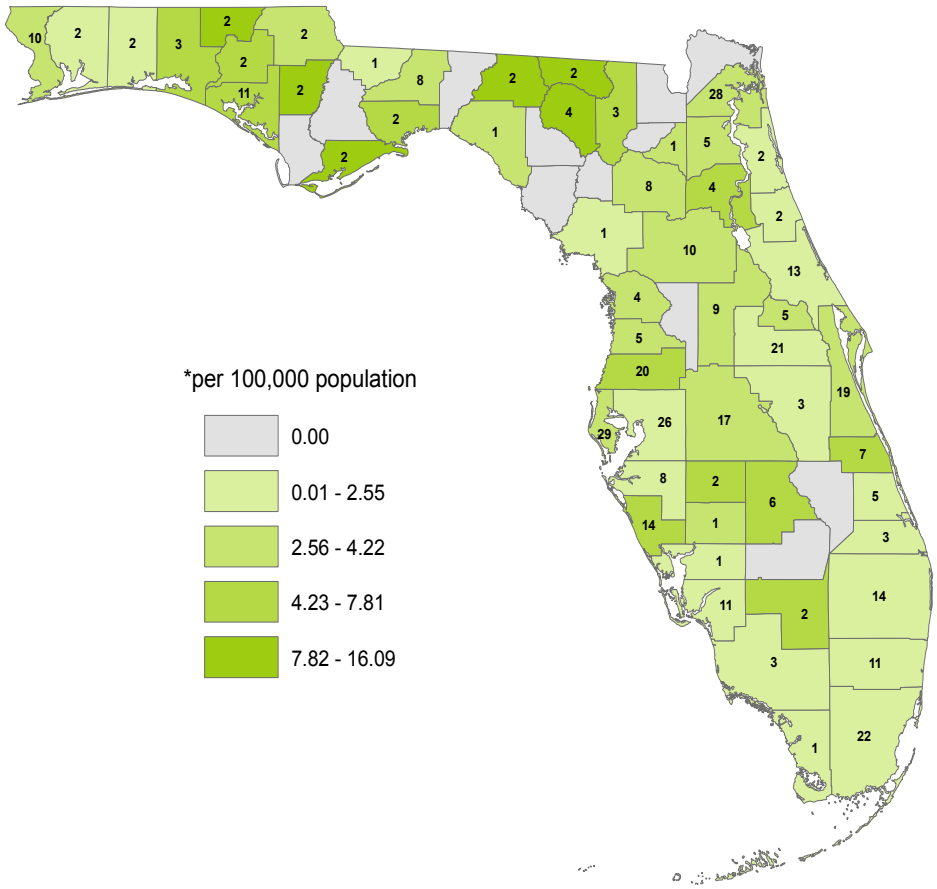
There has been an increase in non-occupational case identification since 2006 due to direct access to FPICN data. However, this additional data set did not result in an increase in the number of reported occupational cases during 2009 (20, 4.9%) (Figure 6).

Figure 6. Pesticide-Related Illness and Injury Cases by Exposure Category, Florida, 1998-2009



The majority of cases occurred in counties with large populations. However, the rate of cases per 100,000 population was highest in the northern part of the state.

Pesticide-Related Illness and Injury Cases and Incidence Rates* by County, Florida, 2009



Prevention

The CDSP analyzes data collected on pesticide exposures and related illnesses to determine risk factors, identify populations at risk, identify areas for further investigation, and determine prevention and intervention activities that are needed to stop further exposures. The program intervenes through education and outreach activities. The program also makes recommendations for regulatory actions and changes.

Prevention Tips for Pesticide Poisoning:

1. When using pesticides:
   - Always read the label first.
   - Strictly follow the directions.
2. Use pesticides safely:
   - Use products only for pests indicated on the label.
   - Use only the minimum amount of pesticide as directed by the label.
   - Twice the amount will not do twice the job.
3. Use protective measures when handling pesticides as directed by the label:
   - Wear impermeable gloves, long pants, and long-sleeve shirt.
   - Change clothes after applying pesticides.
   - Wash your hands immediately after applying pesticides.
4. Before applying a pesticide (indoors or outdoors):
   - Remove children, their toys, and pets from the area to be sprayed.
   - Do not put items back until the pesticide has dried or as specified by label instructions.

Additional Resources
Chemical Disease Surveillance Program (CDSP) at:
http://www.myfloridaeh.com/medicine/Chemical_Surveillance/index.html

Pesticide Surveillance Activities in Florida at:
http://www.doh.state.fl.us/environment/medicine/pesticide/index.html.

Centers for Disease Control and Prevention/ National Institute for Occupational Safety and Health website for Pesticide Illness and Injury Surveillance at: http://www.cdc.gov/niosh/topics/pesticides/.

Q Fever

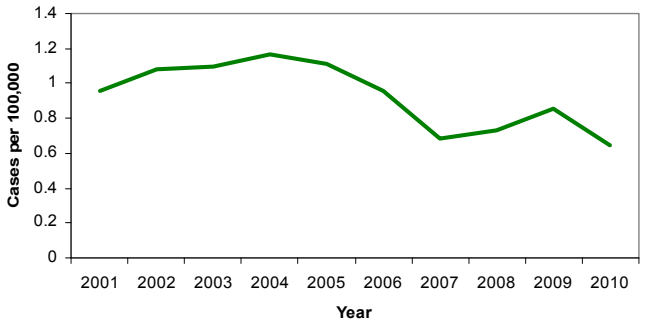
Disease Abstract
Q Fever was last summarized in the annual morbidity report in 2007. Since that time, there have been four probable cases of acute Q Fever, one case each in 2008 and 2009, and two in 2010. Three of the four cases were reported as imported from outside the U.S.; one case, reported in 2010, was acquired in Florida. The 2008 case and one of the 2010 cases involved military personnel exposed while deployed in Iraq. The Centers for Disease Control and Prevention (CDC) report increased numbers of cases in military personnel deployed in the Middle East and Afghanistan, most likely due to endemicity in livestock in those regions. The 2009 case was exposed in India while visiting friends and relatives, and reported drinking unpasteurized milk. The 2010 case acquired in Florida reported no contact with livestock but did regularly drink unpasteurized milk shipped from another state. All four cases were in men. Three of these people were white and one was Asian. Three of them were non-Hispanic and one was Hispanic. The age range was 34 to 64 years.

Q Fever is a zoonotic disease caused by infection with the rickettsial organism *Coxiella burnetii*. It has a global distribution and is resilient in the environment. The most common natural reservoirs are sheep, goats and cattle, but rodents and other animals can also harbor the agent. Ticks are thought to play a role in maintaining animal reservoirs but are not believed to be important in transmission to humans. The agent is shed in animal birthing fluids and may be shed in milk. Transmission to humans occurs primarily through aerosols generated during parturition or from contaminated dust that can carry infectious particles a half mile or more, making identification of exposure difficult in some cases. Transmission can also occur through direct contact with contaminated material or through ingestion of unpasteurized dairy products. The infectious dose is very low and a single organism may lead to infection. Of those exposed, 60% may be asymptomatic. Surveillance is also important because Q Fever has the potential for use as a bioterrorism agent.

Rabies, Animal

Rabies, Animal: Crude Data	
Number of Cases	130
2010 incidence rate per 100,000	0.7
% change from average 5 year (2005-2009) reported incidence rate	-20.7
Age (yrs)	
Mean	N/A
Median	N/A
Min-Max	N/A

Figure 1. Rabies, Animal Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Rabies, Human: From 2001 through 2010, there was one human rabies case in Florida. That infection occurred when an adult male was bitten by a dog in Haiti in 2004 and became ill after returning to Florida. A canine variant strain of rabies then circulating in Haiti was isolated from the patient. There were no human cases identified in 2010, although testing was performed on two Florida residents and one resident of the Philippines. Two suspect cases related to the Haiti earthquake response were also investigated but rabies was ruled out. Please refer to the Rabies, Possible Exposure summary in this same section for further details.

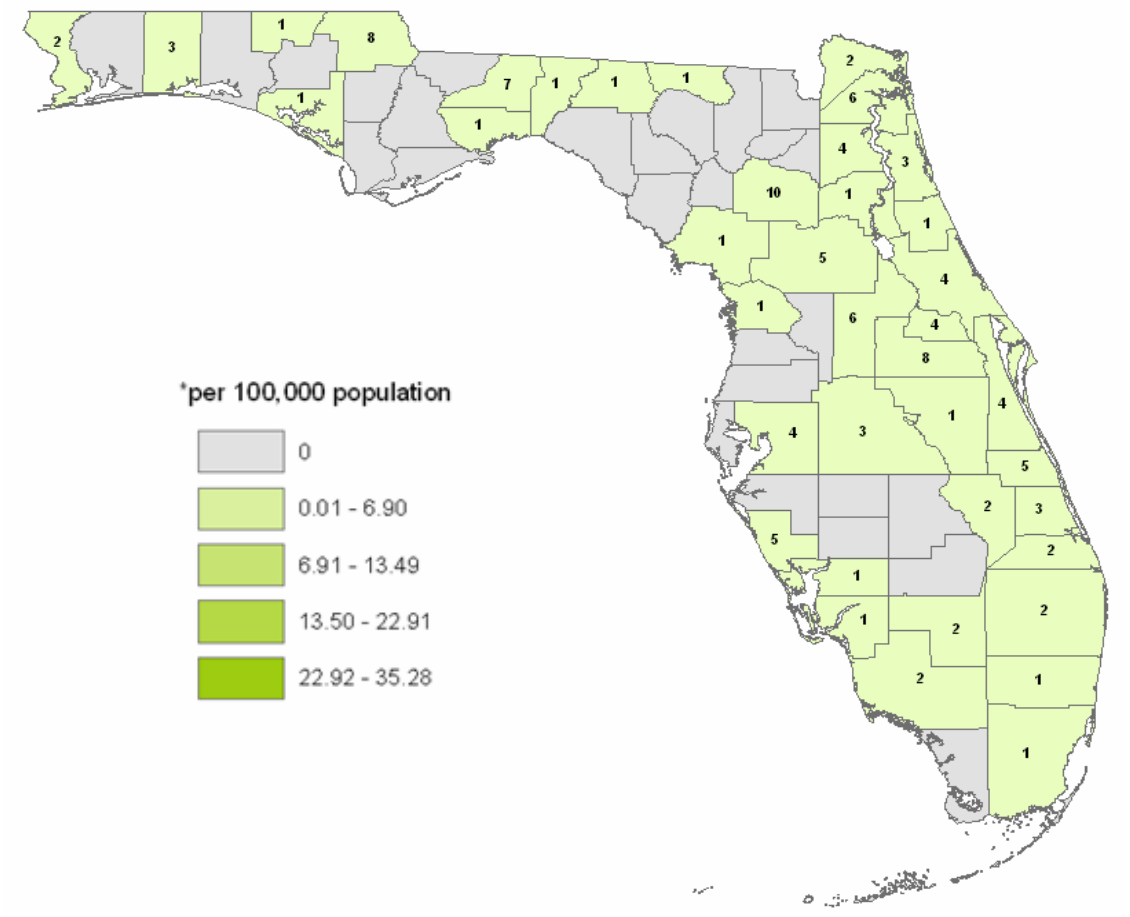
Rabies, Animal: There were a total of 130 rabid animals reported in 2010, but only 128 of those positive results were tested in 2010. This report will describe data based on date tested.

Rabies is endemic in the raccoon and bat populations of Florida, and frequently spills over from raccoons and occasionally from bats into other animal species such as foxes and cats. Laboratory testing for animal rabies is only done when animals expose humans or domestic animals, thus these data do not necessarily correlate with the true prevalence of rabies by animal species in Florida. Among the 2,747 animals tested at the Bureau of Laboratories (BOL) in 2010 there were 128 confirmed rabid animals. This represents a 20.5% decrease in rabid animals from the previous five-year average. There was also an 8.5% decrease in the number of total animals tested for rabies. The decrease may be in part due to decreasing state and local budgets resulting in fewer resources available to pursue animal testing, as well as strict enforcement of a policy limiting testing to wild animals or instances where exposure of humans or pets has 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 exposure. One of ten animals submitted to KSU Rabies Laboratory was positive for rabies. The rabies positive animal was a raccoon submitted from Wakulla County following increased reports of suspected rabies activity in wildlife. In 2010, rabid animals were found in 42 of 67 counties in Florida, with the highest activity concentrated in the north and central parts of the state. Alachua County reported the most cases with 10 animals testing positive for rabies; Duval, Jackson, and Orange Counties all had eight animal rabies cases (see map). Animals testing positive for rabies were identified in each month of the year with most activity in summer: July (19) and August (16), followed by a smaller winter-spring peak: February (12), March (12), and April (13). The highest numbers of raccoons testing positive for rabies were identified in July (10), January (9), and February (9). June and July had the most foxes testing positive for rabies, with three each. Six (40%) of 15 rabid bats were identified in August. Four (27%) of 15 rabid cats were identified in December.

Raccoons accounted for the majority of rabid animals in 2010 (75 cases, 59%); rabies was identified in 15 animals (12%) each for bats, foxes, and cats. For the first time since 1997, cats moved from the 4th most common species identified with rabies to second, tied with bats and foxes. Feline rabies was above the 20 year average, while rabies in raccoons, bats, and foxes was 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. Since 1997, rabid cats have continued to outnumber rabid dogs although rabies vaccination is compulsory for both. All rabid cats tested in 2010 were either not vaccinated against rabies or had unknown rabies vaccination history. All positive cats were feral (12) or pets (3) allowed to roam outdoors. No dogs were found to be rabid in 2010, although over 600 were tested. One horse from Marion County was found to be rabid and resulted in rabies post-exposure prophylaxis being recommended for 11 people in Marion and Alachua counties. In addition, four bobcats and three otters were positive for rabies. An exhaustive search for several children seen playing with a rabid bat at a local pier was conducted by the Lee County Health Department. An Epi-X alert distributed nationwide resulted in an out-of-state visitor submitting a photo of the children to their local health department, followed by successful identification and prophylaxis of five children in Lee County. A similar situation with a rabid bat at a convenience store in Okeechobee County resulted in successful identification of three children following queries from the county health department to the local school.

Molecular sequencing of select positive samples by KSU Rabies Laboratory confirmed 12 terrestrial animals (one raccoon, three cats, two gray fox, three bobcats, two otters, and one horse) were infected with the eastern U.S. raccoon rabies variant. Bat samples submitted for variant typing are pending.

Animals Testing Positive for Rabies by County, Florida, 2010



Prevention

The Florida Department of Health *Rabies Prevention and Control in Florida, 2011* contains information for county health departments and others involved in rabies control and prevention.

Use preventive measures that 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.
- Provide pre-exposure prophylaxis for people in high-risk professions, such as animal control and veterinary personnel, laboratory workers, and those working with 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.

References

Florida Department of Health, *Rabies Prevention and Control in Florida, 2011*, Bureau of Environmental Public Health Medicine, 2011.

Pickering LK, Baker CJ, Long SS, and McMillan JA (eds.), *Red Book: 2009 Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, 2009.

Additional Resources

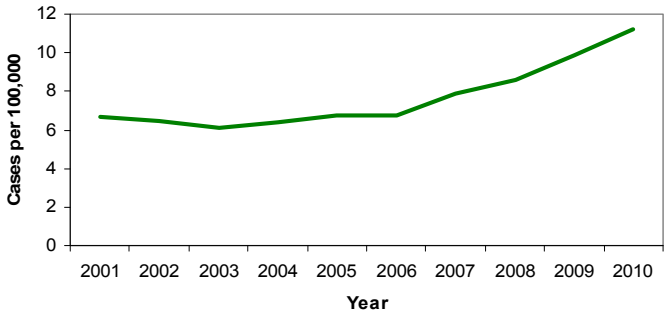
Information is available from the Florida Department of Health website at:
http://www.doh.state.fl.us/environment/medicine/rabies/rabies-index.html.

Disease information is also available from the Centers for Disease Control and Prevention at:
http://www.cdc.gov/rabies/.

Rabies, Possible Exposure

Rabies, Possible Exposure: Crude Data	
Number of Cases	2,114
2010 incidence rate per 100,000	11.3
% change from average 5 year (2005-2009) reported incidence rate	41.3%
Age (yrs)	
Mean	36.9
Median	37
Min-Max	0 - 110

Figure 1. Rabies, Possible Exposure Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

In 2001, reporting of animal encounters for which rabies post-exposure prophylaxis (PEP) is recommended was initiated. 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). In 2010, the incidence rate was up 41.33% over the previous five-year average although the number of confirmed rabid animals decreased in 2010 compared to 2009. 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 by decreasing resources to investigate animal exposures and confirm animal health status, and by reducing county health department staff time to provide regular rabies PEP education for health care providers.

Figure 2. Rabies, Possible Exposure Cases by Month of Exposure, Florida, 2010

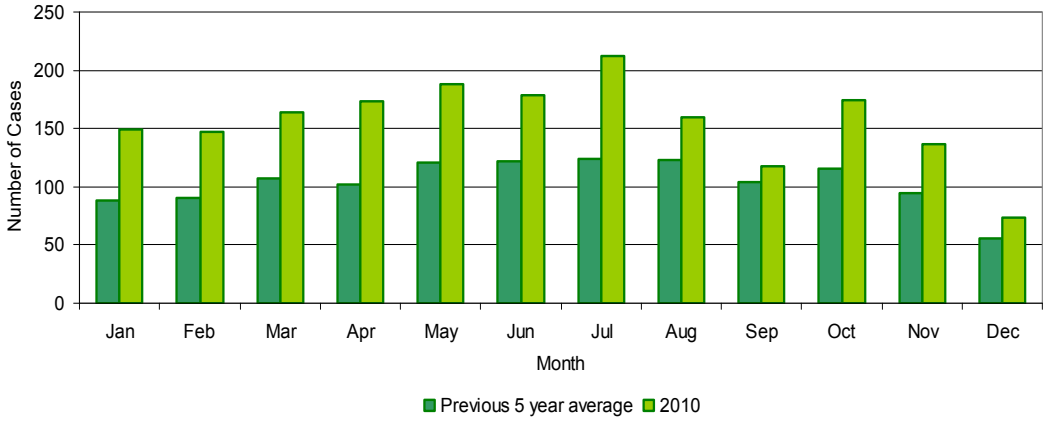
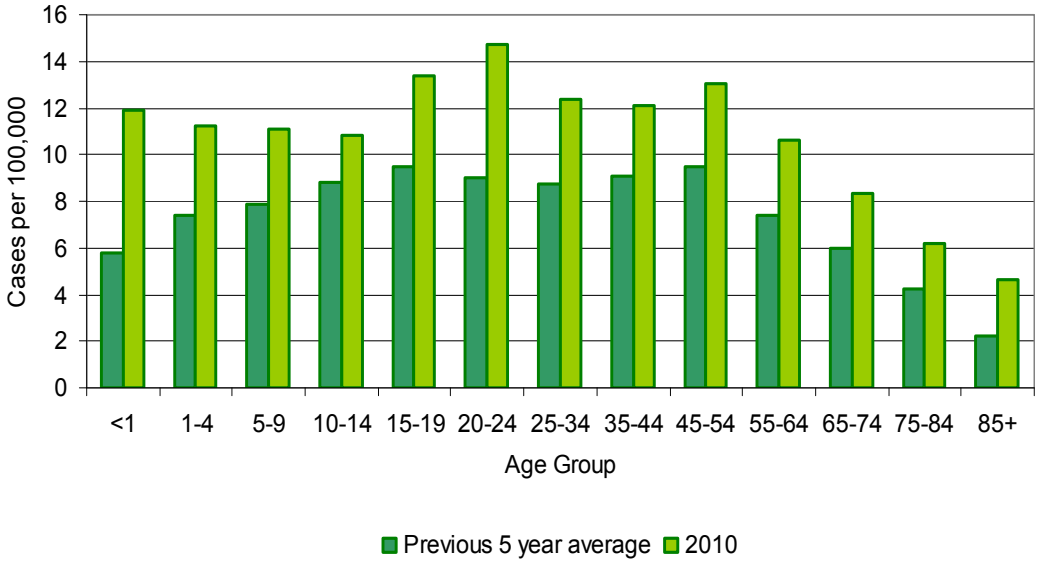


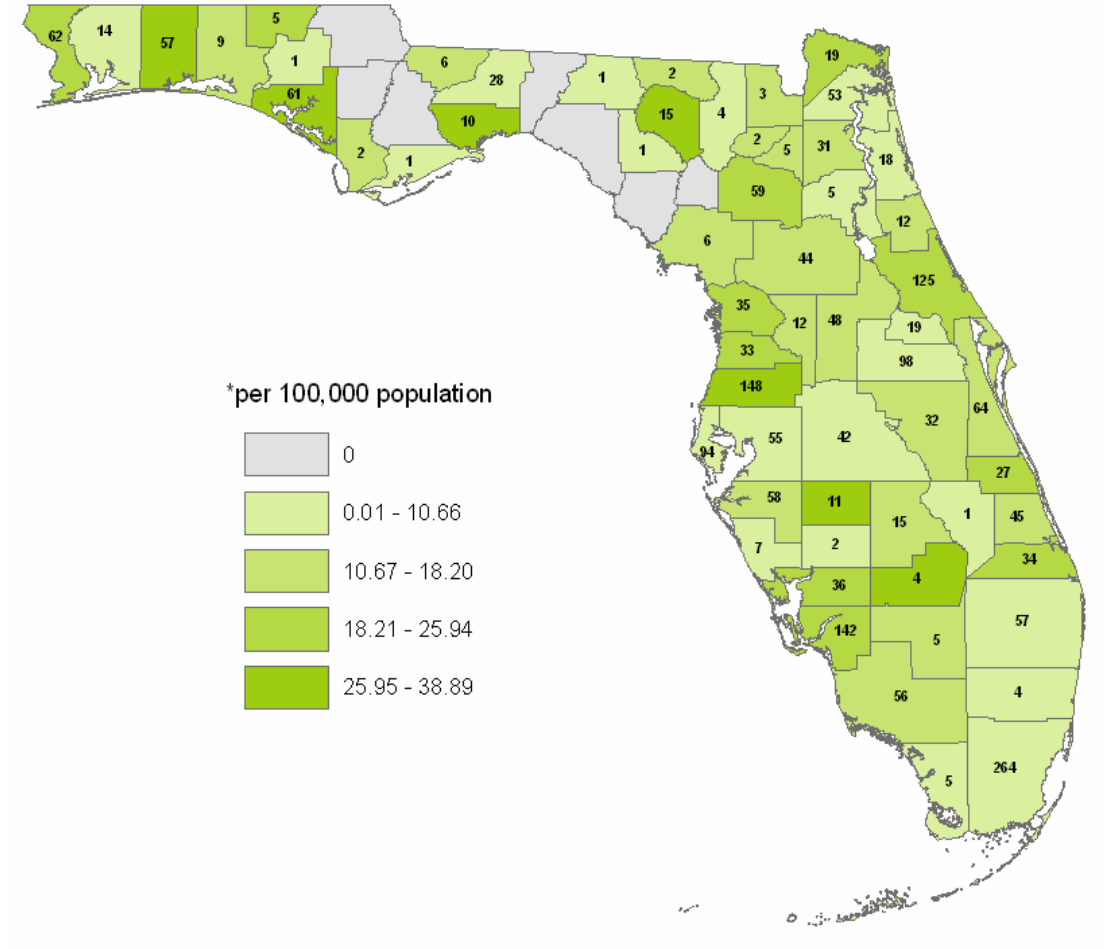
Figure 3. Rabies, Possible Exposure Incidence Rate by Age Group, Florida, 2010



PEP is recommended year round in Florida, though the number of treatment incidents increases somewhat from May to July (Figure 2). The average age of the victim for the 2,114 cases reported in 2010 was 37 years, with a range from under one year to 110 years of age. The highest incidence was seen in individuals aged between 20 and 24 years, but incidence was similar for ages 15 to 19 and 45 to 54 years (Figure 3). There were some variations in age based on the type of animal involved. Average age for those recommended to receive PEP who were exposed to dogs was 32 years; cats, 41 years; and wildlife, 43 years. Men and women were equally represented for PEP when assessing overall exposures and wildlife exposures. However, more men (56%) were recommended to receive PEP for dog exposures, while women (67%) were over-represented in relation to cat exposures. Most persons who were recommended to receive PEP were white (76%), with only 7% of cases representing blacks. Most cases were non-Hispanic (73%), although 14% were Hispanic.

Of the 2,114 cases reported in 2010, the largest proportion of exposed persons for whom treatment was recommended reported exposure to dogs (n=850, 46%). Other animals to which people were exposed include cats (n= 445, 24%), raccoons (n=241, 13%), and bats (n=144, 7%). Less numerous exposures included contact with foxes (16), horses (14), otters (12), squirrels (8), bobcats (5), non-human primates (4), opossums (3), ferrets (3), skunks (2), rats (2), a pig, a cougar, a cow, and other exotic animal species. Though horse exposures are generally low risk, the cases in 2010 were primarily due to exposure of rabies-positive animals. However, squirrels, rats, opossums, owned ferrets, and cattle are also generally low risk species for rabies, and there were no cases of rabies reported in these species. Most 2010 PEP cases involved exposure to stray (42%) or wild (23%) animals. Types of exposure were primarily bites (80%). Scratches were reported in 9% of cases, unknown 6%, other in 4% of cases, saliva in open wound (1.6%), handling (1.4%), bat in the room (1.3%), and saliva on a mucous membrane (<1%) were also reported. Face bites were reported in 99 cases (5%) and typically involved children, average case age was 17 years. Twenty percent of the animals involved in exposures were reported to be owned, 76% of these animals were dogs. Reasons for recommending PEP in cases involving owned animals included face bites, gun shot to the animal's head, and captive wildlife that disappeared. In addition, PEP was inappropriately recommended in some of these cases. Rabies PEP treatment was only known to be initiated 70% of the time; reasons for PEP not being initiated included patient refusal or inappropriate treatment recommendation by the health care provider.

Rabies, Possible Exposure Cases and Incidence Rates* by County, Florida, 2010



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.

Additional Resources

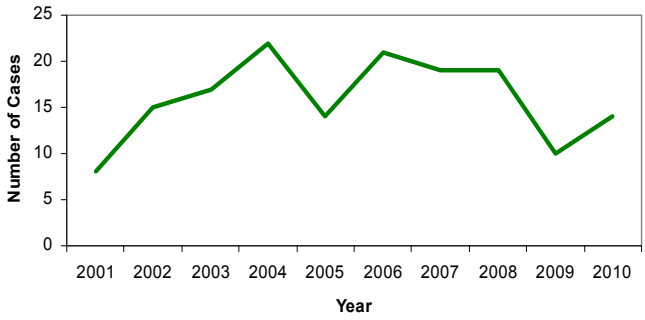
Additional information on animal bites and PEP can be found in the Rabies Prevention and Control in Florida, 2011 Guidebook, online at: http://myfloridaeh.com/medicine/rabies/rabies-index.html.

Dog bite prevention and rabies information can also be found on the Department of Health website at: http://www.myfloridaeh.com/medicine/arboviral/Zoonoses/dogbite_home.html.

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever: Crude Data	
Number of Cases	13
2010 incidence rate per 100,000	0.07
% change from average 5 year (2005-2009) reported cases	-15.7%
Age (yrs)	
Mean	58.1
Median	60
Min-Max	41 - 71

Figure 1. Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 2001-2011



Disease Abstract

National reporting criteria for Rocky Mountain Spotted Fever (RMSF) (causative agent is *Rickettsia rickettsii*) was expanded to include all spotted fever rickettsiosis (SFR). Florida is in the process of revising state case definitions to align with updated SFR national reporting criteria. Although only RMSF was reportable in 2010, notifications regarding infections with other SFR agents sent to FDOH in 2010 occurred and will also be described in this report. Antibodies for other spotted fever rickettsial species, such as *Rickettsia parkeri, R. amblyommii, R. africae*, and *R. conorii,* cross-react with serologic tests for the RMSF agent *R. rickettsii,* and commercial testing to differentiate other SFR from RMSF is currently limited. This may explain, in part, apparent changes in RMSF incidence and geographic distribution. Clinically, the presence of eschar type lesions at the site of the tick bite is suggestive of infection from a SFR other than *R. rickettsii*.

In 2010, there were 13 cases of RMSF reported (Figure 1). However, one case of SFR from *R. africae* infection was reported as a RMSF case in the Merlin reportable disease surveillance system, which brings the total listed under RMSF in Merlin to 14. All 14 cases, (four confirmed and ten probable) had positive serology for RMSF at commercial labs, although there were four infections with eschar lesions indicating an SFR other than RMSF. Two of the four infections with eschar lesions were able to have additional testing performed by the Center for Disease Control and Prevention (CDC). In one case, CDC positive serology results identified both *R. rickettsii* and *R. parkeri*. The fourth case with an eschar and commercial laboratory results for *R. rickettsii* was confirmed to be *R. africae* by CDC. This infection was in a woman aged 44 years from Miami-Dade County with travel to South Africa. In addition to the 13 RMSF cases and *R. africae* infection, there was also an SFR case reported in a woman aged 53 years from Pinellas County with travel to South Africa. The woman presented with an eschar lesion and the causative agent was confirmed by the CDC to be *R. conorii.*

The extent that ecological factors such as rainfall, ambient temperature, fluctuations in tick host densities, and other factors 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 months (Figure 2). In 2010, more cases were reported in April and May than usual, which likely reflects favorable conditions due to one or more of the environmental variables listed above. Of the 2010 cases, nine (64%) acquired the disease in Florida, four (29%) acquired the disease in another U.S. state, and one was acquired in South Africa (*R. africae* case).

Figure 2. Rocky Mountain Spotted Fever Cases by Month of Onset, Florida, 2010

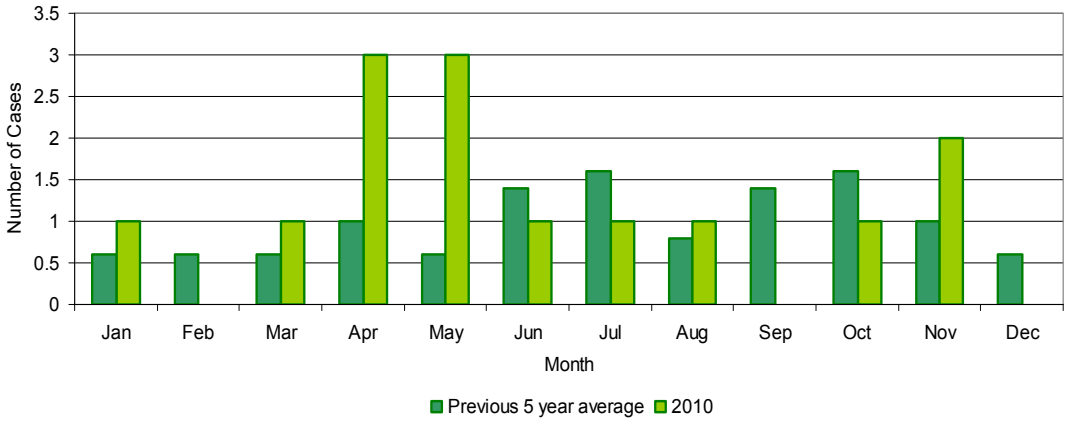
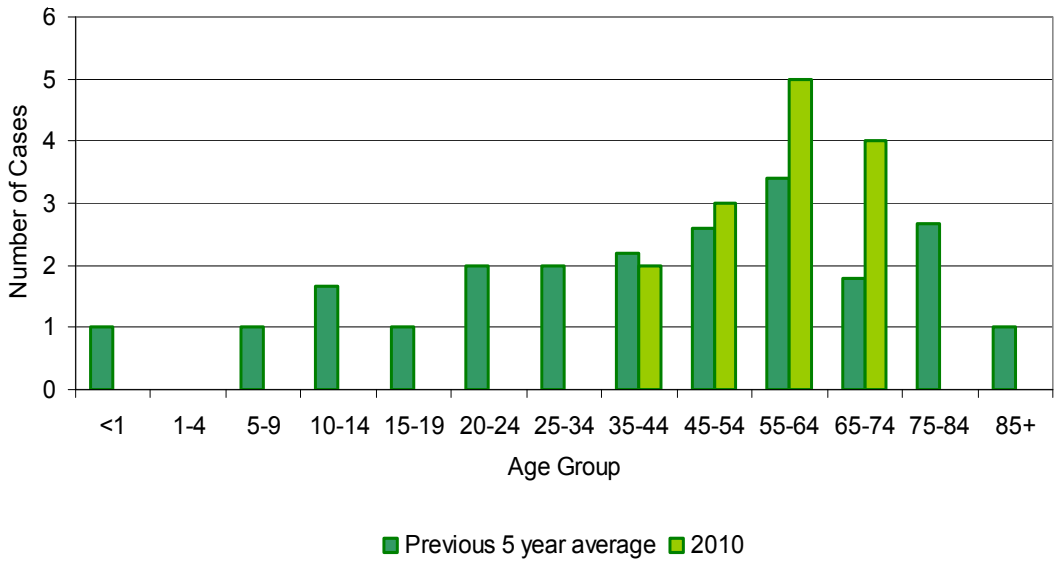


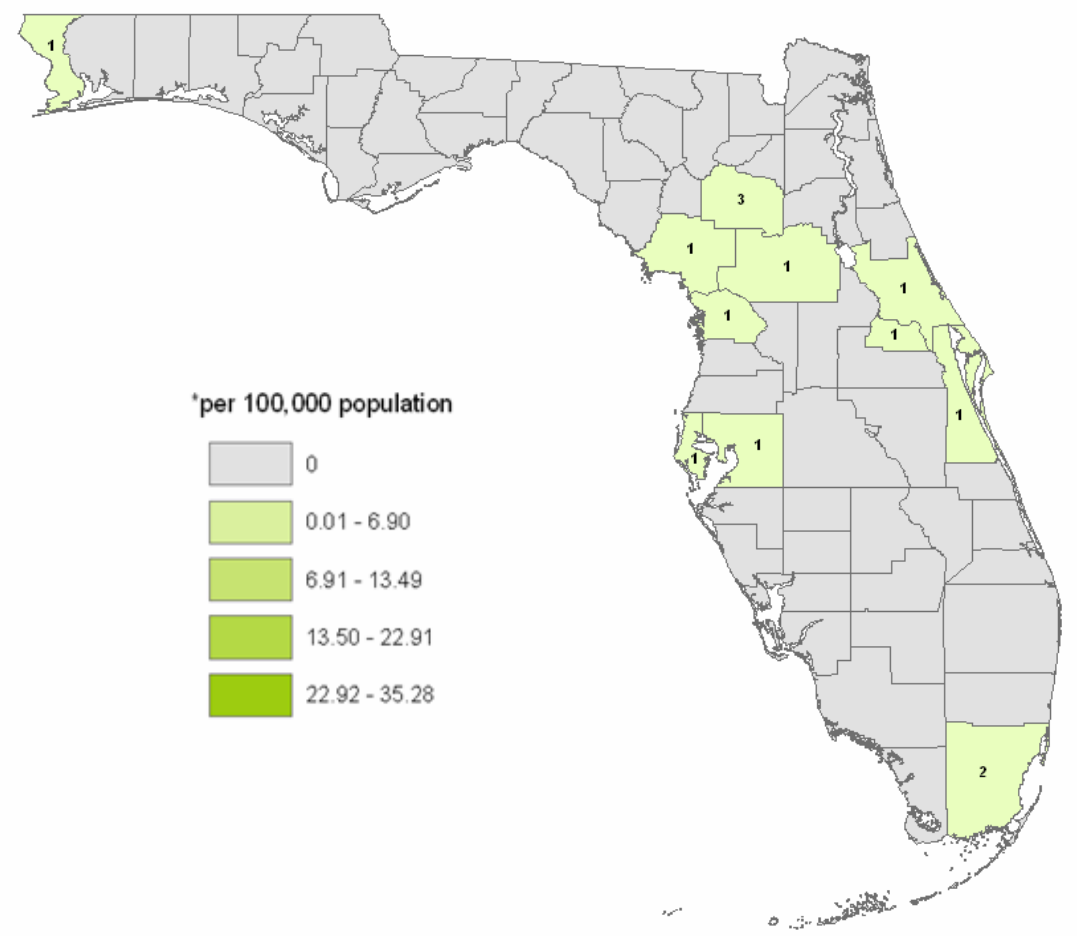
Figure 3. Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2010



RMSF tends to affect adults more than other age groups, and in 2010, there were more cases reported in those aged 55 to 64 years than in any other age group (Figure 3). The elderly, males, blacks, those with glucose-6-phosphate-dehydrogenase (G6PD) deficiency, and those with a history of alcohol abuse are at greatest risk for severe disease. In 2010, males accounted for ten cases (71%) and females four cases (39%). All cases were white, and all except the *R. africae* case were non-Hispanic. There were no deaths attributed to RMSF and only three patients (21%) were hospitalized. The national case fatality rate for treated cases is approximately 5% and for untreated cases is up to 20%.

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. amblyomma* is believed to be the Lone Star tick, *Amblyomma americanum*.

Rocky Mountain Spotted Fever Cases by County, Florida, 2010



Prevention

Prevention of tick bites is the best way to avoid disease. Methods for preventing tick bites include:

- 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.
    - o Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting.
    - o Do not use bare fingers to crush ticks.
    - o Wash your hands following tick removal.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

Additional Resources
Disease information is also available from the Florida Department of Health at: http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

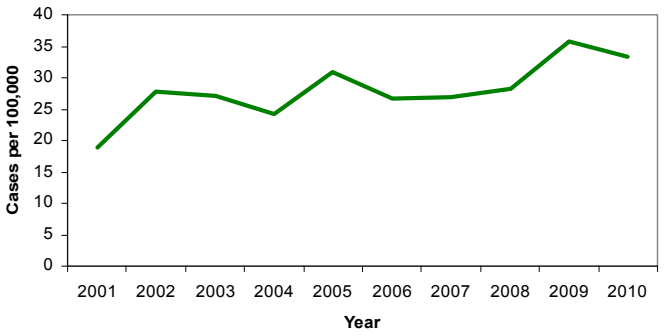
Disease information is available from the CDC at: http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm.

Paddock CD, Sumner JW, Comer JA, et al, "*Rickettsia parkeri*: a Newly Recognized Cause of Spotted Fever Rickettisiosis in the United States," *Clin Infect Dis.,* 2004 (38):805-11.

Salmonellosis

Salmonellosis: Crude Data	
Number of Cases	6,281
2010 incidence rate per 100,000	33.4
% change from average 5 year (2005-2009) reported incidence rate	12.7%
Age (yrs)	
Mean	23.2
Median	7
Min-Max	0 - 103

Figure 1. Salmonellosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract
Salmonellosis is a diarrheal disease caused by infection with bacteria of the genus *Salmonella*. This category does not include typhoid fever. The incidence rate for salmonellosis has increased over the last ten years (Figure 1). In 2010, the incidence was 33.43 cases per 100,000 population, an increase from the previous peak in 2005 of 12.65 cases per 100,000 population. In 2010, 6,282 cases were reported, with 95.3% confirmed. The number of cases reported increases every year in the summer and early fall. In 2010, the number of cases exceeded the previous five-year average in all months except May (Figure 2). Data published in the Morbidity and Mortality Weekly Report (MMWR) indicate that Florida reported more cases of salmonellosis in 2010 than any other state. Overall, 7.8% of salmonellosis cases were classified as outbreak-related in 2010.

Figure 2. Salmonellosis Cases by Month of Exposure, Florida, 2010

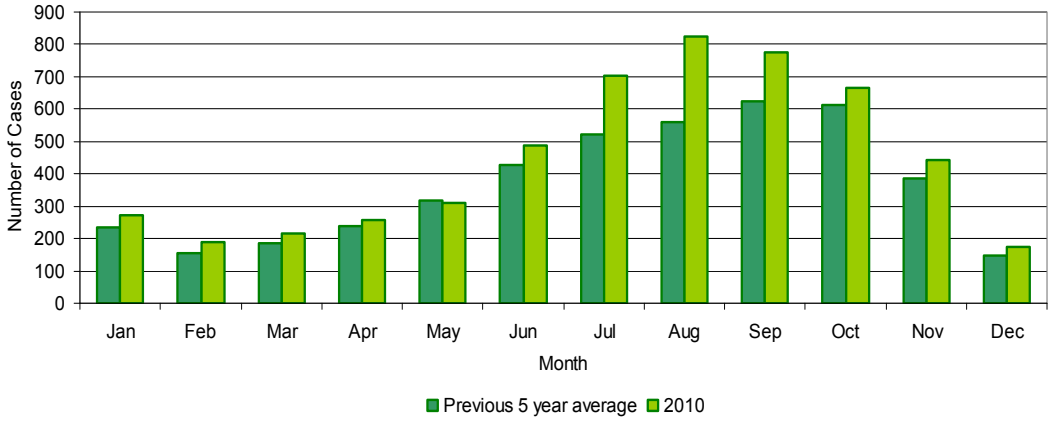
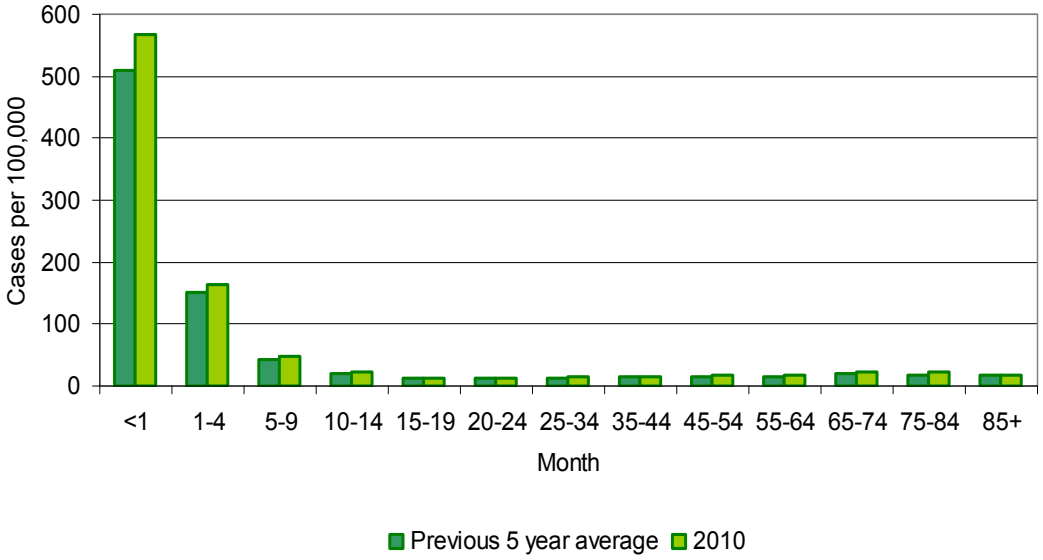


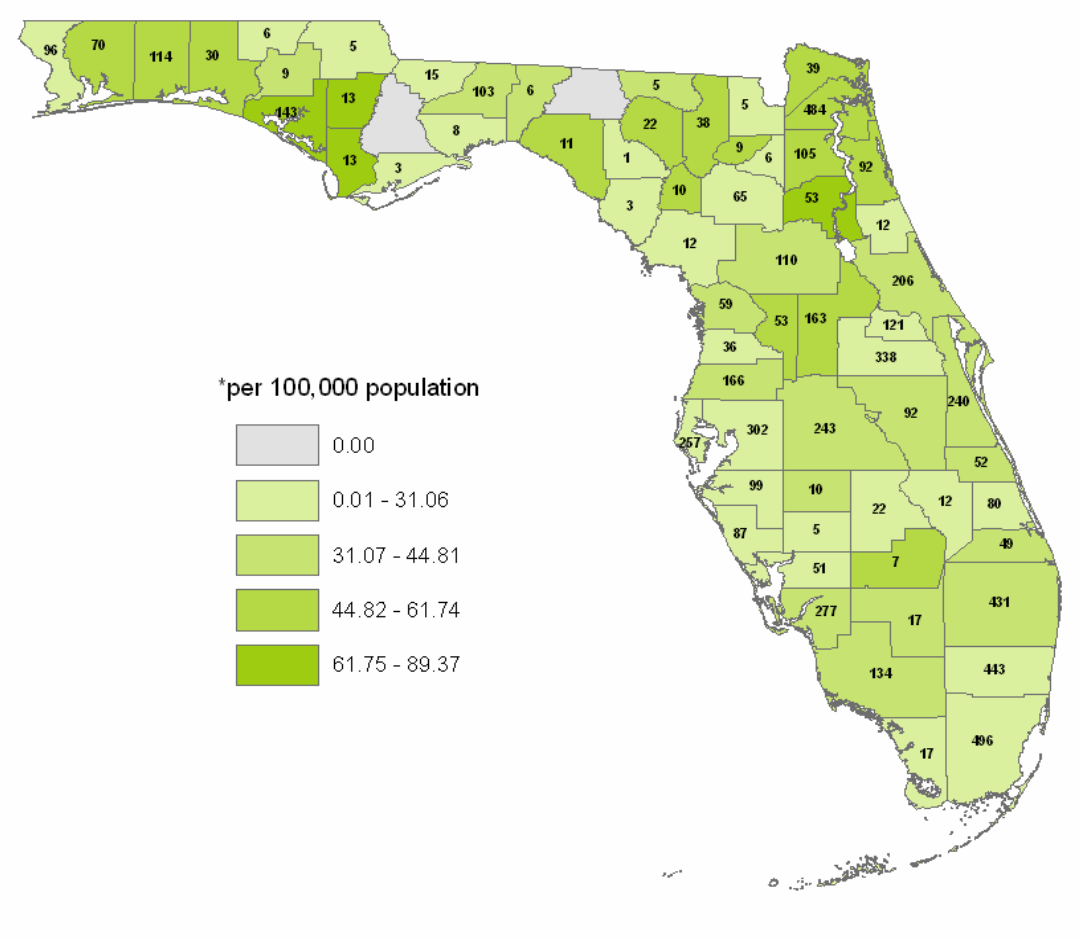
Figure 3. Salmonellosis Incidence Rate by Age Group, Florida, 2010



The highest incidence rates continue to occur among infants aged less than one year and children aged one to four years. In 2010, the incidence rates were slightly higher than the previous five-year average in all age groups, but the increase was most pronounced in those aged less than one year (Figure 3). Males and females have similar incidence rates (33.46 and 33.39 per 100,000, respectively).

Salmonellosis was reported in 65 of 67 counties in Florida (Figure 4). Rates vary across the state, but appear to be higher in the eastern panhandle, northeastern, and central portions of the state. In 2010, the Florida Department of Health launched a case-control study to determine risk factors for salmonellosis among children less than five years of age residing in central Florida. Results will be published in future reports.

Figure 4. Salmonellosis Cases and Incidence Rates* by County, Florida, 2010



Prevention

Reduce the likelihood of contracting salmonellosis by using these preventive measures:

- Cook all meat products and eggs thoroughly, particularly poultry.
- Avoid cross-contamination by cleaning utensils, counter tops, cutting boards, and sponges and making sure they do not 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.

References

L. Pickering (ed.), 2009 *Red Book: Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics, Elk Grove Village, IL, 2009, pp. 992.

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

Additional Resources
Disease information is available from the CDC at: http:// www.cdc.gov/salmonella/.

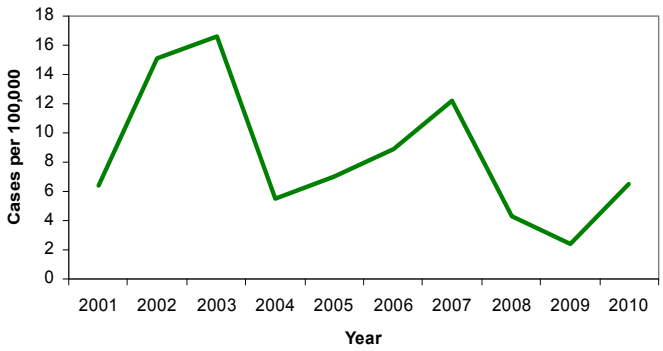
Additional information is available from the U.S Food and Drug Administration – "Bad Bug Book" at: http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathpgensNaturalToxins/BadBugBook/ucm069966.htm.

R. Baker, et al, "Outbreak of Salmonella Serotype Javiana Infections-Orlando, Florida, June 2002," *MMWR*, Vol. 51, No. MM31, p. 683.

Shigellosis

Shigellosis: Crude Data	
Number of Cases	1,212
2010 incidence rate per 100,000	6.5
% change from average 5 year (2005-2009) reported incidence rate	-7.6%
Age (yrs)	
Mean	15.5
Median	6
Min-Max	0 - 89

Figure 1. Shigellosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract
Shigellosis is a diarrheal disease caused by infection with bacteria of the genus *Shigella.* The incidence rate for shigellosis has varied over the last ten years (Figure 1). Periodic community outbreaks involving childcare centers account for most of the observed variability. In 2010, daycare attendees accounted for 26.3% of all cases, compared to 17.8% in 2009. This number does not take into account cases infected by an initial day-care-associated case. Although in 2010 there was a 7.6% decrease in comparison to the average incidence from 2005 to 2009, more than twice as many cases were reported in 2010 compared to 2009 (461). Only 80.0% of cases were confirmed in 2010, compared to 92.2% confirmed in 2009, which indicates increased outbreak activity. Overall, 28.6% of shigellosis cases were classified as outbreak-associated. Historically, the number of cases does not show a distinct seasonal pattern, but instead varies between years. In 2010, the number of cases increased steadily from January to August, and remained high through the end of the year (Figure 2).

Figure 2. Shigellosis Cases by Month of Exposure, Florida, 2010

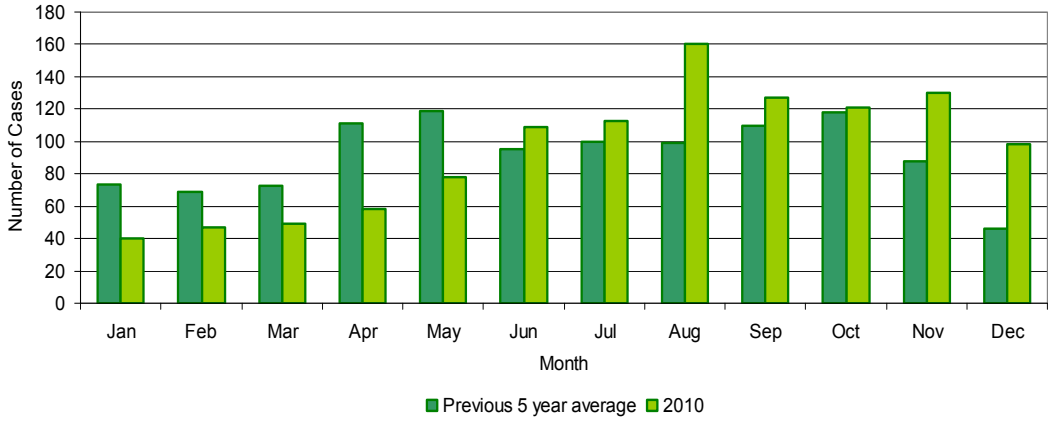
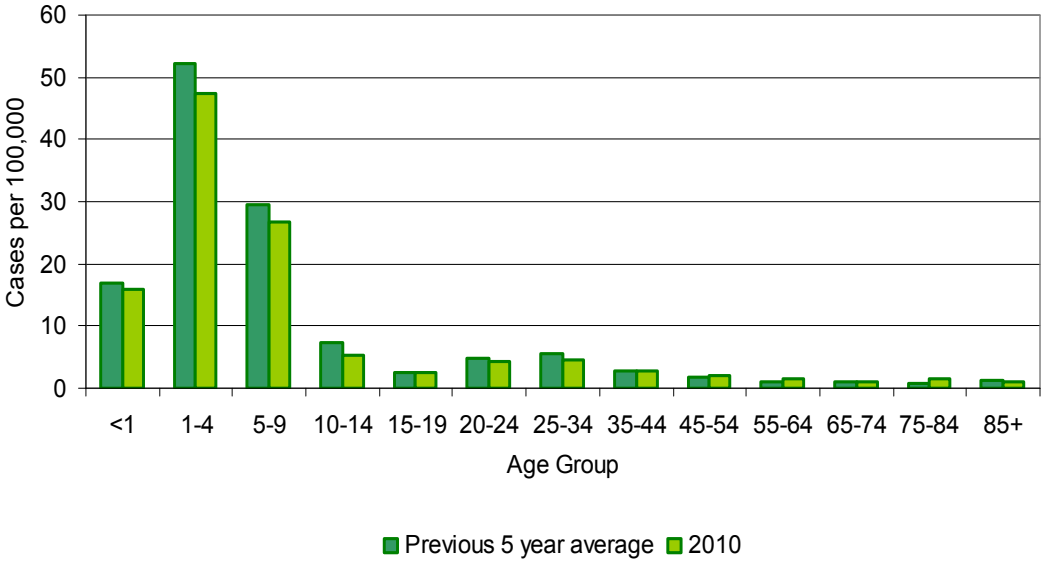


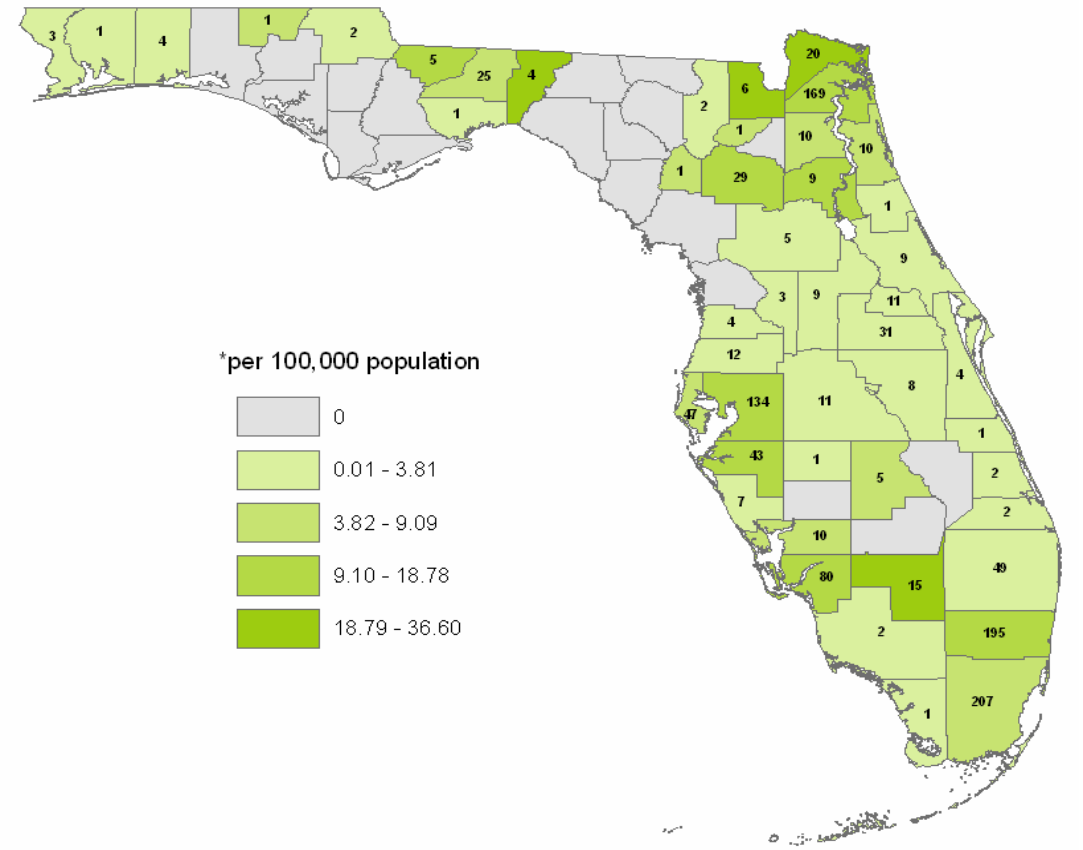
Figure 3. Shigellosis Incidence Rate by Age Group Florida, 2010



The highest incidence rates continue to occur among children aged one to four years old. In 2010, the pattern of incidence rates by age was similar to the five-year average but overall levels were slightly lower (Figure 3). Incidence rates were similar among females and males (6.5 and 6.4 per 100,000 respectively).

Shigellosis was reported in 48 of 67 counties in Florida (Figure 4). Cases were concentrated in the southeastern, central western, and northeastern part of the state.

Figure 4. Shigellosis Cases and Incidence Rates* by County, Florida, 2010



Prevention

To reduce the likelihood of contracting and spreading shigellosis, it is important to practice good hand hygiene, especially hand washing by children and adults after toilet use and before preparing food. 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 references).

References

L. Pickering (ed.), 2009 *Red Book: Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics, Elk Grove Village, IL, 2009, pp. 992.

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

Additional Resources

Disease information is available from the CDC at:
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/.

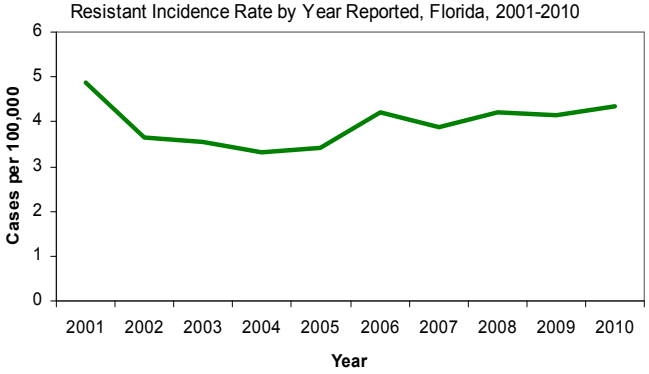
Additional information is available from the U.S Food and Drug Administration – "Bad Bug Book" at:
http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathpgensNaturalToxins/BadBugBook/ucm070563.htm.

CDC, "Outbreak of Gastroenteritis Associated With an Interactive Water Fountain at a Beachside Park - Florida, 1999," *MMWR*, Vol. 49, No. 25, 2000, pp. 565-8.

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant: Crude Data	
Number of Cases	816
2010 incidence rate per 100,000	4.3
% change from average 5 year (2005-2009) reported incidence rate	9.5%
Age (yrs)	
Mean	47.4
Median	53
Min-Max	0 - 98

Figure 1. *Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant Incidence Rate by Year Reported, Florida, 2001-2010

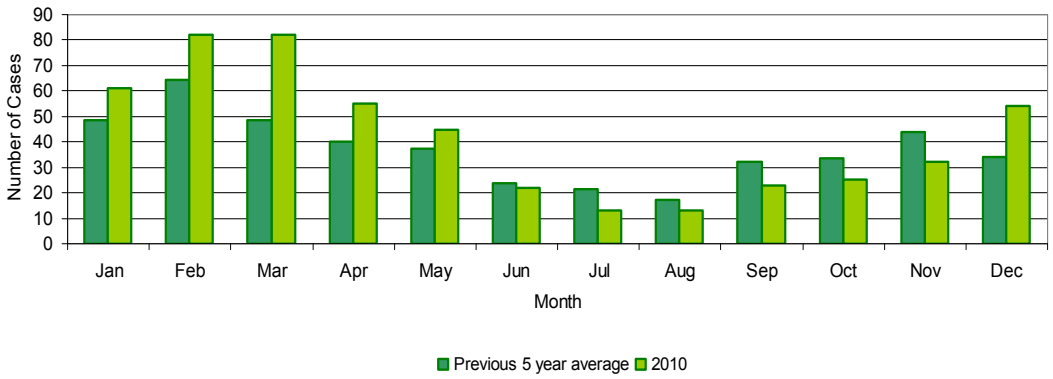


Disease Abstract

Drug-resistant *S. pneumoniae* (DRSP) invasive disease is reportable by laboratories but not doctors or hospitals. A case, for reporting purposes, is defined by a culture obtained from a normally sterile site, such as blood or cerebrospinal fluid, that is either intermediate resistant or fully resistant to one or more commonly used antibiotics. The annual incidence rate for DRSP peaked in 2000 and gradually declined until 2005 when it increased again and is now relatively consistent at around four cases per 100,000 population per year (Figure 1).

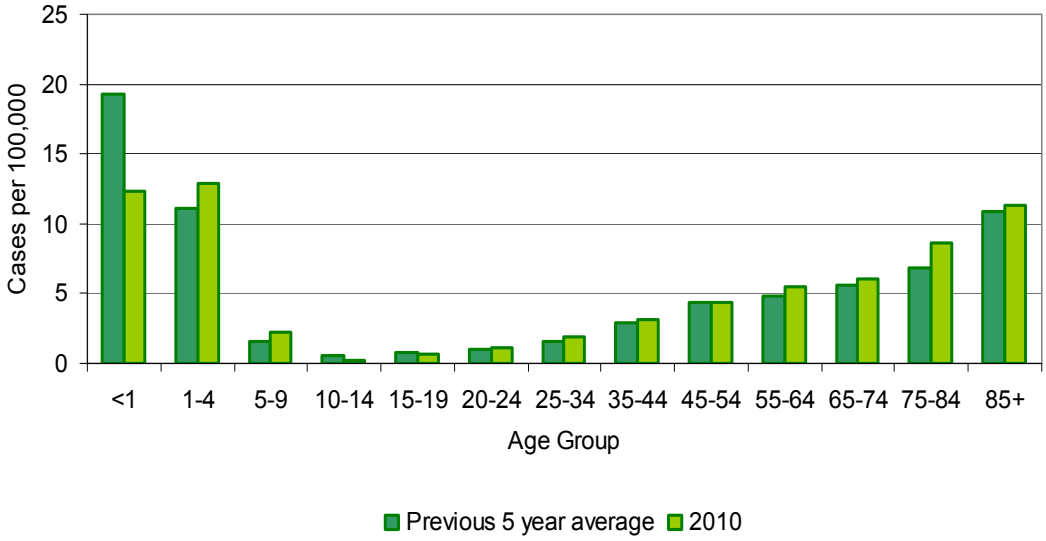
The majority of cases occur during the winter months. In 2010, this seasonal peak was more pronounced, although the overall rate was only slightly elevated from previous years (Figure 2).

Figure 2. *Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant Cases by Month of Exposure, Florida, 2010



Incidence rates are highest among infants aged less than one year, children aged one to four years, and those aged 85 and over. In 2010, the incidence rates were lower than the previous five-year average in infants aged less than one year (Figure 3).

Figure 3. *Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant Incidence Rate by Age Group, Florida, 2010

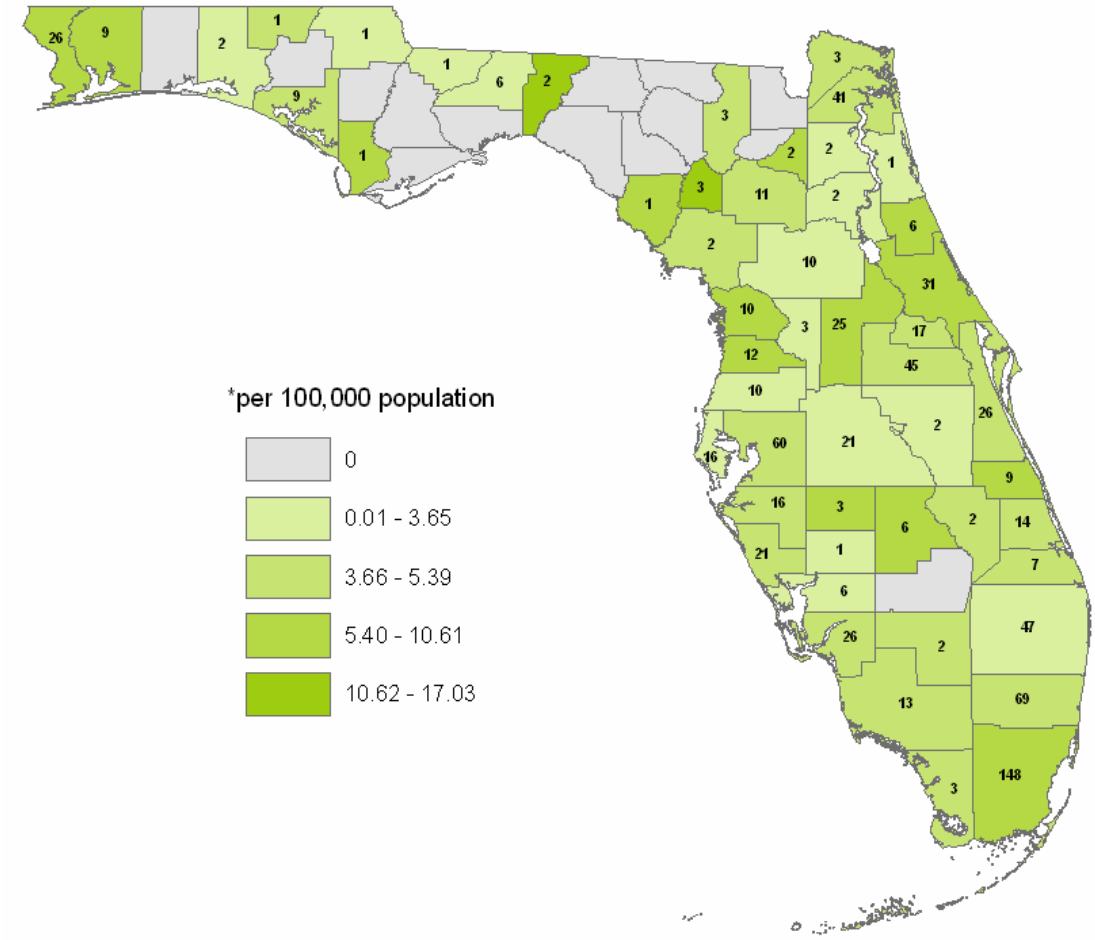


Males and females have similar rates of disease (4.6 and 4.1 per 100,000, respectively). The incidence among blacks (7.4 per 100,000) was more than twice that among whites (3.6 per 100,000). Hispanics had a slightly lower rate of disease than did non-Hispanics (3.1 versus 4.4 per 100,000).

The data from both the drug-resistant and drug-sensitive *S. pneumoniae* isolates reported were used to monitor resistance rates to common antibiotics in this organism. In general, trends in resistance rates have been relatively stable for the past several years. Please see "Section 4: Summary of Antimicrobial Resistance Surveillance" for more details on specific resistance patterns of *S. pneumoniae* in Florida.

Drug-resistant *S. pneumoniae* was reported in 65 of 67 counties in Florida (Figure 4). Additional information regarding antimicrobial resistance data in Florida can be found in Section 4: Summary of Antimicrobial Resistance Surveillance.

Figure 4. *Streptococcus pneumoniae,* Invasive Disease, Drug-Resistant Cases and Incidence Rate* by County, Florida, 2010



Prevention

The most effective way of preventing pneumococcal infections, including DRSP infections, is through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children through age five, with vaccination beginning in the first year of life. The pneumococcal polysaccharide vaccine should be administered routinely to all adults >65 years. The vaccine is also indicated for children aged six through eighteen 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.

References

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases,* 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

William Atkinson (ed.) et al, *Epidemiology and Prevention of Vaccine-Preventable Diseases,* 10th ed., Public Health Foundation, Washington, District of Columbia, 2007.

Michael T. Drennon, "Drug Resistant Patterns of Invasive *Streptococcus pneumoniae* Infections in the State of Florida in 2003," Master's Thesis, University of South Florida, Tampa, 2006.

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

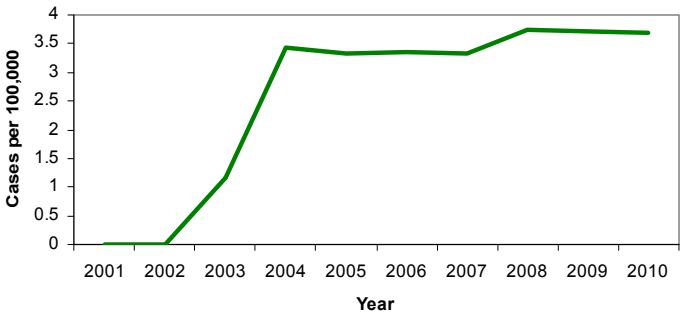
Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm.

Centers for Disease Control and Prevention, "Preventing Pneumococcal Disease Among Infants and Young Children: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR*, Vol. 49, No. RR-9, 2000, pp. 1-35.

Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible

Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible: Crude Data	
Number of Cases	693
2010 incidence rate per 100,000	3.7
% change from average 5 year (2005-2009) reported incidence rate	5.6%
Age (yrs)	
Mean	53.8
Median	57
Min-Max	0 - 104

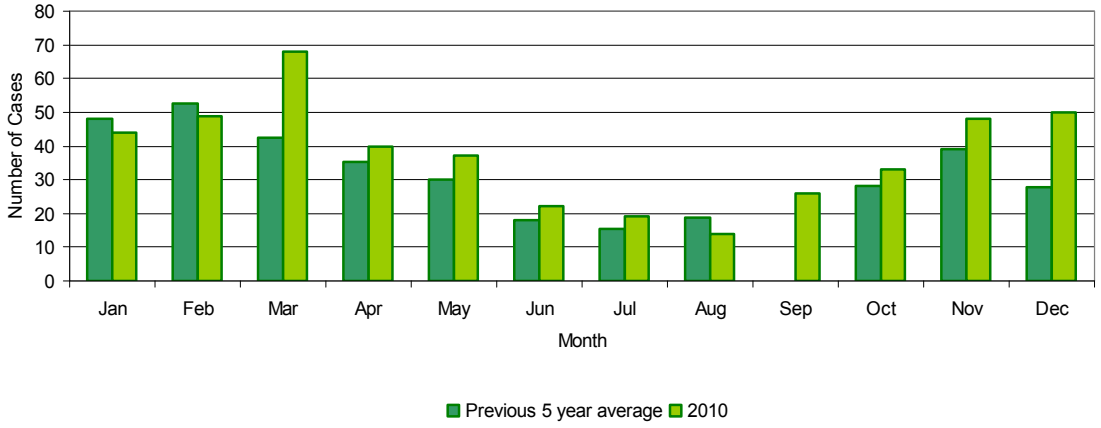
Figure 1. *Streptococcus pneumoniae* , Invasive Disease, Drug-Susceptible Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract
Drug-susceptible *Streptococcus pneumoniae* (DSSP) invasive disease is reportable by laboratories but not doctors or hospitals. A case, for reporting purposes, is defined by a culture obtained from a normally sterile site, such as blood or cerebrospinal fluid, that is sensitive to all of the commonly used antibiotics for which testing was done. Data on drug-susceptible DSSP has been available for the last seven years. Since the second year of reporting, in 2004, the annual incidence of DSSP has been stable around three to four cases per 100,000 population (Figure 1).

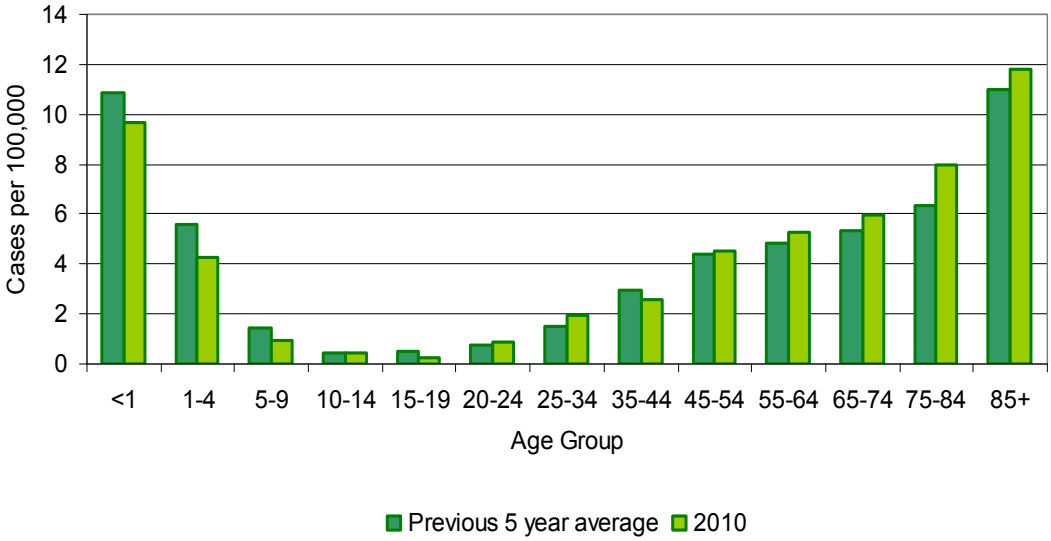
The majority of cases occur during the winter months. In 2010, this same trend held true, although there were a notably higher number of cases in December and March compared with the previous five year average (Figure 2).

Figure 2. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Cases by Month of Exposure, Florida, 2010



Incidence rates are highest among infants and young children, and drop in older children, teens, and young adults, and increase with increasing age, peaking again in those aged 85 and older. In 2010, the age distribution of cases was similar to previous years (Figure 3).

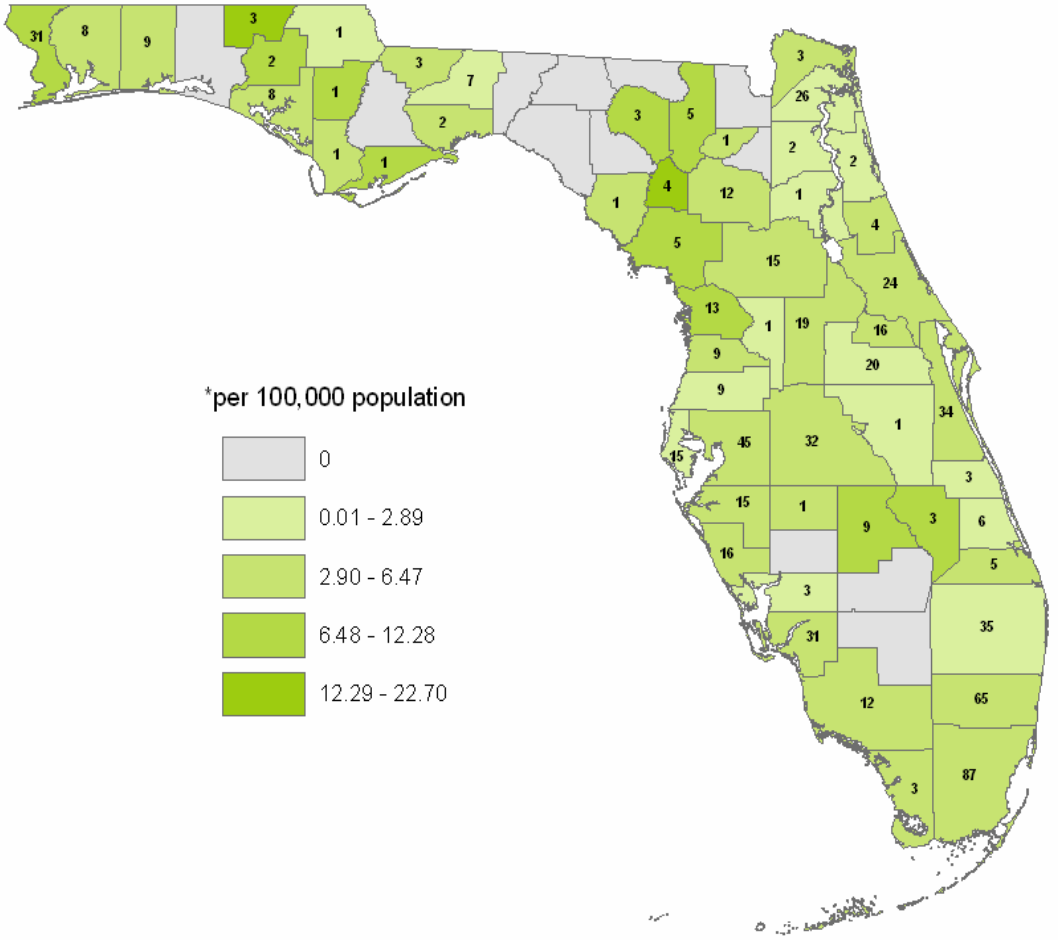
Figure 3. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Incidence Rate by Age Group, Florida, 2010



Males and females have similar rates of disease (3.9 and 3.5 per 100,000 population, respectively). The incidence among blacks (5.4 per 100,000) was higher than among whites (3.3 per 100,000). Hispanics had a lower rate of disease than did non-Hispanics (2.1 versus 3.9 per 100,000).

DSSP was reported in 55 of 67 counties in Florida (Figure 4). Additional information regarding antimicrobial resistance data in Florida can be found in Section 4: Summary of Antimicrobial Resistance Surveillance.

Figure 4. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Cases and Incidence Rate* by County, Florida, 2010



Prevention

The most effective way of preventing pneumococcal infections, including drug resistant and drug susceptible DSSP infections, is through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children through age five, with vaccination beginning in the first year of life. The older pneumococcal polysaccharide vaccine should be administered routinely to all adults aged >65 years. The vaccine is also indicated for children aged six through eighteen years 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.

References

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases,* 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

William Atkinson (ed.) et al., *Epidemiology and Prevention of Vaccine-Preventable Diseases,* 12th ed., Public Health Foundation, Washington, District of Columbia, 2011.

Michael T. Drennon, "Drug Resistant Patterns of Invasive *Streptococcus pneumoniae* Infections in the State of Florida in 2003," Master's Thesis, University of South Florida, Tampa, 2006.

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

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at:
http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm.

Centers for Disease Control and Prevention, "Preventing Pneumococcal Disease Among Infants and Young Children: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR,* Vol. 49, No. RR-9, 2000, pp. 1-35.

Syphilis

Disease Abstract

Syphilis, caused by the bacterium *Treponema pallidum*, is passed from person-to-person through direct contact with an infectious sore, or with infectious mucous patches and syphilitic warts (condylomata lata). Syphilis infection, when left untreated, may progress through several stages over time: primary, secondary, early latent, late latent, and potentially, to neurosyphilis. Transmission of syphilis can occur during vaginal, anal, and oral sex. During pregnancy, the organism can infect a fetus in utero or at delivery. In 2010, there were 4,071 syphilis cases reported in Florida, of those cases, 19 were reported as congenital cases.

This report will focus on the earlier stages of syphilis. Total early (primary, secondary, early latent) syphilis includes all cases where initial infection has occurred within the previous 12 months. In 2010, there were 2,479 early syphilis cases reported in Florida, an increase of 183 cases from 2009 (2,296) and 1,185 primary and secondary syphilis cases. Of the total cases reported, 61% of cases were diagnosed as primary, secondary, or early latent infections with a case rate of 13.2 per 100,000. Of the 2,479 early syphilis cases reported in 2010, 81% were reported from seven counties (Table 1); these same counties also had the greatest number of infections the previous year.

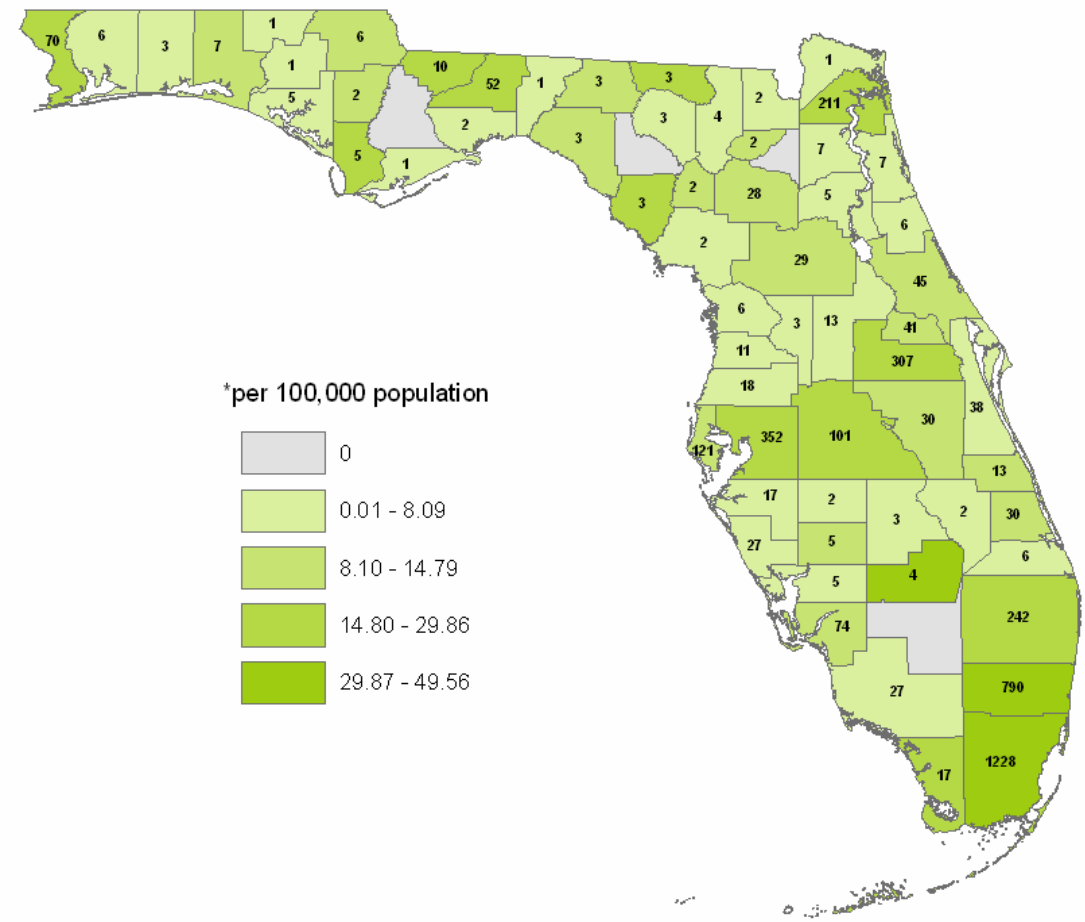
Table 1. Reported Cases of Total Early Syphilis by County for the Seven Most Frequent Counties, Florida, 2010

	Cases (#)	% of Morbidity	Rate/100,000
Miami-Dade	810	32.7	32.7
Broward	469	18.9	26.9
Hillsborough	200	8.1	16.7
Orange	192	7.7	17.3
Duval	131	5.3	14.6
Palm Beach	122	4.9	9.5
Pinellas	85	3.4	9.2

More than other reportable sexually transmitted diseases (STDs), syphilis is highly clustered geographically, mostly occurring in several southern counties and distinct urban areas throughout Florida. Twelve counties reported no cases of early syphilis and forty counties reported five or fewer cases of early syphilis.

One important subset of total early syphilis cases is infectious syphilis (primary and secondary stages). In 2010, infectious syphilis cases totaled 1,185 or 48% of total early syphilis. Of these cases, 88% were in men and 70% were in men who have sex with men (MSM). The ratio of male to female early syphilis cases was 5 to 1 overall, but differed among racial and ethnic groups. The male to female ratio among non-Hispanic blacks was 3 to 1, non-Hispanic whites 9 to 1, and Hispanics 10 to 1. The proportional gender differences between racial/ethnic groups indicated that early syphilis cases in non-Hispanic black populations were more evenly distributed between men and women. The overall male to female ratio for infectious syphilis was 10 to 1.

Total Syphilis Cases by County, Florida, 2010



In 2010, the distribution of early syphilis by race and ethnicity indicated that the disease disproportionately affected non-Hispanic blacks. Persons who self-reported as non-Hispanic black accounted for 39.2% of the early syphilis cases in 2010. However, this same group only accounts for 15% of the state's population. Persons who self reported as non-Hispanic white accounted for 31.9% of the cases. Persons who self-reported as Hispanic (white, black, or other) accounted for 25.4% of the cases. Persons who self-reported in other or unidentified racial and ethnic groups accounted for 1.4% of the cases. The rate for non-Hispanic blacks was 34.1 per 100,000 population. This rate was nearly twice as high as the second highest rate, in Hispanics (17.9 per 100,000 population), and four times greater than non-Hispanic whites (7.8 per 100,000 population).

Table 2. Reported Cases of Total Early Syphilis by Race and Ethnicity, by Gender and Sexual Preference, Florida, 2010

	Female	Non-MSM	MSM	Total
Black/African American (Non-Hispanic)	253	247	473	973
White Non-Hispanic	79	89	623	791
Hispanic	57	67	505	629
Other	7	9	19	35
Unknown	7	15	29	51
Total	403	427	1,649	2,479

The greatest proportion of early syphilis cases for females were reported in the 20-24 and 25-29 age groups, whereas male cases did not show as much difference between age groups (Table 3). Sixty-three percent of cases in females were reported in women aged <30 years, compared to 34% in males of the same age cohort.

Table 3. Reported Cases of Total Early Syphilis by Age, Gender, and Sexual Risk Factors, Florida, 2010

	MSM		Non-MSM Male		Female	
Age	#	%	#	%	#	%
10 – 14	0	-	0	-	2	0.5
15 – 19	77	4.7	35	8.2	67	16.6
20 – 24	245	14.8	69	16.2	117	29.1
25 – 29	217	13.2	62	14.5	69	17.2
30 – 34	210	12.7	48	11.3	41	10.2
35 – 39	199	12.1	49	11.5	26	6.5
40 – 44	263	15.9	42	9.9	15	3.7
45 – 54	358	21.7	69	16.2	53	13.2
55 – 64	72	4.4	32	7.5	9	2.2
65 – 74	8	0.5	14	3.3	2	0.5
75+	0	-	6	1.4	1	0.2
Total	1,649		426		402	

Despite elimination efforts, syphilis in recent years has been persistent in the MSM population. The distribution of early syphilis in this group differs in age, race, and ethnicity from heterosexual populations. Men who self-indentified as MSM accounted for 67% of the total early syphilis cases. Unlike in the heterosexual population, non-Hispanic white men (38%) and Hispanic men (31%) accounted for slightly greater percentages of the reported MSM cases than non-Hispanic black men (29%). The similar morbidity numbers across racial and ethnic groups is likely an indication of similar risk behavior trends in this population, regardless of race and ethnicity. Age also appears not to be a key predictor of infection as the morbidity is relatively evenly distributed. However, 61% of early syphilis infections in non-Hispanic blacks occurred in those aged <30 years while the greatest number of infections in non-Hispanic whites and Hispanics occurred in older men. Fifty-nine percent of MSM with early syphilis infections were also co-infected with Human Immunodeficiency Virus (HIV), the virus that causes AIDS, a vast difference from the 9.8% of co-infected heterosexual men and 8.4% of co-infected women.

Prevention

According to the Centers for Disease Control and Prevention (CDC), 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. When used consistently and correctly, a latex condom can reduce the risk of transmission of syphilis. At the onset of a syphilis infection, the first symptom can last for 3 to 6 weeks and is usually a small, round, painless sore on the area of exposure (genitals, anus, or mouth). A rash may appear on the body after or while the sore is healing. The rash will typically occur on the palms of the hands and soles of the feet. Without treatment, these symptoms can subside but the infection will remain present in the body. Other signs and symptoms include patchy hair loss, weight loss, fatigue, muscle soreness, and headaches. Women and men who are told they have a syphilis infection and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can see a health care provider and be evaluated for any possible STD exposure. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

Condoms lubricated with spermicides (especially Nonoxynol-9 or N-9) are no more effective than other lubricated condoms in protecting against the transmission of STDs. Transmission of an STD, including syphilis cannot be prevented by washing the genitals, urinating, or douching after sex. Any unusual discharge, sore, or rash, particularly in the groin area, should be a signal to refrain from having sex and to see a doctor immediately.

References

Centers for Disease Control and Prevention. STDs & Pregnancy - CDC Fact Sheet. Atlanta, GA: U.S. Department of Health and Human Services, March 2011.

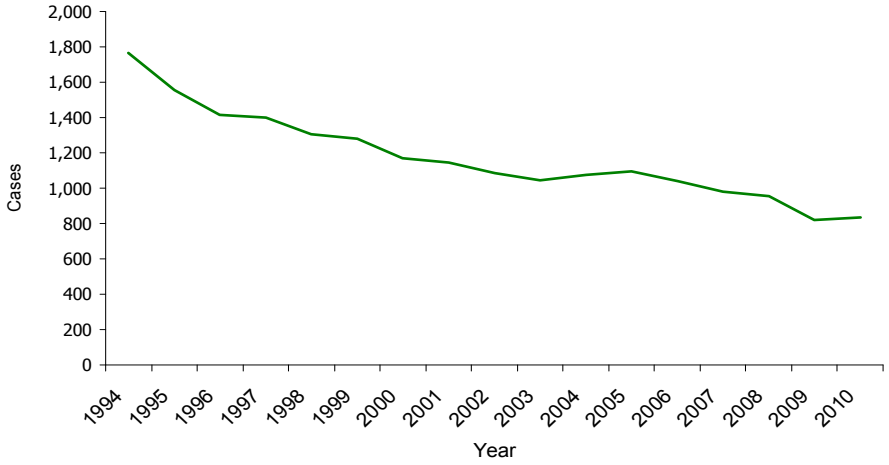
Tuberculosis

Disease Abstract

Tuberculosis (TB) is an infectious disease, mostly respiratory, caused by the bacterium *Mycobacterium tuberculosis.* This disease is spread by aerosolized droplets from people with active TB. Each year there are over nine million infections and 1.7 million deaths caused by the 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.

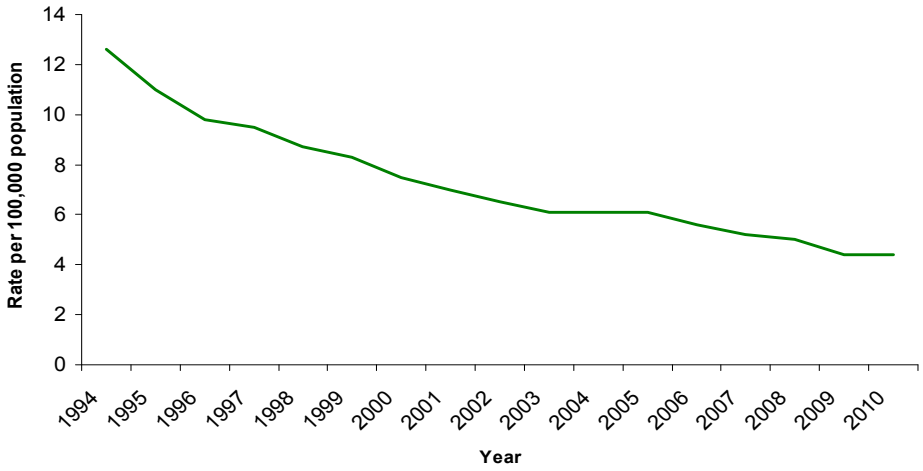
In 2010, 821 tuberculosis cases were reported in Florida (Figure 1). This represents a 1.6% increase in cases since 2009 (822). The TB case rate remained the same at 4.4 per 100,000 population in 2009 and in 2010 (Figure 2).

Figure 1. Tuberculosis Cases by Year, Florida, 1994-2010



Source: Tuberculosis Information Management System (TIMS); Health Management System (HMS)-2009-2010 data only.

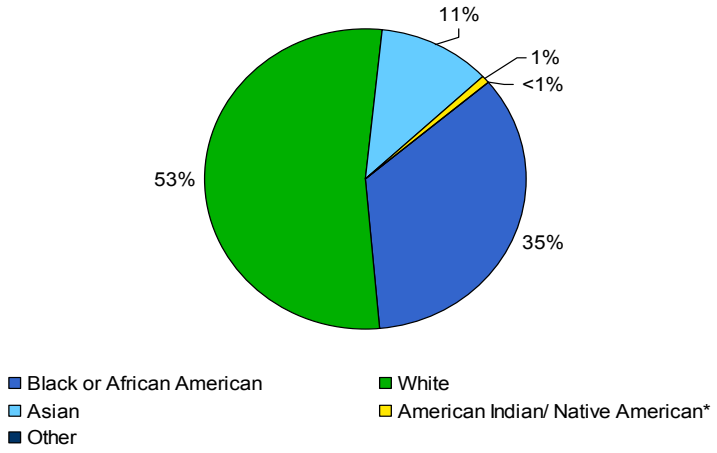
Figure 2. Tuberculosis Rates by Year, Florida, 1994-2010



Source: TIMS and HMS (2009 and 2010 data)
Population estimates from Florida CHARTS

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 people with TB in Florida. This is partly due to immigration from countries where TB is more common. Out of 835 cases reported for 2010, 53% were white, 35% were black or African American, and 11% were Asian. American Indian/Alaskan Native and Pacific Islander/Native Hawaiian combined accounted for 1%, and the Other category comprised <1% (Figure 3). Thirty percent of reported cases were Hispanic and 70% were non-Hispanic.

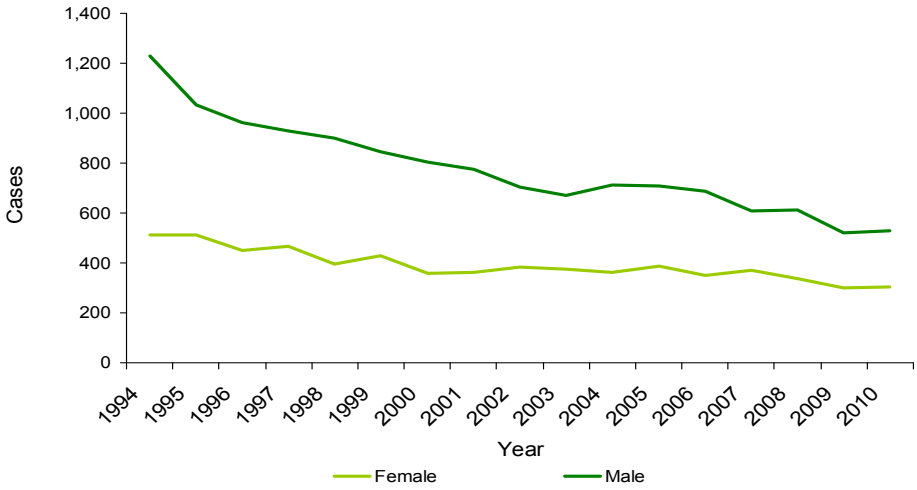
Figure 3. Tuberculosis Cases by Race, Florida, 2010



Source: HMS
Persons reporting to be American Indian (AI)/Alaska Native (AN) includes those who are Pacific Islander/Native Hawaiian (PI/NH).

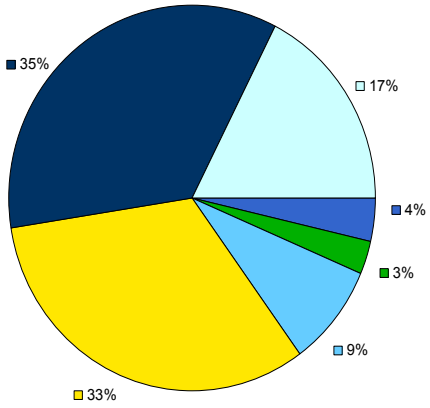
The number of TB cases has decreased overall since 1994. In 2010, there were 531 cases in males and 304 cases in females (Figure 4). The largest proportion of cases is in those aged 45-64 years followed by those aged 25-44 years (Figure 5).

Figure 4. Tuberculosis Cases by Gender, Florida, 2010



Source: TIMS and HMS (2009 and 2010)

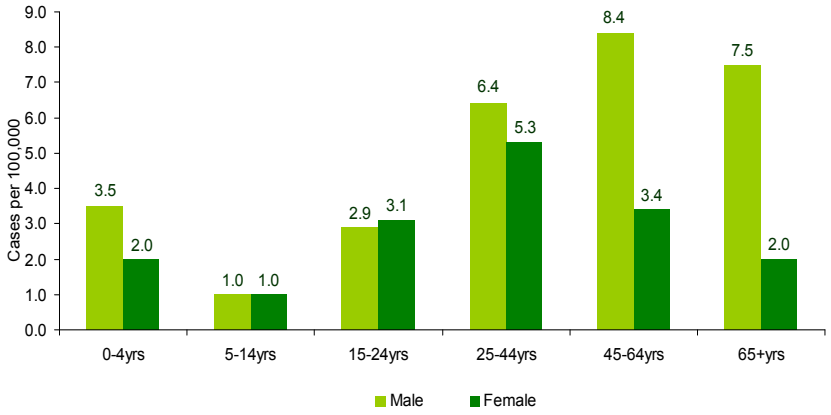
Figure 5. Tuberculosis Cases by Age Group, Florida, 2010



Source: HMS
Percentages have been rounded and may not equal 100%.

Males have a higher case rate than females for all age groups except in the 5-14 year old age group, where males and females are equal at 1.0 case per 100,000 population, and in the 15-24 year age group, where men had 2.9 cases per 100,000 population and women had 3.1. The aged 65 and over group showed the greatest difference between genders with a rate of 7.5 cases per 100,000 population in men and 2.0 in women (Figure 6).

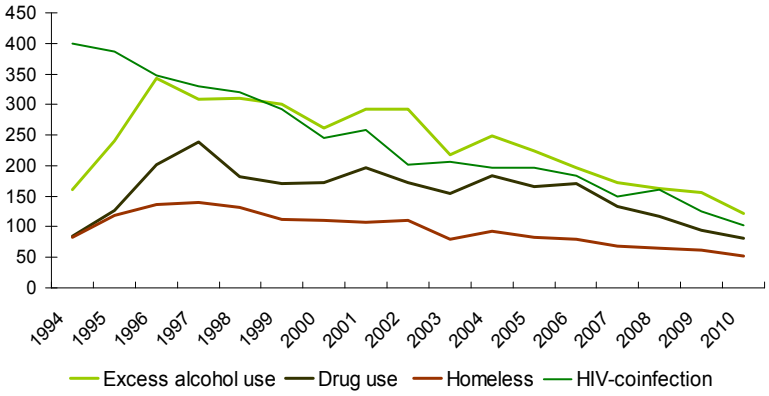
Figure 6. Tuberculosis Cases by Age Group and Gender, Florida, 2010



Rates are per 100,000 population.
Population estimates from Florida CHARTS

The risk factors associated with having TB disease from 1994-2010 were: excess alcohol use (within a year of TB diagnosis), drug use (within a year of TB diagnosis), homelessness (within a year of TB diagnosis), and HIV co-infection. In 2010, there were 122 cases where excess alcohol use was a risk factor. Drug use was reported in 82 cases, homelessness in 52 cases, and HIV co-infection was reported in 103 cases. Please note: multiple risk factors can be reported for a case and not all cases will have these risk factors (Figure 7).

Figure 7. Tuberculosis Cases with Selected Risk Factors, Florida, 2010

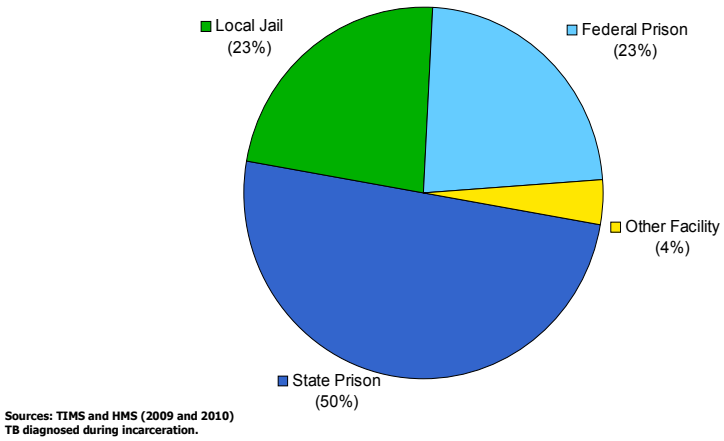


Sources: TIMS and HMS (2009 and 2010)
Patient reported condition of substance abuse and/or homelessness within 1 year of TB diagnosis.

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 are released back into the community with active TB disease or infection. Failure to complete treatment could lead to acquiring multi-drug resistance to TB medications, developing active TB disease, or exposing the general community to possible TB infection.

There were 26 TB cases in people residing in correctional facilities in 2010. Fifty percent of the cases were from state prisons, 23% were from local jails, 23% were from federal prisons, and the remaining 4% came from other detainment facilities (Figure 8).

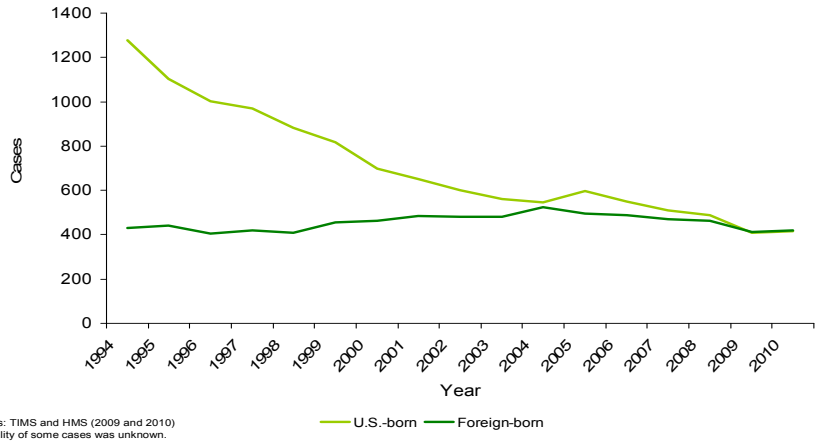
Figure 8. Tuberculosis Cases in Correctional Facilities, by Facility Type, Florida, 2010



Sources: TIMS and HMS (2009 and 2010)
TB diagnosed during incarceration.

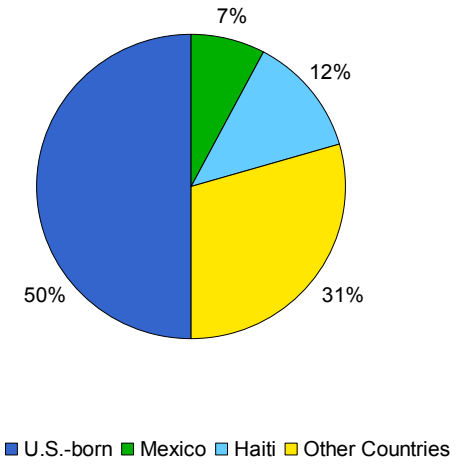
The number of reported cases in U.S.-born persons decreased from 1,277 cases in 1994 to 416 cases in 2010 (Figure 9). Of the 419 foreign-born persons with TB, Haiti was the country of birth for 24% (100) and Mexico was identified for 15% (62). All other countries combined accounted for 61% of the foreign-born cases.

Figure 9. Trends in Tuberculosis Cases in U.S.-born and Foreign-born Persons, Florida, 1994-2010



Sources: TIMS and HMS (2009 and 2010)
Nationality of some cases was unknown.

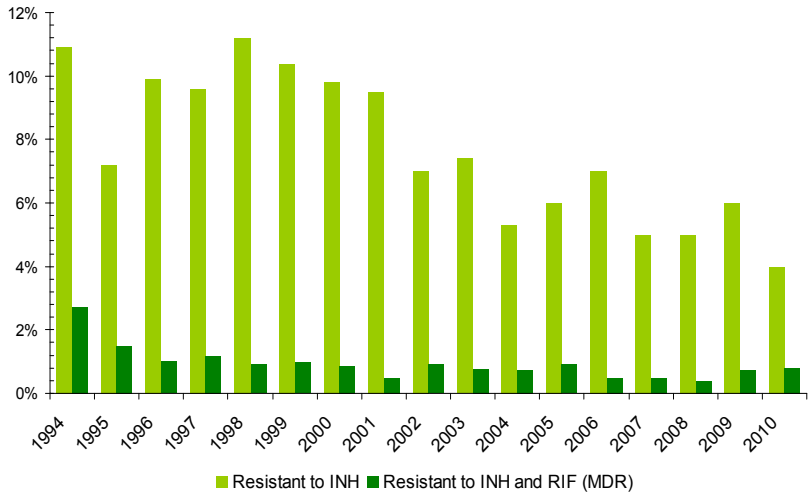
Figure 10. Tuberculosis Cases by Country of Birth, Florida, 2010



Source: HMS

Figure 11 displays the percentage of TB cases whose isolates are resistant to isoniazid (INH) alone and to both INH and rifampin (RIF) from 1994 to 2010. The percentage of INH resistance in 2010 was at 4%. The percentage of resistance to both INH and RIF, also known as multi-drug resistance (MDR), was 0.8%.

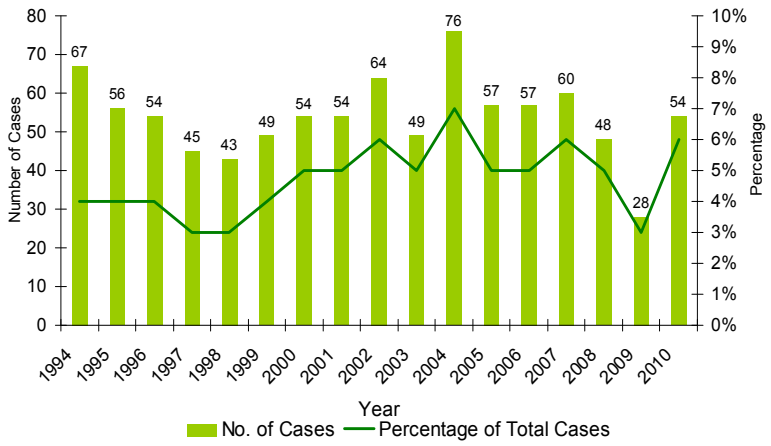
Figure 11. Percentage of Tuberculosis Cases with Drug Resistant Organisms* by Year, Florida, 1994-2010



Sources: TIMS and HMS (2009-2010)
***Based on initial drug susceptibility testing**
INH- isoniazid, RIF- rifampin, MDR- multi-drug resistance

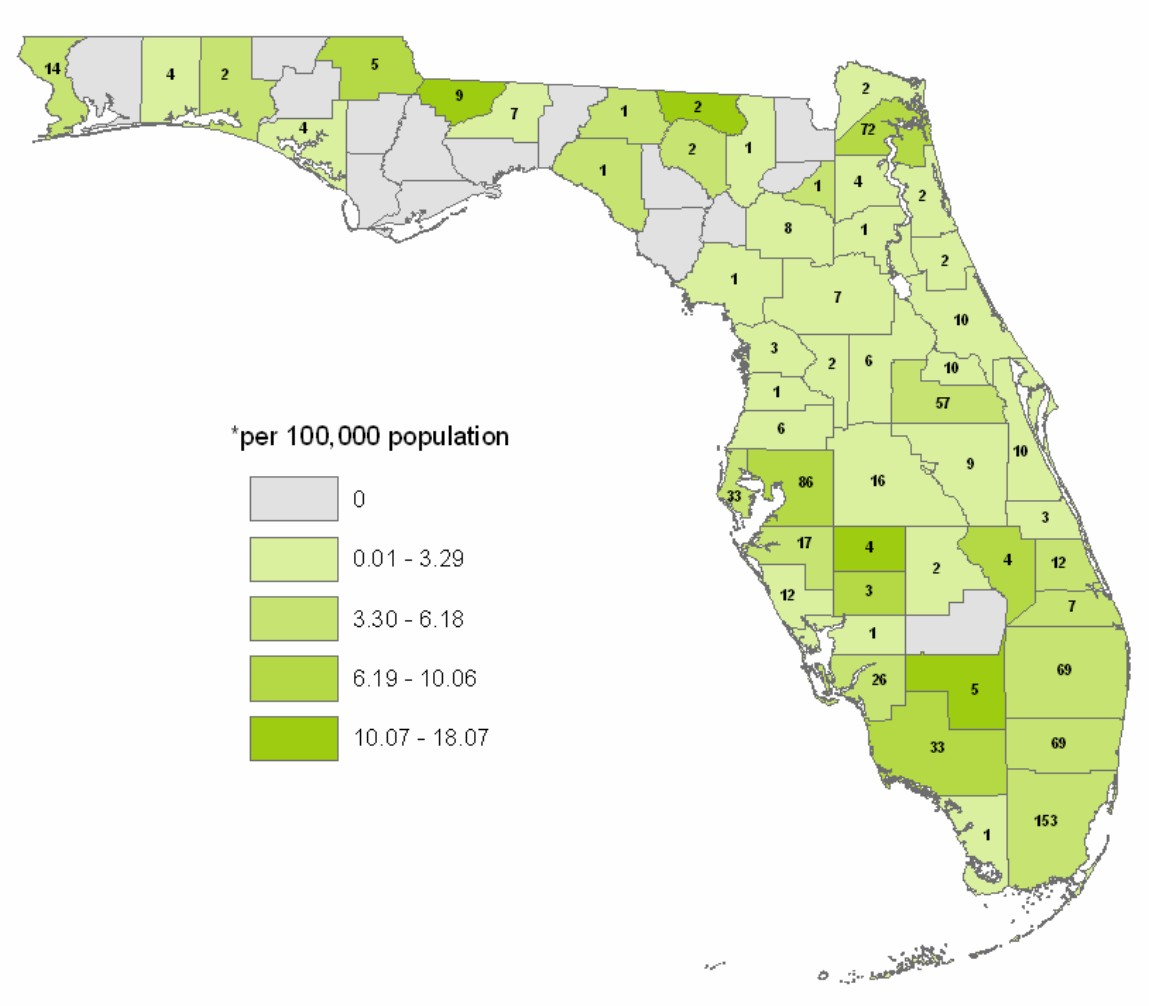
There were 67 children (0-14 years of age) with TB in Florida in 1994 and 54 in 2010 (Figure 12). The number of cases in children has fluctuated from 1994 to 2010 with the highest number reported in 2004 and the lowest number reported in 2009.

Figure 12. Pediatric Tuberculosis, Florida, 1994-2010



Sources: TIMS and HMS (2009 and 2010)
Pediatric = 0-14 years of age
Percentages have been rounded and may not equal 100%

Tuberculosis Cases and Rate*, Florida, 2010



References

Centers for Disease Control and Prevention (CDC), Tuberculosis Fact Sheet, accessed at: http://www.cdc.gov/tb/.

National Institute of Allergies and Infectious Diseases, Tuberculosis Fact Sheet, accessed at: http://www.niaid.nih.gov/topics/tuberculosis/understanding/Pages/Default.aspx.

American Thoracic Society, Tuberculosis Fact Sheet, accessed at: http://www.thoracic.org/.

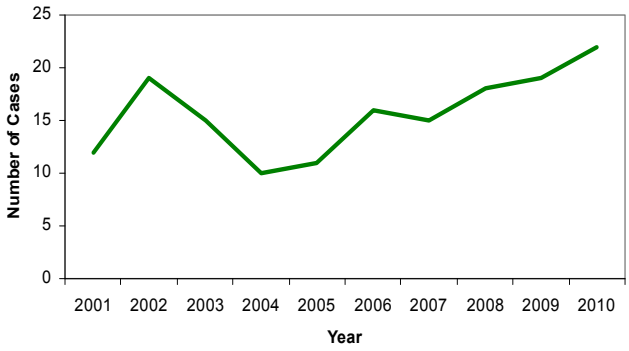
Additional Resource

Florida Department of Health, Bureau of Tuberculosis and Refugee Health website at: http://www.doh.state.fl.us/disease_ctrl/tb/.

Typhoid Fever

Typhoid Fever: Crude Data	
Number of Cases	22
2010 incidence rate per 100,000	0.1
% change from average 5 year (2005-2009) reported cases	39.2%
Age (yrs)	
Mean	24.6
Median	23.5
Min-Max	2 - 73

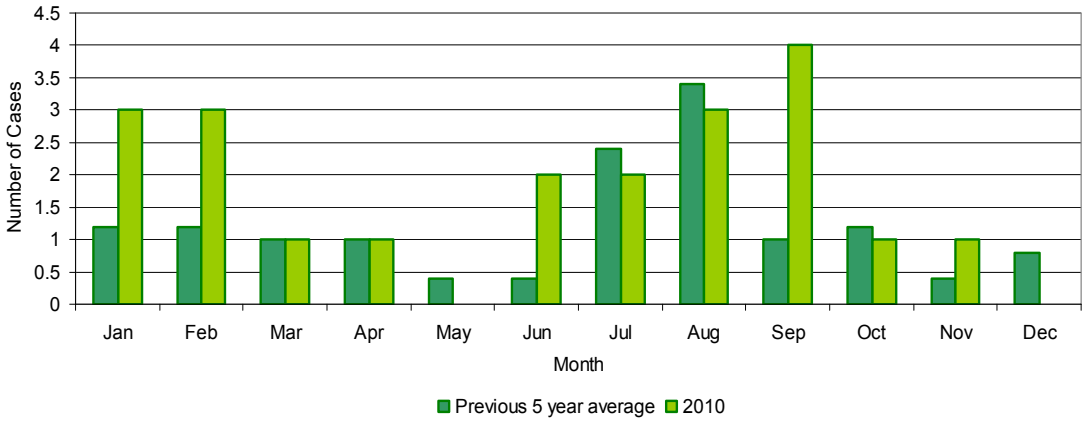
Figure 1. Typhoid Fever Cases by Year Reported, Florida, 2001-2010



Disease Abstract

Typhoid fever is a systemic illness caused by the bacterium *Salmonella* Typhi. The number of confirmed cases of typhoid fever for the last 10 years has ranged from 10 to 22 annually. In 2010, 22 cases were reported, representing an annual incidence rate of 0.1 per 100,000. This was a 39.2% increase from the average annual number of reported cases in the previous five years (Figure 1). One 2010 case was classified as probable, the remaining 21 cases as confirmed. The median age was 23.5. Over the past five years, and consistent with national data, the majority of Florida cases (66-95%) were acquired outside the U.S. In 2010, the majority of Florida cases were imported from India (55%) and Haiti (32%). The counties reporting the greatest number of cases were Broward, Miami-Dade, Orange, and Manatee. Cases typically occur more frequently in the summer months, with a September peak in 2010. Cases tend to be isolated, rather than clustered. However, three of the four cases that occurred in September of 2010 were in students attending a soccer academy in India during monsoon season, which created flooding and unsanitary conditions. In 2010, seven cases were imported from Haiti, compared to only three cases in 2009. This higher number may be due to increased travel between Haiti and Florida following a large earthquake on January 12, 2010.

Figure 2. Typhoid Fever Cases by Month of Onset, Florida, 2010



Prevention

Prevention is accomplished through proper sanitation, safe food handling practices, and appropriate case management. This includes the use of the following methods:

- Wash your hands thoroughly.
- Dispose of human waste products appropriately.
- Maintain safe and purified water supplies.
- Control insects.
- Use appropriate refrigeration.
- Maintain cleanliness when preparing food in both home and commercial settings.
- Make sure cases are treated promptly and effectively.
- Assure that people with untreated cases do not expose others, for example as food-handlers.

In endemic areas, prevention measures should include drinking bottled or carbonated water, cooking foods thoroughly, peeling raw fruits and vegetables, and in general, avoiding food or drink from street vendors. Immunization is recommended only for those with occupational exposure to enteric infections or for those traveling or living in endemic, high-risk areas.

Additional Resources

Disease information is available from the CDC at:
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/.

Varicella

Varicella: Crude Data	
Number of Cases	977
2010 incidence rate per 100,000	5.2
% change from average 5 year (2005-2009) reported incidence rate	N/A
Age (yrs)	
Mean	13.4
Median	9
Min-Max	0 - 86

Disease Abstract

In 2007, the first full year of varicella case reporting in Florida, 1,321 cases were reported. The 977 cases reported in 2010 include both confirmed and probable cases. Of these cases, 554 had a history of vaccination recorded. April 2010 was the peak month of reported cases (Figure 1). The majority of cases in 2010 occurred in children aged <15 years (Figure 2). There were 277 outbreak-associated cases in 24 counties. Childcare centers and schools are the most common sites for varicella outbreaks.

Figure 1. Varicella Cases by Month of Onset, Florida, 2010

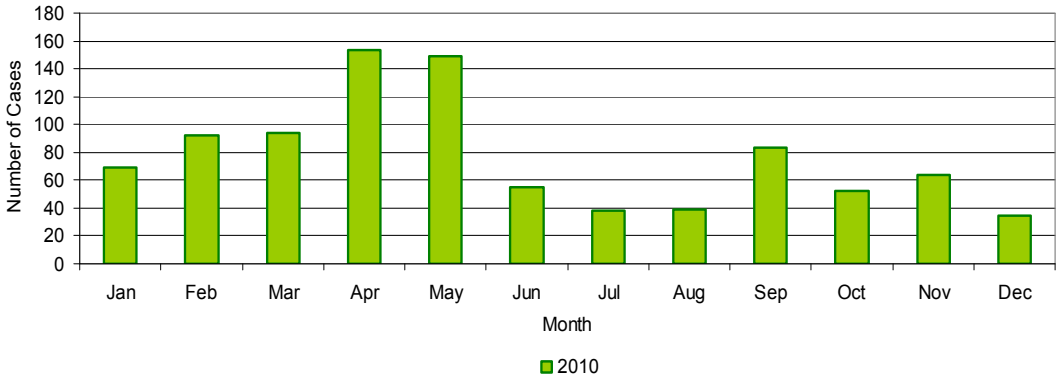
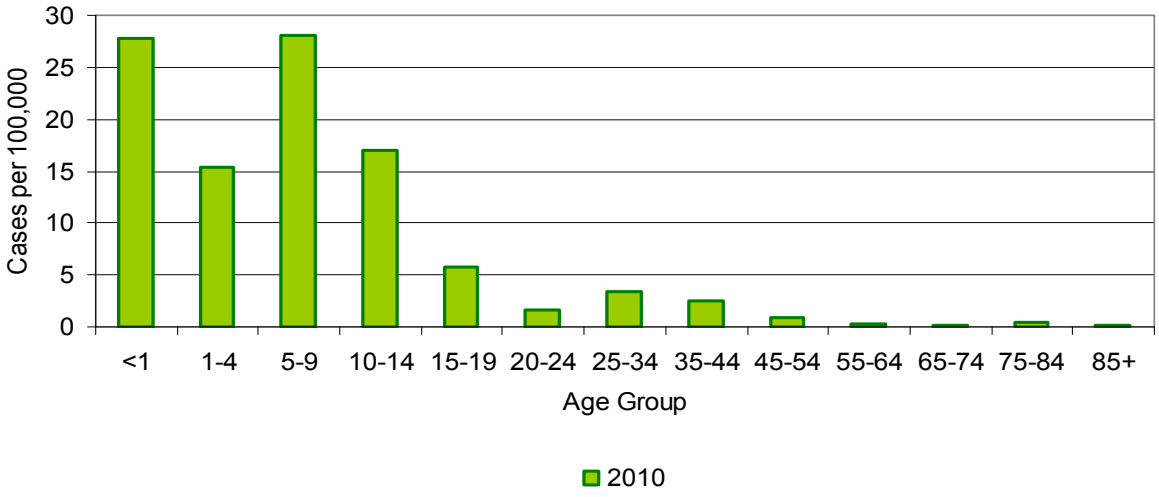
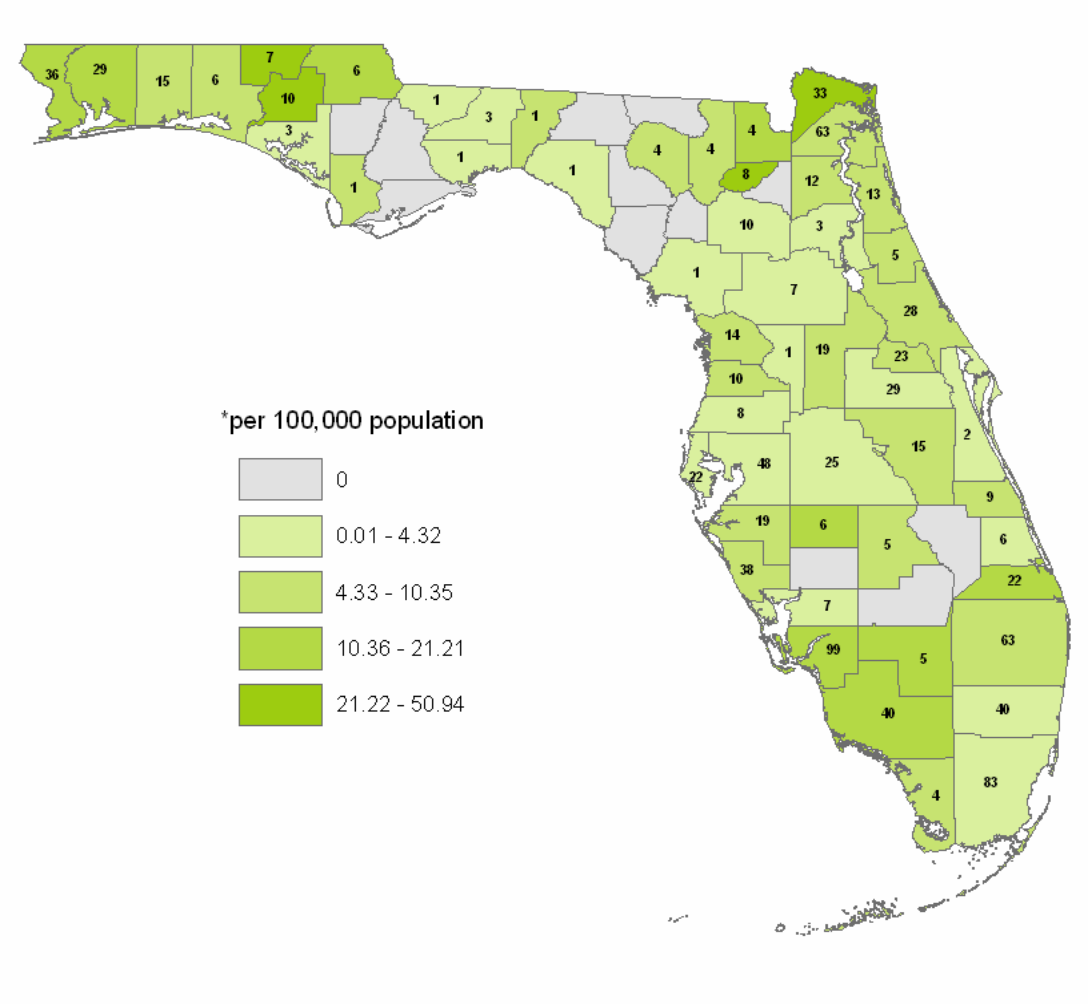


Figure 2. Varicella Incidence Rate by Age Group, Florida, 2010



Varicella was reported in 55 of the 67 Florida counties (Figure 3).

Figure 3. Varicella Cases and Incidence Rates* by County, Florida, 2010



Prevention

The varicella vaccine is recommended at age 12 to 15 months and at age four to six 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 occurrence of disease after one dose of vaccine, the current recommendation is for two doses of vaccine. 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.

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 modify the disease. 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 within 96 hours of exposure. An investigational (not licensed) product, VariZIG, became available in February 2006 under an investigational new drug (IND) application submitted to the Food and Drug Administration after the only U.S. licensed manufacturer of VZIG announced it had discontinued production.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 4th ed., 2008, chapter 17.

Additional Resources

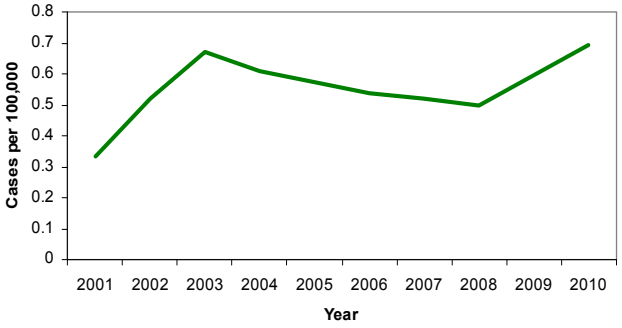
Disease information is available from the CDC at: www.cdc.gov/vaccines/vpdvac/varicella/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Vibriosis

Vibriosis: Crude Data	
Number of Cases	130
2010 incidence rate per 100,000	0.7
% change from average 5 year (2005-2009) reported incidence rate	27.1%
Age (yrs)	
Mean	44.4
Median	47.5
Min-Max	2 - 109

Figure 1. Vibriosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The genus *Vibrio* consists of many species of Gram-negative, curved, motile rods, 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 *Vibrio* infections (excluding cholera, which is described separately) to provide a general description of the disease burden.

Figure 2. Vibriosis Cases by Month of Onset, Florida, 2010

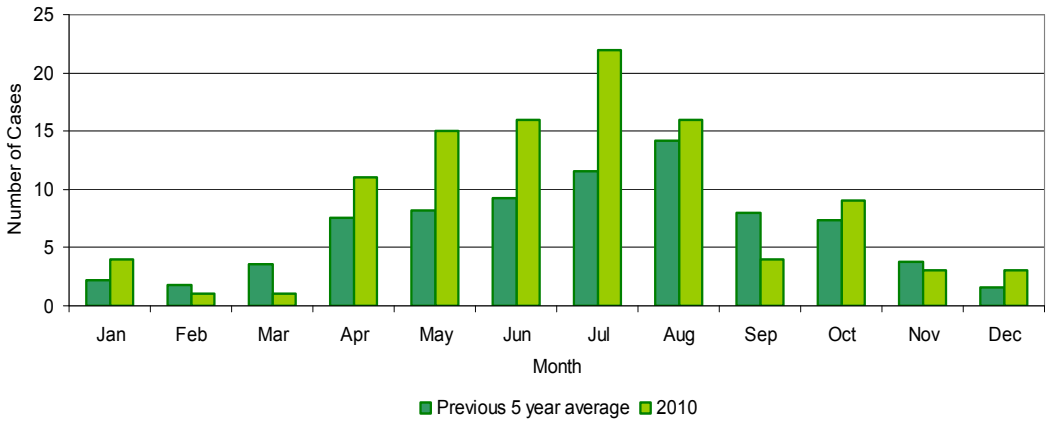
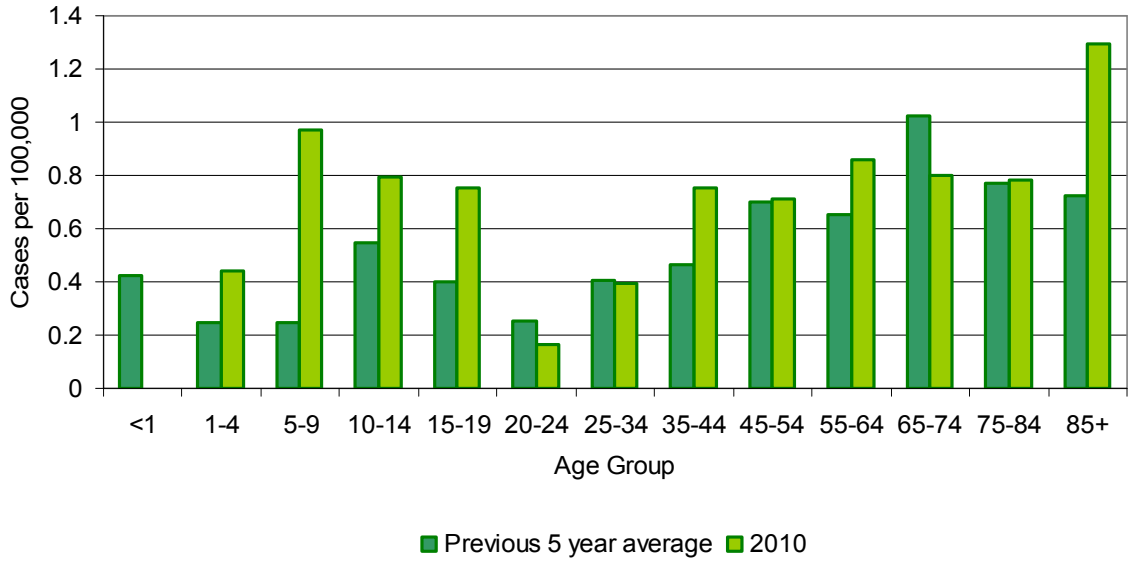


Figure 3. Vibriosis Incidence Rate by Age Group, Florida, 2010

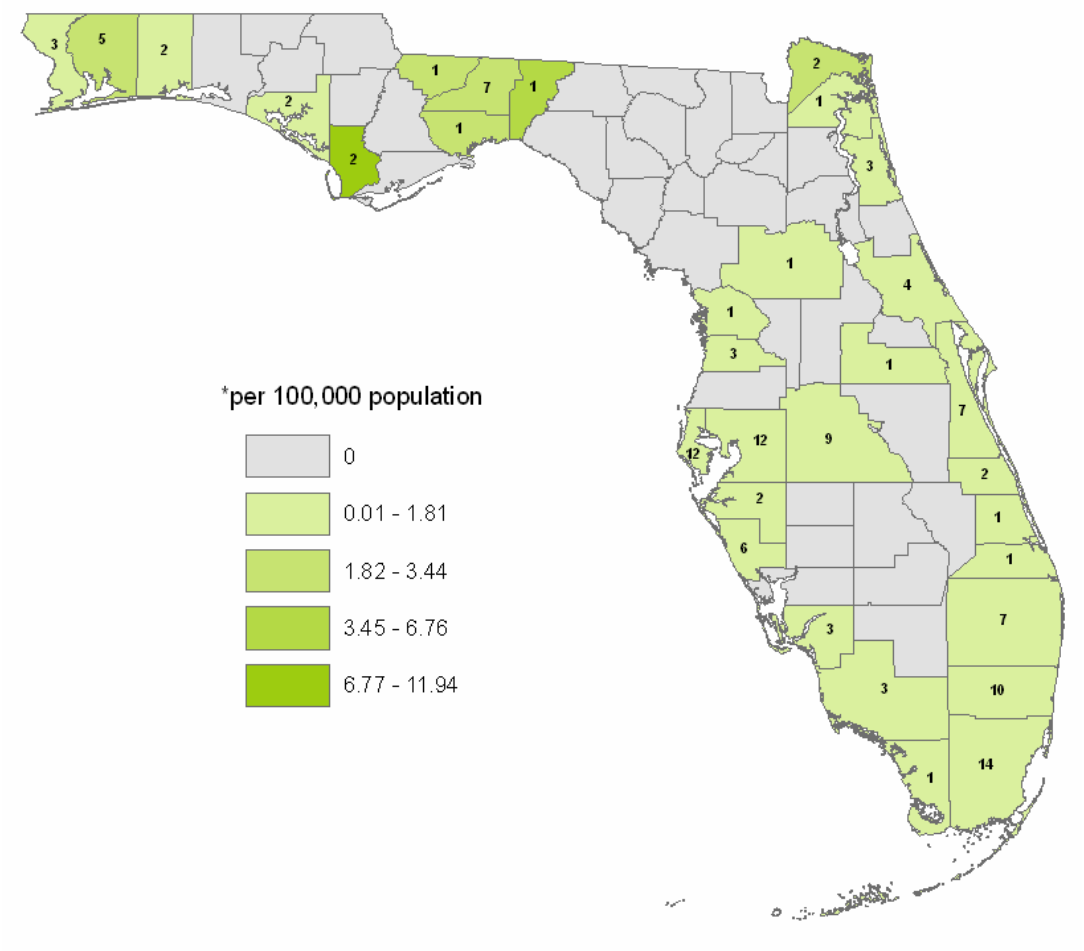


In comparison to the previous average five-year incidence, the incidence for *Vibrio* infections in 2010 increased (27.1%) (Figure 1). In 2010, 130 Florida residents were reported and confirmed as cases. The majority of cases (127) were acquired in Florida, two were acquired in the U.S. outside of Florida, and one case had an unknown exposure. *Vibrio* infections typically increase during the warmer months. In 2010, 87 cases (62%) occurred from April to October (Figure 2).

There are consistently high incidence rates among individuals aged >45 years with a historical peak incidence occurring in the 65 to 74 age group (1.03 per 100,000 population) (Figure 3). This is a population that is likely to have chronic conditions that predispose them to these infections. However, in 2010, there was a relatively high incidence rate among those aged 5 to 19 years.

Vibrio cases were reported in 34 of the 67 counties in Florida in 2010 (Figure 4). The higher-incidence counties are found along the coasts.

Figure 4. Vibriosis Cases and Incidence Rates* by County, Florida, 2010



<u>*Vibrio vulnificus* infections</u>

Vibrio vulnificus infections typically manifest as septicemia in persons who have chronic liver disease, chronic alcoholism, or are immuno-compromised. *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. Of the vibriosis cases reported in 2010, 32 were determined to be *V. vulnificus*. Of the 32 reported *V. vulnificus* cases, 19 were wound infections (one death) and eight were attributed to oyster consumption (four deaths). Exposure was unknown in five of the cases (four deaths).

<u>*Vibrio parahaemolyticus* infections</u>

Vibrio 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. Of the vibriosis cases reported in 2010, 37 were *V. parahaemolyticus*. Of these 37 cases, 12 were wound infections, seven were attributed to oyster consumption, and exposure was unknown in eight of the cases. No deaths from *V. parahaemolyticus* infection were reported.

Vibrio alginolyticus infections

Vibrio 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. Of the vibriosis cases reported in 2010, 38 were *V. alginolyticus.* Of these 38 cases, 23 were wound infections and 11 were reported ear infections. No deaths from *V. alginolyticus* were reported.

Vibrio cholerae, non-O1 infections

During the 2010 calendar year there were a total of five *Vibrio cholerae* infections due to non-O1 and non-O139 strains reported in different counties across Florida. Case interviews revealed that four of the cases had their exposure in Florida and three were associated with raw or steamed oyster consumption. One of those cases, a boy aged 12 years, was confirmed to have *Vibrio cholerae* O75 five days after consuming raw oysters in October. The child recovered after being hospitalized for two days. Strain O75 has become an emerging concern due to its production of cholera toxin, which is not typical for non-O1 strains.

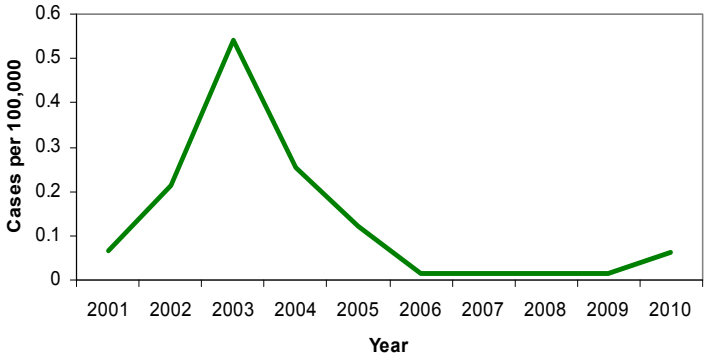
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/nczved/divisions/dfbmd/.

West Nile Virus Disease

West Nile Virus Disease: Crude Data	
Number of Cases	12
2010 incidence rate per 100,000	0.06
% change from average 5 year (2005-2009) reported incidence rate	71.4%
Age (yrs)	
Mean	48.0
Median	49
Min-Max	7 - 82

Figure 1. West Nile Virus Disease Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for West Nile virus (WNV) disease peaked in Florida in 2003. It remained stable and near zero from 2006 until 2010, (Figure 1). In 2010, there were twelve locally-acquired human cases, nine confirmed and three probable. Nine cases were classified as neuroinvasive disease and three as fever (not neuroinvasive). One laboratory positive asymptomatic blood donor was also reported in Brevard County.

Ages of cases in 2010 ranged from 7 to 82 years, with a median age of 49 years. Although three cases in 2010 involved persons aged <20 years, most cases (75%) were those aged 35 years and older as typically seen in the past (Figure 3). Two cases involving men aged 80 and 82 years were fatal. Nine (75%) of the cases were male and three (25%) female. Race was primarily white and non-Hispanic with 83% of cases being white, 8% black, 8% other, and 92% non-Hispanic compared with 8% Hispanic.

In 2010, activity was reported from July to October with activity peaking in July (2), August (4), September (3), and October (3). This is slightly later than WNV activity seen in the past five years, but is more typical of temporal distributions seen during earlier epidemic years (Figure 2 and 2006 Florida Statistics Morbidity Report). Nine of the cases reported no or rare use of mosquito repellant and three reported using repellant sometimes. Five of the 12 were smokers, most of who were known to have smoked outside. One case did not have window screens, and four cases had underlying medical conditions, including the two fatal cases.

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. In 2001, the epicenter of the WNV outbreak was in the north-central part of the state. The following year, activity was most intense in the northwestern and central counties. The focus in 2003 was the panhandle, while south Florida had the most activity in 2004. In 2005, 86% of the human cases were in Pinellas County. Most exposures in 2010 occurred in counties located in the central and south part of the state. Cases were reported in Osceola, Orange (2), Collier (2), Broward, Duval, De Soto, Lee, Suwannee (exposure believed to be in south Florida), Brevard, and Highlands counties.

Figure 2. West Nile Virus Disease Cases by Month of Onset, Florida, 2010

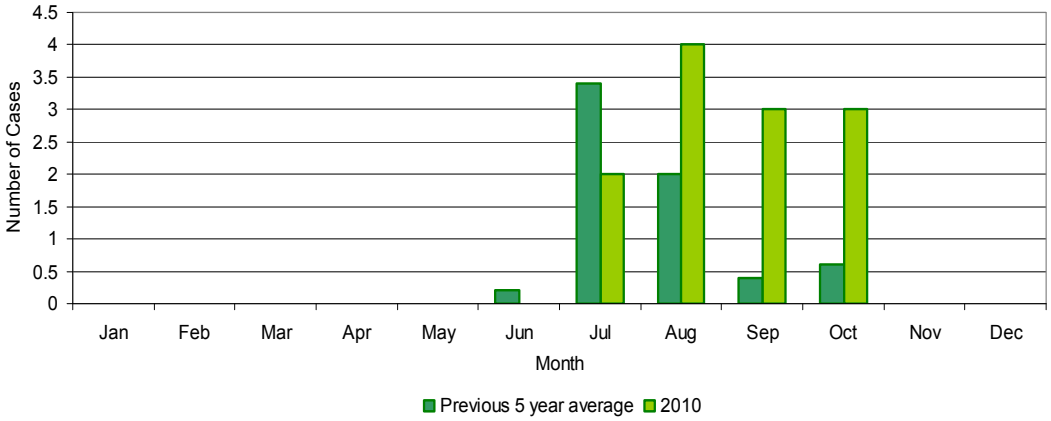
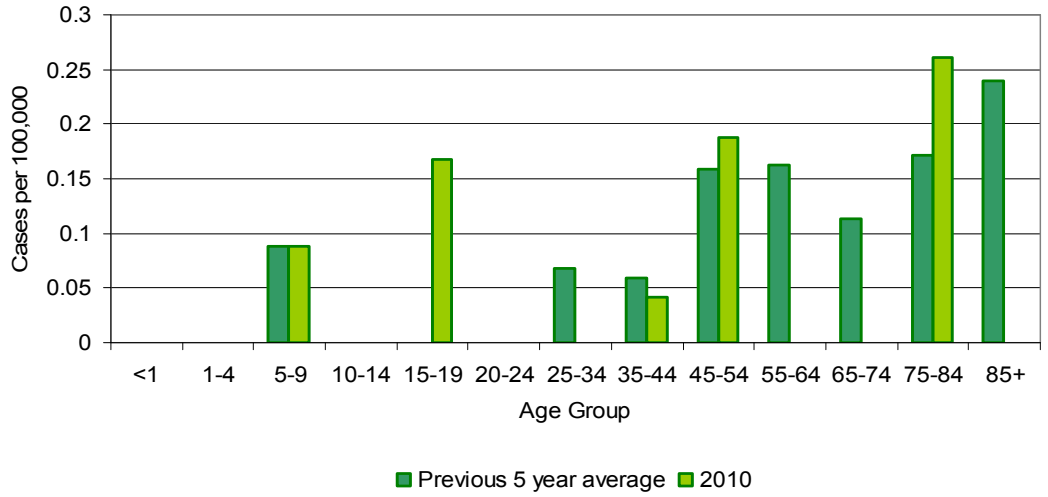


Figure 3. West Nile Virus Disease Incidence Rate by Age Group, Florida, 2010



In general, approximately 80% of those infected show no clinical symptoms. Twenty percent have mild symptoms, and less than 1% experiences the most severe neuro-invasive form of illness. People over the age of 50 years seem to be at increased risk for neuroinvasive disease and more severe outcomes. In Florida, case-fatality ratios range from 4% for all cases to 7% among those who develop the neuroinvasive form of the disease, although the fatality rate for neuroinvasive disease was 22% in 2010. Interestingly, activity of a related virus, St. Louis encephalitis (SLE) virus, has decreased dramatically since WNV was first detected in the state in 2001. Research suggests that in wild bird species that may act as reservoirs, antibodies for WNV may protect against SLE virus infection.

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 following tips:

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 aren't being used.
- Empty and clean birdbaths and pet's water bowls at least once or twice a week.
- Protect boats and vehicles from rain with tarps that don't accumulate water.
- Maintain swimming pools in good condition and appropriately chlorinated. 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

Fang Y, Reisen WK, "Previous Infection with West Nile or St. Louis Encephalitis Viruses Provides Cross Protection During Reinfection in House Finches," *Am J Trop Med Hyg*. 2006, 75 (3):480-5.

Ottendorfer CL, Ambrose JL, White GS, "Isolation of Genotype V St. Louis Encephalitis Virus in Florida," *Emerg Infect Dis.,* 2009, 15 (4):604-06.

Additional Resources

Additional information on WNV disease and other mosquito-borne diseases can be found in the *Surveillance and Control of Mosquito-borne Diseases in Florida Guidebook*, online at: http://www.doh.state.fl.us/Environment/medicine/arboviral/2009MosquitoGuide.pdf.

Disease information is also available from the Centers for Disease Control and Prevention at: http://www.cdc.gov/ncidod/dvbid/westnile/index.htm.