Section 2

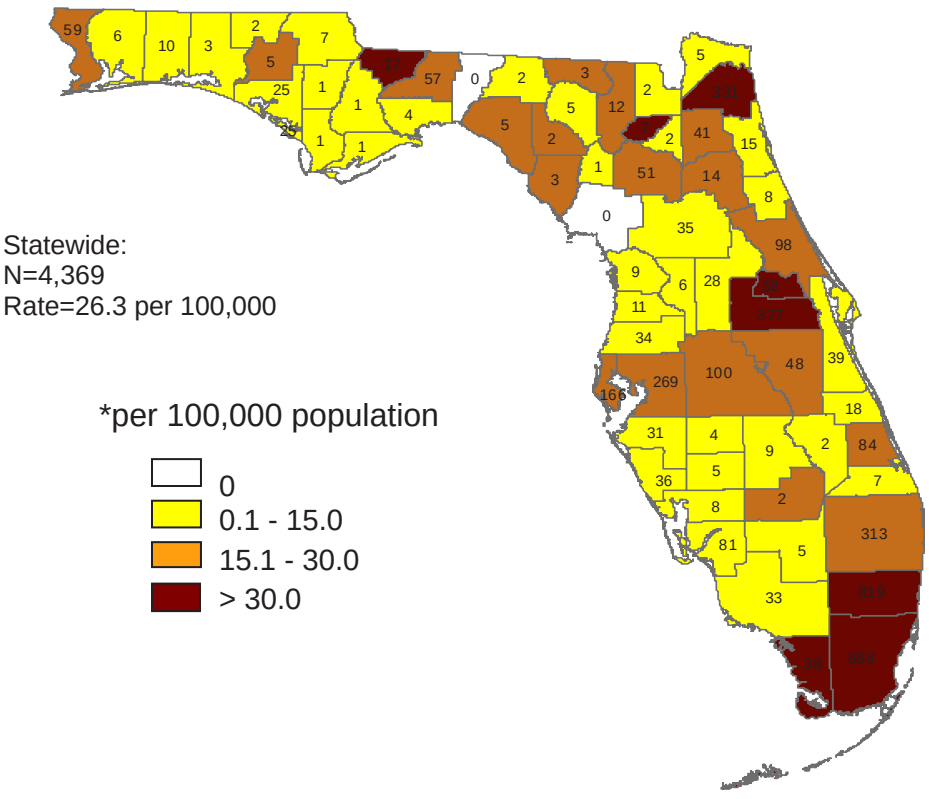
Selected Notifiable Diseases and Conditions

Acquired Immune Deficiency Syndrome/ Human Immunodeficiency Virus

In 2007, Florida ranked third among states in the number of reported acquired immune deficiency syndrome (AIDS) cases (U.S. data not yet available for 2008 or 2009). California reported 4,952 (13% of the U.S. total), followed by New York with 4,810 cases (13%), then Florida with 3,960 cases (10%) and Texas with 2,964 cases (8%). Florida also ranked third among the 38 states that reported human immunodeficiency virus (HIV) cases in 2007. California reported 17,588 cases (28% of the total), followed by New York with 5,197 cases (8%), then Florida with 5,165 cases (8%), and Pennsylvania with 3,694 cases (6%).

In 2009, at least one AIDS case was reported in all but two counties (Figure 1). Although the AIDS epidemic is widespread throughout Florida, nine counties (Broward, Duval, Hillsborough, Lee, Miami-Dade, Orange, Palm Beach, Pinellas, and Polk) reported a combined total of 3,344 cases, or 76% of Florida's total reported cases in 2009 (N=4,426). Two counties located in the southeastern part of the state, Broward and Miami-Dade, reported a combined total of 1,707 cases in 2009, or 39% of the statewide total.

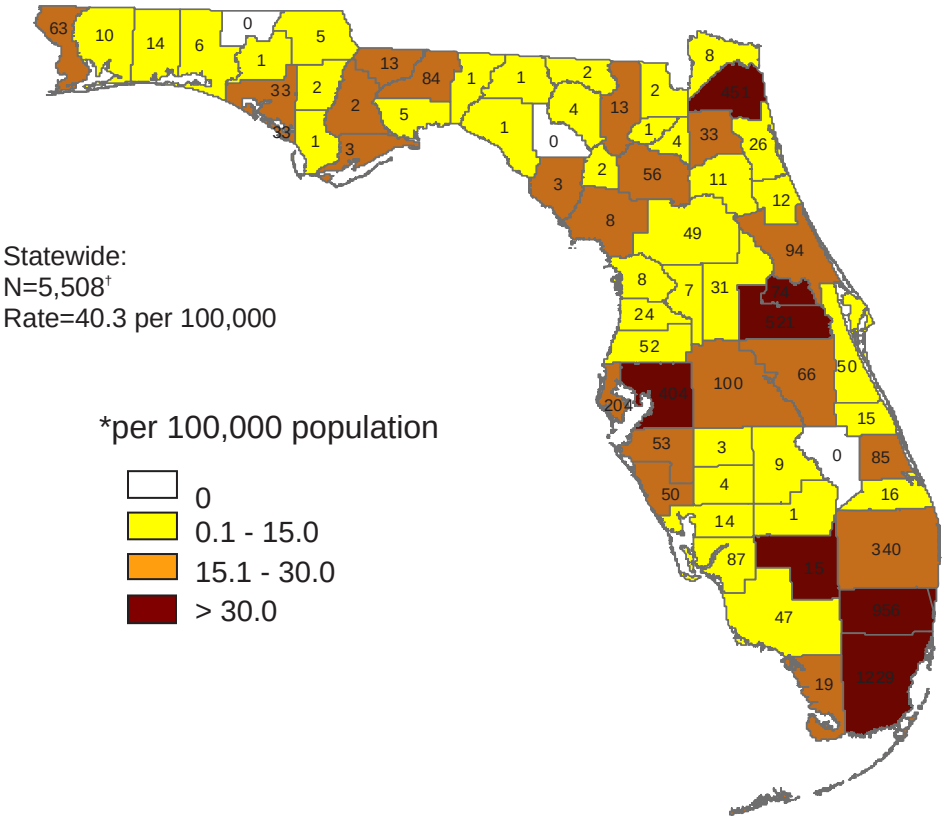
Figure 1. AIDS Case Rates* by County†, Florida, 2009



† County totals exclude Department of Corrections cases (N=60).

In 2009, at least one HIV case was reported in all but three counties, and six counties (Miami-Dade, Broward, Orange, Duval, Hillsborough, and Palm Beach) reported 100 or more cases (Figure 2). These counties reported a combined total of 4,071 cases, or 73% of Florida's total reported cases in 2009 (N=5,608). The greatest numbers of HIV cases were reported from Miami-Dade, Broward, and Orange counties, which reported a combined total of 2,681 cases in 2009, or 49% of the statewide total.

Figure 2. HIV Case Rate* by County†, Florida, 2009



† County totals exclude Department of Corrections cases (N=100).

Generally, the number of HIV cases remained fairly stable with an increase 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 decreased each year until 2007. Enhanced reporting laws were implemented in November 2006, leading to an increase in detection and reporting of HIV cases in 2007 and 2008, followed by an artificial decrease in 2009 (Figure 3 and Table 1).

Figure 3. HIV Cases by Year of Report, 2000-2009

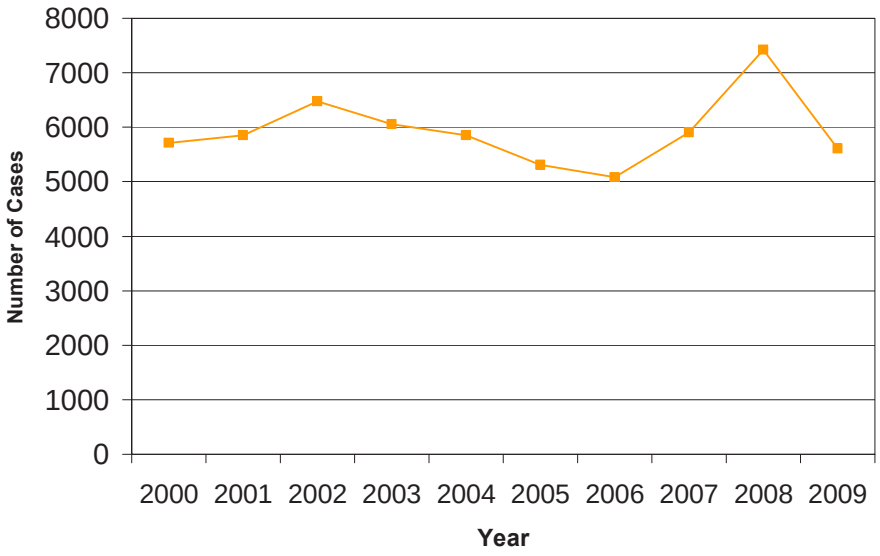


Table 1. HIV Case Rate* by Year of Report†, Florida, 2000-2009

Year	Rate*
2000	33.2
2001	35.7
2002	38.8
2003	35.4
2004	33.4
2005	29.8
2006	27.5
2007	31.5
2008	39.3
2009	29.8

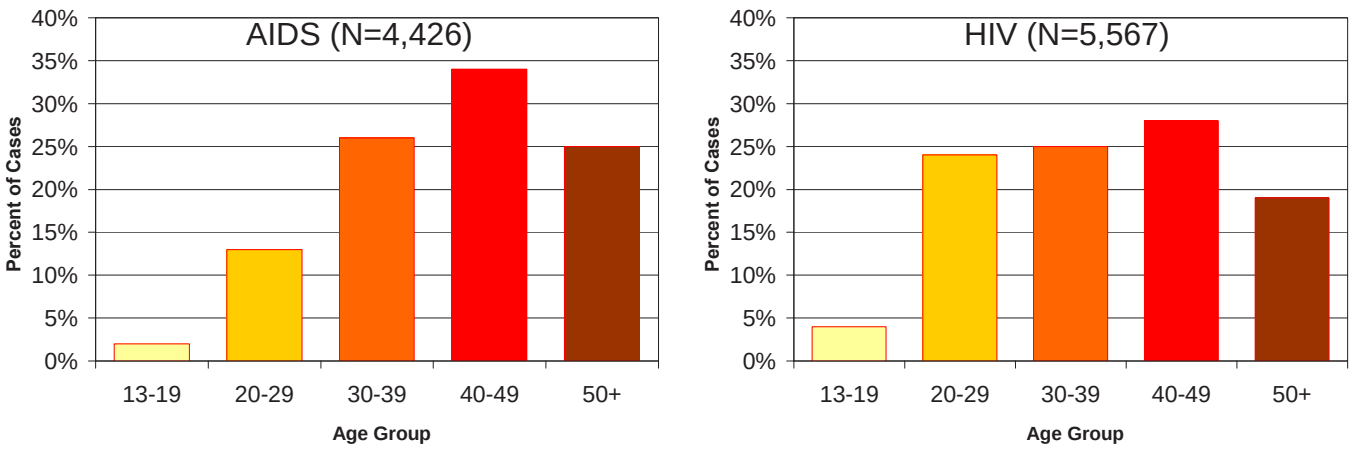
†Data for Acquired Immune Deficiency Syndrome and Human Immunodeficiency Virus are presented here by report date which corresponds to other diseases in this table. However, cases can be added or removed from a previous year based on additional laboratory results or updated demographic data. As such, historical year numbers may differ in this table to the data presented in their program specific summary in Section 2.

*per 100,000 population

HIV/AIDS Cases by Age, Sex, and Race

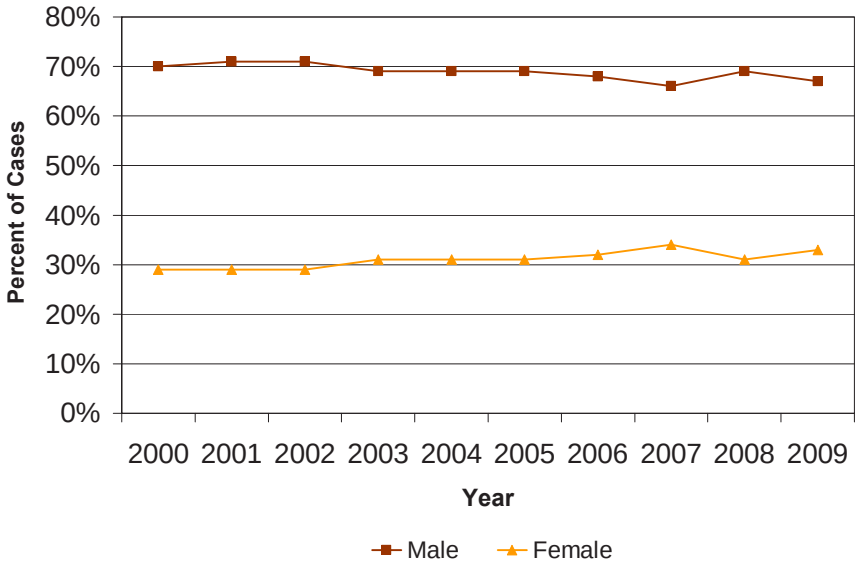
As in previous years, the greatest proportion of AIDS cases reported in 2009 was among people 40 to 49 years old (34%) (Figure 4). The 30 to 39 age group was second, with 26% of the reported AIDS cases, followed by the 50 and older age group with 25%. Compared with AIDS cases, a greater proportion of HIV cases in 2009 were also reported among those aged 40 to 49 (28%) followed by those aged 30 to 39 (25%) and aged 20 to 29 (24%).

Figure 4. Age Distribution of Florida's Adult AIDS Cases Compared with the Age Distribution of Florida's Adult HIV Cases, 2009.



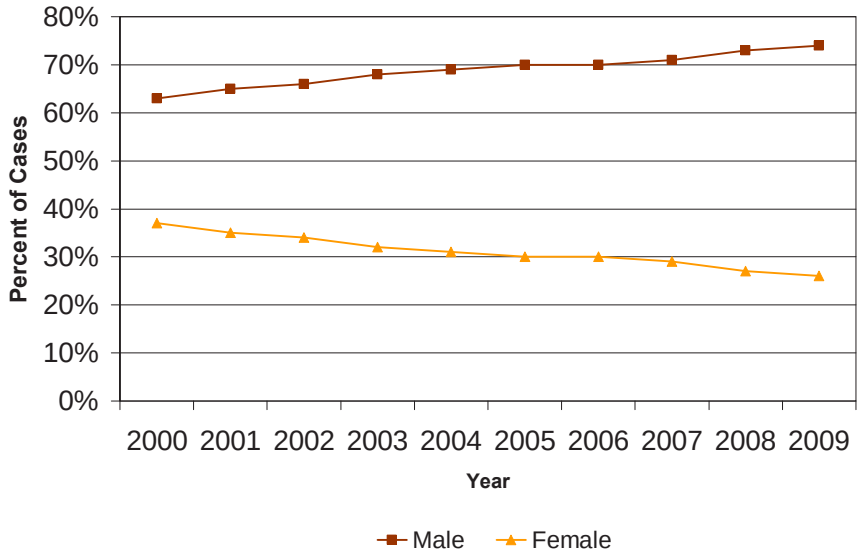
In 2000, 30% of the AIDS cases reported in Florida were female (Figure 5). Over the past ten years, the proportion of AIDS cases among men and women has remained fairly level. The male-to-female ratio declined slightly from 2.4:1 in 2000 to 2.1:1 in 2009. In 2009, the case rate per 100,000 population was 38.6 among adult males and 17.8 among adult females, indicating that AIDS cases in this period were still more likely to be reported among men than women in Florida.

Figure 5. Percentage Of Adult AIDS Cases By Sex And Year Of Report, Florida, 2000-2009



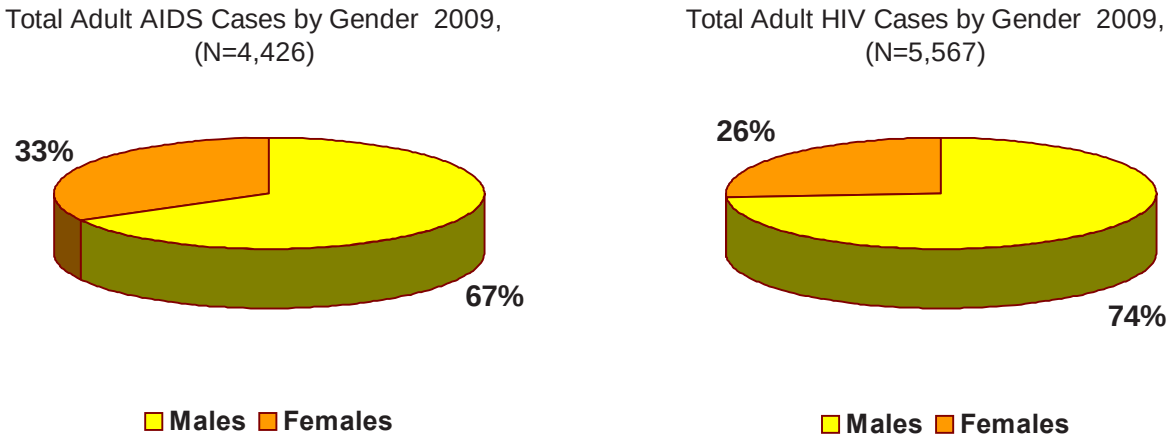
In 2000, 37% of the HIV cases reported in Florida were female (Figure 6). Over the past ten years, the proportion of HIV cases among men has increased while the proportion among women has decreased. The result is an increase in the male-to-female ratio, from 1.7:1 in 2000 to 2.8:1 in 2009. This pattern differs from that seen for AIDS cases during the same time period.

Figure 6. Percent of Adult HIV Cases by Gender and Year of Report, Florida 2000-2009



In 2009, a total of 2,978 adult males and 1,448 adult females were reported with AIDS, representing 67% and 33% of cases, respectively (Figure 7). Also in 2009, a total of 4,116 adult males and 1,451 adult females were reported with HIV infection, representing 74% and 26% of cases, respectively.

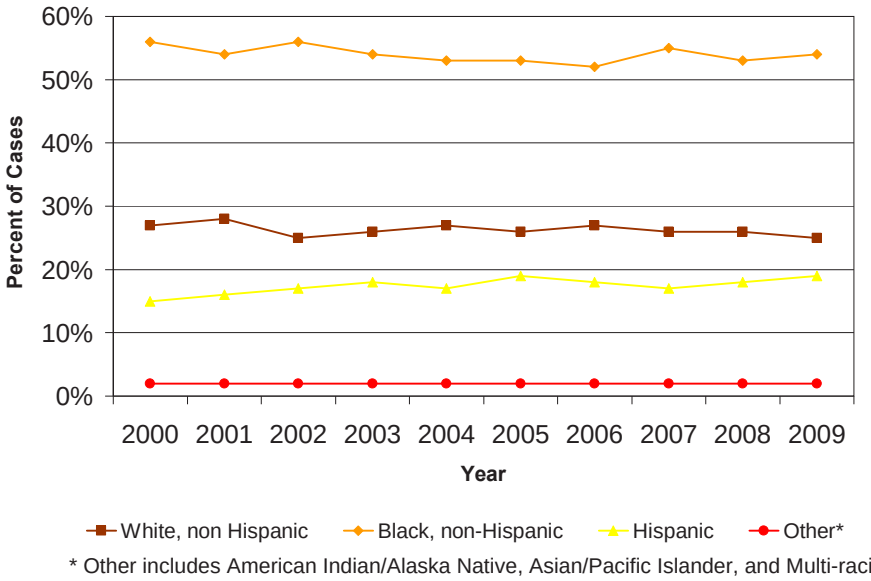
Figure 7. Percentage of Adult AIDS and HIV Cases by Gender, Florida 2009



HIV case reporting, implemented in July 1997, tends to identify newer infections than are reflected by AIDS case data, although we do not know the proportion of diagnosed HIV cases that were recently acquired. HIV case reports augment AIDS case data and provide good information by age, sex, and race/ethnicity on persons who have been tested confidentially.

Of the adult AIDS cases reported in Florida in 2000, 27% were white, compared with 56% black and 15% Hispanic (Figure 8). Over the past ten years, the proportion of AIDS cases among whites, blacks, and Hispanics has remained fairly stable.

Figure 8. Percent of Adult AIDS Cases by Race/Ethnicity and Year of Report, Florida 2000-2009



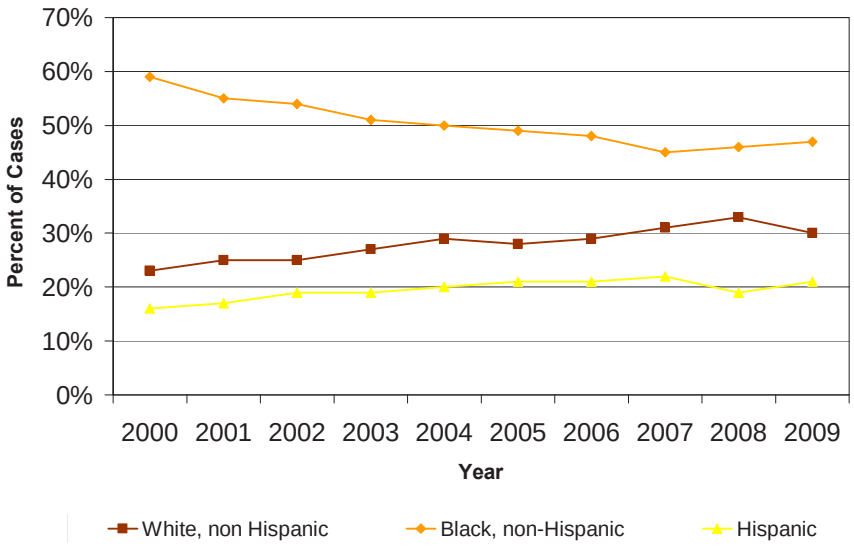
* Other includes American Indian/Alaska Native, Asian/Pacific Islander, and Multi-racial

Factors Affecting Disparities

- Late diagnosis of HIV
- Access to/acceptance of care
- Delayed prevention messages
- Stigma
- Non-HIV STDs in the community
- Prevalence of injection drug use
- Complex matrix of factors related to socioeconomic status

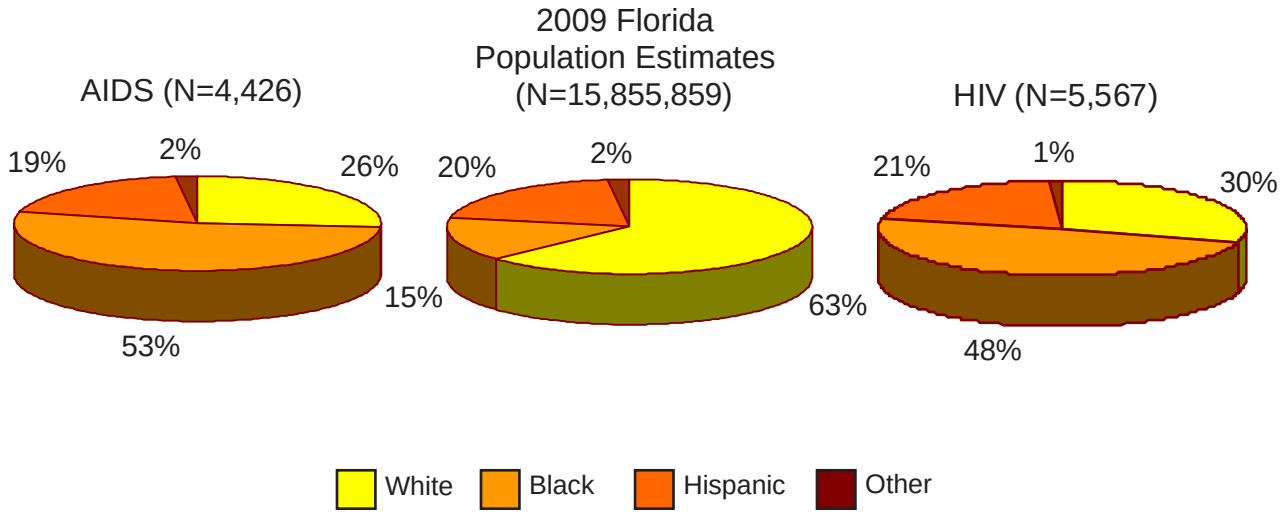
Of the adult HIV cases reported in Florida in 2000, 23% were white, while 59% were black and 16% Hispanic (Figure 9). The percent of black HIV cases has decreased by 20% from 2000 to 2009. In contrast, increases were observed among both white (30%) and Hispanic (31%) HIV cases over this same time period.

Figure 9. Percent of Adult HIV Cases by Race/Ethnicity and Year of Report, Florida 2000-2009



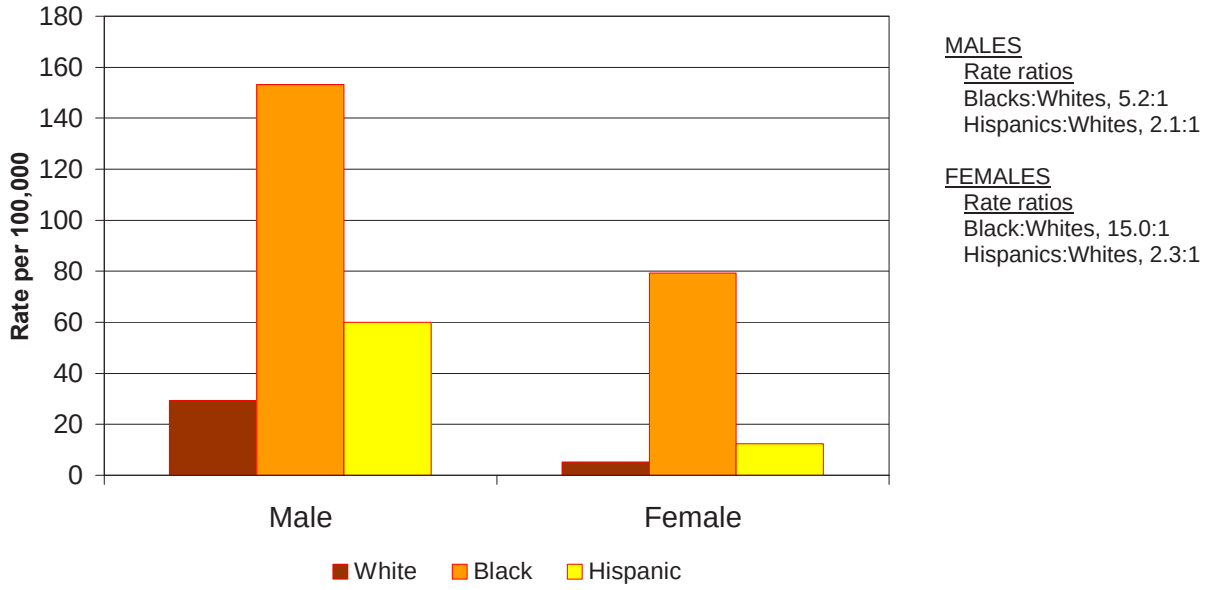
Blacks comprise only 15% of the adult population, but represent 53% of the AIDS cases and 48% of the HIV cases reported in 2009 (Figure 10). Hispanics comprise 20% of Florida's adult population, and account for 19% of the AIDS cases and 21% of the HIV cases.

Figure 10. Percentage of Adult AIDS Cases and HIV Cases by Race/Ethnicity, Florida, 2009



Black men and, to an even greater extent, black women are over-represented in the HIV epidemic (Figure 11). The HIV case rate for 2009 is five times higher among black men than among white men, and 15 times higher among black women than among white women. Hispanic male and female rates are twice the rates among their white counterparts.

Figure 11. Adult HIV Cases and Case Rates per 100,000 Population by Sex and Race/Ethnicity, Florida 2009

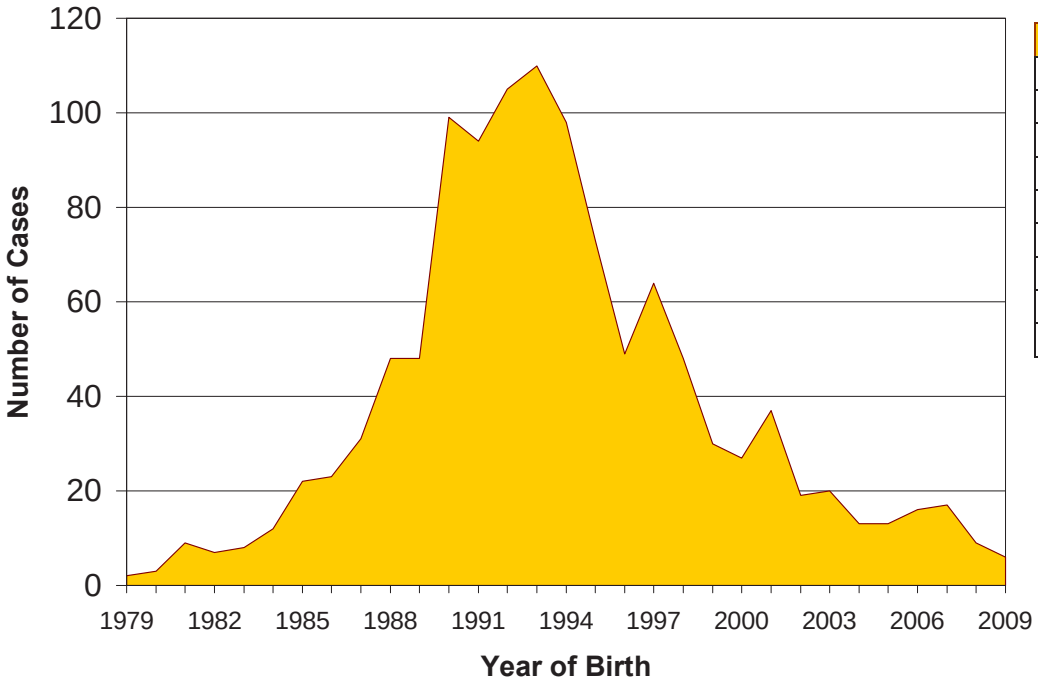


Perinatal HIV/AIDS Cases

Of the 1,161 perinatally infected babies born in Florida through 2009, two were born as early as 1979 (Figure 12). The number of HIV-infected babies born continued to rise through 1993. In April 1994, the Public Health Service released guidelines for zidovudine (ZDV) use to reduce perinatal HIV transmission, and in 1995 recommendations for HIV counseling and voluntary testing for pregnant women were published. Florida law, beginning in October 1996, required offering HIV testing to pregnant women. Because of this increase in testing for HIV infection, more HIV positive women could be offered ZDV during their pregnancy. 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. 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. Numerous additional initiatives, including provider education and social marketing, have helped to further educate local providers of the importance of testing pregnant women for HIV, and then offering effective treatment during pregnancy and at delivery to further decrease the chances of vertical transmission.

The use of these medical therapies has been followed by a decrease in the number of perinatally HIV-infected children and a dramatic decline in perinatally-acquired HIV/AIDS since 1994. There was a sharp decrease since 1993 with a leveling trend from 2002 through 2007, followed by another sharp decrease. In summary, these successful initiatives have resulted in a 94% decline in perinatally infected HIV infants in Florida from 1993 (N=110) to 2009 (N=7).

Figure 12. Perinatal HIV/AIDS Cases by Year of Birth, Born in Florida, 1979-2009 (N=1,161)



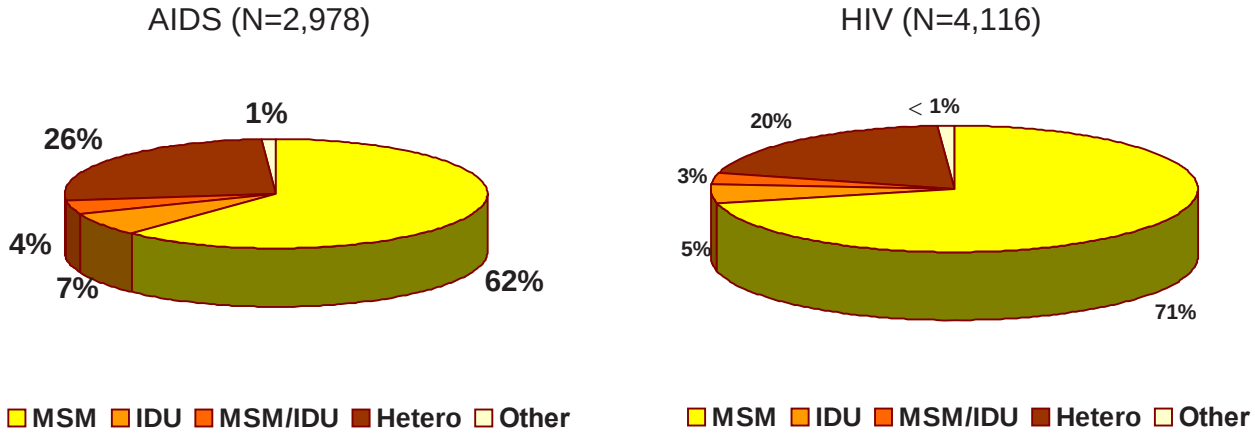
Birth	#	% change
2001	37	
2002	19	-49%
2003	20	5%
2004	13	-35%
2005	13	0%
2006	16	23%
2007	17	6%
2008	9	-47%
2009	7	-22%

HIV/AIDS Cases by Mode of Exposure in Those Over 13 Years of Age

Males

Among the male AIDS and HIV cases reported for 2009, men who have sex with men (MSM) was the most common risk factor (62% and 72%, respectively) followed by cases with a heterosexual risk (26% for AIDS and 20% for HIV) (Figure 13). Injection drug use (IDU) and heterosexual contact were the other defined categories.

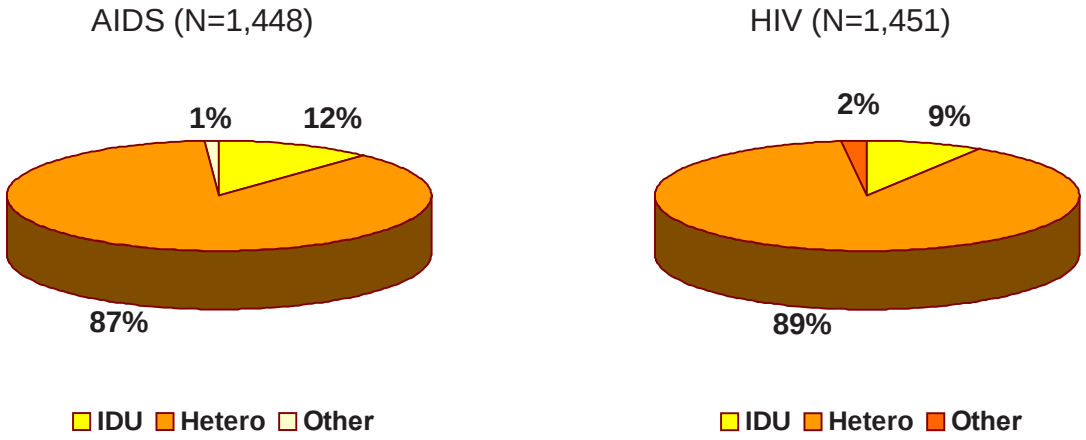
Figure 13. Adult Male AIDS and HIV Cases by Mode of Exposure, Florida, 2009



Females

Among the female AIDS and HIV cases reported for 2009, heterosexual contact was the most common risk factor (87% and 89%, respectively) (Figure 14).

Figure 14. Adult Female AIDS and HIV Cases by Mode of Exposure, Florida 2009



Prevalence Estimate of HIV/AIDS Cases

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, which is 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 serologic status. Approximately 1,039,000 to 1,185,000 people are currently living with HIV infection in the U.S. Florida has consistently reported 10% to 12% of the national AIDS morbidity and currently accounts for 11% of all people living with AIDS in the U.S. The Department of Health now estimates that approximately 125,000 people, or roughly 11.7% of the national total, are currently living with HIV infection in Florida as of the end of 2009.

There are some small differences and a few substantive differences between the proportional distributions of populations living with AIDS in Florida as compared to the U.S. as a whole as noted in the table below (Figure 15). Florida has a slightly higher proportion of women with AIDS (29%) compared to the U.S. (23%). By race and ethnicity, Florida has a slightly higher proportion of AIDS cases among blacks (48%) compared to the U.S. (44%) and a lower proportion among MSM (43% vs. 47%). However, Florida has a far higher proportion of AIDS cases among heterosexuals (38% vs. 24%) and a much lower proportion among IDUs (12% vs. 22%) compared to the U.S.

Figure 15. People Living with AIDS in the U.S. (2007) and Florida (2008)

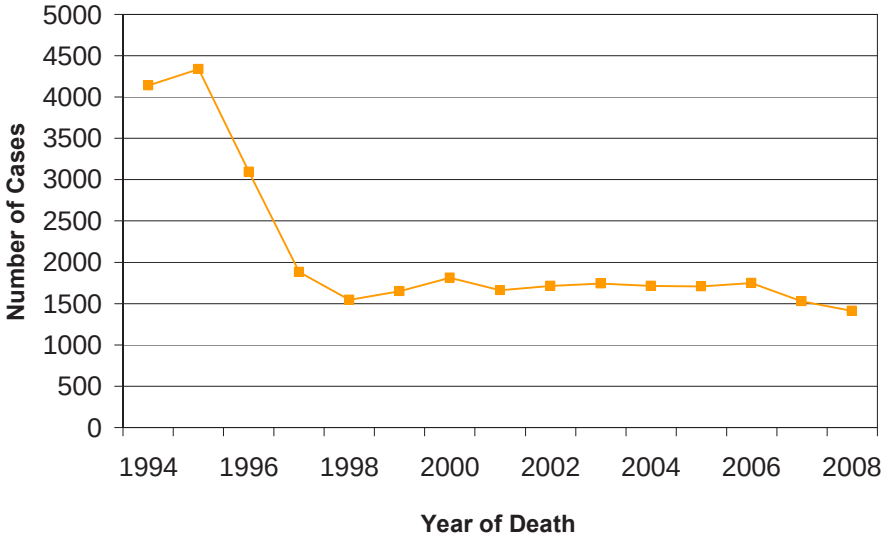
Subgroup	U.S. N=455,636	Florida N=48,179
Male	77%	71%
Female	23%	29%
White	35%	31%
Black	44%	48%
Hispanic	19%	19%
Other	1%	1%
MSM	47%	43%
IDU	22%	12%
MSM/IDU	6%	4%
Heterosexual	24%	38%
Other	1%	3%

Source: U.S. Data: CDC, HIV/AIDS Surv. Suppl. Report, 2007, Vol. 19;
Florida Data: HARS, alive and reported through 2008, as of 04/27/09.

Impact of HIV-Related Deaths

As of December 31, 2008, a total of 114,057 AIDS cases have been reported in Florida. Of these cumulative cases, 62,565 (55%) were known to have died. HIV-related deaths decreased markedly from 1996 to 1998, after the advent of highly active anti-retroviral therapy (HAART) in 1996. A leveling of the trend since 1998 may reflect factors such as viral resistance, late diagnosis of HIV, adherence problems, and lack of access to or acceptance of care (Figure 16). In 2007, for the first time in 10 years, the number of HIV-related deaths decreased, by 13% from the previous year, and 65% since the peak year in 1995. Deaths decreased an additional 7%, down to 1,412 in 2008. Decreases among males and females were observed in all racial/ethnic groups, except white females (where there was no change). Racial/ethnic disparities are evident in the death rate data.

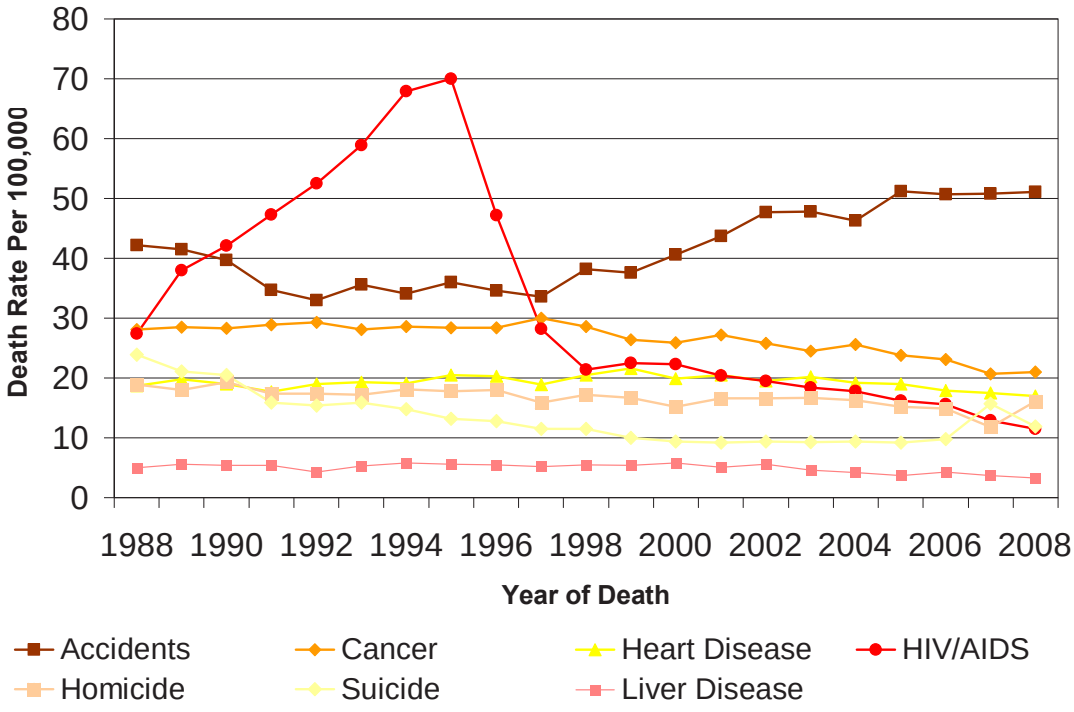
Figure 16. Resident HIV Deaths, by Year of Death, Florida 1995–2008



Race/Ethnicity	2008	
	No.	Rate
White Male	299	5.4
White Female	65	1.1
Black Male	533	37.8
Black Female	317	20.9
Hispanic Male	133	6.6
Hispanic Female	44	2.2
Other**	21	4.4
TOTAL	1,412	7.5

The peak year for HIV deaths in Florida residents was 1995 (Figure 17). In 2008, HIV was the sixth leading cause of death among people aged 25 to 44 as recorded by Florida's Office of Vital Statistics.

Figure 17. Death Rates from Leading Causes of Death Among People 25-44 Years of age, by Year of Death, Florida 1988-2008



Arsenic Poisoning

Description

The human health effects from arsenic poisoning have been the focus of recent attention at the federal and state level. On January 23, 2006, the U.S. Environmental Protection Agency (EPA) set the arsenic standard for drinking water at ten parts per billion. This level is designed to protect consumers served by public water systems from the adverse health effects of chronic exposure to arsenic. Common sources of potential arsenic exposure in Florida are chromated copper arsenate (CCA) treated wood, tobacco smoke, certain agricultural pesticides, some homeopathic and naturopathic preparations, and folk remedies. In addition, arsenic is a naturally occurring contaminant in water in certain areas of Florida effecting (unregulated) private drinking wells.

Arsenic intoxication may affect multiple organ systems. Acute exposure to toxic amounts of arsenic may include signs and symptoms such as vomiting, abdominal pain, diarrhea, light-headedness, headache, weakness, and lethargy. These signs and symptoms may rapidly lead to dehydration, low blood pressure, fluid build-up in the lungs, congestive heart failure, and shock. Different clinical manifestations might follow, including abnormal heartbeats (slow or fast), altered mental status, and multi-system organ failure, which may ultimately lead to death. Prolonged arsenic exposure has been associated with a greatly elevated risk of skin, lung, liver (angiosarcoma), bladder, kidney, and colon cancers. Skin lesions, nerve problems, and anemia are also key findings of chronic arsenic exposure.

Arsenic poisoning can be measured by testing hair, fingernail clippings, blood or urine of the patient. Testing of urine is considered the most reliable method for acute exposures. For surveillance and reporting, only 24-hour urine and urine creatinine tests are considered valid tests. Elevated inorganic or total urinary arsenic levels >50 µg/L total for a 24-hour urine as determined by a laboratory test meets the laboratory criteria for diagnosis.

Most cases of arsenic-induced toxicity in humans are 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.

Disease Abstract

Arsenic poisoning became a reportable condition in Florida on November 24, 2008. Cases designated with a confirmed or probable arsenic poisoning diagnostic status were extracted from the Merlin disease reporting system for exposures that occurred in 2009.

There were nine cases of arsenic poisoning reported during 2009. Counties that reported these cases are Bay (1), Broward (1), Charlotte (1), Hillsborough (1), Palm Beach (1), St. Johns (2), St. Lucie (1), and Pinellas (1). Two-thirds of cases were in men. Cases ranged from 43 to 85 years of age; the mean and median case ages were 60 and 56, respectively.

Among the nine reported cases of arsenic poisoning, six were among whites and two among non-whites and all eight of these cases were also non-Hispanic. One case was reported with both unknown race and ethnicity. Source of arsenic exposure was unknown for most of the

cases (6). The potential sources identified for the remaining three cases were drinking well water, smoking (cigar), and use of vitamin supplements.

Prevention

Arsenic poisoning can be prevented through surveillance for potential sources of exposure and education of consumers. Water from public supplies must be tested for arsenic by Florida law. The drinking water standard is set at 10 micrograms of arsenic per liter (µg/L). Drinking water from private wells, however, is not subject to the same testing requirements. In areas with known high arsenic levels in ground or well water, individual wells may need to be tested specifically for arsenic.

Prevent arsenic exposure by following these general tips.

- Have well water tested for arsenic.
- Stop smoking, since many tobacco products may contain arsenic.
- Ensure a well balanced diet rich in selenium, other antioxidants, and folate.
- When using CCA-treated lumber in non-residential applications, 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 sealant of any existing CCA-treated lumber surfaces.

Additional Resources:

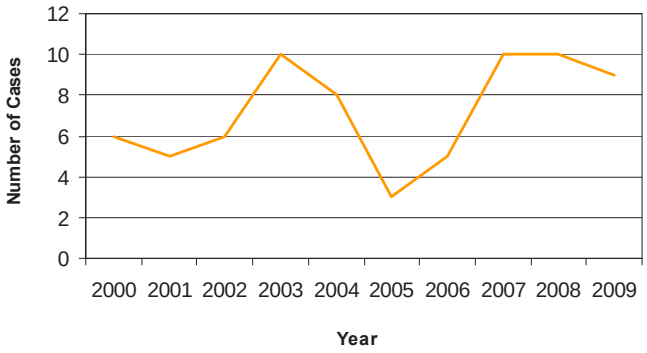
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.bt.cdc.gov/agent/arsenic/.

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/Chemical_Surveillance/index.html.

Brucellosis

Brucellosis: Crude Data	
Number of Cases	9
2009 incidence rate per 100,000	0.05
% change from average 5 year (2004-2008) reported cases	21.71
Age (yrs)	
Mean	33.3
Median	34
Min-Max	7 - 51

Figure 1. Brucellosis Cases by Year Reported, Florida, 2000-2009



Disease Abstract

From 2000 to 2009, 78 cases of human brucellosis were reported in Florida, with 73 (94%) confirmed. There were nine cases reported in 2009; eight confirmed and one probable; one case was fatal. Not included in this tally was one case epidemiologically linked to a *Brucella suis* blood culture positive family member which occurred in 2009 but was reported in 2010, and a *B. abortus* infected patient from El Salvador identified while visiting Florida.

Speciation was available in six cases; five *B. suis* and one *B. melitensis* infections were identified. Location of exposure was determined for eight of the cases from 2009, with five reported as being acquired in Florida and three acquired outside the U.S. (1 Egypt, 2 Mexico). The *B. melitensis* case was acquired in Egypt and the second imported case reported exposure from a blood transfusion administered in Mexico in 2008. The third case reported as imported from Mexico was culture positive for *B. suis*, but did not report any likely exposure while traveling in Mexico or residing in Florida. One *B. suis* culture-positive case of unknown origin was a Mexican immigrant who last traveled to Mexico 10 years previously and who currently worked on a Florida farm that had wild pigs present, although he denied hunting. 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 six cases (67%) and cases were primarily white (89%), and non-Hispanic (89%). Affected people ranged from 7 to 51 years old. Incidence was highest in those aged 45 to 54, representing three of the nine cases (Figure 3). One death occurred in a 47-year-old man with a genetic disorder that may have contributed to the severity of the infection. The deceased, a life-long hunter, was blood culture-positive for *B. suis* and had myocarditis associated with the infection. Risk factors identified in seven of the nine cases included: hunting feral pigs and/or handling feral hog carcasses (five cases including a seven year old child); consuming unpasteurized milk products (one imported); and transfusion (one imported).

There were at least 115 private laboratory workers in Florida who were exposed to *Brucella* cultures while working with diagnostic specimens in 2009, including 43 high-risk and 72 low-risk exposures. In addition, a blood culture from one of the 2009 confirmed cases resulted in exposures of five personnel at a North Carolina (N.C.) laboratory. One of the N.C. laboratorians developed *Brucella* infection and her blood culture isolate resulted in 13 additional laboratory exposures at a N.C. hospital lab.

Figure 2. Brucellosis Cases by Month of Onset, Florida, 2009

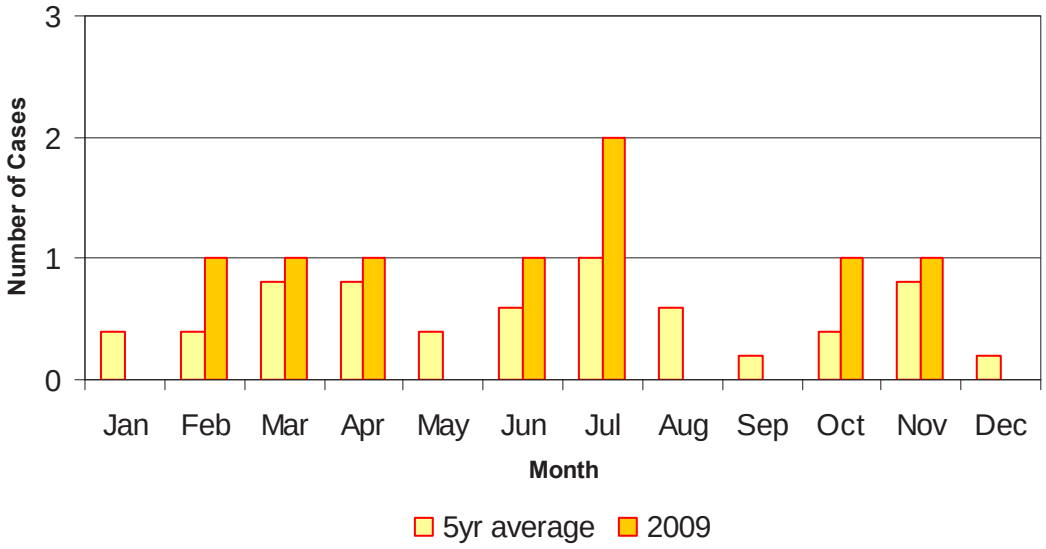
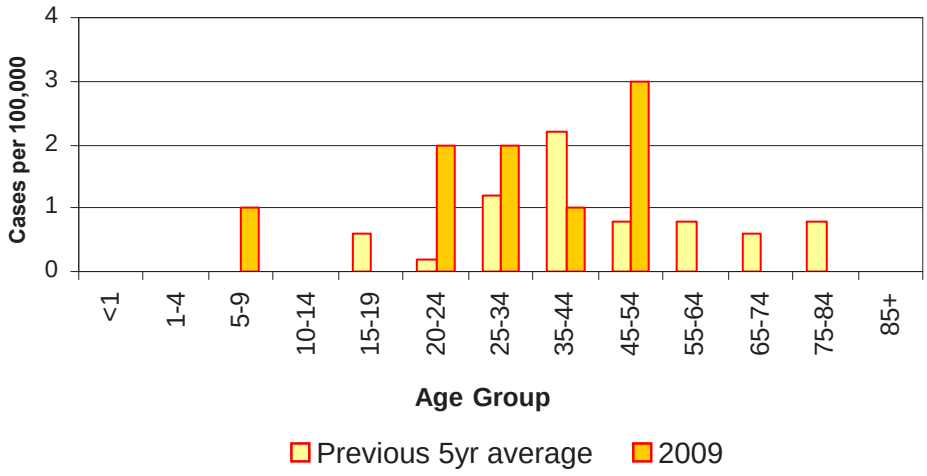


Figure 3. Brucellosis Cases by Age Group, Florida, 2009



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 should be done for laboratory personnel to ensure knowledge of appropriate specimen handling (aerosol protection), and clinicians should be reminded to forewarn laboratories working with patient culture samples if *Brucella* is included in the differential diagnosis. Laboratories should be periodically reminded of state and federal confirmation and reporting requirements for this select agent. Continued surveillance and management programs for *Brucella* sp. in domestic livestock will keep exposure risk from domestic animals low in Florida. Surveillance is also important because *Brucella* has the potential for use as a bioterrorism agent.

References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

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. 2006. Brucellosis in humans and animals. World Health Organization Press. Geneva, Switzerland.

Additional Resources

CDC. *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

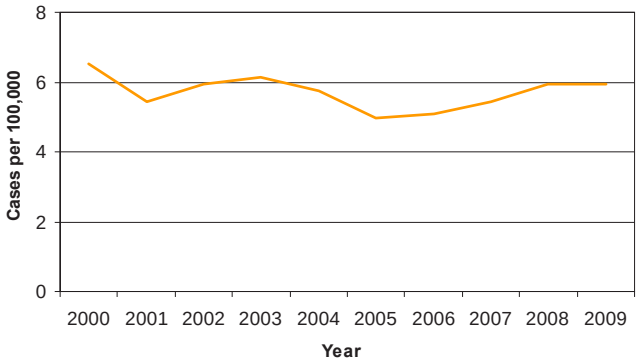
Additional information can also be found at the United States Department of Agriculture, Animal and Plant Health Inspection Services website at http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/

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

Campylobacteriosis

Campylobacteriosis: Crude Data	
Number of Cases	1,120
2009 incidence rate per 100,000	5.95
% change from average 5-year (2004-2008) incidence rate	12.47
Age (yrs)	
Mean	33.02
Median	30
Min-Max	<1 – 96

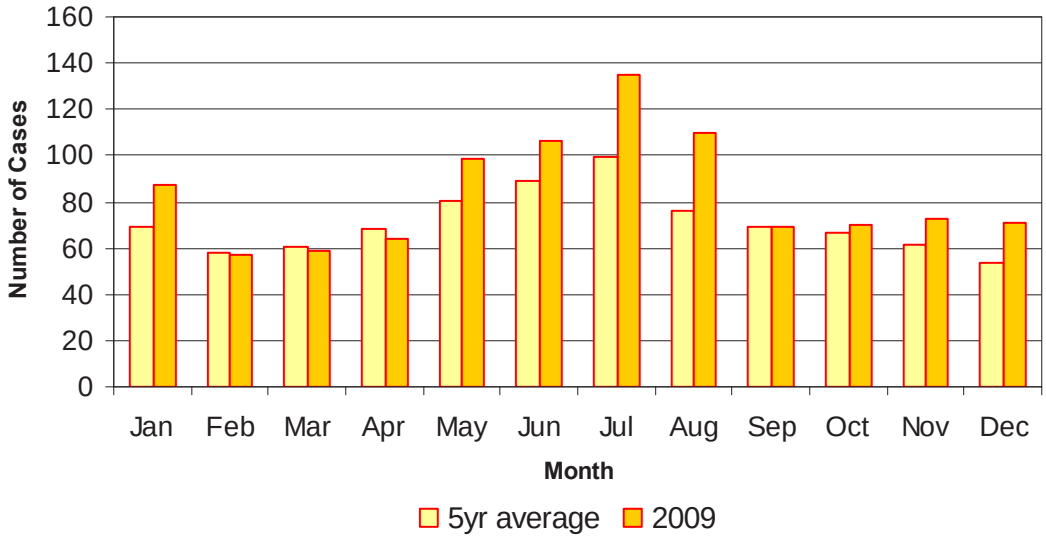
Figure 1. Campylobacteriosis Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

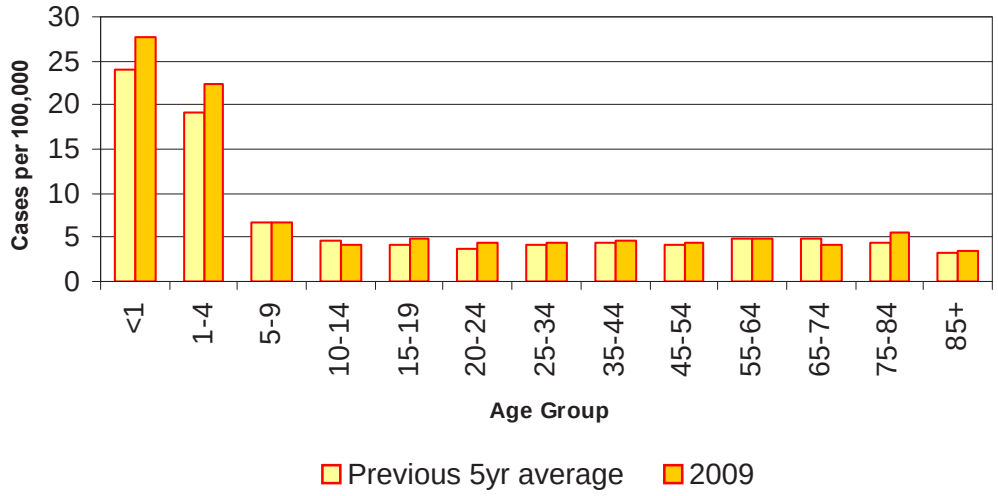
The incidence rate for campylobacteriosis has remained generally stable since 2000 (Figure 1). In 2009, there was a 12.5% increase in comparison to the average incidence from 2004 to 2008. A total of 1,120 cases were reported in 2009, of which 96.16% were classified as confirmed. The number of cases reported tends to increase in the summer months. In 2009, the number of cases reported in the summer of 2009 exceeded the previous five-year averages for the same time period. In 2009, the number of cases exceeded the previous five-year average in all months of the year except February through April (Figure 2). The highest incidence occurs among infants under one year old and children aged one to four years (Figure 3). Overall, 7.1% of the campylobacteriosis cases reported in 2009 were classified as outbreak-related as compared to 5.7% in 2008. The majority of cases classified as outbreak associated were groups of two to four family members who all became ill. Several clusters reported eating undercooked chicken or other common food sources. At least two clusters were attributed to travel to farms outside of the U.S. and one cluster was related to occupational exposure to slaughtered animals. However, the majority of family clusters resulted from person-to-person transmission within the home where one individual was ill from an unknown exposure source and then exposed siblings or parents who then became infected.

Figure 2. Campylobacteriosis Cases by Month of Onset, Florida, 2009



Campylobacteriosis was reported in 58 of the 67 counties in Florida. Counties in north-central and southwestern Florida reported the highest incidence rates.

Figure 3. Campylobacteriosis Incidence Rate by Age Group, Florida, 2009

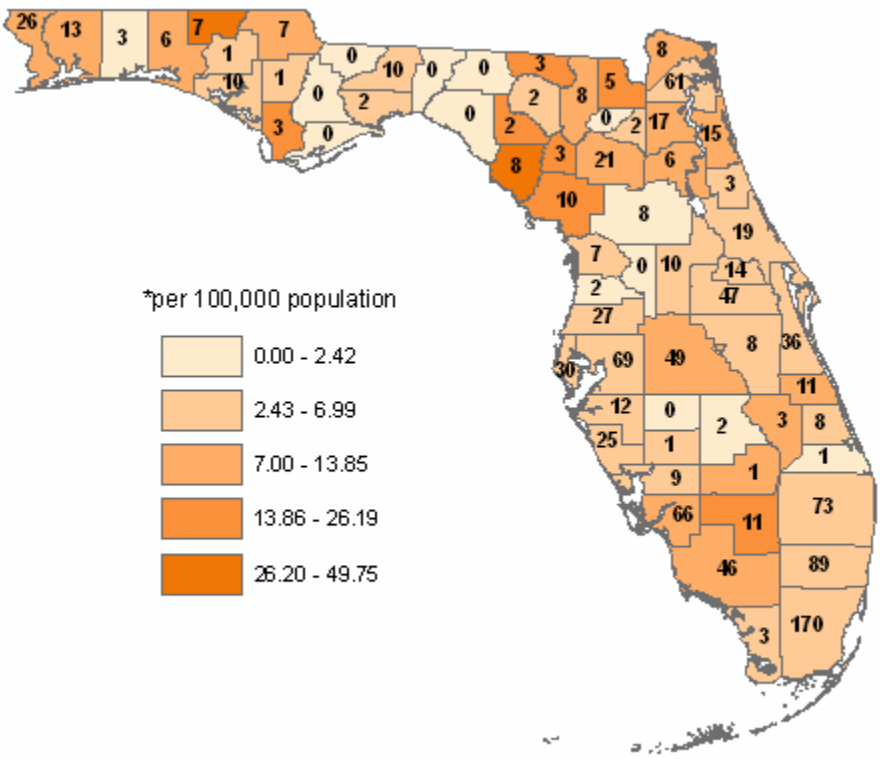


Prevention

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.
- Wash your hands thoroughly before, during, and after food preparation.
- Do not allow fluids from raw poultry or meat to drip on or touch other foods.
- 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.

Campylobacteriosis Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

Additional Resources

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

Carbon Monoxide Poisoning

Description

Carbon monoxide (CO) is an odorless, colorless gas produced as a by-product of combustion. Common sources of CO exposures include gasoline or diesel power generators, motor vehicles, lawn mowers, motorboats, and small engine-powered appliances and tools. Portable propane heaters, non-electric space heaters, natural gas appliances, furnaces, heaters, water heaters, stoves, wood-burning stoves, fireplaces, charcoal grills, and barbecues are also sources. In addition, fires (forest and residential fires) produce CO naturally. CO can build up to dangerous concentrations indoors if fuel-burning devices are not properly installed, vented, operated, or maintained. Emergencies, such as natural disasters and power outages, have led to CO poisoning due to inadequate ventilation or the improper use of equipment such as generators, grills, and camp stoves. Unintentional CO poisoning can occur outdoors, during activities like boating or camping, from sources such as boat exhaust, gasoline-powered generators, and non-electric heaters. Residential fires often result in CO poisoning.

Exposure to high levels of CO can cause loss of consciousness and death. The most common health effects of CO poisoning include: general symptoms (e.g. weakness, drowsiness, and fatigue); neurological symptoms (e.g., headache, dizziness, and confusion); gastrointestinal (e.g., nausea and vomiting); cardiovascular (e.g., chest pain); and respiratory (e.g., shortness of breath). Low-level exposure to CO can result in relatively mild symptoms that are easily confused with other illnesses such as chronic fatigue syndrome, depression, influenza, and migraine headaches. Low-level exposures can also produce more serious illness in people with pre-existing cardiovascular or pulmonary disease (e.g. asthma, chronic obstructive pulmonary disease). Medical professionals or patients may not easily recognize the impacts of these lower level exposures.

Neonates and unborn fetuses are more vulnerable to CO toxicity because of the higher affinity of their hemoglobin for CO compared to adult hemoglobin. There is high risk of neurological sequelae in a fetus with severe maternal CO poisoning; no increased risk is observed in mild unintentional exposures.

Disease Abstract

Carbon monoxide poisoning became a reportable condition in Florida on November 24, 2008. Healthcare providers and emergency responders are required to contact their county health department to report incidents of CO exposures. All laboratory results of patients with volume fractions greater or equal to 0.09 (9%) of carboxyhemoglobin (COHb) in the blood are reportable.

Exposure to CO and CO poisonings are routinely monitored in Florida using two main sources of data, the Florida Poison Information Center (FPIC) data base and chief complaints 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, the county health departments conduct case follow-up and investigation.

For analysis, cases with exposures occurring in 2009, the first year CO poisoning became a reportable disease, were included. Incomplete cases and cases marked for deletion were excluded from this report. In 2009, there were 44 CO poisoning cases reported, but one with exposure occurring in 2008 was excluded from this analysis. The 43 reported cases with

exposures in 2009 were classified as confirmed (36), probable (6) and suspected (1). The total number of cases reported during each month is given below (Figure 1). December (10 cases) and October (7 cases) had the highest numbers.

About half of the CO poisonings were reported in those 35 to 64 years of age (N=21) followed by those 0 to 17 years of age (N=11) (Figure 2). Cases ranged from ages less than one year to 77 years, with 35 and 38 as the mean and median respectively. Cases were primarily white (N=26), with14 cases among non-whites. Three cases were of unknown race. Eight of the 43 cases were reported as having Hispanic ethnicity.

Figure 1: Reported Cases of Carbon Monoxide Poisoning by Month, Florida 2009 (N = 43)

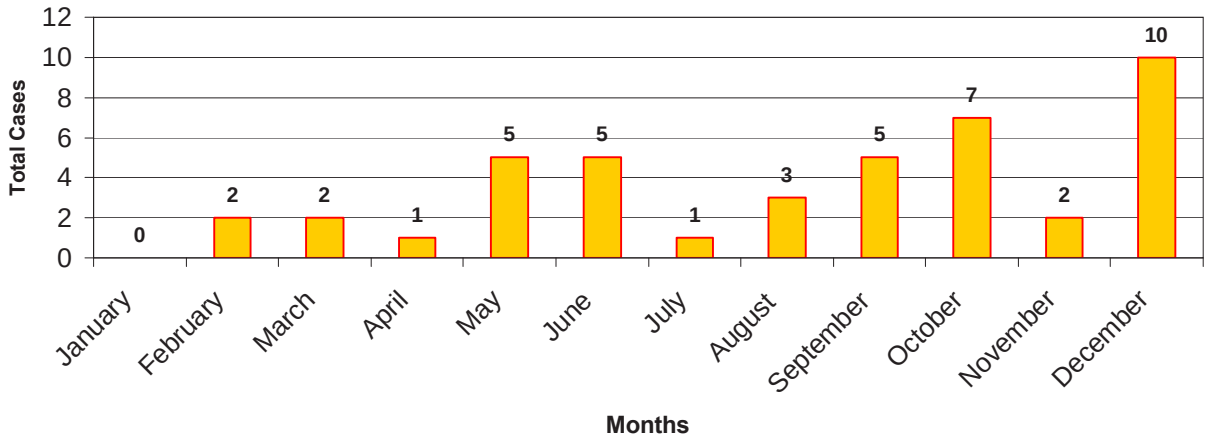
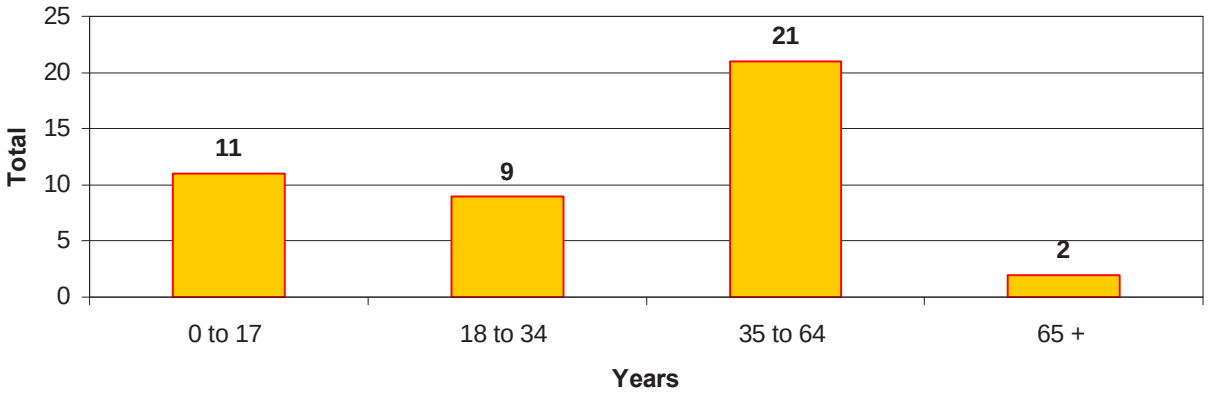


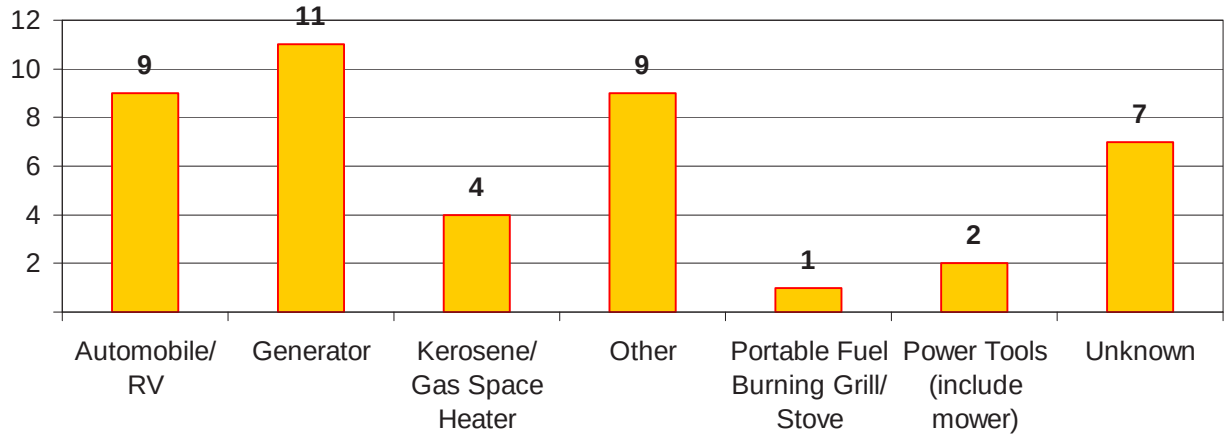
Figure 2: Carbon Monoxide Cases Reported by Age Group, Florida 2009 (N = 43)



The majority of CO poisoning cases were unintentional (81%). Only 16% were recorded as intentional. Seventy-five percent (N=32) of the exposures occurred in residential areas, with fewer in the workplace (N=5), at an unknown site (N=3), in a lake/river/ocean (N=2), or at school (N=1).

The majority of cases were the result of exposures to generators (N=11) and automobiles (N=9). The category 'Other' contained four cases related to fire (smoke inhalation) and two related to propane-powered machines.

Figure 3: Carbon Monoxide Case Distribution by Exposure Type, Florida 2009 (N = 43)



Most confirmed cases were reported from Escambia (6), Broward (5), Orange (5), Miami-Dade (4), Duval (4), and Palm Beach (4) counties.

Prevention

The Florida Department of Health (FDOH) addresses CO exposure and poisoning through surveillance and education. Following are measure to prevent carbon monoxide exposure.

- Make sure all appliances are properly installed and used according to the manufacturer's instructions.
- Install a carbon monoxide alarm in the home if there are combustion appliances in the home or in an attached garage.
- 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.
- Keep the rear window or tailgate of a moving vehicle closed, as CO from the exhaust can be pulled inside.
- If you suspect that you or others are experiencing any symptoms of CO poisoning, open doors and windows, turn off gas appliances and go outside.

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

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

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Additional Resources:

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

Useful links:

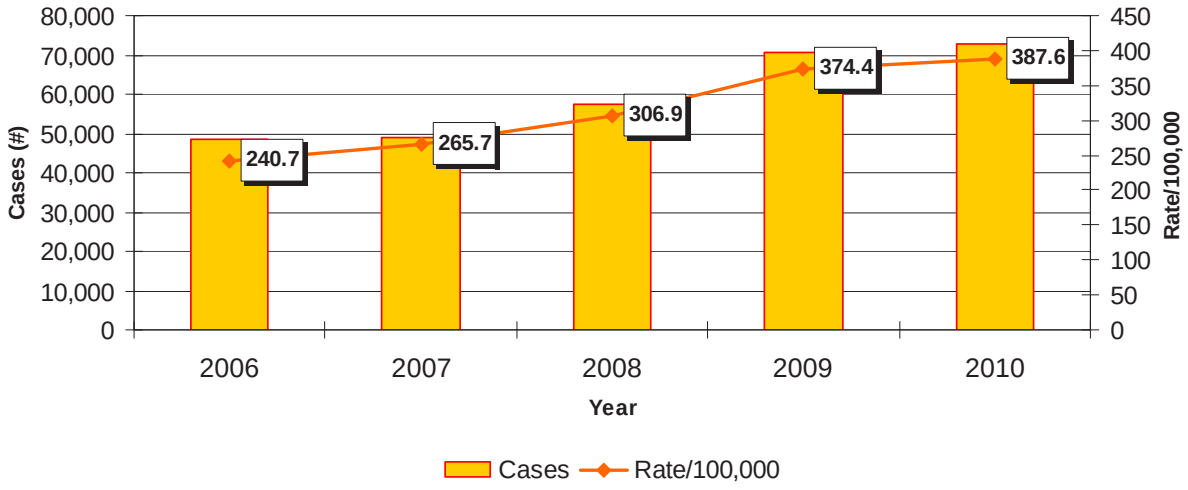
- CO Hospitalization and Death Data available at Florida Charts. http://www.floridatracking.com/HealthTrackFL/DealIndicator.aspx?PageId=11200
- Carbon monoxide brochures available in English, Spanish and Creole. See http://www.myfloridaeh.com/community/indoor-air/carbon.htm

Chlamydia

Disease Abstract

Chlamydia trachomatis infection became reportable by Florida law in 1993. Early chlamydia detection and prevalence monitoring remain priorities nationwide, emphasized by the Infertility Prevention Project (IPP), Healthy People 2010 Objectives, and Healthcare Effectiveness Data and Information Set (HEDIS) measures. Chlamydia accounts for 75% of all reportable sexually transmitted diseases (STD) in Florida and remains one of the most commonly reported of all infectious diseases in the nation and state. Chlamydia is the leading preventable cause of infertility in women. In 2009, 72,937 chlamydia cases were reported in Florida, which is 387.6 cases per 100,000 population. Of these cases, 21 were congenital (Figure 1).

Figure 1. Reported Cases and Rates of Chlamydia by Year, Florida 2005-2009



Age

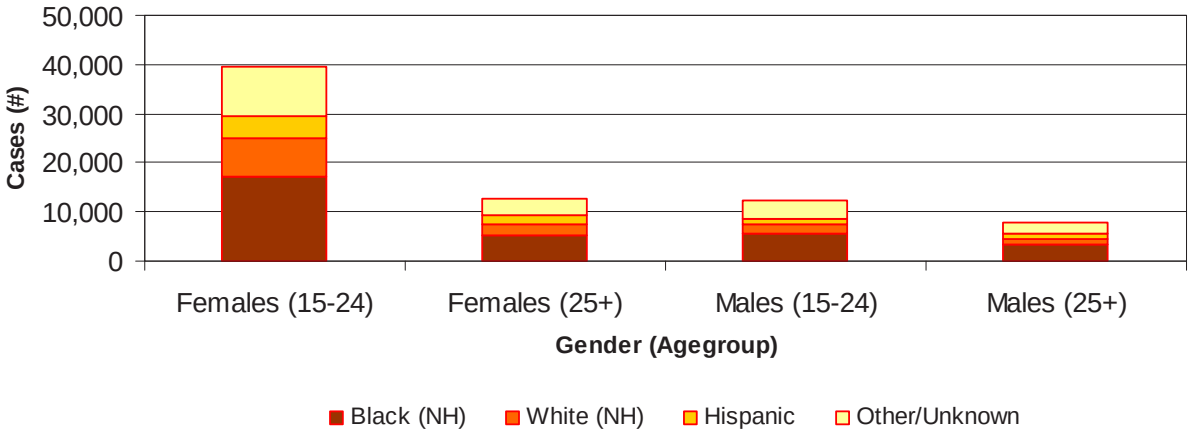
The most important risk factor for chlamydial infection is age. People between the ages of 15 and 24 represented 13% of Florida's population in 2009, yet accounted for 71% of all reported chlamydia cases in Florida during the same time period. In this age cohort, over 50,000 cases were reported in 2009 (Table 1), a modest increase from 2008 (3%).

Table 1. Chlamydia Cases and Rates by Age Group, Florida, 2009

Age Groups	Cases Reported	Rate per 100,000 population
15-19 years	24,403	2,028.3
20-24 years	27,341	2,258.9
25-29 years	11,518	988.04
30-34 years	4,547	407.43
35-39 years	2,113	179.11
40-44 years	1,083	86.0

When data were examined by age in single years, rather than as age groups, reported numbers of cases peak at the age of 19. Adolescents and young adults are disproportionately affected with chlamydia compared to older populations. Although the prevalence of chlamydia is the highest among those under 25 years of age, women and minorities are disproportionately affected (Figure 2).

Figure 2. Reported Cases of Chlamydia by Gender, Age, Race/Ethnicity, 2009



Gender

Three out of every four reported cases of chlamydia are in women. Florida-specific trends parallel national data, which also indicate that infection is most prevalent in women under the age of 25. Among cases reported in women, those under the age of 30 account for 90% of reported infections. The highest chlamydia rates are among women aged 15 to 19 (3,375.22 per 100,000 population). The rate for women in the 20 to 24 age group was slightly lower at 3,312.7 per 100,000 population.

The difference between the reported rates by gender is due in part to much more frequent screening in women than in men. This could lead to greater detection of infections in women while not accurately reflecting the prevalence in men. Regardless of gender, adolescents and young adults (under age 25) account for the majority of reported cases by age (males 60%, females 75%). In 2009, 20- to 24-year-old men had the highest rate among male age groups (1,243.9 per 100,000 population). This rate was trailed by a rate of 733.1 per 100,000 population for males between the ages of 15 and 19.

Race and Ethnicity

Disparities among racial and ethnic groups exist in the number of cases reported annually. Non-Hispanic black female adolescents and young adults have higher rates compared to similar non-Hispanic whites or Hispanics. Among women, the case rate for non-Hispanic blacks 15 to 24 years old (6,918.43 per 100,000 population) is five times higher than the second highest rate, in non-Hispanic whites aged 15 to 24 (1,313,01 per 100,000 population). Among reported cases, non-Hispanic blacks accounted for 43.4% of the chlamydia cases in 2009; non-Hispanic whites accounted for 18.5%; Hispanics accounted for 11.9%; and people in other or unidentified racial-ethnic groups accounted for 26.6% of cases.

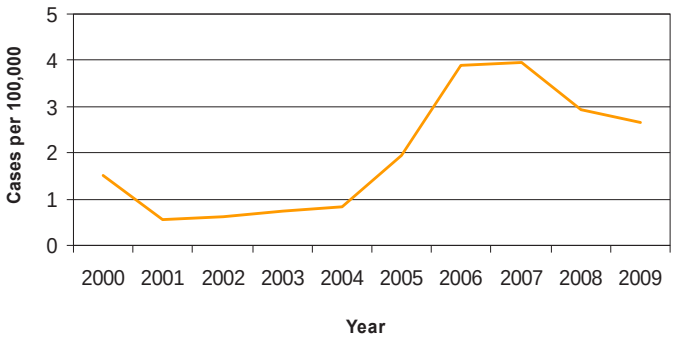
Prevention

The Centers for Disease Control and Prevention (CDC) recommends annual chlamydia screening (and treatment) for all sexually active women under age 26, as well as older women with risk factors such as new or multiple sex partners. Chlamydia prevention strategies also include assuring that male sexual partners of infected women get treatment, promotion of condom use and reduction of number of sexual partners. The sustained elevated rates of chlamydia can, in part, be attributed to policy changes, implementation of reporting systems, national surveillance projects, and changes in testing technologies throughout the past ten years.

Cryptosporidiosis

Cryptosporidiosis: Crude Data	
Number of Cases	497
2009 incidence rate per 100,000	2.64
% change from average 5-year (2004-2008) incidence rate	-3.33
Age (yrs)	
Mean	35.83
Median	33
Min-Max	<1 - 92

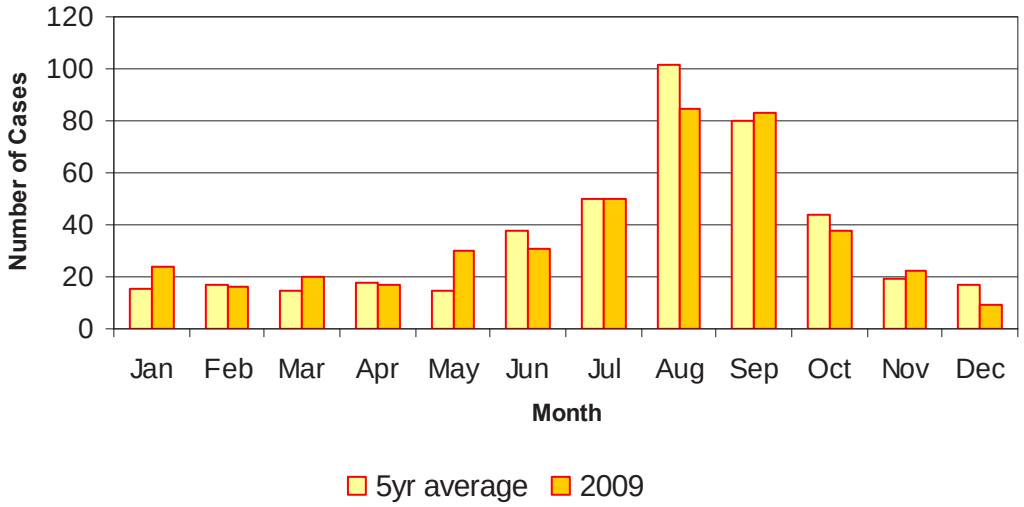
Figure 1. Cryptosporidiosis Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

Cryptosporidiosis is a diarrheal disease caused by the organism *Cryptosporidium parvum*. A total of 497 cases of cryptosporidiosis were reported in 2009, of which 91.75% were classified as confirmed. Just over 10% of all reported cases were classified as outbreak-related, which is a decrease from 13% the previous year; 4.2% 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 2004. Increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water is more common. In 2009, the number of cases occurring each month was similar to the previous five-year average in each month (Figure 2). The overall increase in cryptosporidiosis over the past decade is consistent with national trends and is likely due to a combination of actual increased disease incidence, increased clinical recognition, increased diagnostic testing, increased sensitivity of diagnostic tests, and increased use of recreational water settings by young children. The recent introduction of nitazoxanide, the first licensed treatment for the disease, may have influenced clinical practice because diagnostic testing for *Cryptosporidium* now can lead to specific treatment.

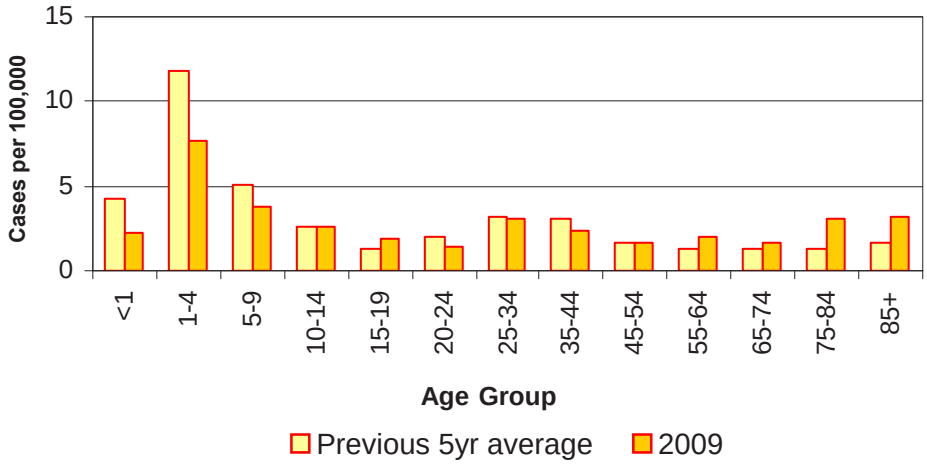
Figure 2. Cryptosporidiosis Cases by Month of Onset, Florida, 2009



Rates are higher among children under 10 years old, with the highest rates occurring in the one to four age group (7.7 per 100,000) (Figure 3). However, there has been an increase in incidence among those over age 55 above the previous five-year average. In 2009, approximately 34% of reported cases who were less than five years old attended daycare centers. The smaller second peak in incidence among adults 20 to 44 years old may be attributed to family contact with infected children (Figure 3).

Cases of cryptosporidiosis were reported in 49 of the 67 counties in Florida. Bay County, with the highest incidence, reported none of their cases as being outbreak-associated. Santa Rosa County had a lower incidence rate, but reported 69.2% of their cases as being associated with an outbreak at a public swimming pool. Additional counties with a high proportion of outbreak-associated cases include Pinellas (26.1%) and St. Johns (25.0%).

Figure 3. Cryptosporidiosis Incidence Rate by Age Group, Florida, 2009



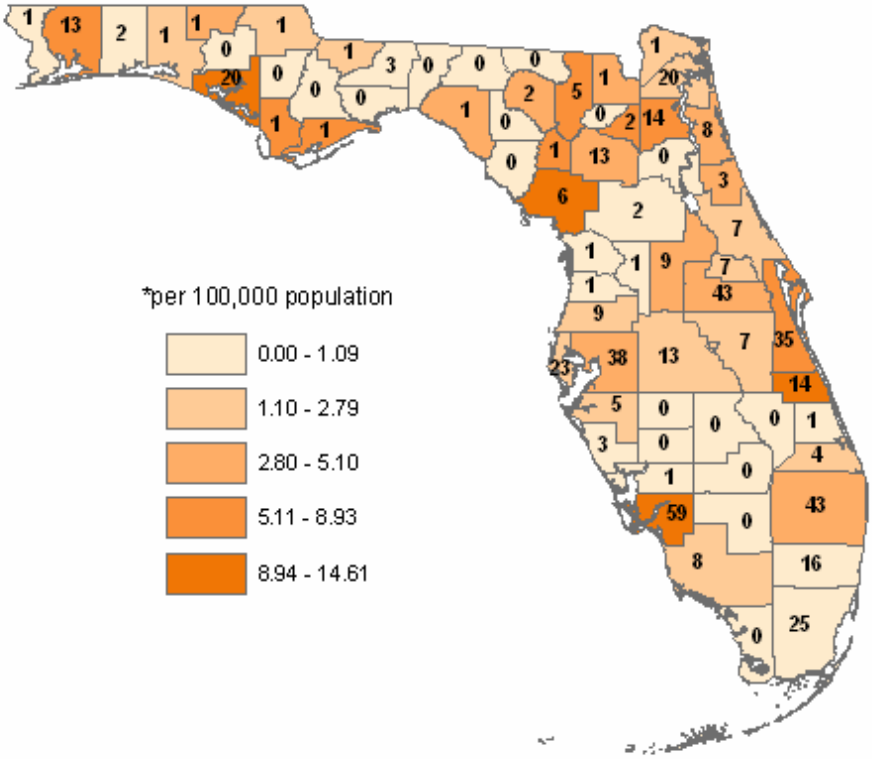
Prevention

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.

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.

Cryptosporidiosis Incidence Rate* by County, Florida, 2009



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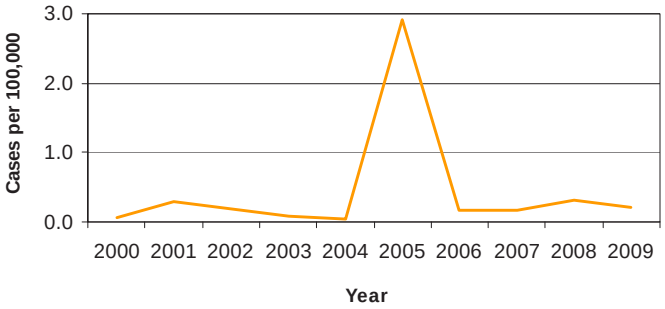
Additional Resources

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	40
2009 incidence rate per 100,000	0.21
% change from median 5-year (2004-2008) reported cases	25.00
Age (yrs)	
Mean	49.3
Median	53.5
Min-Max	3 - 78

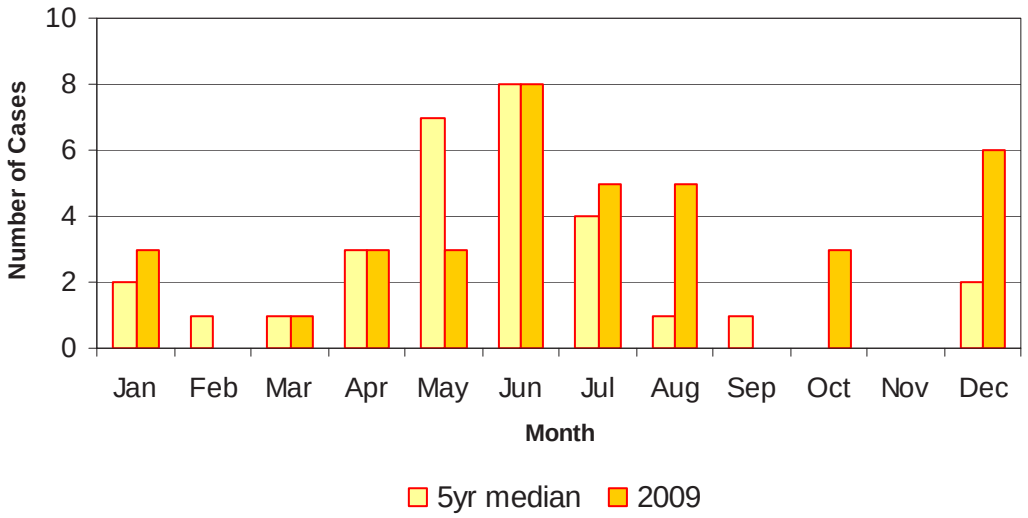
Figure 1. Cyclosporiasis Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

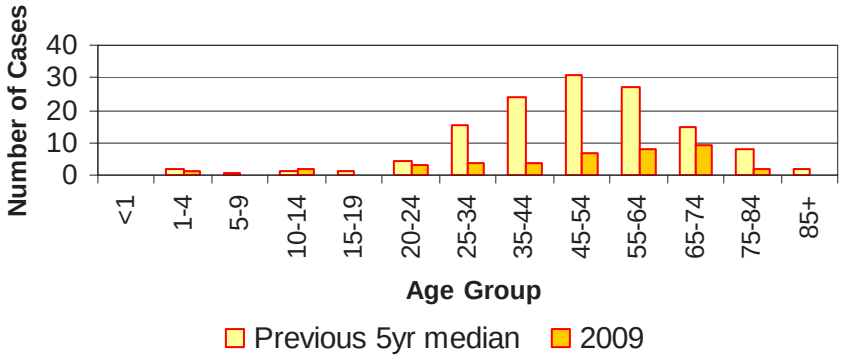
Cyclosporiasis is a parasitic diarrheal disease caused by the organism *Cyclospora cayetanensis*. With the exception of a large outbreak of cyclosporiasis in 2005 (493 cases from Florida; see the notable outbreaks section of the *Florida Morbidity Statistics Report 1997-2006* for more details), the incidence 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 2009 has increased by 25%, with a total of 40 cases reported. Only 5% of the cases reported in 2009 were considered outbreak-associated. In 2009, 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 May (Figure 2). The peak in late spring and early summer may reflect the seasonal variation of endemic cyclosporiasis in countries that export fruits and vegetables to the U.S.

Figure 2. Cyclosporiasis Cases by Month of Onset, Florida, 2009



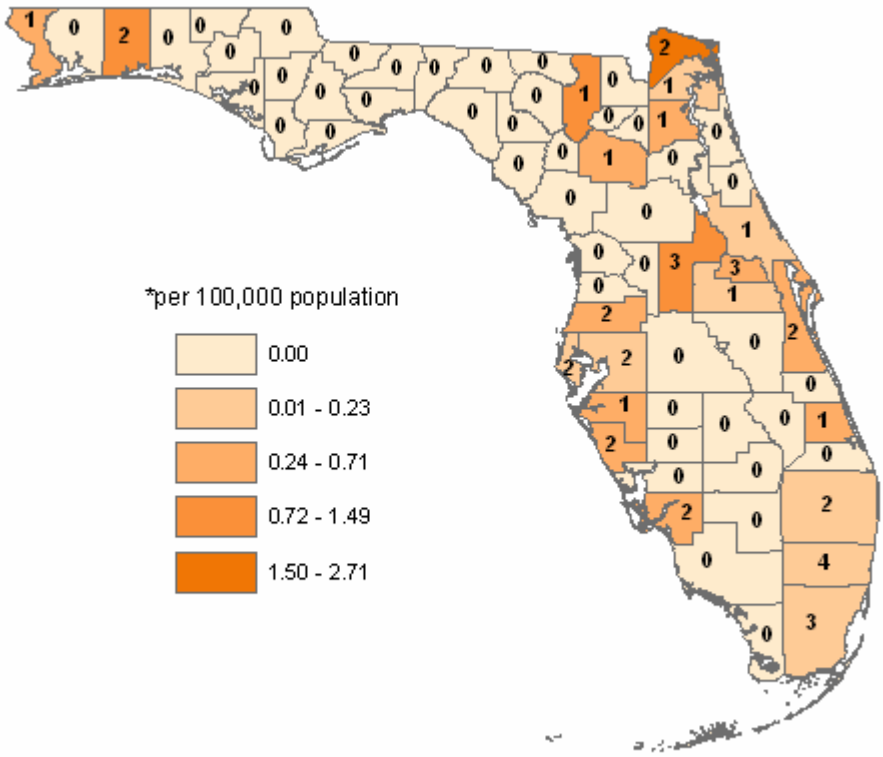
In 2009, 87% of the cases were reported in those who were between the ages of 25 and 84, with the largest increase occurring in the 65-74 age group (Figure 3).

Figure 3. Cyclosporiasis Cases by Age Group, Florida, 2009



Cyclosporiasis was reported in 22 of the 67 counties in Florida, with the largest number of cases occurring in Broward County.

Cyclosporiasis Incidence Rate* by County, Florida, 2009



References

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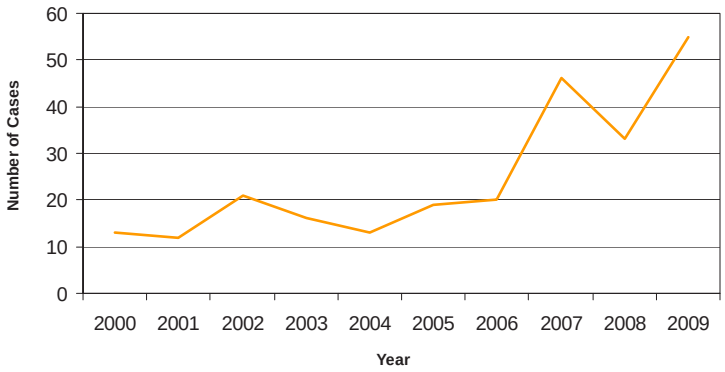
Additional Resources

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	55
2009 incidence rate per 100,000	0.29
% change from average 5-year (2004-2008) incidence rate	104.39
Age (yrs)	
Mean	46.27
Median	49
Min-Max	5 - 73

Figure 1. Dengue Fever Cases by Year Reported, Florida, 2000-2009



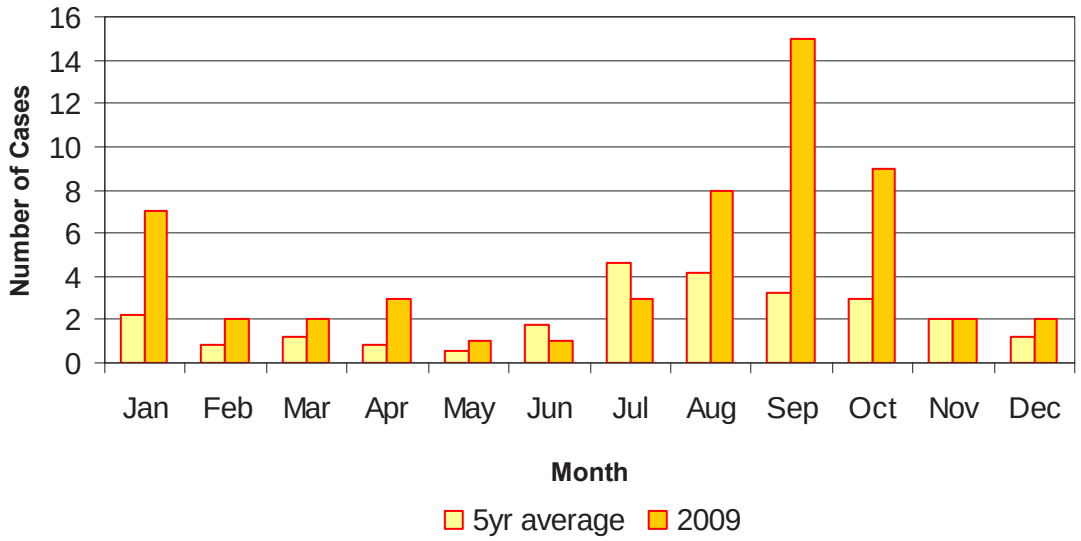
Disease Abstract

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). The case counts have remained elevated, with 33 cases reported in 2008 and 55 in 2009. This increase is likely due to greater prevalence of dengue worldwide and epidemics in areas with high volume of travelers to the United States, 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 more efficient than the *Aedes albopictus* species more common elsewhere. Florida is protected from establishment of endemic foci partly by 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 this report. [Note: additional cases were detected in Key West in 2010.]

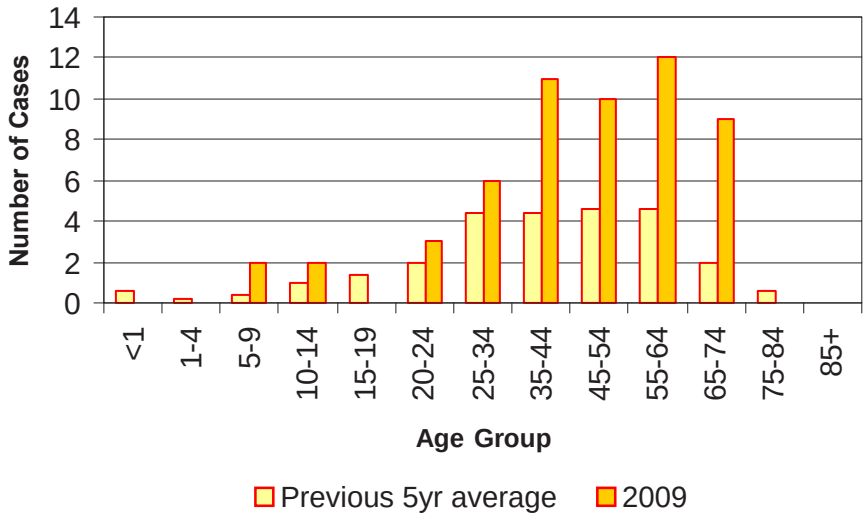
Typically, disease onset for travelers returning to Florida peaks during mid-summer and fall, though cases are reported year-round (Figure 2). The unusual increase in August through October 2009 is primarily due to the Key West outbreak. There were a large number of cases with onset in January this year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

Figure 2. Dengue Fever Cases by Month of Onset, Florida, 2009



In 2009, only the 21 cases associated with Key West were classified as outbreak associated. Most cases (60%) occurred in people 35 to 64 years of age. Among imported dengue cases, 44% reported travel history to the Caribbean immediately prior to symptom onset, and 25% had traveled to Central America, 17% to South America, and 14% to Asia

Figure 3. Dengue Fever Cases by Age Group, Florida, 2009

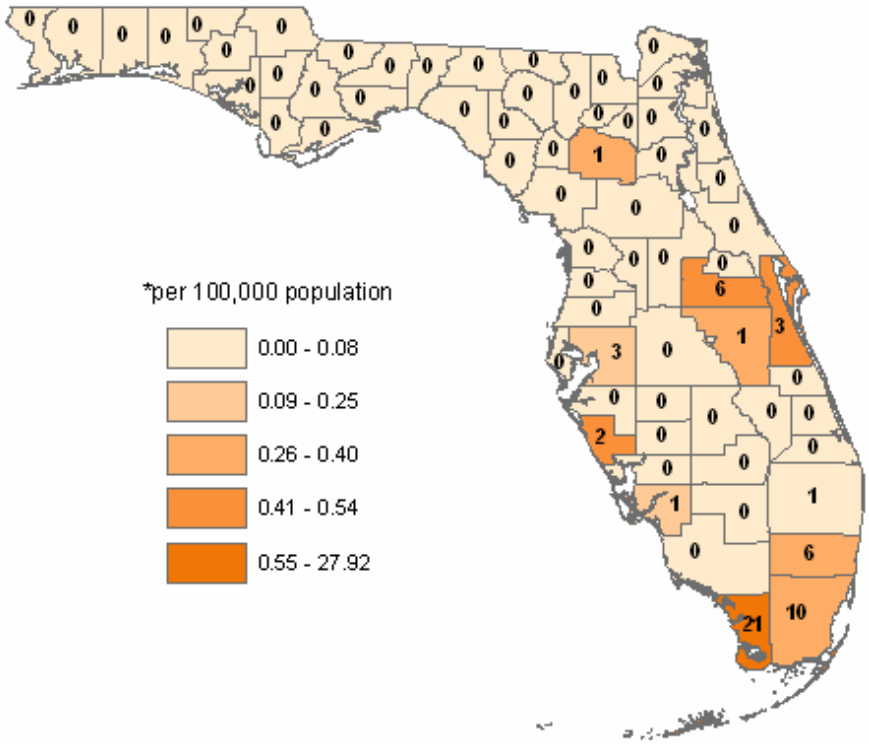


Prevention

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. Travelers should take the following precautions.

- Use insect repellents that contain DEET or other EPA-approved ingredients, such as Picaridin, oil of lemon eucalyptus, or IR3535.
- Avoid spending time outdoors during daytime hours when disease-carrying mosquitoes are most likely to be seeking a blood meal.
- Drain any standing water in containers around the home.
- Dress in long sleeves and long pants to protect your skin from mosquitoes.
- Try to remain in well-screened or air-conditioned areas.

Dengue Fever Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

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

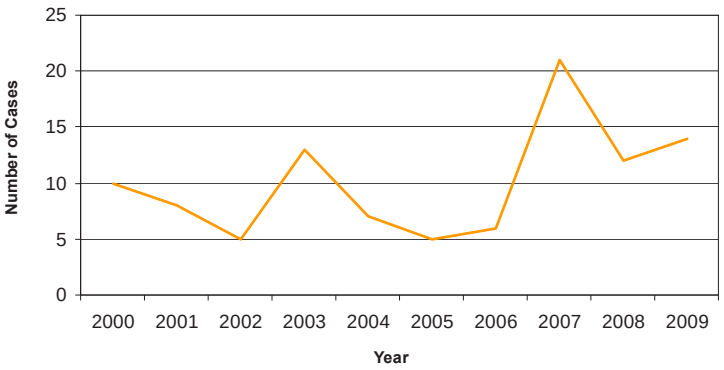
Additional Resources

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.

Ehrlichiosis/Anaplasmosis

Ehrlichiosis/Anaplasmosis (Combined): Crude Data	
Number of Cases	14
2009 incidence rate per 100,000	0.07
% change from average 5 year (2004-2008) reported cases	37.25
Age (yrs)	
Mean	51.71
Median	55
Min-Max	15 - 78

Figure 1. Ehrlichiosis/Anaplasmosis (Combined) Cases by Year Reported, Florida, 2000-2009

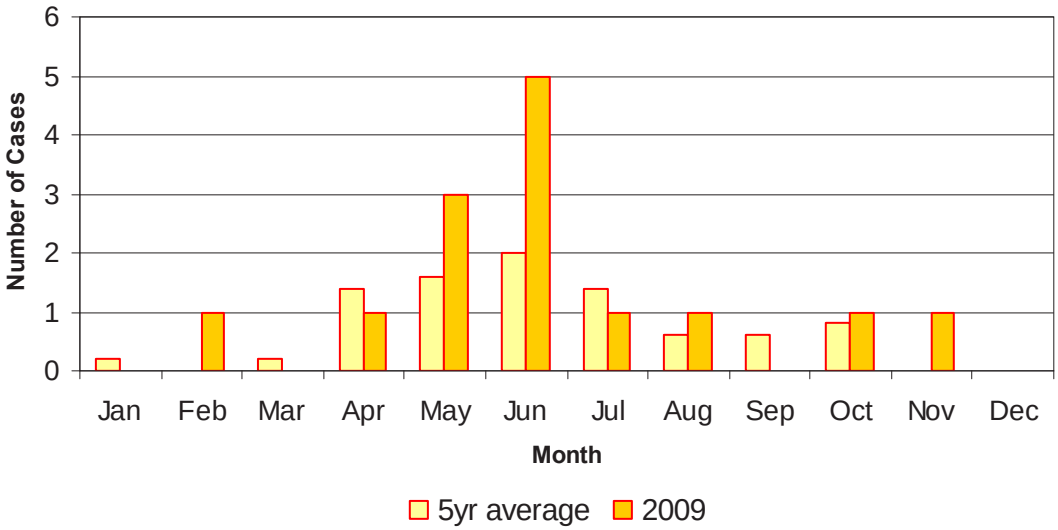


Disease Abstract

Ehrlichia chaffeensis, discovered in 1987, causes human monocytic ehrlichiosis (HME), which is nationally notifiable. *Ehrlichia ewingii* is indistinguishable from *E. chaffeensis* using serologic testing and is present in Florida, 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 immuno-compromised 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 2006, the total number of combined cases of HME and HGA reported ranged from two to thirteen cases per year, but in 2007 there were 21 cases reported (18 HME and three HGA). This number decreased to more typical levels in 2008 and then again in 2009 (Figure 1), with 11 cases of HME and three of HGA reported. Three suspect cases of ehrlichiosis (positive lab results with no clinical information), were also reported in 2009. Increased educational efforts and awareness may have contributed to the increase in reported cases in 2007. White-tailed deer are an important reservoir species for *E. chaffeensis*. Less is known regarding other potential wildlife reservoirs. In addition, there is no standardized tick 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 HME cases than HGA cases reported in Florida. In 2009, 82% of HME and 67% of HGA cases were male. Forty-five percent of HME cases are reported as being acquired in Florida, 27% are acquired in other states, and exposure in 27% of cases is reported as unknown. Most cases are reported in the north and central parts of the state. HGA is more likely to be acquired outside Florida; all three cases reported in 2009 were imported. Though cases of both HME and HGA are reported year-round, peak transmission occurs during the late spring and early summer months (Figure 2). Median age of HME cases was 48 years; all three HGE cases were 65 years or older. No deaths were reported in 2009.

Figure 2. Ehrlichiosis/Anaplasmosis (Combined) Cases by Month of Onset, Florida, 2009

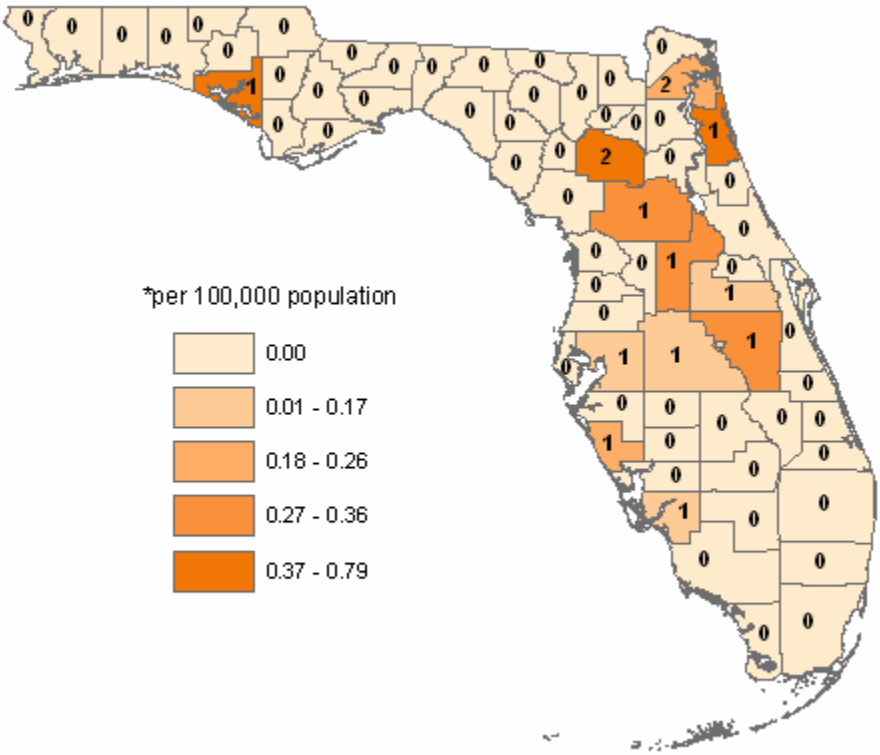


Prevention

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 (Combined) Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

CDC. Diagnosis and management of tickborne rickettsial diseases: Rocky Mountain spotted fever, ehrlichiosis, and anaplasmosis—United States. *MMWR*. 2006;55(RR04); 1-27.

Additional Resources

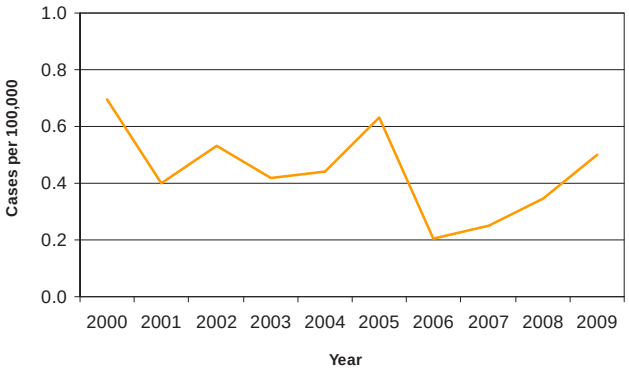
Disease information is also available from the Florida Department of Health at http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm

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

Escherichia coli, Shiga Toxin-Producing

Escherichia coli, Shiga Toxin-Producing: Crude Data	
Number of Cases	94
2009 incidence rate per 100,000	0.50
% change from average 5-year (2004-2008) incidence rate	33.80
Age (yrs)	
Mean	22.27
Median	9.50
Min-Max	0-90

Figure 1. *Escherichia coli* Shiga Toxin-Producing Incidence Rate by Year Reported, Florida, 2000-2009



Description

The most commonly identified Shiga toxin-producing *Escherichia coli* (STEC) in the U.S. is *E. coli* serogroup O157:H7; however, there are many other serogroups that can cause disease due to Shiga toxin. 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 STEC 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 all STEC serogroups reported over the past 10 years, not just serogroup O157:H7; therefore, they cannot be compared to those in previous years' reports.

Disease Abstract

A total of 94 cases were reported in 2009, of which 87 were confirmed. Twenty-two were classified as outbreak-associated. Four cases were acquired in states other than Florida and six were acquired outside the U.S. Almost half (40) of the confirmed cases were caused by serogroup O157:H7 and one was caused by O157:non-motile. Non-O157 serogroups included O103:H2 (14), O26:H11 (7), O111:H8 (5), O111:NM (5), O145:NM (2), O103:H25 (1), O103:NM (1), O118:H16 (1), O121:H19 (1), O123:H2 (1), O3:H8 (1), O45:H2 (1), O45:H2, O26:H11 (1), O49:H21 (1), O70:H11 (1), O91:H14 (1), and O rough:H25 (1). One is still pending final CDC results.

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 2009, there was a 33.80% increase in incidence of new cases in comparison to the average incidence from 2004 to 2008.

Figure 2. *Escherichia coli*, Shiga Toxin-Producing, Cases by Month of Onset, Florida, 2009

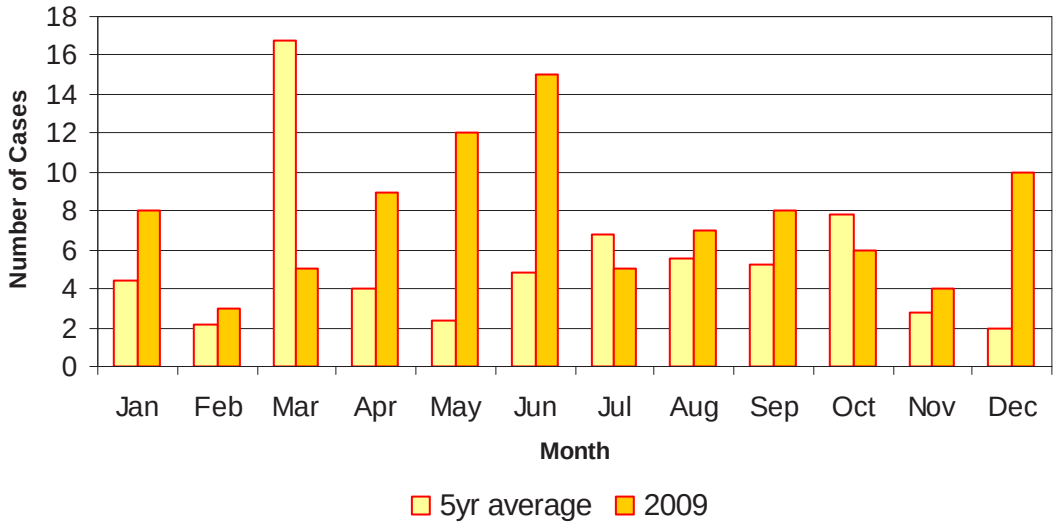
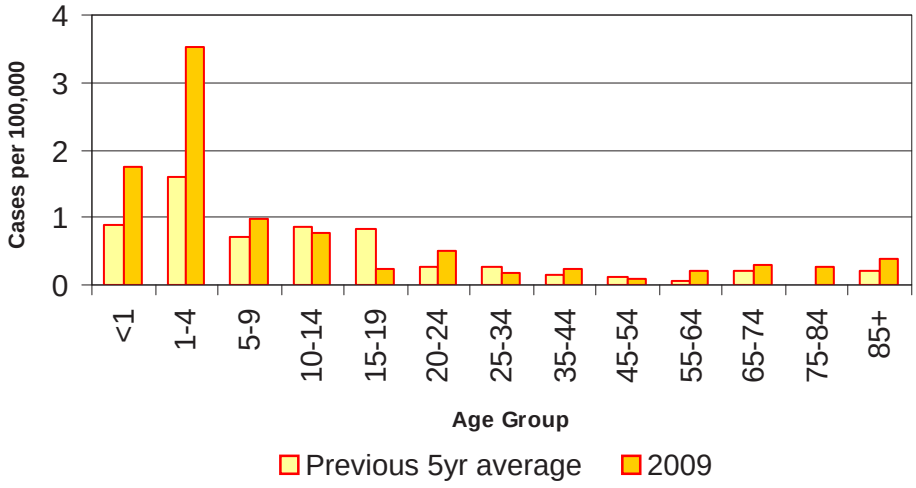


Figure 3. *Escherichia coli*, Shiga Toxin-Producing, Incidence Rate by Age Group, Florida, 2009



In 2009, no clear seasonal patterns were observed (Figure 2). Incidence was greatest among children and teenagers (Figure 3). Incidence was higher than the previous five-year average in those aged less than one and those aged one to four (Figure 3).

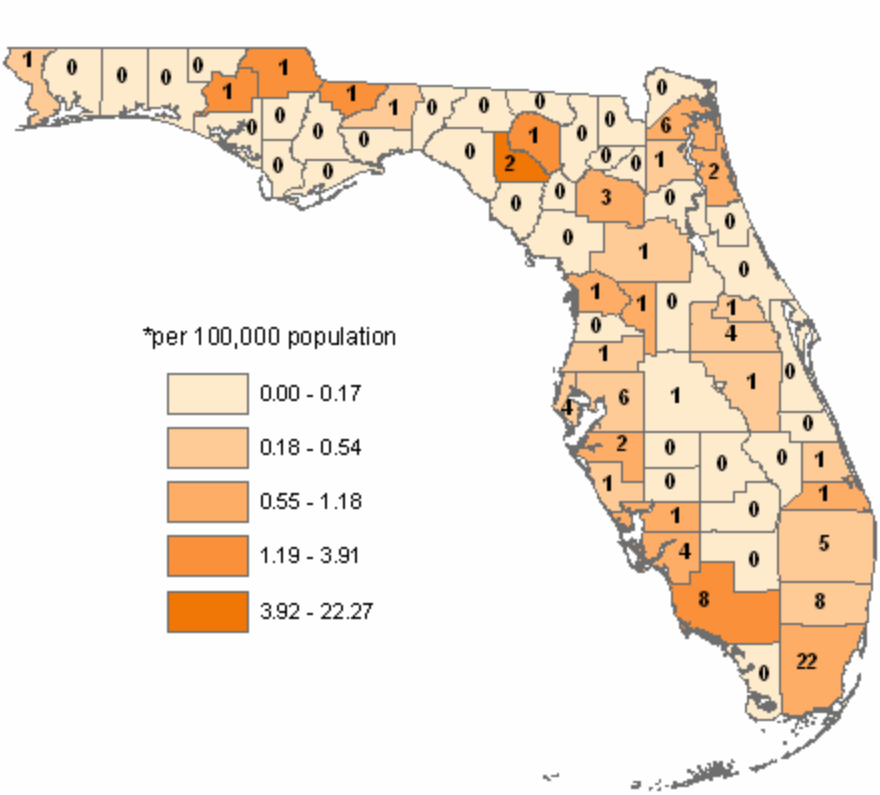
STEC cases were reported in 31 of 67 counties in Florida.

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.
- Wash your hands thoroughly before, during, and after food preparation and after toilet use.
- Do not allow the fluids from raw meat to come in contact with other foods.
- 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.

***Escherichia coli*, Shiga Toxin-Producing Incidence Rate* by County, Florida, 2009**



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

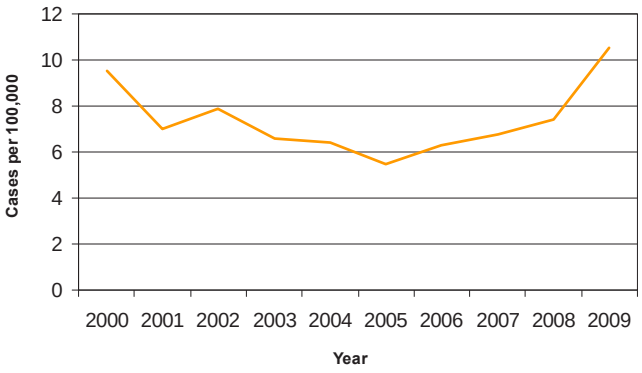
Additional Resources

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

Giardiasis

Giardiasis: Crude Data	
Number of Cases	1,981
2009 incidence rate per 100,000	10.53
% change from average 5-year (2004-2008) incidence rate	62.44
Age (yrs)	
Mean	26.65
Median	20
Min-Max	<1 - 97

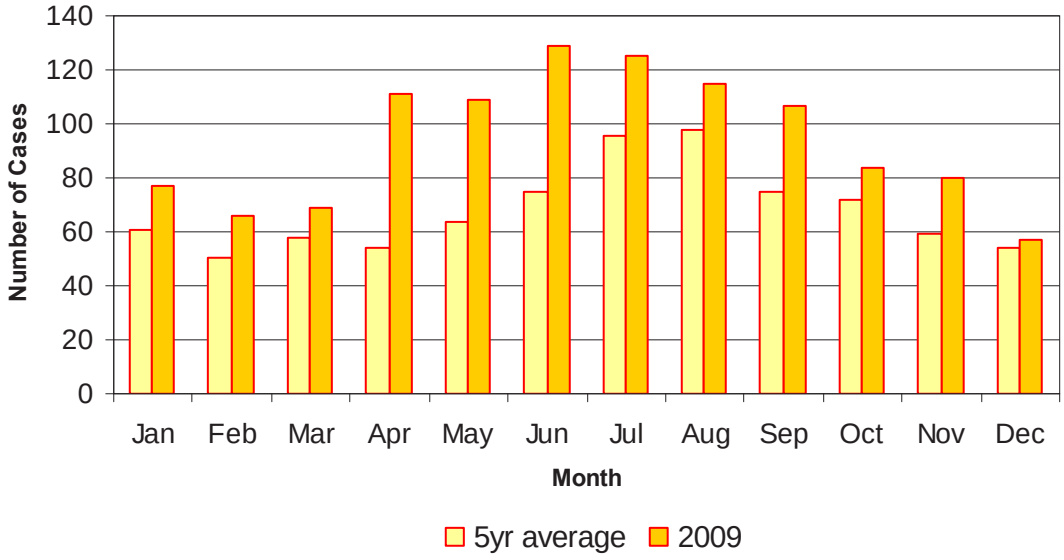
Figure 1. Giardiasis Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

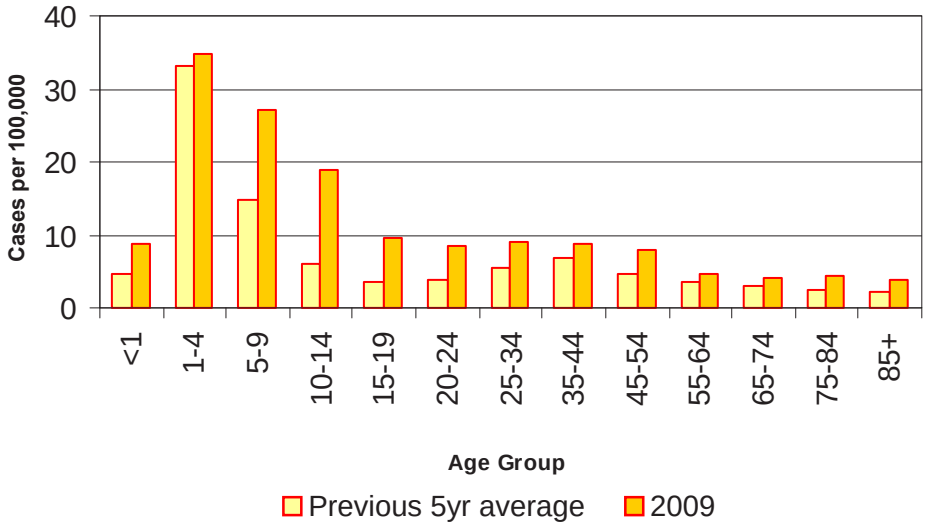
The incidence rate for giardiasis declined by about half over the years from 1999 to 2005 but increased slightly starting in 2006 (Figure 1). In 2009, there was a 62.4% increase in comparison to the five-year average incidence from 2004 to 2008 (see note below on case definition change). A total of 1,981 cases were reported in 2009, higher than the number reported in 2008 (1,391 cases). Of the 1,981 cases reported in 2009, 98.6% were classified as confirmed. Each year, the number of cases increases in the summer and early fall months (Figure 2). The month of July historically has the largest number of reported cases (2004-2008: five-year average 95 cases), but in 2009, the largest number of cases occurred in June (129 cases). In 2009, all months exceeded the previous five-year average number of cases. Among the 1,981 giardiasis cases reported in 2009, 87, or 4.4%, were reported as outbreak associated. Over 61.4% of all reported cases indicated infection had been acquired in Florida. There were 664 cases that were reported as acquired outside of the U.S., with 489 of these cases, or 73.6%, indicating infection was acquired in Cuba. The giardiasis case definition was changed in August 2008 to include asymptomatic laboratory-confirmed cases. Previously, only symptomatic laboratory-confirmed cases met the case definition. The 2009 reporting year was the first full reporting year in which the case definition change was effective. Approximately 35.8% of reported giardiasis cases in 2009 were asymptomatic. It is likely the large increase in reported cases of giardiasis in 2009 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.

Figure 2. Giardiasis Cases by Month of Onset, Florida, 2009



The highest reported incidence rates continue to occur in children aged one to four years (34.86 cases per 100,000) and five to nine years (27.17 cases per 100,000) (Figure 3). There were 317 cases reported among children aged one to four years. Approximately 22.4 percent of the 317 cases aged one to four years attended daycare.

Figure 3. Giardiasis Incidence Rate by Age Group, Florida, 2009



Overall, males continue to have a higher reported incidence than females (12.37 and 8.71 per 100,000, respectively). Following previous annual trends, incidence rates in whites are greater than those in non-whites.

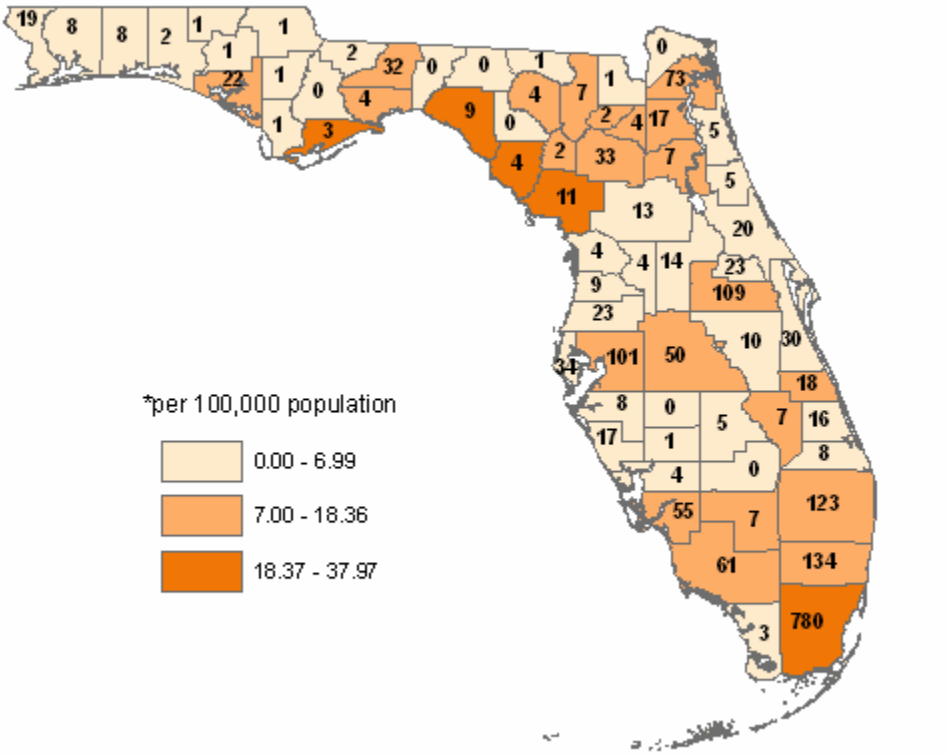
In 2009, giardiasis was reported in 60 of 67 counties in Florida.

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. Other ways to prevent *Giaridia* include the following strategies.

- Avoid eating food and swallowing water from recreational water (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, 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.

Giardiasis Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

L.K. Pickering, C.J. Baker, S.S. Long, and J.A. McMillan (eds.), *Red Book: 2006 Report of the Committee on Infectious Diseases*, 27th ed., American Academy of Pediatrics Press, 2006.

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

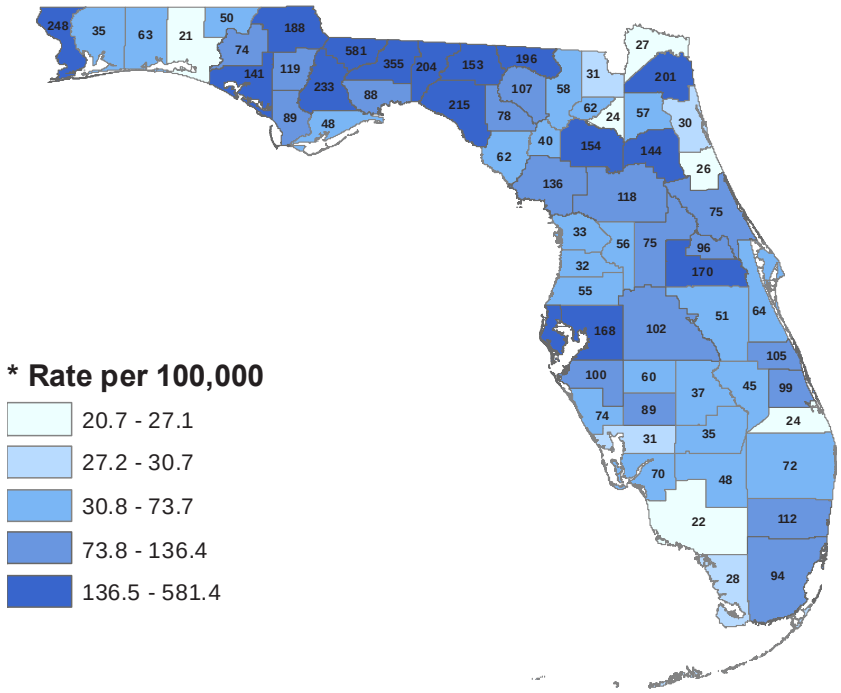
In 2009, 20,881 cases of infection with *Neisseria gonorrheae* (gonorrhea) were reported in Florida for a rate of 111.0 cases per 100,000 population. Gonorrhea cases and rates have continued to decrease although reporting measures such as electronic laboratory reporting have improved case identification. In 2009, cases decreased by an additional 11.2% over the previous year. While state rates have declined, parts of the state have a high burden of disease. Over 48% of all gonorrhea cases are reported from the more populous counties of Broward, Duval, Hillsborough, Miami-Dade, and Orange. While these counties consistently have a larger proportion of total cases, several smaller counties have much higher rates (Table 1).

Table 1. Counties with the Highest Rate/100,000 of Gonorrhea, Florida, 2009

County	Rank	Population	Cases	Rate/100,000
Gadsden	1	51,430	299	581.4
Leon	2	275,369	978	355.2
Escambia	3	314,698	782	248.5
Liberty	4	8,580	20	233.1
Taylor	5	23,701	51	215.2

In Florida, rates of infection are highest in the less populated and rural segments of the panhandle and the northern regions of the state (Figure 1).

Figure 1. Gonorrhea Rates* By County, Florida, 2009



Age

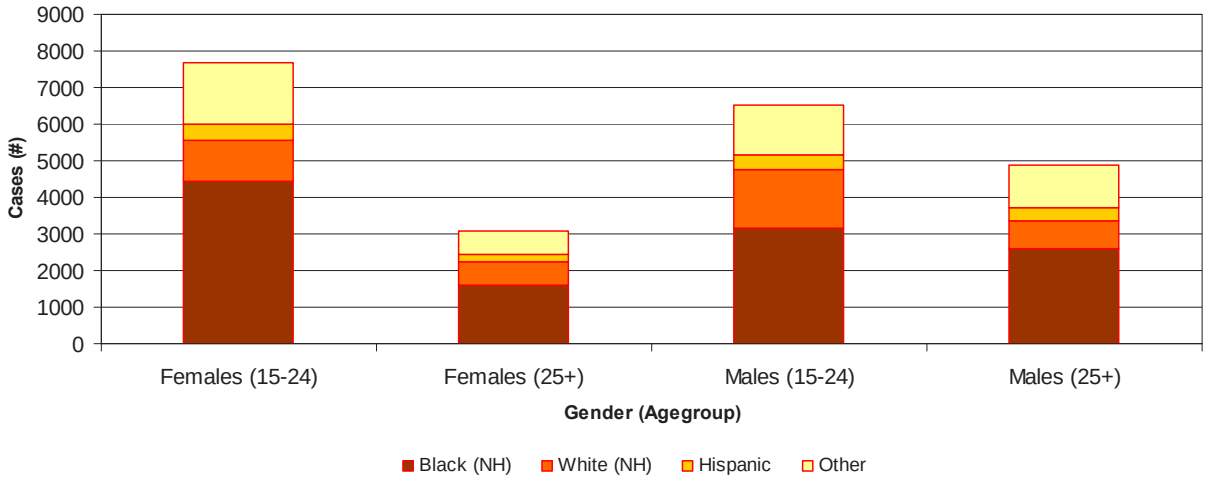
Gonorrhea remains the second most prevalent sexually transmitted bacterial infection reported among 15 to 24 year olds in Florida. Much like *Chlamydia* infection, gonorrhea disproportionately affects those under the age of 25. The mean age of all reported gonorrhea cases was 24.8 years. The age-specific case rate for 15 to 24 year olds was 535.43 cases per 100,000, which is a slight decrease from 581.6 cases per 100,000 population in 2008.

Since 1998, more cases have been consistently reported in the 20 to 24 age group, when compared to other age groups. Age distribution shows that only 16% of all reported gonorrhea cases are in people between the ages of 25 and 29; whereas those under 25 account for 62% of reported infections.

Gender

Gender differences in incidence are less apparent for gonorrhea than other sexually transmitted diseases. Women account for the largest proportion of cases reported (52.6%). The highest rate (686.6 per 100,000 population) and number of cases (4,041) was reported in 15 to 19 year old women (Figure 2). This is a 12.5% decrease in cases for this group from the previous year. The second highest rate was in 20 to 24 year old women (613.7 per 100,000 population).

Figure 2. Reported Cases of Gonorrhea by Gender, Age, Race/Ethnicity, Florida, 2009



Among men, the highest numbers of cases were reported in the 20 to 24 year old age group (3,321 cases) with a rate of 536.6 cases per 100,000 population. Men 15 to 19 (310.4 cases per 100,000) and 25 to 29 years old (307.9 cases per 100,000) had similar rates. One explanation for the higher rates of gonorrhea among men as compared to chlamydia is that a majority of urethral infections with *N. gonorrhoeae* cause symptoms that prompt the patient to seek care. This could lead to greater detection of gonorrhea cases among men, but may not necessarily reflect higher incidence of infection.

Race and Ethnicity

In 2009, gonorrhea disproportionately affected non-Hispanic blacks (Table 2). Non-Hispanic black adolescents and young adults (those 15 to 24 years old) had the highest rates when cases were grouped by race, ethnicity, and age. In 2009, non-Hispanic blacks 15 to 24 years

old had a case rate of 1,510.27 cases per 100,000 population. Although this rate was a 20% decrease from the previous year, this rate was nine times higher than the second highest rate which was in non-Hispanic whites 15 to 24 years old (163.5 cases per 100,000 population). Nevertheless, all cases reported, regardless of race or ethnicity, disproportionately occur in people under 25 years of age. Table 2 displays the rate per 100,000 for all ages.

Table 2. Cases and Rate/100,000 of Gonorrhea by Race/Ethnicity, Florida, 2009

	Males		Females	
Race/Ethnicity	**Cases**	**Rate/100,000**	**Cases**	**Rate/100,000**
Black (NH)	5,750	407.1	6,034	398.1
White (NH)	1,152	20.7	1,761	30.2
Hispanic	719	35.6	618	30.7
Other/Unknown	2,481	N/A	2,293	N/A

Prevention

Many infections in women can lead to complications such as pelvic inflammatory disease (PID). Both symptomatic and asymptomatic cases of PID can result in tubal scarring that can lead to infertility or ectopic pregnancy. Because gonococcal infections among women are frequently asymptomatic, an essential component of gonorrhea control in the U.S. is screening of women at high risk for STDs.

The U.S. Preventive Services Task Force (USPSTF) recommends screening all sexually active women, including those who are pregnant, for gonorrhea infection if they are at increased risk. Risk factors include:

- age under 25 years,
- a previous gonorrhea infection,
- other sexually transmitted infections,
- new or multiple sex partners,
- inconsistent condom use,
- commercial sex work, and
- drug use.

The USPSTF does not recommend screening for men or women who are at low risk for infection.

Gonorrhea cases continue to decrease overall. However, some of the core risk factors for infection correlate to socio-economic indicators that are often unrecognized in data reporting. Gonorrhea continues to disproportionately impact minority populations and is increasing among men who have sex with men (MSM). These data suggest the need for specialized interventions and resources for these populations. Additionally, the sustained number of cases in youth and young adults indicates that people in these groups are participating in behaviors that put them at risk for STDs in general, including HIV. To understand further the contributory causes and risk factors for acquiring the disease, accurate, timely, and comprehensive reporting and disease investigation must continue. Additionally, clusters of infection must be understood.

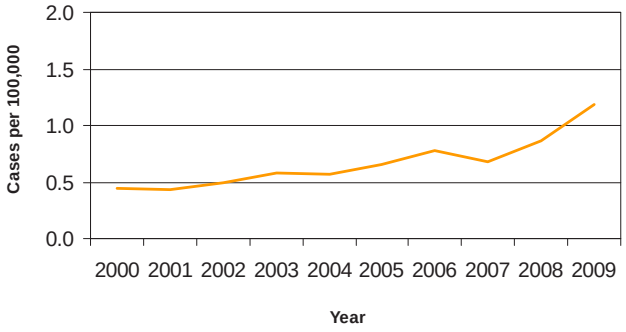
References

Centers for Disease Control and Prevention. “Sexually Transmitted Diseases Treatment Guidelines, 2006.” *MMWR*, 2006, Vol. 55, No. RR-11, pp. 42-49.

Haemophilus influenzae (Invasive Disease)

Hemophilus influenzae (Invasive Disease): Crude Data	
Number of Cases	222
2009 incidence rate per 100,000	1.18
% change from average 5-year (2004-2008) incidence rate	66.78
Age (yrs)	
Mean	56.18
Median	63
Min-Max	<1 - 97

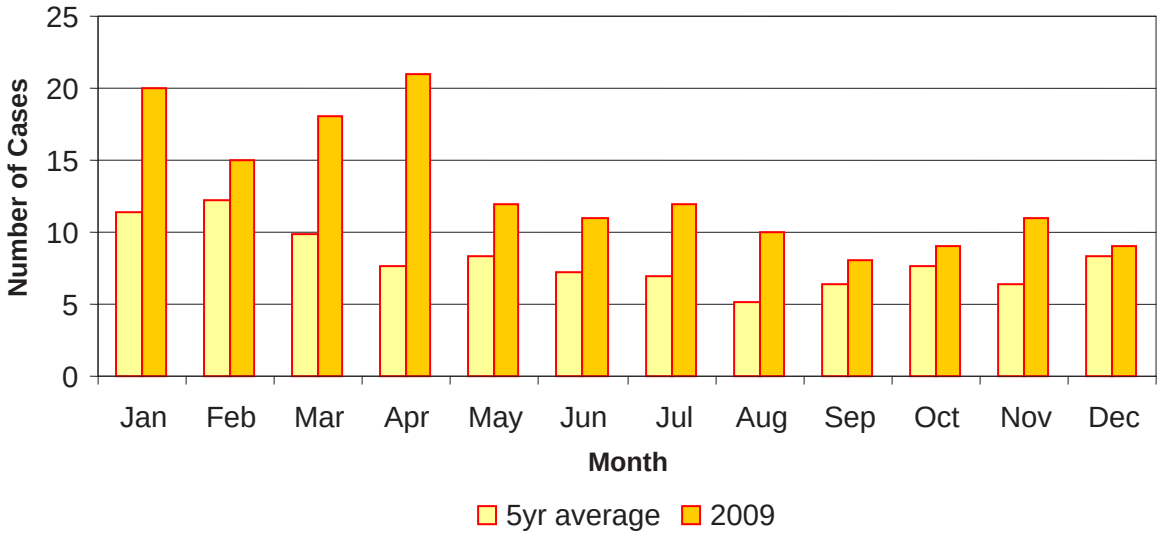
Figure 1. *Haemophilus influenzae,* Invasive Disease, Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

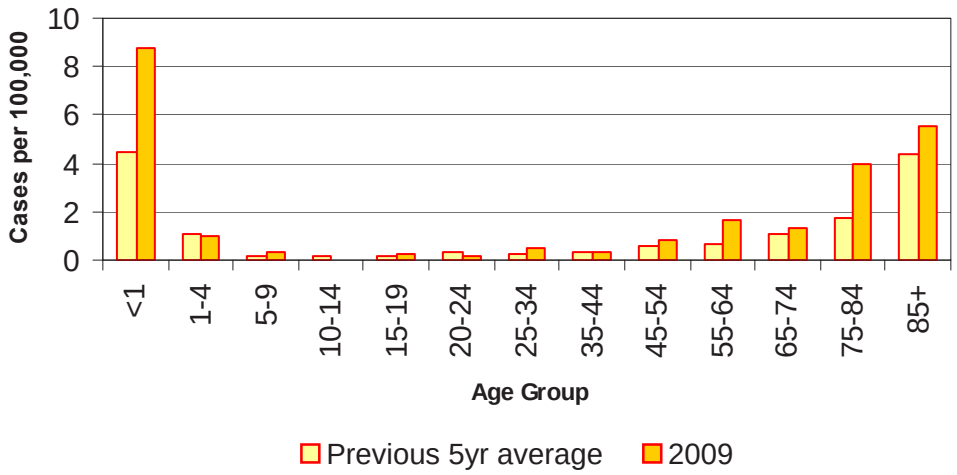
The incidence rate for all invasive diseases caused by *Haemophilus influenzae* has gradually increased over the past ten years (Figure 1). In 2009, there was a 66.8% increase compared to the average incidence from 2004 to 2008. In 2009, 222 cases were reported; all were confirmed. The number of cases reported is typically highest in the winter during the months of December through February, but there was significant disease through March and April 2009 (Figure 2). In 2009, the number of cases significantly exceeded the previous five-year average in most months of the year. Nearly all cases of invasive disease caused by *Haemophilus influenzae* are sporadic in nature.

Figure 2. *Haemophilus influenzae*, Invasive Disease, Cases by Month of Onset, Florida, 2009



The highest reported incidence rates occur in those aged under one year or in those over 85 years (Figure 3). In 2009, the incidence rates were higher than the previous five-year average in all age groups except those 1 to 4, 10 to 14, 20 to 24, and 35 to 44 years. The incidence of disease in males and females does not differ significantly (1.07 per 100,000 and 1.27 per 100,000 population, respectively). For 2009, the incidence rate in blacks was lower than that in whites, which is different from previous years (1.06 and 1.15 per 100,000 population respectively).

Figure 3. *Haemophilus influenzae* , Invasive Disease, Incidence Rate by Age Group, Florida, 2009



Invasive disease caused by *Haemophilus influenzae* was reported in two-thirds (44) of the 67 counties in Florida. Counties with the highest incidence rates were distributed throughout the state.

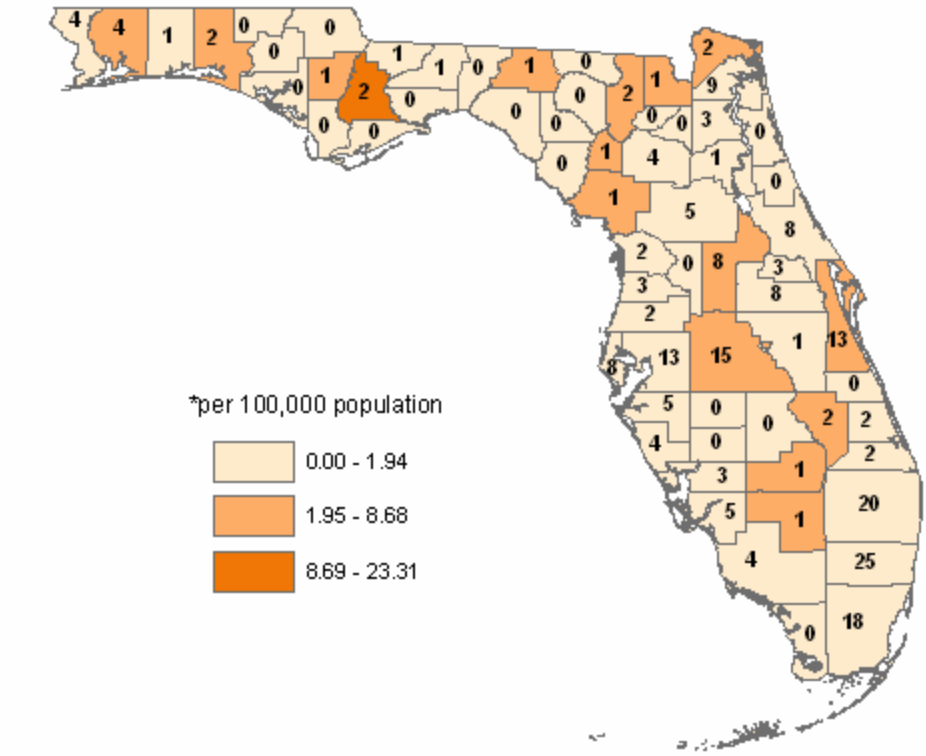
Invasive Disease in Those Under Age Five

In 2009, there was one case of invasive disease (meningitis) caused by *Haemophilus influenzae* serotype b in a child under age five, who recovered. No information about this child's specific vaccination history was available, but this is the portion of *H. influenzae* disease that is most vaccine-preventable.

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-color-print.pdf

***Haemophilus influenzae,* Invasive Disease Incidence Rate* by County, Florida, 2009**



References

David L. Heyman (Ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 366.

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

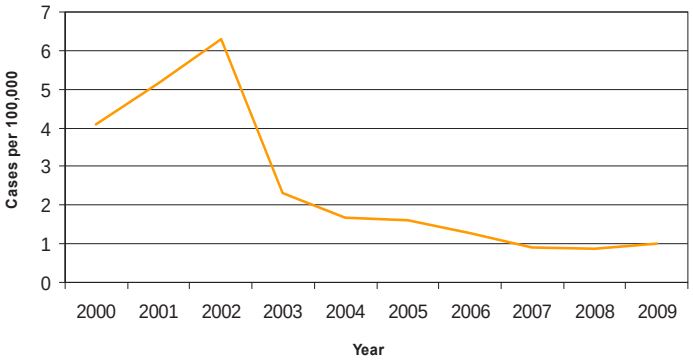
Immunization Recommendations are available from:

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); pp.1-7. http://www.cdc.gov/mmwr/preview/mmwrhtml/00041736.htm.

Hepatitis A

Hepatitis A: Crude Data	
Number of Cases	191
2009 incidence rate per 100,000	1.01
% change from average 5-year (2004-2008) incidence rate	-19.35
Age (yrs)	
Mean	39.96
Median	37
Min-Max	4 - 90

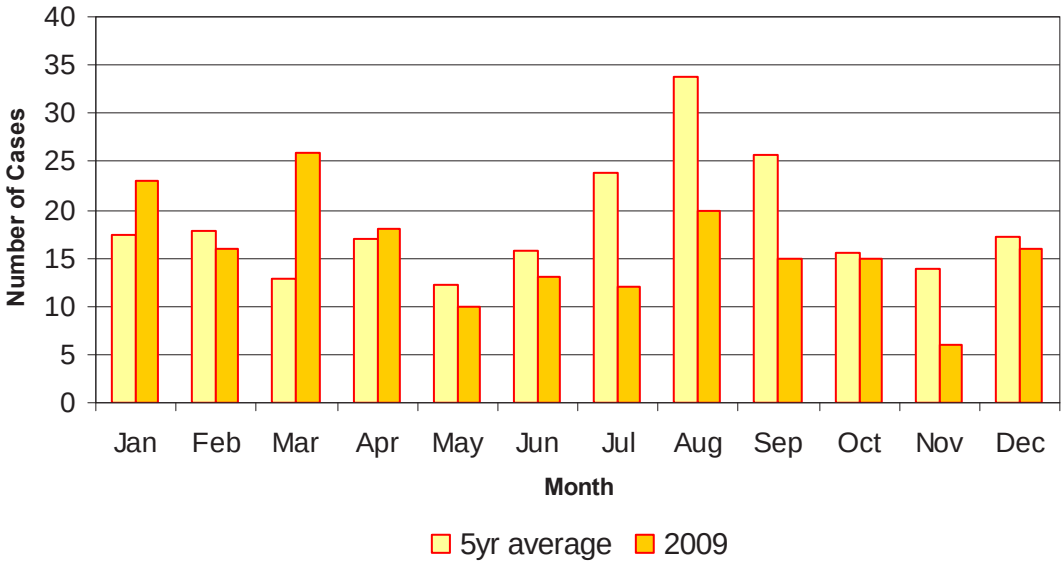
Figure 1. Hepatitis A Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

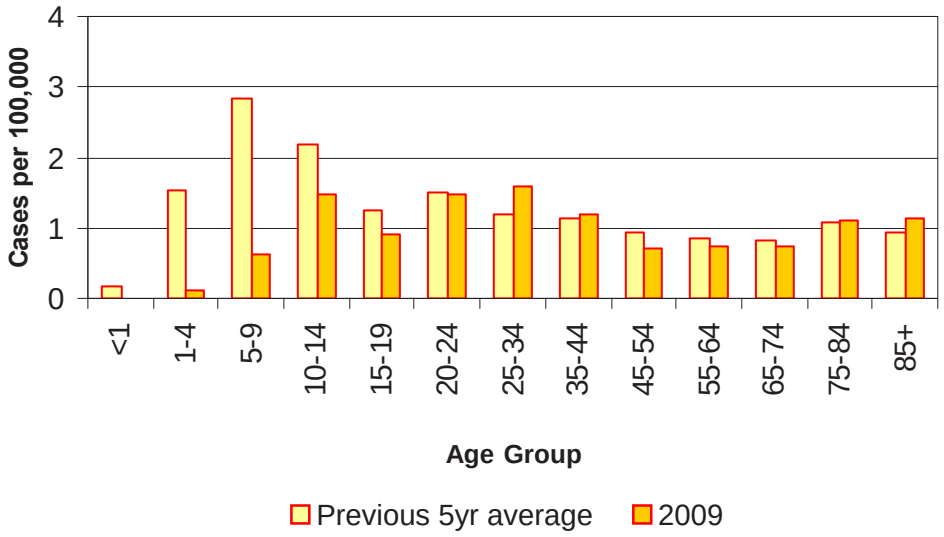
In 2009, 191 cases of hepatitis A were reported in Florida. This represents a slight increase from the 164 cases reported in 2008. In 2009, 89.5% of hepatitis A cases were classified as confirmed, 51% of cases were males, 77% of cases were white, and 42% were Hispanic people. Most cases were apparently isolated events and only 9% of cases reported contact with a person with confirmed or suspected hepatitis A infection in the two to six weeks prior to their illness. Approximately 35% of cases reported a travel history outside the U.S. and Canada in the two to six weeks prior to their illness with most (54%) traveling to a destination in South/Central America. Additionally, 21% of cases reported that a household member had traveled outside of the U.S. or Canada. Only 3% of cases were either a child or employee in a daycare center, preschool, or nursery and 2% of reported cases were in food-handlers. The incidence rate for hepatitis A in Florida has declined markedly since 2002, which mirrors a similar decline observed nationally (Figure 1). The annual incidence in Florida from 2004 to 2009 was one to two cases 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 vaccines to protect against hepatitis A virus, which first became commercially available in 1995. However, as data for 2009 indicate, these declines in disease incidence may have begun to plateau.

Figure 2. Hepatitis A Cases by Month of Onset, Florida, 2009



Hepatitis A occurs throughout the year (Figure 2). In 2009, incidence rates were lower than the previous five-year average in many age groups but the rate was increased in the 25- to 34-year-olds, as well as those over 75 (Figure 3). The largest decrease in incidence was observed among children under ten years old. The incidence in 2009 was higher among Hispanics than among non-Hispanics (1.98 and 0.70 per 100,000, respectively).

Figure 3. Hepatitis A, Incidence Rate by Age Group, Florida, 2009



During 2009, hepatitis A was reported in 32 of 67 counties in Florida.

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 over18 years old, and is administered in three doses.

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

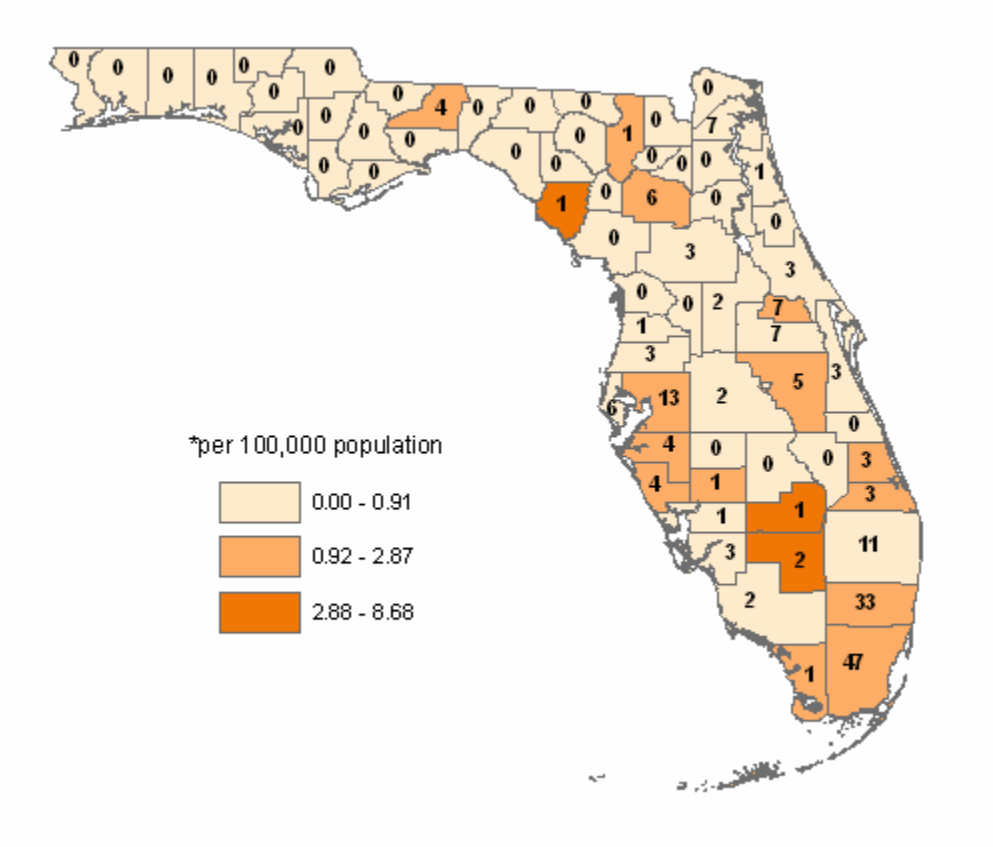
- those traveling to developing countries,
- men who have sex with men (MSM),
- injection and non-injection drug users, and
- people with a clotting factor disorder.

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

- good personal hygiene,
- hand washing, and
- washing fruits and vegetables before eating.

Illness among food-handlers or persons in a childcare setting should be promptly identified and reported 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 over age 40. Recently updated guidelines based on results from a clinical trial, recommend using vaccine rather than immune globulin for post-exposure prophylaxis in healthy individuals between 1 and 40 years old. All post-exposure prophylaxis should be administered within two weeks of exposure.

Hepatitis A Incidence Rate* by County, Florida, 2009



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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, "Summary of Notifiable Diseases-United States, 2006," *MMWR* 2006; 55(53).

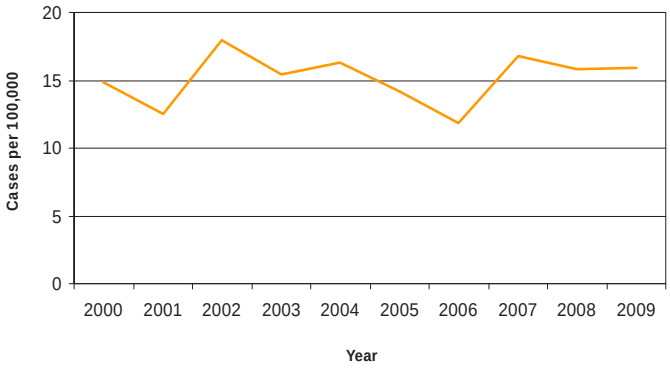
Additional Resources

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 (HBsAg +) Pregnant Women

Hepatitis B (HBsAg +) Pregnant Women: Crude Data	
Number of Cases	598
2009 incidence rate per 100,000	17.06
% change from average 5-year (2004-2008) incidence rate	6.95
Age (yrs)	
Mean	29.52
Median	30
Min-Max	15 - 46

Figure 1. Hepatitis B (HBsAg + Pregnant Women) Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

There were 598 pregnant women who tested positive for the hepatitis B surface antigen (HBsAg+) in 2009, which is a slight decrease from 599 women in 2008. In 2009, there were no Florida-born infants identified as perinatal cases of hepatitis B (disease code 07744). This is a decrease from the one infant identified as a perinatal hepatitis B case in 2008, and two identified the year before.

Prevention

Hepatitis B immune globulin (HBIG) is prepared from human plasma known to contain a high titer of antibody to HBsAg (anti-HBs). A regimen combining HBIG and hepatitis B vaccine is 85%-95% effective in preventing HBV infection when administered at birth to infants born to HBsAg+ mothers. HBIG and the first dose of hepatitis B vaccine should be administered within 12 hours of birth. The second dose should be given at one month of age and the third dose at six months of age. Dose three of hepatitis B vaccine should not be given before six months of age. These infants should have serologic testing at nine to fifteen 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.

References

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

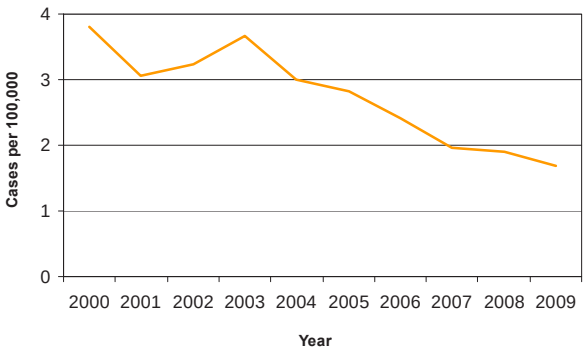
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/vaccines/vpd-vac/hepatitis/default.htm

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

Hepatitis B, Acute

Hepatitis B, Acute: Crude Data	
Number of Cases	318
2009 incidence rate per 100,000	1.69
% change from average 5 year (2004-2008) incidence rate	-29.85
Age (yrs)	
Mean	40.35
Median	43
Min-Max	19 - 83

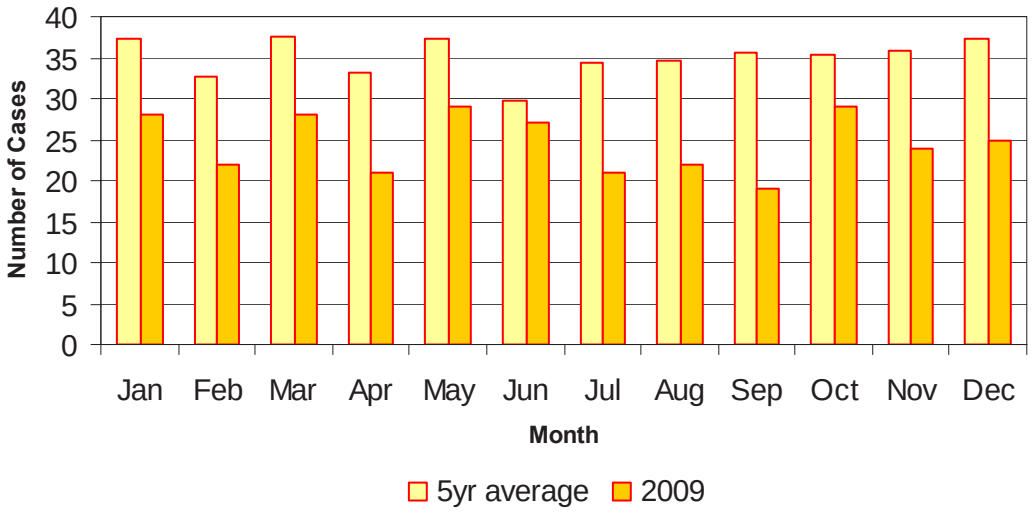
Figure 1. Hepatitis B, Acute Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

The incidence rate for acute Hepatitis B has declined gradually over the last ten years (Figure 1). The 2009 rate was 29.9% lower than the average from 2004 to 2008. In 2009, 94% of the 318 reported cases were confirmed. There is no seasonal trend for acute hepatitis B infection (Figure 2). Overall, 95.6% of the acute hepatitis B cases were classified as sporadic.

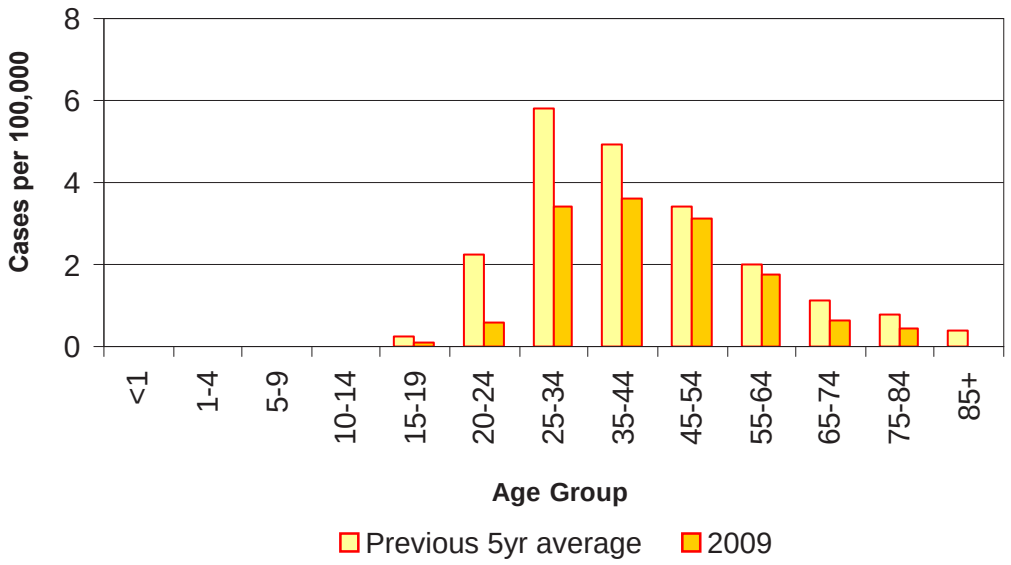
Figure 2. Hepatitis B, Acute Cases by Month of Onset, Florida, 2009



The highest historical incidence rates occurred in the 25 to 34 year old age group, and for 2009 the incidence rate in this group was high, but the highest incidence was among those aged 35 to 44, which was also true for 2007 and 2008. In 2009, the incidence rates were lower than the previous five-year average in all age groups (Figure 3). The incidence of hepatitis B is lowest in

people under 19 years of age. Rates have always been low in children, and are even lower with widespread immunization. Males continue to have a higher incidence than females (2.09 per 100,000 and 1.30 per 100,000, respectively).

Figure 3. Hepatitis B, Acute Incidence Rate by Age Group, Florida, 2009



Hepatitis B is a vaccine-preventable disease. Among the 318 people diagnosed with acute hepatitis B, 62% never received the vaccine and 33% have unknown vaccine status. This demonstrates the importance of vaccination campaigns to eliminate hepatitis B in the U.S. The symptoms of acute viral hepatic illness may prompt individuals to seek immediate medical attention. Approximately 55% of those diagnosed with acute hepatitis B were hospitalized. In 2009, death occurred in two of the 318 people with acute hepatitis B infection. Thirty-two of the 318 people with acute hepatitis B reported having had contact with someone confirmed or suspected of having a hepatitis B infection, and of these, 78% reported the ill person was a sexual partner. Drug use has also been associated with hepatitis B infection. Of the 318 acute hepatitis B cases, 11% reported injection drug use and 22% 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 2009, 8.8% 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. People's risk factors may change over time.

Acute hepatitis B was reported in 43 of the 67 counties in Florida. A cluster of high-rate counties can be seen in the center of the state and along the northern border.

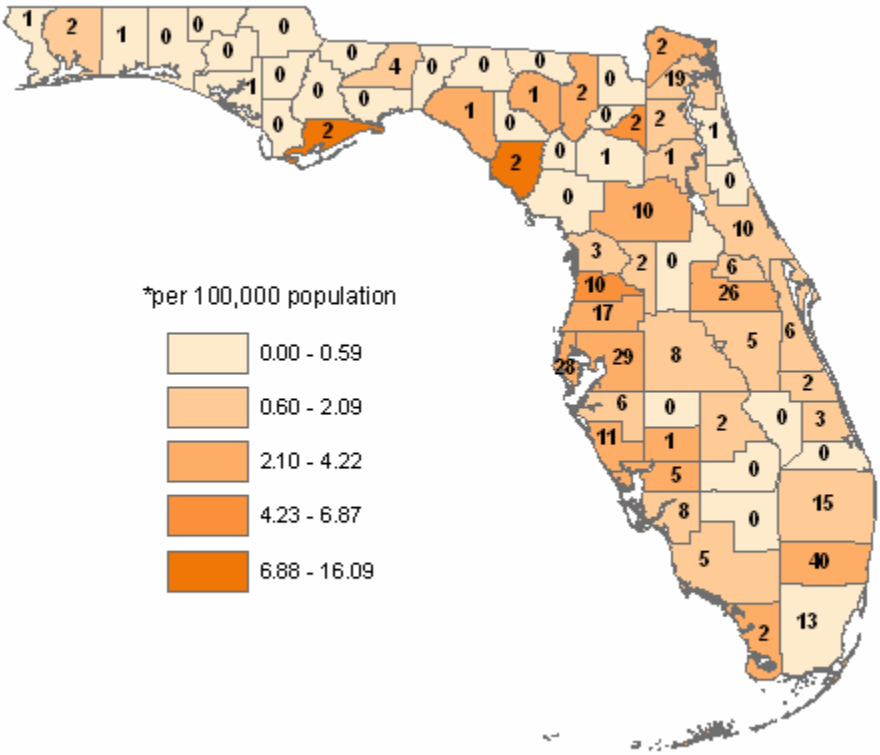
Table 2. Distribution of the Number of Sexual Partners in the Six Months Prior to Symptoms in Four Sexual Preference Groups, for People with Acute Hepatitis B Reported in 2009.

Sexual Behavior Risk Factors	Men having sex with men*	Men having sex with women*	Women having sex with men*	Women having sex with women*
1 Sexual Partner	8%	31%	34%	2%
2-5 Sexual Partners	5%	14%	22%	0%
More than 5 Sexual Partners	1%	3%	5%	1%
No Reported Sexual Partners	53%	20%	10%	68%
Not Answered	2%	2%	3%	2%
Unknown	32%	30%	26%	27%
Total	100%	100%	100%	100%
% of Cases in Each Sexual Preference Group†	13%	48%	61%	2%

* Total number of acute hepatitis B positive males is 193 and females is 125. One person identified themselves as unknown. In 2009, all 358 acute cases of hepatitis B occurred in individuals 18 years of age and older.

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

Hepatitis B, Acute Incidence Rate* by County, Florida, 2009



Prevention

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

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.

References

Centers for Disease Control and Prevention, "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States," *MMWR*, Vol. 55, No. RR16, pp. 1-25.

Centers for Disease Control and Prevention, "Incidence of Acute Hepatitis B-United States, 1990-2002," *MMWR*, Vol. 52, 2004, pp. 1252-1254.

Centers for Disease Control and Prevention, "Surveillance for Acute Viral Hepatitis-United States, 2005," *MMWR*, Vol. 56, No. SS03, 2007, pp. 1-24.

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.

J.T. Redd, J. Baumbach, W. Kohn, et al, "Patient-to Patient Transmission of Hepatitis B virus Associated with Oral Surgery," *Journal of Infectious Diseases*, Vol. 195, 2007, pp. 1311-1314.

American Academy of Pediatrics, Red Book 2003: Report of the Committee on Infectious Diseases, 26th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2003.

Additional Resources

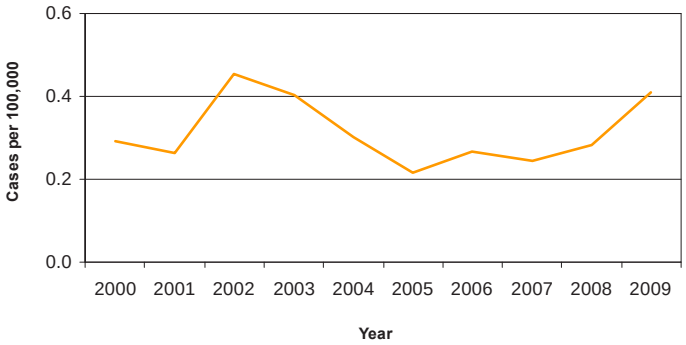
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at http://www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm and http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm

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

Hepatitis C, Acute

Hepatitis C, Acute: Crude Data	
Number of Cases	77
2009 incidence rate per 100,000	0.41
% change from average 5 year (2004-2008) incidence rate	56.19
Age (yrs)	
Mean	40.35
Median	38
Min-Max	20 - 88

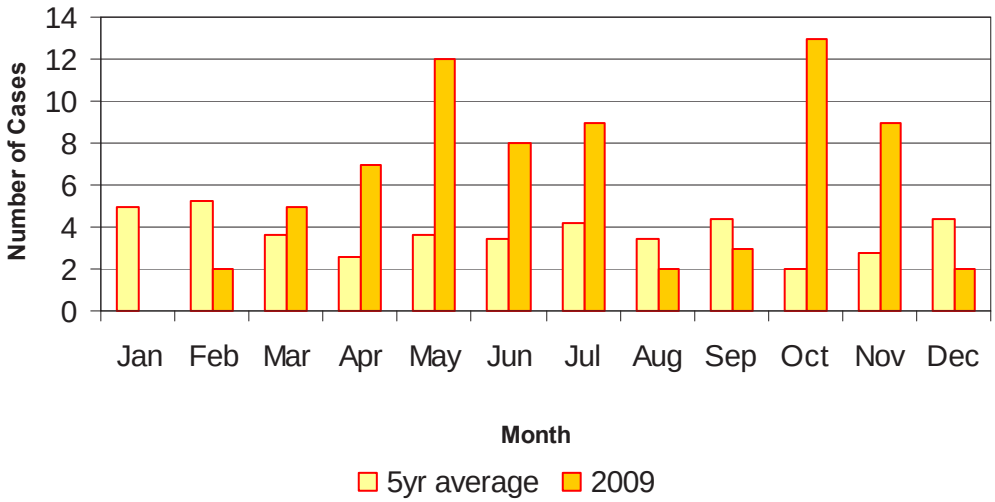
Figure 1. Hepatitis C, Acute Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

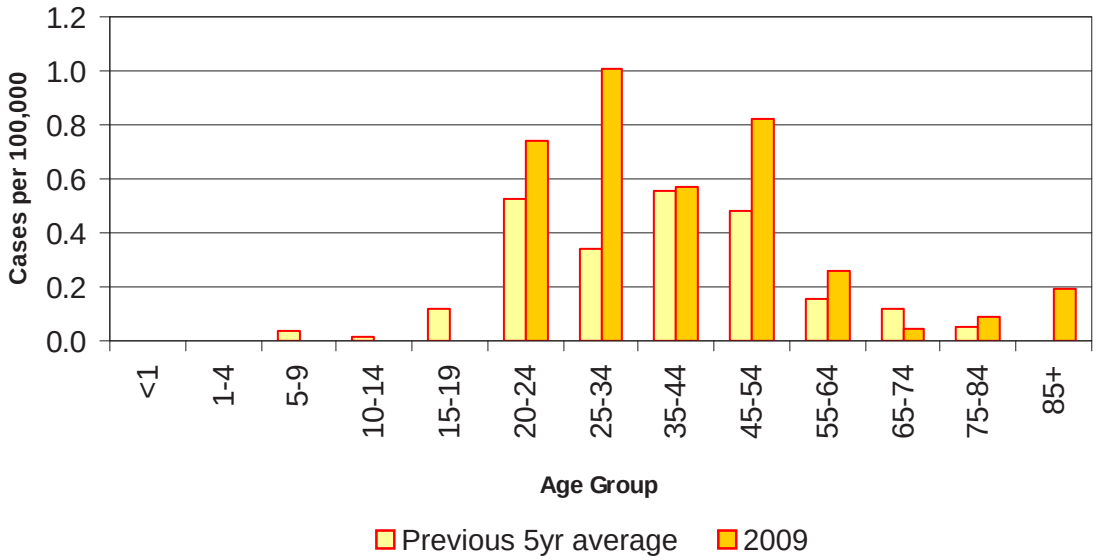
The incidence rate for acute hepatitis C has been variable over the last eight years. It was low from 2005 to 2008 but has been increasing since 2005 (Figure 1). In 2009, there was a 56.2% increase in comparison to the average incidence from 2004 to 2008. A total of 77 cases were reported in 2009. Sixty-nine percent of the cases were classified as confirmed. The hepatitis C acute surveillance case definition changed in 2008, therefore more cases may have been classified as confirmed compared to previous reporting years (2006: 36%, 2007: 34.7%, 2008: 60.4%). There is no seasonal trend for acute hepatitis C infection (Figure 2). Six acute hepatitis C cases were classified as outbreak associated. Five of the six cases classified as outbreak associated were related to an outbreak of hepatitis C in an outpatient holistic care center. The one remaining outbreak-associated case occurred in a healthcare setting where a healthcare worker was infected via an accidental occupational exposure to a hepatitis C-infected patient.

Figure 2. Hepatitis C, Acute Cases by Month of Onset, Florida, 2009



The highest incidence rates for 2009 occurred among those 20- to 54-years-old, which is consistent with historical trends, but the individual age groups do have differences when compared to the historical trend. In 2009, the incidence rates were higher than the previous five-year average in all age groups in which cases were reported except for those 65 to 74 years old (Figure 3).

Figure 3. Hepatitis C, Acute Incidence Rate by Age Group, Florida, 2009



The passive transfer of maternal HCV antibodies may be present in infants up to 18 months of age. A positive Anti-HCV result in an infant under 18 months is not a true indicator of hepatitis C infection in an infant. In 2008, men and women had similar incidence of acute hepatitis C (0.38 per 100,000 and 0.44 per 100,000, respectively). The incidence rates in whites are greater than those in non-whites.

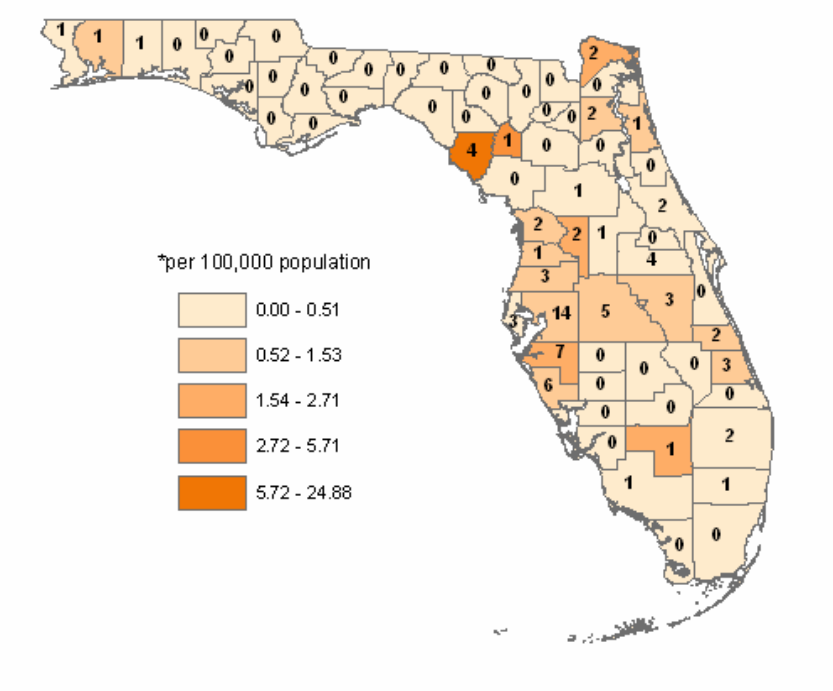
Acute hepatitis C cases were reported in 28 of 67 counties in Florida.

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.

Hepatitis C, Acute Incidence Rate* by County, Florida, 2009



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J.L. Dienstag, "Sexual and perinatal transmission of hepatitis C," *Hepatology*, Vol. 26, No. 66S-70S, 1997.

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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.

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S. Kamili, et al., "Infectivity of Hepatitis C Virus in Plasma After Drying and Storage at Room Temperature," *Infection Control and Hospital Epidemiology*, Vol. 28, 2007, pp. 519-524.

Lead Poisoning, 2008

Description
Lead poisoning can affect nearly every system in the human body. Lead poisoning can be present with no obvious symptoms and usually goes undetected among individuals exposed to lead. Lead poisoning is diagnosed through a blood lead test. Blood lead levels greater than or equal to 10ug/dL are classified as lead poisoning. Lead poisoning usually occurs when an individual ingests or inhales lead particles, such as dust or chips, from lead-based paint in older homes. Dust from lead-based paint and the former use of leaded gasoline both contribute to lead in soil, which can also be an exposure route. Other sources of lead include some imported ceramics (e.g., lead-glazed pottery), home remedies, hair dyes, toys, folk medicines, and cosmetics. Children less than six years of age are more likely to become lead poisoned because of certain distinct behaviors. Such behaviors include placing hands and toys in their mouths and eating non-food items (e.g., paint chips and dust) that may contain or be contaminated by lead. Additionally, the body of a child absorbs lead more readily than that of an adult and can reach the threshold for poisoning much more quickly. Lead poisoning can cause serious health effects in children, including learning disabilities, behavioral problems, and, at very high levels, seizures, coma, and even death.

Disease Abstract
In 2003, the Centers for Disease Control and Prevention (CDC) estimated that 22,000 children (0 to 16 years old) were lead poisoned in Florida (CDC 2003 Program Announcement 03007, Appendix III). The CDC further approximates that 7,400 of these lead-poisoned individuals reside in nine highly populated ($\geq$ 100,000 residents) Florida cities. Florida ranked eighth in the nation, according to the CDC, for lead poisoning among children. The Florida Childhood Lead Poisoning Prevention and Healthy Homes Program (FL CLPPP) monitors all reported blood-lead levels within the state. The program documents the reported number of children less than six years of age who meet the case definition of lead poisoning (≥ 10ug/dL) and the reported number of children screened for lead poisoning each year. Although some children are tested multiple times in a single year, only the first test per year is considered a screening test, all subsequent tests are considered follow-up tests. Cases are then classified as new or persistent poisonings. A new case is a case that was not confirmed in any previous year. A persistent case is case that was confirmed during a previous year and whose blood-lead level remains at least 10 µg/dL in a subsequent year.

Cases of children less than six years of age with confirmed blood-lead levels that meet the case definition for lead poisoning are investigated and receive disease case management by the local county health department. The child's blood-lead level determines his or her follow-up blood-lead testing schedule and the type of investigation and/or case management services received. The goal of the investigation and case management is to reduce the child's blood-lead level to below the level of concern (10µg/dL) by identifying and eliminating possible lead exposure sources, preventing continued exposure and improving nutrition. The child should be monitored by a physician and the case manager until the blood-lead level returns to below this level.

Figure 1 shows an overall increase (24%) in the number of screenings for lead poisoning from 2004 to 2008. (Data from 2009 is not summarized in this report.) This increase may be due to several reasons including improvement in the reporting of blood lead test results by laboratories and physicians as well as targeted screening of high-risk populations within specific geographic areas. Conversely, the number of reported new lead poisoning cases in Florida declined by

42% from 2004 (475 cases) to 2008 (274 cases). This decline indicates that there were fewer children with a blood-lead level of 10ug/dL or greater among the population of children screened from 2004 to 2008. It is not clear if all of those screened represent the children who are most at-risk for lead poisoning. Further analysis is needed to assess the statistical significance of these findings and to fully understand the prevalence of lead poisoning among high-risk groups in Florida.

Figure 1. Number of Reported New Lead Poisoning Cases and Blood-Lead Screenings, Florida, 2004-2008

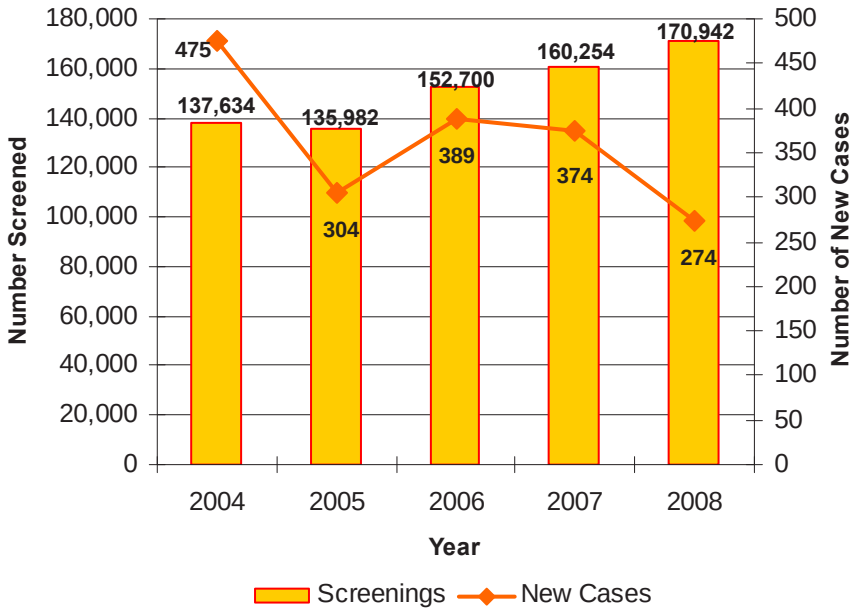
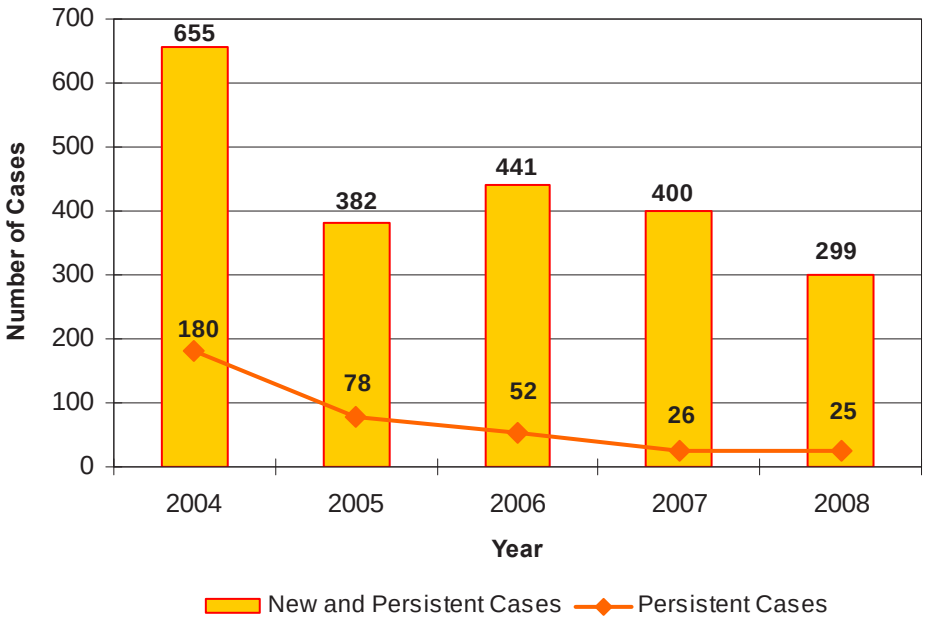


Figure 2 illustrates the number of reported new and persistent cases per year. In general, the number of reported cases (persistent and new) of lead poisoning decreased by 54% from 655 in 2004 to 299 in 2008. For 2007 to 2008, the decline in the number of new and persistent cases was less steep (25%) with 400 cases in 2007 and 299 in 2008. There was a decline (86%) in the annual number of recognized persistent cases from 180 in 2004 to 25 in 2008. This decline in persistent cases may be due to enhanced efforts by CHD staff to recommend services for the management of the disease, as well as the elimination of lead exposure sources among identified cases.

Figure 2. Number of New and Persistent Cases of Lead Poisoning, Florida, 2004-2008



Prevention

Despite the fact that lead persists in several forms in the human environment, lead poisoning is completely preventable. Primary prevention activities that are conducted through the FL CLPPP include ensuring that parents, property owners, healthcare professionals, workers, and individuals who care for young children are informed about the risks of lead poisoning and how to prevent lead exposures. Secondary prevention efforts include following up on lead poisoned individuals, particularly children, to ensure that they received adequate medical care and support to improve their health and reduce further lead exposures.

Resources

Florida Department of Health website
http://www.doh.state.fl.us/environment/community/lead/index.html

Centers for Disease Control and Prevention website
http://www.cdc.gov/nceh/lead/faq/about.htm

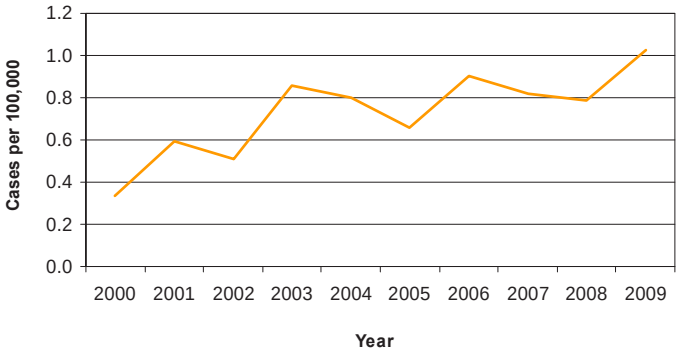
Additional Information

Florida Department of Health Lead Program website also includes additional information and disease statistics
http://www.doh.state.fl.us/environment/medicine/lead/index.

Legionellosis

Legionellosis: Crude Data	
Number of Cases	193
2009 incidence rate per 100,000	1.03
% change from average 5 year (2004-2008) incidence rate	29.06
Age (yrs)	
Mean	62.98
Median	63
Min-Max	<1 - 95

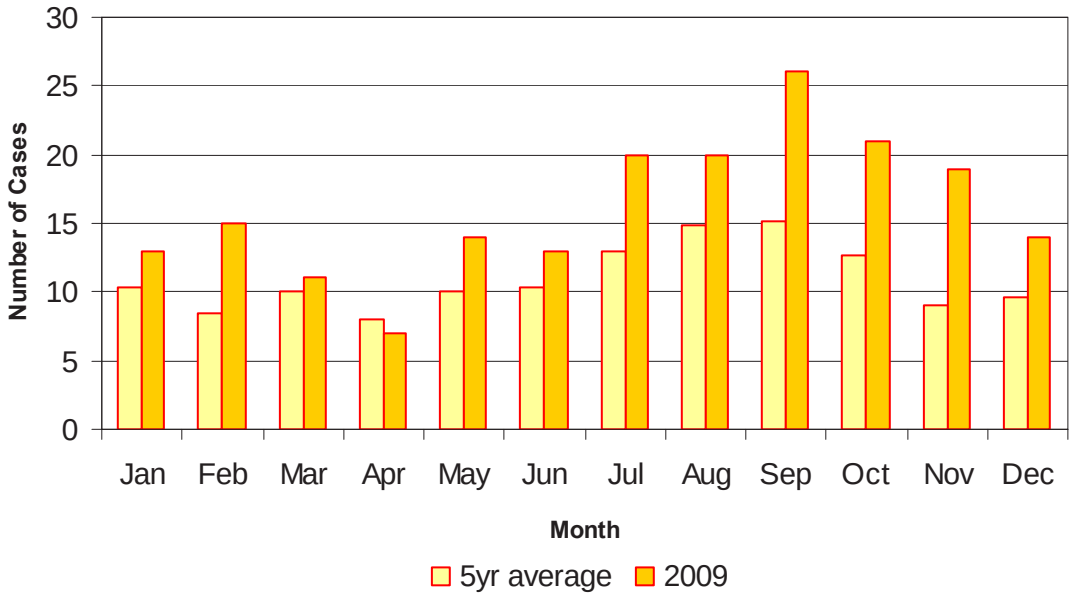
Figure 1. Legionellosis Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

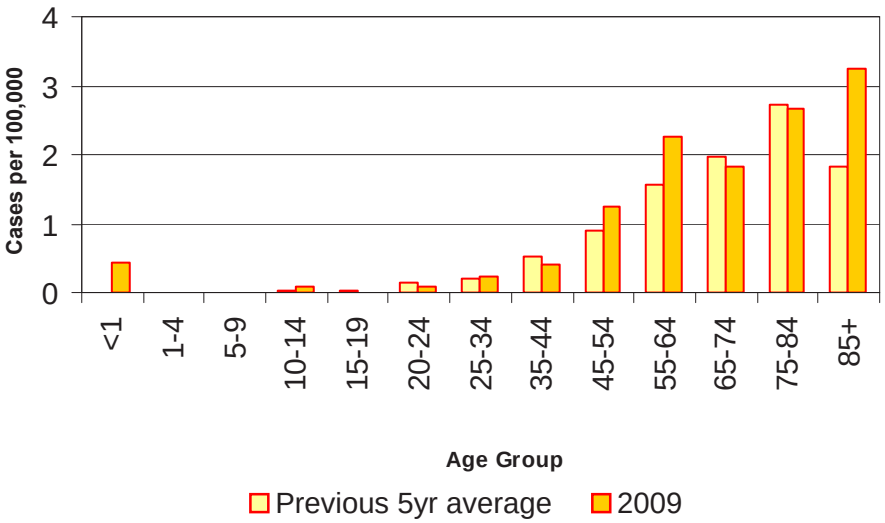
The Florida incidence rate for legionellosis has steadily increased over the last ten years (Figure 1). In 2009, there was a 29.1% increase in comparison to the average incidence from 2004 to 2008. In 2009, 193 cases were reported, of which 100% were classified as confirmed cases and 6.2% were acquired outside of Florida. The number of cases reported tends to increase in the summer months. In 2009, the number of cases exceeded the previous five-year average for many of the months, most notably those in the fall and winter (Figure 2). Two of the legionellosis cases were classified as outbreak associated and were associated with exposure to the same fitness club. (See the Summary of Notable Outbreaks and Case Investigations section of this document.)

Figure 2. Legionellosis Cases by Month of Onset, Florida, 2009



The highest incidence rates continue to occur among adults 45 years of age and older with rates ranging from 1.2 per 100,000 in the 45-54 age group to 3.2 per 100,000 in the over 85 age group. In 2009, the incidence rates were higher than the previous five-year average in most age groups with the largest difference in those 85 and older. There was also a very interesting increase in incidence among those 10 to14 years old compared to the historic average, but it actually represents a recent decrease in total cases among those 10 to 14 years of age, with one case reported in this age group for 2009 compared to four in 2008. (Figure 3). Males continue to have a higher incidence than females and this gap widened in 2009 (1.30 and 0.76 per 100,000, respectively).

Figure 3. Legionellosis Incidence Rate by Age Group, Florida, 2009

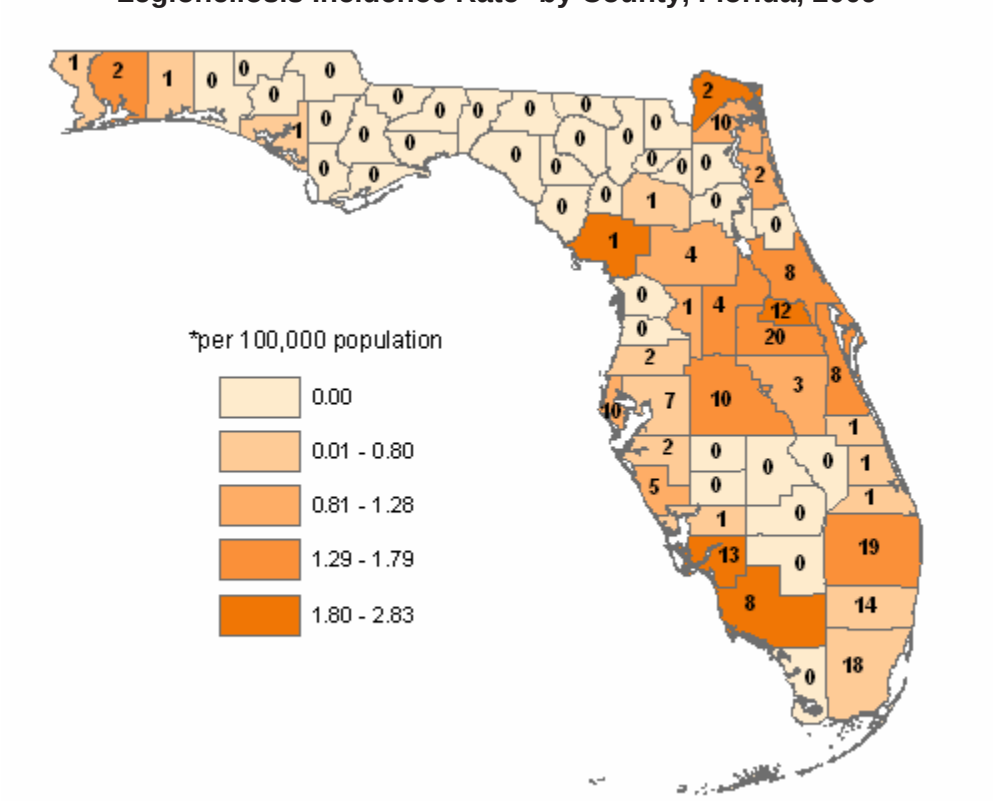


Legionellosis cases were reported in 31 of 67 counties in Florida. Counties in the central, southwestern, and southeastern regions Florida reported the highest incidence rates.

Prevention

- 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) or higher.
- Provide proper maintenance of hot tub/spas.

Legionellosis Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

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.

Listeriosis

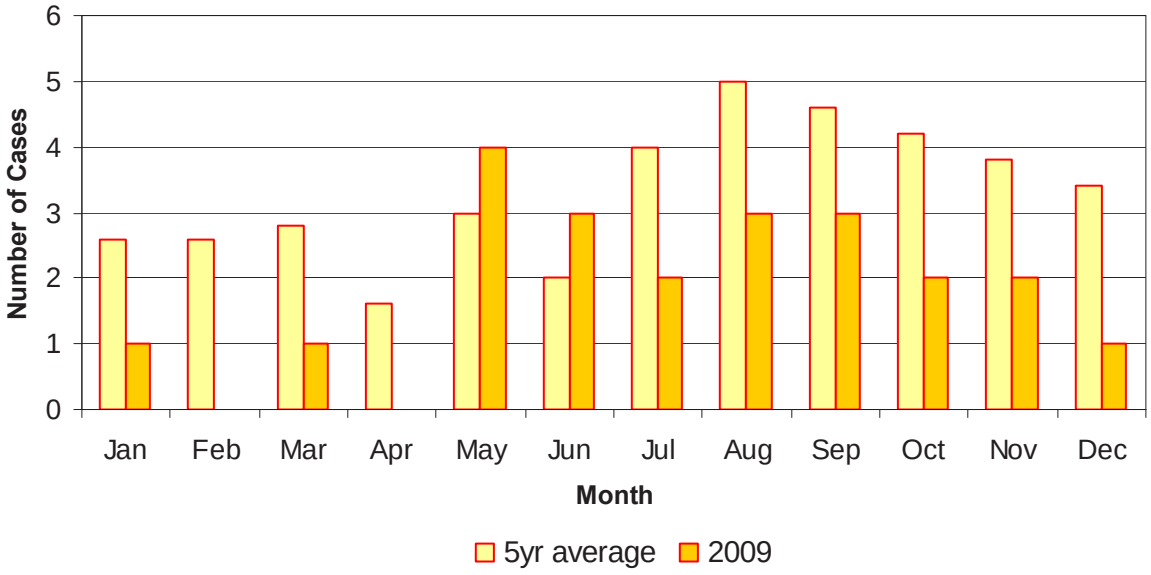
Listeriosis: Crude Data	
Number of Cases	25
2009 incidence rate per 100,000	0.13
% change from average 5 year (2004-2008) incidence rate	-44.68
Age (yrs)	
Mean	66.24
Median	73
Min-Max	<1 - 96

Figure 1. Listeriosis Incidence Rate by Year Reported, Florida, 2000-2009

Disease Abstract

The reported incidence rate for listeriosis has shown no clear trend over the last ten years (Figure 1). In 2009, there was a 44.7% decrease in comparison to the previous five-year average incidence. A total of 25 cases were reported in 2009, which is about half as many as were reported in 2008. All of the 2009 cases were sporadic and not outbreak related. Historically, the number of cases reported tends to increase slightly in the late summer months with a high number of cases in July, August, and September. In 2009, a similar trend was observed but with a notably early peak in May and June (Figure 2).

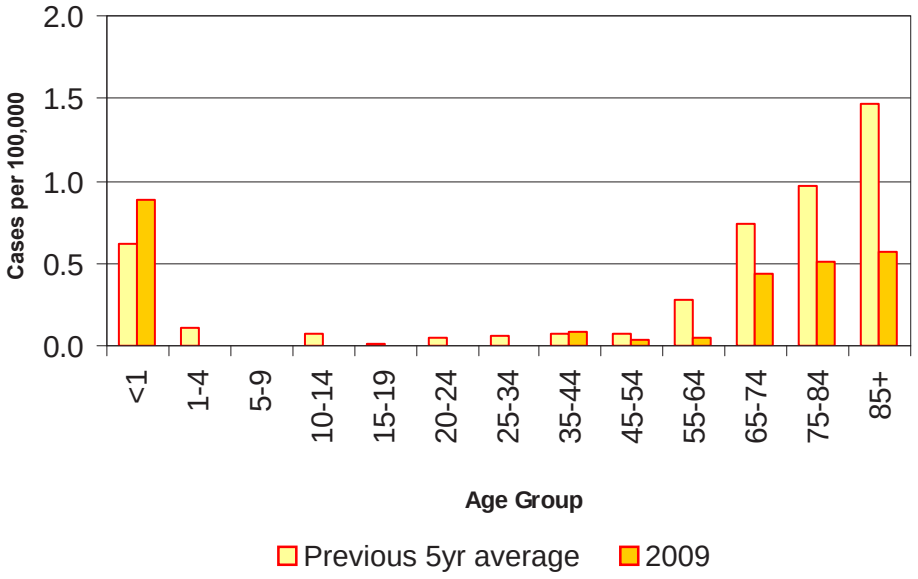
Figure 2. Listeriosis Cases by Month of Onset, Florida, 2009



The very young and the elderly are at increased risk of infection in comparison to other age groups (Figure 3). In 2009, the incidence rate was lower than the previous five-year average for all age groups except those less than one year old. The incidence rate in males was lower than

in females (0.08 and 0.19 per 100,000 population, respectively) for 2009, which is similar to the historical trend.

Figure 3. Listeriosis Incidence Rate by Age Group, Florida, 2009



Listeriosis was reported in 15 of 67 counties in Florida.

Prevention

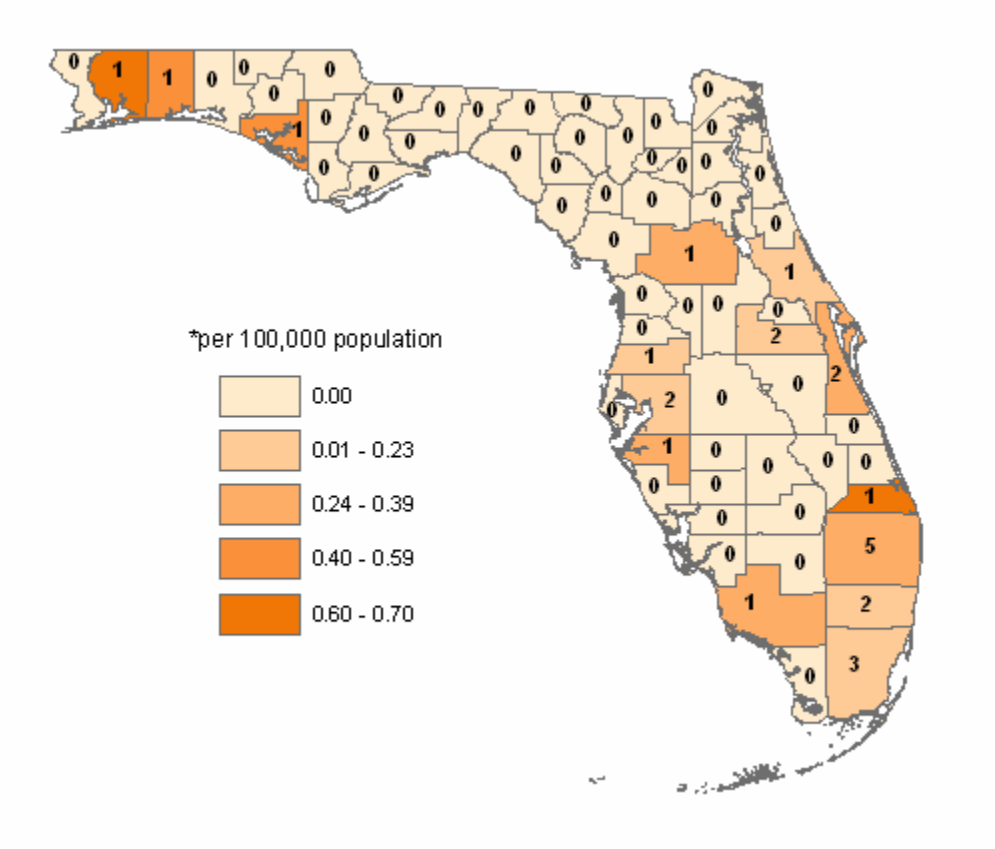
Generally, to prevent listeriosis:

- thoroughly cook raw food from animal sources, such as beef, pork, or poultry.
- wash raw vegetables before eating; and keep uncooked meats separate from vegetables, cooked foods, and ready-to-eat foods.
- avoid unpasteurized milk or foods made from unpasteurized milk, and
- 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.

Listeriosis Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

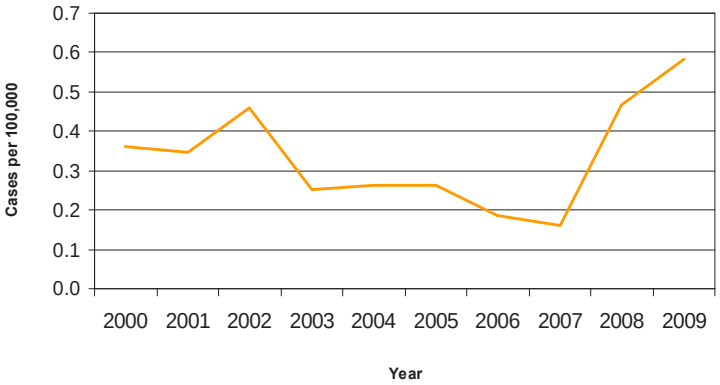
Additional Resources

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	110
2009 incidence rate per 100,000	0.58
% change from average 5-year (2004-2008) incidence rate	118.58
Age (yrs)	
Mean	46.86
Median	51.5
Min-Max	2 – 84

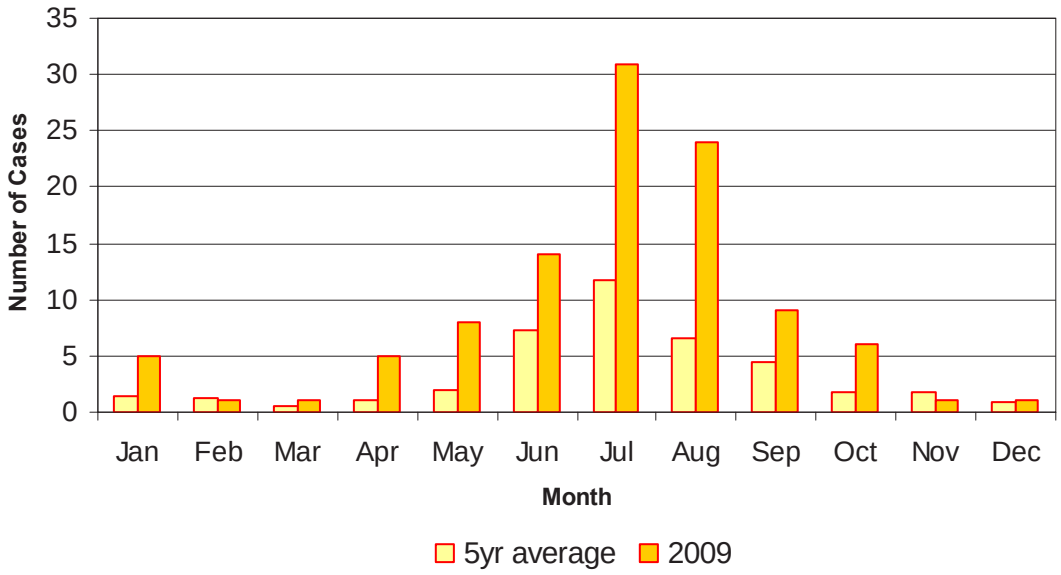
Figure 1. Lyme Disease Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

Lyme Disease is caused by infection with *Borrelia burgdorferi,* resulting from a bite by an infected tick. After declines in the reported incidence rate of Lyme disease for most of the decade, there has been a sharp increase in reported incidence in 2008 and 2009 (Figure 1). In 2009, 110 cases were reported, which represented a 118.6% increase over the average incidence from 2004 to 2008. This may be attributed to, at least partly, a change in the case definition in 2008 as well as to a true increase in cases. In Florida, the increase occurred primarily in cases imported from out of state, particularly from the northeast U.S.

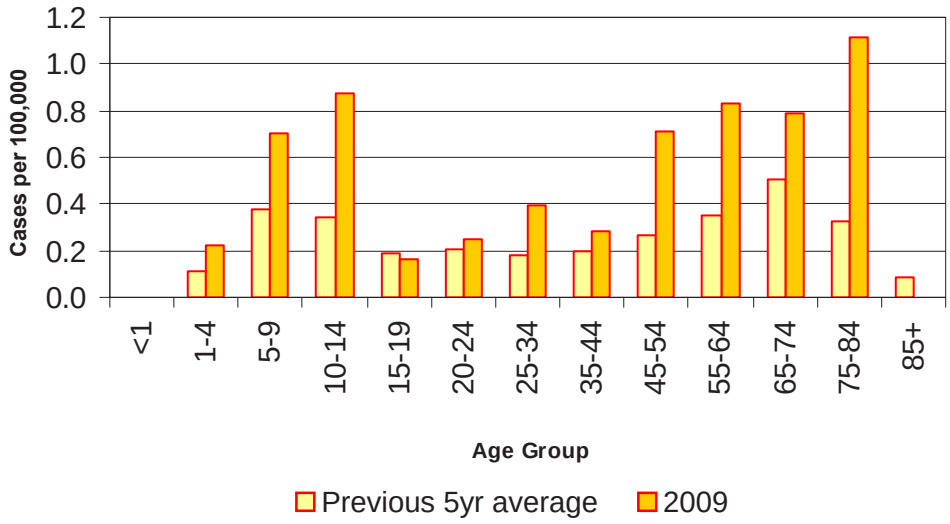
Figure 2. Lyme Disease Cases by Month of Onset, Florida, 2009



Eighty-two percent of cases were classified as confirmed in 2009. The majority of cases were acquired outside Florida, with only 13% (11 cases) in 2008 and 20% (22 cases) in 2009 reported as acquired in Florida. Exposures in the northeast U.S., particularly New York, New Jersey, Connecticut, and Pennsylvania, accounted for the largest number of cases. Highest case incidence was in the summer, with peak incidence in July, but cases occurred year round. In 2009, the number of cases exceeded the previous five-year average in all months except February and December; winter is a period of decreased tick activity in most states (Figure 2). Forty-one percent (45) of all cases reported erythema migrans (EM), compared with 64% (7) of Florida-acquired cases.

In 2009, there was a higher incidence of Lyme disease in age groups 45 and older and in five- to nine- and 10- to 14-year-olds, with the highest incidence in the 75 to 84 year group. This general trend is consistent with the previous five-year average for age; however, the age groups in Florida tend to be older than the nationally reported peak incidence group of 45 to 54. The peak in children between five and fourteen is more consistent with national trends (Figure 3). Incidence rates in whites continue to be higher than in non-whites.

Figure 3. Lyme Disease Incidence Rate by Age Group, Florida, 2009



Lyme disease was reported in residents of 37 of 67 Florida counties, but only 18 counties reported cases as acquired in Florida. Forty-six percent of cases acquired in Florida were reported from central Florida, 29% from south Florida, and 25% from the Panhandle.

Prevention

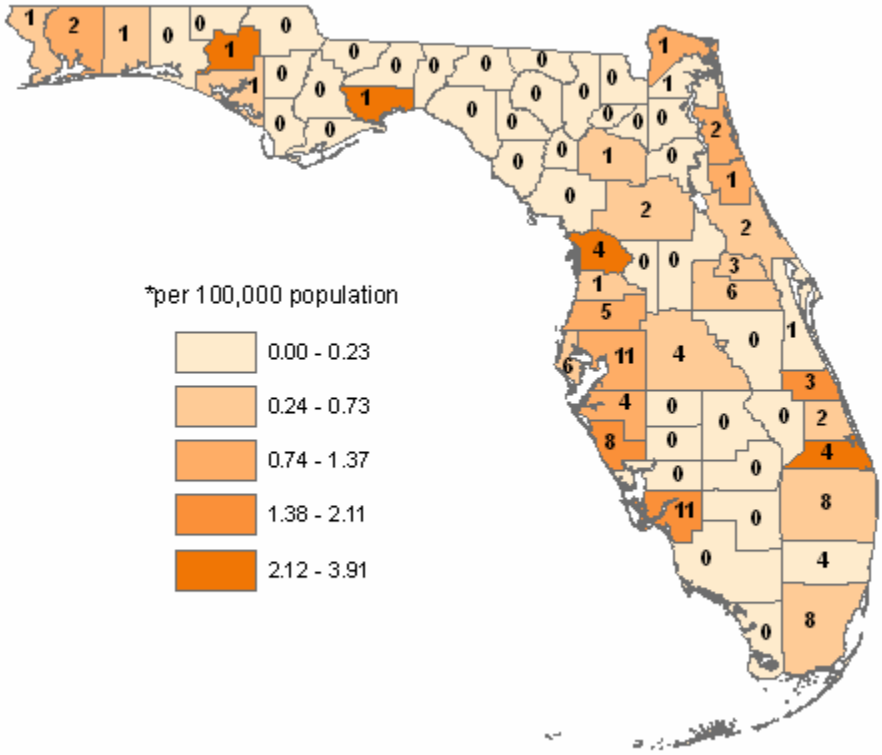
The most effective prevention is avoiding human and pet exposure to ticks by using the following strategies.

- 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.
- Remove promptly 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.

Lyme Disease Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

L.K. Pickering, C.J. Baker, S.S. Long, and J.A. McMillan (eds.), *Red Book: 2006 Report of the Committee on Infectious Diseases*, 27th ed., American Academy of Pediatrics Press, 2006.

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

Additional Resources

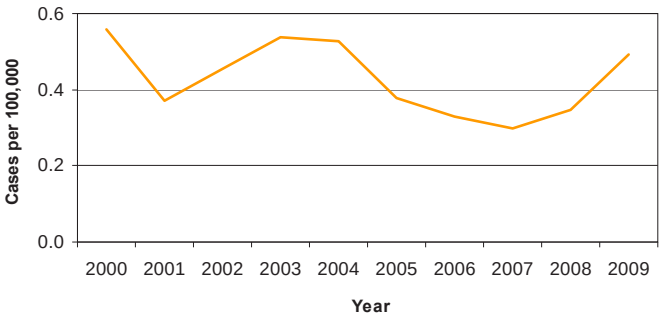
Disease information is available from the Centers for Disease Control and Prevention at http://www.cdc.gov/ncidod/dvbid/lyme/ and http://www.cdc.gov/healthypets/diseases/lyme.htm

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	93
2009 incidence rate per 100,000	0.49
% change from average 5-year (2004-2008) incidence rate	32.00
Age (yrs)	
Mean	41.2
Median	43
Min-Max	1 - 78

Figure 1. Malaria Incidence Rate by Year Reported, Florida, 2000-2009



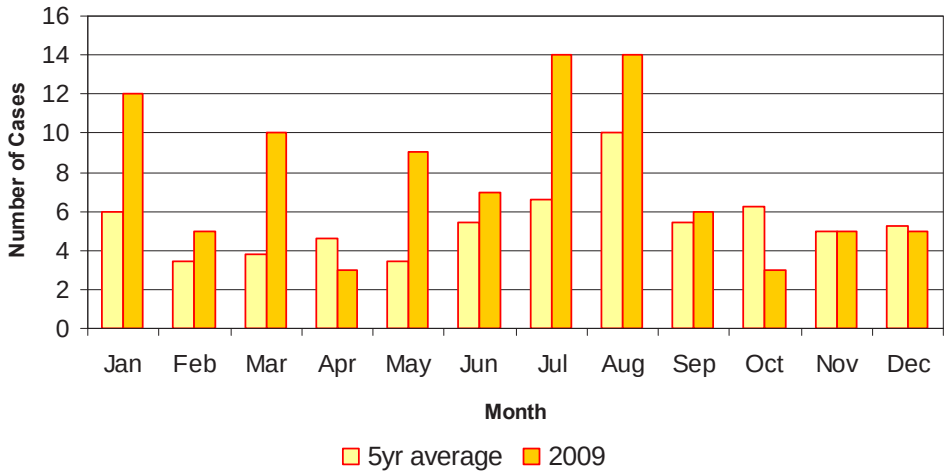
Disease Abstract

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 person to person 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 in 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 over the last 10 years (Figure 1) until 2008; 93 cases were reported in 2009. In 2009, there was a 32% increase in cases compared to the average incidence from 2004 to 2008.

More cases are reported during the summer and early fall months, which correlates with the rainy season in source countries such as Haiti, but cases are reported year-round (Figure 2). High incidence rates have been consistent among those in the 20 to 34 age group, and this is what was seen in 2009 (Figure 3). The mean age of reported malaria cases in Florida is 41.2 years (range: 1-78). In 2009, 76% of the 93 reported malaria cases were diagnosed with *P. falciparum* and 15% were diagnosed with *P. vivax*. One case was diagnosed with *P. ovale* and species was unable to be determined for seven cases. Seventy-seven percent of cases were non-white and 66% were male.

One individual acquired malaria via a blood transfusion from an asymptomatic donor. The remaining cases were all imported. Forty-two percent of cases had recent travel history to Haiti, 13% traveled to Nigeria, 26% traveled to another African country, 10% to Asia, 4% to Central or South America, and 2% to the Dominican Republic. Of those for whom additional data were available (86 out of 93 total cases), the largest proportion (59%) acquired malaria while visiting relatives or friends. Persons “visiting friends and relatives” or VFRs are considered a high-risk group since prior immunity they may have had has waned and they tend not to take proper malaria prevention precautions. Other reasons for travel to malaria endemic areas were missionary/volunteer work (15%), tourism (9%), and business (6%). Immigrants to Florida made up 10% of the cases. Seventy-five percent of cases reported not using anti-malarial chemoprophylaxis; 12% reported missing doses; and 10% reported taking all doses as scheduled. Anti-malarial chemoprophylaxis treatment history for the remainder was unknown.

Figure 2. Malaria Cases by Month of Onset, Florida, 2009



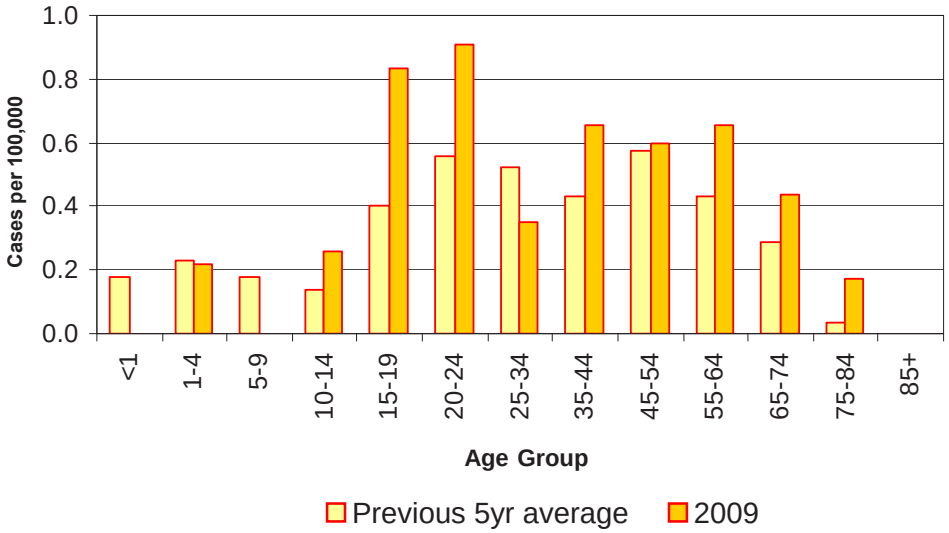
Prevention

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.

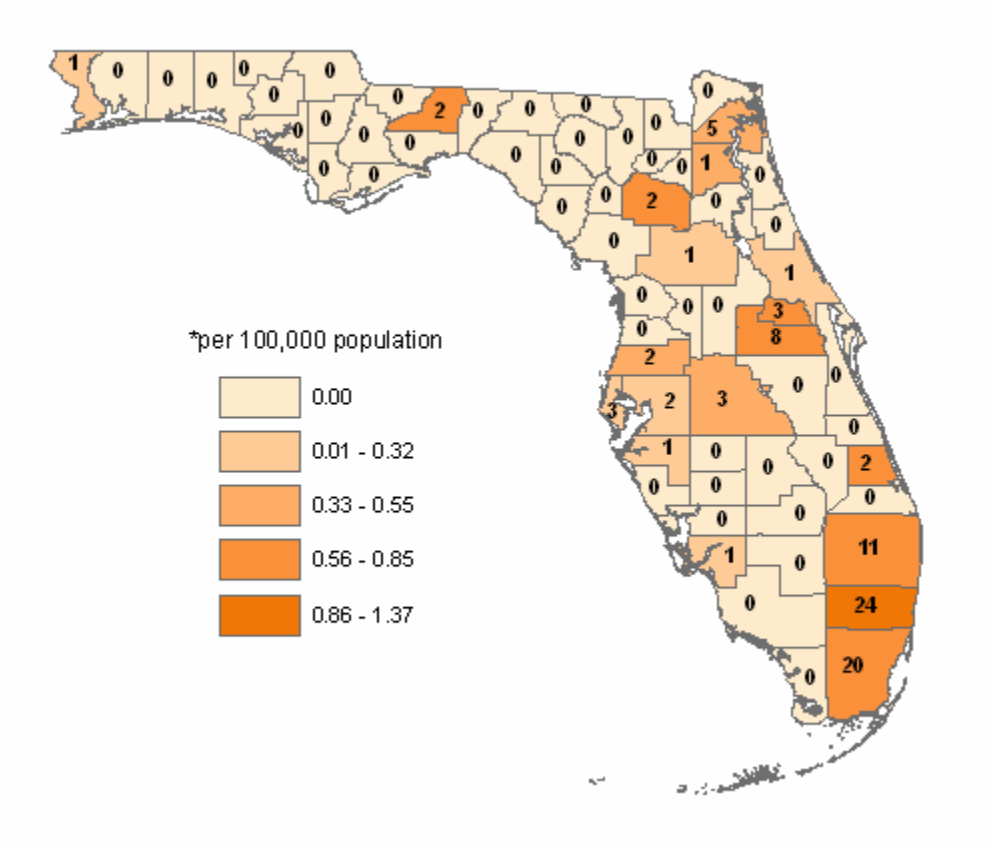
Following these personal protection measures can also help prevent malaria infection:

- 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.

Figure 3. Malaria Incidence Rate by Age Group, Florida, 2009



Malaria Incidence Rate* by County, Florida, 2009



References

Centers for Disease Control and Prevention, "Traveler's Health: Yellow Book, Health Information for International Travel, 2008," 22 June 2007, 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 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

Measles: Crude Data	
Number of Cases	5
2009 incidence rate per 100,000	0.03
% change from average 5-year (2004-2008) reported cases	127.27
Age (yrs)	
Mean	5.8
Median	3
Min-Max	<1 - 14

Disease Abstract

In 2009, five laboratory-confirmed cases of measles were reported, for a statewide incidence rate of 0.03 cases per 100,000 population. Of the five confirmed cases reported, one was imported from Africa, in a child who was too young to receive the measles vaccine. Four of the confirmed cases occurred within the same family and were imported from England. These four children had not received measles vaccine. The United Kingdom continues to have an increase in measles activity over the past few years due to decreased vaccination rates. The U.K. currently has endemic transmission of measles. A case is officially classified as internationally imported when the exposure was outside the country, with rash onset within 21 days after entering the country, and the case is not linked to local transmission.

Measles is a disease of urgent public health importance, so even one case requires tracking of all contacts and conducting interviews to assess susceptibility. 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 must be 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.

References

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

Additional Resources

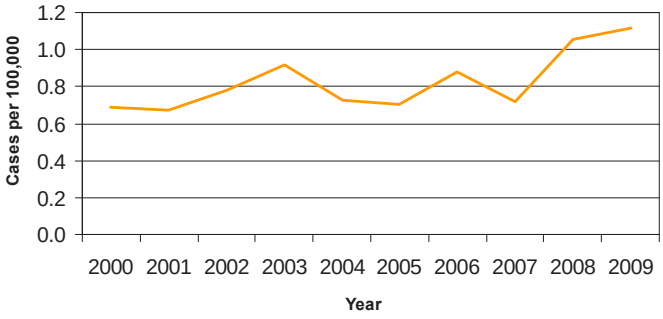
Disease information is available from the Centers for Disease Control and Prevention (CDC) at www.cdc.gov/vaccines/vpd-vac/measles/default.htm.

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

Meningitis, Other

Meningitis, Other (Bacterial, Cryptococcal, or Mycotic): Crude Data	
Number of Cases	210
2009 incidence rate per 100,000	1.12
% change from average 5-year (2004-2008) incidence rate	36.13
Age (yrs)	
Mean	36.74
Median	41.5
Min-Max	<1 - 109

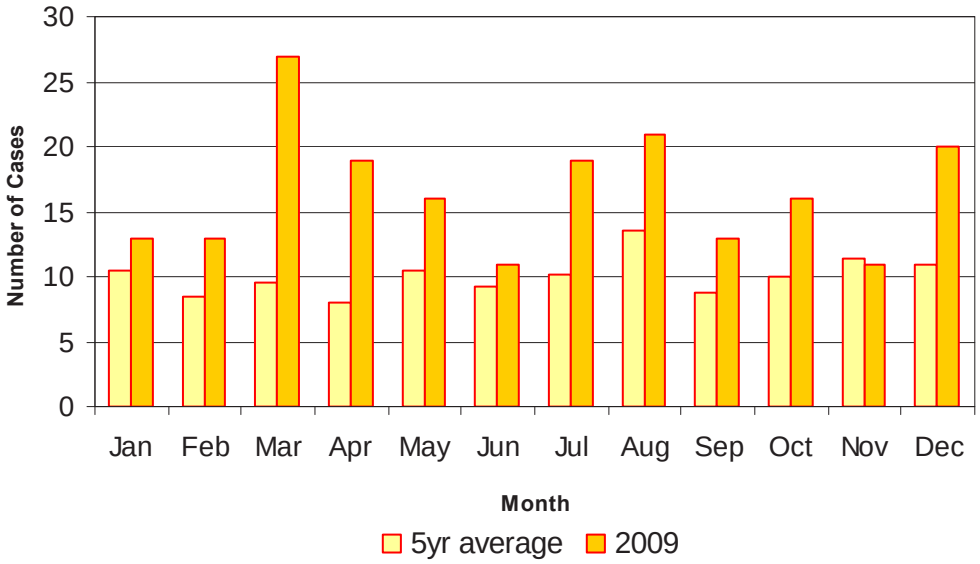
Figure 1. Meningitis, Other (Bacterial, Cryptococcal, or Mycotic) Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

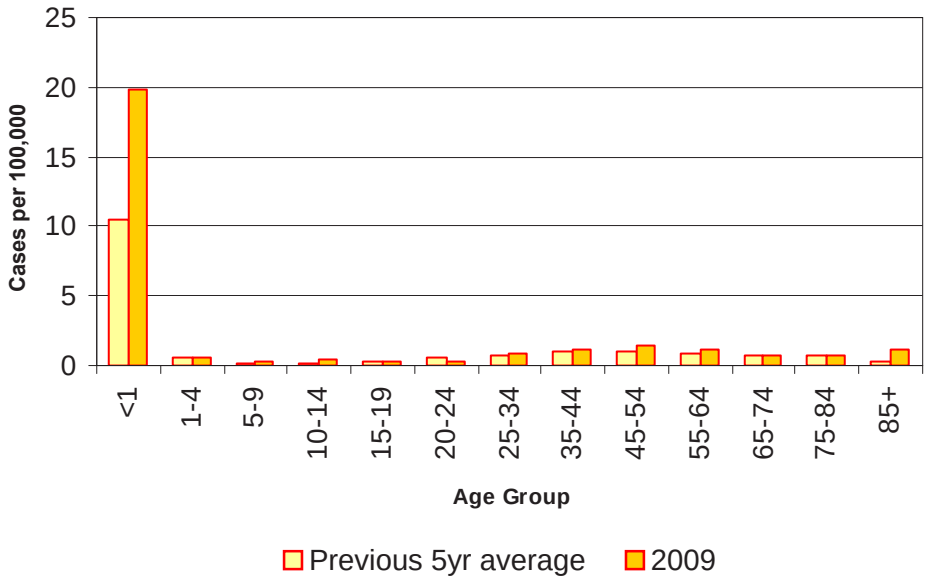
The “meningitis, other” category includes any meningitis due to any bacterial or fungal species other than *Neisseria meningitidis* or *Haemophilus influenzae*, with an isolate from the blood or cerebrospinal fluid. In 2009, some common pathogens isolated were *Cryptococcus neoformans*, *Escherichia coli*, *Klebsiella pneumoniae*, Staphylococcal species, Streptococcal species, and Enterococcal species. Please see Table 1 for a complete list of etiologic agents identified for the past seven years.

Figure 2. Meningitis, Other (Bacterial, Cryptococcal, or Mycotic) Cases by Month of Onset, Florida, 2009



The incidence rate of “meningitis, other” has increased gradually over the previous 10 years and in 2009 there was a 36.13% increase in the incidence rate as compared to the previous five-year average (Figure 1). In 2009, 210 cases were reported, all confirmed. The number of cases of “meningitis, other” shows little difference by season when averaged over several years but there did seem to be increased incidence in the late spring of 2009 (Figure 2). The majority of cases were sporadic in 2009. One case of tuberculosis (TB) meningitis was linked to a known TB case.

Figure 3. Meningitis, Other (Bacterial, Cryptococcal, or Mycotic) Disease Incidence Rate by Age Group, Florida, 2009



The highest incidence rates continue to occur in infants under one year (Figure 3). Immuno-suppressed or immuno-compromised people in the older age groups may also be at risk for infection. Males continue to have a higher incidence than females (1.42 per 100,000 and 0.82 per 100,000, respectively).

“Meningitis, other” cases were reported by 34 of 67 counties in Florida. Counties with the highest incidence rates were widely scattered.

Table 1. Etiologic Agents Identified in Cases Reported as Meningitis, Other, Florida, 2003-2009

	Year						
Organism	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Bacteria	**72**	**63**	**72**	**91**	**72**	**128**	**144**
Acinetobacter sp.	2	0	2	4	0	4	3
Escherichia coli	4	8	6	9	10	8	10
Enterococcus	4	6	5	4	2	5	7
Haemophilus influenzae	2	0	2	0	0	0	1
Klebsiella sp.	3	1	0	2	7	8	6
Pseudomonas sp.	2	1	4	0	5	5	1
Salmonella sp.	3	1	1	4	1	3	5
Staphylococcus aureus	13	13	16	24	15	22	18
Staphylococcus epidermidis	0	1	2	1	2	7	2
Staphylococcus hominis	0	0	0	2	1	2	1
Other Staphylococcal sp.	11	5	10	18	8	16	11
Beta Hemolytic *Streptococcus*							
Group A	3	1	2	2	0	1	2
Group B	2	6	4	0	1	13	23
Alpha Hemolytic *Streptococcus*							
Streptococcus pneumoniae	4	1	1	0	0	9	29
Streptococcus Viridans Group	8	9	5	6	5	5	7
Other Streptococcal sp.	1	1	1	3	0	5	0
Other bacterial species	8	8	9	11	15	15	14
Non-specific bacterial species	2	1	2	1	0	0	3
Mycotic	**37**	**48**	**45**	**68**	**57**	**66**	**64**
Cryptococcal sp.	35	48	45	65	55	61	62
Other and non-specific mycotic results	2	0	0	3	2	5	2
Other	**2**	**1**	**4**	**2**	**0**	**0**	**0**
Unknown	**5**	**3**	**0**	**0**	**0**	**2**	**0**

Prevention

Practicing good personal hygiene will reduce the chances of a bacterial, cryptococcal, or fungal infection.

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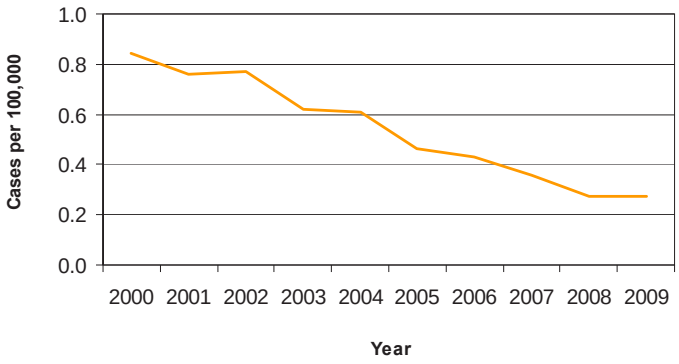
Meningococcal Disease

Meningococcal Disease: Crude Data	
Number of Cases	52
2009 incidence rate per 100,000	0.28
% change from average 5-year (2004-2008) incidence rate	-34.76
Age (yrs)	
Mean	37.67
Median	31.5
Min-Max	<1 - 91

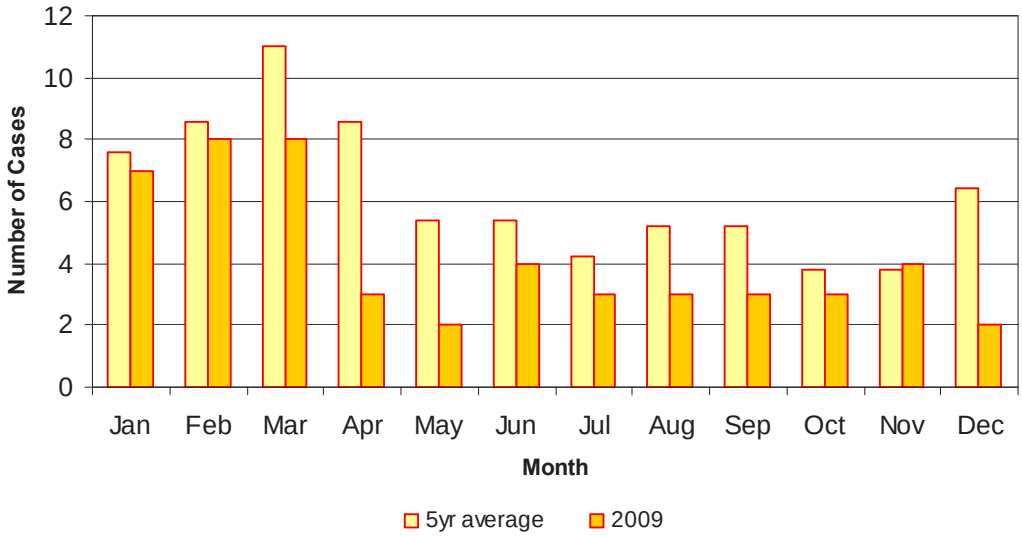
Figure 1. Meningococcal Disease Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

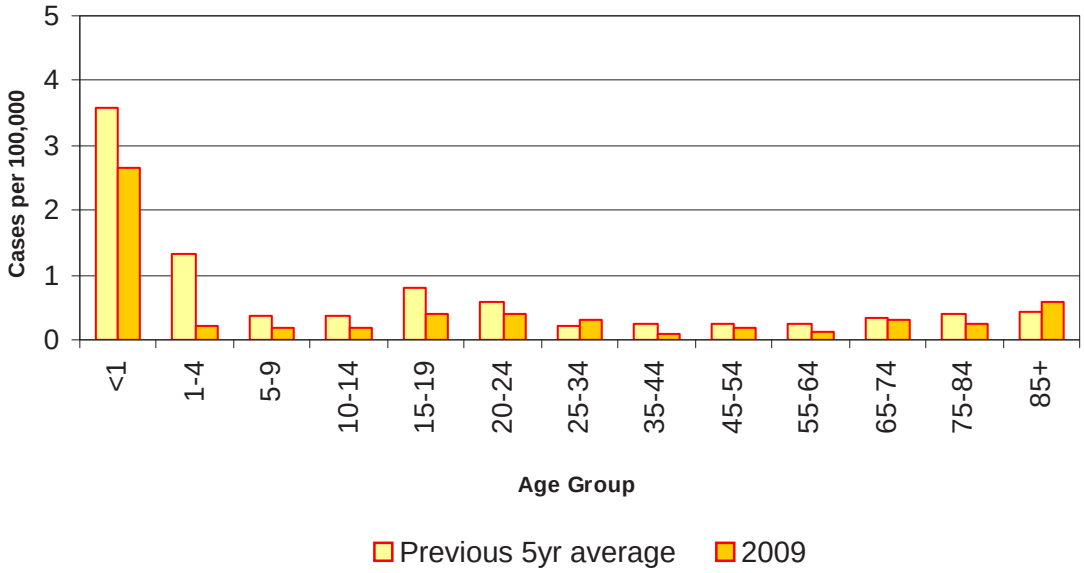
Meningococcal disease includes both meningitis and septicemia due to the bacteria *Neisseria meningitidis*. There are many different serogroups of *Neisseria meningitidis* around the world. The common ones in the United States include A, B, C, W-135, and Y. The reported incidence rate for meningococcal disease has declined gradually over the previous 10 years, and in 2009 was less than half of what it was 10 years ago (Figure 1). In 2009, there was a 34.8% decrease in comparison to the average incidence from 2004 to 2008. In 2009, 52 cases were reported, and all were confirmed. There is a general seasonal increase in cases in early winter and late spring (Figure 2). This may be due in part to social gatherings as well as staying indoors in the fall and winter months. There were 14 cases reported as outbreak-related in 2009; 13 cases were related to a laboratory-confirmed cluster of serogroup W-135 in southeast Florida and one case related to transmission among family members. There were seven cases that resulted in death.

Figure 2. Meningococcal Disease Cases by Month of Onset, Florida, 2009



The highest incidence rates continue to occur in infants less than one year. There are no vaccines approved for use in those less than two years old. In 2009, the incidence rates were lower than or equal to the previous five-year average in all age groups except those 25 to 34 and those over 85 years (Figure 3). Forty-nine of the 52 cases had specimens submitted to the Bureau of Laboratories for serogrouping (Table 1).

Figure 3. Meningococcal Disease Incidence Rate by Age Group, Florida, 2009



Meningococcal disease was reported in 22 of 67 counties in Florida. Counties in central and southeastern Florida reported the highest incidence rates.

Table 1. Cases of Meningococcal Disease by Serogroup, Florida 2009

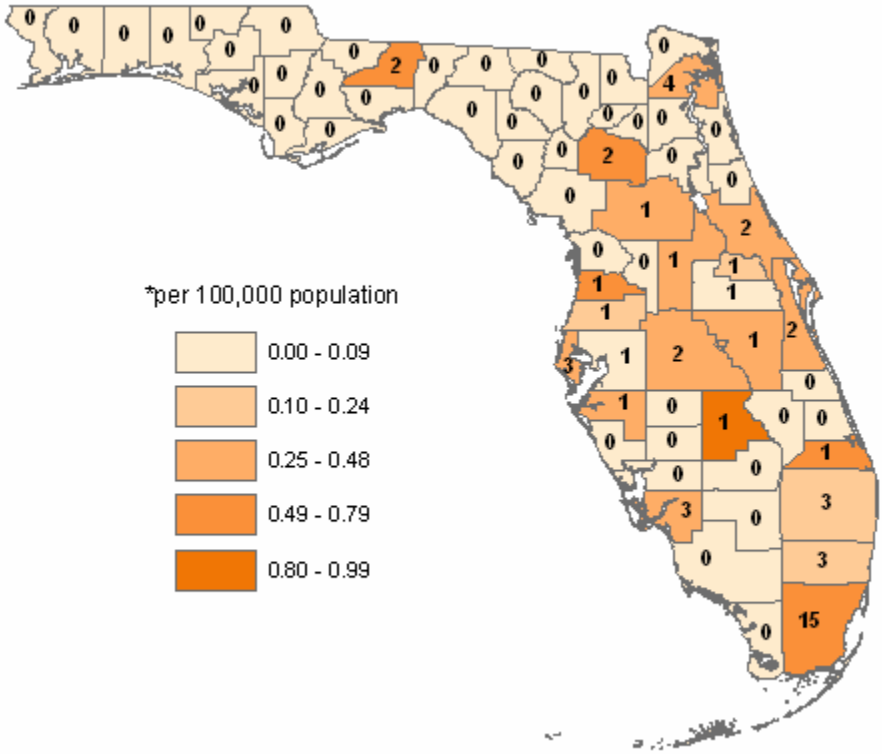
Serogroup	Number of Cases
Group A	0
Group B	13
Group C	6
Group Y	12
Group W-135	15
Non-Viable	3
Unknown	3
Total	52

Prevention

Meningococcal vaccines are available to reduce the likelihood of contracting *Neisseria meningitidis*. Two vaccines, licensed in 1978 and 2005, each 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 close household or social contact should receive antibiotic prophylaxis with an approved regimen (most often used are ciprofloxacin and rifampin).

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

Meningococcal Disease Incidence Rate* by County, Florida, 2009



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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, 2008-2009

Description

Mercury is a naturally occurring element. Its distribution in the environment is the result of both natural and man-made processes. There are three categories of mercury 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. Thimerosal (merthiolate) may be included in vaccines.
- 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.

The clinical presentation of mercury poisoning varies depending on the form of mercury (elemental, organic, or inorganic) as well as the route of exposure and the dose. Any organ system may be affected. For elemental mercury, acute toxicity might result in fever, fatigue, and clinical signs of pneumonitis. For inorganic mercury, symptoms might include profuse vomiting and diarrhea that is often bloody, followed by hypovolemic shock, oliguric (decreased urine production) renal failure, and possibly death. Delayed toxicity symptoms (more than 1 month) are typical of organic mercury poisoning and usually involve the central nervous system. These symptoms might include paresthesias, headaches, ataxia, dysarthria (motor speech disorder), visual field constriction, blindness, and hearing impairment.

Disease Abstract

Mercury poisoning may be diagnosed by laboratory testing. Elevated levels of mercury are defined as more than10 micrograms per liter (µg/L) of urine, more than 10 micrograms per liter (µg/L) of whole blood, or more than 5 micrograms per gram (µg/g) of hair. However, urine mercury levels are not useful in evaluating organic mercury poisonings.

For analysis, cases with exposures occurring in 2008 or 2009 were included. The case definition used for mercury poisoning reported during 2008 requires only laboratory confirmation to classify a case as confirmed. The new case definition classifies all cases reported in 2009 based on clinical illness, laboratory tests, exposure history, or epidemiologic linkage.

There were 81 confirmed cases of mercury poisoning reported during 2008 and 2009. There were fewer reported cases of mercury poisoning during 2009 (14) as compared to 2008 (67). One of the main reasons for the decrease in cases was the change in case definition, which is more stringent and requires clinical illness. Potential sources of mercury exposure were recorded during 2009 only. Among the 14 cases reported in 2009, 13 had eaten fish within a month of report. Along with fish consumption, one case had exposure to a broken thermometer and another reported exposure to dental amalgam.

For the years 2008 and 2009, a majority of the confirmed cases were reported from Miami-Dade (N=31, 38.3%), Palm Beach (N=20, 24.7%), and Broward (N=16, 19.8%) counties. Cases were predominantly male (53, 65.4%).

The majority of mercury-poisoning cases were reported among those 35 to 64 years of age (N=64, 79%) and those 65 years and older (N=11, 14%) (Figure 1). Cases ranged from four months to 86 years old, the mean and median case age was 52 and 50, respectively.

About half of the reported cases of mercury poisoning were among whites (both Hispanic and non-Hispanic) while 40% were reported with unknown race and ethnicity. Hispanic ethnicity was reported among 12.5% (N=6) of the cases with known race and ethnicity (Figure 2).

Figure 1. Mercury Poisoning Cases by Age Group, Florida, 2008-2009

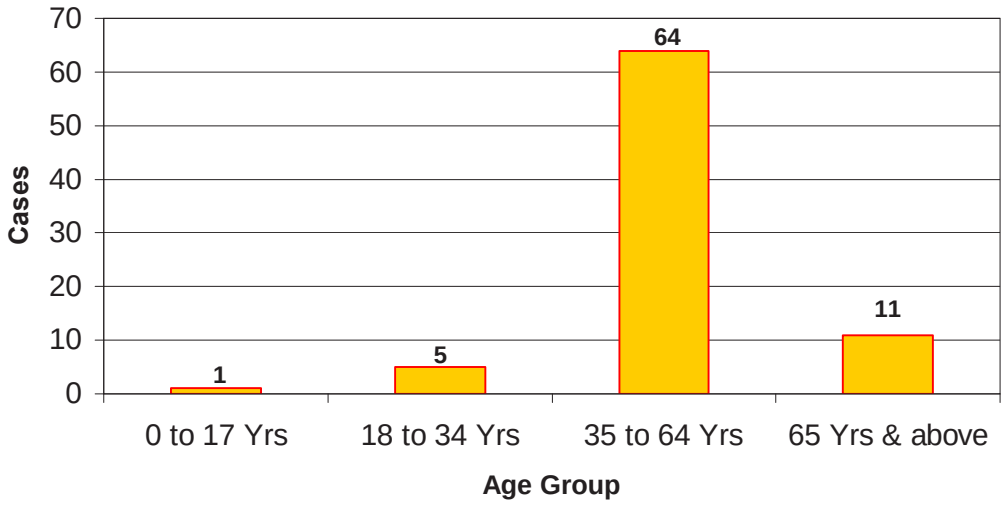
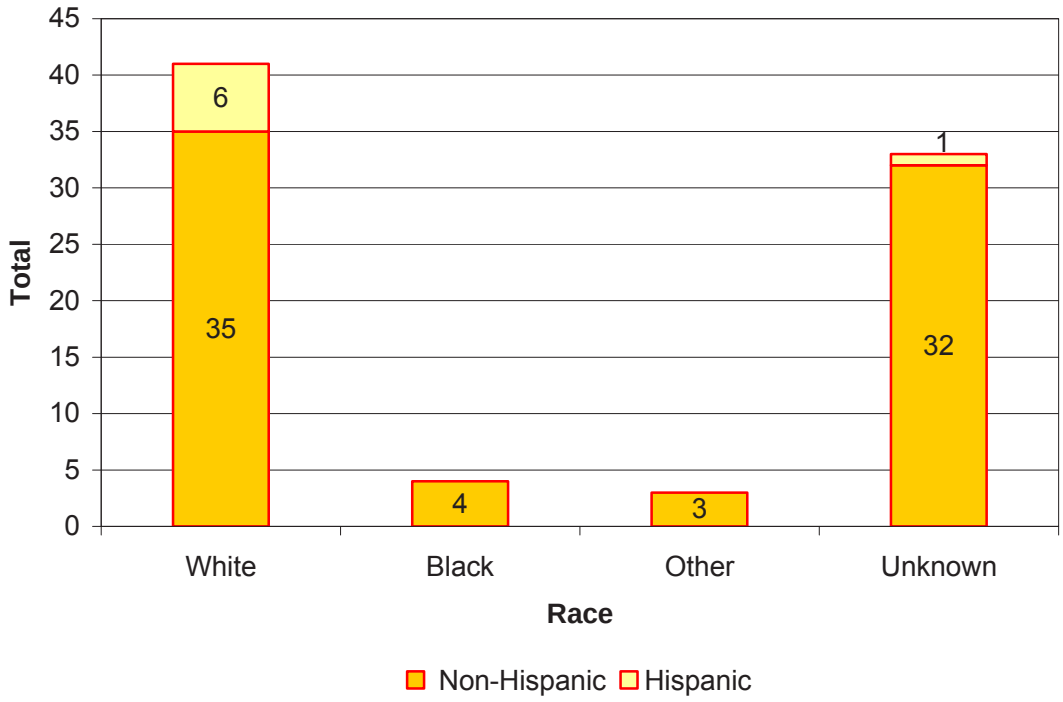


Figure 2. Mercury Poisoning Cases by Race & Ethinicity, Florida, 2008-2009



Prevention

The Florida Department of Health, Division of Environmental 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.

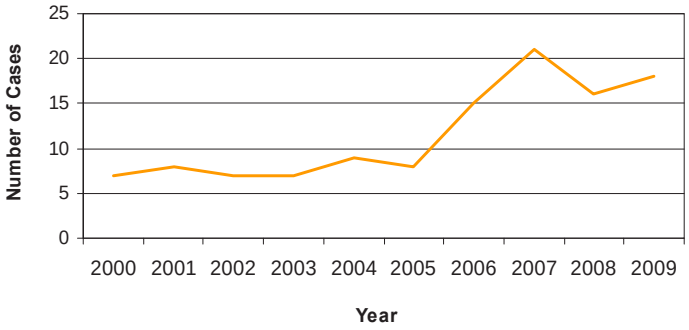
Additional Resources

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

Mumps

Mumps: Crude Data	
Number of Cases	18
2009 incidence rate per 100,000	0.10
% change from average 5 year (2004-2008) reported cases	30.43
Age (yrs)	
Mean	30.6
Median	23.5
Min-Max	1 - 75

Figure 1. Mumps Cases by Year Reported, Florida, 2000-2009

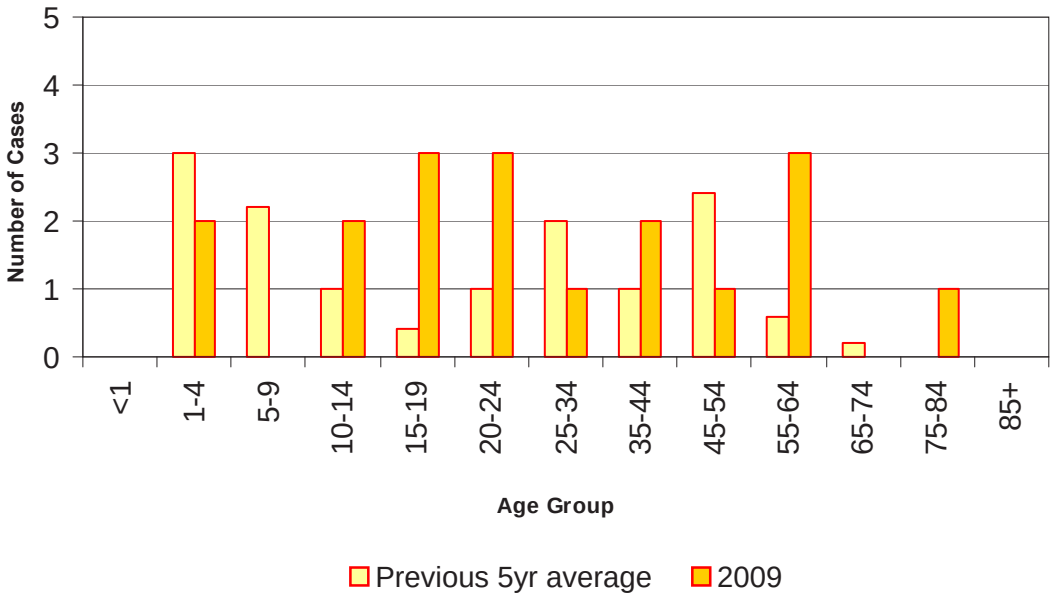


Disease Abstract

The 2009 statewide incidence rate for mumps was 0.10 per 100,000 population. Cases in 2009 ranged from 1 to 75 years of age (Figure 2) and all 18 were confirmed cases. Three cases were acquired outside of the U.S. Three of the cases were hospitalized. Eight of the cases had received vaccine, six had no history of vaccine, and four had unknown immunization status.

The 18 confirmed cases represent an increase from 12 confirmed cases in 2008. 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. This trend continued in 2008 with an increase of 33.33% over the average number of cases reported in the previous five years, but slowed for 2009 when there was an increase of 30.6% over the previous five-year average.

Figure 2. Mumps Cases by Age Group, Florida, 2009



Prevention

Vaccination with two doses of mumps (preferably MMR) vaccine is recommended. The first dose of MMR should be given at 12 months of age and the second dose at kindergarten entrance. Proof of MMR is required for entry and attendance in childcare facilities, family daycare homes, and kindergarten through twelfth grade. Many colleges in Florida also require mumps vaccination for entry. After the 2006 multi-state mumps outbreak in young adults, two doses of mumps vaccine are now recommended for all children and young adults.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed., 2008, Chapter 9.

Additional Resources

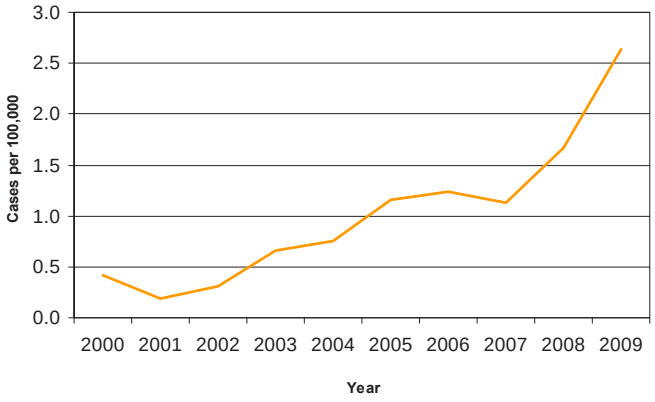
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/vaccines/vpd-vac/mumps/default.htm#clinical.

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

Pertussis

Pertussis: Crude Data	
Number of Cases	497
2009 incidence rate per 100,000	2.64
% change from average 5-year (2004-2008) incidence rate	121.37
Age (yrs)	
Mean	15.41
Median	9
Min-Max	<1 - 86

Figure 1. Pertussis Incidence Rate by Year Reported, Florida, 2000-2009

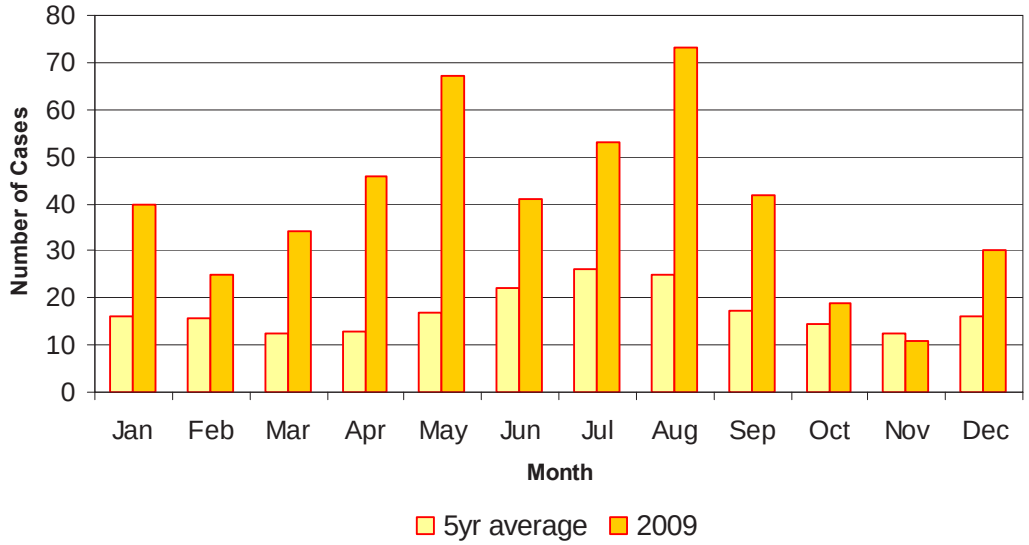


Disease Abstract

Pertussis is a severe respiratory disease caused by *Bordetella pertussis*. It is also known as whooping cough.

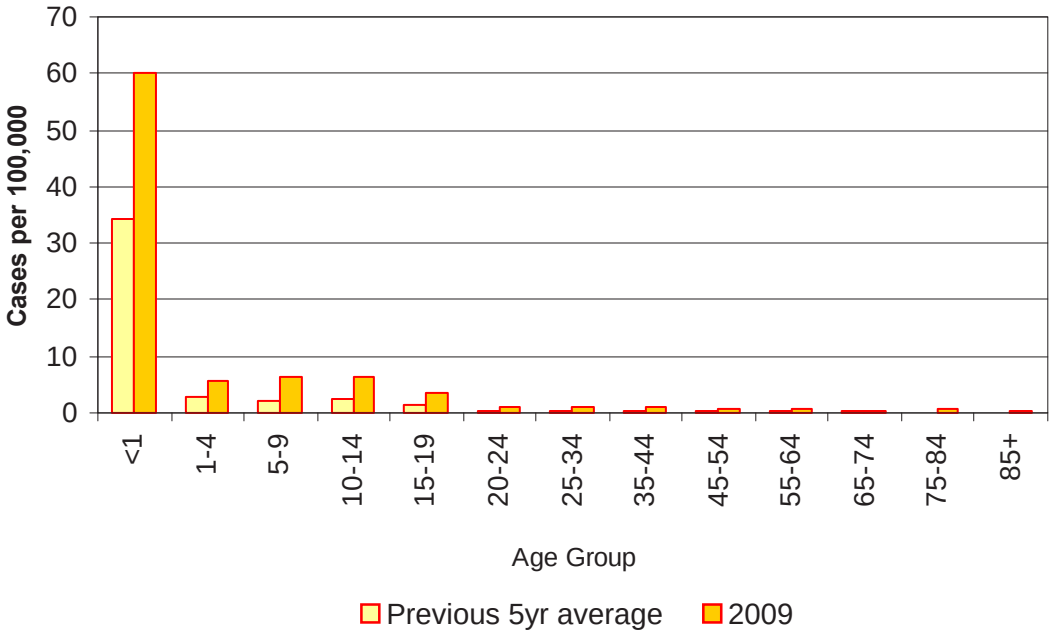
Disease trends in Florida, and nationwide, indicate that pertussis rates have increased steadily since 2001 (Figure 1). Case numbers went from 30 cases in 2001 (22 confirmed and 8 probable) to a peak of 497 cases in 2009 (376 confirmed and 121 probable). In the previous five years, most cases occurred during the summer months, and a similar trend was observed in 2009 (Figure 2). In the previous years, pertussis cases were consistent between gender and race. In 2009, rates were slightly higher in whites than non-whites and females than males.

Figure 2. Pertussis Cases by Month of Onset, Florida, 2009



As in the previous five years, most pertussis cases were identified in infants and young children. Of the 497 reported cases in 2009, 137 were reported in infants less than 12 months of age, too young to have completed the vaccination series (Figure 3). Of the reported cases, 102 were hospitalized, with one case developing acute encephalopathy. No deaths occurred in confirmed cases of pertussis in 2009. One death occurred in a probable case of a 69-year-old with negative culture and PCR results and positive clinical symptoms. There was no record of vaccination for 125 cases; of these, 32 (25%) refused vaccination. Two hundred and forty (48%) cases throughout 17 counties were outbreak associated.

Figure 3. Pertussis Incidence Rate by Age Group, Florida, 2009

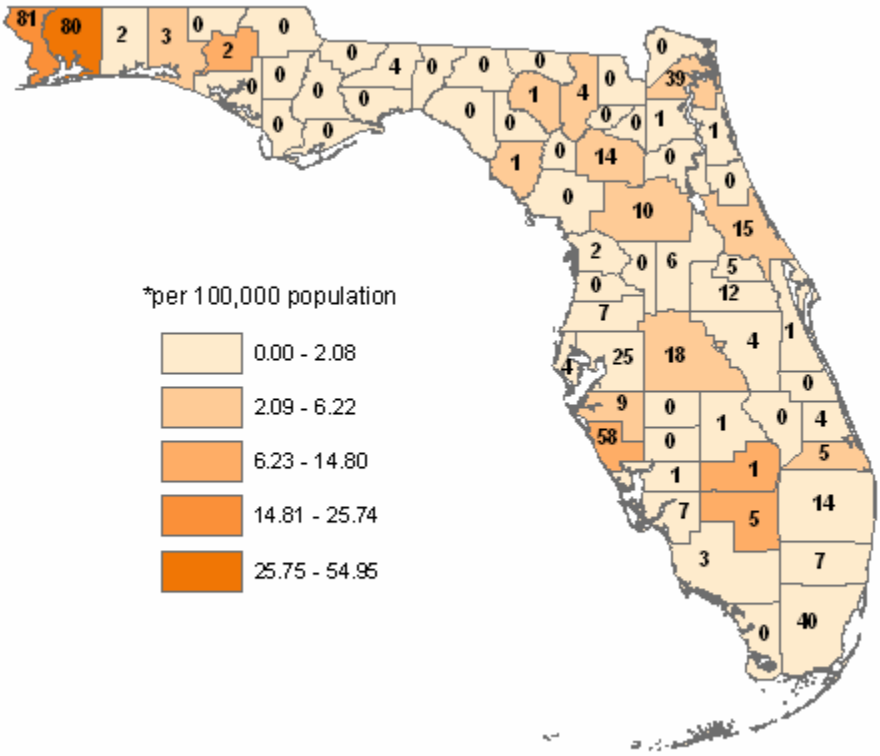


Pertussis was reported in 38 of 67 counties in Florida. Counties in the northeast and southwest regions of Florida reported the highest incidence rates.

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 two months, four months, six months, 15 to 18 months, and four to six years of age. 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. Vaccine recommendations now include one dose of Tdap vaccine to be given between 10 and 64 years of age. 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.

Pertussis Incidence Rate* by County, Florida, 2009



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. Web site: 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 Poisoning, 2007-2008

Description
Acute onset of pesticide-related illness or injury usually occurs within 24 to 48 hours after the exposure. Sub-acute illness or injury due to pesticide exposure also occurs, with symptoms appearing within 30 days of exposure. Health effects of acute and sub-acute pesticide poisoning include rash, hives, or blisters, redness of the eyes, blurred vision, or systemic signs and symptoms (e.g., respiratory, gastrointestinal, and neurological). Sub-chronic pesticide poisoning illness or injury may occur after repeated exposures over longer periods, usually 30 to 90 days. Chronic effects are also possible after long-term, prolonged and repeated exposures to pesticide products. Chronic conditions may be cancers or developmental, neurological, or reproductive disorders.

Pesticide exposures may be occupational or non-occupational. After the initial report, follow-up interviews of exposed people or their proxies are conducted to obtain details about exposure and health effects. Investigation reports from the Department of Agriculture and Consumer Services and medical and laboratory reports are also used to complete and classify cases.

The FDOH Chemical Disease Surveillance Program (CDSP) uses a standard protocol, based on National Institute of Occupational Safety and Health (NIOSH) surveillance guidelines for classifying cases. Incorporation of Florida Poison Center Information Network (FPCIN) and Emergency Department (ED) chief-complaint data into the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) has provided an additional tool for trained CHD users to access clinical pesticide poisoning reports.

Disease Abstract
From 1998 through 2008, there were 2,539 cases of pesticide poisoning reported in Florida, of which 410 were identified as work related. NIOSH has been collecting standardized information about acute occupational pesticide exposure from selected states since 1998 under the Sentinel Event Notification System for Occupational Risk (SENSOR) program. FDOH annually reports summarized case data (without personal identifiers) to the SENSOR program.

In Florida, there were 449 cases of acute pesticide poisoning reported during 2007 and 455 reported during 2008 (Figure 1). The increase in cases seen since 2006 is related to additional cases identified because of direct access to FPICN data by the CDSP, which has led to more complete case ascertainment. Case distribution is not uniform throughout the year, with more cases reported during the summer months (Figure 2).

Figure 1. Number of Pesticide Poisoning Cases by Year, Florida 1998-2008

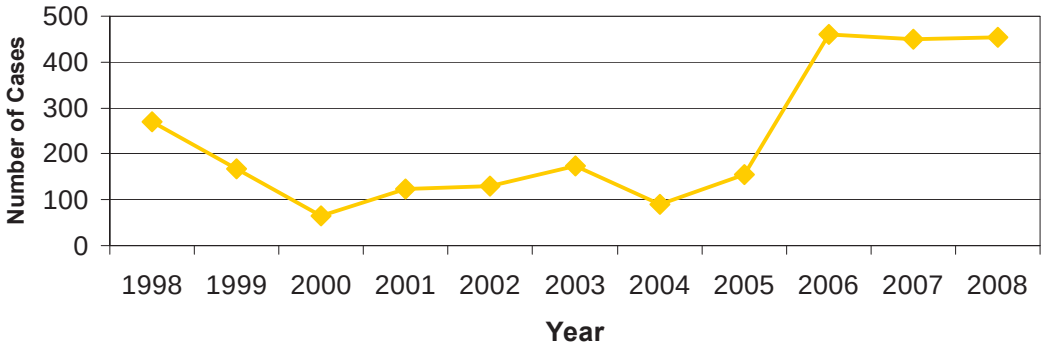
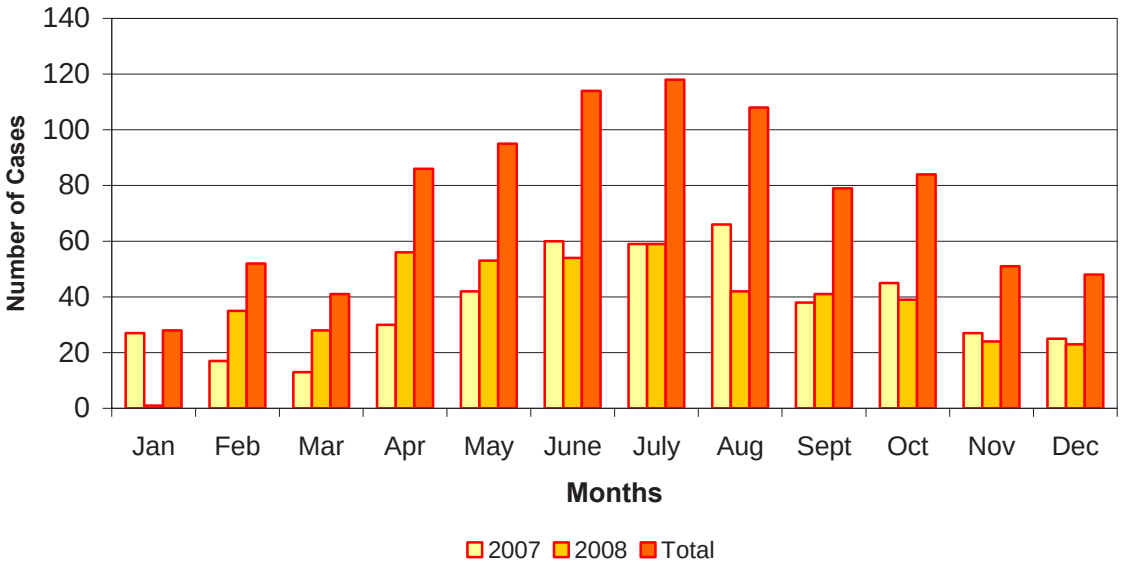
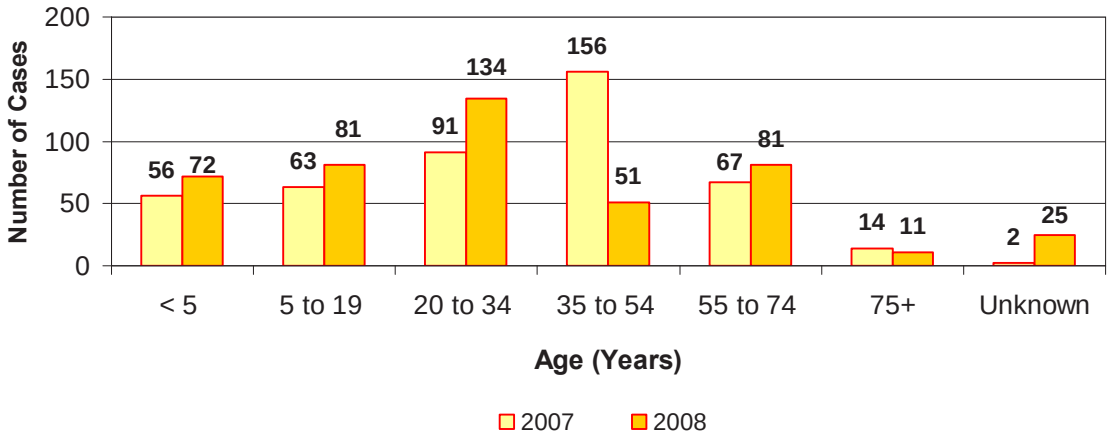


Figure 2. Pesticide Poisoning Cases by Month of Exposure, FL 2007-2008



The majority of the cases were classified as suspected during 2007 (361, 80%) and 2008 (316, 69%). The FPICN has become the major reporting source since 2006. In 2007, 427 (95%) cases were identified through the FPICN. During 2008, self-reports (114, 25%) and friends or relatives (103, 22.64%) were also frequent reporting sources in addition to the FPICN (147, 32%). Cases ranged from less than one year of age to 95 years, with 64 and 37 as the mean and median ages, respectively (Figure 3). The majority of cases were in people 35 to 54 years old (35% in 2007; 29% in 2008). There were slightly more males reported with pesticide poisoning (52%) than females.

Figure 3. Pesticide Poisoning Cases by Age Group, Florida 2007-2008



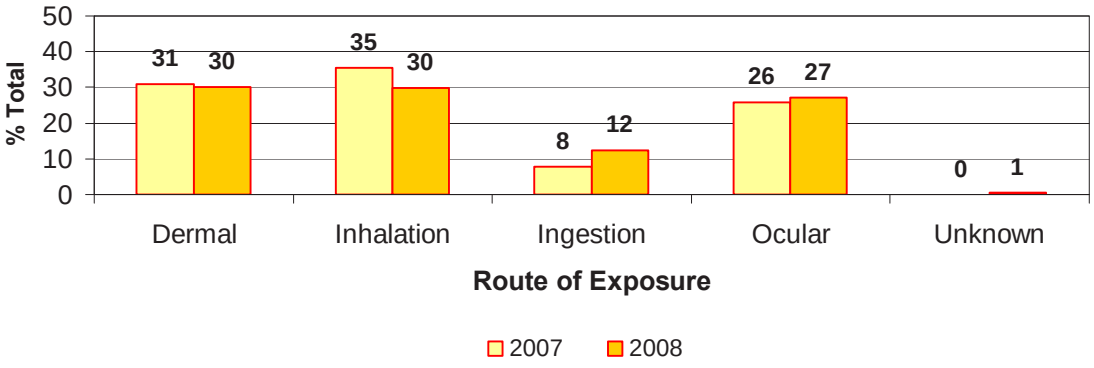
To meet the disease reporting criteria for pesticide poisoning, patients must report two or more acute pesticide-related health effects. The largest number of patients reported the following health effects during 2007 and 2008:

- dermal (21% in 2007; 18% in 2008);
- ocular (22% in 2007; 23% in 2008);
- respiratory (16% in 2007; 19% in 2008);
- gastrointestinal (18% in 2007; 15% in 2008); and
- neurological (17% in 2007; 15% in 2008) health effects.

Most cases reported during 2007 (79%) and 2008 (83%) were categorized as low severity. Only one death was reported as pesticide-related during 2008 and none were reported in 2007.

Routes of exposure for pesticide poisonings are shown in Figure 4. During 2007 and 2008, inhalation, dermal, and ocular were the most frequent routes of exposure.

Figure 4. Pesticide-Related Cases by Route of Exposure, Florida 2007-2008



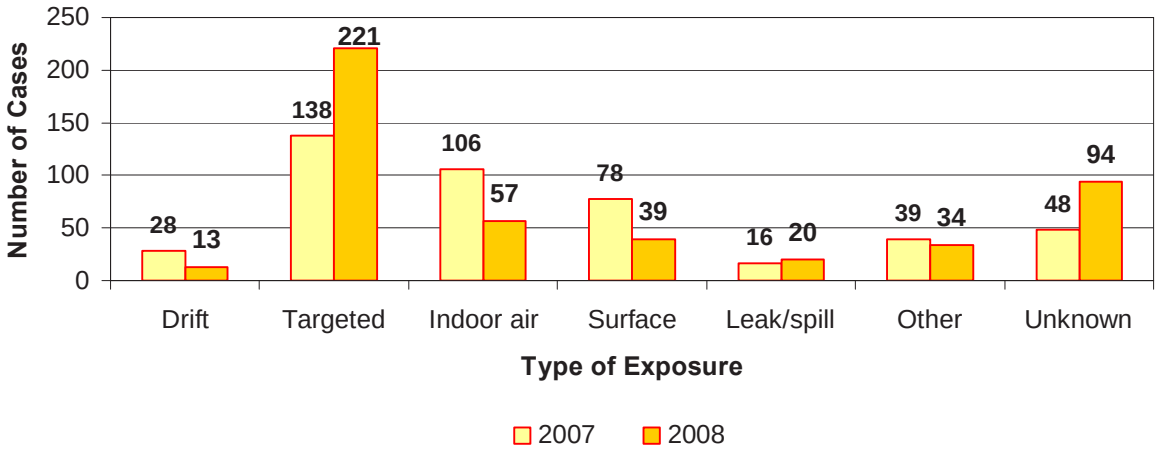
Most of the cases reported during 2007 (406, 90%) and 2008 (230, 50%) occurred in the home. Other sites of exposure reported include farms, schools, private vehicles, and service establishments. The majority reported that they were applying pesticides at the time of exposure (Table 1). Less than 5% of reported cases were at work at the time of exposure but were not applying pesticides.

Table 1. Activity at the Time of Pesticide Exposure for Reported Cases of Pesticide Poisoning, Florida 2007-2008

Activity at the time of exposure	2007	%	2008	%
Applying pesticides	203	45.21	157	34.51
Mixing or loading	3	0.67	2	0.44
Transport or disposal	0	0.00	1	0.22
Any combination of above three	0	0.00	5	1.10
Emergency response	0	0.00	4	0.88
Routine work/not application	14	3.12	19	4.18
Routine indoor living	94	20.94	73	16.04
Routine outdoor living	40	8.91	15	3.30
Not applicable	2	0.45	27	5.93
Unknown	93	20.71	152	33.41
Total	**449**	**100.00**	**455**	**100.00**

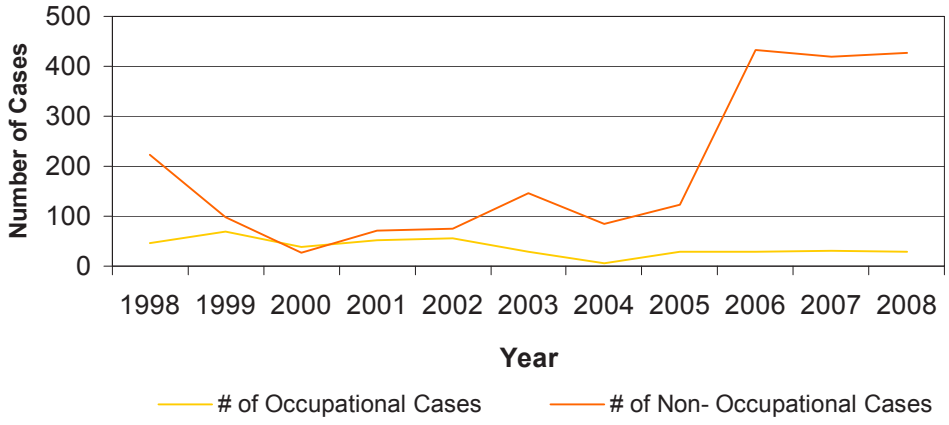
Applications of a pesticide material released at the intended location (target site) and not carried from that location to another area by air are considered to be targeted applications. Pesticide exposure occurred during targeted application for 138 cases in 2007 (30%) and 221 cases in 2008 (46%) (Figure 5). Pesticide drift accounted for only 6% and 3% of cases during 2007 and 2008, respectively.

Figure 5. Pesticide-Related Cases by Type of Exposure, Florida 2007-2008



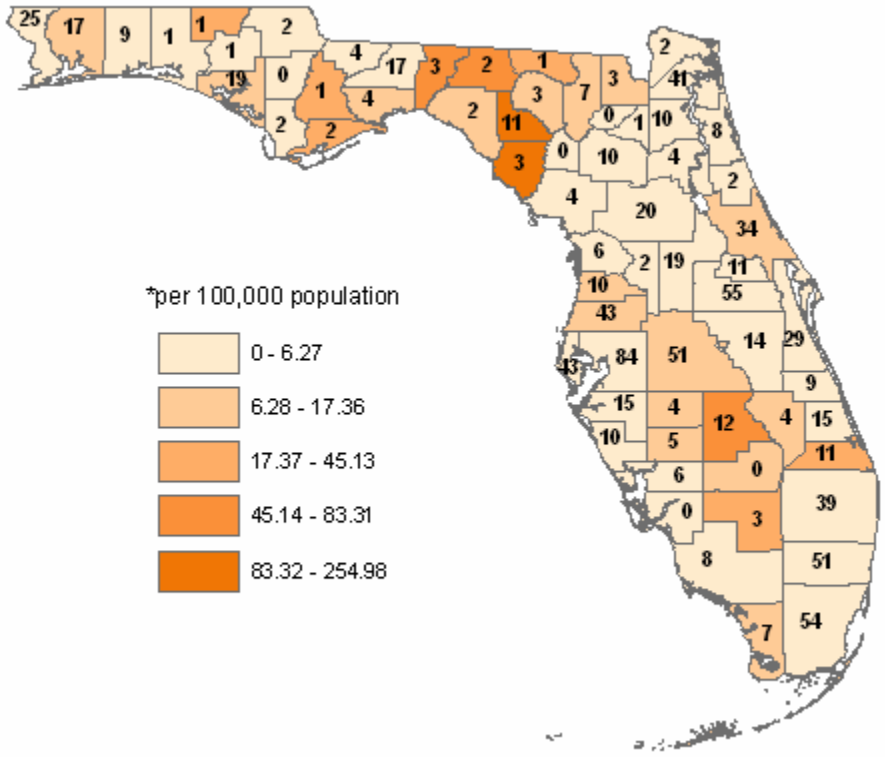
Direct access to FPICN data has led to the identification of more non-occupational cases, but not more occupational ones. During 2007 and 2008, 30 (6%) and 28 (6%) cases were occupational (Figure 6).

Figure 6. Pesticide Poisoning Cases by Exposure Category, Florida 2007-2008



The following map shows the distribution of reported pesticide poisoning cases by county of residence.

Pesticide Poisoning Incidence Rate* by County, Florida, 2007-2008



Prevention

The CDSP analyzes the 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 prevent further exposures. The program intervenes through education and outreach activities. The program also makes recommendations for regulatory actions and/or changes.

To prevent exposure to pesticides, use the following measures.

- Always read the label first and strictly follow the directions.
- Use pesticides safely by not using products for pests that are not indicated on the label and not using more pesticide than directed by the label.
- Use protective measures when handling pesticides as directed by the label including impermeable gloves, long pants, and long-sleeve shirts.
- Change clothes after applying pesticides.
- Wash your hands immediately after applying pesticides.
- Remove children, their toys, and pets from the area to be sprayed and do not allow them to return until the pesticide has dried or as specified by label instructions.

Educational materials are available in three languages (English, Spanish, and Haitian-Creole) on the program website listed below to promote safe practices when using pesticides at work and at home.

Additional Resources

CDSP collects pesticide-related illness and injury (or pesticide poisoning) data as a part of our disease reporting system. For more information about the program, please visit http://www.myfloridaeh.com/medicine/Chemical_Surveillance/index.html.

FDOH has been conducting surveillance on acute pesticide-related illnesses and injuries since 1998. Details about pesticide surveillance activities are available at http://www.doh.state.fl.us/environment/medicine/pesticide/index.html.

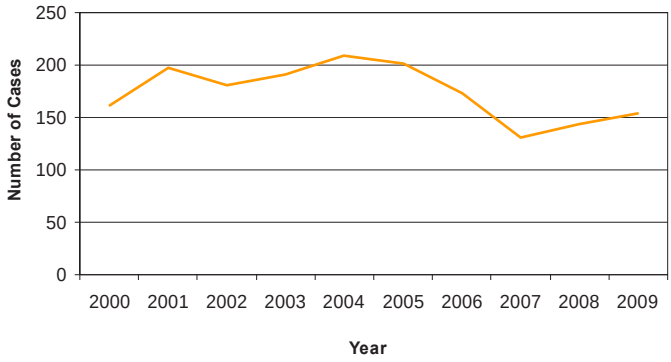
The case definition for pesticide-related illness and injury is available at http://www.doh.state.fl.us/environment/medicine/pesticide/Professional-Resources.html.

CDC/NIOSH website for Pesticide Illness and Injury Surveillance can be found at http://www.cdc.gov/niosh/topics/pesticides/.

Rabies, Animal

Rabies, Animal: Crude Data	
Number of Cases	154
2009 incidence rate per 100,000	NA
% change from average 5-year (2004-2008) reported cases	-10.5
Age (yrs)	
Mean	NA
Median	NA
Min-Max	NA

Figure 1. Animal Rabies by Year Reported, Florida, 2000-2009



Disease Abstract

From 2000 through 2009, 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. In 2009, rabies post-exposure treatment was recommended for 1,913 people in Florida; there were no human cases reported.

Rabies is endemic in the raccoon and bat populations of Florida, and frequently spills out from raccoons into other animal species such as foxes and cats. Laboratory testing for animal rabies is only done when animals expose humans or domestic animals, and thus the data do not necessarily correlate with the true prevalence of rabies by animal species in Florida. Among the 3,003 animals tested at the Bureau of Laboratories (BOL) in 2009, there were 154 confirmed rabid animals, representing a 10% decrease from the previous five-year average but a 7% increase from 2008. After a decrease in reported cases in 2007, apparently due to decreases in the raccoon population because of raccoon distemper outbreaks statewide, overall case numbers seem to be increasing to more typical levels (20-year average is 183 cases per year). No cases were associated with domestic animal rabies outbreaks. In 2009, rabid animals were found in 46 of 67 counties in Florida, with the highest activity concentrated in the central part of the state. Three counties reported 10 or more cases: Leon (12); Marion (10); and Orange (10) (see map). Cases were reported in each month of the year, with most activity in summer: July (18), August (20), September (18), followed by a smaller winter peak: January (14), February (15), and March (15). It is typical to see summer and winter increases, but these peaks in activity usually occur over one- to two-month intervals rather than extending over a three-month period. Highest numbers of positive raccoon rabies cases were reported in August (13), January (12), and March, (12). July, May, and September had the most rabid fox reports, with five, four, and four cases, respectively. Rabid bat cases typically peak in late summer. In 2009 the most bat rabies cases were identified in July (5) and August (4). Rabid cats were identified in all months of the year except March, May, and August.

Raccoons once again accounted for the majority of cases (92, 60%), followed by bats (23, 15%), foxes (21, 14%), and cats (11, 7%). One dog was found to be rabid in 2009, although over 700 were tested. Since 1997, rabid cats have continued to outnumber rabid dogs, although rabies vaccination is compulsory for both. All positive cats were either not vaccinated

for rabies, were significantly overdue for vaccination, or had unknown rabies vaccination history. All positive cats were feral or pets allowed to roam outdoors. In 2009, one horse was found to be rabid, and two bobcats, two skunks, and one otter were positive for rabies. See the "Outbreak Section" for specific accounts of multi-person exposures to rabid animals.

Molecular sequencing of select samples by Kansas State Rabies Lab confirmed 11 of the terrestrial animals (three raccoons, two cats, three foxes and one dog) were infected with eastern U.S. raccoon rabies variant. Bat samples that were sequenced generally typed in species specific variant clusters: Five Brazilian free-tail bats were *Tadarida* variant, one Brazilian free-tail bat virus was uncharacterized; two Seminole bats were *Lasiurus* variant, two Florida yellow bats were *Lasiurus intermedius* variant, and one unknown bat species was *Eptesicus* (big brown bat) variant.

Prevention

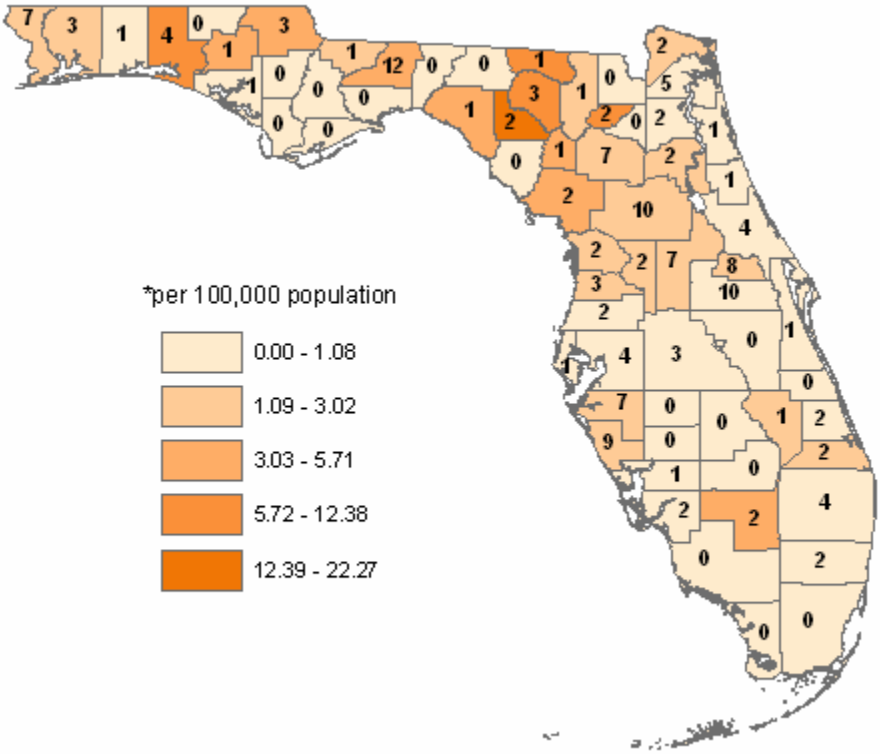
During 2009, the Florida Rabies Advisory Committee revised the rabies guidebook to provide information for county health departments and others involved in rabies control and prevention.

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.

Animal Rabies Cases by County, Florida, 2007-2008



References

Florida Rabies Advisory Committee, *Rabies Prevention and Control in Florida, 2009*, Florida Department of Health, Bureau of Environmental Public Health Medicine, 2009.

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

Pickering LK, Baker CJ, Long SS, and McMillan JA (eds.), *Red Book: 2006 Report of the Committee on Infectious Diseases*, 27th ed., American Academy of Pediatrics Press, 2006.

Additional Resources

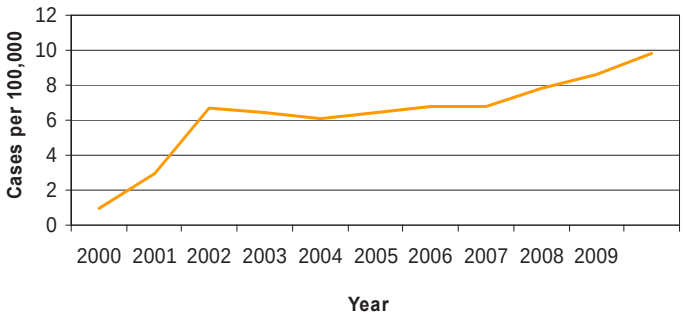
Information is available from the Florida Department of Health website at http://www.doh.state.fl.us/environment/medicine/rabies/rabies-index.html

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	1,853
2009 incidence rate per 100,000	9.85
% change from average 5 year (2004-2008) incidence rate	35.06
Age (yrs)	
Mean	37.34
Median	38
Min-Max	<1 - 108

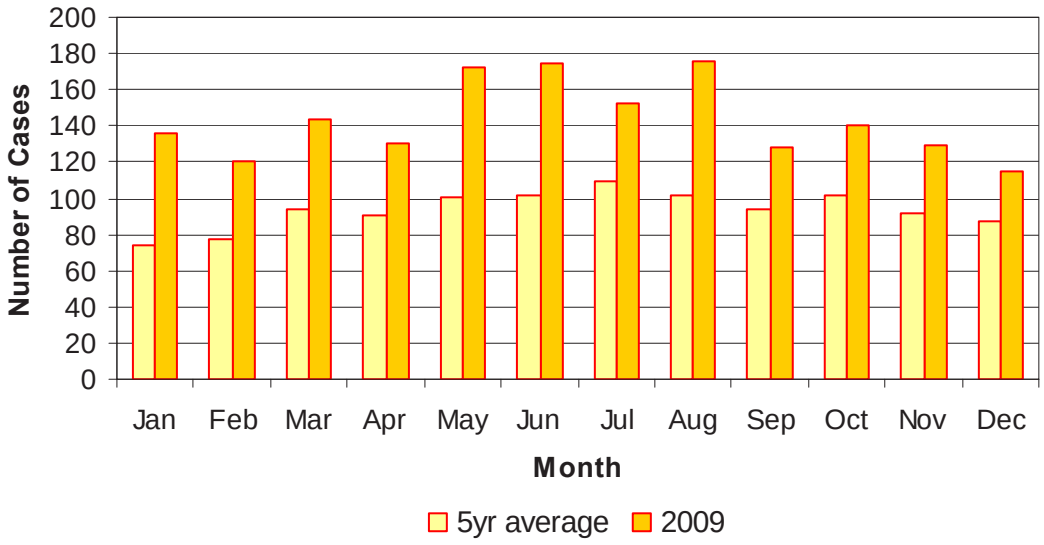
Figure 1. Rabies Possible Exposure Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

Electronic reporting was initiated in 2001 of animal encounters (bites, scratches, etc.) for which rabies post-exposure prophylaxis (PEP) is recommended through the Merlin system. Additional data summaries of rabies PEP cases, including total 2009 cases based on the date of exposure, are included in *Rabies Prevention and Control in Florida, 2010* located at http://myfloridaeh.com/medicine/rabies/rabies-index.html. 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.

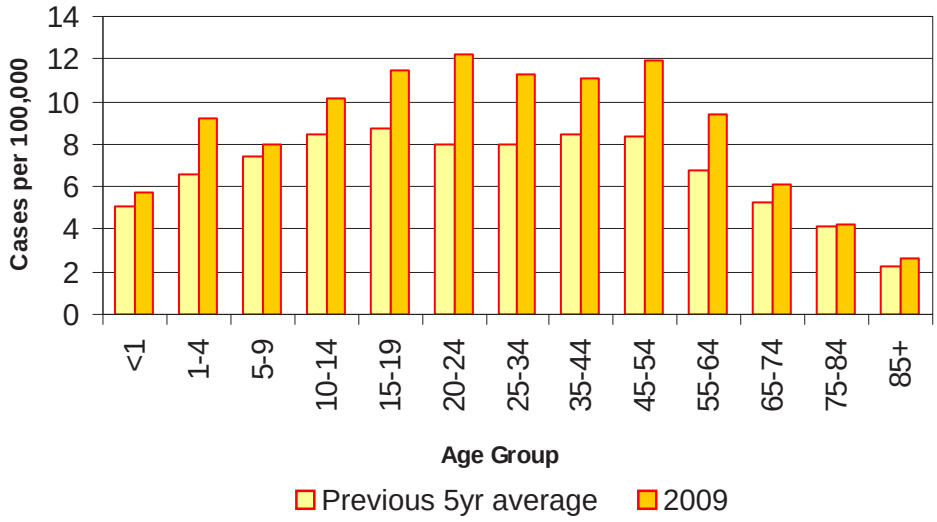
Figure 2. Rabies, Possible Exposure Cases by Month of Exposure, Florida, 2009



The annual incidence of exposures for which PEP is recommended has increased since electronic reporting was initiated (Figure 1). In 2009, the incidence rate was up 35.1% over the previous five-year average. This increase is thought to be largely due to the human rabies vaccine shortage experienced throughout most of 2008 and 2009. During much of this time, healthcare providers were required to contact local and state health officials on a case by case basis to obtain rabies post-exposure vaccines, which led to more reporting of exposures with PEP recommended.

PEP is recommended year round in Florida, though the number of treatment incidents increases somewhat during the summer months (Figure 2). The average age of the victim for the 1,853 cases reported in 2009 was 37.3 years, with a range from under one year to 108 years of age. In 2009, the highest incidence was seen in individuals between 20 and 24 years of age, but incidence was similar from ages 15 to 54 (Figure 3). The incidence rate for males is approximately the same as that for females, but the incidence rate among whites is almost three times that of blacks.

Figure 3. Rabies, Possible Exposure Incidence Rate by Age Group, Florida, 2009

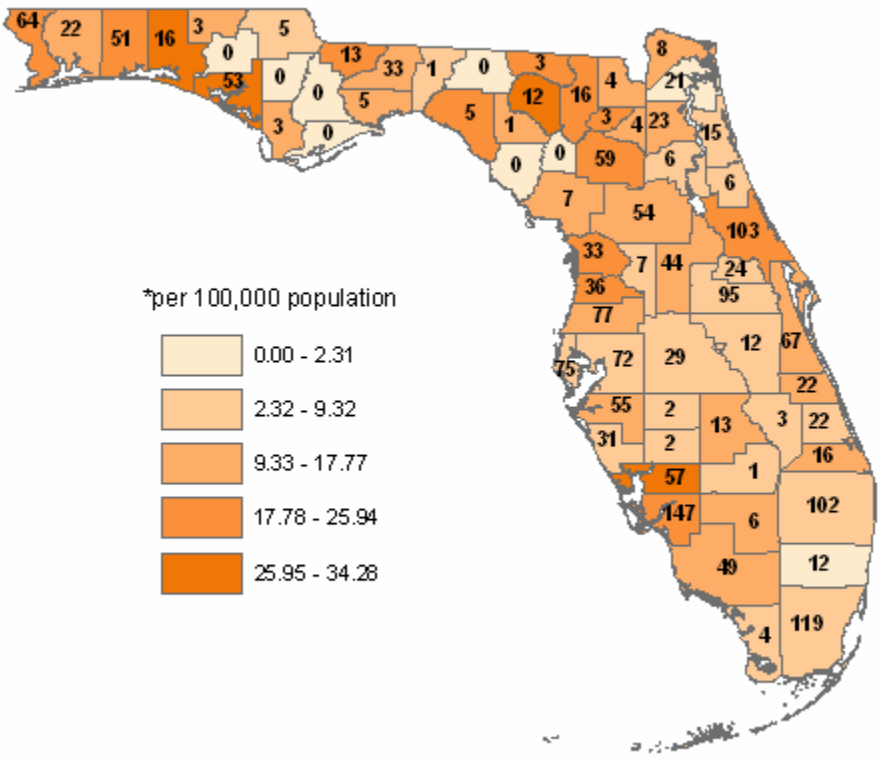


Of the 1,853 cases reported in 2009, the largest proportion of exposed people for whom treatment was recommended reported exposure to dogs (n=850, 46%). Other animals to which people were exposed include cats (24%), raccoons (13%), and bats (7%). Other, less numerous exposures included contact with bobcats, foxes, squirrels, horses, opossums, pigs, skunks, and otters. Enhanced data collection in Merlin, Florida's reportable disease database, for animal bites and cases where PEP was recommended was started in 2009. Additional data elements captured include body exposure location (neck, arm, etc.), type of exposure (bite, scratch, etc.), whether PEP was recommended, and whether PEP was actually started or completed. These new data elements were added to the system mid-year. The first complete year for which the enhanced data collection will be available is 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.

Rabies, Possible Exposure Incidence Rate* by County, Florida, 2009



Additional Resources

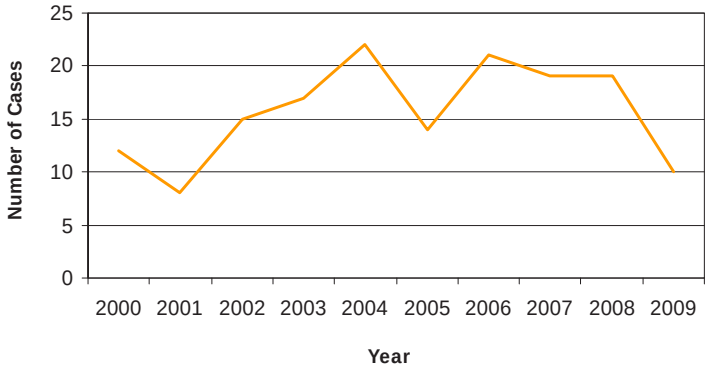
Additional information on animal bites and PEP can be found in the *Rabies Prevention and Control in Florida, 2008 Guidebook*, online at http://www.doh.state.fl.us/environment/community/arboviral/Zoonoses/Rabiesguide2008.pdf

Dog bite prevention and rabies information can also be found on the Department of Health website at www.MyFloridaEH.com and http://www.doh.state.fl.us/environment/community/rabies/rabies-index.html

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever: Crude Data	
Number of Cases	10
2009 incidence rate per 100,000	0.05
% change from average 5-year (2004-2008) reported cases	-47.37
Age (yrs)	
Mean	49.3
Median	53
Min-Max	<1 - 78

Figure 1. Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 2000-2009

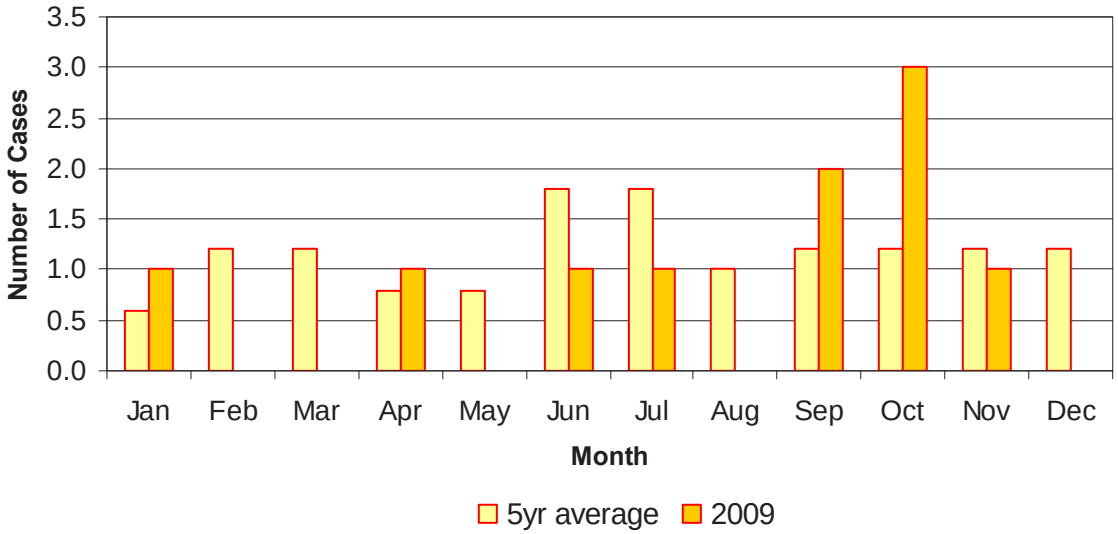


Disease Abstract

After a marked increase in reported Rocky Mountain Spotted Fever (RMSF) in the early part of the decade, incidence dropped off in 2009 (Figure 1). This decrease is partly, but not entirely, due to the recognition of the presence of disease due to rickettsial spotted fever agents other than *Rickettsia rickettsii* in Florida that had previously been diagnosed as RMSF. Currently, only disease due to *Rickettsia rickettsii* is reportable in Florida. Antibodies for other rickettsial species, such as *Rickettsia parkeri* and *Rickettsia amblyommii,* cross-react with tests for the RMSF agent, *Rickettsia rickettsii*, which may explain changes in apparent national and Florida disease incidence and geographic distribution in recent years. Florida has plans to modify Rule 64D-3, *Florida Administrative Code* to expand surveillance to include all spotted fever rickettsioses. No suspect cases of RMSF (cases with a positive laboratory tests but no clinical information) were reported in Florida in 2009.

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 2009, more cases were reported in September and October than usual. Interestingly, the adult stage of *Amblyomma maculatum*, the Gulf Coast tick, is believed to be more active during late summer and early fall. Of the 10 cases reported in 2009, seven (70%) acquired the disease in Florida and three (30%) acquired the disease in another U.S. state.

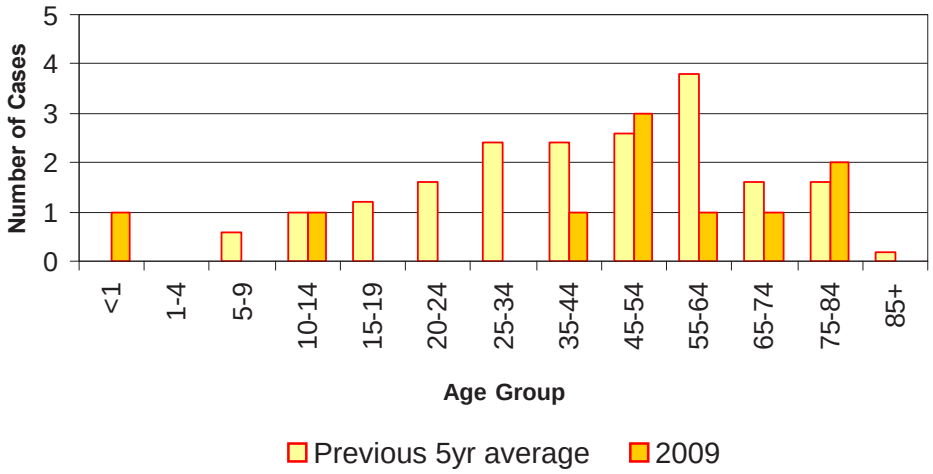
Figure 2. Rocky Mountain Spotted Fever Cases by Month of Onset, Florida, 2009



RMSF tends to affect adults more than other age groups, and in 2009, there were more cases reported in those aged 45 to 54 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 2009, males accounted for eight cases (80%) and all cases were white. No deaths were reported in 2009, but five patients (50%) were hospitalized. The national case fatality rate for treated cases is approximately 5% and for untreated cases is up to 20%.

Eschars at the site of the tick bite are associated with *R. parkeri* infections, but rare in cases of RMSF. 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*. The Florida Department of Health does not have the capacity to test for *R. amblyomma*, however four additional patients who developed eschar lesions at the site of tick bites were confirmed (two PCR of eschar biopsies or eschar swabs and one serologically) or probable (one serologically) to be due to *R. parkeri* through testing performed at the CDC. These four cases were adult white males ranging in age from 37 to 62 years with a median age of 47 years. Two patients were hospitalized. One-PCR positive patient had saved the biting tick (*A. maculatum*), which tested positive for *R. parkeri* at the CDC. Two cases were believed to have been exposed in Lee County, one in Polk, and the fourth in Santa Rosa. Exposures occurred between September 10 and October 18. Tick exposure time was known to be short in two cases (less than three hours). Other species of *Rickettsia* associated with human illness continue to be identified across the U.S. and will require additional surveillance efforts in the future.

Figure 3. Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2009

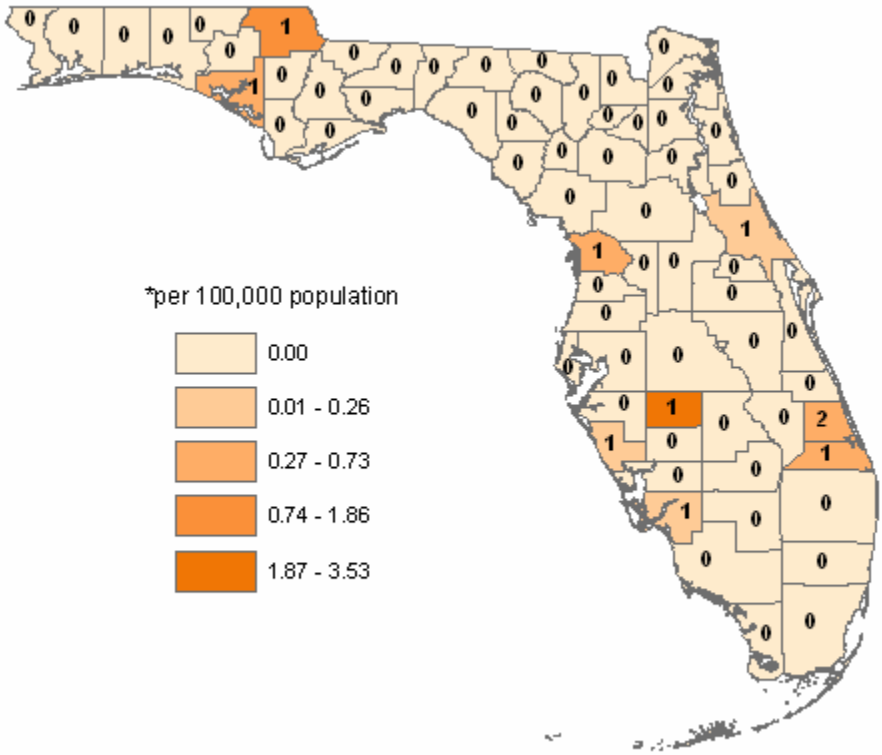


Prevention

Prevention of tick bites is the best way to avoid disease.

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

Rocky Mountain Spotted Fever Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

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

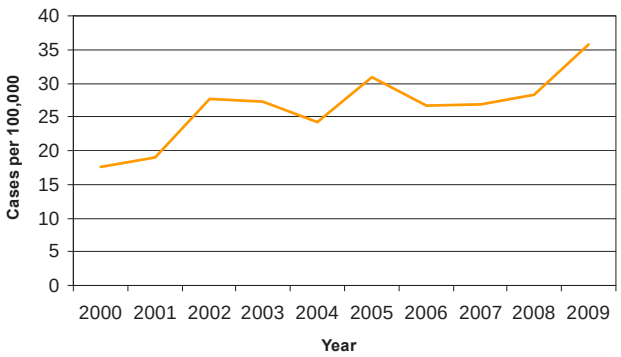
Disease information is available from the CDC at http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm

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	6,741
2009 incidence rate per 100,000	35.82
% change from average 5-year (2004-2008) incidence rate	30.80
Age (yrs)	
Mean	22.79
Median	7
Min-Max	<1 - 108

Figure 1. Salmonellosis Incidence Rate by Year Reported, Florida, 2000-2009

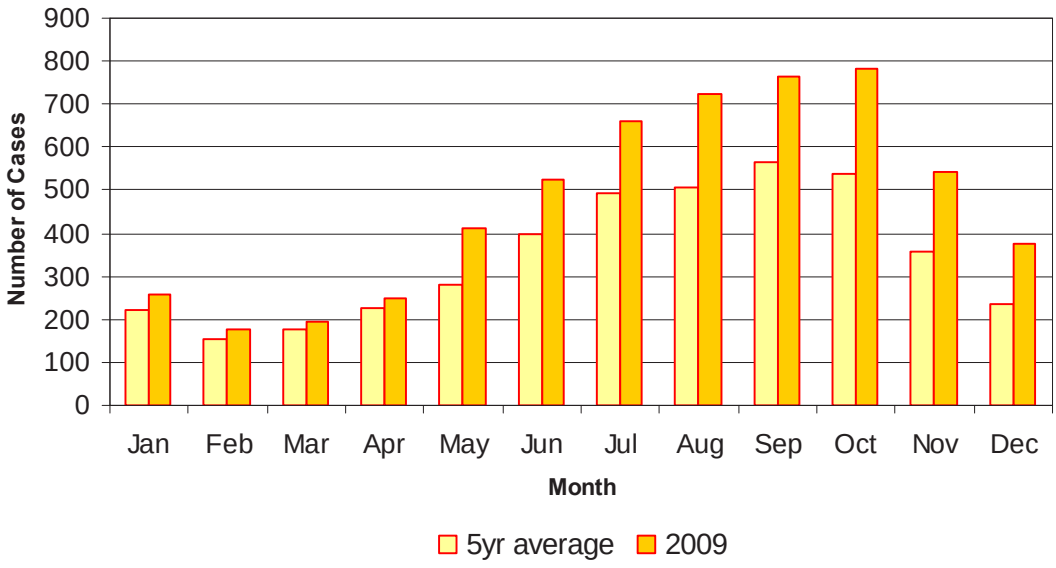


Disease Abstract

Salmonellosis is a diarrheal disease caused by infection with bacteria of the genus *Salmonella*. This category does not include typhoid fever.

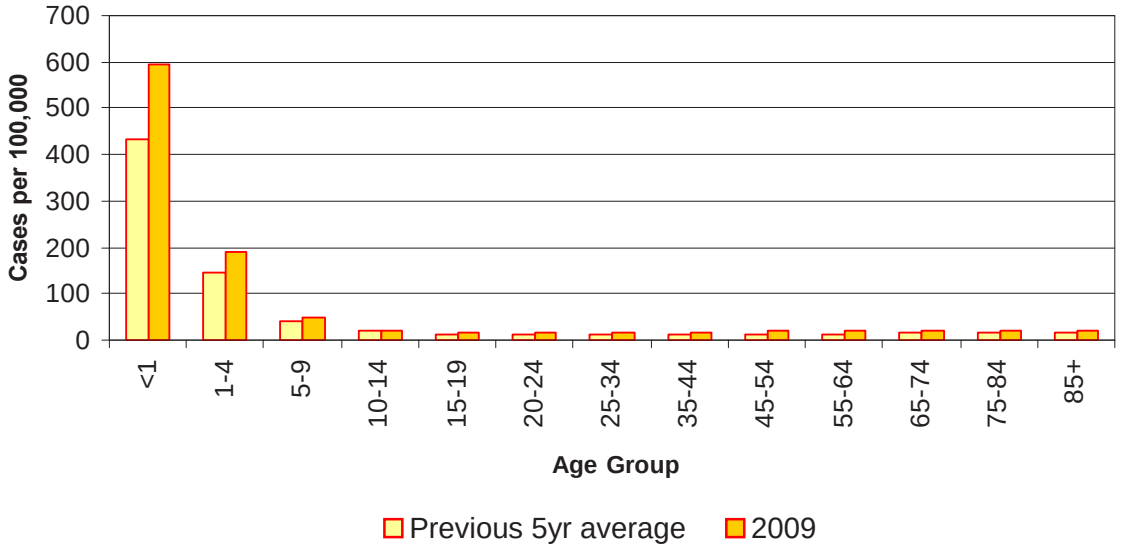
The incidence rate for salmonellosis has increased over the last ten years (Figure 1). In 2009, the incidence was 35.8 cases/100,000, an increase from the previous peak in 2005 of 30.8 cases per 100,000 population. In 2009, 6,741 cases were reported, with 95.7% confirmed. The number of cases reported increases every year in the summer and early fall. In 2009, the number of cases exceeded the previous five-year average in all months (Figure 2). Data published in the MMWR indicate that Florida reported more cases of salmonellosis in 2009 than any other state. Overall, 8.8% of salmonellosis cases were classified as outbreak-related in 2009.

Figure 2. Salmonellosis Cases by Month of Onset, Florida, 2009



The highest incidence rates continue to occur among infants under one year old and children one to four years old. In 2009, the incidence rates were slightly higher than the previous five-year average in all age groups, but the increase was most pronounced in those under one year old (Figure 3). Males and females have similar incidence rates (36.6 and 34.9 per 100,000, respectively). The incidence rate among whites (33.9 per 100,000) is slightly higher than that among blacks (26.9 per 100,000).

Figure 3. Salmonellosis Incidence Rate by Age Group, Florida, 2009



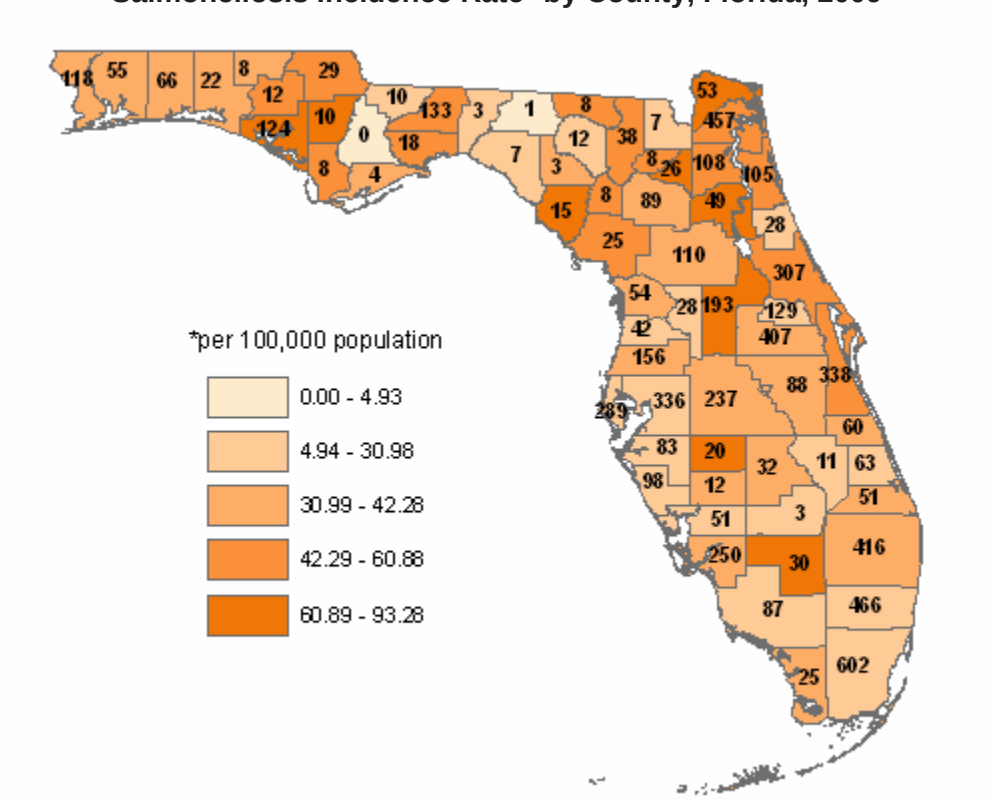
Salmonellosis was reported in 66 of 67 counties in Florida. Rates vary across the state, but appear to be higher in the eastern panhandle, northeastern, and central portions of the state.

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.

Salmonellosis Incidence Rate* by County, Florida, 2009



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L. Pickering (ed.), *2006 Red Book: Report of the Committee on Infectious Diseases*, 27th ed., American Academy of Pediatrics, Elk Grove Village, IL, 2006, 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/

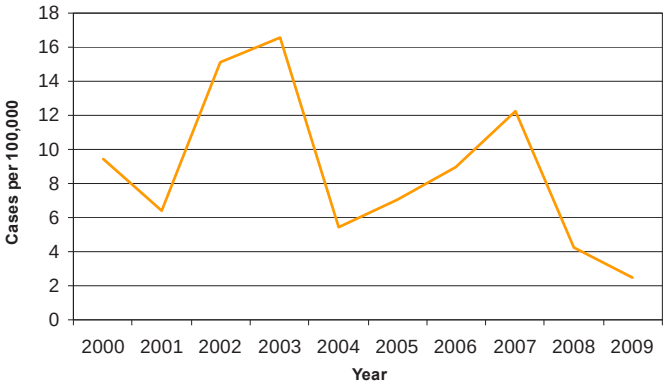
Additional information is available from the U.S Food and Drug Administration – Bad Bug book at http://www.cfsan.fda.gov/~mow/chap1.html.

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	461
2009 incidence rate per 100,000	2.45
% change from average 5-year (2004-2008) incidence rate	-67.80
Age (yrs)	
Mean	19.8
Median	9
Min-Max	<1 - 95

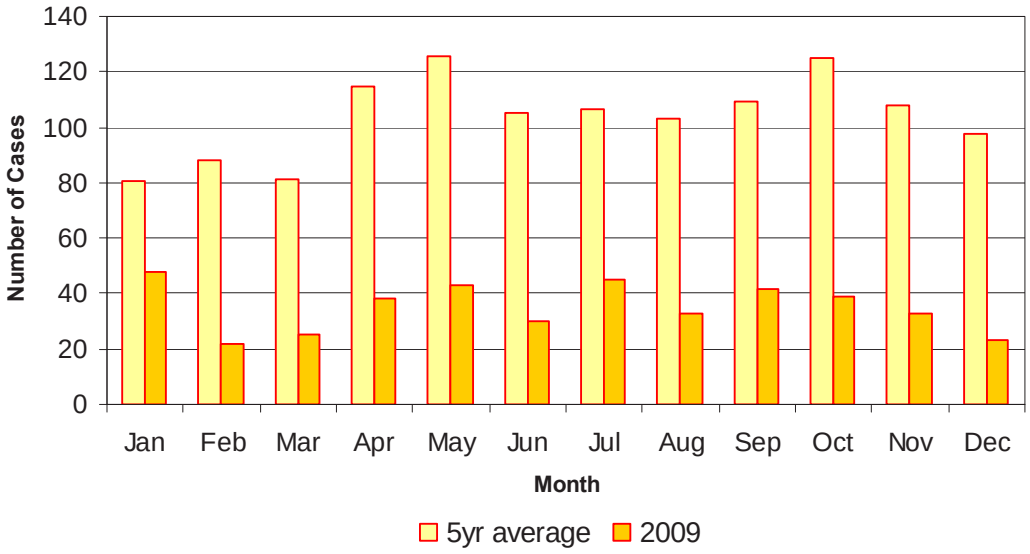
Figure 1. Shigellosis Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

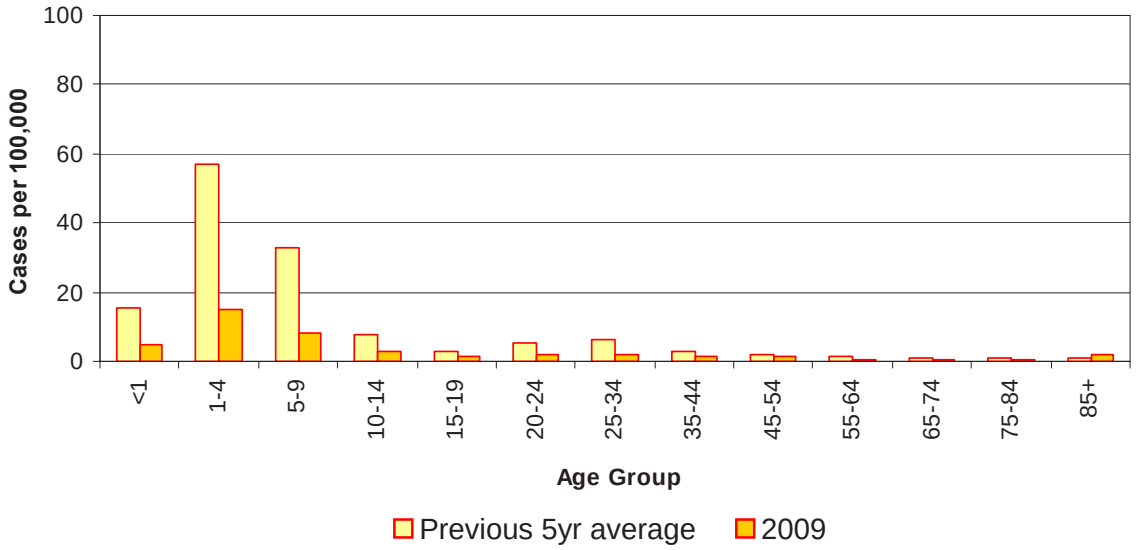
Shigellosis is a diarrheal disease caused by infection with bacteria of the genus *Shigella*. The incidence rate for shigellosis has varied over the last ten years (Figure 1). Periodic community outbreaks involving childcare centers account for most of the observed variability. Almost 20% of the cases reported in 2008 were children who attend daycare or staff who work at affected daycares. This number does not take into account the cases who were infected by an initial daycare-associated case. In 2009, there was a 67.8% decrease in comparison to the average incidence from 2004 to 2008. In 2009, 461 cases were reported (down from 801 in 2008 and 2,288 in 2007), with 92.2% confirmed. Historically, the number of cases reported tends to increase in late summer and the fall months. However, in 2009, the number of cases was highest at the beginning of the year in January and steadily decreased, then hit a second peak over the summer (Figure 2). Overall, 21.3% of shigellosis cases were classified as outbreak related and 17.9% of shigellosis cases were daycare attendees.

Figure 2. Shigellosis Cases by Month of Onset, Florida, 2009



The highest incidence rates continue to occur among children aged one- to four-years-old. In 2009, the pattern of incidence rates by age was similar to the five-year average but overall levels were much lower (Figure 3). Incidence rates were similar among females and males (2.5 and 2.4 per 100,000 respectively) and higher in blacks than whites.

Figure 3. Shigellosis Incidence Rate by Age Group, Florida, 2009

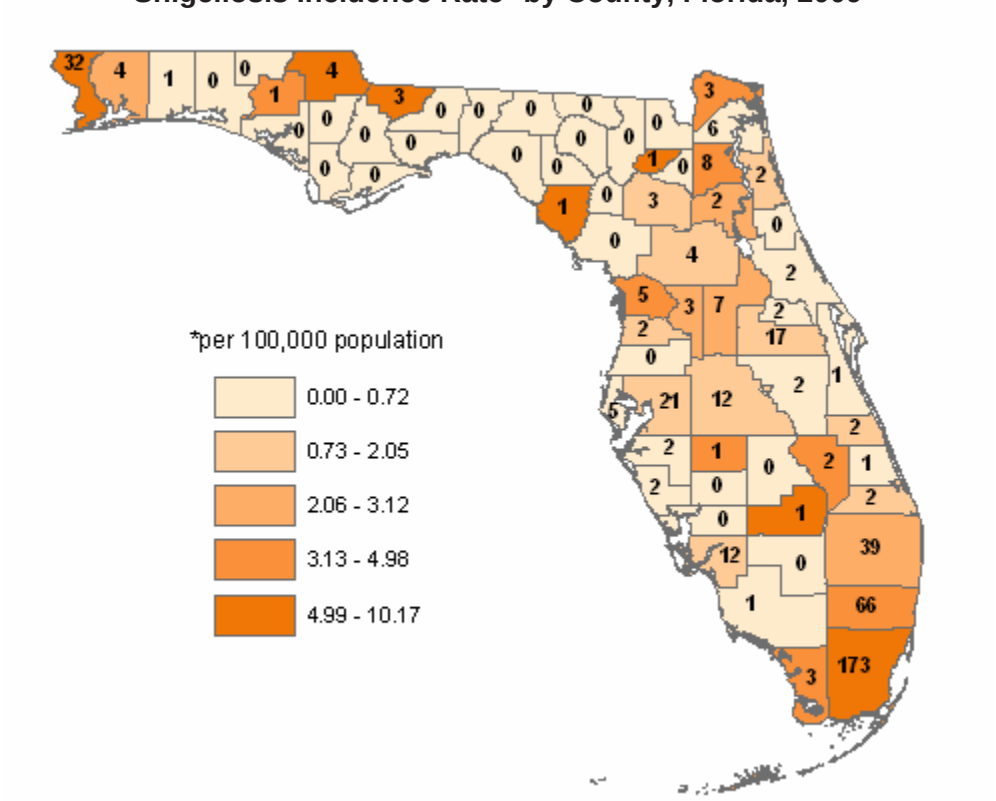


Shigellosis was reported in 41 of 67 counties in Florida. There were no distinct geographic patterns in the distribution of shigellosis cases throughout the state.

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).

Shigellosis Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

L. Pickering (ed.), *2006 Red Book: Report of the Committee on Infectious Diseases*, 27th ed., American Academy of Pediatrics, Elk Grove Village, IL, 2006, 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/ncidod/dbmd/diseaseinfo/shigellosis_g.htm.

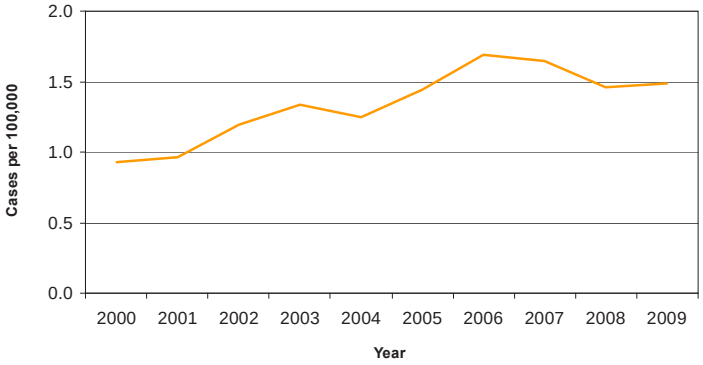
Additional information is available from the U.S Food and Drug Administration – Bad Bug book at http://www.cfsan.fda.gov/~mow/chap19.html.

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.

Streptococcal Disease, Invasive, Group A

Streptococcal Disease, Invasive Group A: Crude Data	
Number of Cases	279
2009 incidence rate per 100,000	1.48
% change from average 5-year (2004-2008) incidence rate	-1.22
Age (yrs)	
Mean	54.92
Median	59
Min-Max	<1 - 99

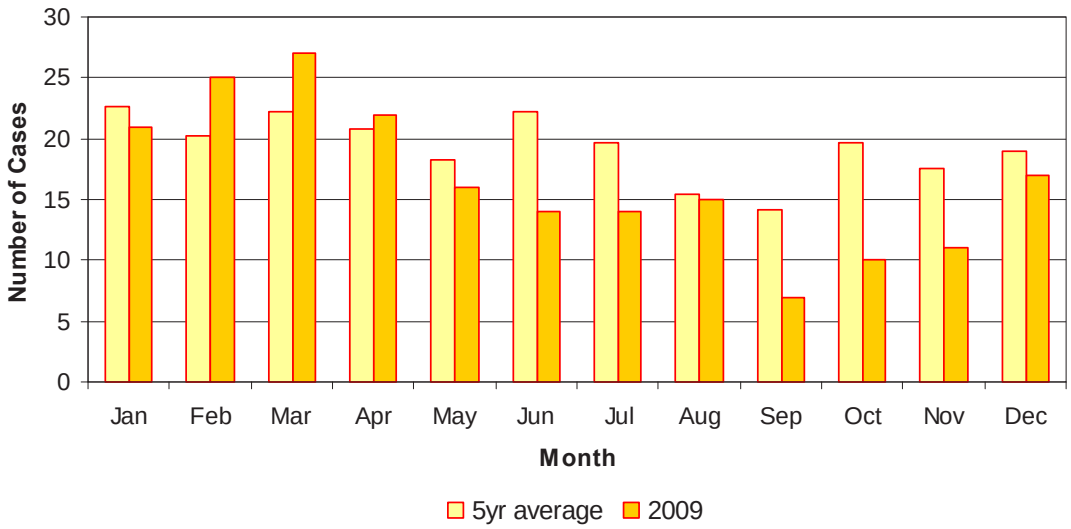
Figure 1. Streptococcal Disease Invasive Group A Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

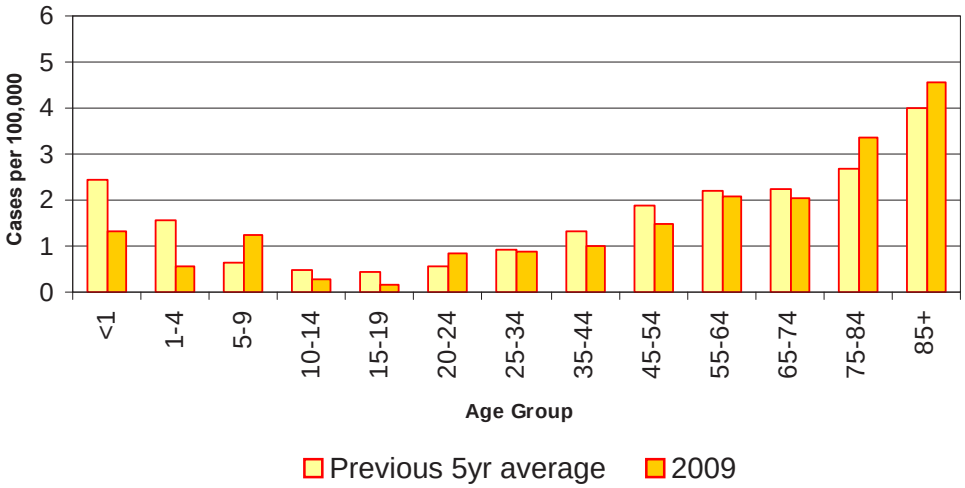
The incidence rate for reported invasive group A streptococcal disease in Florida has gradually increased over the past 10 years, with a more than four-fold cumulative increase since 1997 (Figure 1). However, in 2009, there was a 1.22% decrease compared to the average incidence for 2004 to 2008. In 2009, 279 cases were reported, and all were confirmed. Cases occur throughout all months of the year with no clear seasonal pattern (Figure 2). No cases were reported as outbreak-associated in 2009.

Figure 2. Streptococcal Disease, Invasive Group A, Cases by Month of Onset, Florida, 2009



The highest incidence rate for 2009 occurred in those 85 and older, which is in line with historical trends (Figure 3). In 2009, incidence increased in four of the age groups, most notably those 75 and older. Males continue to have a slightly higher incidence than females (1.52 and 1.45 per 100,000).

Figure 3. Streptococcal Disease, Invasive Group A Incidence Rate by Age Group, Florida, 2009

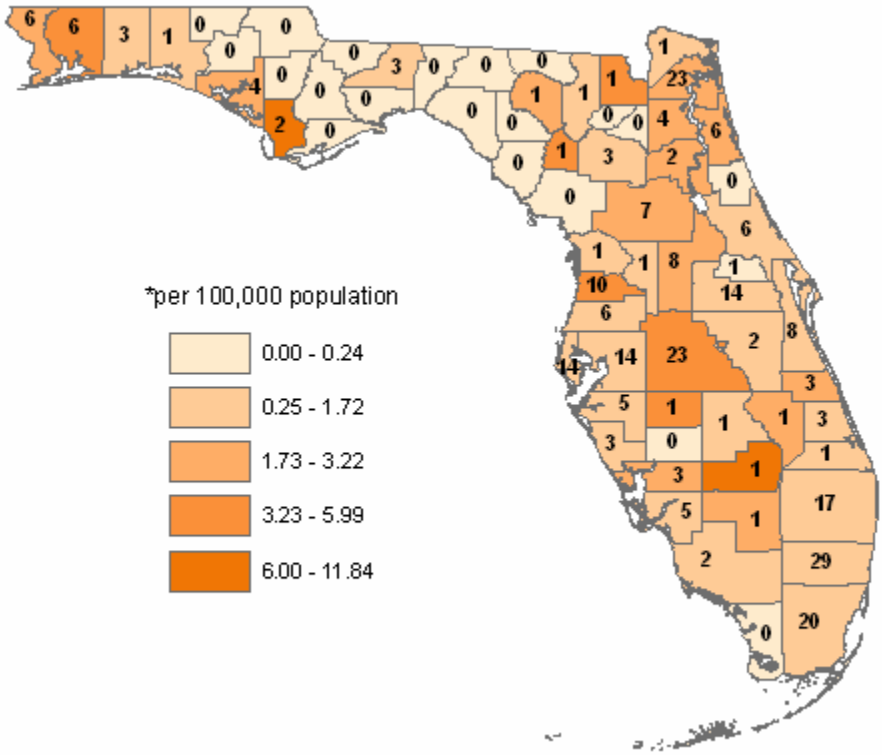


Invasive group A streptococcal disease cases were reported in 41 of 67 counties in Florida. The five counties reporting the highest number of cases were primarily in the central and southern part of the state with relatively few cases occurring in the panhandle region. However, the counties with the highest rates of disease were in the northern part of the state.

Prevention

Prevention is provided through education about modes of transmission, prompt and effective treatment of infections, and appropriate drainage and secretion precautions for infection sites and wound care.

Streptococcal Disease, Invasive Group A Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

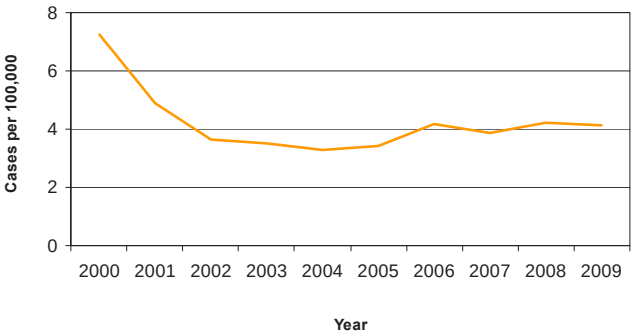
Additional Resources

Disease information is available from the CDC at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_g.htm.

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant: Crude Data	
Number of Cases	779
2009 incidence rate per 100,000	4.14
% change from average 5-year (2004-2008) incidence rate	8.79
Age (yrs)	
Mean	45.93
Median	51
Min-Max	<1 - 109

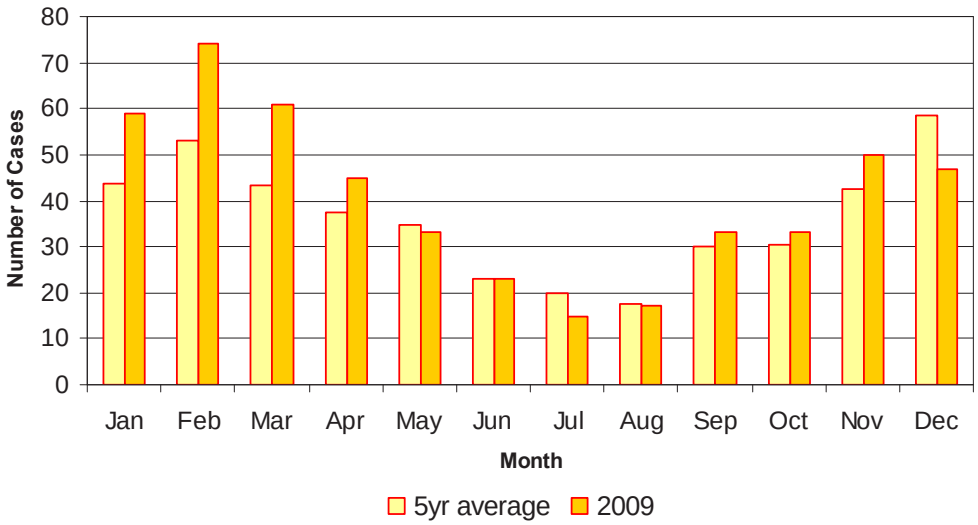
Figure 1. *Streptococcus pneumoniae* Invasive Disease, Drug-Resistant Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

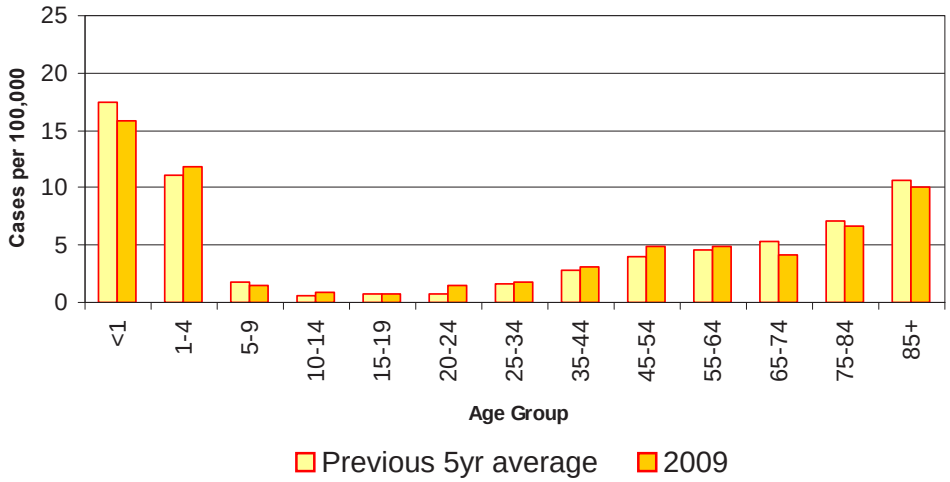
Drug-resistant *S. pneumoniae* (DRSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or cerebrospinal fluid, which are either intermediate resistant or fully resistant to one or more commonly used antibiotics. The incidence rate for DRSP peaked in 2000 and gradually declined until 2005 when it started to increase again and is now relatively consistent at around four cases per 100,000 population per year (Figure 1).

Figure 2. *Streptococcus pneumoniae* , Invasive Disease, Drug-Resistant Cases by Month of Onset, Florida, 2009



The majority of cases occur during the winter months (Figure 2). The highest incidence rates occur among infants less than one year old, children one to four years, and those aged 85 and over. In 2009, the incidence rates were lower than the previous five-year average in two of those three age groups (Figure 3). Males have a slightly lower annual incidence than females (4.1 and 4.2 per 100,000, respectively). The incidence among blacks (7.1 per 100,000) was almost twice that among whites (3.4 per 100,000).

Figure 3. *Streptococcus pneumoniae* , Invasive Disease, Drug-Resistant Incidence Rate by Age Group, Florida, 2009



The data from both the drug-resistant and drug-sensitive *S. pneumoniae* isolates reported were used to calculate resistance rates of common antibiotics for 2009 (Figure 4 and Table 1). A total of 1,468 cases had one or more antibiograms, and the earliest pattern for each case was used in these calculations. The sensitivity rate varies by the class of antibiotic. Erythromycin and clarithromycin had the greatest percentage of intermediate and resistant isolates (48.3% and 44.7%, respectively).

Please see “Section 4: Summary of Antimicrobial Resistance Surveillance” for additional information on antimicrobial resistance surveillance in Florida including additional data on *Streptococcus pneumoniae*.

Figure 4. *Streptococcus pneumoniae*, Invasive Disease, Antibiotic Resistance, Florida 2009

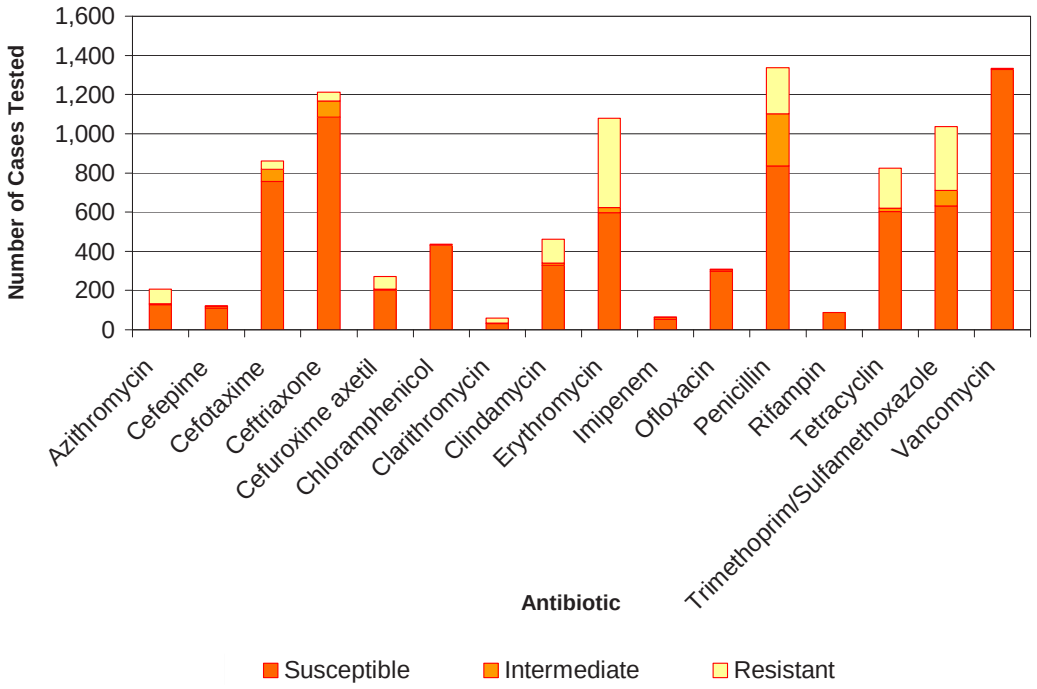
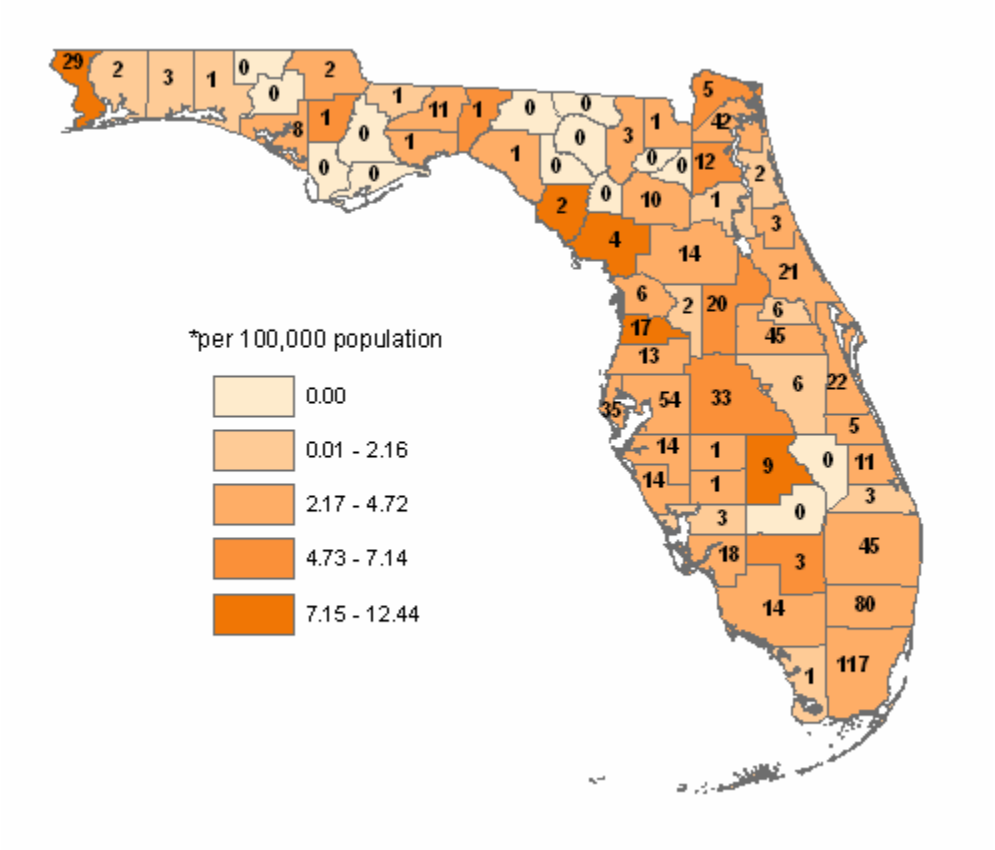


Table1. *Streptococcus pneumoniae*, Invasive Disease, Antibiotic Resistance, Florida 2009

Antibiotic name	Number of Cases Tested	Susceptible	Intermediate	Resistant
Azithromycin	207	61.8%	1.9%	36.2%
Cefepime	121	91.7%	5.8%	2.5%
Cefotaxime	860	88.0%	7.0%	5.0%
Ceftriaxone	1,211	89.5%	6.8%	3.7%
Cefuroxime axetil	273	73.3%	2.6%	24.2%
Chloramphenicol	435	98.9%	0.0%	1.1%
Clarithromycin	60	51.7%	3.3%	45.0%
Clindamycin	463	71.1%	2.6%	26.3%
Erythromycin	1,080	55.3%	2.4%	42.3%
Imipenem	66	83.3%	10.6%	6.1%
Ofloxacin	309	96.1%	3.2%	0.6%
Penicillin	1,337	62.5%	19.8%	17.7%
Rifampin	89	97.8%	0.0%	2.2%
Tetracycline	825	73.0%	2.2%	24.8%
Trimethoprim/Sulfamethoxazole	1,037	60.9%	7.7%	31.3%
Vancomycin	1,333	99.5%	0.0%	0.5%

Drug-resistant *S. pneumoniae* was reported in 53 of 67 counties in Florida.

***Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant**
Incidence Rate* by County, Florida, 2009



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 older pneumococcal polysaccharide vaccine should be administered routinely to all adults over 65 years old. The vaccine is also indicated for children six through eighteen years of age 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

David L. Heymann, *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

American Academy of Pediatrics, *Red Book 2003: Report of the Committee on Infectious Diseases*, 26th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2003.

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.

The following reports are available on the Department of Health web site: 1999 *Streptococcus pneumoniae* Surveillance Report, 2000 *Streptococcus pneumoniae* Surveillance Report, and 1997-1999, Surveillance of *SP* in Central FL, at http://www.doh.state.fl.us/disease_ctrl/epi/topics/popups/anti_res.htm.

Additional Resources

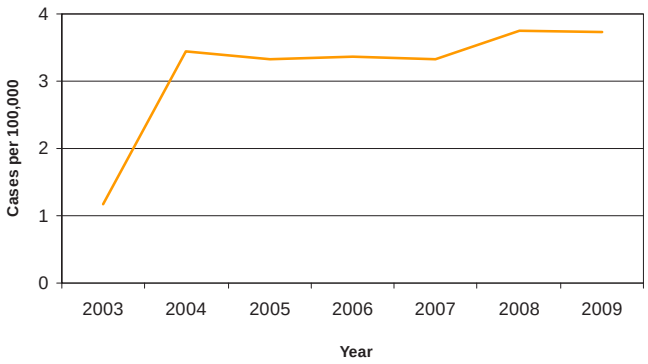
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm.

Centers for Disease Control and Prevention, "Preventing pneumococcal disease among infantsand 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	701
2009 incidence rate per 100,000	3.72
% change from average 5 year (2004-2008) incidence rate	8.34
Age (yrs)	
Mean	51.83
Median	55
Min-Max	<1 - 99

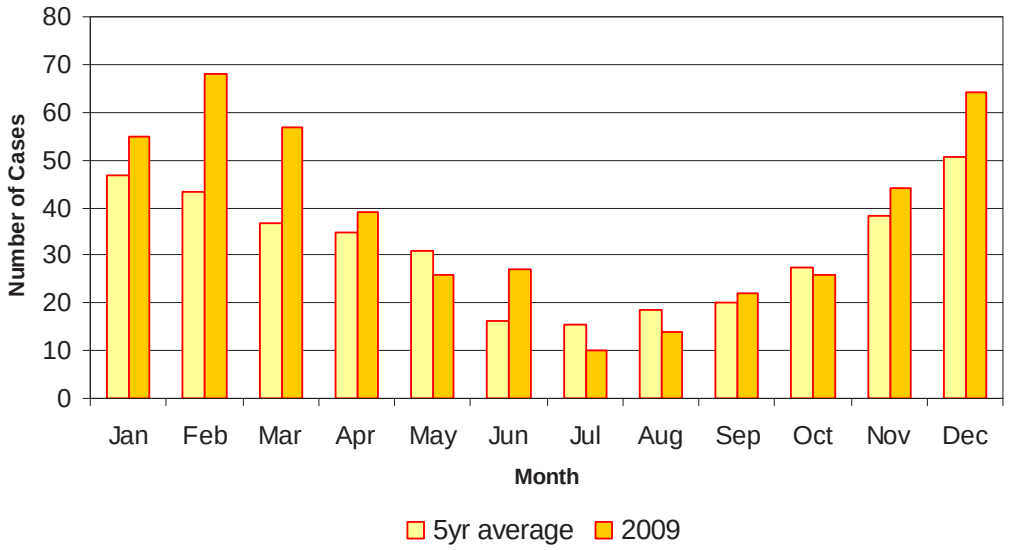
Figure 1. *Streptococcus pneumoniae* , Invasive Disease, Drug Susceptible Incidence Rate by Year Reported, Florida, 2003-2009



Disease Abstract

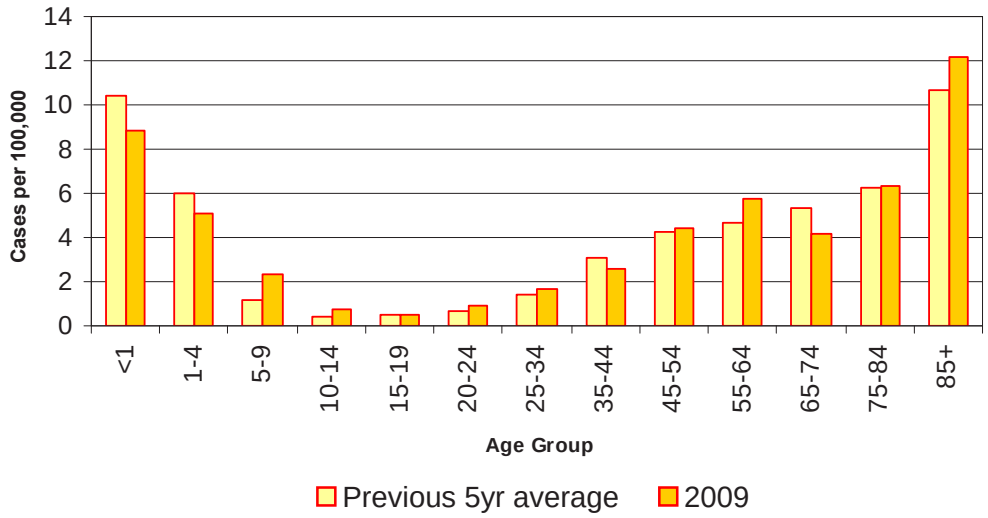
Drug-susceptible *Streptococcus pneumoniae* (DSSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or cerebrospinal fluid, that are sensitive to all of the commonly used antibiotics. Data on drug-susceptible *S. pneumoniae* has been available for the last seven years. Since the second year of reporting, in 2004, the incidence of DSSP has consistently been about three to four cases per 100,000 population. A total of 701 cases were reported in 2009. This is the highest reported incidence in the seven years that the disease has been reportable. The number of cases reported tends to increase in the winter months. In 2009, the number of cases exceeded the previous five-year average in all months except four (Figure 2).

Figure 2. *Streptococcus pneumoniae* , Invasive Disease, Drug-Susceptible Cases by Month of Onset, Florida, 2009



The highest incidence rates continue to occur among infants under one year, children aged one to four years, and those aged 85 and over. In 2009, the incidence rates were lower than the previous five-year average in two of those age groups (Figure 3). Males continue to have a slightly higher incidence than females (3.90 and 3.55 per 100,000 population, respectively). The incidence among whites (3.27 per 100,000 population) is lower than that among blacks (5.29 per 100,000 population).

Figure 3. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Incidence Rate by Age Group, Florida, 2009

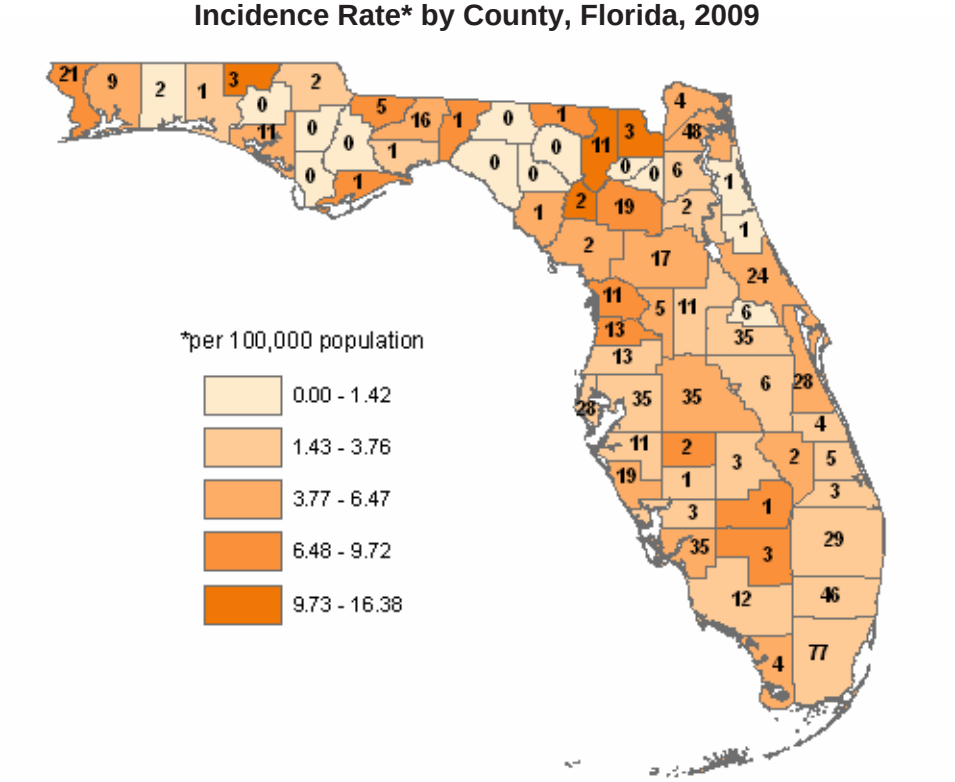


DSSP was reported in 57 of 67 counties in Florida.

Prevention

The most effective way of preventing pneumococcal infections, including drug resistant and drug sensitive *Streptococcus pneumoniae* 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 over 65 years old. The vaccine is also indicated for children six through eighteen years of age 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.

***Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible**
Incidence Rate* by County, Florida, 2009



References

David L. Heymann, *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

American Academy of Pediatrics, *Red Book 2003: Report of the Committee on Infectious Diseases*, 26th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2003.

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.

The following reports are available on the Department of Health web site: 1999 *Streptococcus pneumoniae* Surveillance Report, 2000 *Streptococcus pneumoniae* Surveillance Report, 1997-1999 Surveillance of *SP* in Central FL, at http://www.doh.state.fl.us/disease_ctrl/epi/topics/popups/anti_res.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

Description
Syphilis, caused by the bacterium *Treponema pallidum*, is transmitted 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. Total early syphilis, which includes primary, secondary, and early latent syphilis, includes all cases where initial infection has occurred within the previous 12 months. One important subset of total early syphilis is infectious syphilis, in the primary or secondary stage. Transmission of syphilis can occur during vaginal, anal, and/or oral sex. During pregnancy, the organism can infect a fetus in utero or at delivery. In 2009, 3,864 syphilis cases were reported in Florida; of those cases, 19 were reported as congenital cases.

Disease Abstract
Of the cases reported in 2009 (N=3,864), 59% (N=2,296) were diagnosed as primary, secondary, or early latent infection, which is a case rate of 12.2 per 100,000 population. The 2,296 early syphilis cases reported in 2009 was a slight increase of six cases over 2008 (2,290). Of the early syphilis cases reported in 2009, 80% were reported from seven counties (Table 1).

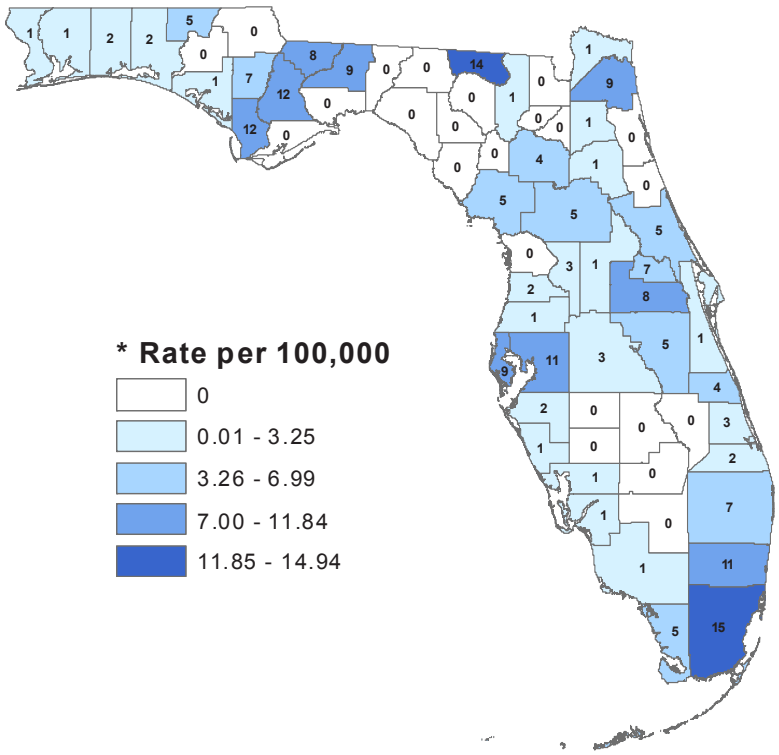
Table 1. Counties with the Largest Number of Reported Early Syphilis, Florida 2009

	Cases (#)	% of Morbidity	Rate/100,000 population
Miami-Dade	683	29.7	27.5
Broward	357	15.5	20.4
Hillsborough	236	10.3	19.6
Orange	166	7.2	14.9
Pinellas	148	6.4	15.9
Duval	131	5.7	14.4
Palm Beach	122	6.4	9.5

More than for cases of other reportable sexually transmitted diseases (STDs), syphilis cases are highly concentrated in several southern counties and large urban areas throughout Florida. Nineteen counties reported no cases of early syphilis (Figure 1).

In 2009, infectious syphilis cases accounted for 1,041 or 45% of total early syphilis. Of these cases, 86% were male and 67% of those were among men who have sex with men (MSM). Despite elimination efforts, syphilis in recent years has been persistent in these segments of the population. In addition to identified risk behaviors, the differences in age and race/ethnicity between MSM and heterosexual populations might also account for some of the difference.

Figure 1. Early Total Syphilis Rates* By County, Florida, 2009



The largest number of reported early syphilis cases in women was in the 15 to 24 age group and the numbers in each age group gradually decreased as age group increased (Table 2). Non-MSM male cases peaked in the 20 to 24 and 25 to 29 age groups, which is similar to trends in cases reported in women. However, unlike the pattern in women, the number of non-MSM male cases in each age group did not fall with age in those over 35 years of age. Sixty percent of female cases were reported in women younger than 30 years of age, while only 32% of cases in men were younger than 30. The majority of syphilis cases in Florida are MSM. For those cases, the peak age group was 40 to 44 years old.

The ratio of male to female early syphilis cases was four to one overall, but differed significantly among racial/ethnic groups. The rate ratio of males to females among non-Hispanic blacks was 2:1; non-Hispanic whites, 8:1; and Hispanics, 8:1.

Table 2. Reported Early Syphilis by Age, Gender, and MSM* Status, Florida, 2009

	MSM*		Non-MSM* Male		Female	
Age	#	%	#	%	#	%
10 – 14			1	0.2	4	0.9
15 – 19	75	5.4	36	7.8	104	22.8
20 – 24	199	14.5	91	19.7	104	22.8
25 – 29	164	11.9	64	13.9	67	14.7
30 – 34	161	11.7	52	11.3	45	9.8
35 – 39	203	14.7	42	9.1	35	7.7
40 – 44	240	17.4	38	8.2	39	8.5
45 – 49	182	13.2	45	9.7	24	5.3
50 – 54	91	6.6	41	8.9	18	3.9
55 -59	31	2.3	19	4.1	12	2.6
60+	31	2.3	33	7.1	5	1.1
Total	1,377	100.0	462	100.0	457	100.0

* MSM- men who have sex with men

In 2009, early syphilis affected non-Hispanic blacks more than other groups. People who self reported as non-Hispanic black accounted for 41.8% of the syphilis cases in 2009, while this group only accounted for about 16% of the state's population. People who self reported as non-Hispanic white accounted for 27.5% of the cases. People who self reported as Hispanic (white, black, or other) accounted for 20.2% of the cases. People who self reported in other or unidentified racial and ethnic groups accounted for 10.4% of the cases. The annual rate per 100,000 for non-Hispanic blacks was 32.8 per 100,000 population. This rate was six times greater than the second highest rate, in non-Hispanic whites (5.5 cases per 100,000 population).

Table 3. Reported Early Syphilis Cases by Race/Ethnicity and MSM* Status, Florida 2009

	Female	Non-MSM* Male	MSM*	Total
Black/African American (Non-Hispanic)	287	270	402	959
White (Non-Hispanic)	67	67	498	632
Hispanic	51	64	349	464
Other	2	1	7	10
Unknown	50	60	121	231
Total	457	462	1,377	2,296

*MSM- men who have sex with men

Prevention

Community prevalence and higher risk-taking behaviors associated with certain populations continue to contribute to morbidity. In terms of gender and racial/ethnic distribution, the trends for early syphilis indicate the need for tailored programs and resources targeted at identified high-risk groups.

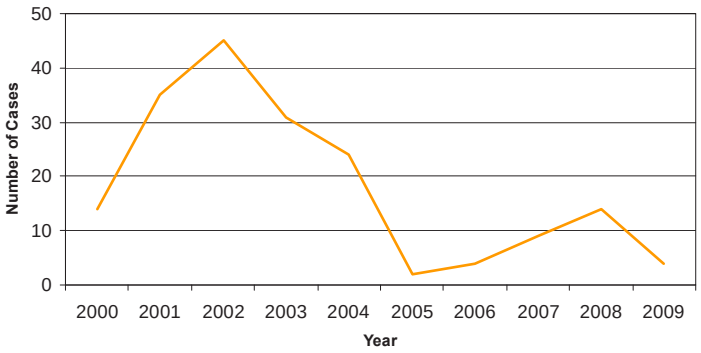
References

CDC. Syphilis - CDC Fact Sheet. Atlanta, GA: U.S. Department of Health and Human Services, May 2004.

Toxoplasmosis

Toxoplasmosis: Crude Data	
Number of Cases	4
2009 incidence rate per 100,000	0.02
% change from average 5-year (2004-2008) reported cases	-62.26
Age (yrs)	
Mean	36.75
Median	36.5
Min-Max	30 - 44

Figure 1. Toxoplasmosis Cases by Year Reported, Florida, 2000-2009

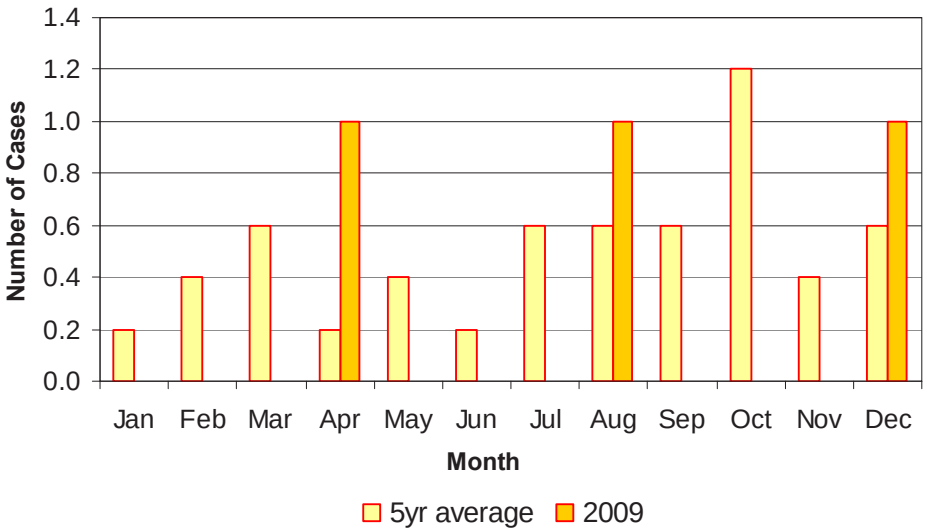


Disease Abstract

The number of cases of toxoplasmosis increased between 2000 (14) and 2002 (45), declined to two cases in 2005, and had been steadily increasing until a decline in 2009 to four cases (Figure 1). Of the cases reported in 2009, all four were confirmed. No outbreaks of toxoplasmosis have been reported in the past 10 years. Most cases of toxoplasmosis occur in immunocompromised individuals without a recent or specific exposure history. This is true for all the cases of toxoplasmosis confirmed in Florida during 2009.

During the past five years, the cases reported were distributed throughout all the months of the year; in 2009, cases occurred in January, April, August, and December (Figure 2). The cases came from three counties – Alachua (1), Collier (1), and Dade (2).

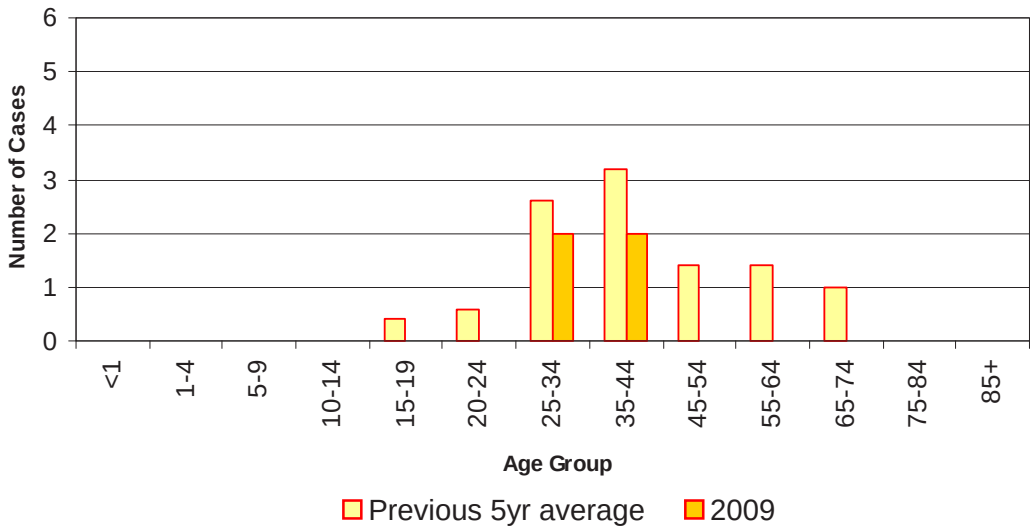
Figure 2. Toxoplasmosis Cases by Month of Onset, Florida, 2009



* This graph is by month of onset and so does not reflect one 2009 case with an onset date in December, 2008.

The average number of cases for the past five years was highest in those aged 35-44 years with a bell-shaped distribution surrounding this group. The 2009 data show a very similar pattern with cases occurring in those 30 to 44 years old (Figure 3). Between 2002 and 2006, and again in 2009, women had a higher incidence rate than men.

Figure 3. Toxoplasmosis Cases by Age Group, Florida, 2009



Prevention

Prevention measures should include informing immuno-compromised people and pregnant women use the strategies that follow:

- Wash your hands.
- Freeze or cook meats thoroughly.
- Avoid cleaning cat litter pans.
- Wear gloves when gardening.
- Keep cats indoors.
- Dispose of cat feces and litter daily.
- Cover sandboxes to prevent access from stray cats.

References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

Additional Resources

Disease information is available from the CDC at http://www.cdc.gov/ncidod/dpd/parasites/toxoplasmosis/default.htm and http://www.cdc.gov/ncidod/dpd/parasites/toxoplasmosis/moreinfo_toxoplasmosis.htm.

Tuberculosis

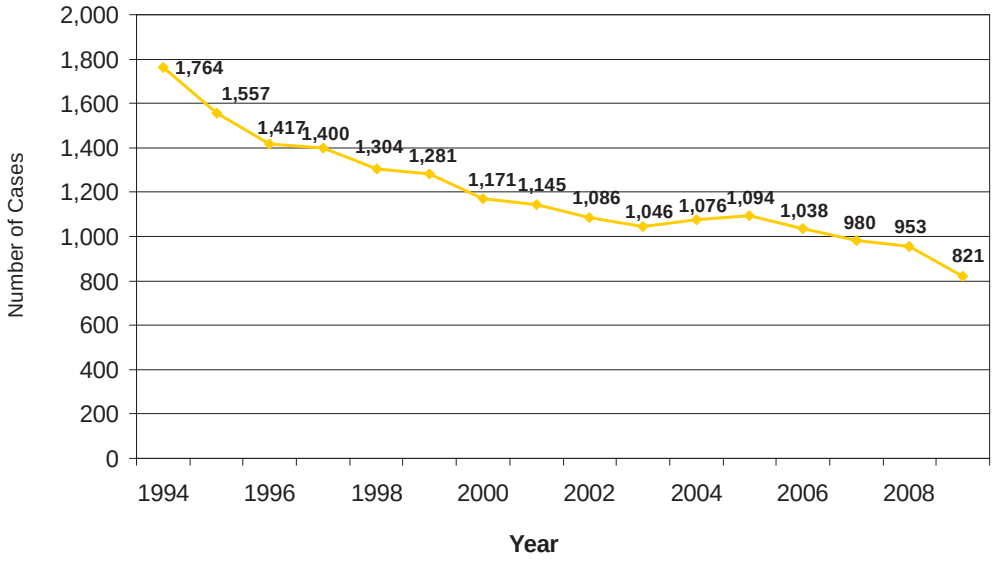
Description

Tuberculosis (TB) is an infectious respiratory disease caused by the bacteria *Mycobacterium tuberculosis*. Aerosolized droplets from individuals with active TB spread this disease when they cough, sing, speak, or laugh. Each year there are over nine million infections and 1.7 million deaths caused by the disease worldwide. Over 90% of healthy individuals infected with TB bacteria will never get the active form of the disease. However, the risk of active disease increases dramatically with specific risk factors and co-morbid conditions.

Disease Abstract

In 2009, 821 tuberculosis cases were reported in Florida. This represents over a thirteen percent (13.6%) decrease in cases from the previous year (N=953). The TB case rate declined from 5.0 cases per 100,000 population in 2008 to 4.4 cases per 100,000 population in 2009.

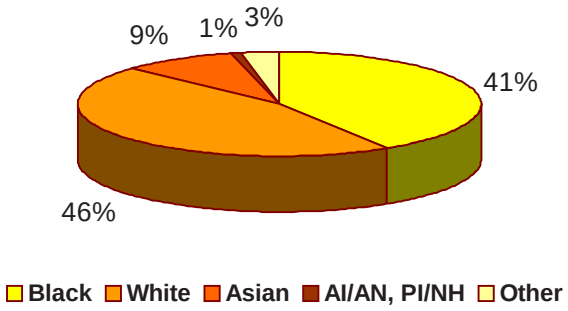
Figure 1. Tuberculosis Cases by Year Florida, 1994-2009



Race and Ethnicity

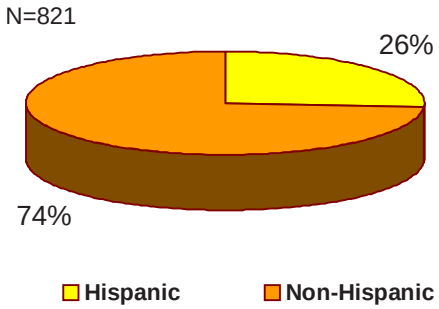
Medically underserved and low-income populations, including high risk racial and ethnic minorities, such as blacks, Hispanics, and Asians, have high rates of TB exposure and infection. These populations are disproportionately represented among reported cases of TB in Florida. Out of 821 cases reported for 2009, 48% were white, 42% were black or African-American, and 9% were Asian. American Indian/Alaskan Native and Pacific Islander/Native Hawaiian combined were 1.0%, and the Other category composed the remaining 1% (Figure 2). Twenty-six percent of reported cases were Hispanic and 74% were non-Hispanic (Figure 3).

Figure 2. TB Cases by Race, Florida, 2009



Source: HMS
Persons reporting to be American Indian (AI)/Alaska Native (AN), Pacific Islander/Native Hawaiian (PI/NH), and Other categories comprised 1% of TB cases.

Figure 3. TB Cases by Ethnicity, Florida, 2009



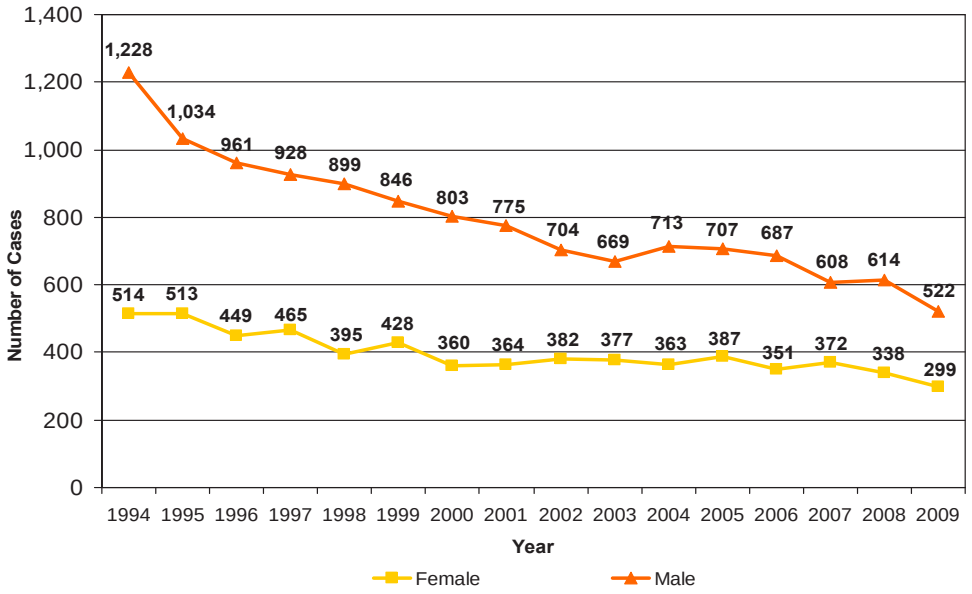
Source: HMS
Persons self reporting to be either Hispanic or Non-Hispanic.

Gender and Age

The number of TB cases in both genders has steadily decreased since 1994 with males having a greater decrease over time. In 2009, there were 522 cases in males and 299 cases in females (Figure 4). When grouping the TB cases by age categories, 2% of the cases fall in the zero to four-year-old age group and 2% in the five- to fourteen-year-old group. The 15 to 24 age group accounts for 7% of the overall TB cases. Thirty-three percent fall in the 25 to 44 year old group, 37% fall into the 45 to 64 year old group, and 20% of the cases were 65 and over (Figure 5).

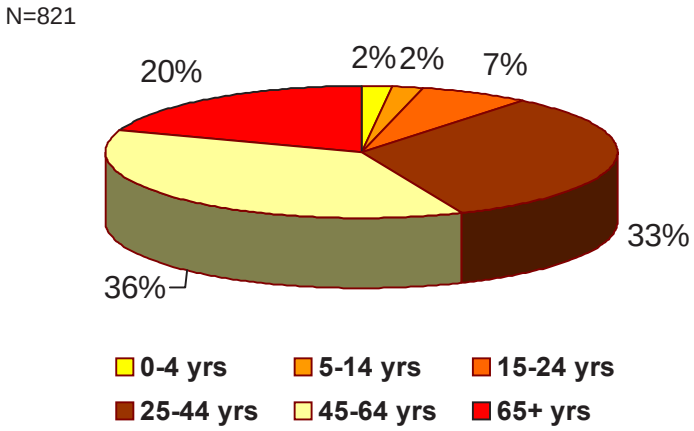
Males have a higher case rate than females for all age groups. In the zero to four year old age group, males had a case rate of 1.7 cases per 100,000 population as compared to females with a case rate of 1.1 cases per 100,000 population. In the five to fourteen year old age group, the case rate between males and females was much closer (0.8 cases and 0.3 cases per 100,000 population, respectively). The 15 to 24 year old age group was the closest in terms of case rate in males and females, with males having a case rate of 2.4 cases per 100,000 population and females had a case rate of 2.3 cases per 100,000 population. The difference between case rates increased as age increased, with the greatest difference between genders in people 65 and over, in which the rate in males was 2.5 times higher than the rate in females (Figure 6).

Figure 4. Tuberculosis and Gender Florida, 1994-2009



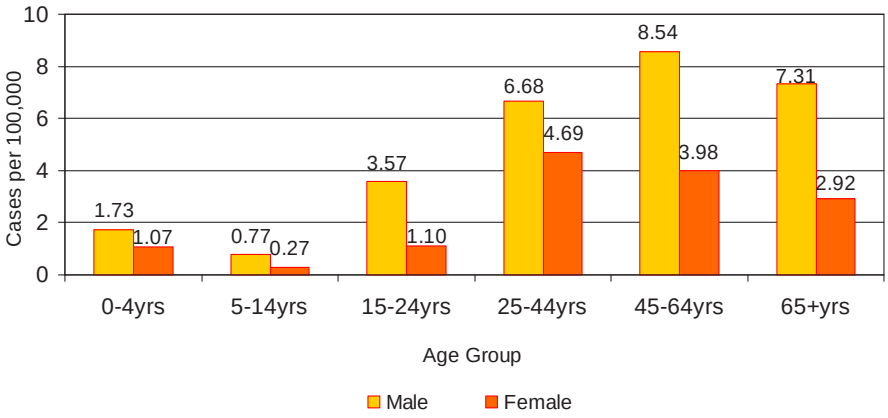
Source: TIMS and HMS (2009)

Figure 5. TB Cases by Age Group, Florida, 2009



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

Figure 6. Tuberculosis Case Rates by Age Group and Gender Florida, 2009



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

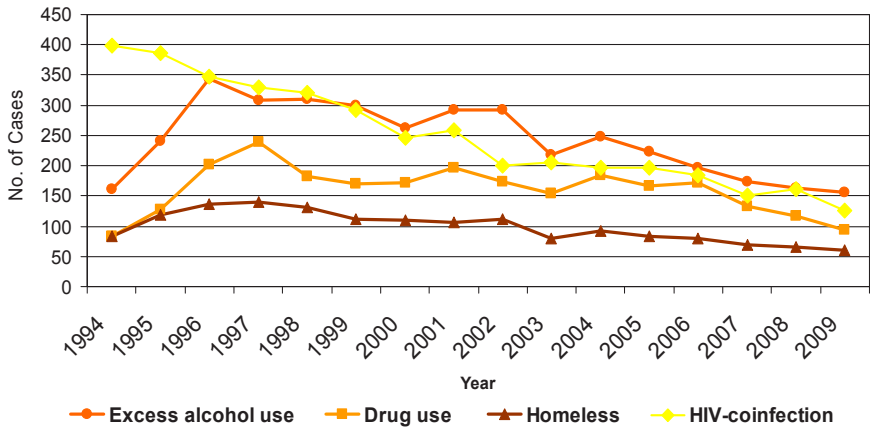
Risk Factors

The risk factors associated with TB disease from 1994 to 2009 were:

- excessive 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 2009, there were 156 cases in which excessive alcohol use was a risk factor. Drug use was reported in 94 cases, homelessness in 61 cases and HIV co-infection was reported in 125 cases. Please note: multiple risk factors can be reported for a case and not all cases will have these select risk factors (Figure 7).

Figure 7. Tuberculosis Disease and Risk Factors, Florida, 1994-2009



Source: TIMS and HMS (2009)

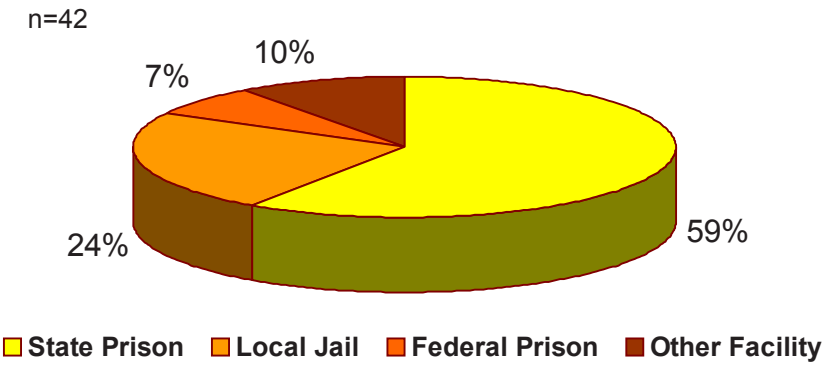
Patient reported condition of substance abuse and/or homelessness within 1 year of TB diagnosis.

Incarceration

Effective TB prevention and control within correctional settings are essential elements to protecting the health of inmates, staff, and the community. Continuity of care at the county health department must be ensured in order to increase adherence to treatment once inmates with active TB disease or infection are released back into the community. Failure to complete treatment could lead to acquiring drug resistance to one or more TB medications, progressing to active TB disease, or exposing the general community to possible TB infection.

There were 42 TB cases in 2009 reported from correctional facilities. Fifty-nine percent of the cases were from state prisons, 24% were from local jails, 7% were from federal prisons, and the remaining 10% came from other detainment facilities (Figure 8).

Figure 8. TB in Correctional Facilities, Florida, 2009

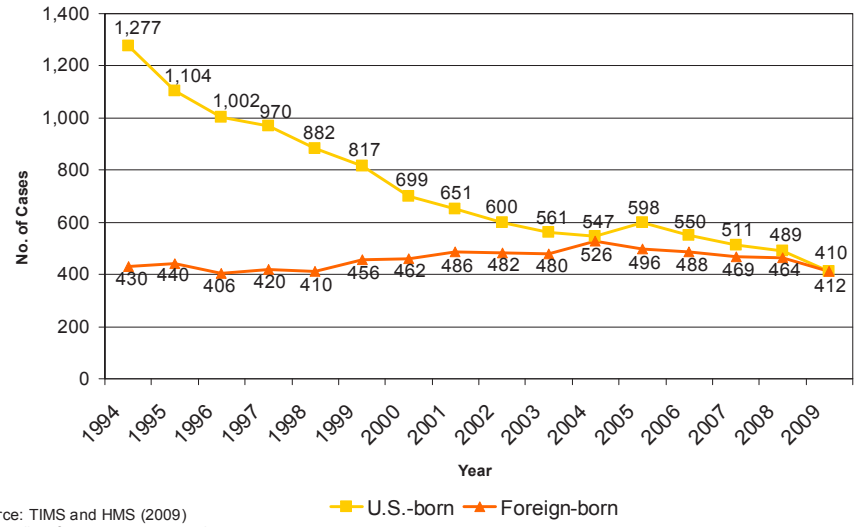


Source: TIMS and HMS (2009)
TB diagnosed during incarceration.
Percentages have been rounded and may not equal 100%.

Country of Origin

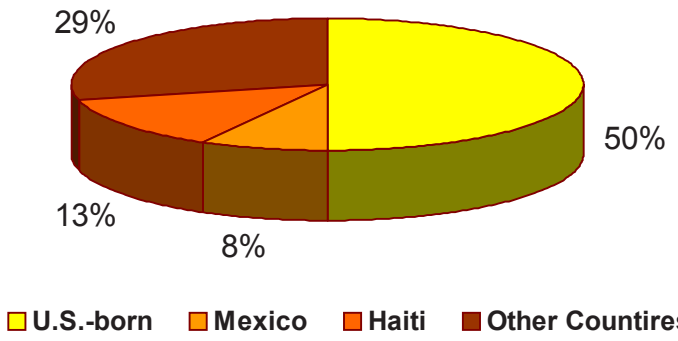
TB cases occurring in U.S.-born people in Florida have decreased significantly from a high of 1,277 cases in 1994 to 409 cases in 2009 (Figure 9). Out of the 821 TB cases reported in Florida for 2009, 50% were U.S.-born and 50% were foreign-born. Out of the 412 of cases that were foreign-born, Haiti accounted for 107 cases or 26%, and Mexico accounted for 66 cases or 16%. Overall, Haiti and Mexico were listed as the country of birth for 21% of the total number of TB cases (Figure 10).

Figure 9. Trends in TB Cases in U.S.-born vs. Foreign-born Persons, Florida, 1994-2009



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

Figure 10. Reported TB Cases by Origin, Florida, 2009

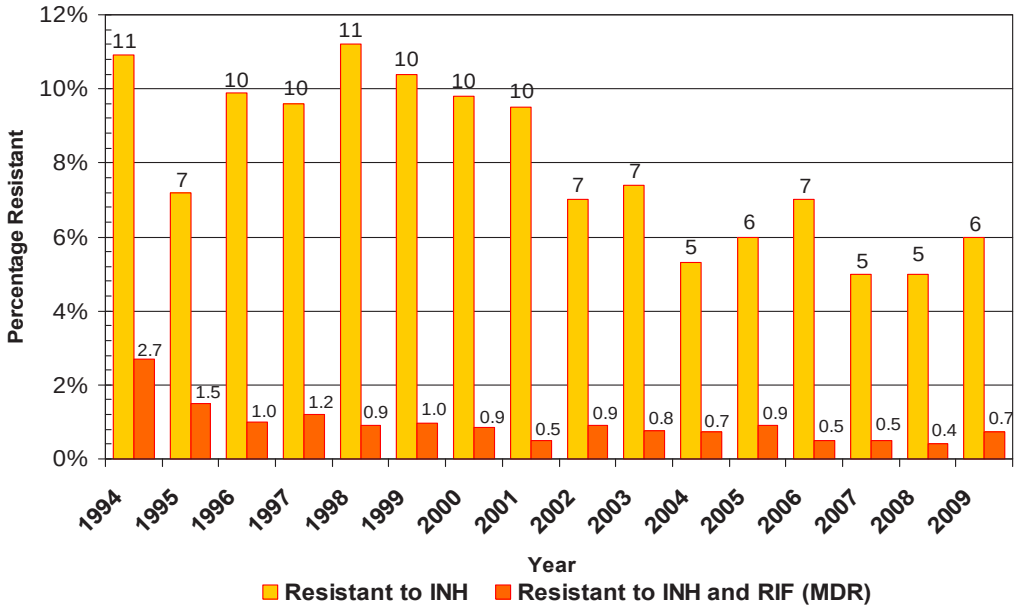


Source: HMS
*Haiti and Mexico represent top two foreign born countries.

Drug Resistance

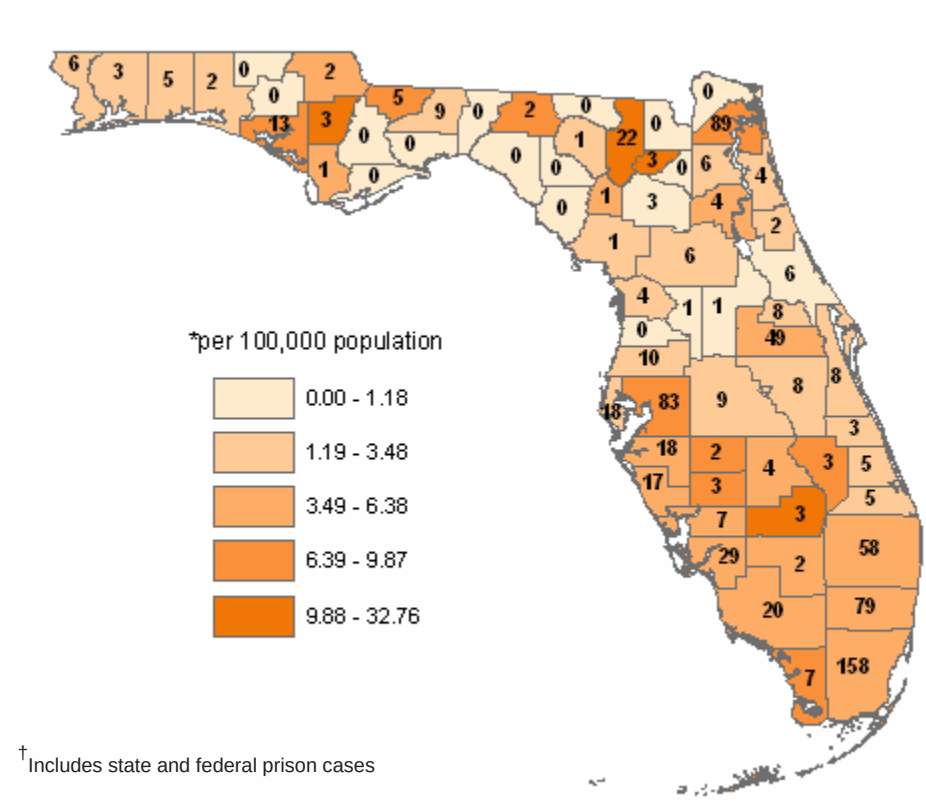
The development of drug resistance is an important issue in TB control. Multi-drug-resistant TB and extensively-drug-resistant TB have become more prevalent over the past decade. Development of resistance to certain antimicrobials has important implications for the types of drugs that are used for TB treatment and control. Figure 11 displays the percentage of TB cases in Florida that are resistant to isoniazid (INH) alone and the cases resistant to both INH and rifampin (RIF) from 1994 to 2009. The percentage of INH resistance in 2009 was 6.0%. The percentage of INH and RIF, also known as Multi-drug resistance (MDR), was 0.7%.

Figure 11. Anti-TB Drug Resistance* Florida, 1994-2009



Source: TIMS and HMS (2009)
*Based on Initial Drug Susceptibility Testing.

Tuberculosis Incidence Rate* by County, Florida, 2009†



References

David L. Heymann (ed.) Control of Communicable Diseases Manual, 18th ed., American Public Health Association Press, Washington, DC, 2004.

Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/tb/

National Institute of Allergies and Infectious Diseases
http://www.niaid.nih.gov/topics/tuberculosis/understanding/Pages/Default.aspx

American Thoracic Society http://www.thoracic.org/

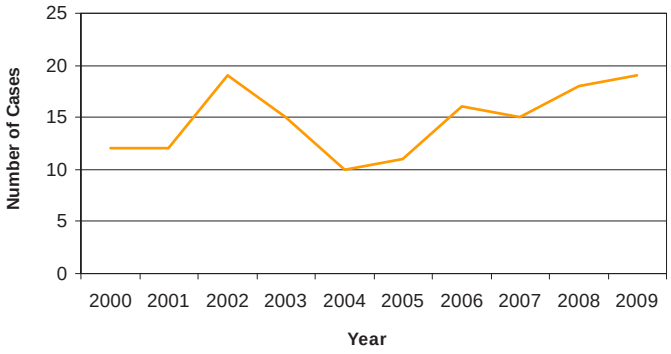
Additional Resource

Florida Department of Health - Bureau of TB and Refugee Health website
http://www.doh.state.fl.us/disease_ctrl/tb/

Typhoid Fever

Typhoid Fever: Crude Data	
Number of Cases	19
2009 incidence rate per 100,000	0.10
% change from average 5-year (2004-2008) reported cases	35.71
Age (yrs)	
Mean	24.26
Median	23
Min-Max	2 - 54

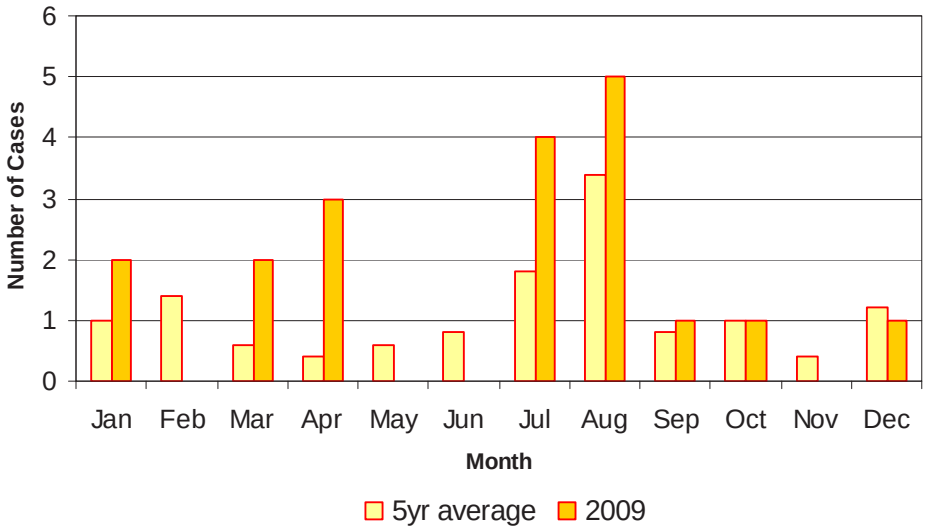
Figure 1. Typhoid Fever Cases by Year Reported, Florida, 2000-2009



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 24 annually. In 2009 19 cases were reported, representing an annual incidence rate of 0.10 per 100,000. This was a 35.7% increase from the average number of reported cases in the previous five years (Figure 1). All of the 2009 cases were classified as confirmed, and the median age was 23. Over the past five years, and consistent with national data, the majority of the cases (66-90%) were acquired outside the U.S. The counties reporting the greatest number of cases were Broward, Miami-Dade, and Lee. Cases tend to be isolated, rather than clustered. They typically occur more frequently in the summer months. In 2009, the majority of cases occurred in July and August. Only a single outbreak of typhoid fever (18 cases, 1997) occurred in Florida in the past 12 years. This outbreak was traced to frozen shakes made with imported frozen mamey fruit.

Figure 2. Typhoid Fever Cases by Month of Onset, Florida, 2009



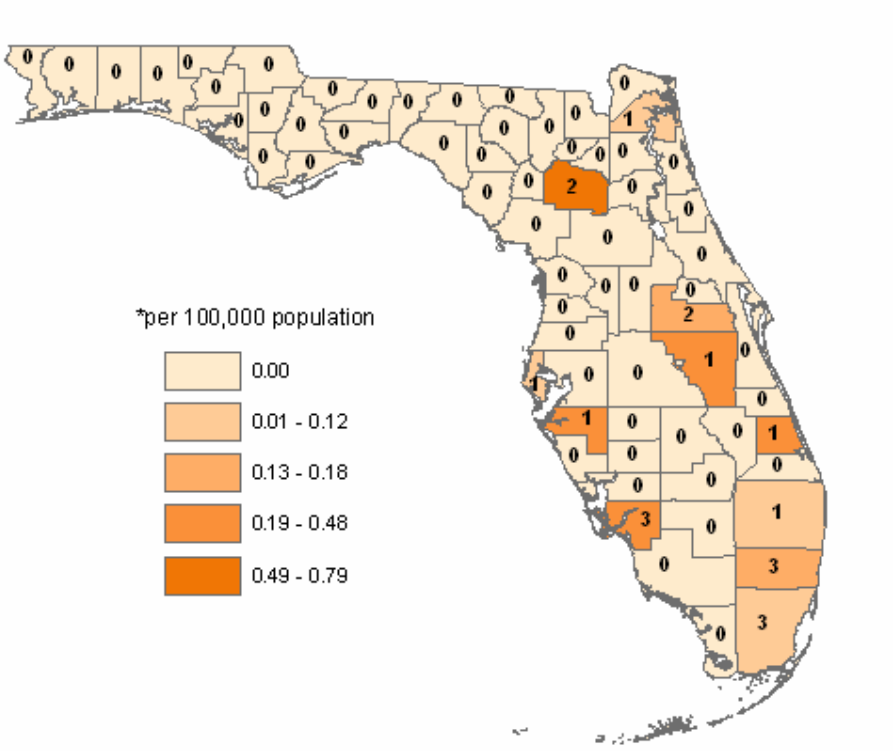
Prevention

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.

Typhoid Fever Incidence Rate* by County, Florida, 2009



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

Additional Resources

Disease information is available from the CDC at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/typhoidfever_g.htm.

Varicella

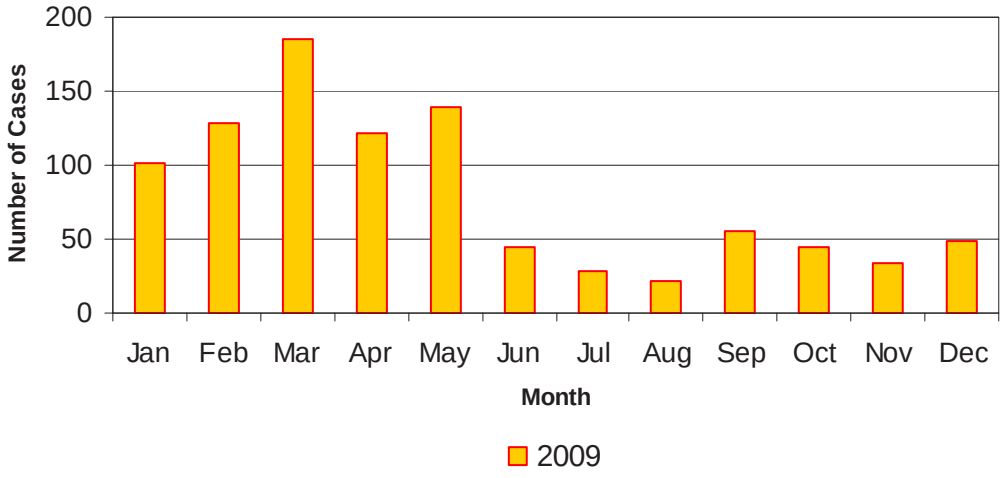
Varicella: Crude Data	
Number of Cases	1,125
2009 incidence rate per 100,000	5.98
% change from average 5-year (2004-2008) reported cases	N/A
Age (yrs)	
Mean	14.51
Median	10
Min-Max	<1-95

Disease Abstract

In 2007, the first full year of varicella case reporting in Florida, 1,321 cases were reported. The 1,125 cases reported in 2009 include both confirmed and probable cases. Of these cases, 642 had a history of vaccination recorded. March 2009 was the peak month for cases to occur (Figure 1). The majority of cases in 2009 occurred in those under 15 years of age (Figure 2). There were 266 outbreak-associated cases in 27 counties. Childcare centers and schools are the most common sites for varicella outbreaks.

Varicella was reported in 57 of the 67 Florida counties.

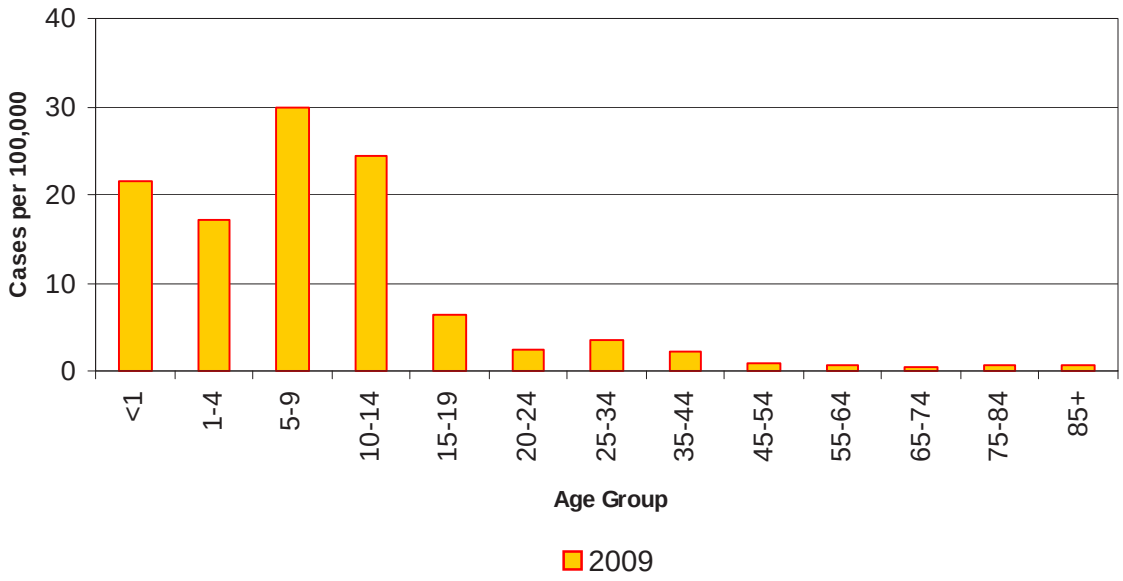
Figure 1. Varicella Cases by Month of Onset, Florida, 2009



Prevention

The varicella vaccine is recommended at 12 to 15 months and at four to six years of age. Doses given prior to 13 years of age should be separated by at least three months. Doses given after 13 years of age 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.

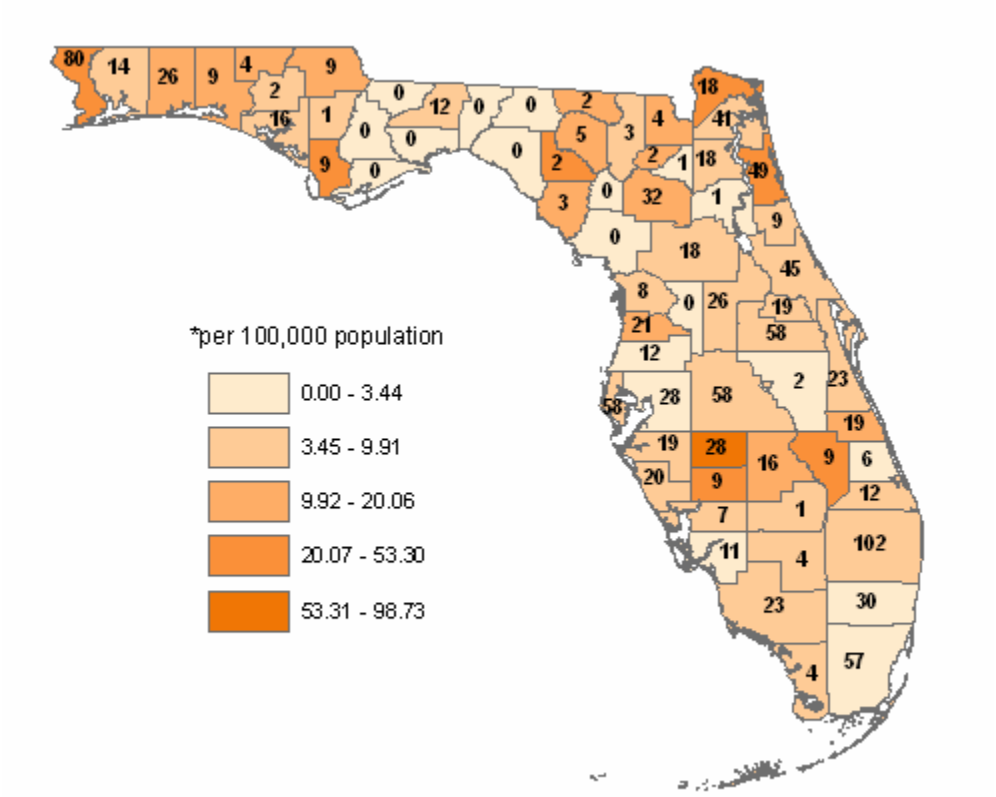
Figure 2. Varicella Incidence Rate by Age Group, Florida, 2009



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 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), if available, is recommended for post-exposure prophylaxis of susceptible persons who are at high risk for developing severe disease and when varicella vaccine is contraindicated. VZIG is most effective in preventing varicella infection when given within 96 hours of exposure. After the only U.S. licensed manufacturer of VZIG announced it had discontinued production, 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. This new product can be obtained from the distributor (FFF Enterprises, Inc., Temecula, CA) by calling 800-843-7477.

Varicella Incidence Rate* by County, Florida, 2009



References

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

Additional Resources

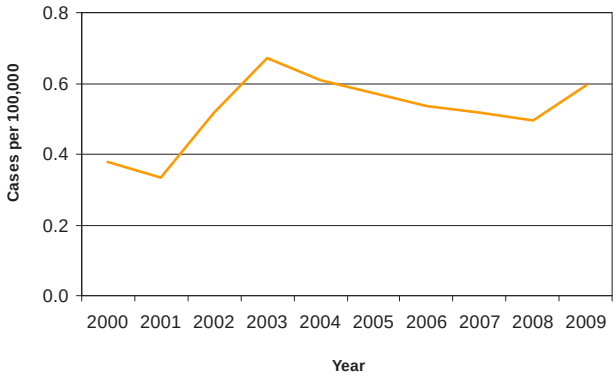
Disease information is available from the CDC at www.cdc.gov/vaccines/vpd-vac/varicella/default.htm.

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

Vibriosis

Vibrio Infections: Crude Data	
Number of Cases	112
2009 incidence rate per 100,000	0.60
% change from average 5-year (2004-2008) incidence rate	9.27
Age (yrs)	
Mean	49.15
Median	51.5
Min-Max	3 - 91

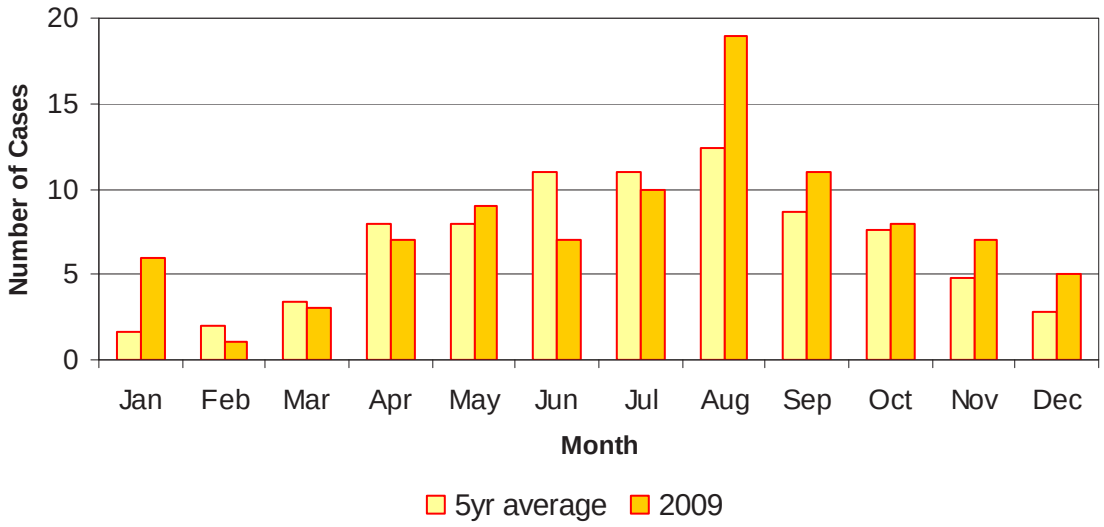
Figure 1. *Vibrio* Infections Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

The genus *Vibrio* consists of many species of gram-negative, curved, motile rods, and contains 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. The symptoms depend 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 to provide a general measure of disease burden; see Table 1 for distribution by species.

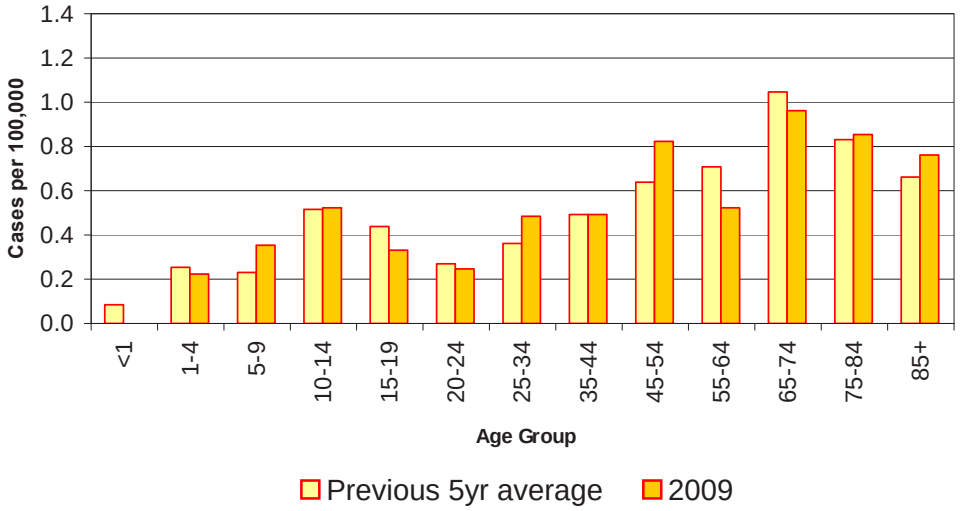
Figure 2. *Vibrio* Infections by Month of Onset, Florida, 2009



In comparison to the previous average five-year incidence, the incidence for *Vibrio* infections in 2009 increased (9.27%) (Figure 1). In 2009, 112 cases were reported and confirmed. The majority of cases were considered sporadic (95%), not outbreak-associated, and six were of

unknown origin. *Vibrio* infections typically increase during the warmer months. In 2009, 63% of the cases occurred from April to October (Figure 2).

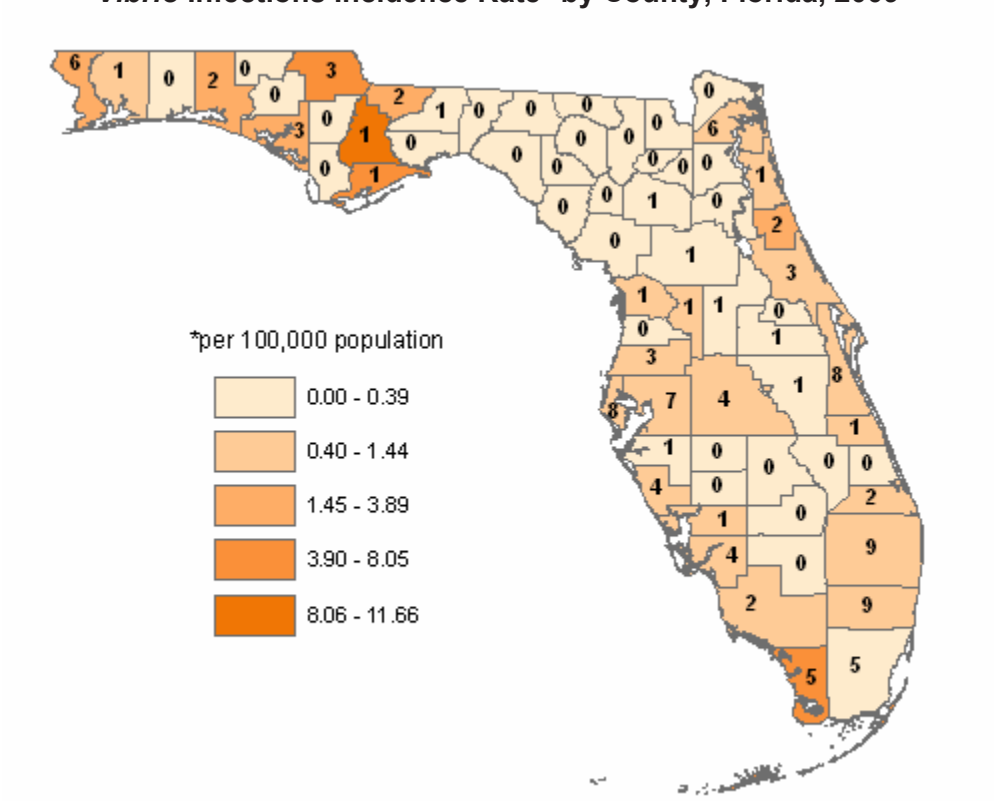
Figure 3. *Vibrio* Infections Incidence Rate by Age Group, Florida, 2009



There are consistently high incidence rates among individuals over 45 years old with a historical peak incidence occurring in the 65 to 74 age group (1.04 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 2009, there was a relatively high incidence rate among those 10 to 14 years old.

Vibrio cases were reported in 36 of the 67 counties in Florida in 2009. The higher-incidence counties are found along the coasts.

Vibrio Infections Incidence Rate* by County, Florida, 2009



<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 2009, 24 were determined to be *V. vulnificus*. Of the 24 reported *V. vulnificus* cases, 13 were wound infections (one death) and seven were attributed to oyster consumption (three deaths). Exposure was unknown in four of the cases (two 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 2009, 23 were *V. parahaemolyticus*. Of these 23 cases, 11 were wound infections, four were attributed to oyster consumption, and one case had consumed both oysters and clams. Exposure was unknown in seven 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 2009, 33 were *V. alginolyticus*. Of these 33 cases, 29 were wound infections. Two deaths from *V. alginolyticus* were reported.

Table 1. *Vibrio* Infections – Confirmed Cases by Species and Exposure Type, Florida, 2009

	Exposure			
	Total Cases	Seafood*	Wound†	Unknown
Vibrio alginolyticus	33	0	29	4
V. parahaemolyticus	23	5	11	7
V. vulnificus	24	7	13	4
V. fluvialis	9	4	1	4
V. cholerae non-O1	6	1	1	4
V. hollisae	5	0	0	5
V. mimicus	3	2	0	1
Other *Vibrio spp.*	9	0	8	1
Total	112	19	63	30

*Includes shellfish (raw oysters and clams)

†Includes pre-existing and sustained wounds, ear infections, and eye infections

References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

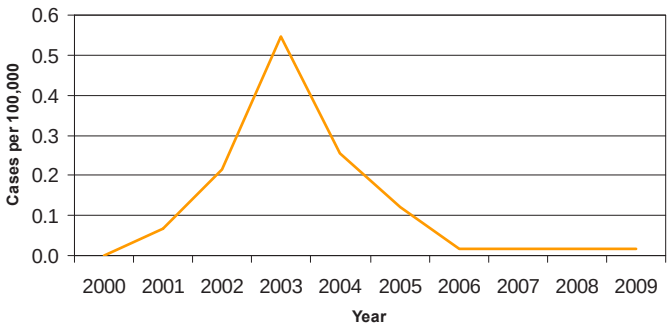
Additional Resources

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

West Nile Virus

West Nile Virus: Crude Data	
Number of Cases	3
2009 incidence rate per 100,000	0.02
% change from average 5-year (2004-2008) reported cases	-80.26
Age (yrs)	
Mean	56.67
Median	62
Min-Max	39 - 69

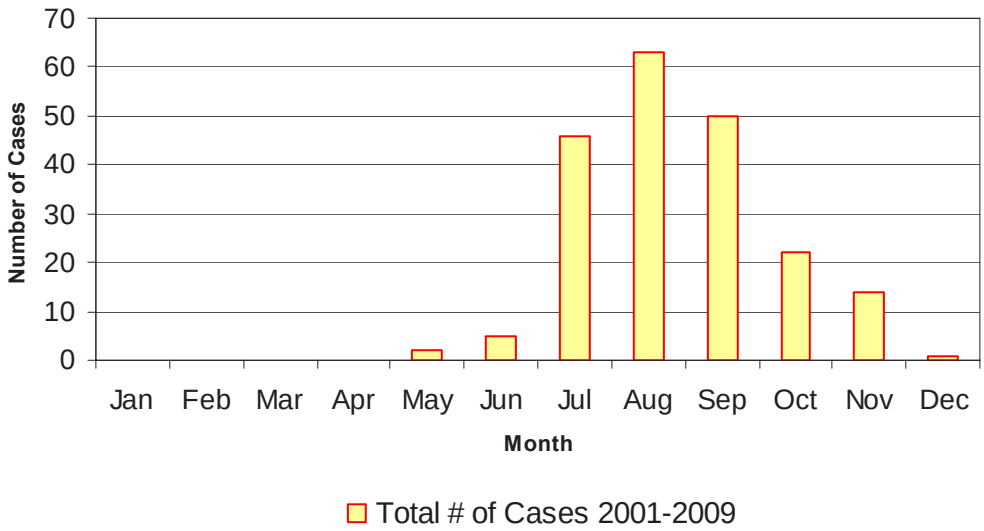
Figure 1. West Nile Virus Incidence Rate by Year Reported, Florida, 2000-2009



Disease Abstract

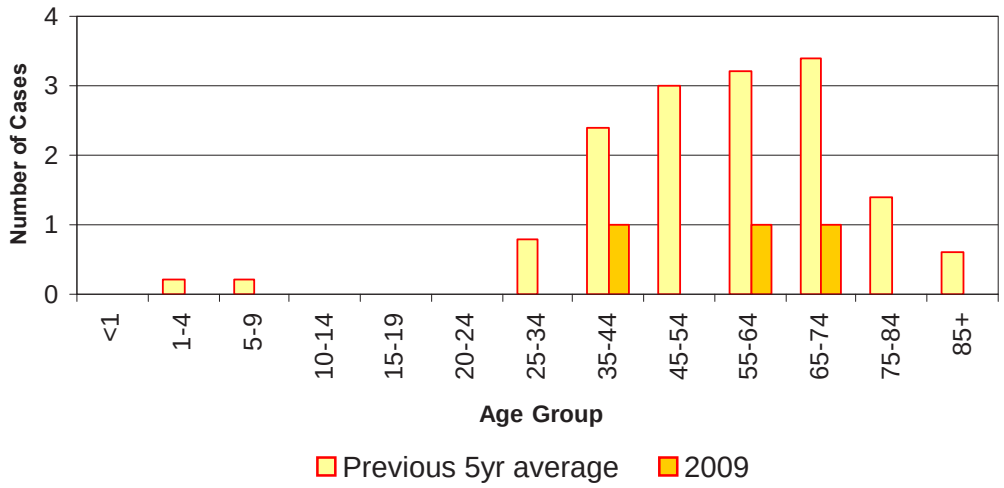
The incidence rate for West Nile virus (WNV), including the neuro-invasive and non-neuro-invasive forms, peaked in Florida in 2003 and has remained stable and near zero since 2006 (Figure 1). In 2009, there were two locally-acquired human cases, and one Floridian became ill after being exposed in another state. All were classified as neuro-invasive disease. The level of virus transmission between bird and mosquito populations is dependent on a number of environmental factors. The low levels of activity reported from 2006 to 2009 were likely a result of the dry conditions experienced by much of the state. The peak transmission period for WNV in Florida occurs July through September (Figure 2).

Figure 2. West Nile Virus by Month of Onset, Florida, 2001-2009



The greatest number of cases occur in people over the age of 35 (Figure 3), with more cases among males than females. WNV transmission tends to be localized 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. In 2009, the locally-acquired cases were in Lee and Miami-Dade counties, both in south Florida.

Figure 3. West Nile Virus Cases by Age Group, Florida, 2009



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 seem to be at increased risk for neuro-invasive disease. The case-fatality ratio for neuro-invasive disease is approximately 7% in Florida. Interestingly, activity of a related disease, St. Louis Encephalitis (SLE), has decreased dramatically since WNV was first detected in the state in 2001. Research suggests that antibodies for WNV may protect against SLE virus infection in wild bird reservoirs.

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 any areas of standing water from around the home to eliminate mosquito-breeding sites.
- Use insect repellents that contain DEET or other EPA-approved ingredients, such as Picaridin, oil of lemon eucalyptus, or IR3535.
- Avoid spending time outdoors during dusk and dawn, the time when WNV disease-carrying mosquitoes are most likely to be biting.
- Dress in long sleeves and long pants to protect your skin from mosquitoes.
- Inspect screens on doors and windows for holes to make sure mosquitoes cannot enter the home.
- Vaccinate horses

References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2009.

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Additional Resources

Additional information on WNV 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