Section 2

List of Notifiable Diseases and Conditions

Acquired Immune Deficiency Syndrome/ Human Immunodeficiency Virus
Animal bite, post-exposure prophylaxis recommended
Anthrax
Brucellosis
California serogroup
Campylobacteriosis
Chlamydia
Cryptosporidiosis
Cyclosporiasis
Dengue Fever
Eastern Equine Encephalitis
Ehrlichiosis
Enterohemorrhagic *Escherichia coli (*O157:H7)
Escherichia coli, shiga toxin+ (non-O157:H7)
Giardiasis
Gonorrhea
Haemophilus influenzae, invasive disease
Hantavirus
Hepatitis A
Hepatitis B, acute
Hepatitis B (+HBsAg in Pregnant Women)
Hepatitis C, acute
Lead Poisoning
Legionellosis
Leptospirosis
Listeriosis
Lyme Disease
Malaria
Measles
Meningitis (other bacterial/mycotic)
Meningococcal Disease
Mumps
Neonatal Infections
Pertussis
Pesticide-related illness
Plague
Psittacosis
Q Fever
Rabies
Rocky Mountain Spotted Fever
Rubella
Salmonellosis
Shigellosis
St. Louis Encephalitis
Streptococcal Disease, invasive group A
Streptococcus pneumoniae, invasive disease, drug-resistant
Streptococcus pneumoniae, invasive disease, drug-susceptible
Syphilis
Tetanus
Toxoplasmosis
Trichinellosis
Tuberculosis
Tularemia
Typhoid Fever
Venezuelan Equine Encephalitis
Vibrio Infections
West Nile Virus
Western Equine Encephalitis
Yellow Fever

Acquired Immune Deficiency Syndrome/Human Immunodeficiency Virus

In 2005, Florida ranked second among states in the number of reported acquired immune deficiency syndrome (AIDS) cases. New York reported 6,299 (15%), followed by Florida with 4,960 cases (12%), California with 4,088 cases (10%), and Texas with 3,113 cases (8%). Florida ranked second among the 38 states that reported human immunodeficiency virus (HIV) cases in 2005. New York reported 5,509 cases (16%), followed by Florida with 4,637 cases (14%), Georgia with 3,894 cases (11%), and Texas with 3,682 cases (10%).

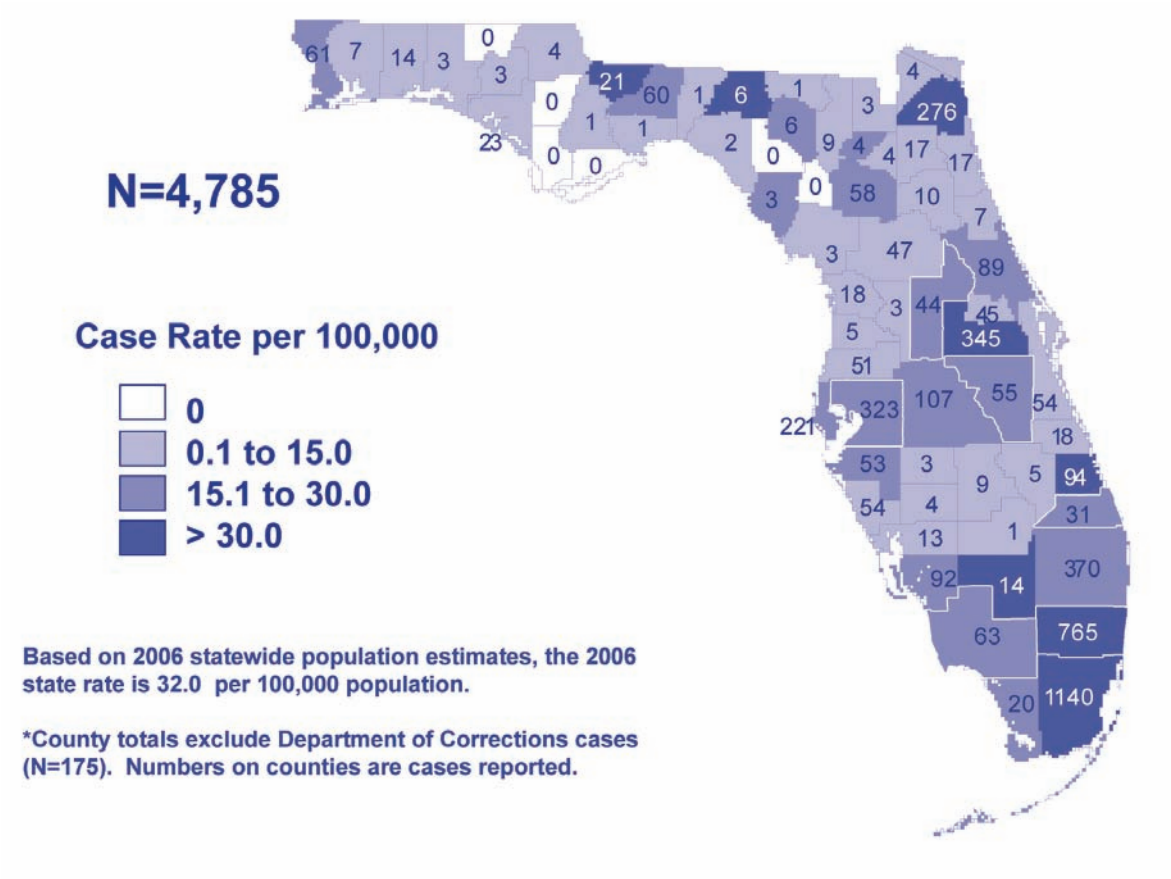
In 2006, Florida reported a higher percentage of AIDS cases among heterosexuals (32%) compared to reported cases in the U.S. (13%). Furthermore, Florida reported a lower percentage of AIDS cases among MSM and injection drug users (IDU), compared to reported cases in the U.S. Combined, MSM/IDU cases accounted for 3% of total reported cases in Florida and 7% compared to reported cases in the U.S. A higher proportion of cases with no identified risk (NIR) were reported in Florida (22%) than in the U.S. as a whole (11%). Florida reported a slightly higher percentage of AIDS cases among blacks (52%) compared to reported cases in the U.S. (40%). Florida also reported a higher percentage of cases among women (32%) compared with the U.S. (19%) as a whole.

Similar to reported AIDS cases in 2006, Florida reported a higher percentage of HIV heterosexual cases (25%) compared to reported cases in the U.S. (20%). Florida reported a lower percentage of IDU than the U.S. as a whole. MSM/IDU cases accounted for (2%) of total reported cases in Florida and (4%) in the U.S. Florida reported a slightly higher percentage of cases with NIR compared with the U.S., 29% versus 28%. The state reported the same percentage of HIV cases among blacks (47%) compared with the U.S. (47%). Florida also reported a slightly higher percentage of cases among women (31%) compared with the U.S. (30%).

In 2006, at least one AIDS case was reported in all but six counties in Florida (Figure 1). Although the AIDS epidemic is widespread throughout Florida, the majority of cases were reported from the seven most populous counties: Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, and Pinellas. These seven counties reported a combined total of 3,440 cases, or 69% of Florida's total reported cases in 2006. The greatest numbers of AIDS cases were reported from three counties located in the southeastern part of the state: Broward, Miami-Dade, and Palm Beach. These three counties reported a combined total of 2,275 cases in 2006 or 46% of the statewide total.

Analysis of county-specific AIDS case rates per 100,000 population for 2006 indicate that Miami-Dade County ranked the highest with a rate of 46.1, followed by Broward (43.1), St. Lucie (37.0), Orange (31.9), Duval (31.2), and Monroe (24.0) Counties.

Figure 1. AIDS cases and rates per 100,000 population, by county of residence, Florida, 2006 (excluding Department of Corrections)



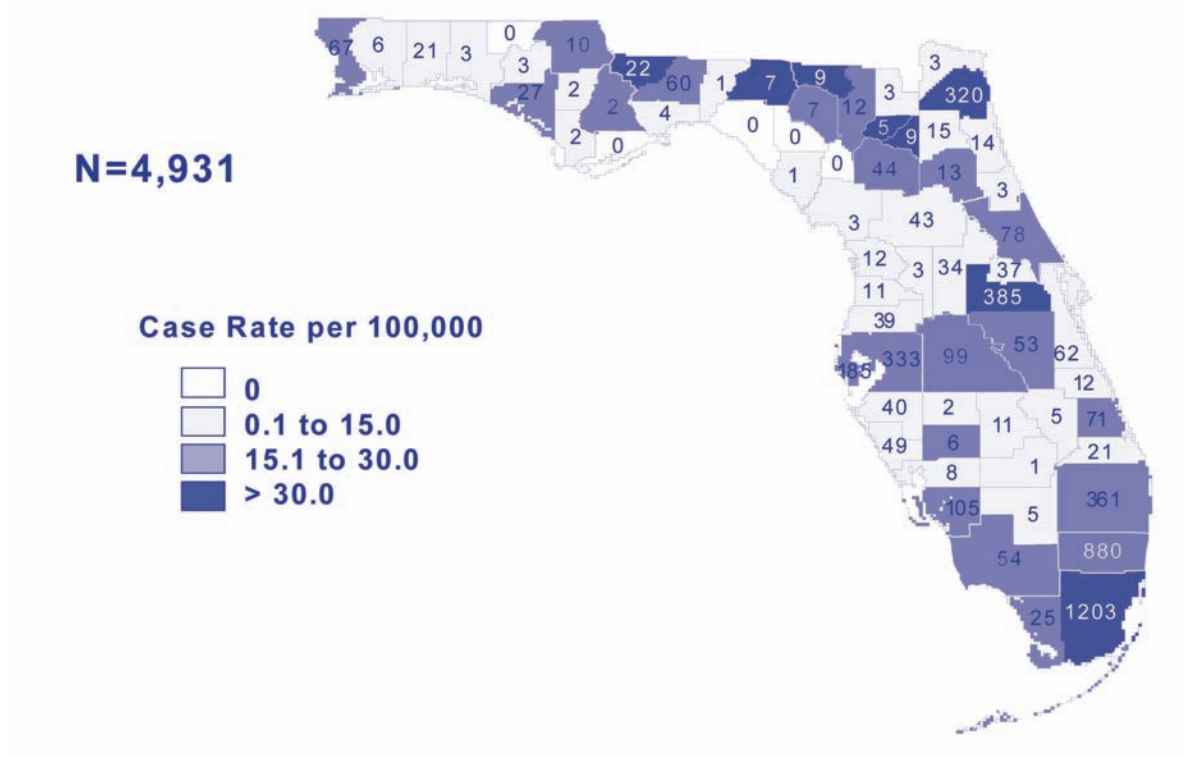
Based on 2006 statewide population estimates, the 2006 state rate is 32.0 per 100,000 population.
***County totals exclude Department of Corrections cases (N=175). Numbers on counties are cases reported.**

In 2006, at least one HIV case was reported in all but five counties (Figure 2). The majority of HIV cases were also reported from the same seven counties. These seven counties reported a combined total of 3,667 cases, or 70% of Florida's total reported cases in 2006. The greatest numbers of HIV cases were reported from Miami-Dade, Broward, and Orange Counties. These three counties reported a combined total of 2,468 cases in 2006, or 47% of the statewide total.

Analysis of county-specific data for 2006 indicate that Miami-Dade County ranked the highest, with 23% of the HIV cases, followed by Broward (17%), Palm Beach (7%), Orange (7%), and Hillsborough (6%).

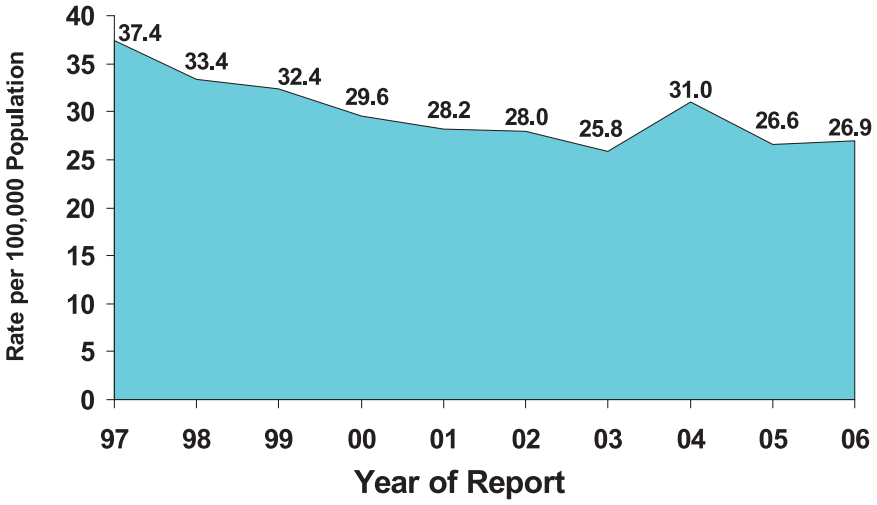
AIDS cases decreased from 1996 to 2000, due to the use of highly active antiretroviral therapy (HAART). Since 2000, AIDS cases have remained fairly level with a slight increase in reported cases observed in 2004 (Figure 3). That slight increase was mostly due to increased CD4 testing of patients in care throughout the state.

Figure 2. HIV cases, by county of residence, Florida, 2006 (excluding Department of Corrections)



Based on 2006 statewide population estimates, the 2006 state rate is 33.5 per 100,000 population.
***County totals exclude Department of Corrections cases (N=293). This map does not reflect HIV incidence. Numbers on counties are cases reported.**

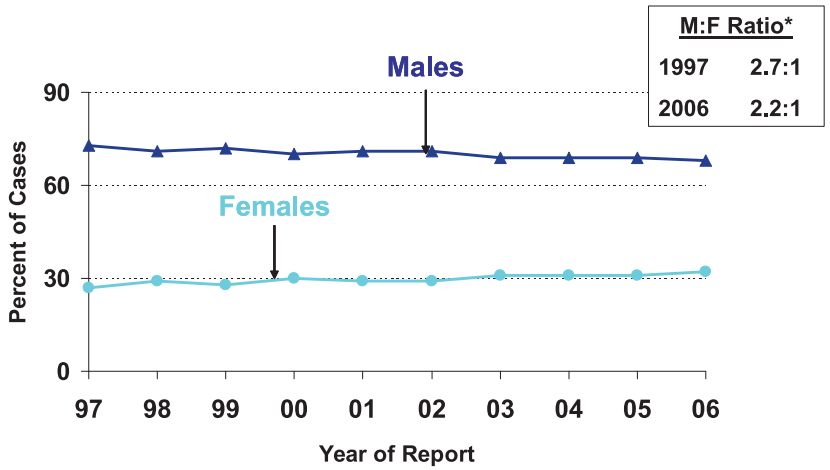
Figure 3. AIDS case rates per 100,000 population*, by year of report, Florida, 1997-2006



*Population rates calculated from annual population estimates.
Comment: The advent of HAART was associated with decreases in AIDS cases in the late 1990's. Generally, AIDS cases remained fairly stable in the early 2000's, with an increase in 2004 due to increased CD4 testing statewide. Increasingly, a diagnosis of AIDS reflects late diagnosis of HIV and limited access to treatment.

In 1997, 27% of the AIDS cases reported in Florida were female (Figure 4). Over the past 10 years, the proportion of AIDS cases among women has increased steadily. This has resulted in a decline of the male-to-female ratio, from 2.7:1 in 1997 to 2.2:1 in 2006. In 2006, the case rate per 100,000 population was 45.1 among adult males and 19.6 among adult females, indicating that AIDS cases in this period were still more likely to be reported among males than females in Florida.

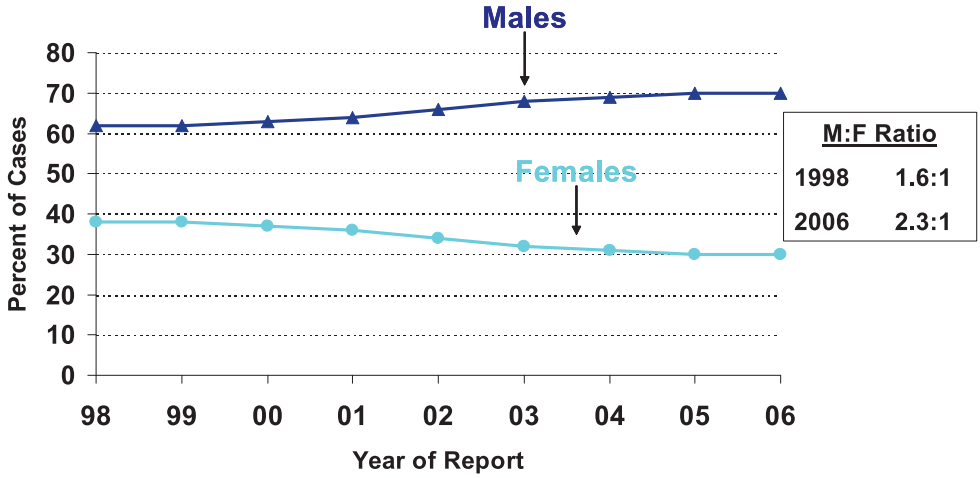
Figure 4. Percent of adult AIDS cases by sex and year of report, Florida, 1997 – 2006



Comment: AIDS cases tend to represent HIV transmission that occurred many years ago. The relative increases in female cases reflect the changing face of the AIDS epidemic over time.
*The male-to-female ratio is the number or percent of cases among males divided by the number or percent of female cases.

In 1998, 38% of the HIV cases reported in Florida were female (Figure 5). The proportion of HIV cases among women has decreased steadily over the past nine years. The result is an increase of the male-to-female ratio, from 1.6:1 in 1998 to 2.3:1 in 2006. This increase in the male-to-female ratio differs from the pattern seen for the ratio for AIDS cases during the same time period.

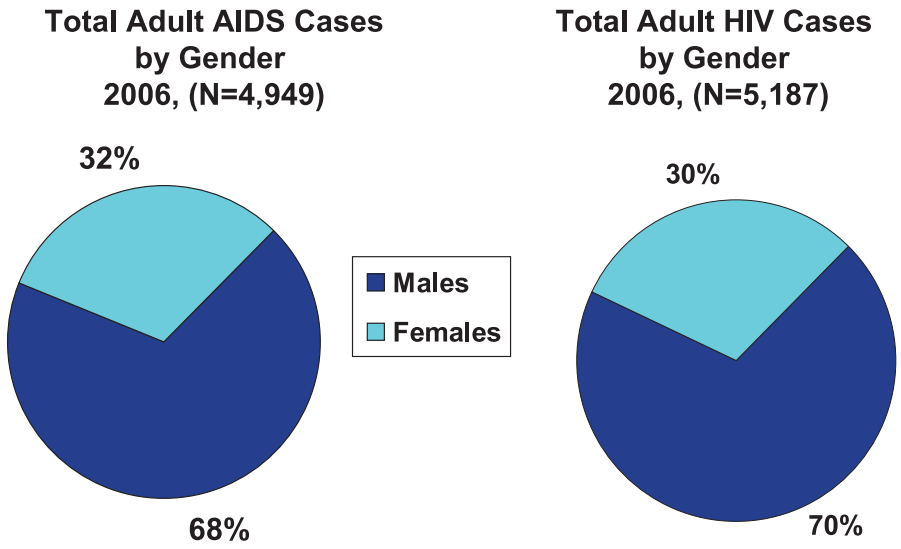
Figure 5. Percent of adult HIV cases by sex and year of report, Florida, 1998–2006



Comment: The trend for HIV cases by sex is the opposite of that for AIDS cases. Recent trends in HIV transmission are best described by the HIV case data. The relative increases in male HIV cases might be attributed to proportional increases in HIV transmission among men who have sex with men (MSM), which may influence future AIDS trends. There is additional evidence to support this MSM hypothesis, which we will now examine more closely.

In 2006, a total of 3,390 adult males and 1,559 adult females were reported with AIDS, representing 68% and 32% of cases, respectively (Figure 6). Also in 2006, a total of 3,608 adult males and 1,579 adult females were reported with HIV infection, representing 70% and 30% of cases, respectively.

Figure 6. Percent of adult AIDS cases by sex, Florida, compared with percent of adult HIV cases by sex, Florida, 2006



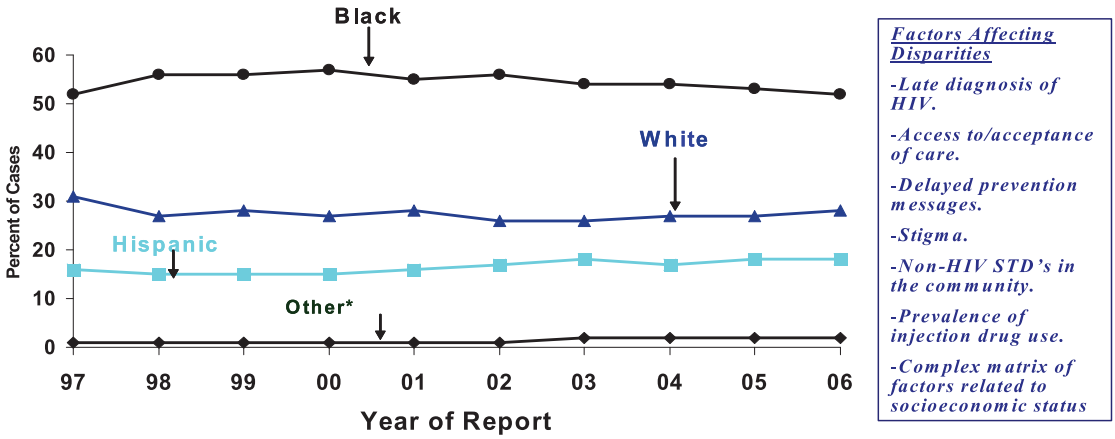
Comment: Florida's Adult Population is: 49% Male and 51% Female, therefore male cases are disproportionately impact

HIV case reporting, implemented in July 1997, tends to indicate newer infections than are reflected by AIDS case data, although the proportion of diagnosed HIV cases that were recently acquired is not known. HIV case reports augment AIDS case data and provide good information by age, sex, and race/ethnicity on persons who have been tested confidentially. Overall, HIV infection data represent the minimum of HIV prevalence in Florida, which is estimated at approximately 125,000 persons living with HIV infection.

Thirty-one percent of the adult AIDS cases reported in Florida in 1997 were white, compared with 52% black, and 17% Hispanic (Figure 7). Over the past 10 years the proportion of AIDS cases among whites, blacks, and Hispanics has remained fairly stable.

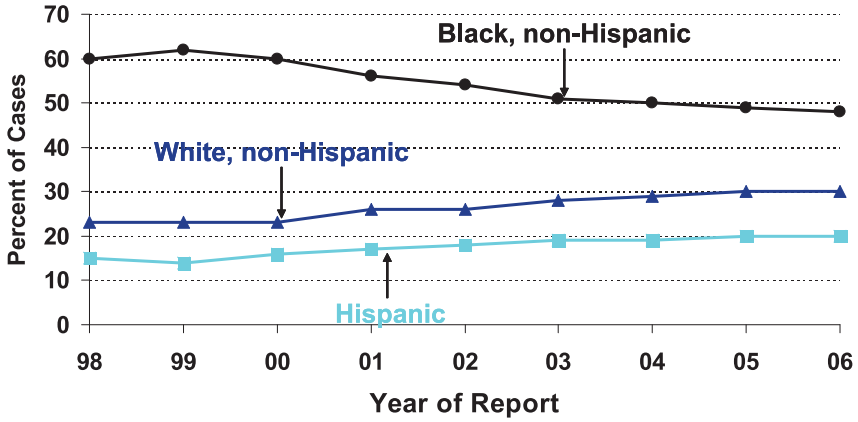
Twenty-three percent of the adult HIV cases reported in Florida in 1998 were white, compared with 60% black (Figure 8). By 2006, the percentage of HIV cases increased for whites (30%) and decreased among blacks to 48%. The percentage of HIV cases among Hispanics has realized a slight steady increase since 2000.

Figure 7. Percent of adult AIDS cases by race/ethnicity and year of report, Florida, 1997–2006



Comment: In 2006, blacks accounted for 52% of reported AIDS cases, but only 15% of the population. Hispanic cases remain stable at 18% in 2006. D isparities are even more evident among women: Annually, more than 70% of female AIDS cases have been reported among black women since 1988. HIV case reporting, implemented in mid-1997, has shown a very similar distribution of cases by race/ethnicity and sex.
*Other includes American Indian/Alaska Native, Asian/Pacific Islander, and Multi-racial.

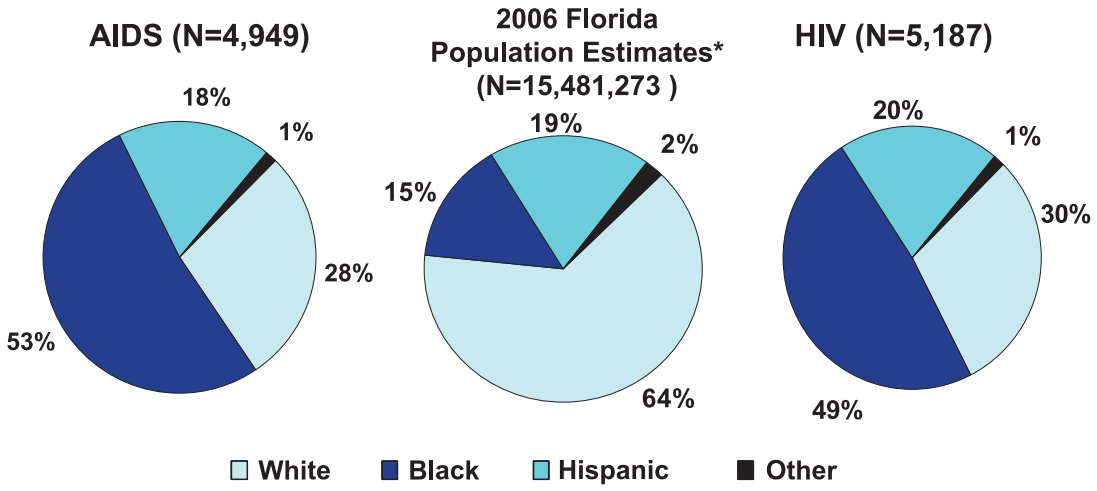
Figure 8. Percent of adult HIV cases by race/ethnicity and year of report, Florida, 1998–2006



Comment: In absolute numbers, from 1999-2006, HIV cases among blacks decreased by 31%, while increasing by 13% among whites and 21% among Hispanics. The decreases among blacks may correspond to some extent with recent targeted prevention, while the increases among whites may be associated with recent increases in HIV transmission among white and Hispanic MSM.

Blacks comprise only 15% of the adult population, but represent 53% of the AIDS cases and 49% of the HIV cases reported in 2006 (Figure 9). Hispanics comprise 19% of Florida's adult population, and account for 18% of the AIDS cases and 20% of the HIV cases.

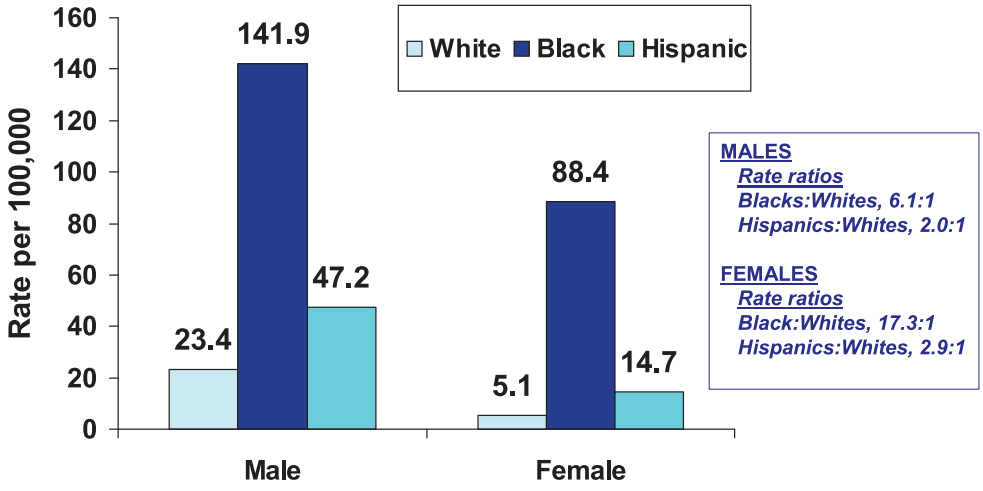
Figure 9. Percent of adult AIDS cases by race/ethnicity, Florida, compared with percent of adult HIV cases by race/ethnicity, Florida, 2006



Comment: In 2006, blacks are over-represented among the AIDS and HIV cases, accounting for 53% of adult AIDS cases and 49% of adult HIV cases, but only 15% of the adult population. Hispanics represent 19% of the adult population and account for 18% of the adult AIDS cases and 20% of the adult HIV cases. A group is disproportionately impacted to the extent that the percentage of cases exceeds the percentage of population.
*Other includes Asian/Pacific Islanders, Native Alaskans/American Indians and mixed races.
*2006 Florida Population Estimates, Adults (Ages 13+), DOH, Office of Planning, Evaluation and Data Analysis

Black men and, to an even greater extent, black women are over-represented in the AIDS epidemic in terms of rates per 100,000 population (Figure 10). To a lesser extent, Hispanic males and females are also over-represented, when compared to the percentage of Hispanic population in Florida.

Figure 10. Adult AIDS cases and case rates per 100,000 population by sex and race/ethnicity, Florida, 2006



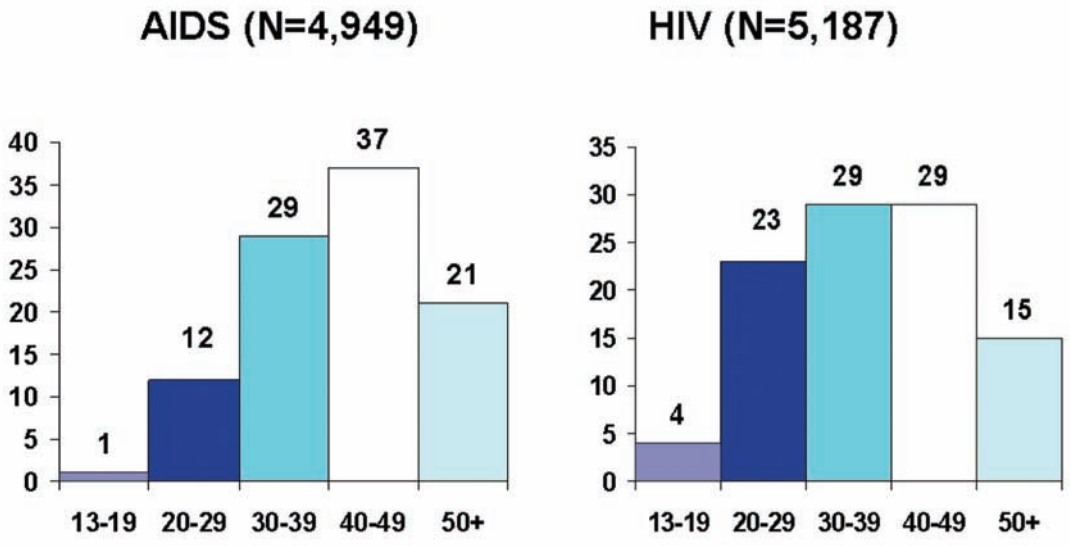
Comment: Among black males, the AIDS case rate for 2006 is 6 times higher than among white males. Among black females, the AIDS case rate is 17 times higher than among white females. Hispanic male rates are two times higher and Hispanic female rates are three times higher than the rates among their white counterparts.
*2005 Florida Population Estimates, DOH, Office of Planning, Evaluation and Data Analysis for ages 13+.

As in previous years, the greatest proportion of AIDS cases reported in 2006 was among persons 40-49 years (37%) (Figure 11). The 30-39 age group was second, with 29% of the reported AIDS cases. The 20-29 age group accounted for 12% of these cases, and the 50+age group accounted for 21%.

Persons reported with AIDS in the 40-49 age group account for 37% of the cases, but only 16% of the total population. However, because AIDS-defining conditions appear late in the course of HIV disease, AIDS cases represent individuals who may have been infected an average of 10 years earlier.

As with AIDS cases, a greater proportion of HIV cases in 2006 were reported among those aged 30-39 (29%), aged 20-29 (23%), and aged 40-49 (29%). There was a lower proportion among those aged 13-19 (4%) and a higher proportion among those aged 20-29 years, but a lower proportion for those aged 50+ (15%), all of which is consistent with earlier detection of HIV cases.

Figure 11. Age distribution of Florida's adult AIDS cases compared with the age distribution of Florida's adult HIV cases, 2006



Comment: HIV cases tent to be younger than AIDS cases. HIV cases tend to reflect more recent transmission than AIDS cases, and thus present a more current picture of the epidemic. 15% of all new HIV cases were under the age of 25.

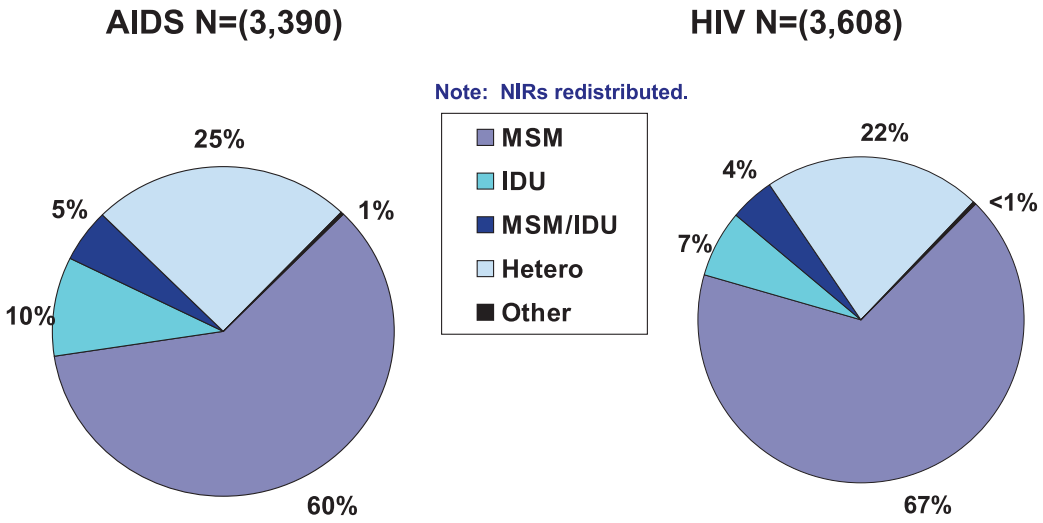
HIV/AIDS by Mode of Exposure

The dynamics of the HIV epidemic are different in each population; so multiple data sets must be used to compile a representative epidemiologic profile for HIV prevention, planning, and targeting of resources and outreach. The following data represent HIV and AIDS cases by mode of exposure where cases reported with no identified risks (NIRs) have been redistributed into "known" risk categories, based on how people with no initially identified risk have been classified when a risk has become known.

Males

Among the male AIDS and HIV cases reported for 2006, MSM was the most common risk factor (60% and 67%, respectively) followed by cases with a heterosexual risk (25% for AIDS, and 22% for HIV) (Figure 12). People with a risk of IDU are more common among AIDS cases (10%) than HIV cases (7%); this has been a waning risk for HIV infection in Florida over the past 10 years.

Figure 12. Adult male AIDS and HIV cases by mode of exposure, Florida, 2006

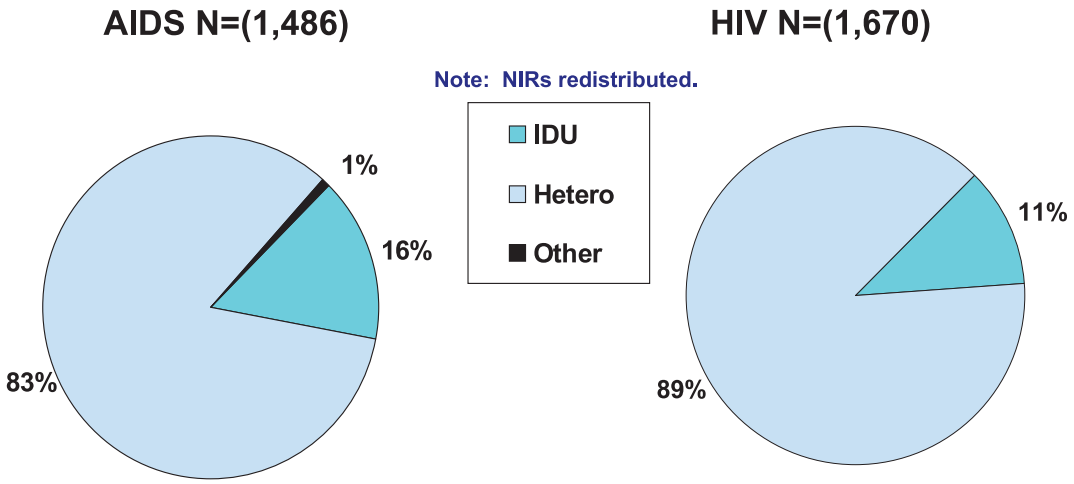


Comment: The recent increase among MSM is indicated by the higher percent of MSM among HIV cases compared to AIDS cases, as HIV cases tend to represent a more recent picture of the epidemic.

Females

Among the female AIDS and HIV cases reported for 2005, heterosexual contact was the highest risk followed by IDU (Figure 13).

Figure 13. Adult female AIDS and HIV cases by mode of exposure, Florida, 2005



Comment: The ongoing increase among heterosexual risk compared with IDU is indicated by the higher percent of heterosexuals among HIV cases compared to AIDS cases, as HIV cases tend to represent a more recent picture of the epidemic.

Prevalence of HIV/AIDS

Assessment of the extent of the HIV epidemic is an important step in community planning for HIV prevention and HIV/AIDS patient care. HIV prevalence, 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 who are unaware of their serostatus.

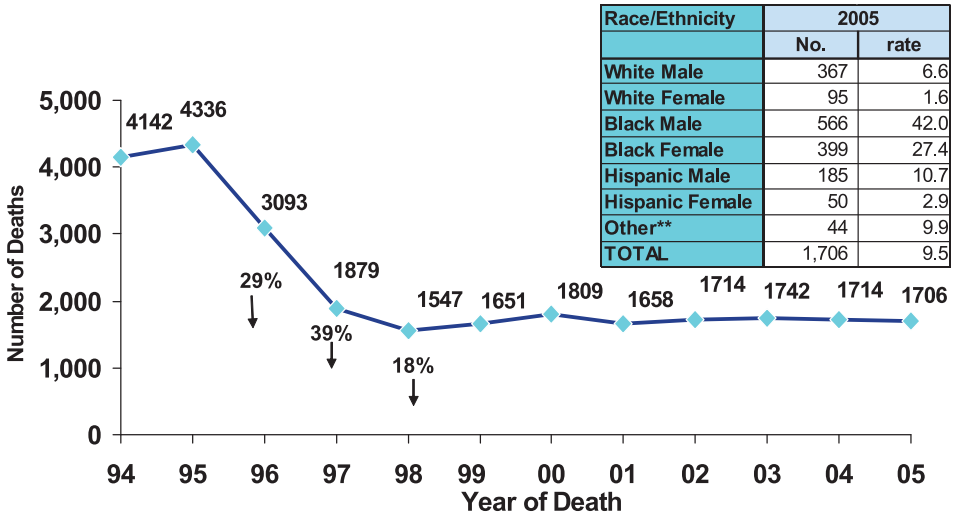
Approximately 1,039,000-1,185,000 persons are living with HIV infection in the U.S. (2004). Florida has consistently reported 10-12% of the national AIDS morbidity and currently accounts for 11% of all persons living with AIDS in the U.S. The Florida Department of Health now estimates that approximately 125,000 persons, or roughly 11.7%, of the national total are currently living with HIV infection in Florida, as of the end of 2006.

Impact of HIV-related Deaths

As of December 31, 2005, a total of 101,013 AIDS cases were known to have been diagnosed in Florida through 2005 (2006 death data is not yet available). Some cases are lost to follow-up, so vital status is unknown. Of these cumulative cases, 53,994 (54%) were known to have died.

HIV/AIDS deaths decreased markedly from 1996 to 1998, associated with the advent of HAART in 1996. Deaths in 2005 were 61% lower than in the peak year, 1995. 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 14). Racial/ethnic disparities are evident in the death rate data.

Figure 14. Resident HIV deaths, by year of death, Florida, 1994–2005

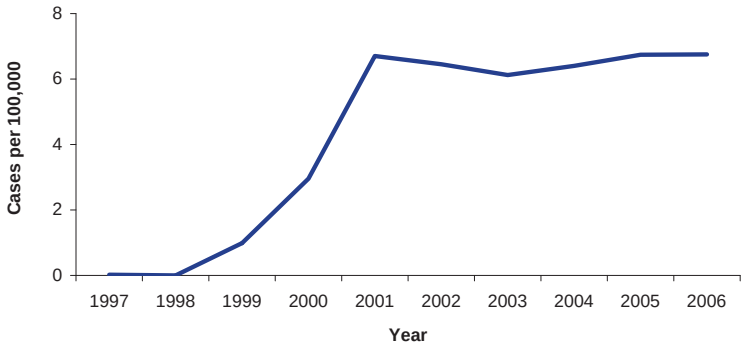


Race/Ethnicity	2005	
	No.	rate
White Male	367	6.6
White Female	95	1.6
Black Male	566	42.0
Black Female	399	27.4
Hispanic Male	185	10.7
Hispanic Female	50	2.9
Other**	44	9.9
TOTAL	1,706	9.5

Animal Bite, Rabies Post-Exposure Prophylaxis

Animal Bite, PEP: Crude Data	
Number of cases	1244
2006 incidence rate per 100,000	6.75
% change from average 5yr (2001-2005) incidence rate	+ 4.1
Age (yrs)	
Mean	36.6
Median	37
Range	<1-94

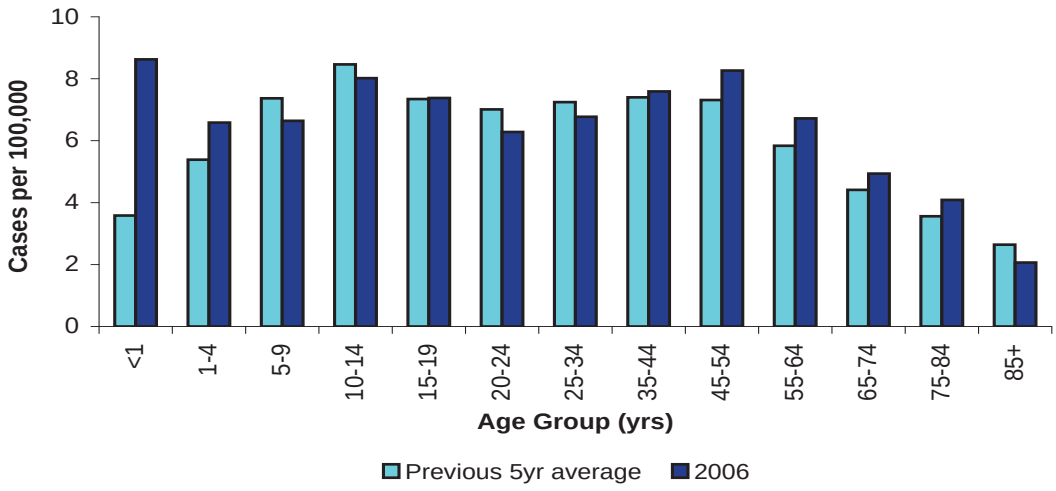
Figure 1.
Animal Bite PEP Incidence Rate by Year Reported, Florida, 1997- 2006



Description

Electronic reporting of animal encounters (bites, scratches, etc.) for which rabies post-exposure prophylaxis (PEP) is recommended was initiated in 2001. Rabies PEP is recommended when an individual is bitten by, or otherwise exposed to the saliva of, a rabid mammal or a mammal that is suspected of being rabid, but is not available for testing. The prophylaxis consists of a series of vaccinations given on day 0, 3, 7, 14, and 21 or 28. Human rabies immunoglobulin (HRIG) is also given on day 0. Persons who have been previously immunized against the disease receive two doses of rabies vaccines on day 0 and 3 after exposure. The series is costly and can cause side effects such as redness, itching, and swelling.

Figure 2. Animal Bite PEP Incidence Rate by Age Group, Florida, 2006



Disease Abstract

The annual incidence of cases for which PEP is recommended has increased from 1997 to 2006 (Figure 1). In 2006, the incidence rate was up 4.1% over the previous 5-year average. The average age of the victim was 36.6 years, with a range of <1 year to 94 years. In 2006, the highest incidence was

seen in individuals <1 year old (Figure 2), but incidence was similar from ages 5 to 64. The incidence rate for males is higher than that for females (Figure 3).

Figure 3. Animal Bite PEP Incidence Rates by Gender, Florida 2006

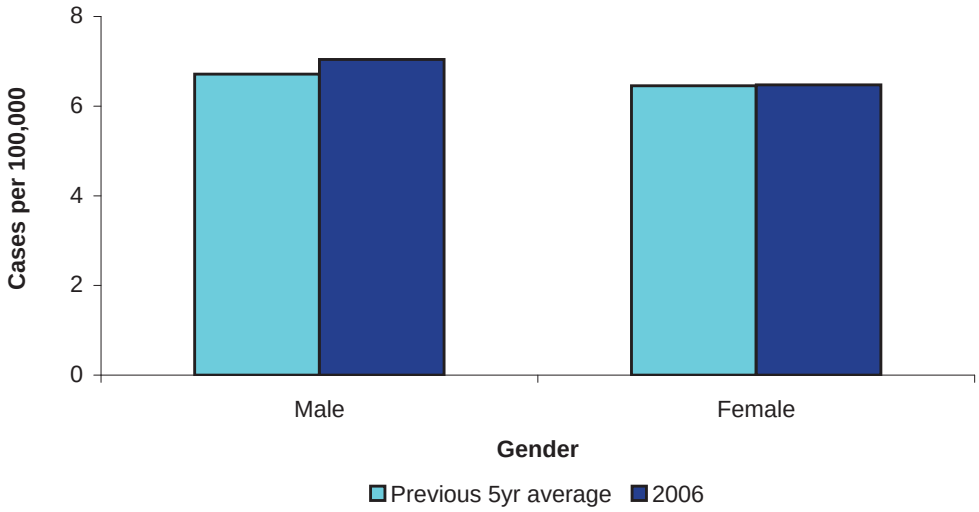
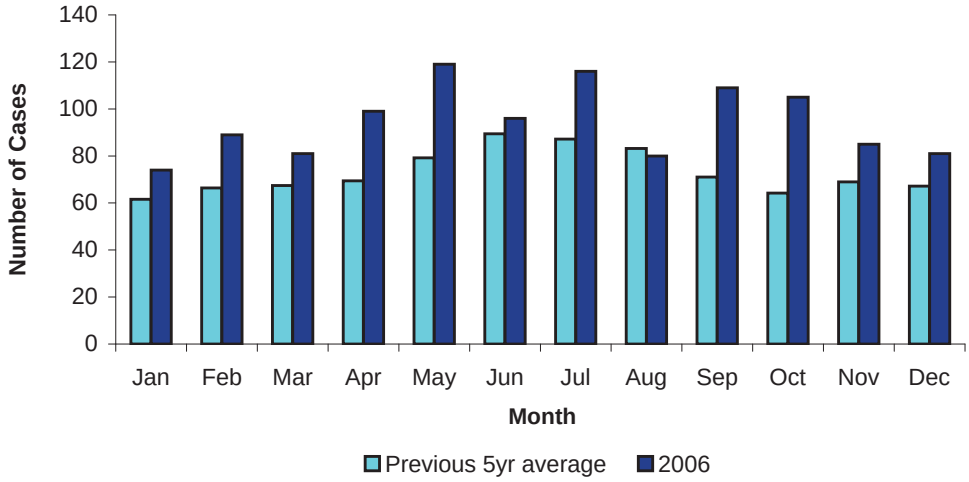


Figure 4. Animal Bite PEP Cases by Month of Onset, Florida, 2006

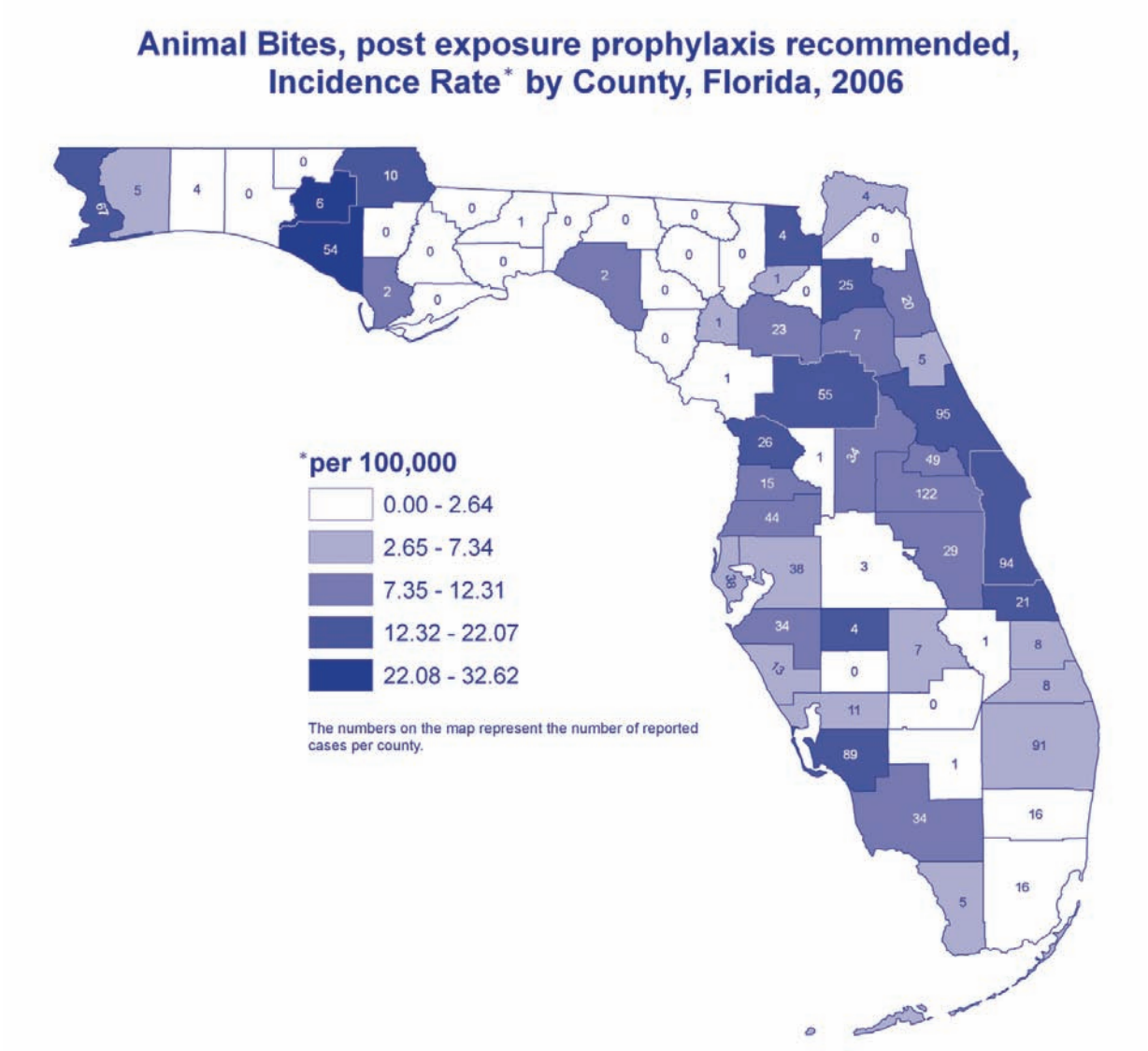


According to an analysis of data from 2000 to 2006, an annual average of 1,060 individuals was recommended to receive PEP. Of those cases for which the animal type was available, 35% of exposures involved a dog, 31% involved a cat, 18% involved a raccoon, 9% involved a bat, 3% involved a fox, and the remaining 4% of exposures were other animals. Among cases for which exposure type was available, 81% of exposures were bites, 9% were scratches, and 10% were saliva or other non-bite exposures. The most common exposure sites were the hand (46%), leg (25%), and arm (13%). Eleven percent of exposures occurred above the neck. Exposures above the neck were most common in children <9 years, and of those for which animal type was reported, 56% involved a dog. Treatment information was provided for roughly 20% of cases. Of these, 14% declined to receive PEP. Another 5% were not treated because they were not able to be reached by the county health department, or missed multiple appointments and were lost to follow-up. Two percent began treatment as indicated, but did

not complete the series. PEP is recommended year-round in Florida, though the number of treatment incidents increases during the summer months (Figure 4).

Prevention

Contact with wildlife and unfamiliar domestic animals should be limited. It is especially important that children be educated on appropriate interactions with animals. If bitten, it is important to wash the area thoroughly with soap and water, seek medical attention if necessary, and report the bite to the local county health department.



Resources

Additional information on animal bites and PEP can be found in the Rabies Prevention and Control in Florida, 2007 Guidebook, online at http://www.doh.state.fl.us/environment/community/arboviral/Zoonoses/Rabiesguide2007.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

Anthrax

From 1997 through 2006, there were only two cases of anthrax in Florida, one fatal. Both cases occurred in 2001. Exposure was through letters contaminated with anthrax spores (please see the outbreak section for more details on these cases). The causative agent of anthrax is *Bacillus anthracis*, a gram-positive spore-forming rod. The spore is the infective form for the cutaneous and inhalational syndromes of anthrax. Eschar formation is characteristic of the cutaneous syndrome. Viable vegetative organism is believed to cause the gastrointestinal syndrome, which can present as either an intestinal or oropharyngeal form. This zoonotic agent is most frequently associated with hair, wool, hides, carcasses, blood, excreta, and bone meal of naturally infected cattle, sheep, goats, and horses. Human exposure occurs through contact with cuts or abrasions in the skin, inhalation, ingestion of undercooked meat, or via fly bites. Animal, mill, and laboratory workers are at greatest risk for natural infection. Mortality for appropriately treated cutaneous anthrax is <1%, while mortality for treated gastrointestinal or inhalational anthrax often exceeds 50%. Because of the resilience of the spores, the possibility of aerosol transmission, and the high mortality rate, anthrax is a CDC Select agent and is considered one of the most likely candidates for use as a bioweapon.

References

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

Brucellosis

Description

Brucellosis is an important disease of ruminants, swine, and canids that primarily affects the reproductive tract and fertility. At least four species of this zoonotic gram-negative coccobacillus have been associated with human disease: *Brucella melitensis* (goats, sheep), *B. suis* (pigs), *B. abortus* (cattle, bison, cervids), and rarely, *B. canis* (dogs, coyotes). Brucella suis is endemic in wild hogs in Florida, and *B. canis* occurs sporadically in dogs. *Brucella* spp. have also been identified as potential bioterrorist weapons and are listed as CDC Select Agents.

The organisms are shed in high concentration in the reproductive fluids of infected animals and are also present in animal tissues, milk, blood, and urine. Transmission to humans primarily occurs through contact of infected animal tissues and fluids with breaks in the skin, or ingestion of unpasteurized milk and dairy products. Though less common, aerosol transmission is also possible in areas contaminated with high concentrations of organism such as laboratories, abattoirs, or animal birthing areas. Disease risk is increased for those handling livestock and their tissues, including veterinarians, hunters, ranchers, meat inspectors, abattoir, and laboratory workers. It is estimated that inhalation of only 10-100 organisms can cause disease in humans. Accidental percutaneous inoculation with modified live animal vaccine has caused disease in veterinarians.

The incubation period in humans ranges from five days to several months. In most cases, clinical disease develops within two months of exposure. Symptoms in people include fever (intermittent or

continuous), headache, weakness, profuse sweating, chills, arthralgia, depression, weight loss, and generalized aching. Illness can be acute or insidious, and recurrences are common. Suppuration of liver, spleen, and other organs can occur.

Osteoarticular complications are reported in 20-60% of cases; genitourinary involvement occurs in 2-20%, with orchitis and epididymitis common in males. Appropriate antimicrobial treatment is critical for prevention of relapses. Case fatality is ≤2% and is usually associated with endocarditis caused by *B. melitensis*.

Disease Abstract

A total of 51 cases of human brucellosis were reported in Florida from 1997 to 2006, of which 42 (82.4%), were classified as confirmed. The incidence rate has increased over the past ten years with an annual average of 3.8 cases reported from 1997 to 2001, compared to 6.4 in 2002-2006. Speciation was provided in 21 cases with 11 *B. suis*, six *B. abortus*, and four *B. melitensis* infections identified. Site of exposure was determined in 49 cases; 35 cases were acquired in Florida, seven imported from outside of the country (including five from Mexico), and two cases imported from other states. Males accounted for 76.5% of the cases. Cases ranged from 9-80 years old. Incidence was highest in those aged 35-44, representing 20 cases or 39.2% of the total reports. Of the 42 cases with known ethnicity, 60.5% were non-Hispanic whites and 40.5% were Hispanic. Risk factors identified in 14 cases included hunting or handling carcasses (6 cases, 5 specifically mentioned hogs), consuming unpasteurized milk (3, all imported), milking a goat (1, imported), eating meat from wild animals (1), eating goat meat/handling a pet pig (1, imported), vet assistant handling farm animals (1), and no reported animal contact (1).

Prevention

Prevention can best be accomplished through the education of animal workers and hunters on proper handling techniques: wearing gloves and protective clothing, working in properly ventilated areas, proper carcass and tissue disposal, disinfection of contaminated areas, and proper handling of modified live vaccines. Also important is requiring pasteurization of milk. Education should be provided to travelers and the general public on the risks of drinking or eating unpasteurized dairy products, especially products originating in countries where brucellosis is endemic in livestock. Continued surveillance and management programs for Brucella spp. in domestic livestock will keep exposure risk low in Florida. Surveillance is also important because Brucella has the potential for use as a bioterrorist agent.

References

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

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.

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

Information on human Brucellosis in Florida can be obtained at the following websites,
Florida Department of Health
http://www.doh.state.fl.us/Environment/community/arboviral/Zoonoses/Zoonotic-brucellosis.html

United States Department of Agriculture, Animal and Plant Health Inspection Services
http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/
Centers for Disease Control and Prevention
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis_g.htm

California Serogroup Viruses

Description

California serogroup refers to a number of closely-related mosquito-borne viruses from the genus *Bunyavirus*, including LaCrosse, Jamestown Canyon, and snowshoe hare viruses. These viruses are known to cause symptoms ranging from a mild meningioencephalitis (fever, headache, respiratory distress, aseptic meningitis) to encephalitis and coma. Current evidence suggests that adults are more likely to experience mild illness or asymptomatic infection, while children generally present with acute central nervous system (CNS) disease. The transmission cycle for these viruses involves *Aedes* mosquitoes and a variety of mammals, though the virus can also over-winter in Aedes eggs. Only six cases from the California serogroup of viruses have been reported in Florida from 1997 to 2006, and three of these are thought to have been acquired in other states. Four of the cases are in people <18 years old. Prevention measures for this group of viruses are the same as those for other mosquito-borne viruses.

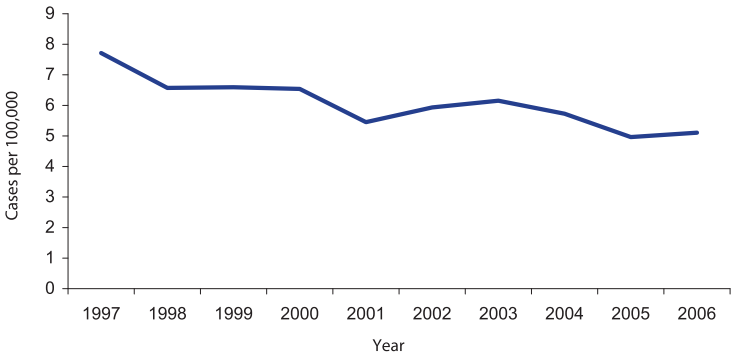
References

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

Campylobacteriosis

Campylobacteriosis: Crude Data	
Number of cases	941
2006 incidence rate per 100,000	5.11
% change from average 5yr (2001-2005) incidence rate	-9.43
Age (yrs)	
Mean	33
Median	33
Range	<1-105

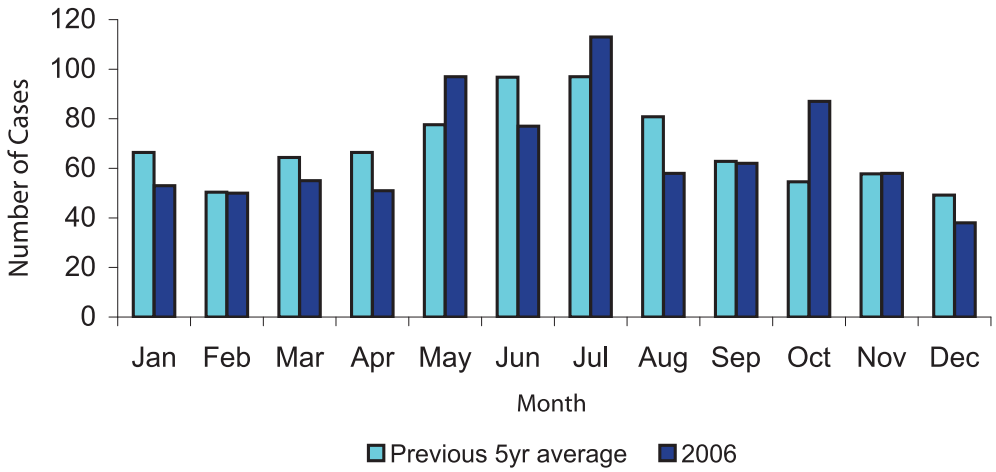
Figure 1.
Campylobacteriosis Incidence Rate by Year Reported, Florida, 1997-2006



Description

Campylobacteriosis is an acute bacterial gastroenteritis caused by gram-negative bacilli. The natural reservoirs for *Campylobacter* species are typically poultry and cattle, although puppies, kittens, birds, swine, sheep, and rodents can also carry the organism. The infection is most often transmitted by ingesting undercooked meat, contaminated food and water, or raw milk and from infected pets or farm animals, or from infected people. Cross-contamination of surfaces contaminated by raw meat may also be a source of infection. The incubation period is generally 2-5 days after exposure (range: 1-10 days). Common symptoms include watery or bloody diarrhea, abdominal pain, fever, malaise, and nausea.

Figure 2. Campylobacteriosis Cases by Month of Onset, Florida, 2006



Disease Abstract

The incidence rate for campylobacteriosis has declined gradually over the last 10 years (Figure 1). In 2006, there was a 9.4% decrease in comparison to the average incidence from 2001 to 2005. A total of 941 cases were reported in 2006, of which 97.4% were classified as confirmed cases. The number of cases reported tends to increase in the summer months. In 2006, the number of cases exceeded the

previous 5 year average in May, July, and October (Figure 2). Overall 4.8% of the campylobacteriosis cases were classified as outbreak-related.

The highest incidence rates continue to occur among infants <1 year old and children aged 1-4 years. In 2006, the incidence rates were lower than the previous 5-year average in all age groups, except in those older than 55 years where the incidence rate was slightly increased (Figure 3). Males continue to have a higher incidence than females (5.8 per 100,000 and 4.4 per 100,000, respectively), and in 2006, the incidence in both genders was lower than the previous 5 year average incidence. As has been the case in the past, incidence rates in whites are greater than those in non-whites (Figure 4).

Figure 3. Campylobacteriosis Incidence Rate by Age Group, Florida, 2006

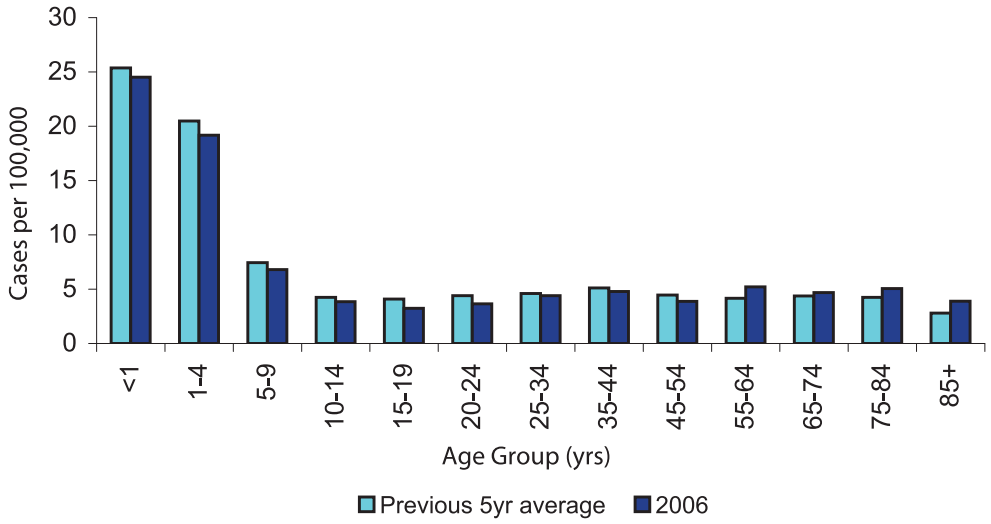
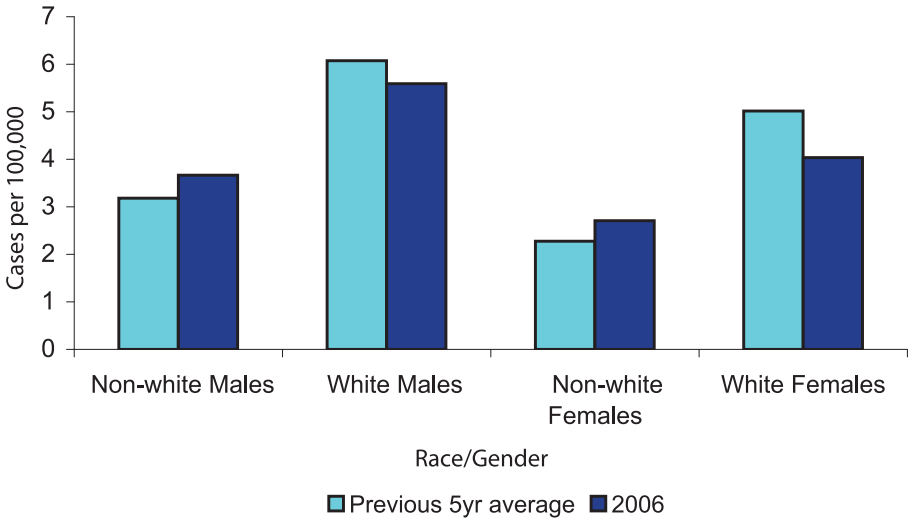


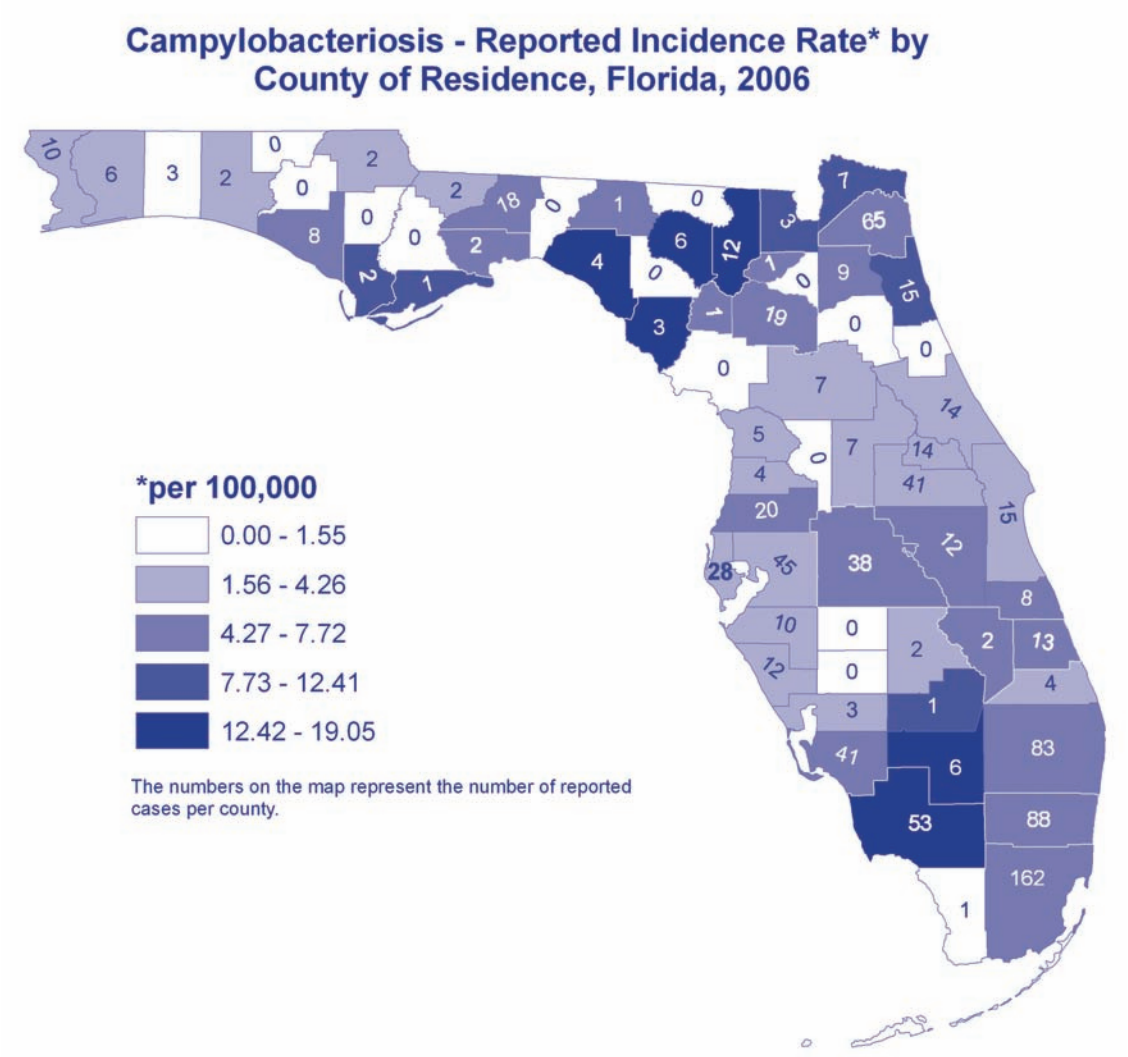
Figure 4. Campylobacteriosis Incidence Rate by Race and Gender, Florida, 2006



Campylobacteriosis was reported in 53 of the 67 counties in Florida. Counties in north central and southwestern Florida reported the highest incidence rates.

Prevention

The likelihood of contracting campylobacteriosis can be reduced by cooking 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 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 hands after coming into contact with any animals or their environment.



References

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

Additional Resources

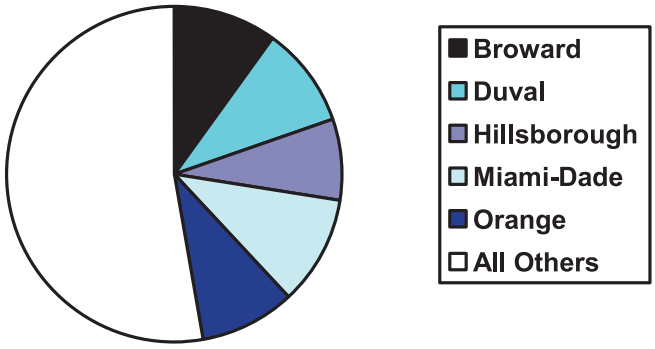
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

Chlamydia

Chlamydia, caused by the bacterium *Chlamydia trachomatis*, is the most commonly reported sexually transmitted disease in the United States. In order to infect an individual, the bacteria must invade cells. *Chlamydia trachomatis* can infect the male and female genital areas, the anus, the urethra, the eye, or the throat.

In 2006, there were 48,955 chlamydia cases reported among both males and females in Florida, or 265.7 cases per 100,000 total population. Over 47% of all cases were reported from five of the most populous counties (Figure 1), although all counties in the state continue to be impacted by this infection.

Figure 1. Reported Cases of Chlamydia in Males and Females by Select Counties, Florida, 2006



Under-reporting is common because chlamydia is often asymptomatic. Approximately three-quarters of infected women, and greater than half of infected men, have no symptoms. Case numbers and rates reported include both people with symptoms; usually identified when they seek care for those symptoms, and people without symptoms; usually identified through screening.

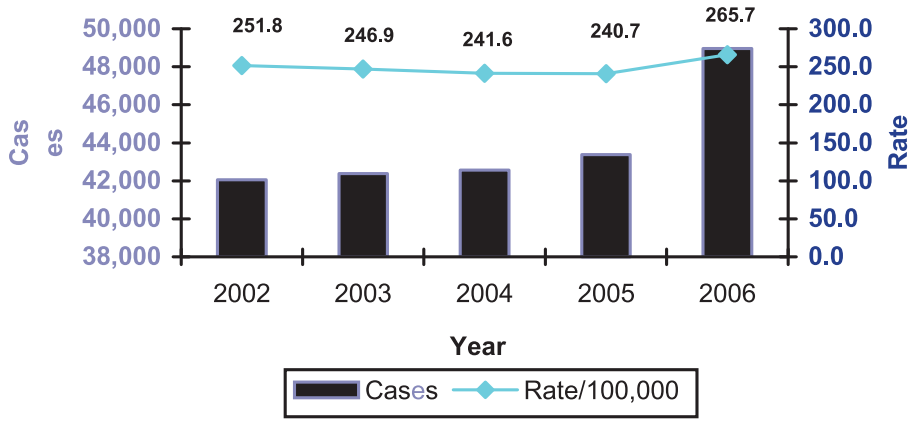
If untreated, chlamydia may cause pelvic inflammatory disease in up to 40% of women. Complications and sequelae include a risk of infertility and life-threatening ectopic pregnancy.

The chlamydia rate per 100,000 population among males and females and across all age groups increased from 251.8 in 2002 to 265.7 in 2006. However, this increase came after the rate decreased from 2002 through 2005 (Figure 2). From 2005 to 2006, there was an overall 10.4% increase in the chlamydia rate (240.7 in 2005 to 265.7 in 2006).

The number of cases reported among females increased by 10.6%, from 34,850 in 2005 to 38,535 in 2006. The number of cases reported among males increased by 22.2%, from 8,522 in 2005 to 10,410 in 2006. This upward trend of increase in both males and females is most likely related to the expanded use of highly sensitive urine-based screening and broad community prevalence.

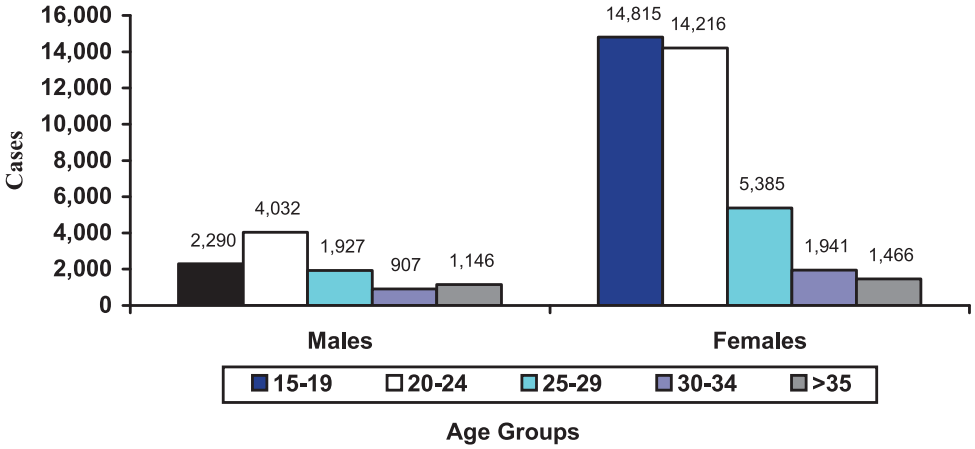
More cases are identified in women than in men. Women have more opportunities to receive screening because they receive reproductive health care and Pap smears. Across all age groups, females represent approximately 80% of reported cases.

Figure 2. Reported Cases of Chlamydia Among Males and Females, Cases and Rate per 100,000 Population, Years 2002 - 2006



Closer examination of the disease distribution reveals that 75% of all reported cases of chlamydia are found in the 15-19 and the 20-24 age groups among both males and females (Figure 3). Chlamydia cases in the 15-19 age group comprised 35.0% of all cases reported in 2006, and chlamydia cases in the 20-24 age group comprised 37.3% of all cases reported in 2006.

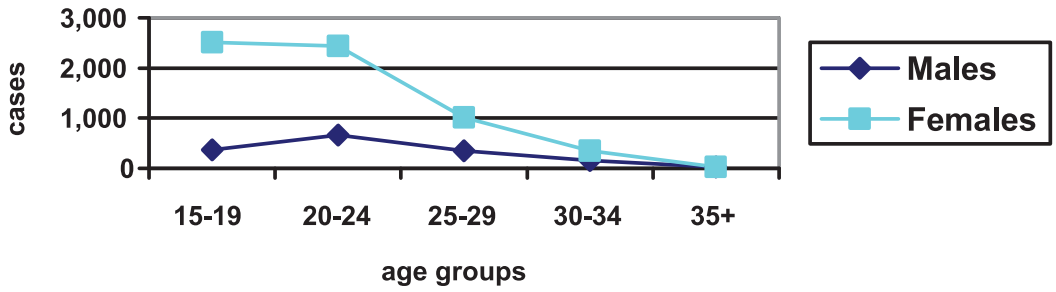
Figure 3. Reported Cases of Chlamydia by Gender and Age Group, Florida, 2006



Among males, the highest number of cases was found in the 20-24 age group. Among females, the highest number of cases was found in the 15-19 age group. Although the overall chlamydia case rate among males and females across all age groups was 265.7 in 2006, the rate was dramatically different between males and females among various age groups (Figure 4). The highest rate among males was in the 20-24 age group, with a rate of 659 cases per 100,000 population. The rate among females in the 20-24 age group was 2,440.9. The highest rate among females was in the 15-19 age group, with a rate of 2,508.1 cases per 100,000 population. The rate for males in the 15-19 age group was 371.9.

In 2006, approximately 82% of chlamydia cases in males were in persons between the (inclusive) ages of 18 and 35. The rate per 100,000 for this group was 404. Approximately 86% of chlamydia cases in females were in persons between the (inclusive) ages of 16 and 29. The rate per 100,000 for this group was 2,098.8.

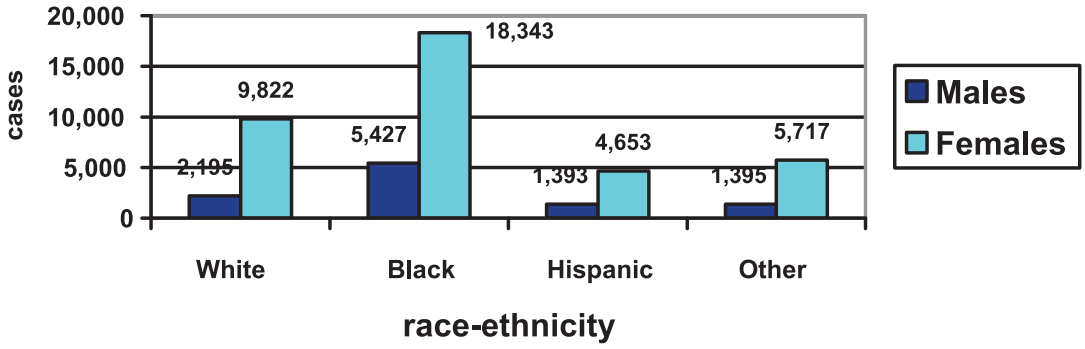
Figure 4. Chlamydia Rates Per 100,000 Population By Gender and Age Group, Florida, 2006



A unique characteristic of the bacterium *Chlamydia trachomatis* is the relationship between physiology and the immune response. With chlamydia, there is an age aspect to cervical physiology that reduces the availability of target cells for infection as a woman matures. Additionally, many strains of chlamydia have been identified. If individuals become infected with different strains, they may develop an effective immune response. Over time, this will reduce their susceptibility to infection when exposed to the bacteria. This may partially explain the lower prevalence of infection after age 35.

Persons who described themselves as non-Hispanic black accounted for 48.6% of the chlamydia cases in 2006 (Figure 5). Persons who described themselves as non-Hispanic white accounted for 24.5% of the cases. Persons who self-reported as Hispanic (white or black) accounted for 12.4% of the cases. Persons who self-reported in other or unidentified racial-ethnic groups accounted for 14.5% of the cases.

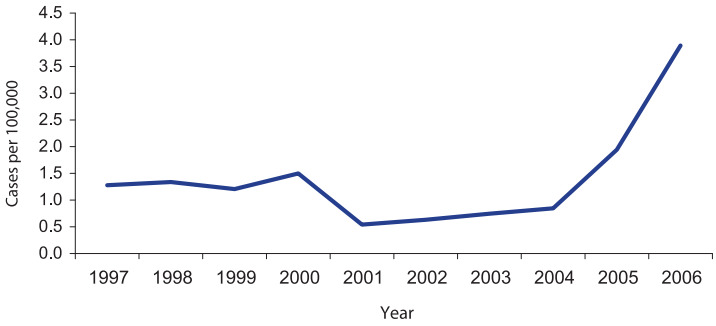
Figure 5. Reported Cases of Chlamydia by Race-Ethnicity and Gender, Florida, 2006



Cryptosporidiosis

Cryptosporidiosis: Crude Data	
Number of cases	717
2006 incidence rate per 100,000	3.89
% change from average 5yr (2001-2005) incidence rate	+ 307.1
Age (yrs)	
Mean	29
Median	29
Range	<1-91

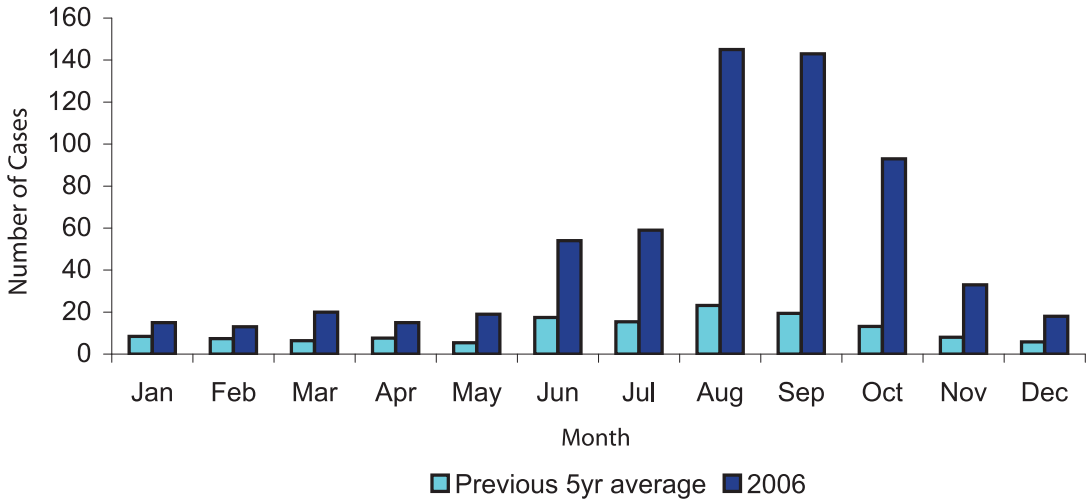
Figure 1.
Cryptosporidiosis Incidence Rate by Year Reported,
Florida, 1997-2006



Description

Cryptosporidiosis is a parasitic gastroenteritis caused by *Cryptosporidium parvum*. The natural reservoirs for this parasite include humans, cattle, and other domestic animals. Transmission is by the fecal-oral route and includes person-to-person, animal-to-person, foodborne, and waterborne routes. *C. parvum* is protected by an outer shell that allows it to survive outside the body for long periods of time, making it resistant to chlorine-based disinfectants. The usual incubation period is 1-12 days with typical symptoms including watery diarrhea, abdominal cramps, and sometimes low-grade fever. Asymptomatic infections are also common and serve as a source of transmission. The disease is of particular concern for persons with AIDS and for other immunocompromised individuals, in whom it can cause life-threatening diarrhea and dehydration.

Figure 2. Cryptosporidiosis Cases by Month of Onset, Florida, 2006



Disease Abstract

The incidence rate for cryptosporidiosis has increased since 2001, with a sharp increase beginning in 2004 (Figure 1). The incidence rate in 2006 was 307.1% higher than the average incidence from

2001 to 2005. This increase in incidence is likely due to a combination of actual increased incidence, increased clinical recognition, and changes in laboratory practice. A total of 717 cases were reported in 2006, of which 80.5% were classified as confirmed cases. The number of cases reported tends to increase in the summer months. In 2006, the number of cases exceeded the previous 5-year average in all months, though the difference was particularly great in the summer months (Figure 2). Thirty percent of all reported cases were classified as outbreak-related.

Rates are higher among children <9 years old, with the highest rates occurring in the 1-4 age group (16.45 per 100,000) (Figure 3). In 2006, approximately 13% of reported cases attended daycare centers. A second smaller peak among adults 25-44 years old is commonly attributed to family contact with infected children (Figure 3). The 2006 incidence exceeded the previous 5-year average incidence across genders and race. Non-white females had the highest reported incidence, at 3.79 per 100,000 (Figure 4).

Figure 3. Cryptosporidiosis Incidence Rate by Age Group, Florida, 2006

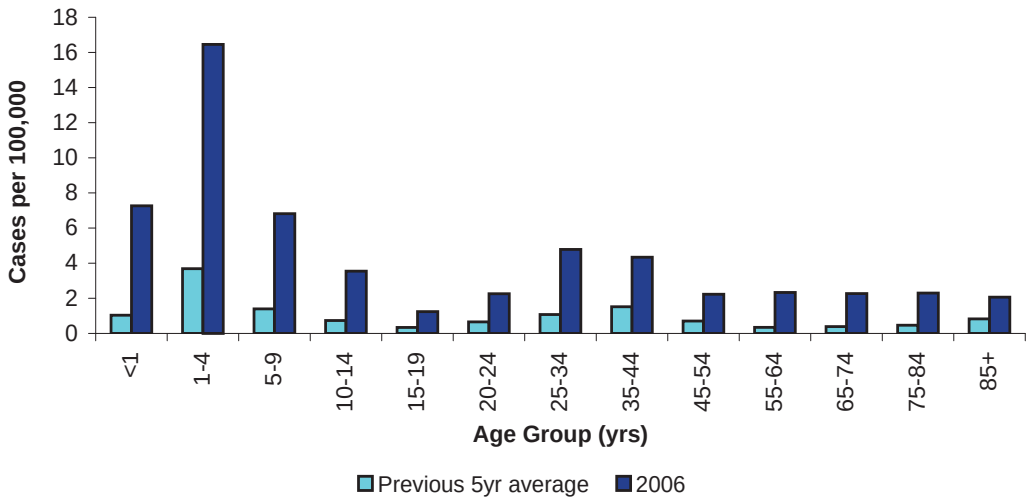
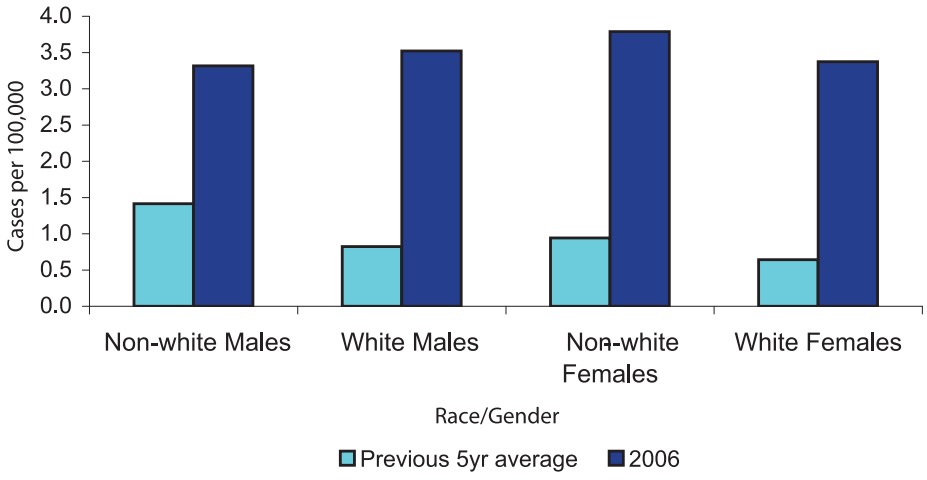


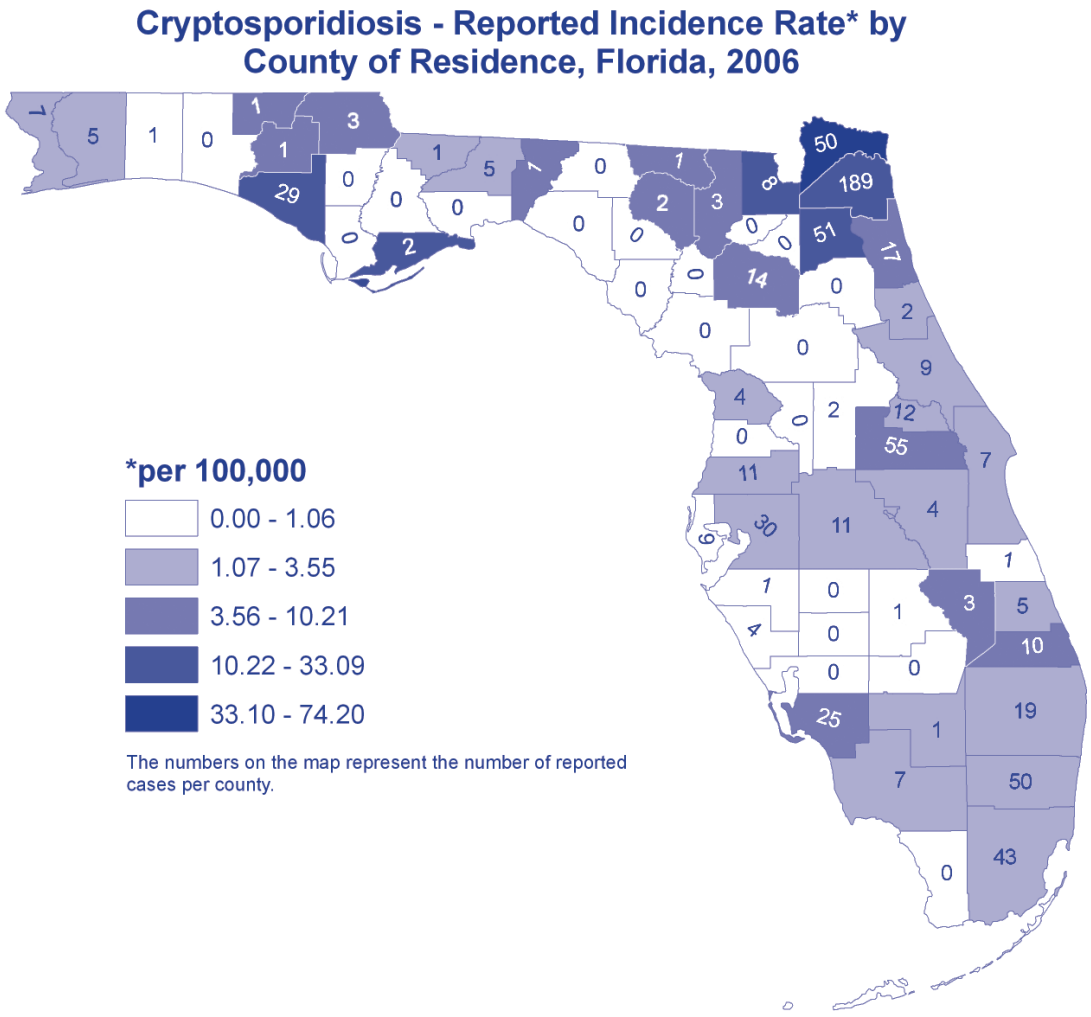
Figure 4. Cryptosporidiosis Incidence Rate by Race and Gender, Florida, 2006



Cases of cryptosporidiosis were reported in 45 of the 67 counties in Florida, 40% of which occurred in three counties in northeastern Florida (Nassau, Duval, and Clay counties). In these counties, a larger percentage of cases were reported as being outbreak-associated and as having attended a daycare facility, 49% and 21%, respectively.

Prevention

To reduce the likelihood of contracting cryptosporidiosis, practice good hand hygiene by washing hands before handling or eating food, and after diaper changing. Also, do not swallow recreational water, do not drink untreated water from shallow wells or surface water, and do not use untreated water when traveling abroad. Outbreaks associated with recreational water, especially water parks and interactive fountains, can be prevented by following established guidelines for management of these facilities.



References

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

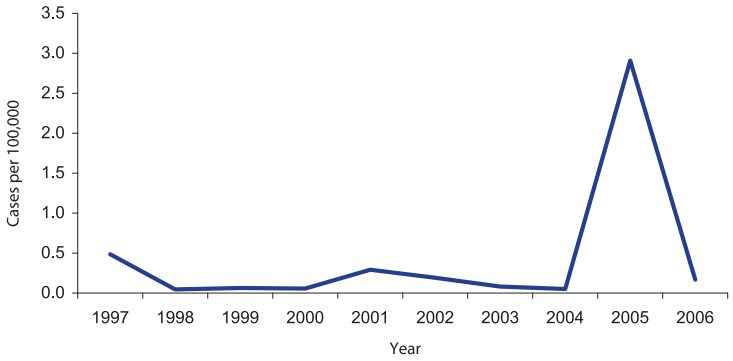
Additional Resources

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

Cyclosporiasis

Cyclosporiasis: Crude Data	
Number of cases	31
2006 incidence rate per 100,000	0.17
% change from average 5yr (2001-2005) incidence rate	- 76.9
Age (yrs)	
Mean	47.2
Median	50
Range	17-80

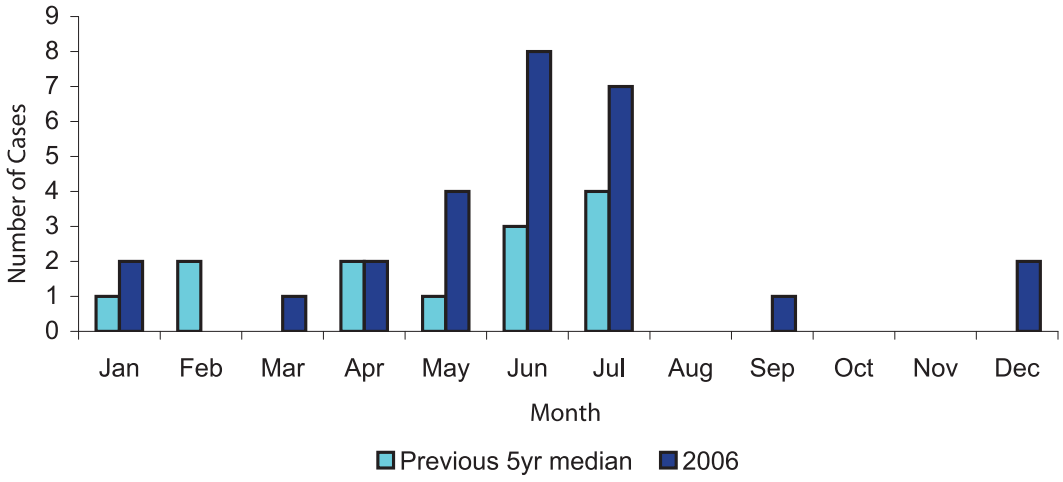
Figure 1.
Cyclosporiasis Incidence Rate by Year Reported, Florida, 1997-2006



Description

Cyclosporiasis is a diarrheal disease caused by a coccidian protozoan parasite called *Cyclospora cayetanensis*. It infects the small intestine and can cause watery diarrhea, loss of appetite, weight loss (may be substantial), bloating, increased gas, stomach cramps, and fatigue. Humans are reservoirs for *C. cayetanensis*, which is endemic in many developing countries and has been associated with diarrhea in travelers to Asia, the Caribbean, Mexico, and Peru. It is transmitted by consuming water or food that has been contaminated by human fecal material. Outbreaks, including several in Florida, have previously implicated fresh fruits and vegetables as the source of infection (raspberries, basil, and lettuce).

Figure 2. Cyclosporiasis Cases by Month of Onset, Florida, 2006



Disease Abstract

With the exception of a large outbreak of cyclosporiasis in 2005 (493 cases from Florida; see the notable outbreaks section of this report for more details), the incidence rate for cyclosporiasis has remained stable (Figure 1). In comparison to the median incidence for the last five years, the incidence in 2006 has decreased by 9.6%, with a total of 31 cases reported in 2006. Sixty-one percent of cases

reported in 2006 were considered outbreak-associated. In 2006, the number of cases by month of disease onset exceeded the previous 5-year median during seven months of the year, particularly during the months of May, June, and July (Figure 2). This peak in late spring and early summer may reflect the endemicity of cyclosporiasis in other countries whose fruit and vegetables the U.S. imports.

In 2006, most of the cases were reported in those who were between the ages of 45 and 64, with the largest increase occurring in the 45-54 age group (Figure 3). Incidence rates are much higher in whites than in non-whites (Figure 4).

Cyclosporiasis was reported in 12 of the 67 counties in Florida, with the largest number of cases occurring in Palm Beach County.

Figure 3. Cyclosporiasis Cases by Age Group, Florida, 2006

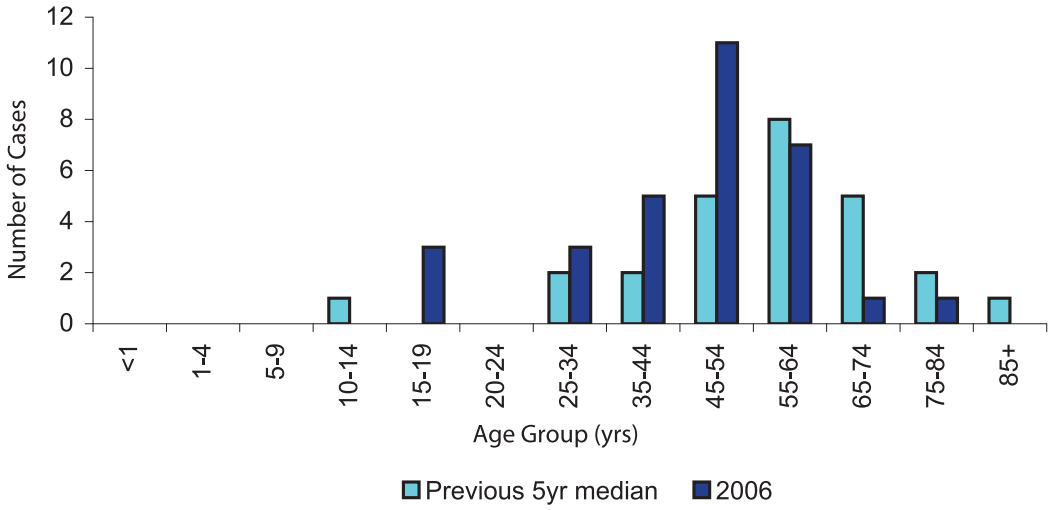
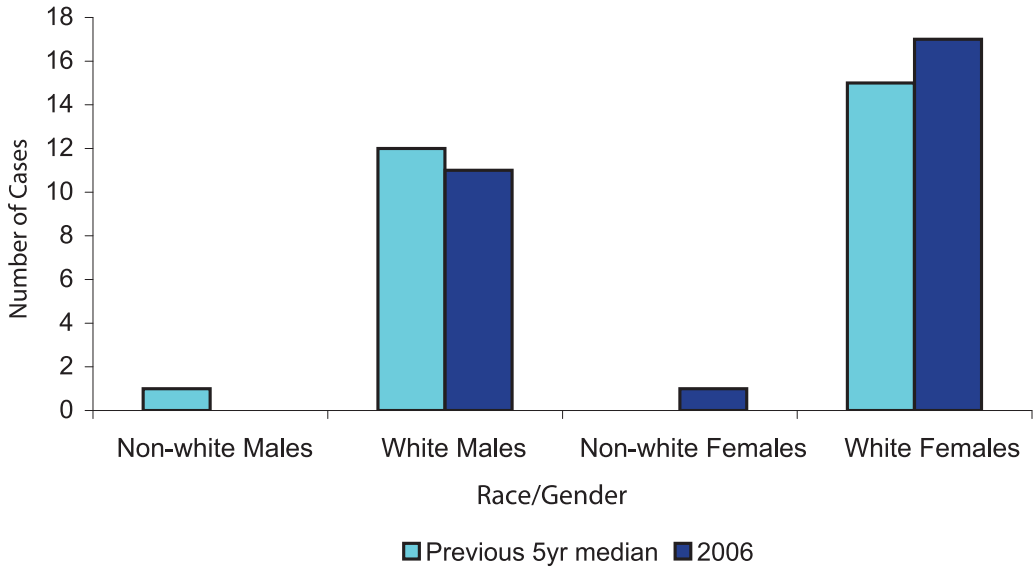
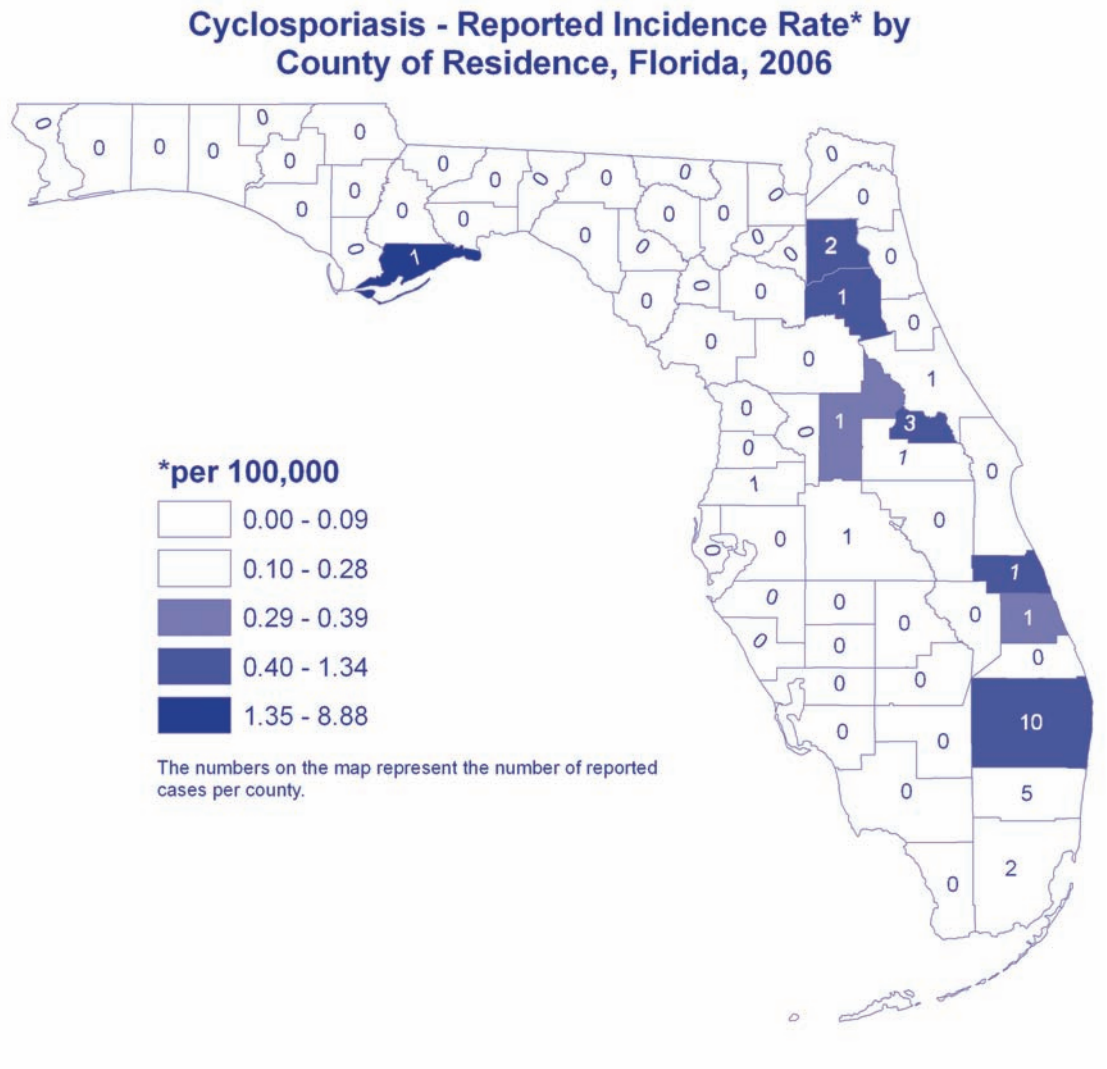


Figure 4. Cyclosporiasis Cases by Race and Gender, Florida, 2006





References

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

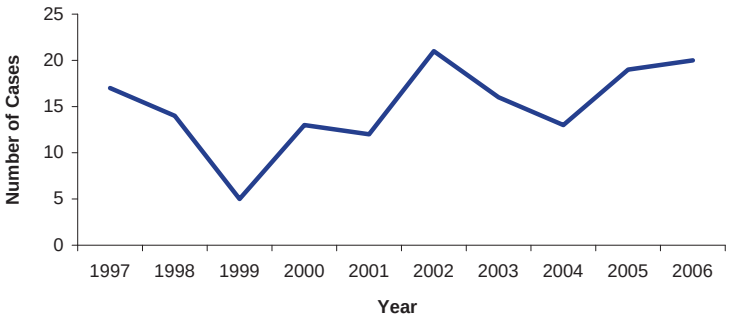
Additional Resources

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

Dengue

Dengue Fever: Crude Data	
Number of cases	20
2006 incidence rate per 100,000	0.11
% change from average 5yr (2001-2005) incidence rate	+ 15.2
Age (yrs)	
Mean	38
Median	33.5
Range	7-67

Figure 1.
Dengue Fever Cases by Year Reported, Florida, 1997-2006



Description

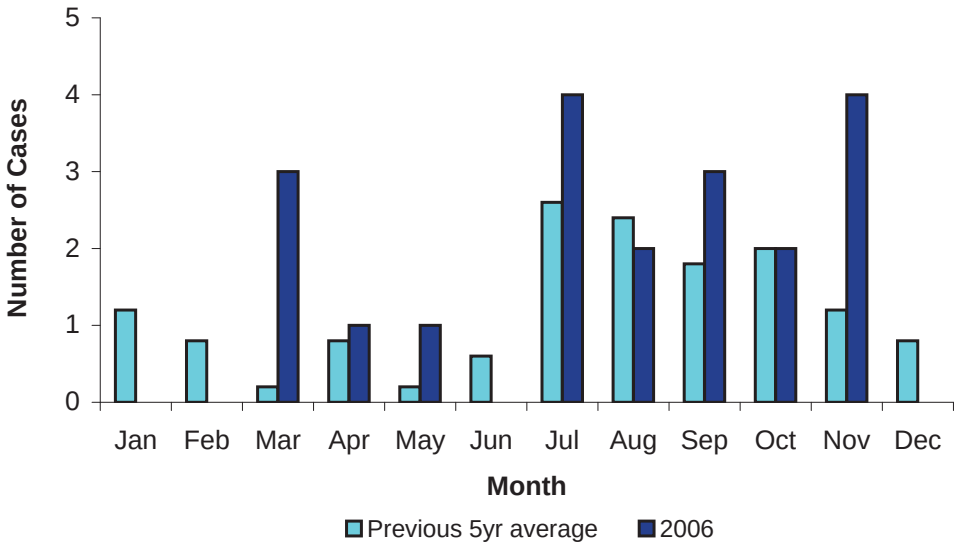
Dengue virus (DENV) is a mosquito-borne virus that has historically plagued Florida, although disease acquired in Florida was last documented since the early 1960's. The syndromes, collectively referred to as "dengue" and dengue hemorrhagic fever (DHF), are caused by any of four closely related virus subtypes. Classical dengue ("break-bone fever") is a painful, debilitating febrile disease that is rarely fatal. This illness is characterized by abnormal vascular permeability, hypovolemia, and abnormal blood clotting mechanisms. Dengue hemorrhagic fever-dengue shock syndrome (DHF-DSS) is a group of severe hemorrhagic symptoms that occur principally in children, but may also occur in adults. In those with severe disease, shock is the predominant sign. The case fatality rate can be as high as 40-50% untreated, but can be drastically lowered with appropriate fluid therapy. Encephalitis is a rare consequence of dengue infection. The pathogenesis and risk factors associated with DHF-DSS are controversial but appear to be related to more virulent or second infection with another dengue serotype. Humans are the only significant vertebrate hosts of DENV. In past Florida epidemics, the sole vector of the dengue viruses was undoubtedly the native *Aedes aegypti* mosquito. The arrival of *Aedes albopictus* to many parts of Florida is a concern, because this species is an important vector of DENV in Asia. DENV has become increasingly common in the Caribbean, Central America, the Pacific, and South America during the past two decades. Puerto Rico and other Caribbean islands experience DENV epidemics annually. Florida's proximity to the Caribbean increases the possibility for DENV to be imported into Florida by inadvertent transport of infected mosquitoes. The virus can also be introduced by viremic travelers returning from the Caribbean or Central America. All cases reported in Florida are among travelers returning from dengue-endemic areas. Florida may be relatively protected against re-establishment of dengue by a lifestyle in which almost all homes have window screens, air conditioning, or both.

Disease Abstract

Prior to 1998, dengue was not often considered among diagnoses for ill travelers. A 1998 study on an active surveillance program for recent dengue infections in Florida led to an increase in awareness as well as enhanced laboratory capacity to test for the viruses. Since 1998, dengue cases have been

reported in Florida each year (Figure 1). The number of cases reported typically ranges from 10-20 annually. Typically, disease onset for travelers returning to Florida peaks during mid-summer and fall, though cases are reported year-round (Figure 2).

Figure 2. Dengue Fever by Month of Onset, Florida, 2006



From 1997 through 2006, 57% percent of cases were male, and 57% occurred among those 30-59 years of age. In 2006, 50% of dengue cases reported a travel history to countries in South or Central America, or to Mexico. Forty-five percent of cases traveled to the Caribbean, and the remaining 5% traveled to countries in Asia or Africa.

Prevention

There is no vaccine available. Travelers to dengue-endemic countries should be warned of the risk of disease and instructed to avoid mosquito bites. Use insect repellents that contain DEET or other EPA-approved ingredients such as Picaridin or oil of lemon eucalyptus. Avoid spending time outdoors during daytime hours when disease-carrying mosquitoes are most likely to be seeking a blood meal. Dress in long sleeves and long pants to protect skin from mosquitoes. Also, try to remain in well-screened or air-conditioned areas.

References

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

J. Gill, L.M. Stark, and C.G. Clark, Dengue Surveillance in Florida, 1997-1998, *Emerging Infectious Diseases*, Vol. 1, 2000, pp.30-35.

Additional Resources

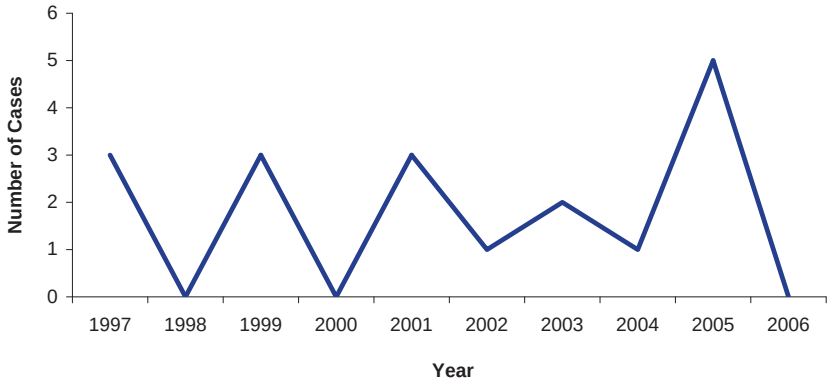
Additional information on DENV and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at

http://www.doh.state.fl.us/environment/community/arboviral/pdf_files/UpdatedArboguide.pdf

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

Eastern Equine Encephalitis

Figure 1.
Eastern Equine Encephalitis Cases by Year Reported, Florida, 1997-2006



Description

Eastern equine encephalitis virus (EEEV) is a mosquito-borne alphavirus that was first identified in the 1930s. EEEV occurs in natural cycles involving birds and *Culiseta melanura* in freshwater swampy areas, with a peak of activity occurring between May and August. In this usual cycle of transmission (enzootic cycle), the EEEV remains in the swampy areas, as the mosquito involved prefers to feed upon birds, and does not usually bite humans or other mammals. For reasons not fully understood, the virus may spread from enzootic foci carried in birds or bridge vectors (mosquito species that feed on both birds and mammals). EEEV-infected bridge vectors are responsible for transmitting the virus to horses and people. It takes from 3-10 days after the bite of an infected mosquito for a person to develop symptoms of human eastern equine encephalitis (EEE). Symptoms include a sudden onset of fever, general muscle pains, and a headache of increasing severity. Many individuals will progress to more severe symptoms such as seizures and coma. Although the majority of human infections are asymptomatic, approximately one-third of all people with clinical encephalitis caused by EEEV will die from the disease. Of those who recover, many will suffer permanent brain damage requiring long-term medical care.

Disease Abstract

All evidence indicates that EEE does not have epidemic potential in Florida. Continuous surveillance since 1957 has documented only 77 human cases (average 1.5 cases per year, range: 0-5). The cases reported each year from 1997 to 2006 remains infrequent (Figure 1). The peak illness onset period for human cases is between June and August (Figure 2), though transmission can occur year-round. Unlike some other mosquito-borne diseases, which typically affect the elderly, EEE tends to affect individuals in younger age groups (Figure 3). In fact, of the 77 cases reported since 1957, 53% are in those <20 years of age. Of the 12 cases reported between 2001 and 2006, four (33%) resulted in death. This is consistent with the known case fatality rate for EEE. Between 2001 and 2006, 25% of cases were reported in individuals residing in counties in the northern region of the state. Twenty-five

percent of cases were reported from the central region, and 50% were reported from the panhandle region.

Figure 2. Eastern Equine Encephalitis by Month of Onset, Florida, 2001-2006

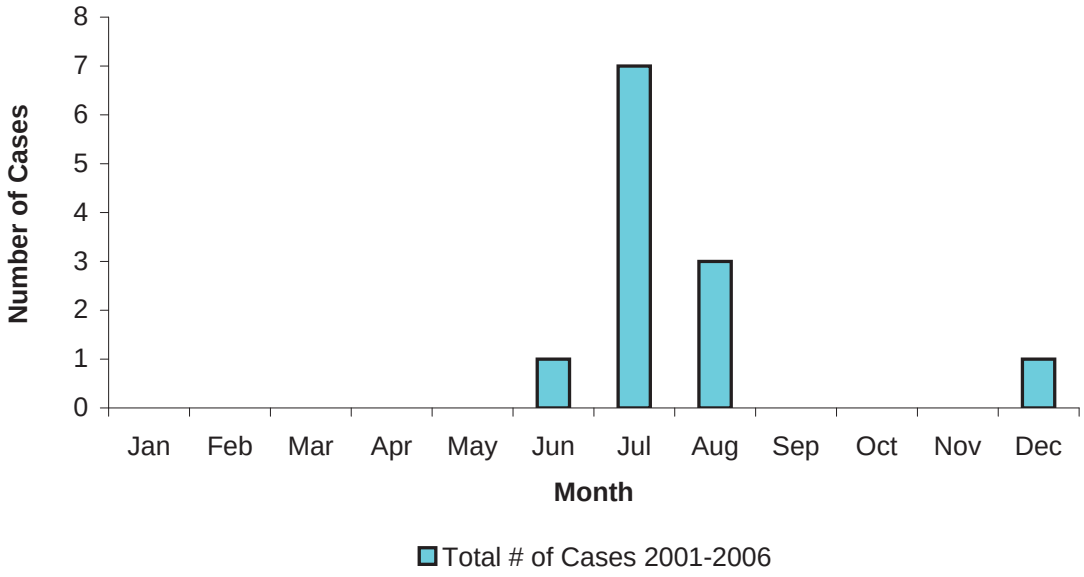
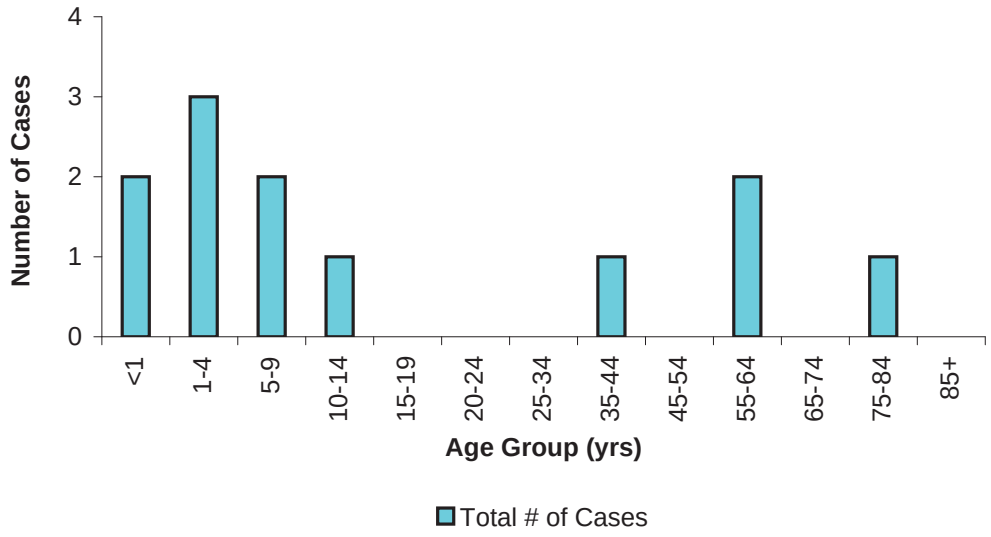


Figure 3. Eastern Equine Encephalitis Cases by Age Group, Florida, 2001-2006



Prevention

Prevention of the disease is a necessity, as there is no cure for EEE; only supportive care is available. Measures can be taken to avoid being bitten by mosquitoes. 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 or oil of lemon eucalyptus. Avoid spending time outdoors during dusk and dawn, the time when disease-carrying mosquitoes are most likely to be seeking a blood meal. Dress in long sleeves and long pants to protect skin from mosquitoes. Also, inspect screens on doors and windows for holes to make sure mosquitoes cannot enter the home.

References

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

Resources

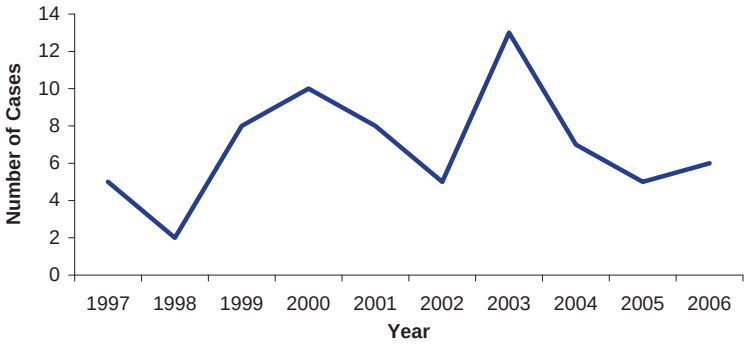
Additional information on EEE and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at http://www.doh.state.fl.us/environment/community/arboviral/pdf_files/UpdatedArboguide.pdf

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

Ehrlichiosis/Anaplasmosis

Ehrlichiosis/Anaplasmosis: Crude Data	
Number of cases	6
2006 incidence rate per 100,000	0.03
% change from average 5yr (2001-2005) incidence rate	+ 50
Age (yrs)	
Mean	55.8
Median	60
Range	16-87

Figure 1.
Ehrlichiosis (all codes combined) Cases by Year Reported, Florida, 1997-2006



Description

Tick-borne bacteria in the genera *Ehrlichia* and *Anaplasma* can cause febrile illnesses in humans with a potentially fatal outcome. *Ehrlichia chaffeensis*, discovered in 1987, causes human monocytic ehrlichiosis (HME). What was originally thought to be a second species of *Ehrlichia* causing human granulocytic ehrlichiosis (HGE), was recently reclassified as *Anaplasma phagocytophilum*, with the associated illness renamed to human granulocytic anaplasmosis (HGA). HGA became nationally notifiable in 1999. HME is also nationally notifiable. Nonspecific clinical findings make both diseases difficult to diagnose. They may account for many cases of unexplained tick-associated fevers of unknown origin, for example, some illnesses misdiagnosed as Lyme disease. The most likely tick vector for HME is *Amblyomma americanum*. The spectrum of illness ranges from asymptomatic to fatal. Most cases have a nonspecific febrile illness without rash, with over 60% hospitalized. About 15% have severe disease, including renal failure, disseminated intravascular coagulopathy, seizures, and coma, with 2-3% mortality. The tick vector for HGA is thought to be *Ixodes scapularis*. HGA is clinically similar to HME, and usually presents as an undifferentiated fever without rash. Elderly patients are more likely

to have severe disease. Half of the diagnosed patients have been hospitalized, with 9% admitted to intensive care. Mortality is approximately 5%.

Disease Abstract

The total number of combined cases of HME and HGA reported annually ranges from 2 to 13 cases per year (Figure 1). Since HGA was recognized as a separate reportable disease in 1999, there have been slightly more HME cases than HGA cases reported in Florida annually. Based on data collected between 2000 and 2006, slightly more than half of HME cases are male. The majority of cases are white (91%) and non-Hispanic (86%). The average age is 51 years, and 72% of cases are reported as having been acquired in Florida. Of the HGA cases reported between 2000 and 2006, 73% were male. The average age was 52 years, and the majority of cases were white (82%) and non-Hispanic (82%). Forty-five percent of cases were reported as having been acquired in Florida. Of these, 46% were reported in residents of counties in the northern region of the state. Twenty-four percent were in residents of the central region, 22% from the panhandle region, and 8% from the southern region. Between 2000 and 2006, two cases of HME resulted in death. No fatalities from HGA were reported during this time. Though cases of both HME and HGA are reported year-round, peak transmission occurs during the late spring and summer months.

Prevention

Both HME and HGA can be treated with doxycycline, though prevention of tick bites is the best way to avoid disease. Wear light-colored clothing so that ticks crawling on clothing are visible. Tuck pant legs into socks to prevent ticks from crawling 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 upon return from potentially tick-infested areas. If a tick is found, it should be removed as soon as possible. Controlling tick populations in the yard and on pets can also reduce the risk of disease transmission.

References

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

Resources

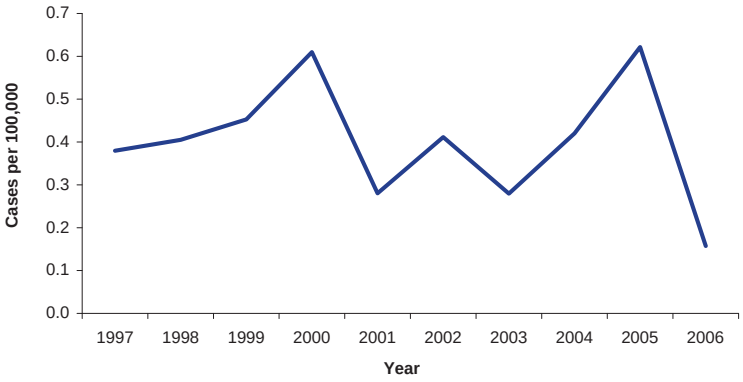
Additional information on ehrlichiosis and anaplasmosis, along with other arthropod-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online
http://www.doh.state.fl.us/environment/community/arboviral/pdf_files/UpdatedArboguide.pdf

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

Enterohemorrhagic *Escherichia coli* O157:H7

Enterohemorrhagic *Escherichia coli* O157:H7: Crude Data	
Number of cases	29
2006 incidence rate per 100,000	0.16
% change from average 5yr (2001-2005) incidence rate	- 61.2
Age (yrs)	
Mean	25.9
Median	15
Range	<1-68

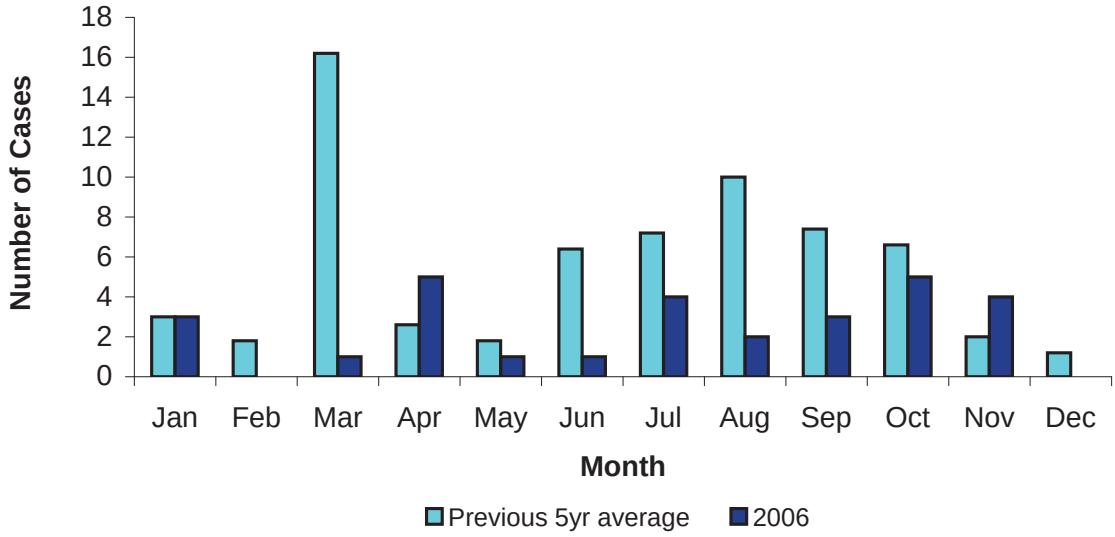
Figure 1.
Enterohemorrhagic *E. coli* O157:H7 Incidence Rate by Year Reported, Florida, 1997-2006



Description

Enterohemorrhagic *Escherichia coli* O157:H7 is an acute diarrheal disease caused by shigatoxin producing *Escherichia coli* bacteria. The most important reservoir for *E. coli* O157:H7 is cattle. Transmission occurs mainly through ingestion of contaminated food, often due to inadequately cooked ground beef, or fruits and vegetables contaminated with animal feces. *E. coli* O157:H7 has also been found in un-pasteurized apple juice, un-pasteurized milk, and untreated water. Cross-contamination of surfaces contaminated by raw meat may also be a source of infection. Person-to-person and waterborne transmission also occurs. The incubation period is generally 3-4 days after exposure (range: 2-8 days). Common symptoms include diarrhea (often containing blood), abdominal pain,

Figure 2. Enterohemorrhagic *E. coli* O157:H7 Cases by Month of Onset, Florida, 2006



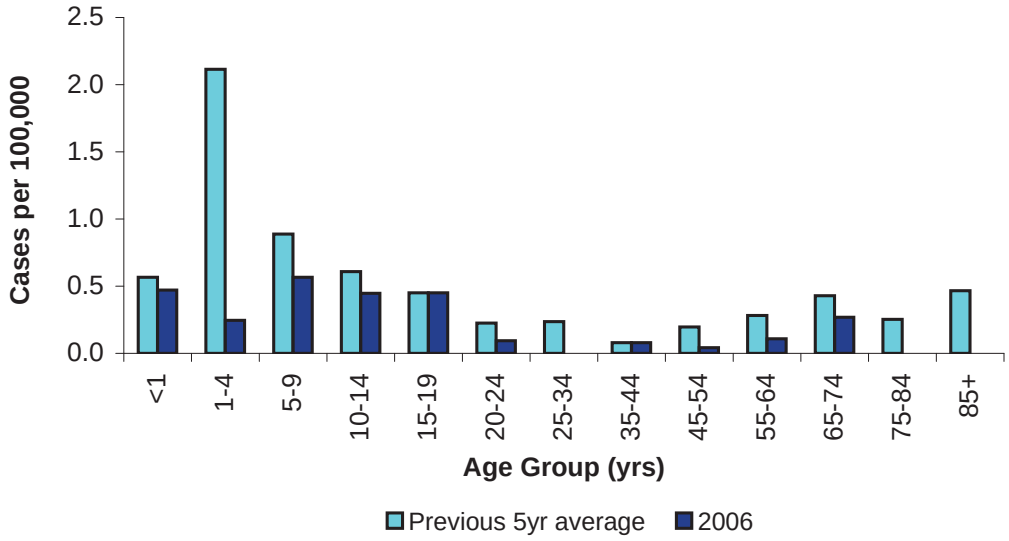
fever, malaise, and nausea. Approximately 5% of sick individuals, particularly young children, go on to develop hemolytic uremic syndrome (HUS), which can result in renal failure and death.

Disease Abstract

A total of 29 cases were reported in 2006, all of which were confirmed. All cases were classified as sporadic, and none were considered outbreak-associated. The incidence rate for enterohemorrhagic E. coli O157:H7 has varied over the last 10 years (Figure 1). One source of variation is large outbreaks involving food products distributed across multiple states or other common source exposures (additional information regarding outbreaks can be found in the outbreaks section of this report). In 2006, there was a 61.2% decrease in comparison to the average incidence from 2001 to 2005, likely due to the absence of outbreaks tied to a common source. No clear seasonal patterns were observed (Figure 2).

In 2006, incidence was greatest among children and teenagers < 20 years old and incidence rates were the same or lower than the previous 5-year average in all age groups (Figure 3). In 2006, the incidence was similar between males and females and incidence in both genders was lower than the previous 5-year average incidence (Figure 4).

Figure 3. Enterohemorrhagic *E. coli* O157:H7 Incidence Rate by Age Group, Florida, 2006

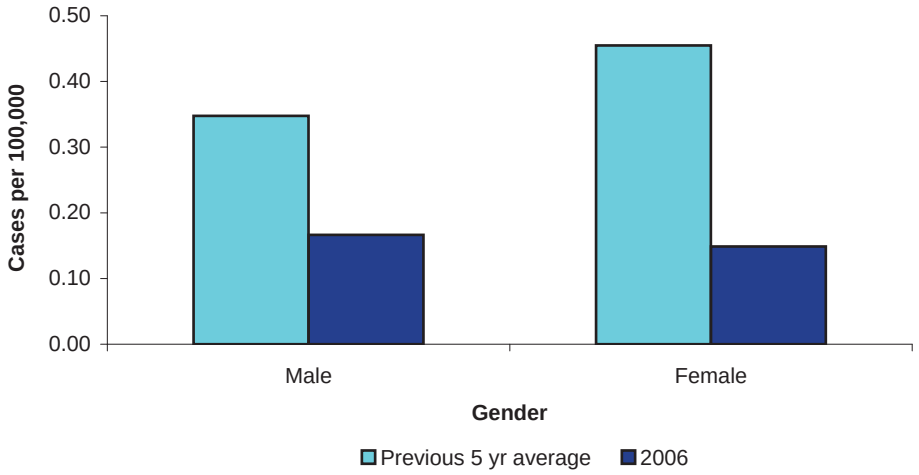


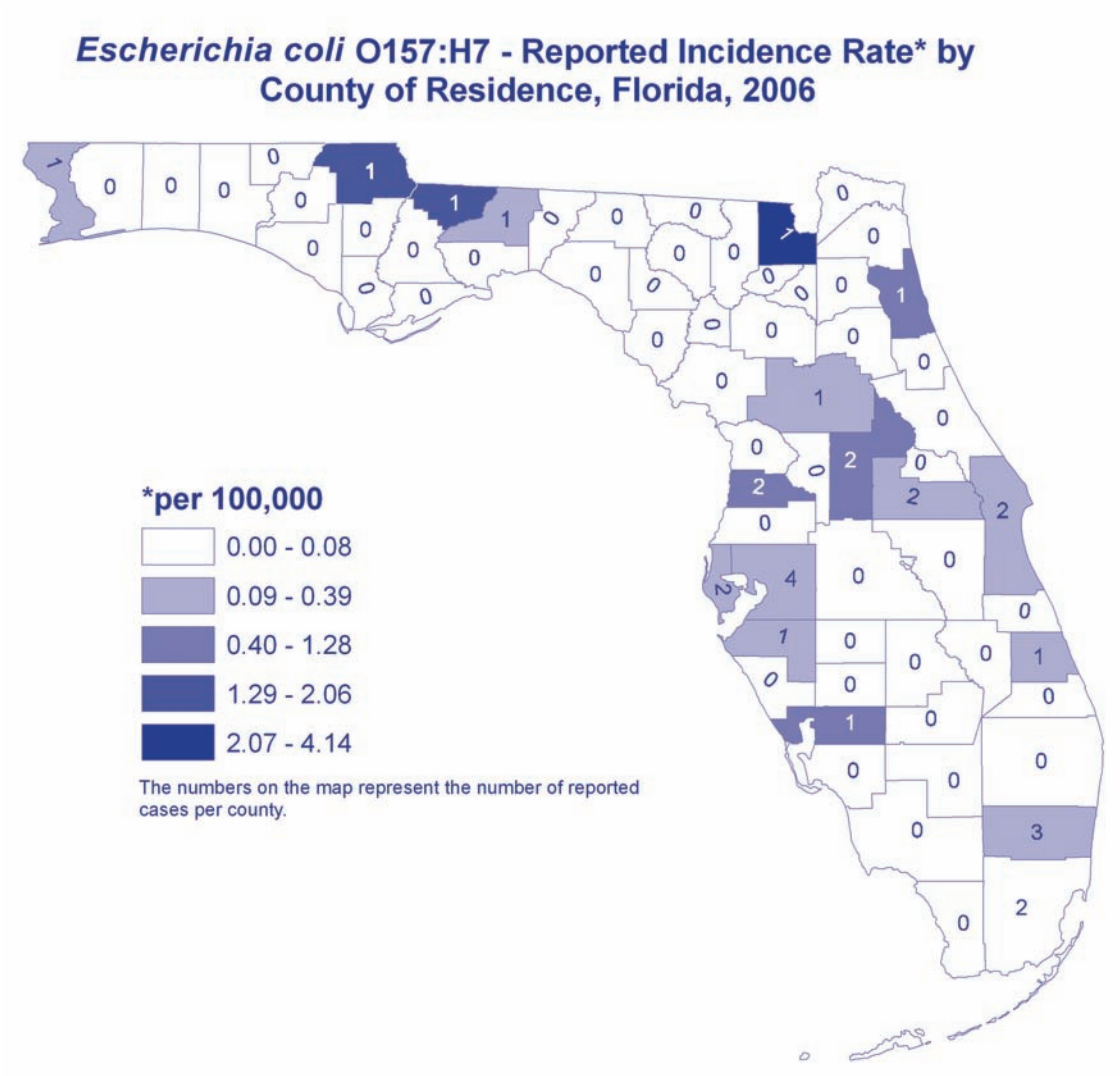
Enterohemorrhagic *E. coli* O157:H7 cases were reported in 18 of the 67 counties in Florida. Counties in northern Florida, along the Georgia border, reported the highest incidence rates.

Prevention

To reduce the likelihood of contracting *E. coli* O157:H7, all meat products should be thoroughly cooked, particularly ground beef. Cross-contamination may be avoided by making sure utensils, counter tops, cutting boards, and sponges are cleaned, or do not come in contact with raw meat. Hands should be thoroughly washed before, during, and after food preparation, and after toilet use. The fluids from raw meat should not be allowed to come in contact with other foods. Additionally, it is important to wash hands after coming into contact with animals or their environment. Particular care should be taken with young children in the setting of petting zoos or when in contact with farm animals, which harbor the organism.

Figure 4. Enterohemorrhagic *E. coli* O157:H7 Incidence Rates by Gender, Florida 2006





References

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

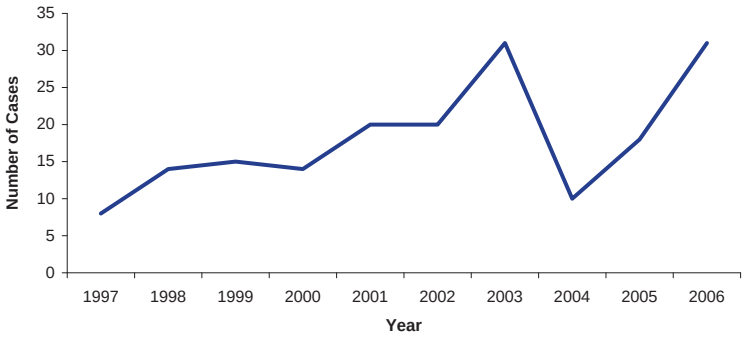
Additional Resources

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

Escherichia coli shiga toxin positive (non-O157:H7)

***Escherichia coli* shiga toxin + (non O157:H7): Crude Data**	
Number of cases	31
2006 incidence rate per 100,000	0.09
% change from average 5yr (2001-2005) incidence rate	+ 15.5
Age (yrs)	
Mean	35
Median	33
Range	<1-94

Figure 1.
E. coli shiga toxin + (non-O157) Cases by Year Reported, Florida, 1997-2006



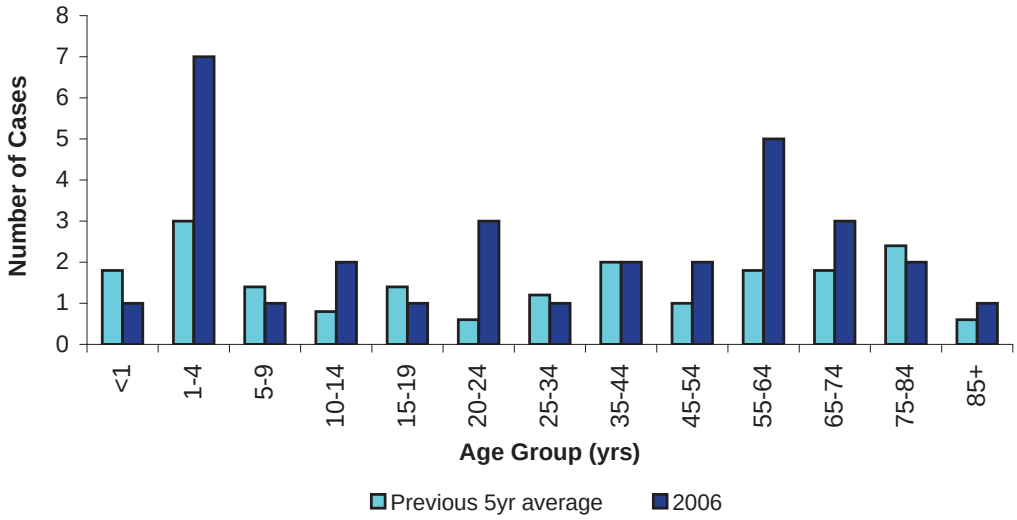
Description

Infection with shiga-toxin producing *Escherichia coli* can result in an acute diarrheal disease. There are many different serotypes of shiga-toxin producing *E. coli*. The most common is *E. coli* O157:H7, which is summarized separately. The data presented here is for shiga-toxin producing *E. coli* serotypes other than O157. The clinical characteristics and epidemiologic risk factors are similar for all shiga-toxin producing *E. coli*, including O157:H7 serotype. Transmission occurs mainly through ingestion of contaminated food, often due to inadequately cooked ground beef, or fruits and vegetables contaminated with animal feces. Shiga-toxin producing *E. coli* has also been found in un-pasteurized apple juice, un-pasteurized milk, and untreated water. Cross-contamination of surfaces contaminated by raw meat may also be a source of infection. Person-to-person and waterborne transmission can also occur. Common symptoms are similar to infection with O157 serotype and include frequent diarrhea (often containing blood), abdominal pain, fever, malaise, and nausea.

Disease Abstract

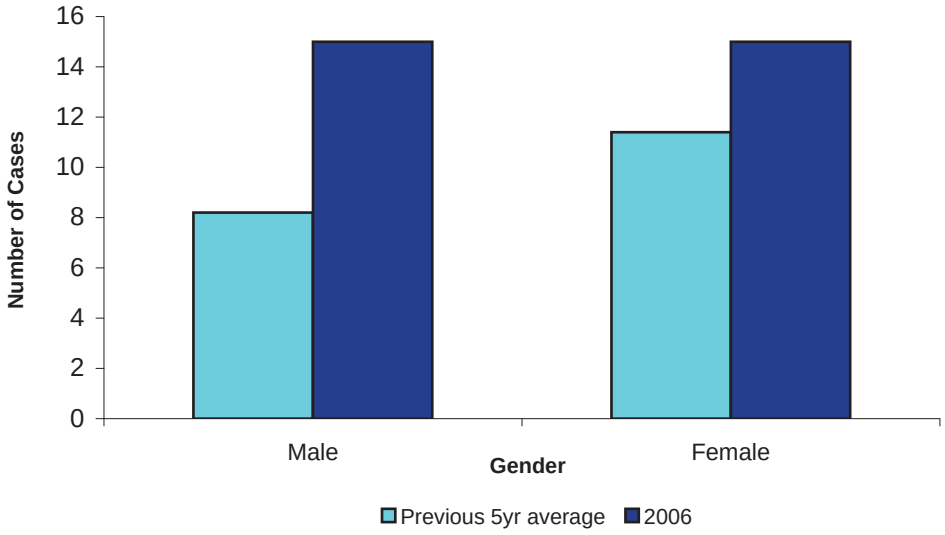
A total of 31 cases were reported in 2006, 29 (90.3%) of which were confirmed. Two cases were classified as outbreak-associated and 29 were considered sporadic. In 2006, there was a 15.5% increase in comparison to the average incidence from 2001 to 2005 (Figure 1). However, surveillance procedures for non-O157 serotype shiga-toxin producing *E. coli* have changed over the past 10 years, making surveillance trends difficult to interpret.

Figure 2. *E. coli* shiga toxin + (non-O157) Cases by Age Group, Florida, 2006



In 2006, incidence was greatest among children 1-4 years old, followed by adults aged 55-64 (Figure 2). In 2006, the incidence was similar between males and females, and incidence in both genders was higher than the previous 5-year average incidence (Figure 3).

Figure 3. *E. coli* shiga toxin + (non-O157) Cases by Gender, Florida 2006



Prevention

Prevention of shiga-toxin producing *E. coli* is similar to prevention of E. coli O157:H7. To reduce the likelihood of contracting shiga-toxin producing E. coli, all meat products should be thoroughly cooked, particularly ground beef. Cross-contamination may be avoided by making sure utensils, counter tops, cutting boards, and sponges are cleaned, or do not come in contact with raw meat. Hands should be thoroughly washed before, during, and after food preparation, and after toilet use. The fluids from raw meat should not be allowed to come in contact with other foods. Additionally, it is important to wash hands after coming into contact with animals or their environment. Particular care should be taken with

young children in the setting of petting zoos or when in contact with farm animals, which harbor the organism.

References

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

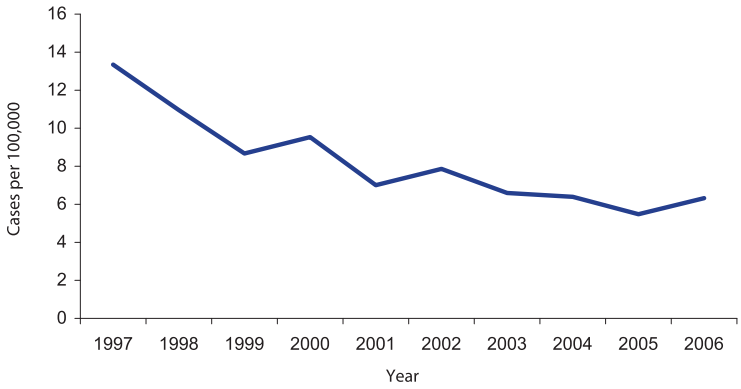
Additional Resources

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

Giardiasis

Giardiasis: Crude Data	
Number of cases	1165
2006 incidence rate per 100,000	6.32
% change from average 5yr (2001-2005) incidence rate	- 4.83
Age (yrs)	
Mean	25.8
Median	21
Range	<1-97

Figure 1.
Giardiasis Incidence Rate by Year Reported, Florida, 1997-2006

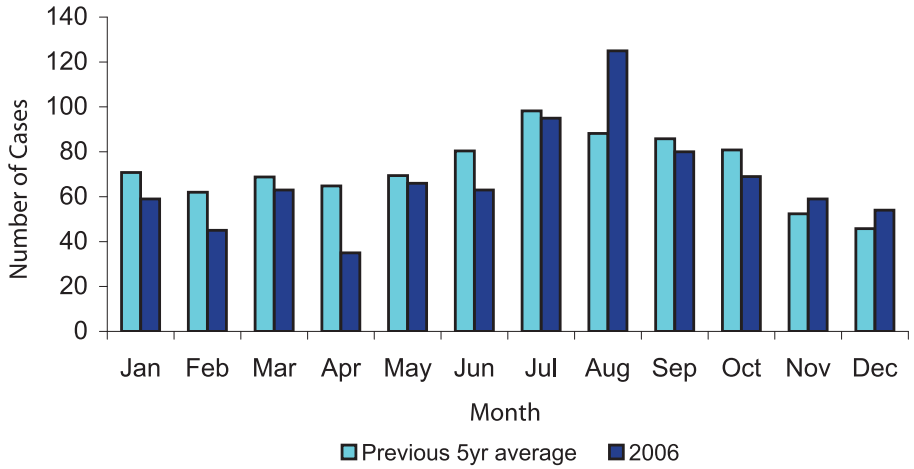


Description

Giardiasis is a parasitic diarrheal disease caused by infection from the flagellate protozoan, *Giardia intestinalis* (also known as *Giardia lambia*). Only the cyst form is infective, although *Giardia* parasites live in the intestine of humans and animals. *Giardia* is found in soil, food, water, or surfaces that have been contaminated with the feces from infected humans or animals.

In Florida, *Giardia* is mainly transmitted by person-to-person contact, although the parasite can survive outside the body and in the environment for long periods of time. The disease is communicable for as long as the infected person excretes cysts, often months. The incubation period is usually 3-25 days with a median of 7-10 days after becoming infected. Common symptoms include diarrhea, abdominal cramps, bloating, fatigue, malabsorption, and weight loss. The asymptomatic carrier rate is high.

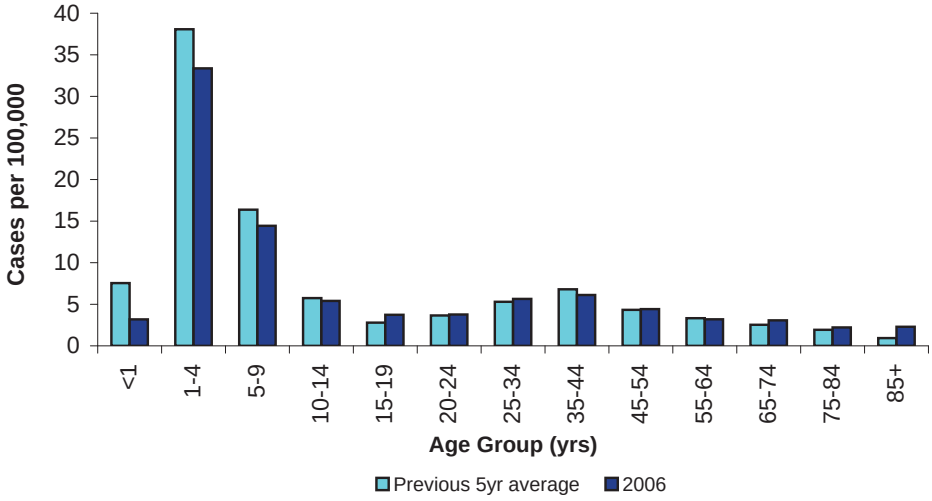
Figure 2. Giardiasis Cases by Month of Onset, Florida, 2006



Disease Abstract

The incidence rate for giardiasis in Florida has declined by about half over the last 10 years (Figure 1). In 2006, there was a 4.83% decrease in comparison to the average incidence from 2001 to 2005. A total of 1,165 cases were reported in 2006, slightly higher than the number reported in 2005 (987 cases). Of the 1,165 cases reported in 2006, 96.2% were classified as confirmed. Although asymptomatic infections are common, in Florida, only acute cases with symptoms are reported. Annually, the number of cases occurring increases in the summer months (Figure 2). The month of July typically has the largest number of cases (2001-2005, 5-year average 98.22). In 2006, the largest number of cases occurred in August (125 cases). In 2006, the months of August, November, and December exceeded the previous 5-year average for number of cases. Among the 1,165 giardiasis cases reported in 2006, 156 (13.39%) were reported as outbreak-associated, and 866 (74.3%) were determined to have been acquired in Florida. There were 203 cases that acquired infection outside of the U.S., with 120 of these cases (59.1%) indicating infection was acquired in Cuba.

Figure 3. Giardiasis Incidence Rate by Age Group, Florida, 2006

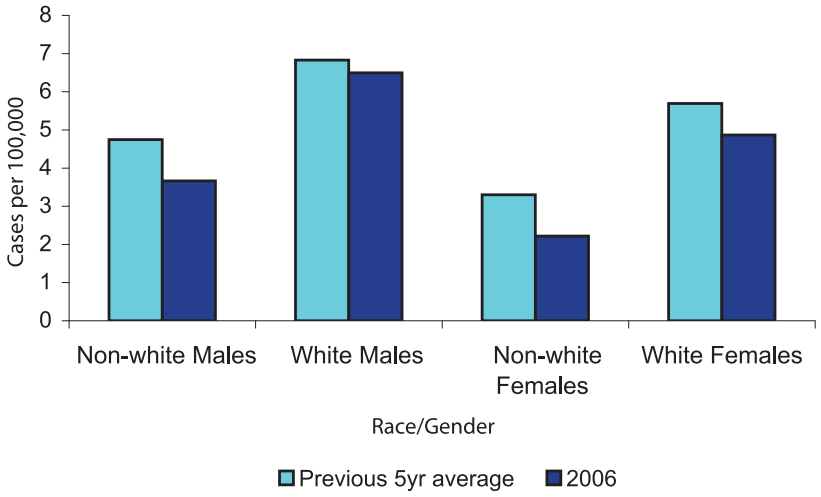


The highest incidence rates continue to occur among in children aged 1-4 years (33.36 per 100,000) and secondarily in those aged 5-9 years (14.43 per 100,000) (Figure 3). There were a total of 294 cases reported among children aged 1-4 years. Approximately one-third of the 294 cases, aged 1-4 years, attended daycare.

Overall, males continue to have a higher incidence than females (7.41 and 5.25 per 100,000, respectively). Following previous annual trends, incidence rates in whites are greater than those in non-whites (Figure 4).

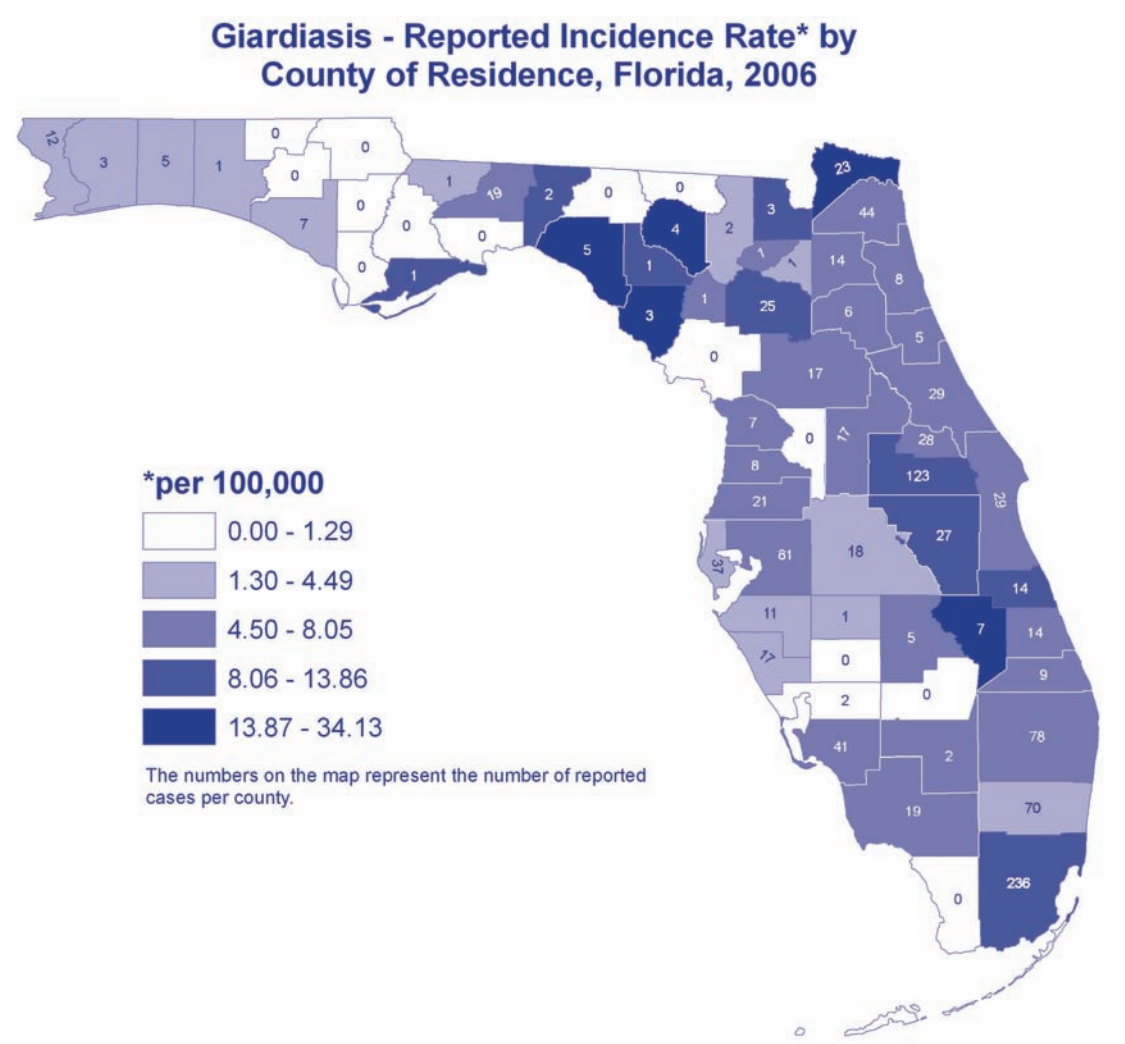
In 2006, giardiasis was reported in 55 of the 67 counties in Florida. The highest incidence rate was in Nassau County, 34.13 cases per 100,000.

Figure 4. Giardiasis Incidence Rate by Race and Gender, Florida, 2006



Prevention

Giardia infection 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. Avoid contaminated food and swallowing water that might be contaminated, such as recreational water (ponds, lakes, etc.) and drinking untreated water from shallow wells, lakes, rivers, springs, ponds, streams, or untreated ice or drinking water when traveling in countries where the water may not be adequately filtered and treated. Boiling water is the most reliable way to make water safe for drinking. Filters and chemical disinfection can be effective against *Giardia*, but chlorine germicidal activity is dependent on several factors, including pH, temperature, and organic content of the water. People with diarrhea caused by *Giardia* should avoid use of recreational water venues for two weeks after symptoms resolve.



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Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) website http://www.cdc.gov/NCIDOD/DPD/PARASITES/giardiasis/default.htm

Gonorrhea

Gonorrhea, caused by the bacterium *Neisseria gonorrhoeae*, grows and multiplies in the warm, moist areas of the reproductive tract. The bacterium can also grow in the mouth, throat, eyes, and anus. In 2006, there were 23,976 gonorrhea cases reported among both males and females in Florida, or a rate of 130.1 cases per 100,000 population. Counties in north Florida have some of the highest rates of cases reported per 100,000 population (Table 1).

Table 1. Counties with the Highest Rate of Gonorrhea, Florida, 2006

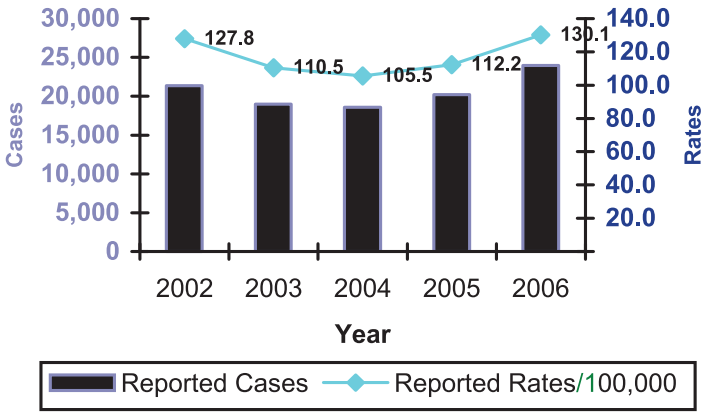
County	Rank	Population	Cases	Rate
Escambia	1	303,578	928	305.7
Gadsden	2	48,554	145	298.6
Duval	3	884,004	2,632	297.7
Alachua	4	246,151	711	288.8
Leon	5	278,789	677	242.8

Over the past five years, the total number of reported gonorrhea cases reached a low of 18,580 cases in 2004, and increased to 23,976 cases in 2006 (Figure 6). The gonorrhea rate per 100,000 population followed this trend, reaching a low of 105.5 in 2004 and increasing to 130.1 in 2006.

The distribution of reported gonorrhea cases by age group from 2002 to 2006 has been fairly consistent, with one exception (Figure 7). The reported cases in the 30-34 age group decreased 0.7%, from 1,990 in 2002 to 1,976 in 2006. The total number of gonorrhea cases increased in all other age groups. The largest increase occurred in the 15-19 age group, which increased 22.4%, from 5,517 reported cases in 2002 to 6,752 reported cases in 2006. Overall, more cases have been reported in the 20-24 age group for gonorrhea consistently since 1998.

Among males, the highest number of cases was found in the 20-24 age group (3,494 cases). Among females, the highest number of cases was found in the 15-19 age group (4,619 cases). The number of cases has increased among both males and females since 2004.

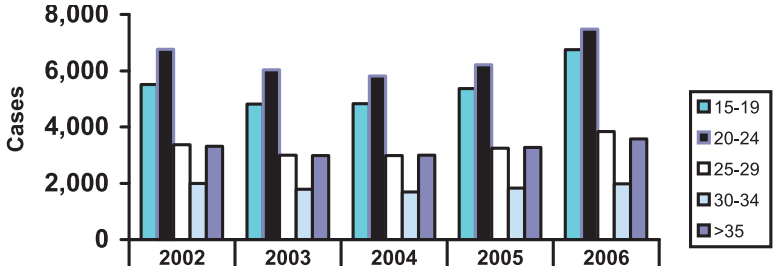
Figure 6. Reported Cases of Gonorrhea among Males and Females by Year, Florida, 2002-2006



The highest rate among males was in the 20-24 age group, with a rate of 571 cases per 100,000 population (Figure 8). The rate among females in the 20-24 age group was 682.5. The highest rate

among females was in the 15-19 age group, with a rate of 782 cases per 100,000 population. The rate for males in the 15-19 age group was 346.3. Among the age groups of 25-29, 30-34, and 35 and over, the rate among males was higher than the rate among females.

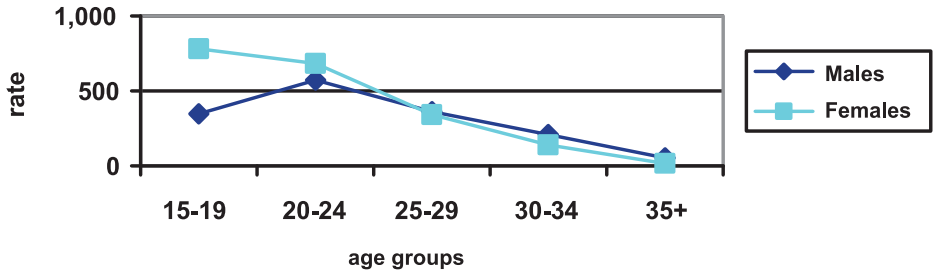
Figure 7. Reported Cases of Gonorrhea by Age Group, Florida, 2002-2006



	2002	2003	2004	2005	2006
15-19	5,517	4,811	4,829	5,362	6,752
20-24	6,758	6,033	5,813	6,209	7,471
25-29	3,364	2,996	2,983	3,250	3,838
30-34	1,990	1,793	1,692	1,830	1,976
>35	3,317	2,983	3,001	3,276	3,573

In 2006, approximately 80% of gonorrhea cases in males were in persons between the (inclusive) ages of 18 and 44. The rate per 100,000 for this group was 294.8. Approximately 85% of gonorrhea cases in females were in persons between the (inclusive) ages of 16 and 32. The rate per 100,000 for this group was 458.4.

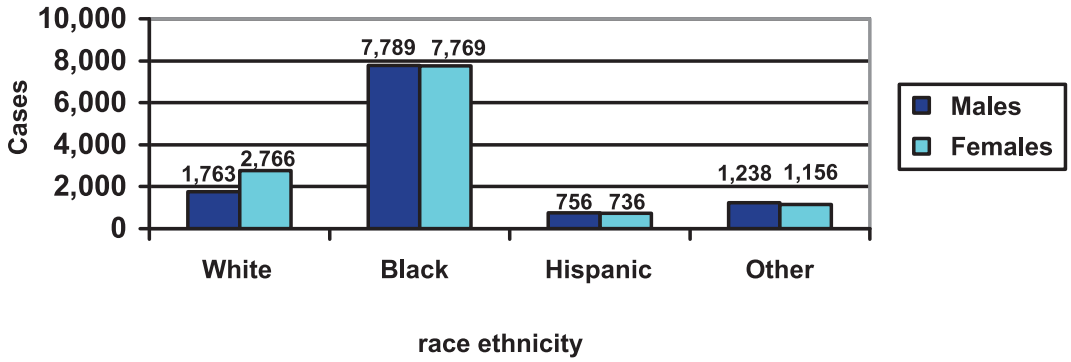
Figure 8. Gonorrhea Rates By Gender and Age Group, Florida, 2006



It is speculated gonorrhea prevalence is related to the availability of improved test technology, expanded targeted screening, and risk-taking behaviors among those connected within various sexual networks. There is no known immune response with the bacterium Neisseria gonorrhoeae. Overall, the increase in gonorrhea indicates the increased risk for youths to become infected with life-threatening HIV, because an individual with gonorrhea is more likely to become infected with HIV if exposed.

Persons who described themselves as non-Hispanic black accounted for 64.9% of the gonorrhea cases in 2006 (Figure 9). Persons who self-reported as non-Hispanic white accounted for 18.9% of the cases. Persons who self-reported as Hispanic (white or black) accounted for 6.2% of the cases. Persons who self-reported in other or unidentified racial-ethnic groups accounted for 10.0% of the cases.

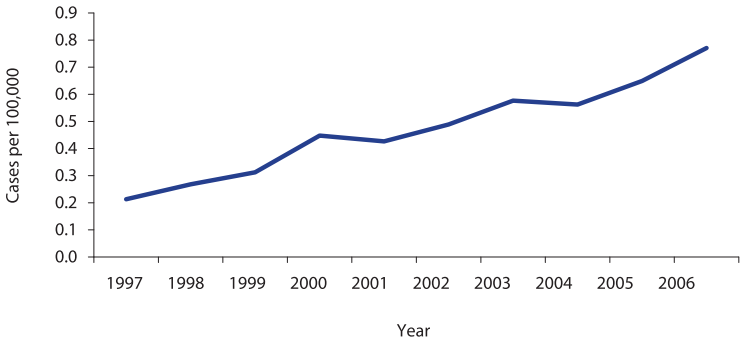
Figure 9. Reported Cases of Gonorrhea by Race- Ethnicity and Gender, Florida, 2006



Haemophilus influenzae (Invasive Disease)

***Haemophilus influenzae* Invasive: Crude Data**	
Number of cases	142
2006 incidence rate per 100,000	0.77
% change from average 5yr (2001-2005) incidence rate	+ 41.9
Age (yrs)	
Mean	57.1
Median	62.5
Range	<1-101

Figure 1.
Haemophilus influenzae, invasive disease, Incidence Rate by Year Reported, Florida, 1997-2006



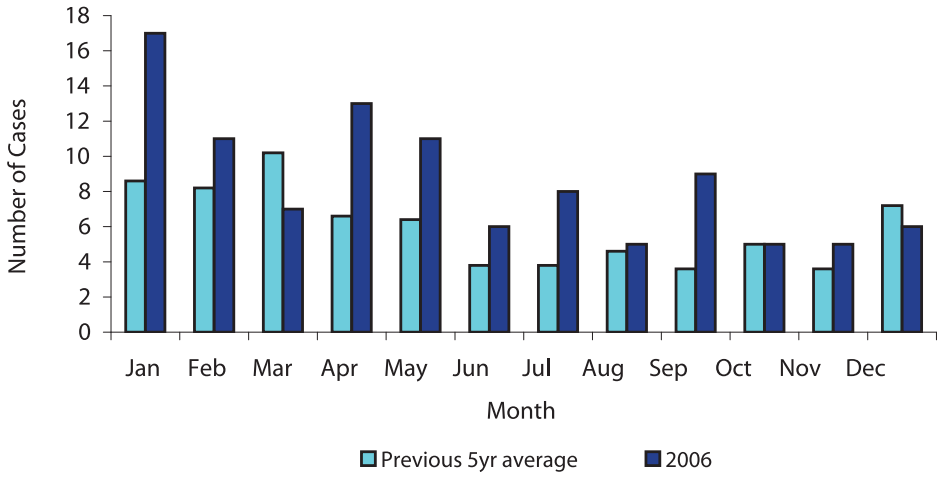
Description

Invasive disease caused by *Haemophilus influenzae* may cause a variety of clinical syndromes including meningitis, bacteremia (septicemia), epiglottitis, or pneumonia. Widespread use of the *Haemophilus* conjugate vaccine in infants and children has significantly decreased the incidence of invasive disease due to the serotype b infection.

Disease Abstract

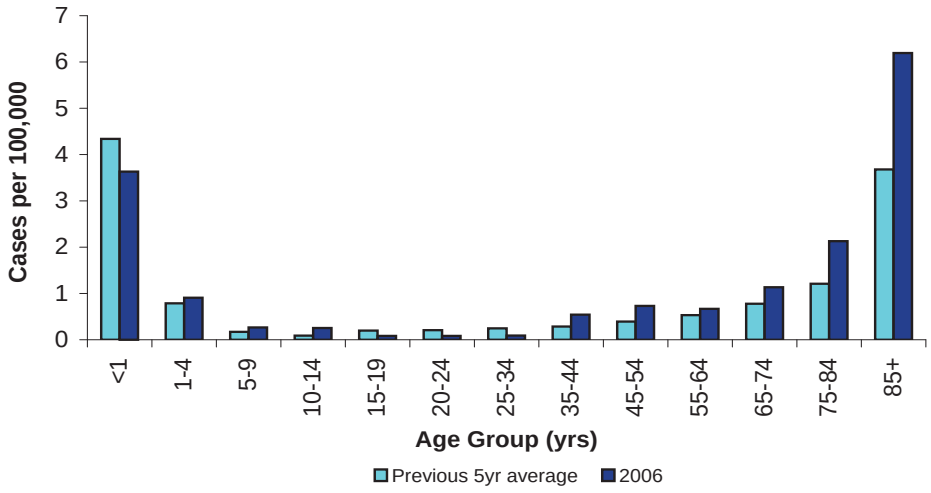
The incidence rate for all invasive diseases caused by *Haemophilus influenzae* has gradually increased over the past 10 years (Figure 1). In 2006 there was a 41.9% increase compared to the average incidence from 2001-2005.. A total of 142 cases were reported in 2006, of which all but one were classified as confirmed. The number of cases reported is highest in the winter and spring, during the months of December through May (Figure 2). In 2006, the number of cases exceeded the previous 5 year average in all months except March and December. Nearly all cases of invasive disease caused by *Haemophilus influenzae* are sporadic in nature.

Figure 2. *Haemophilus influenzae*, invasive disease, by Month of Onset, Florida, 2006



The highest incidence rates occur in those aged <1 year or in those >85 years (Figure 3). In 2006, the incidence rates were higher than the previous 5 year average in all age groups except in those <1, 5-19, 20-24 and 25-34 years. Females continue to have a higher incidence than males (0.58 per 100,000 and 0.50 per 100,000 respectively) and in 2006 the incidence in both genders was higher than the previous 5 year average incidence (0.83 per 100,000 and 0.71 per 100,000) (Figure 4). As in the past, incidence rates in non-whites are greater than those in whites.

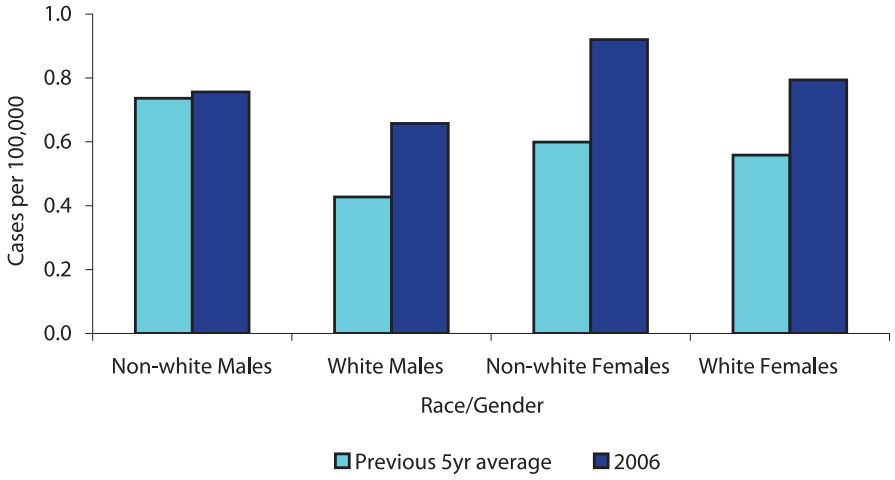
Figure 3. *Haemophilus influenzae*, invasive disease, Incidence Rate by Age Group, Florida, 2006



Invasive disease caused by *Haemophilus influenzae* was reported in 29 of the 67 counties in Florida. Overall, counties in central and southwestern Florida reported the highest incidence rate.

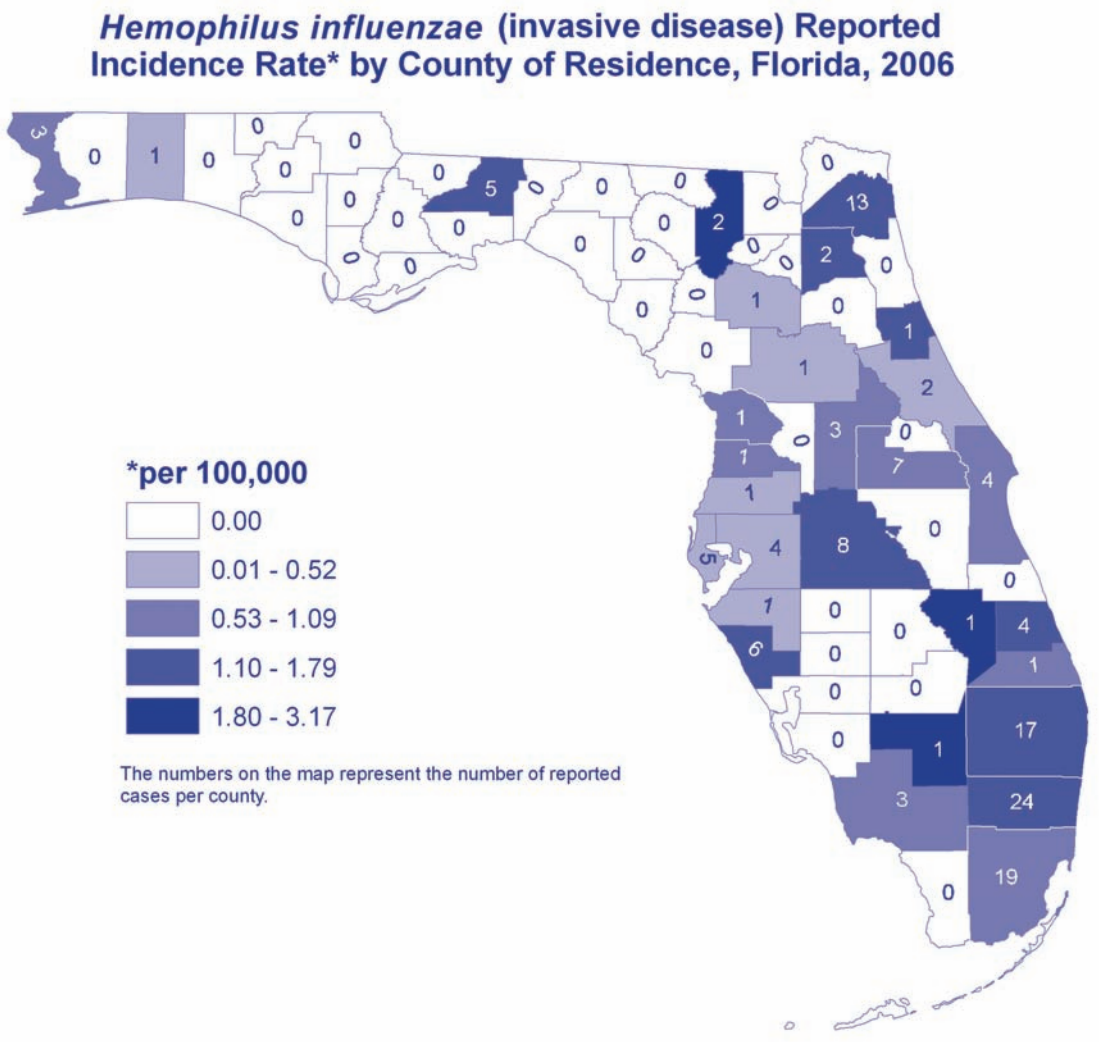
Invasive disease caused by *Haemophilus influenzae b* in those under age five:
From 1997 to 2006 there were 21 cases of invasive disease caused by *Haemophilus influenzae*, serotype b in those under age five. Of these, 20/21 were classified as confirmed cases. Four cases were reported in 2006, three in those <1 year of age and one >1 year of age. Three of these cases were confirmed, one was probable. Two were white, one black and one classified as other. Three of the four cases were male.

Figure 4. *Hemophilus influenzae*, invasive disease, Incidence Rate by Race and Gender, Florida, 2006



Prevention

Conjugate vaccines against *Hemophilus 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



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

Centers for Disease Control and Prevention
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/haeminfluserob_t.htm

Immunization Recommendations:

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* 1991 / 40(RR01); pp. 1-7. http://www.cdc.gov/mmwr/preview/mmwrhtml/00041736.htm

Hantavirus

There were no cases of hantavirus infection reported from 1997 through 2006. Causative agents are RNA viruses of the *Bunyaviridae* family. Several different viruses are found throughout the world, with rodents acting as the natural reservoirs. Sin Nombre, Black Creek Canal, Bayou, New York, and Monongahela viruses are found in the U.S. and are associated with specific rodent species. The only report of human infection with hantavirus in Florida thus far is a single case of Black Creek Canal virus that occurred in Miami-Dade County in the early 1990's. Apparent endemic infection in wild cotton rats *Sigmodon hispidus* was documented in the region during the same time period.

Rodents shed virus in saliva, urine and feces. Transmission to humans occurs through direct contact or inhalation of aerosolized particles from infective materials. In rare instances virus has been transmitted through rodent bites or through contamination of cuts with excreta. Human to human transmission generally does not occur. Two syndromes are seen, hantavirus pulmonary syndrome (HPS) and hemorrhagic fever with renal syndrome (HFRS). Mortality for HPS in adults is 30-40%, more mild disease may be present in children. Mortality for HFRS ranges from <1-15% depending on which virus is involved. The HFRS syndrome is seen primarily in Europe and Asia.

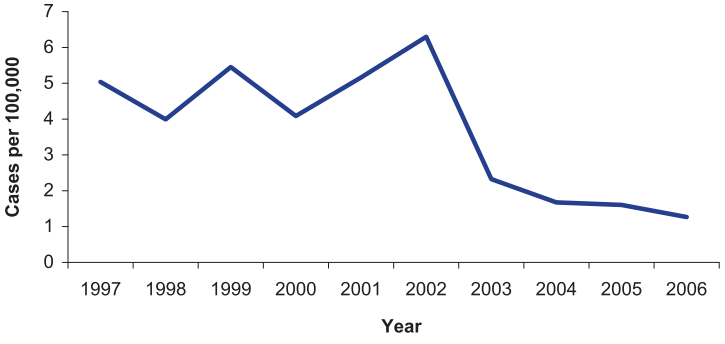
References

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

Hepatitis A

Hepatitis A: Crude Data	
Number of cases	233
2006 incidence rate per 100,000	1.26
% change from average 5yr (2001-2005) incidence rate	- 62.3
Age (yrs)	
Mean	32.9
Median	26
Range	2-93

Figure 1.
Hepatitis A Incidence Rate by Year Reported, Florida, 1997-2006

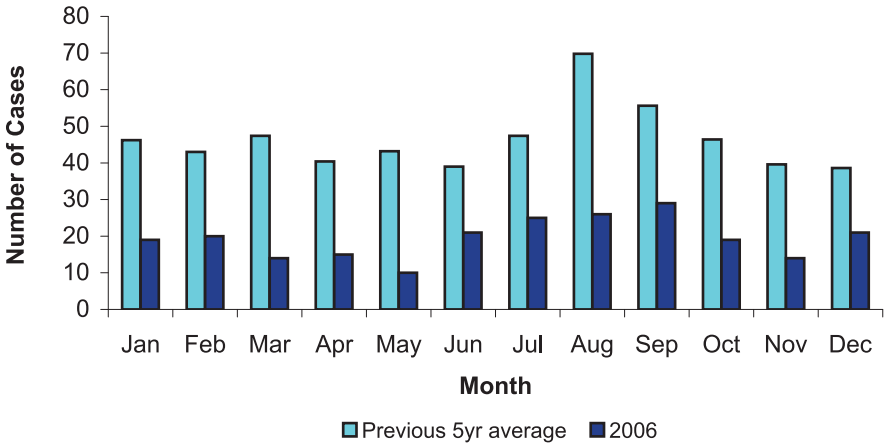


Description

Hepatitis A is an acute liver disease caused by infection with hepatitis A virus. The virus is transmitted person to person by the fecal-oral route, and poor sanitation is a risk factor for infection. Common-source outbreaks have been linked to contaminated food or water, including raw or undercooked mollusks harvested from contaminated waters. The incubation period ranges from approximately two to

six weeks after exposure. Symptoms include fever, malaise, nausea, and abdominal discomfort, often followed by jaundice. Infection may be asymptomatic in children.

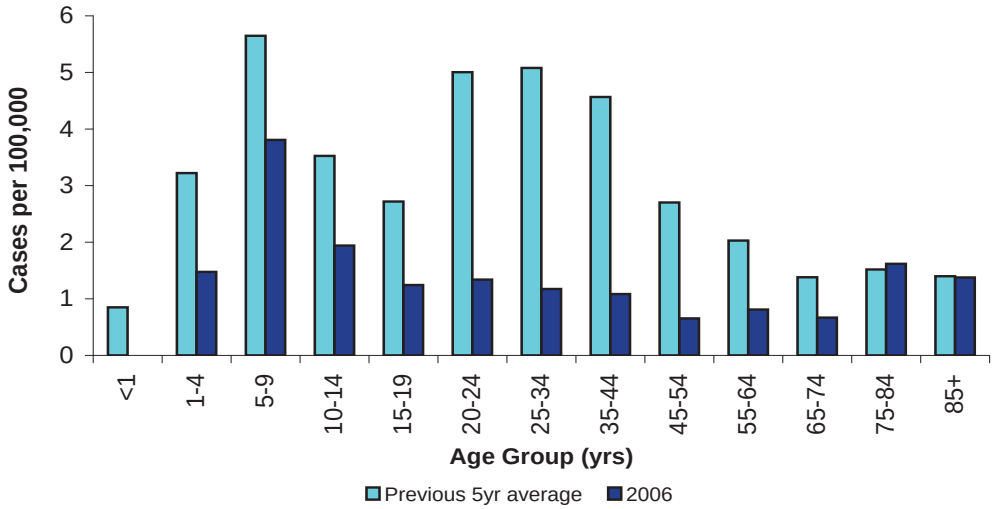
Figure 2. Hepatitis A by Month of Onset, Florida, 2006



Disease Abstract

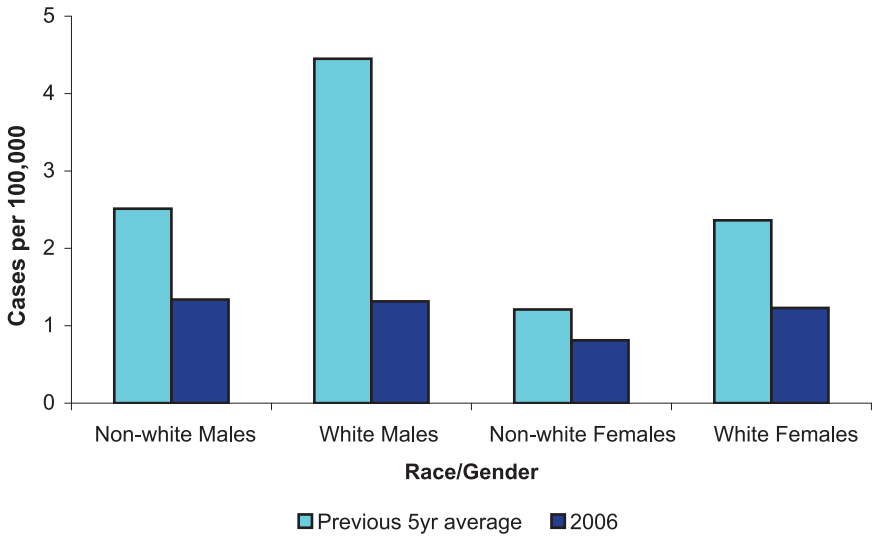
A total of 233 cases of hepatitis A were reported in 2006, of which 91.4% were classified as confirmed. At least 39% of hepatitis A cases were hospitalized, and two persons died. Approximately 14% of cases were classified as outbreak-related; 16% reported contact with a person with confirmed or suspected hepatitis A infection in the two to six weeks prior to their illness. Approximately 38% of cases reported a travel history outside the U.S. in the 2-6 weeks prior to their illness. Of those reporting a travel history, approximately 70% reported travel to Latin America or the Caribbean. The incidence rate for hepatitis A in Florida has declined markedly since 2002 (Figure 1), which mirrors a similar decline observed nationally. The annual incidence in Florida from 2004 to 2006 was between 1-2 cases per 100,000. This is a substantial decrease from the annual incidence of 4-6 cases per 100,000 observed from 1997 to 2002. The decrease in Florida and nationally is likely due, at least in part, to increased use of vaccines to protect against hepatitis A virus, which first became commercially available in 1995.

Figure 3. Hepatitis A Incidence Rates by Age Group, Florida, 2006



Hepatitis A occurs throughout the year (Figure 2), and the highest incidence rates continue to occur among children aged 5-9 years (Figure 3). In 2006, incidence rates were lower than the previous 5-year average in all age groups, except those 75-84 years old. The largest decrease in incidence was observed among adults 20-44 years old. In 2006, the incidence in both males and females was lower than the previous 5-year average incidence, and the greatest decrease occurred among whites in both genders (Figure 4).

Figure 4. Hepatitis A Incidence Rate by Race and Gender, Florida, 2006

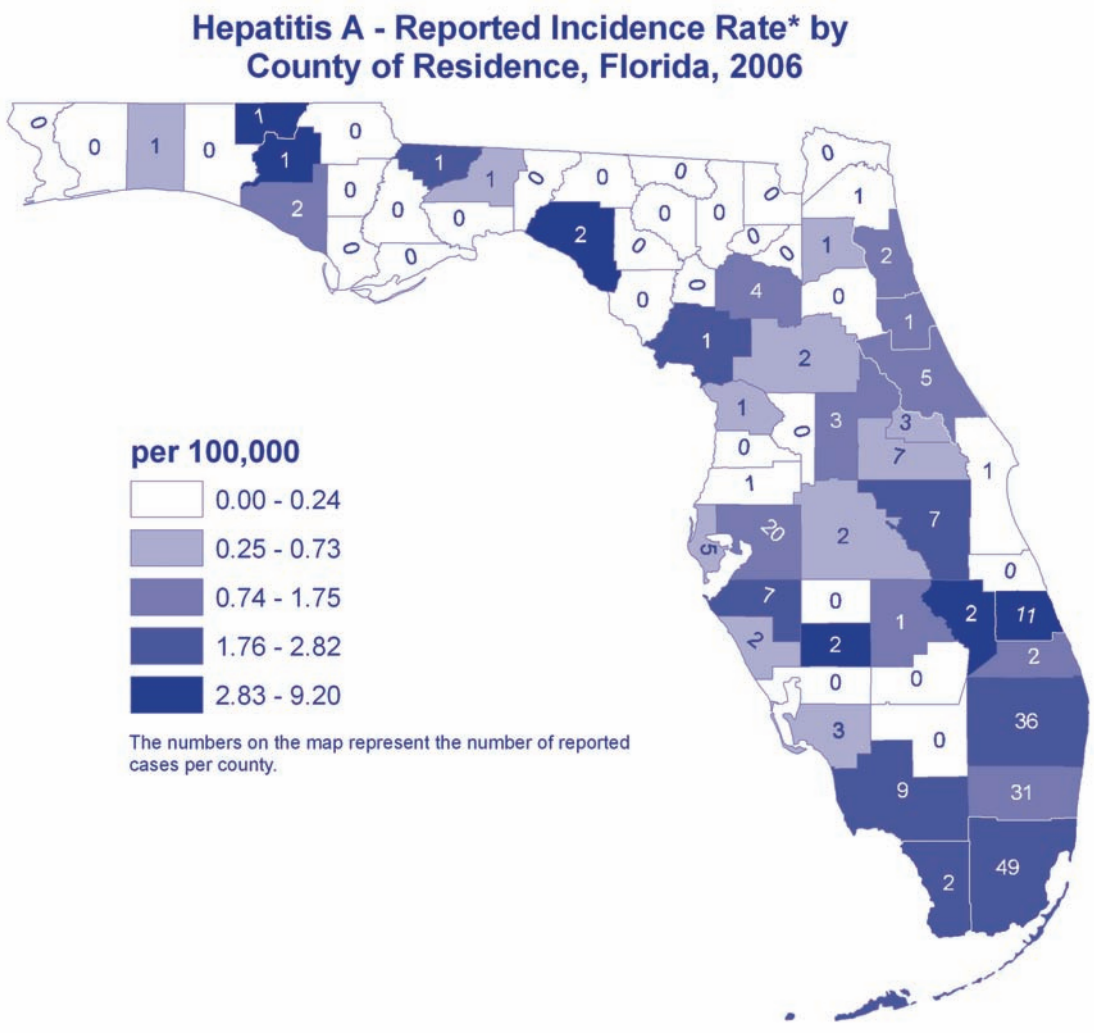


Hepatitis A was reported in 38 of the 67 counties in Florida during 2006. Counties in southern Florida reported the highest incidence rates with approximately half of cases reported from the Southeast.

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 child care 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 >18 years old, and is administered in three doses. In addition to routine childhood immunization, hepatitis A vaccine is also recommended for those at increased risk of infection, including those traveling to developing counties, men who have sex with men (MSM), injection and non-injection drug users, and persons with 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.



References

Centers for Disease Control and Prevention, "Prevention of Hepatitis A through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR* 2006; 55(RR07); pp 1-23.

Centers for Disease Control and Prevention, "Summary of Notifiable Diseases-United States, 2005," *MMWR* 2005; 55(53).

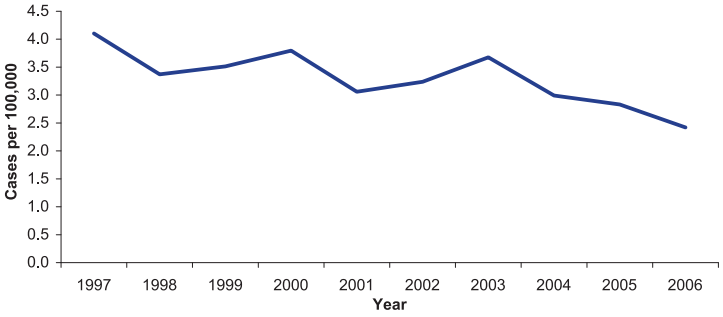
Additional Resources

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

Hepatitis B, Acute

Hepatitis B: Crude Data	
Number of cases	446
2006 incidence rate per 100,000	2.42
% change from average 5yr (2001-2005) incidence rate	- 23.3
Age (yrs)	
Mean	42.5
Median	41
Range	18-87

Figure 1.
Hepatitis B, acute Incidence Rate by Year Reported, Florida, 1997-2006



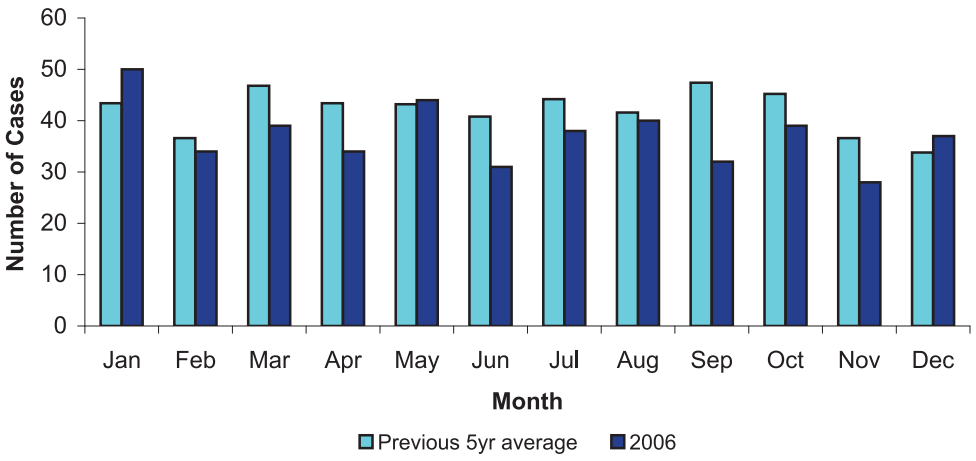
Description

Hepatitis B is one of several kinds of acute viral hepatitis. Symptoms may appear up to six months after exposure to the virus. Hepatitis B is transmitted from person to person via infected body fluids. Very small amounts of blood, semen, or other body fluids may contain enough virus to infect a person. Transmission may occur by sexual or similar close contact with an infected person, from mother to infant, through shared injection drug equipment, or by nosocomial exposure. People usually recover from acute hepatitis B, although they may become chronic carriers of the hepatitis B virus. Common symptoms include jaundice, abdominal pain, dark urine, clay-colored stool, weight loss, and nausea.

Disease Abstract

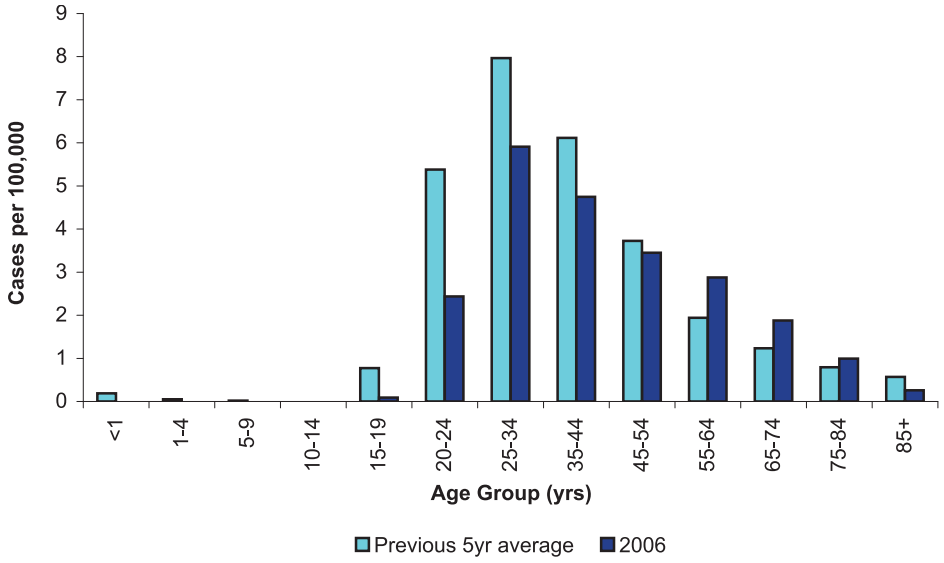
The incidence rate for acute hepatitis B has declined gradually over the last 10 years (Figure 1). The 2006 rate was 23.3% lower than the average from 2001 to 2005. A total of 446 cases were reported in 2006, of which 94.1% were classified as confirmed. There is no seasonal trend for acute hepatitis B infection (Figure 2). Overall, 1.35% of the acute hepatitis B cases were classified as outbreak-related.

Figure 2. Hepatitis B, acute by Month of Onset, Florida, 2006



The highest incidence rates continue to occur in the 25-34 year age group. In 2006, the incidence rates were lower than the previous 5-year average in all age groups, except in those older than 55 years where the incidence rate was slightly increased (Figure 3). The incidence of hepatitis B is lowest in people <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 (3.1 per 100,000 and 1.8 per 100,000, respectively). The incidence rates in non-whites are greater than those in whites (Figure 4).

Figure 3. Hepatitis B, acute Incidence Rate by Age Group, Florida, 2006



Hepatitis B is a vaccine-preventable disease. Among the 446 people diagnosed with acute hepatitis B, 65.9% never received the vaccine and 29.6% 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 51.8% of those diagnosed with acute hepatitis B were hospitalized. In 2006, death occurred in 5 of the 446 people with acute hepatitis B infection. Thirty-six of the 446 people with acute hepatitis B reported having known contact with someone confirmed or suspected of having a hepatitis B infection, and of these, 69% reported the type of contact was as a sexual partner. Drug use has been associated with hepatitis B infection. Of the 446 acute hepatitis B cases, 10% reported injection drug use and 19% 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 2006, 2.5% of those with an acute hepatitis B infection recently received a tattoo.

Sexual behavior may place an individual at risk for hepatitis B infection. However, during case investigation interviews individuals often decline to comment on the frequency of sexual partners and/or their sexual preferences. For 2006, sexual preference and frequency of sexual partnerships are summarized in Table 1. Risk factor data may change over time or new settings or host behaviors may be identified that increase or decrease the chances of disease or infection.

Acute hepatitis B was reported in 46 of the 67 counties in Florida. A cluster of high-rate counties can be

seen in the center of the state.

Table 1. Distribution of the number of sexual partners in the six months prior to symptoms among four sexual preference groups, for people with acute hepatitis B reported in 2006.

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	7%	21%	32%	2.0%
2-5 Sexual partners	7%	14%	22%	0%
More than 5 sexual partners	4 %	7%	5%	1%
Reported no sexual partner	48%	24%	14%	70%
Not Answered	1%	2%	1%	0%
Unknown	33%	32%	26%	27%
Total	100%	100%	100%	100%
% of Cases in each sexual preference group	17%	42%	59%	2.4%

*Total number of acute hepatitis b positive males is 279 and females is 167.

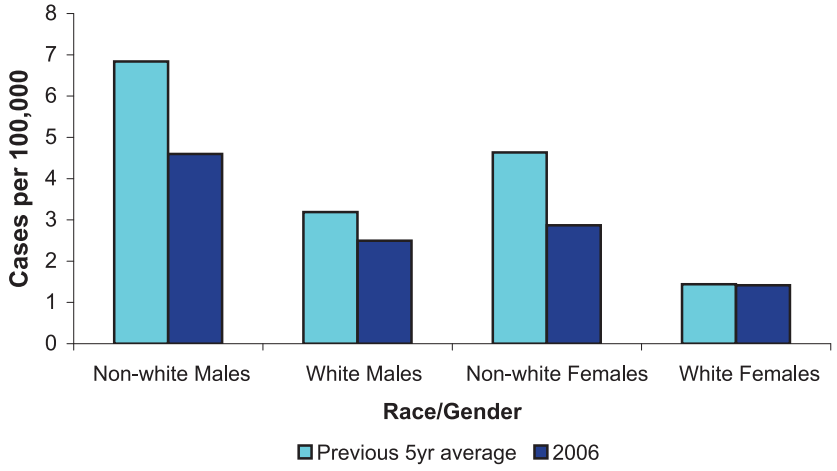
**:In, 2006, all 446 acute cases of hepatitis occurred in individuals 18 years of age and older

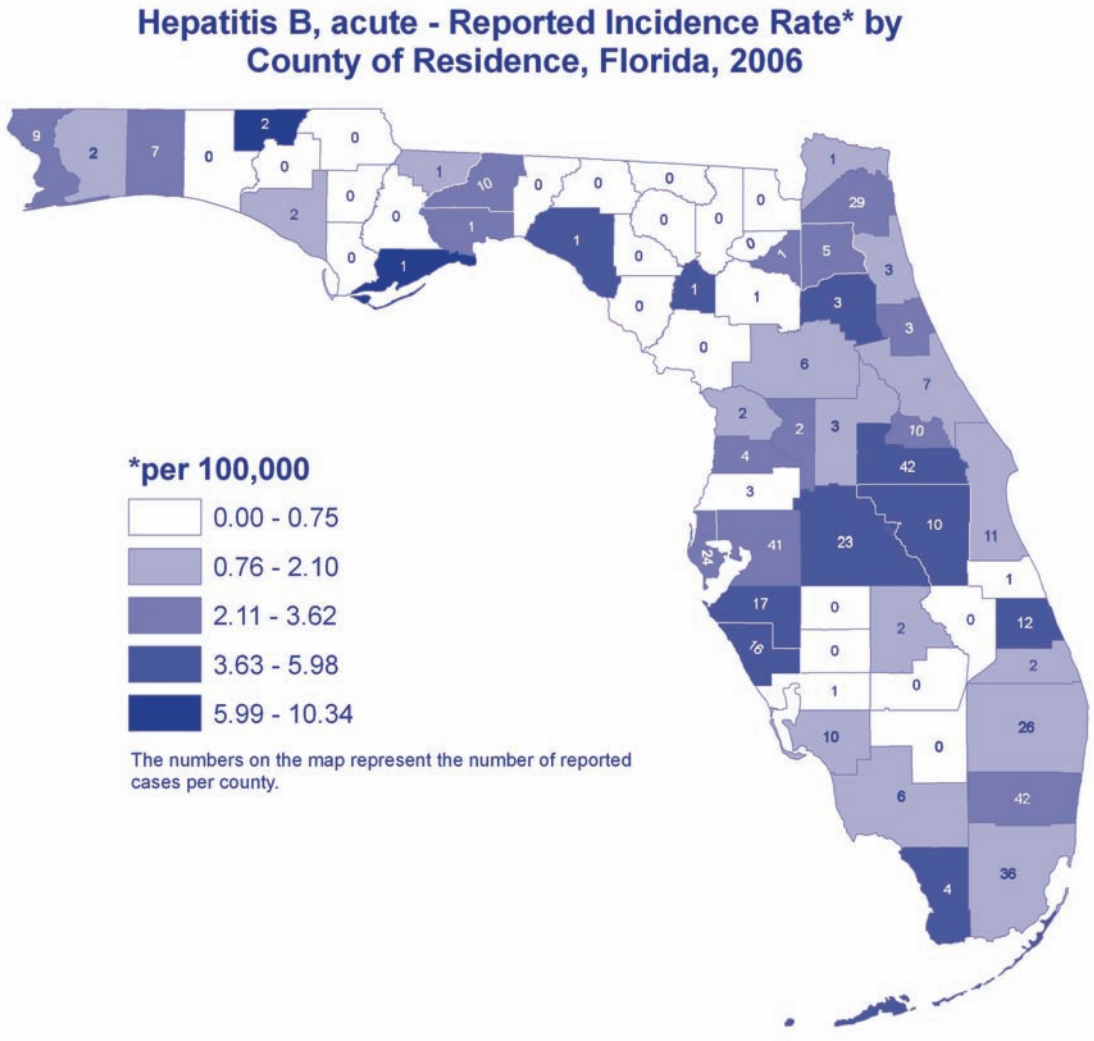
*** Sexual history is collected by asking about the number of sexual partnership in the last 6 months prior to having symptoms, regardless of gender.

Prevention

Hepatitis B vaccines are available to protect against hepatitis B virus infection. In addition, in healthcare settings, universal precautions should be implemented 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, people who have multiple sexual partners, household contacts of infected persons, and infants born to mothers who are hepatitis B carriers.

Figure 4. Hepatitis B, acute Incidence Rate by Race and Gender, Florida, 2006





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J.T. Redd, J. Baumbach, W. Kohn, et al, "Patient-to-Patient Transmission of Hepatitis B Virus Associated with Oral Surgery," *JID* 2007;195: pp. 1311-1314.

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Additional Resources

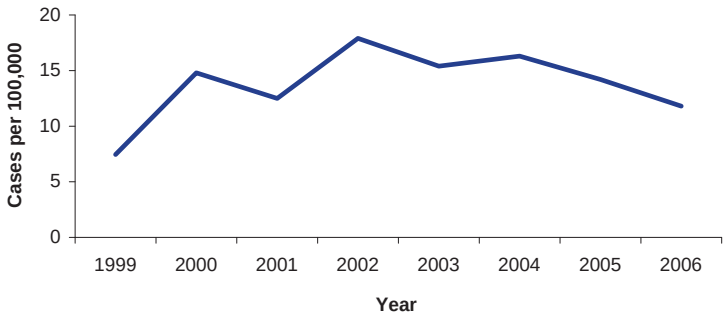
Disease information is available from the Centers for Disease Control and Prevention (CDC) website http://www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm and http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm

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

Hepatitis B (HBsAg + Pregnant Women)

Hepatitis B (HBsAg + Pregnant Women): Crude Data	
Number of cases	448
2006 incidence rate per 100,000	
% change from average 5yr (2001-2005) incidence rate	- 22.8
Age (yrs)	
Mean	28
Median	26
Range	15-52

Figure 1.
Hepatitis B (HBsAg + Pregnant Women) Incidence Rate by Year Reported, Florida, 1999-2006



Description

Hepatitis B is caused by infection with the hepatitis B virus (HBV), a double-stranded DNA virus of the family hepadnaviridae. HBV replicates in the liver, and causes both acute and chronic hepatitis. HBV is a bloodborne, sexually transmitted infection that is transmitted by percutaneous and mucosal exposure to infectious body fluids. The incubation period for acute hepatitis B ranges from 45-160 days (average 120 days). When present, clinical symptoms and signs may include anorexia, malaise, nausea, vomiting, abdominal pain, jaundice, dark urine, and clay-colored or light stools. Occasionally, extrahepatic manifestations occur and include skin rashes, arthralgias, and arthritis. Fulminant hepatitis occurs with a case fatality rate of 0.5–1%. Persons with chronic HBV infection are often asymptomatic; however, chronic liver disease develops in two-thirds of these persons, and approximately 15-25% die prematurely from cirrhosis or liver cancer. Perinatal hepatitis B in the newborn may range from asymptomatic to fulminant hepatitis. Infants infected at birth have a 90% chance of developing chronic infection. Newborns can also become infected due to exposure to HBsAg-positive household members

or community contacts. Populations with the highest rates of these early childhood infections include Alaskan Natives, children of Asian/Pacific Islander parents, and children of first generation immigrants from countries where HBV is of high or intermediate endemicity.

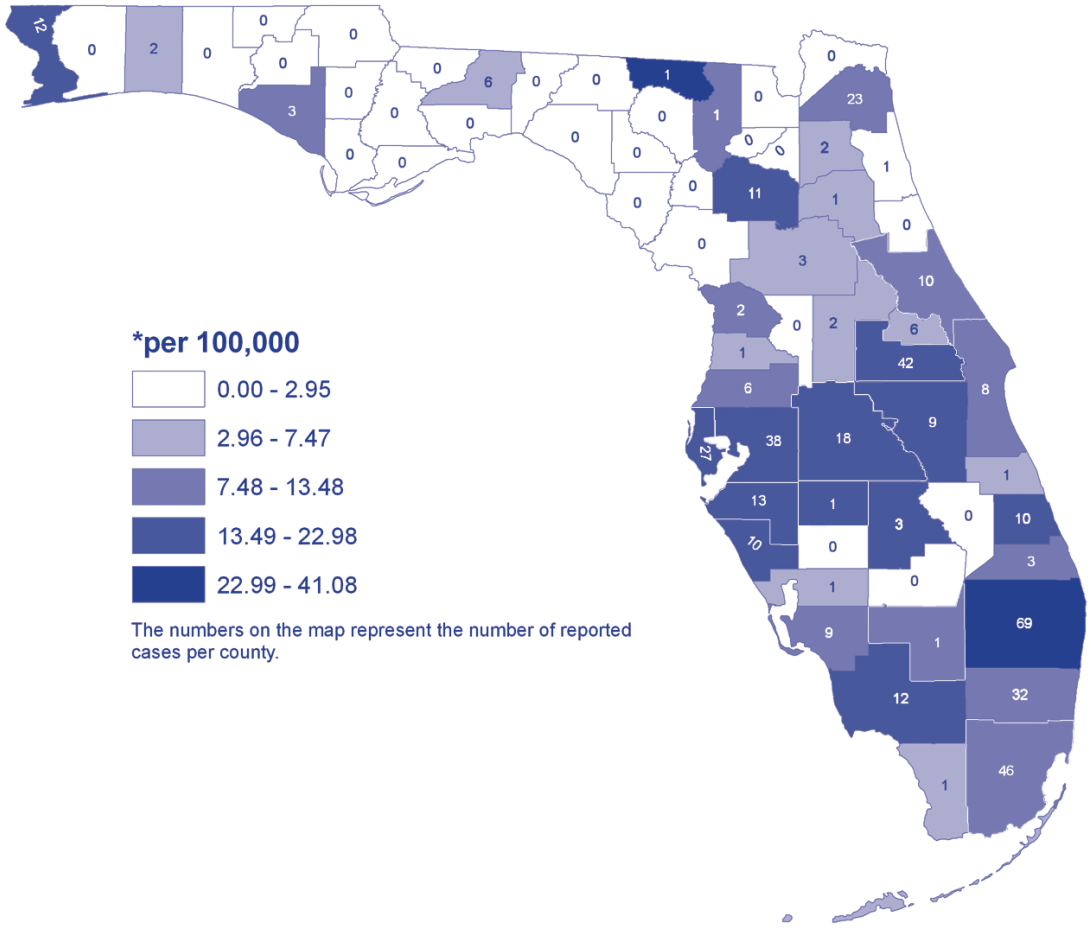
Disease Abstract

The number of cases of HBsAg+ pregnant women was 448 in 2006, which is a decrease from 530 in 2005. Also, an important note for infants/children, there were six cases of perinatal hepatitis B reported in 2006. The disease trend since 1999 has been improved case identification and increasing case numbers. So the decrease in HBsAg+ women for 2006 may indicate fewer cases identified, not necessarily that there was less disease in the Florida population, since Florida has an increasing population of women from countries where hepatitis B virus is endemic. However, overall incidence has declined 75 percent for acute hepatitis B since 1990. The CDC tracks HBsAg+ women by the number of expected births. In 2004, the CDC Florida count of expected births for HBsAg+ women ranged from 605 to 941 births. The reported number for Florida in 2004 was 536 births to HBsAg+ women, reflecting 89% of the expected lower-end limit.

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 the hepatitis B vaccine should not be given before six months of age. These infants should have serologic testing at 9-15 months of age to determine if a protective antibody response developed after vaccination. Infants who do not respond to the primary vaccination series should be given three additional doses of hepatitis B vaccine in a 0, 1-2, 4-6 month schedule, and the HBsAg and anti-HBs blood tests repeated to determine response.

Hepatitis B (+HBsAg in a pregnant woman) Reported Incidence Rate* by County of Residence, Florida, 2006



References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*. 3rd Ed., 2002, Chapter 4, Hepatitis B, http://www.cdc.gov/vaccines/pubs/surv-manual/default.htm.

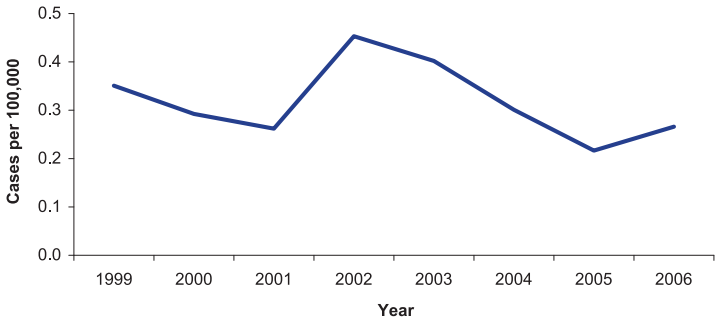
Additional Resources

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

Hepatitis C, Acute

Hepatitis C, Acute: Crude Data	
Number of cases	49
2006 incidence rate per 100,000	0.27
% change from average 5yr (2001-2005) incidence rate	- 18.3
Age (yrs)	
Mean	43
Median	40
Range	18-80

Figure 1.
Hepatitis C, acute Incidence Rate by Year Reported, Florida, 1999-2006



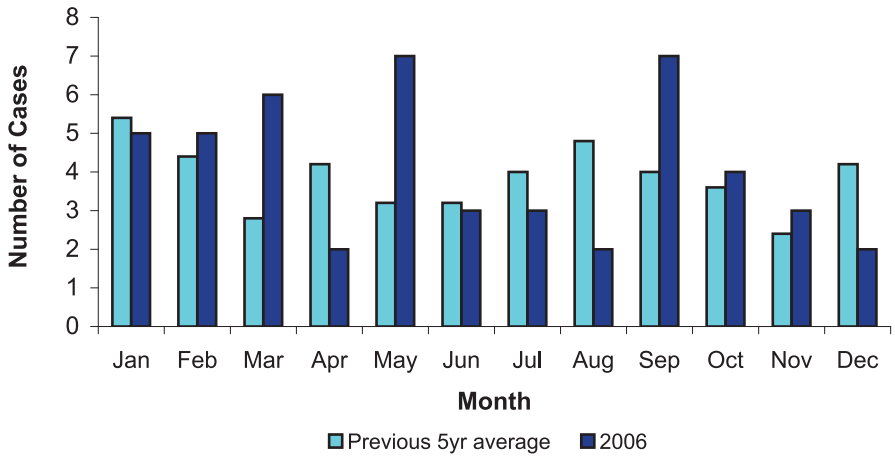
Description

The hepatitis C virus is one of several agents that can cause acute viral hepatitis. Symptoms of acute infection may appear up to six months after exposure to the virus. Transmission may occur by sexual or close contact with an infected person, mother-to-infant contact, injection drug use, or nosocomial exposure. Many infected people become chronic carriers of the virus. Most persons currently ill as a result of hepatitis C infection were first infected many years ago, and are not counted as incident acute cases in the surveillance system. Common symptoms include jaundice, abdominal pain, dark urine, clay-colored stool, weight loss, and nausea.

Disease Abstract

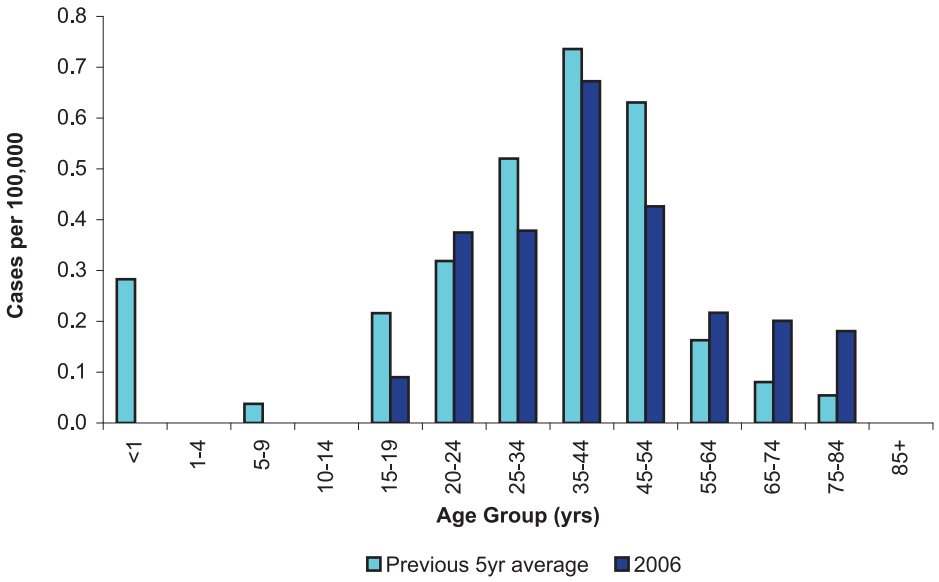
The incidence rate for acute hepatitis C has been variable over the last seven years (Figure 1). In 2006, there was an 18.3% decrease in comparison to the average incidence from 2001 to 2005. A total of 49 acute cases were reported in 2006, of which 36.7% were classified as confirmed cases. There is no seasonal trend for acute hepatitis C infection (Figure 2). There were no acute hepatitis C cases classified as outbreak-related.

Figure 2. Hepatitis C, acute by Month of Onset, Florida, 2006



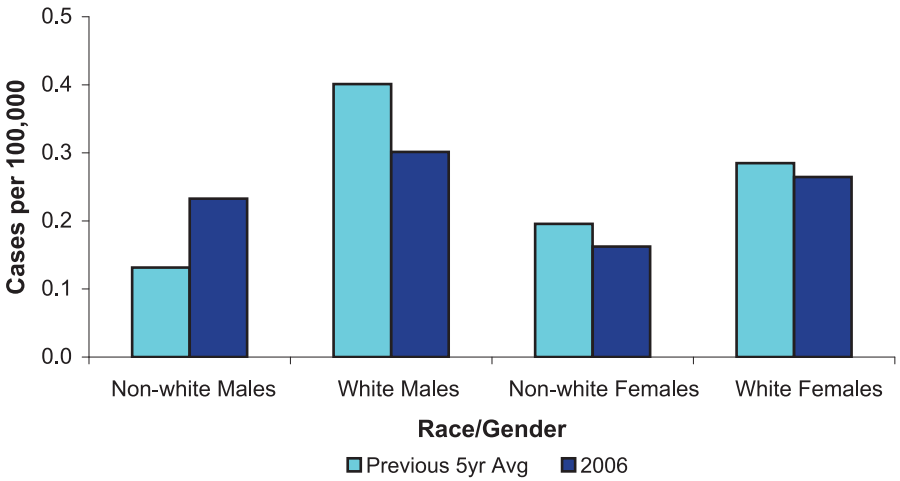
The highest incidence rates continue to occur in individuals in the 35-44 age group. In 2006, the incidence rates were lower than the previous 5-year average in all age groups except in those in the 20-44 age group and in persons older than 55 years where the incidence rate was slightly increased (Figure 3).

Figure 3. Hepatitis C, acute Incidence Rate by Age Group, Florida, 2006



It is important to remember that the passive transfer of maternal HCV antibodies may be present in infants for up to 18 months of age. A positive ANTI-HCV result in an infant <18 months is a not a true indicator of hepatitis C infection in an infant. In 2006, men and women had similar incidence of acute hepatitis C (0.29 per 100,000 and 0.24 per 100,000, respectively). The incidence rate in whites was greater than those in non-whites (Figure 4).

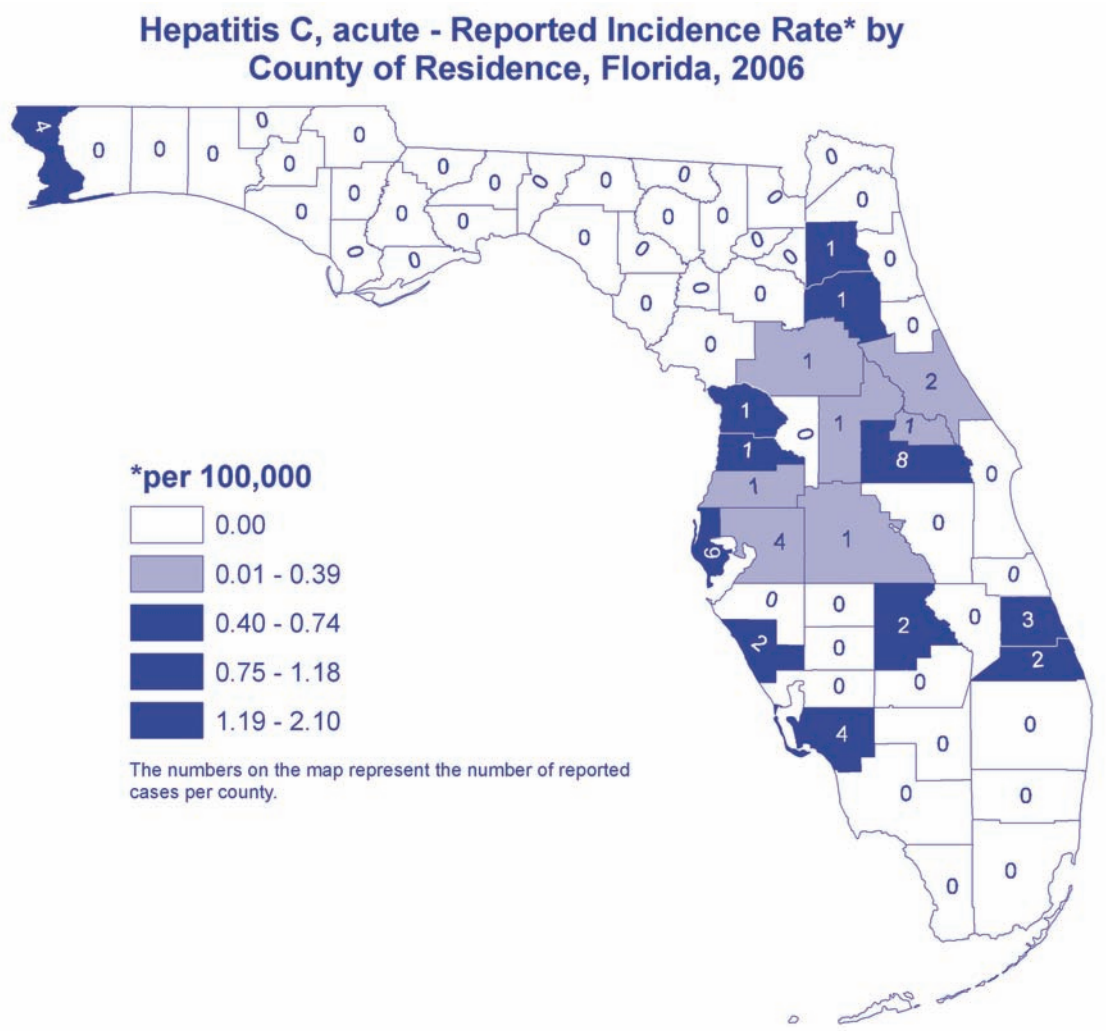
Figure 4. Hepatitis C, acute Incidence Rate by Race and Gender, Florida, 2006



Acute hepatitis C was reported in 19 of the 67 counties in Florida.

Prevention

Universal precautions should be implemented 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, MSM, people who have multiple sexual partners, household contacts of infected persons, or infants born to mothers who are hepatitis C carriers.



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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.

Centers for Disease Control and Prevention, "Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease," *MMWR* 1998; 47(No. RR-19), pp. 1-39.

Centers for Disease Control and Prevention, "Sexually Transmitted Diseases Treatment Guidelines, 2006," *MMWR* 2006; 55(No. RR-11), pp. 1-101.

Centers for Disease Control and Prevention, "Guidelines for Laboratory Testing and Result Reporting of Antibody to Hepatitis C Virus," *MMWR* 2003; 52 (No. RR-03), pp. 1-16.

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

J.L. Dienstag, “Sexual and Perinatal Transmission of Hepatitis C,” *Hepatology* 26:66S-70S, 1997.

M.I. Gismondi E.I. Turazza, and S. Grinstein et al., ”Hepatitic C Virus Infection in Infants and Children from Argentina,” J Clin Micro 2004: 42, pp. 1199-1202.

J.A. Hochman and W.F. Balistreri,”Chronic Viral Hepatitis: Always Be Current!” *Pediatrics in Review*, 2003; 24: pp. 399-410.

S. Kamili et al., “Infectivity of Hepatitis C Virus in Plasma After Drying and Storage at Room Temperature,” *Infect Control Hosp Epidemiol* 2007;28, pp. 519-524.

Lead Poisoning

Description

Lead poisoning can affect nearly every system in the body. Because lead poisoning often occurs with no obvious symptoms, it frequently goes unrecognized. Lead poisoning can cause learning disabilities, behavioral problems, and, at very high levels, seizures, coma, and even death. Lead poisoning occurs when an individual ingests or inhales lead particles. Children <6 years of age are particularly at-risk because their behaviors, such as mouthing on their hands and toys, act as a pathway for exposure and their bodies absorb lead more readily than adults. The source of most lead poisoning in the U.S. is dust and chips from lead-based paint in older homes. Dust from lead-based paint, and the former use of leaded gasoline, contributes to lead in soil, which can also be hazardous to children. Other sources of lead include some imported ceramics (e.g. lead-glazed pottery), home remedies, hair dyes, toys, and cosmetics.

Disease Abstract

In 2006, there were 373 confirmed cases of lead poisoning reported by County Health Departments in Merlin, the state notifiable disease database. Data from Merlin show a steady decline in the number of lead poisoning cases in Florida annually, from 2,220 cases in 1997 to 373 in 2006. The large majority of these cases were found in children <6 years of age.

According to the CDC, Florida ranks eighth in the nation for number of estimated children with lead poisoning. The CDC further estimates that 7,400 children with elevated blood lead levels live in nine Florida cities with populations of 100,000 or greater. In total, the CDC estimates that 22,000 children may be poisoned in the state (CDC 2003 Program Announcement 03007, Appendix III).

Prevention

Lead poisoning is completely preventable. Prevention efforts of the Childhood Lead Poisoning

Prevention Program include ensuring parents, property owners, healthcare professionals, and those who work with young children, are informed about the risks of lead poisoning and how to prevent it.

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

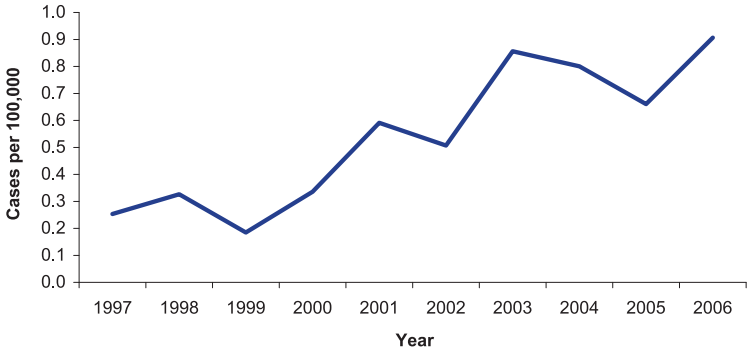
Additional Information

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

Legionellosis

Legionellosis: Crude Data	
Number of cases	167
2006 incidence rate per 100,000	0.91
% change from average 5yr (2001-2005) incidence rate	+ 32.3
Age (yrs)	
Mean	64.5
Median	64
Range	22-92

Figure 1.
Legionellosis Incidence Rate by Year Reported,
Florida, 1997-2006



Description

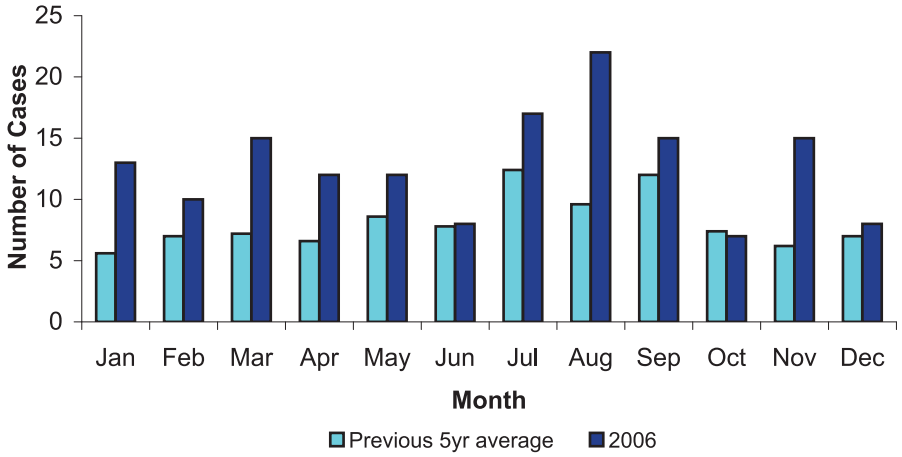
Legionellosis is an infection caused by the bacterium *Legionella pneumophila.* The disease has two distinct forms: Legionnaire's disease, the more severe form of infection which includes pneumonia, and Pontiac fever, a milder illness. Found naturally in the environment, *Legionella* bacteria grow best in warm water. Reservoirs of importance to human infection include hot tubs, cooling towers, hot water tanks, large plumbing systems, and parts of air-conditioning systems of large buildings. The infection is transmitted through the air to the lungs of human beings through aerosilization. The incubation period is generally 2-10 days after exposure, most often 5-6 days. Common symptoms include a rapidly rising fever (102°F-105°F) associated with chills, cough, and shortness of breath.

Disease Abstract

The Florida incidence rate for legionellosis has steadily increased over the last 10 years (Figure 1). In 2006, there was a 32.3% increase in comparison to the average incidence from 2001 to 2005. A total of 167 cases were reported in 2006, of which 81.6% were classified as confirmed cases. The number

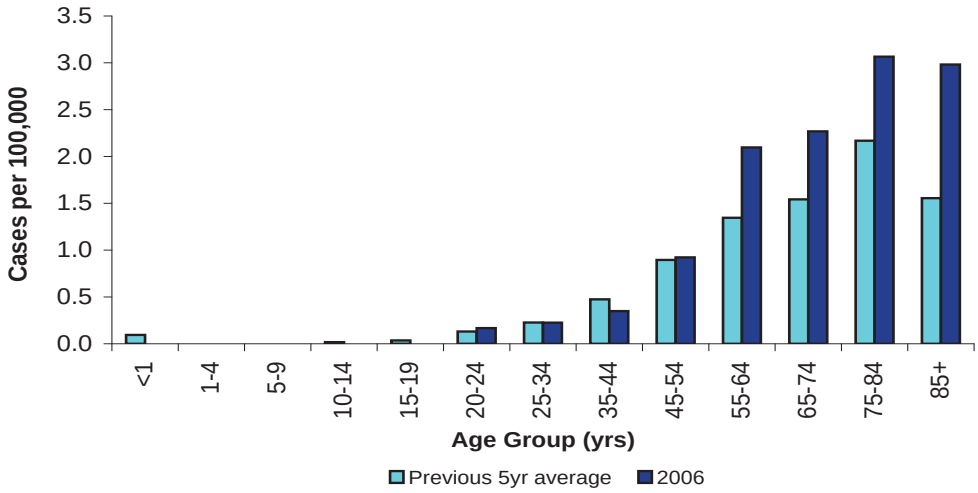
of cases reported tends to increase in the summer months. In 2006, the number of cases exceeded the previous 5-year average for each month of the year, with the exception of October (Figure 2). Overall, 1.2% of the legionellosis cases were classified as outbreak-related.

Figure 2. Legionellosis by Month of Onset, Florida, 2006



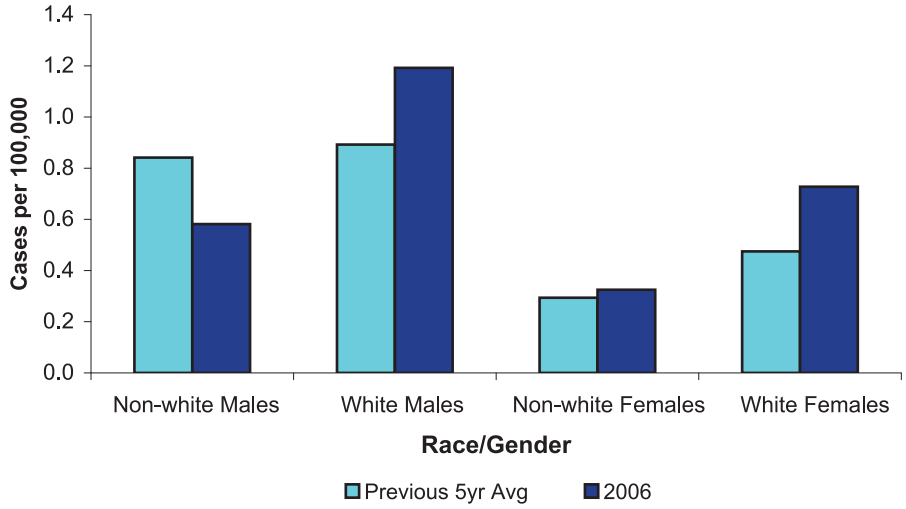
The highest incidence rates continue to occur among adults 55+ years of age, with incidence rates ranging from 2.1 per 100,000 in the 55-64 age group to 3.06 in the 85+ age group. In 2006, the incidence rates were higher than the previous 5 year average in all age groups with reported cases, except 35-44 year olds. Incidence of disease is minimal in individuals ≤19 years of age, with no cases reported in the last 10 years in infants and children ages one to nine (Figure 3). Males continue to have a higher incidence than females (1.13 and 0.65 per 100,000, respectively). In 2006, the incidence of disease increased in white males and decreased in non-white males, compared to 2001-2005. For women, incidence increased regardless of race. As has been the case in the past, incidence rates in whites are greater than those in non-whites (Figure 4).

Figure 3. Legionellosis Incidence Rate by Age Group, Florida, 2006



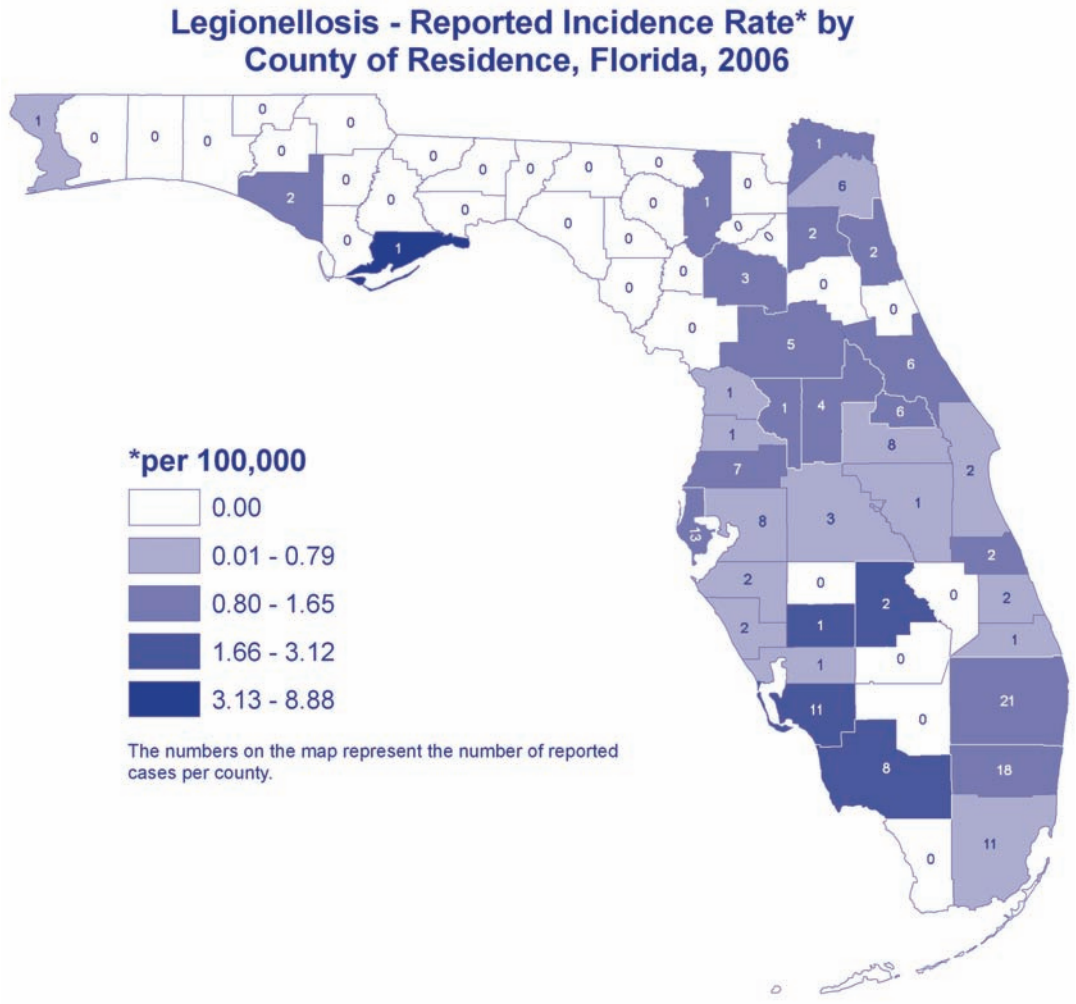
Legionellosis was reported in 36 of the 67 counties in Florida. Counties in the northeast, central-west, southwestern, and southeastern regions of Florida reported the highest incidence rates.

Figure 4. Legionellosis Incidence Rate by Race and Gender, Florida, 2006



Prevention

Cooling towers should be drained when not in use, and mechanically cleaned periodically to remove scale and sediment. Appropriate biocides should be used to limit the growth of slimeforming organisms. Tap water should not be used in respiratory therapy devices. Maintaining hot water system temperatures at 50°C (122°F) or higher may reduce the risk of transmission.



References

David L. Heyman (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) website http://www.cdc.gov/ncidod/dbmd/diseaseinfo/legionellosis_g.htm

Leptospirosis

Description

Leptospirosis is caused by the spirochete *Leptospira interrogans*, with over 200 pathogenic serovars identified. Common serovars found in the U.S. include *icterohaemorrhagiae, canicola, autumnalis, pomona, hebdomadis, and australis*. The organisms are maintained in the renal tubules of many wild and domestic animal reservoirs, with certain serovars tending to be more prevalent in specific species. However, over time some serovars have crossed over, and emerged in domestic species. Organisms are shed in the urine, amniotic fluid, and placenta and can survive for weeks to months in water or moist environments. At greatest risk are those working with animals, or exposed to wet (freshwater) conditions, such as sewer or sugarcane field workers, military personnel, and outdoor enthusiasts. Disease is more common in males, primarily because of occupational links. The disease appears to be emerging in peri-urban areas, and flood conditions have also led to outbreaks in urban environments.

Exposure occurs through contact of abraded skin or mucosal surfaces with contaminated water, tissues, or soil. Exposure can occasionally occur through ingestion of food or water contaminated with urine, most frequently associated with rats. Person-to- person transmission is rare. The incubation period is 5-14 days. Clinical disease is acute febrile with symptoms resulting from a generalized vasculitis. Severity of disease ranges from self-limiting in approximately 90% of patients to life-threatening with jaundice, renal failure, and pneumonitis in the remaining 10%. Case fatality for those with severe disease is 5-40%. Disease is generally biphasic with an initial febrile phase lasting 4-9 days, sometimes followed by a 1-3 day abatement of fever, before an “immune-mediated” phase begins on day 6-12. Initial symptoms are generally non-specific including fever, chills, headache, nausea, vomiting, and transient rash. More distinctive clinical signs can include conjunctival suffusion without purulent discharge (30-40% of cases), and myalgias of the calf and lumbar region (80%). Clinical symptoms for the second phase may include fever, aseptic meningitis, conjunctival suffusion, uveitis, muscle tenderness, adenopathy, and purpuric rash. The entire duration of symptomatic disease may last from one week to several months. Definitive diagnosis can be challenging with the tests currently available.

Disease Abstract

Between 1997 and 2006, there were 14 cases of leptospirosis reported in Florida. Five cases were classified as confirmed, nine as probable. Two cases (14%) were classified as outbreak-associated. In 2006, there were two probable cases reported, one that occurred in 2005 and was associated with an

adventure race in Hillsborough County. There were 14 confirmed, and 29 probable cases associated with that race, but almost all were in people who were not Florida residents (for more information about this outbreak please see the outbreak section). All but one case reported from 1997 through 2006 were in men (93%), most were white (86%), and the age range was from 20 to 54 years of age, with a median age of 42.6 years.

Prevention

At-risk workers need to be provided with appropriate personal protective equipment including boots, gloves, and aprons. Rodent populations should be controlled in environments as needed. Potentially infectious animal urine, water, and other materials should be avoided.

References

David L. Heyman (ed.), *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.

Additional Resources

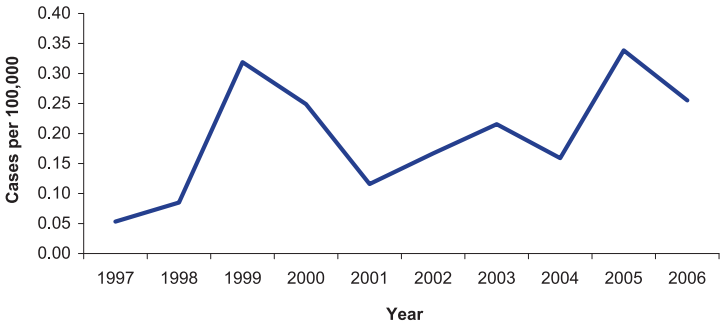
Information regarding leptospirosis in Florida can be obtained at the Florida Department of Health website http://www.doh.state.fl.us/Environment/community/arboviral/Zoonoses/Zoonotic-lepto.html

Additional information can be found at the Centers for Disease Control and Prevention website http://www.cdc.gov/ncidod/dbmd/diseaseinfo/leptospirosis_g.htm

Listeriosis

Listeriosis: Crude Data	
Number of cases	47
2006 incidence rate per 100,000	0.26
% change from average 5yr (2001-2005) incidence rate	+ 26.8
Age (yrs)	
Mean	68.2
Median	72
Range	20-98

Figure 1.
Listeriosis Incidence Rate by Year Reported,
Florida, 1997-2006

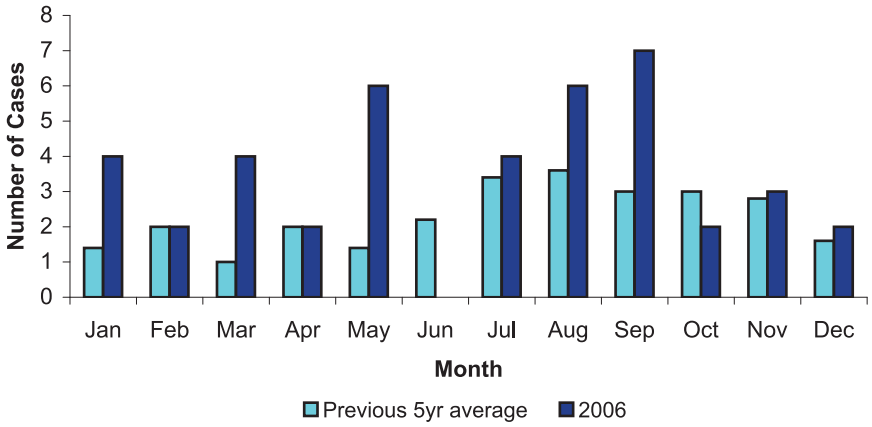


Description

Listeriosis is a disease caused by the gram-positive rod shaped bacterium *Listeria monocytogenes*. Listeriosis most commonly manifests as sepsis and/or meningitis. Symptoms can include fever, muscle

aches, headache, stiff neck, confusion, loss of balance, and convulsions. In pregnant women, it can cause fever and abortion. The organism is found naturally in the soil, forage, water, mud, and silage, and can contaminate raw foods (e.g. uncooked meats, raw milk, and vegetables), as well as foods that become contaminated after processing (e.g. soft cheeses, cold cuts). Unlike other foodborne pathogens, *Listeria* tends to multiply in refrigerated foods that are contaminated. Those at highest risk for infection include neonates, the elderly, immunocompromised individuals, pregnant women, and alcoholic, cirrhotic, or diabetic adults.

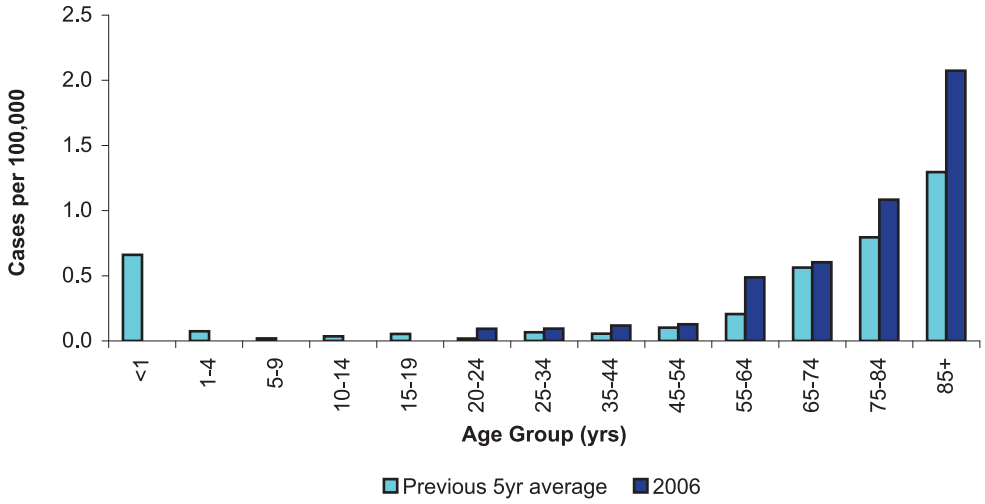
Figure 2. Listeriosis by Month of Onset, Florida, 2006



Disease Abstract

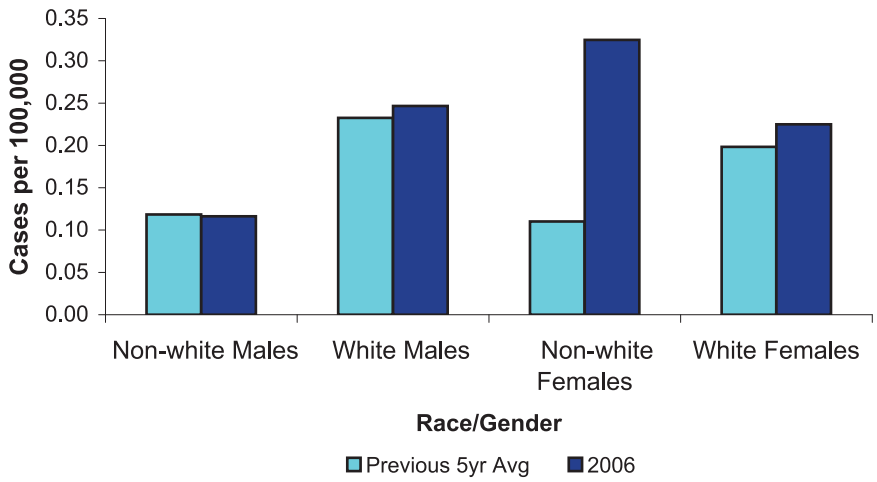
The incidence rate for listeriosis has increased over the last 10 years (Figure 1). In 2006, there was a 27% increase in comparison to the average incidence from 2001 to 2005. A total of 47 cases were reported in 2006. All of the 2006 cases were sporadic and not outbreak-related. Historically, the number of cases reported tends to increase slightly in the summer months. In 2006, the number of cases exceeded the previous 5-year average during eight months of the year, particularly in May (Figure 2).

Figure 3. Listeriosis Incidence Rate by Age Group, Florida, 2006



The very young and the elderly are at increased risk of infection (Figure 3) in comparison to other age groups. In 2006, the incidence rate for those older than 55 years was higher than the previous 5-year average for that age group. The incidence rate in females was slightly higher than in males (0.27 and 0.24 per 100,000, respectively), and in 2006, the incidence in both genders was higher than the previous 5-year average incidence. Historically, incidence rates in whites are greater than those in non-whites, but in 2006 non-white females experienced the highest incidence of listeriosis (0.32 per 100,000) (Figure 4).

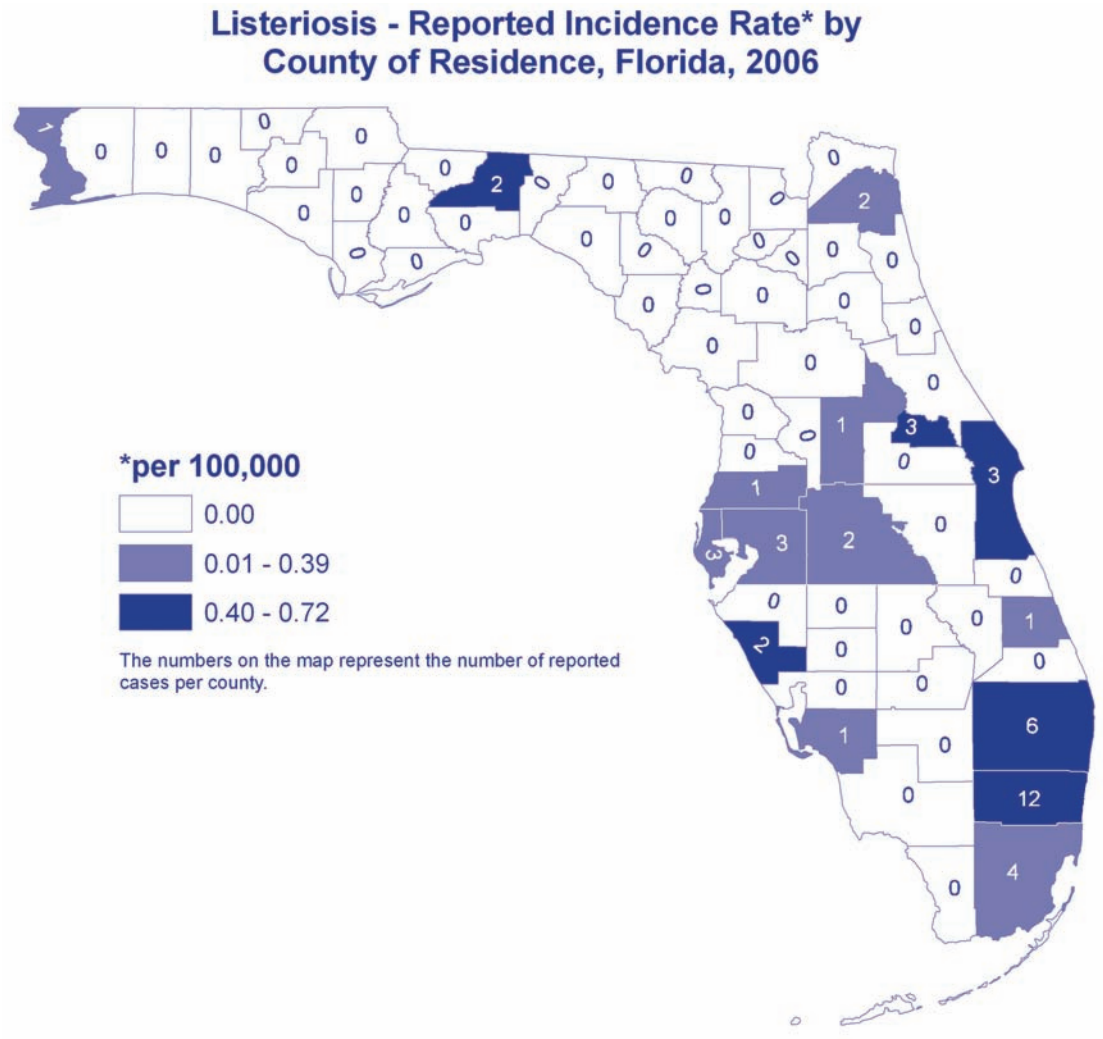
Figure 4. Listeriosis Incidence Rate by Race and Gender, Florida, 2006



Listeriosis was reported in 16 of the 67 counties in Florida.

Prevention

Generally, listeriosis may be prevented by thoroughly cooking raw food from animal sources, such as beef, pork, or poultry, washing raw vegetables before eating, and keeping uncooked meats separate from vegetables, cooked foods, and ready-to-eat foods. Avoiding unpasteurized milk or foods made from unpasteurized milk, and washing hands, knives, cutting boards after handling uncooked foods, may also prevent listeriosis. Those at high risk for listeriosis (the elderly, those with cancer, HIV, diabetes, pregnant women, or weakened immune systems) should follow additional recommendations: avoid soft cheeses such as feta, brie, camembert, blue-veined, and Mexican-style cheese. Leftover foods or ready-to-eat foods, such as hot dogs or cold cuts, should be cooked until steaming hot before eating.



References

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

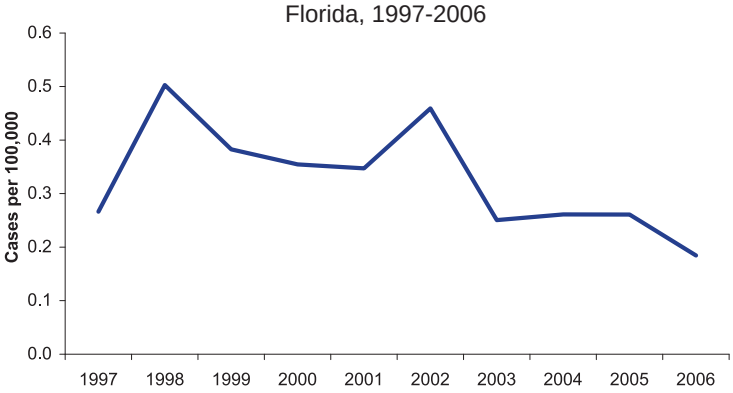
Additional Resources

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

Lyme Disease

Lyme Disease: Crude Data	
Number of cases	34
2006 incidence rate per 100,000	0.18
% change from average 5yr (2001-2005) incidence rate	- 41.2
Age (yrs)	
Mean	49.7
Median	56.5
Range	6-82

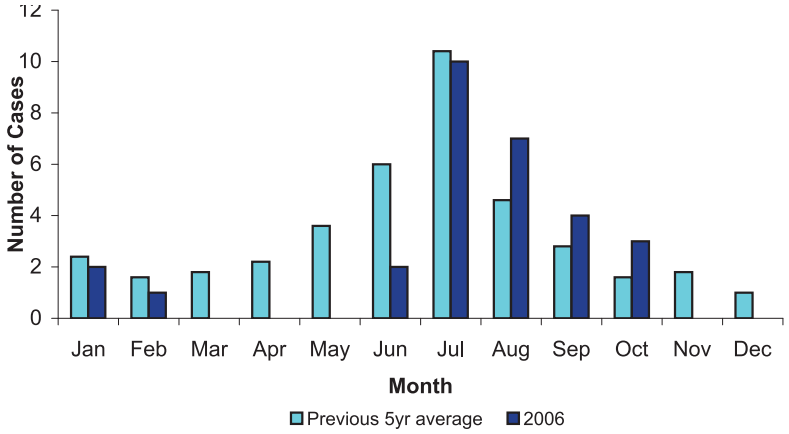
Figure 1.
Lyme Disease Incidence Rate by Year Reported, Florida, 1997-2006



Description

Lyme Disease is a zoonotic tick-borne disease caused by a *Borrelia spirochete*. In North America the causative agent is *Borrelia burgdorferi*. Wild rodents act as the natural reservoir; deer act as a mammalian maintenance host for the *Ixodes* tick vectors. The clinical manifestations have 3 stages: 1) early localized disease, 2) early disseminated disease and 3) late disease. Early localized disease and early disseminated disease may occur within 1-55 days following exposure. Stage three or late disease develops months to years later. Early localized disease is characterized by an erythema migrans (EM) rash at the site of the tick bite in 70-80% of the cases. The patient may experience fever, malaise, headache, mild neck stiffness, myalgia and arthralgia. Early disseminated disease is characterized by the development of multiple EM lesions away from the site of the tick bite, and usually develops several weeks following the exposure. The general symptoms as reported for early localized disease can recur and patients may also develop palsies of the cranial nerves (especially VII), lymphocytic meningitis, and conjunctivitis. Untreated patients with late disease may develop recurrent arthritis (60%), chronic neurologic problems (5%) and cardiac disease. Late disease may occur without history of early disease. In the U.S. most cases of Lyme disease occur between April and October and incidence is highest in children aged 5-9 years old and adults aged 45-54 years old.

Figure 2. Lyme Disease by Month of Onset, Florida, 2006



Disease Abstract

The incidence rate for Lyme disease in Florida has dropped over the past 10 years (Figure 1). In 2006 there was a 41.2% decrease in comparison to the average incidence from 2001-2005. Changes in testing procedures by private laboratories may have contributed to this decline. A positive ELISA test followed by a Western blot is currently required to meet surveillance criteria for case confirmation. A total of 34 cases were reported in 2006, all classified as confirmed cases. In most cases the disease was acquired outside of the state (82% of total 2006 cases) compared with 63% of all cases reported from 1997 through 2005. Highest case incidence was in the summer, with peak incidence in July. In 2006 the number of cases exceeded the previous 5 year average in August, September and October (Figure 2). None of the 2006 cases were classified as outbreak related.

Figure 3. Lyme Disease Incidence Rate by Age Group, Florida, 2006

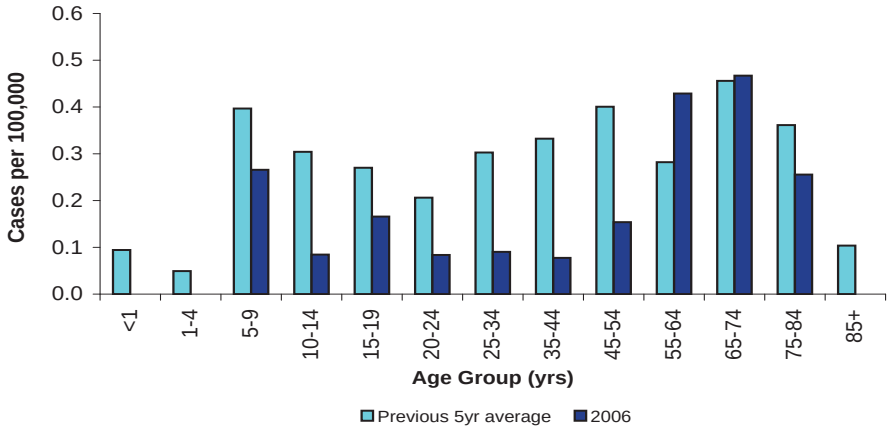
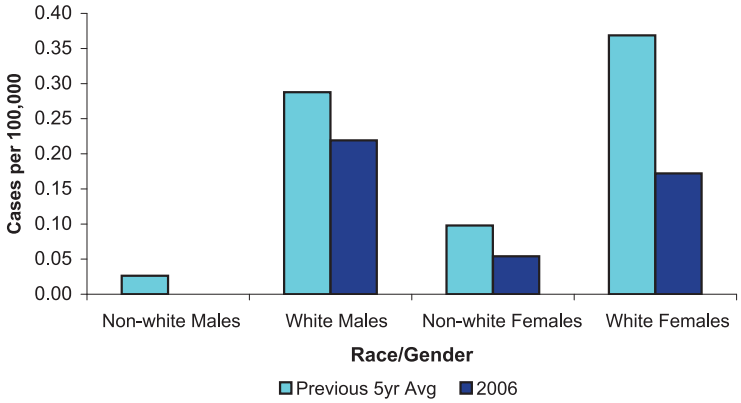


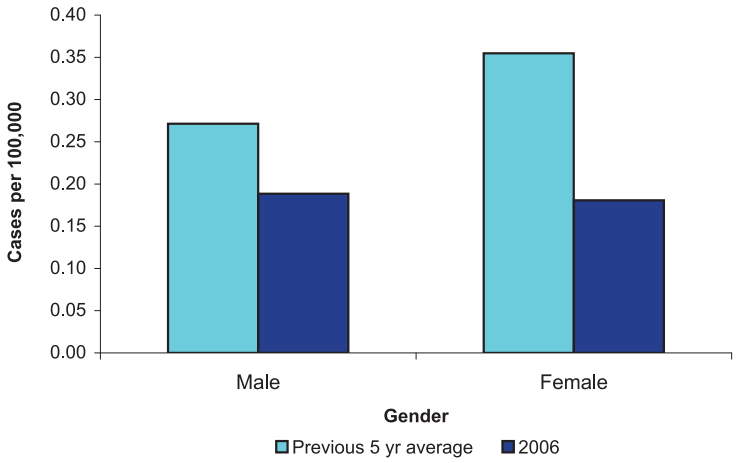
Figure 4. Lyme Disease Incidence Rate by Race and Gender, Florida, 2006



The highest incidence in 2006 was in the 65-74 year olds. Three of the four highest age group incidences were in older patients (55-64, 65-74 and 75-84 year olds) compared to the nationally reported peak incidence group of 45-54. More consistent with national trends is the peak in children aged 5-9 years old (Figure 3). Incidence rates in whites continue to be higher than in non-whites (Figure 4). Incidence rates in females decreased by 0.17 per 100,000 compared to a smaller decrease

in males (0.8 per 100,000) in 2006 relative to the 5-year average (Figure 5).

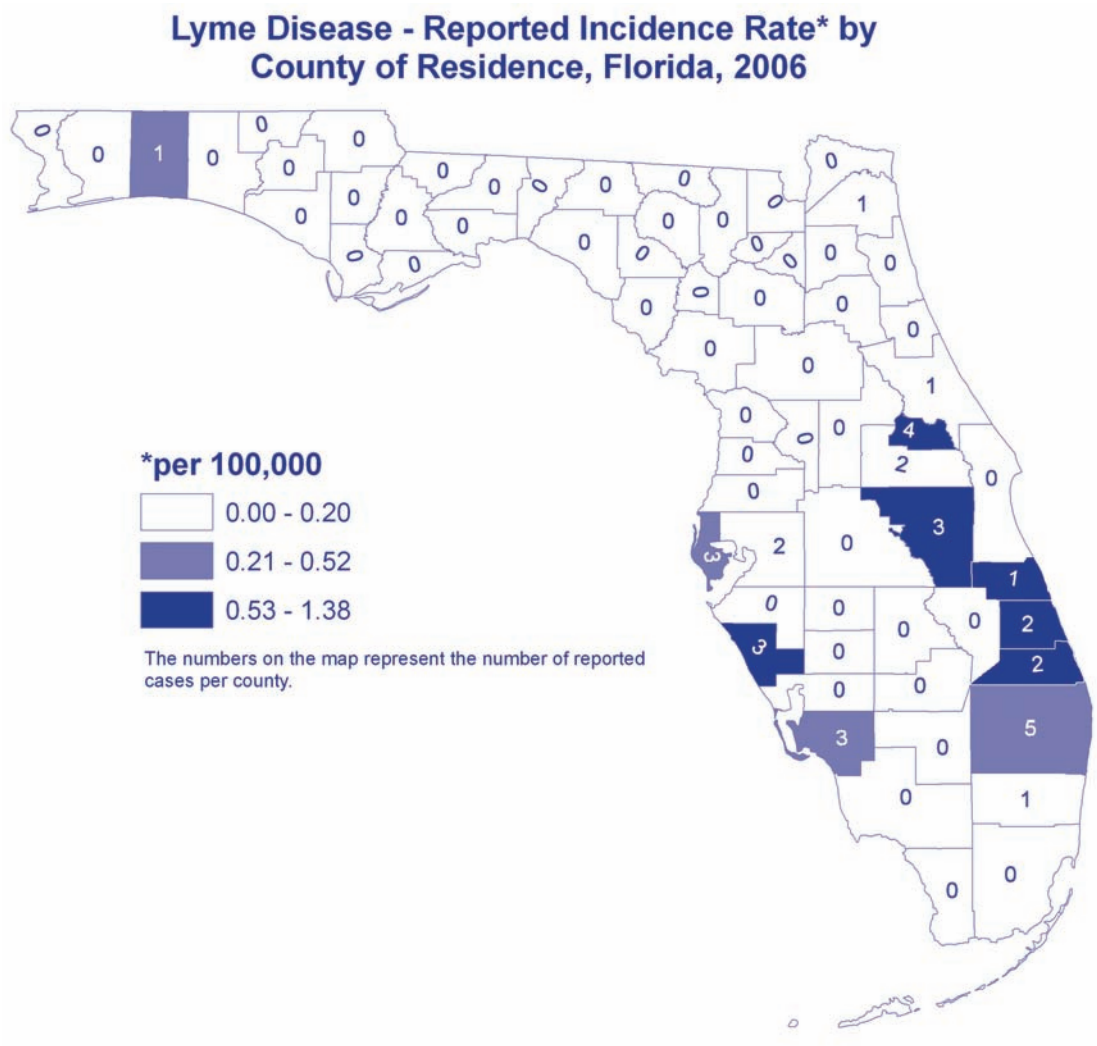
Figure 5. Lyme Disease Incidence Rates by Gender, Florida 2006



Lyme disease was reported in 15 of 67 Florida counties. Most cases were reported from central and south Florida, with a single report from the Panhandle.

Prevention

The most effective prevention is avoiding human and pet exposure to ticks including: avoiding tick infested areas, covering exposed skin as much as possible, wearing light colored clothing to better visualize ticks, tucking in pant legs and buttoning sleeves, appropriate application of permethrin to clothing and DEET to skin (per CDC recommendations), inspecting children, pets and adults for ticks immediately following likely exposure, and using appropriate veterinary products as recommended by a veterinarian to prevent tick exposure. Any ticks found attached to children, adults or pets should be removed promptly. Using fine tweezers or a tissue to protect fingers, grasp ticks close to the skin and gently pull straight out without twisting. Do not use bare fingers to crush ticks. Wash hands following tick removal.



References

*Control of Communicable Diseases Manua*l. 18th ed. Ed. David L. Heymann. American Public Health Association, 2004.

Red Book: 2006 Report of the Committee on Infectious Diseases. 27th ed. Eds. Pickering LK, Baker CJ, Long SS, McMillan JA. American Academy of Pediatrics, 2006.

Additional Resources

Disease information is available from the CDC and the Florida Department of Health at:
http://www.cdc.gov/ncidod/dvbid/lyme/

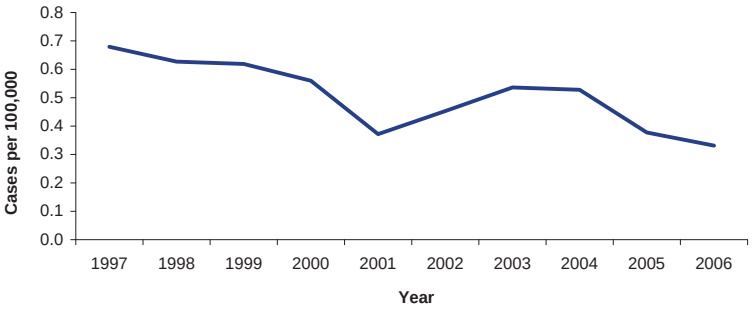
http://www.cdc.gov/healthypets/diseases/lyme.htm

http://www.doh.state.fl.us/Environment/community/arboviral/Tick_Borne_Diseases/Lyme_Disease.htm

Malaria

Malaria: Crude Data	
Number of cases	61
2006 incidence rate per 100,000	0.33
% change from average 5yr (2001-2005) incidence rate	- 27
Age (yrs)	
Mean	34.4
Median	33
Range	1-63

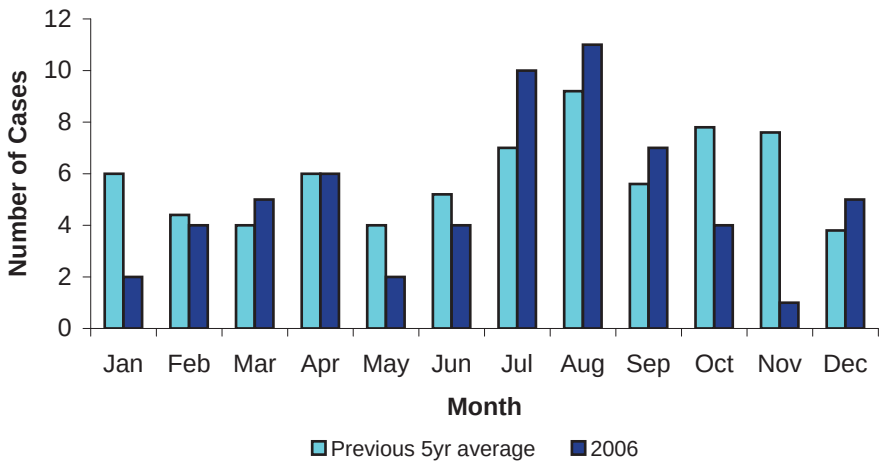
Figure 1.
Malaria Incidence Rate by Year Reported, Florida, 1997-2006



Description

Malaria is one of the world's greatest public health problems. Approximately 500 million of the world's population are infected each year, and between 2 million and 2.5 million people die annually. Human malaria is caused by four species of protozoan parasites of the genus *Plasmodium: P. vivax, P. falciparum, P. malariae, and P. ovale*. All four are transmitted from person to person via the bite and blood-feeding behavior of mosquitoes of the genus *Anopheles*. Malaria was endemic in Florida up until the 1940s. Now, it almost always occurs in travelers returning to the state from endemic malaria regions of the world. Occasionally, locally acquired cases have also been seen in the state. The last documented outbreak was in Palm Beach County in 2003, when eight cases of *P. vivax* malaria were confirmed (additional information can be found in the outbreak section of this report). Prior to this episode, one locally acquired case was documented in Bay County in 1990, and four locally acquired cases were reported in 1996, including two cases where infection is thought to have resulted from a break in standard precautions in a hospital setting. In Florida, there are 14 *Anopheles* species, all of which are potentially capable of transmitting malaria. Only two of these, *Anopheles quadrimaculatus* and *A. crucians* are, or have been, major malaria vectors in Florida. In the Americas, over 2 million cases occur annually. Approximately 30% of the human population in the Americas resides in areas

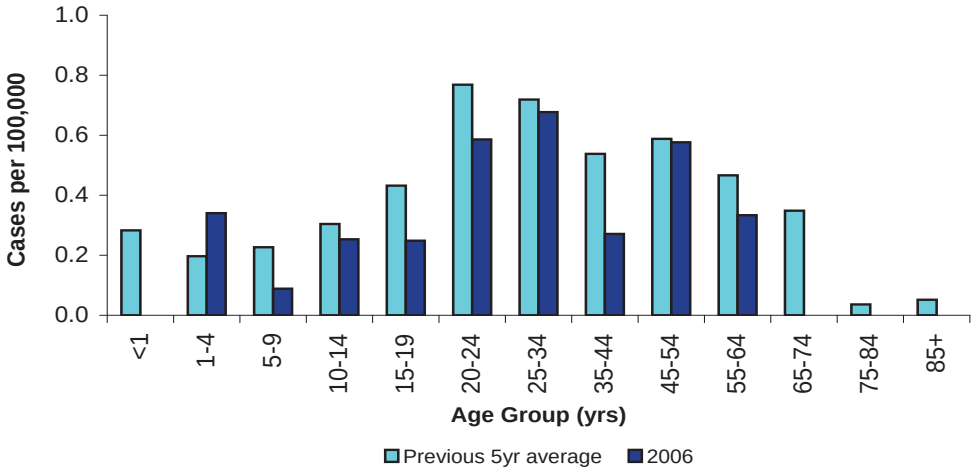
Figure 2. Malaria by Month of Onset, Florida, 2006



suitable for malaria transmission. As with yellow fever and dengue, Florida is partially protected from re-establishment of endemic malaria by the fact that almost the entire population lives in housing with window screens, air conditioning, or both.

Symptoms can vary depending on the malaria species, but the initial attack may start with lassitude, headache, anorexia, occasional nausea, and vomiting. The fever is comprised of a cold stage (shivering and a feeling of intense cold), a hot stage (distressing heat, dryness, burning, intense headache, nausea, and vomiting) and finally, a profuse sweating stage. The typical attack often begins in the early afternoon, and lasts from 8-12 hours. Persons experiencing these symptoms, and having been in an area with malaria, should see a doctor immediately.

Figure 3. Malaria Incidence Rate by Age Group, Florida, 2006



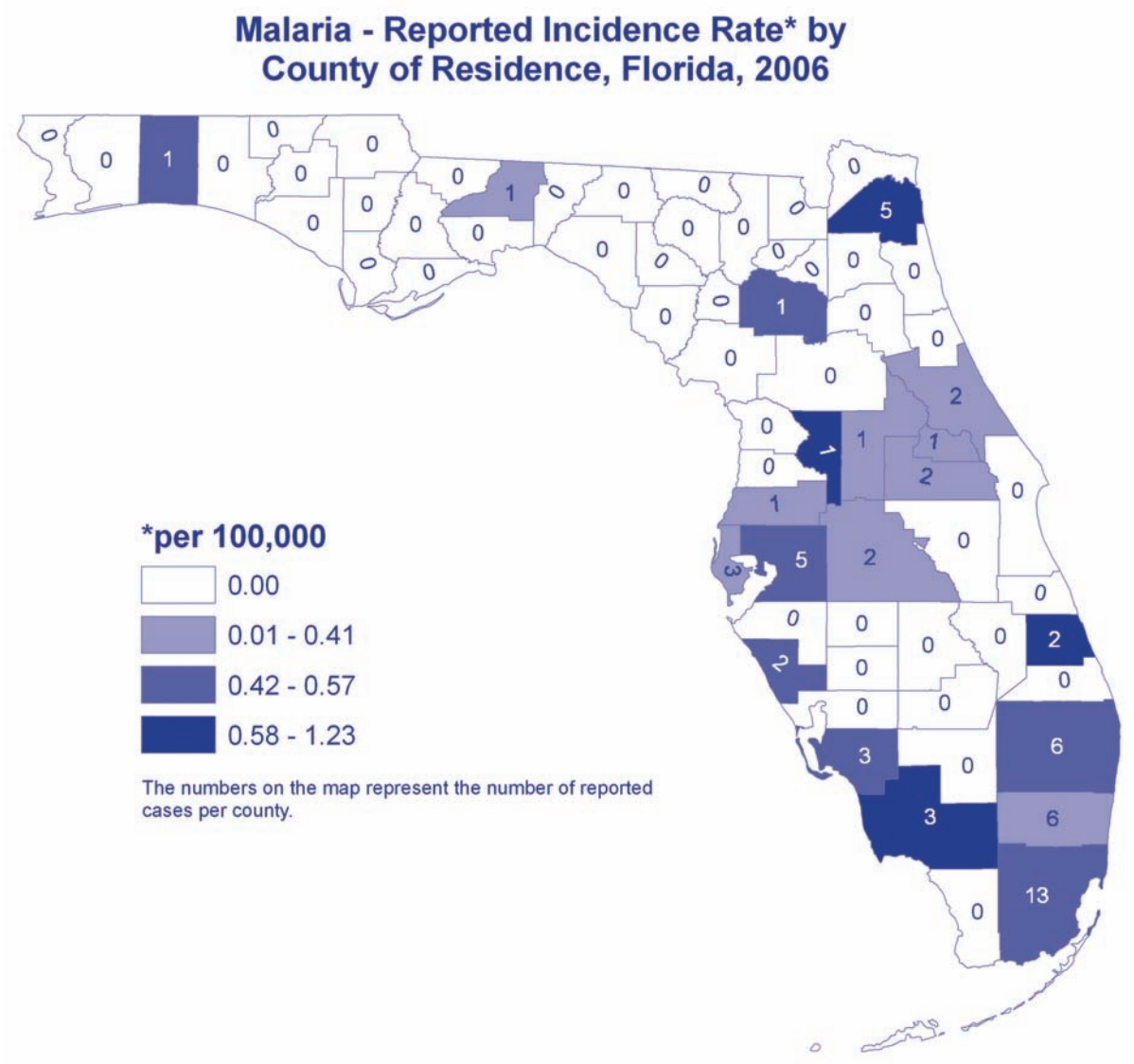
Disease Abstract

The incidence rate for malaria in Florida has declined over the last 10 years (Figure 1) with 61 cases reported in 2006. In 2006, there was a 27% decrease in comparison to the average incidence from 2001 to 2005. More cases are reported during the summer months, but cases are reported year-round (Figure 2). The highest incidence rates occur among those in the 20-34 age group (Figure 3). The average age of reported malaria cases in Florida is 34.4 years (range: 1-63). In 2006, 60% of cases were diagnosed with *P. falciparum*, 33% were diagnosed with *P. vivax*, 2% were diagnosed with *P. malariae*, and in the remaining cases' species was unable to be determined. Seventeen percent of cases were Hispanic, 73% were non-Hispanic, and the remaining 10% were of unknown ethnicity. Thirty-seven percent of cases had recent travel history to countries in Africa, 22% had traveled to the Caribbean, 22% had traveled to countries in South or Central America, or to Mexico, and the remaining 19% had traveled to countries in Asia.

Prevention

No vaccine is currently available. Travelers to malaria-endemic countries should consult with their doctor to make sure they receive an appropriate chemoprophylactic regimen which helps prevent malaria. A number of factors should be taken into consideration prior to prescribing chemoprophylaxis including, but not limited to, risk, the species of malaria present, drug resistance, and how well the drug

is tolerated. 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, remaining in well-screened areas, keeping skin covered in clothing, and using insecticide-treated bed nets.



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.

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/community/arboviral/pdf_files/UpdatedArboguide.pdf

Measles

Description

Measles is an acute viral illness caused by a virus in the family paramyxovirus, genus Morbillivirus. Measles is characterized by a prodrome of fever, malaise, cough, coryza, and conjunctivitis, followed by a maculopapular rash. Measles is usually a mild to moderately severe illness. However, measles can result in residual neurological impairment from encephalitis in approximately 5-10 cases per 10,000 reported cases, and in death in approximately 10-30 cases per 10,000 reported cases. Pneumonia complicates 6% of measles cases in the U.S., and 19% of cases are hospitalized.

Disease Abstract

In 2006, four laboratory-confirmed cases of measles were reported for a statewide incidence rate of 0.02 per 100,000 population. This is a significant increase from the zero cases reported in 2005. All cases were imported. An internationally imported case has its source outside the country, with rash onset within 21 days after entering the country, and is not linked to local transmission.

Of the four reported cases in 2006, one was reported in Polk County in an unimmunized 13-month-old. The infant arrived from England with otitis media and then developed clinical symptoms of measles. Contact investigation included patients from a walk-in clinic and hospital emergency department in Osceola County. Airline contacts included eight in Florida, three in other U.S. states, and one each in England, Ireland, and Venezuela. The probable source was a childcare center in England.

The remaining three cases reported in Florida were adult cases. All worked on a cruise ship, and were confined to the ship. Passengers were notified of possible exposure, and encouraged to contact their healthcare provider. No secondary cases were identified in Florida.

Prevention

Vaccination against measles is recommended for all children after their first birthday. Two doses of measles vaccine (preferably 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. Cruise lines are making every attempt to immunize crew members for measles.

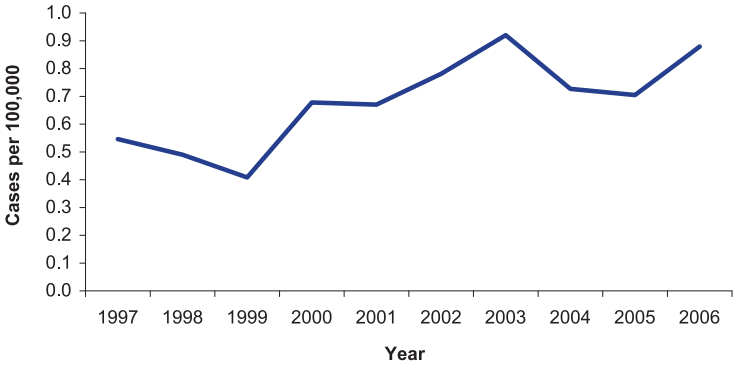
Resources

Centers for Disease Control and Prevention, Manual for the Surveillance of Vaccine-Preventable Diseases, 3rd ed., 2002, http://www.cdc.gov/vaccines/pubs/surv-manual/downloads/chpt06_measles.pdf

Meningitis, Other (bacterial/mycotic)

Meningitis, other: Crude Data	
Number of cases	162
2006 incidence rate per 100,000	0.88
% change from average 5yr (2001-2005) incidence rate	+ 15
Age (yrs)	
Mean	38.2
Median	41.5
Range	<1-88

Figure 1.
Meningitis, other Incidence Rate by Year Reported,
Florida, 1997-2006



Description

The meningitis, other category includes any meningitis due to any bacterial or fungal species other than *Neisseria meningitidis* or *Hemophilus influenzae*, with an isolate from the blood or cerebral spinal fluid. Symptoms may include fever, headache, altered mental status, rash, or stiff neck. In 2006, some common pathogens isolated were *Cryptococcus neoformans, Salmonella, Escherichia coli, Staphylococcal* species, and *Streptococcal* species.

Disease Abstract

The incidence rate for meningitis, other has increased gradually over the last 10 years (Figure 1). In 2006, there was a 15% increase in comparison to the average incidence from 2001 to 2005. A total of 162 cases were reported in 2006, all confirmed. The number of cases of meningitis, other shows little difference by season when averaged over several years. In 2006, there were more cases in the spring and summer, and most notably, in November (Figure 2). There were no meningitis, other outbreaks in 2006.

Figure 2. Meningitis, other by Month of Onset, Florida, 2006

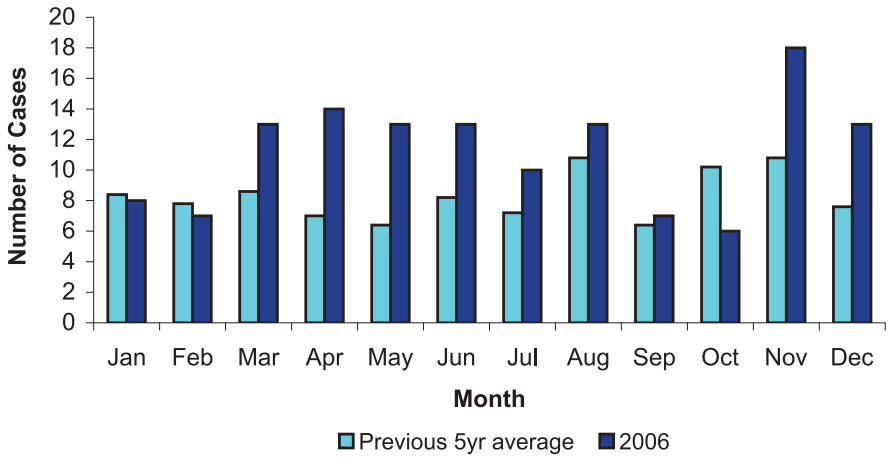
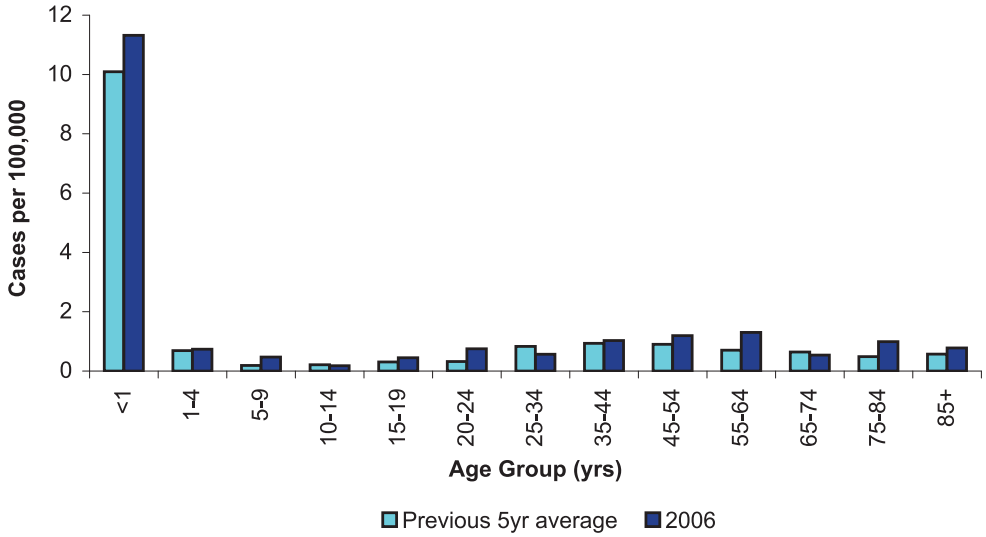


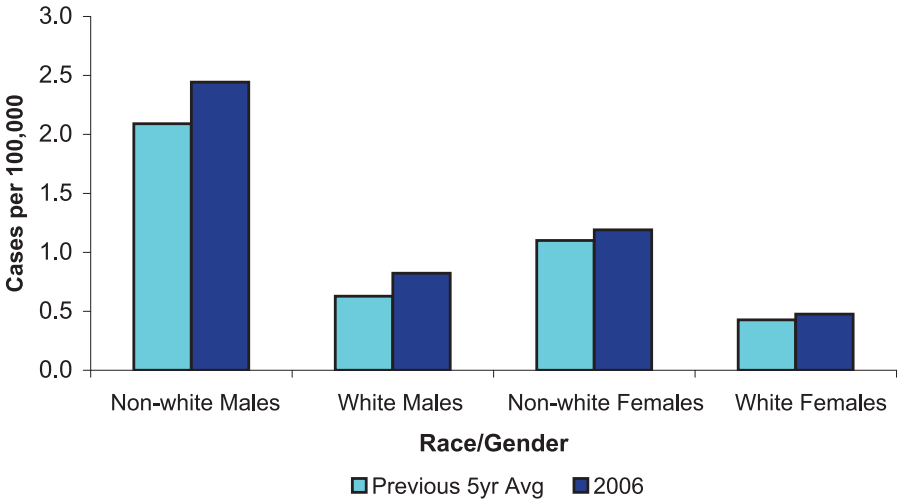
Figure 3. Meningitis, other Incidence Rate by Age Group, Florida, 2006



The highest incidence rates continue to occur in infants <1 year of age (Figure 3). Immunosuppressed or immunocompromised individuals in the older age groups may be also be at risk for infection. Males continue to have a higher incidence than females (1.15 per 100,000 and 0.62 per 100,000, respectively). Incidence rates in non-white males are greater than those in white males (Figure 4).

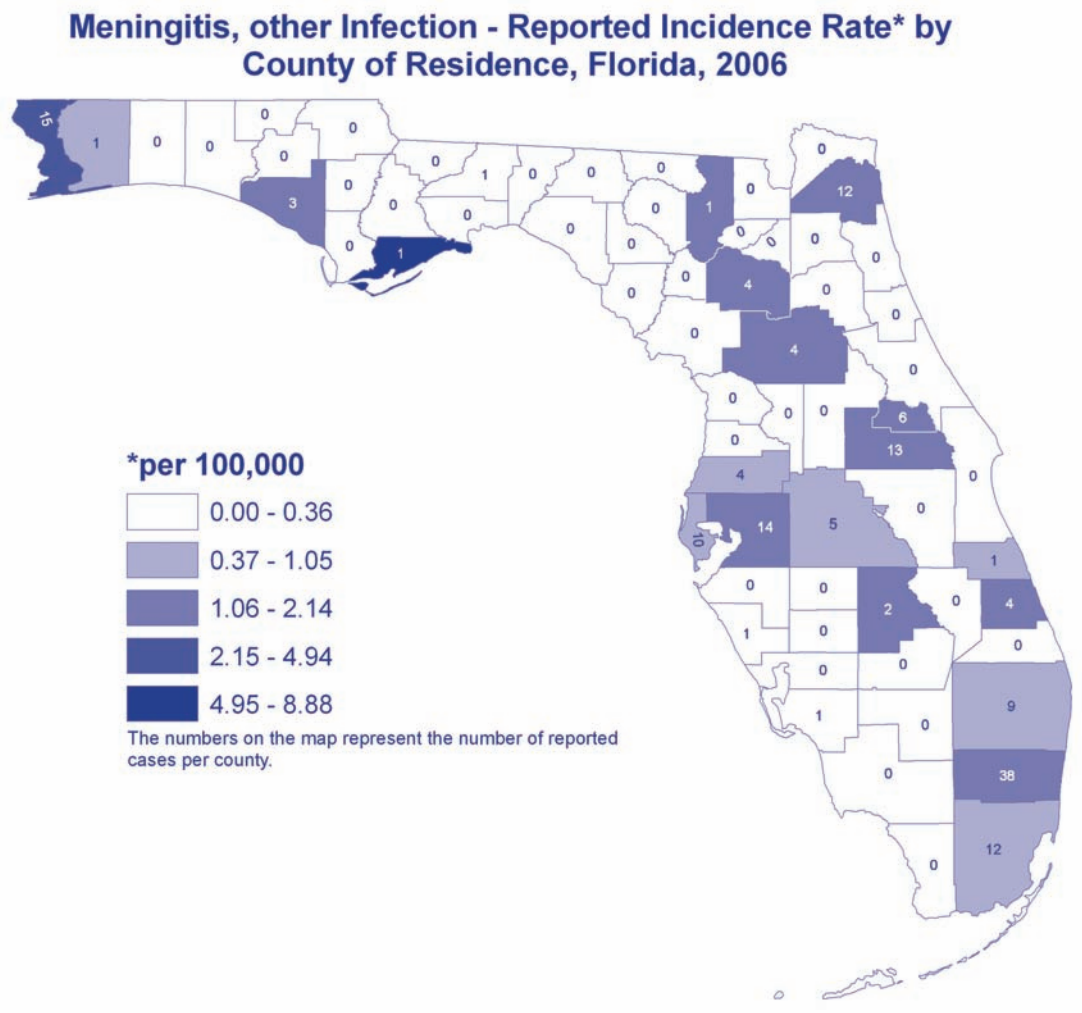
Meningitis, other was reported in 21 of the 67 counties in Florida. Counties with the highest incidence rates were widely scattered.

Figure 4. Meningitis, other Incidence Rate by Race and Gender, Florida, 2006



Prevention

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



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J.H. Price, J. de Louvois, and M.R. Workman, "Antibiotics for Salmonella Meningitis in Children," *Journal of Antimicrobial Chemotherapy*, Vol. 46, 2000, pp. 653-655.

A. Varaiya, K. Saraswathi, U. Tendolkar, A. De, S. Shah, and M. Mathur, *"Salmonella enteritidis* Meningitis-A Case Report," *Indian Journal of Medical Microbiology*, Vol. 19, 2001, pp. 151-152.

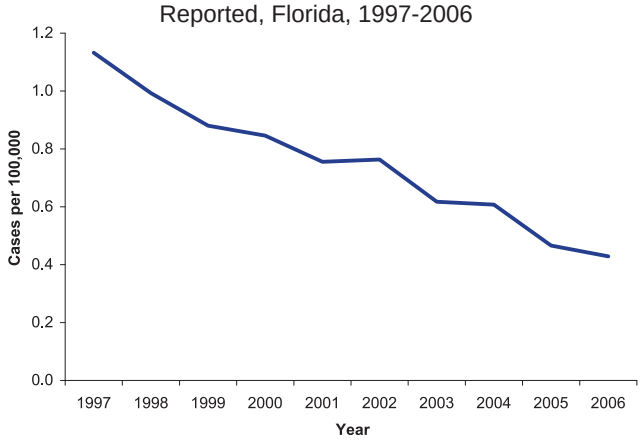
A. Zuger, E. Louie, R.S. Holzman, M.S. Simberkoff, and J.J. Rahal, "Cryptococcal Disease in Patients With the Acquired Immunodeficiency Syndrome. Diagnostic Features and Outcome of Treatment," *Annals of Internal Medicine*, Vol. 104, 1986, pp. 234-240.

A. Lerche, N. Rasmussen, J.H. Wandall, and V.A. Bohr, *"Staphylococcus aureus Meningitis*: A Review of 28 Community Acquired Cases," Scandinavian Journal of Infectious Diseases, Vol. 27, No. 6, 1995, pp. 569-573.

Meningococcal Disease

Meningococcal Disease: Crude Data	
Number of cases	79
2006 incidence rate per 100,000	0.43
% change from average 5yr (2001-2005) incidence rate	- 32.8
Age (yrs)	
Mean	37.3
Median	30
Range	<1-89

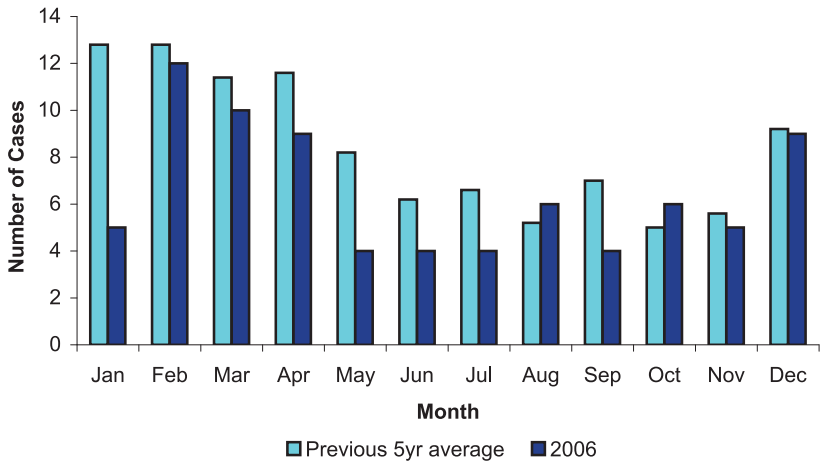
Figure 1.
Meningococcal Disease Incidence Rate by Year Reported, Florida, 1997-2006



Description

Meningococcal disease includes both meningitis and septicemia due to the bacteria *Neisseria meningitidis*. There are many different serogroups of *Neisseria meningitidis* present around the world. The common ones in the U.S. include A, B, C, W135, and Y. Symptoms may include fever, headache, and stiff neck in meningitis cases, and sepsis and rash in meningococcemia. The incubation period is 3-4 days with a range of 2-10 days. It is mainly transmitted through direct contact with large droplet respiratory secretions from patients or asymptomatic carriers. Although risk in close contacts is increased over the background level, it is still very low. Clusters of cases are rarely seen, and community outbreaks are even more uncommon. Meningitis and septicemia are epidemiologically identical, and present the same risk of secondary cases.

Figure 2. Meningococcal Disease by Month of Onset, Florida, 2006

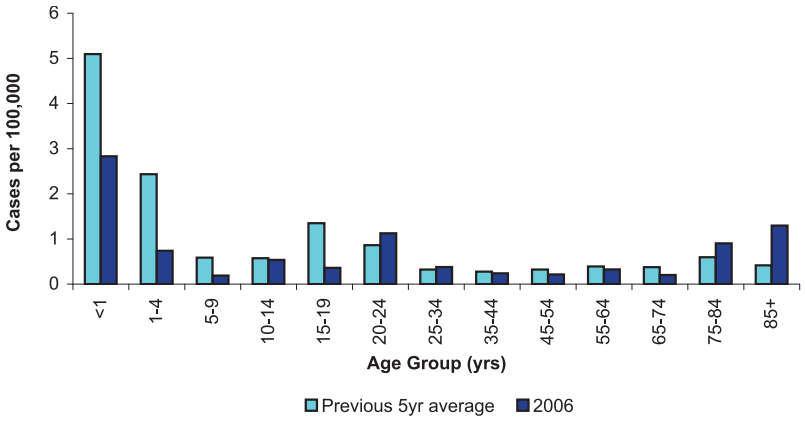


Disease Abstract

The reported incidence rate for meningococcal disease has declined gradually over the past 10 years (Figure 1), and in 2006, is about one-third of what it was 10 years ago. In 2006, there was a 32.8% decrease in incidence compared to the average incidence from 2001 to 2005. A total of 79 cases were reported in 2006, of which 92.4% were classified as confirmed cases. There is a general increase in

cases in late fall and early winter (Figure 2). This may be due, in part, to social gatherings as well as staying indoors in the fall and winter months. There were no cases reported as outbreak-related. Nine cases resulted in death.

Figure 3. Meningococcal Disease Incidence Rate by Age Group, Florida, 2006



The highest incidence rates continue to occur in infants <1 year of age. There are no vaccines approved for use in those <2 years of age. In 2006, the incidence rates were lower than the previous 5-year average in all age groups, except those aged 20-24, and in those older than 75, where the incidence rate was slightly increased (Figure 3). In 2006, the incidence rates in non-white males are greater than those in white males (Figure 4). Sixty-four of the 79 cases had specimens submitted to the Bureau of Laboratories for serogrouping (Table 1).

Figure 4.
Meningococcal Disease Incidence Rate by Race and Gender, Florida, 2006

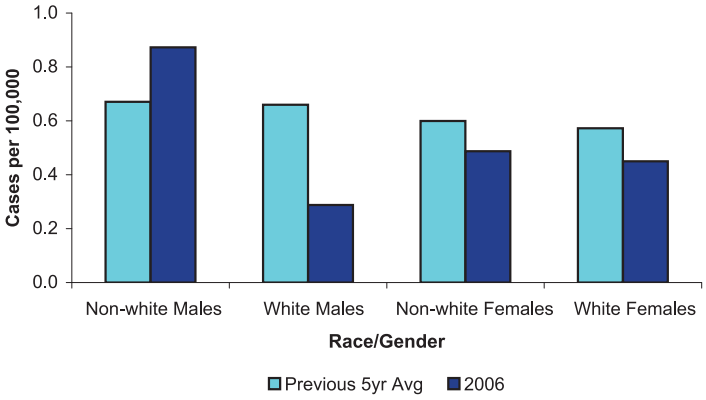


Table 1 Frequency of *Neisseria meningitidis* Serogroups

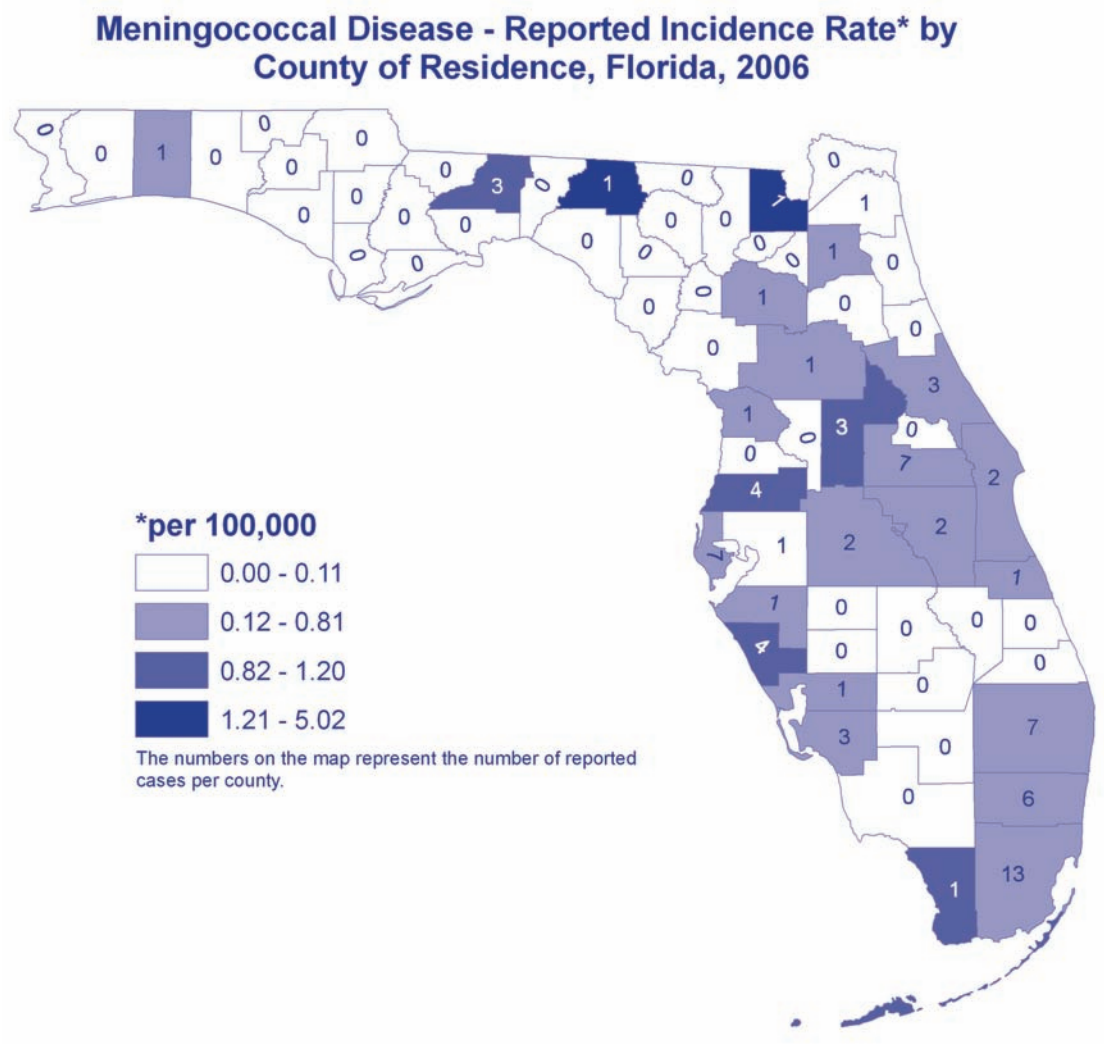
Serogroup	Number of Cases
Group B	14
Group C	19
Group Y	24
Group Z	1
Group W135	2
Non-Groupable	1
Non-viable	2
No org Isolated.	1
Total	64

Meningococcal disease was reported in 25 of the 67 counties in Florida. Counties in the central region, southern region, and scattered counties in the northwest areas of Florida reported the highest incidence rates.

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



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

Centers for Disease Control and Prevention, "Control and Prevention of Meningococcal Disease and Control and Prevention of Serogroup C Meningococcal Disease: Evaluation and Management of Suspected Outbreaks; Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *Morbidity and Mortality Weekly Report*, Vol. 46, No. RR5, 1997, pp. 1-21.

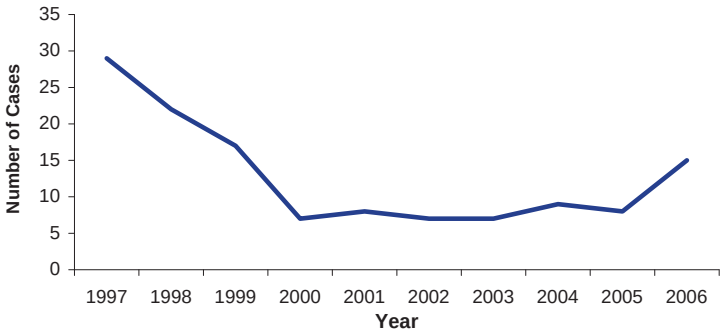
Additional Resources

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

Mumps

Mumps: Crude Data	
Number of cases	15
2006 incidence rate per 100,000	0.08
% change from average 5yr (2001-2005) incidence rate	76.4
Age (yrs)	
Mean	17
Median	8
Range	1-68

Figure 1.
Mumps Cases by Year Reported, Florida, 1997-2006



Description

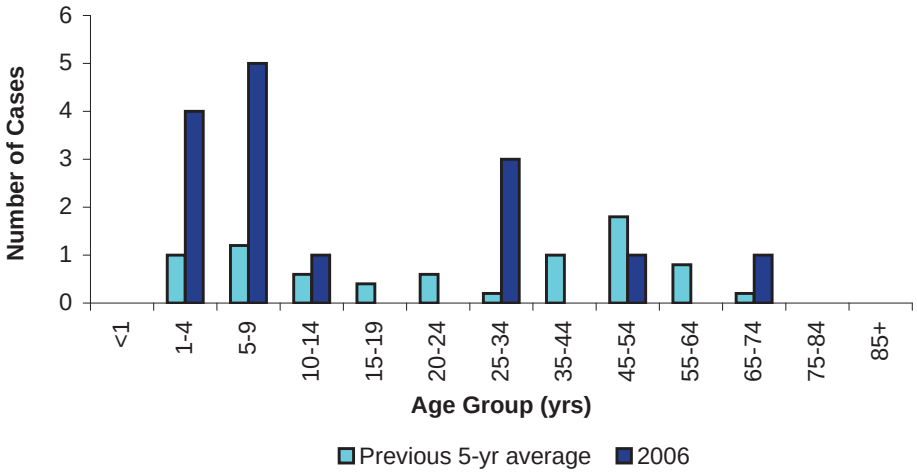
Mumps is a viral illness caused by a paramyxovirus of the genus *Rubulavirus*. The classic symptom is parotitis, commonly bilateral, which develops an average of 16-18 days after exposure. Nonspecific symptoms including myalgia, anorexia, malaise, headache, and lowgrade fever may occur days before parotitis. Mumps can cause acquired sensorineural hearing loss in children; incidence is estimated at five per 100,000 cases. In the U.S., mumps-associated encephalitis occurs in <2 per 100,000 cases, and approximately 1% of encephalitis cases are fatal. Adults have a higher risk for mumps meningoencephalitis than children. Orchitis occurs in up to 38% of cases in post-pubertal males, but rarely causes sterility. Mastitis has been reported in 31% of female patients >15 years of age. Other rare complications are oophoritis and pancreatitis. Permanent sequelae and death are rare. Mumps infection in the first trimester of pregnancy may result in fetal loss, but there is no evidence that mumps during pregnancy causes congenital malformations.

Disease Abstract

The statewide incidence rate for laboratory-confirmed and probable cases for all ages was 0.08 per 100,000 population. The ages ranged from 1 to 68 years of age. There were eight laboratory-confirmed cases of mumps reported in 2006, of which three cases were imported from outside the U.S. Of the laboratory-confirmed cases, only one, a 27-year-old, was hospitalized. Two of the cases had received one dose of mumps vaccine; the other six cases had no doses or unknown immunization status. The eight laboratory-confirmed cases represent a slight increase from the six cases in 2005. The incidence was not significantly changed from 2000 until 2005. However, in 2006 there was a significant increase

in cases in the U.S., especially in the college-aged population. The State Laboratory expanded testing for mumps, but none of the Florida cases were shown to be directly linked to cases in any other states. Additionally, seven probable cases were reported with no laboratory confirmation, all of whom had a history of one or more doses of mumps vaccine. None of the probable cases were imported from outside the U.S.

Figure 2. Mumps Cases by Age Group, Florida, 2006



Prevention

Vaccination with two doses of mumps (preferably MMR) vaccine is recommended (the first dose for children after their first birthday and the second after the fourth birthday). Proof of MMR is required for entry and attendance in childcare facilities, family daycare homes, and pre-kindergarten through twelfth grade. Many colleges in Florida also require the mumps vaccine 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*, 3rd ed., 2002, p. 7-1, http://www.cdc.gov/vaccines/pubs/survmanual/default.htm.

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

Neonatal Infections

The term “neonatal infections” includes reported cases of chlamydia, gonorrhea, syphilis, herpes simplex virus (HSV), and human papillomavirus (HPV) diagnosed in infants up to six months of age. This age range was used in order to capture delayed identification of chlamydial pneumonia and human papillomavirus. Reporting parameters for neonatal infections were published in November 2006. Additionally, neonatal syphilis includes cases based on the surveillance definition.

Insufficient prenatal care is the primary risk factor associated with neonatal infections. In 2006, there were 63 infants reported with neonatal infections. This number includes infants born in 2006 and was a 5% increase from 2005. Figure 14 shows the total number of neonatal infections from 2002 to 2006.

Figure 14. Reported Neonatal Infections by Year, Florida, 2002-2006

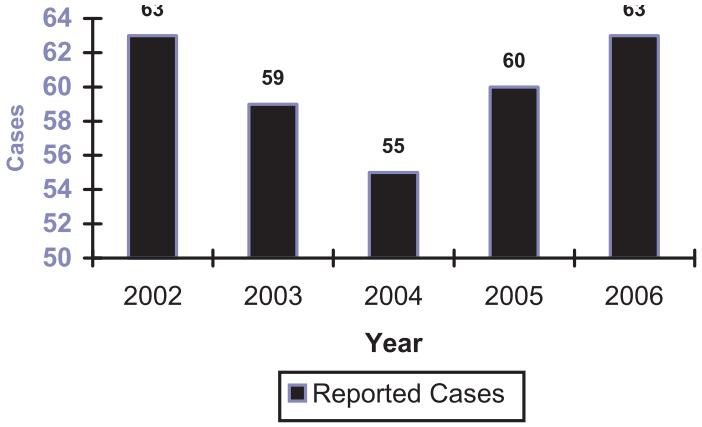
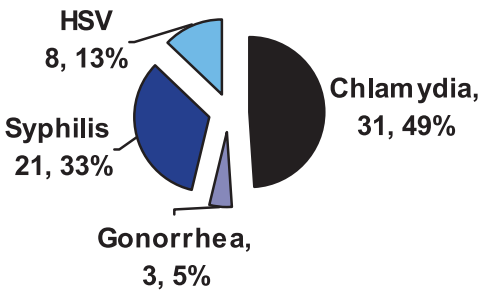


Figure 15. Reported Neonatal Infections by Disease, Florida, 2006



The 2006 breakdown of neonatal infections by disease is shown in Figure 15. During 2006, there were no cases of HPV reported. Nearly half (49.2%) of all neonatal infections were caused by chlamydia.

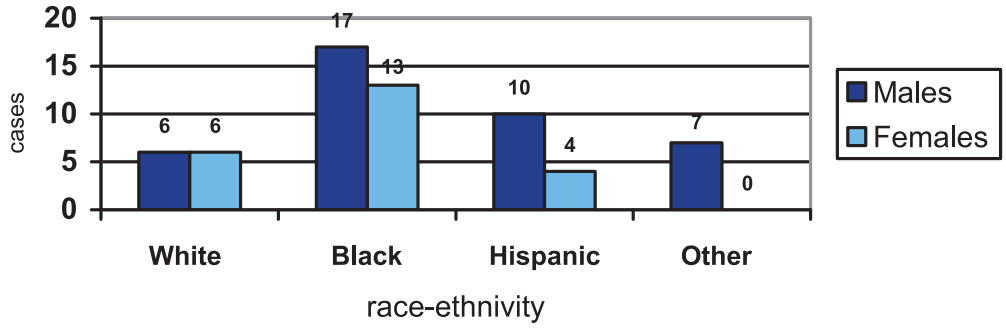
The county with the highest number of neonatal infections in 2006 was Dade County (Table 2), followed by Duval and Hillsborough Counties.

Table 2. Counties with the Most Neonatal Infections, Florida, 2006.

Rank	County	Cases
1	Dade	12
2	Duval	10
3	Hillsborough	7

Non-Hispanic black neonates accounted for 47.6% of the neonatal infections in 2006 (Figure 16). Non-Hispanic white neonates accounted for 19.0% of the infections. Hispanic (white or black) neonates accounted for 22.2% of the infections. Neonates in other or unidentified racial-ethnic groups accounted for 11.1% of the infections.

Figure 16. Reported Neonatal Infections by Race-Ethnicity and Gender, Florida, 2006



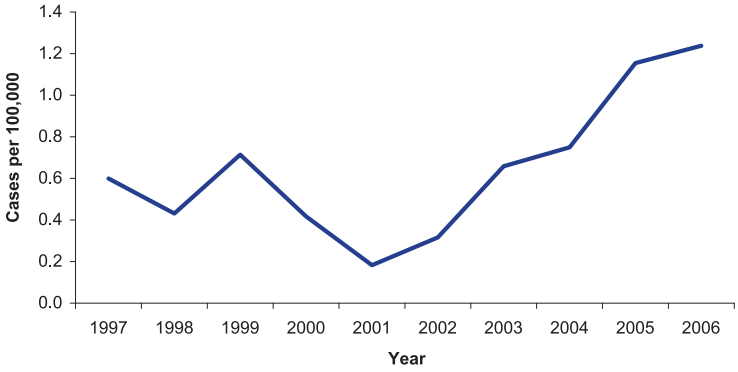
References

Florida Department of State, Florida Administrative Weekly and Florida Administrative Code, Chapter 64D-3, July 30, 2007, https://www.flrules.org/gateway/ChapterHome.asp?Chapter=64D-3.

Pertussis

Pertussis: Crude Data	
Number of cases	228
2006 incidence rate per 100,000	1.24
% change from average 5yr (2001-2005) incidence rate	+ 98.5
Age (yrs)	
Mean	14.6
Median	7
Range	<1-90

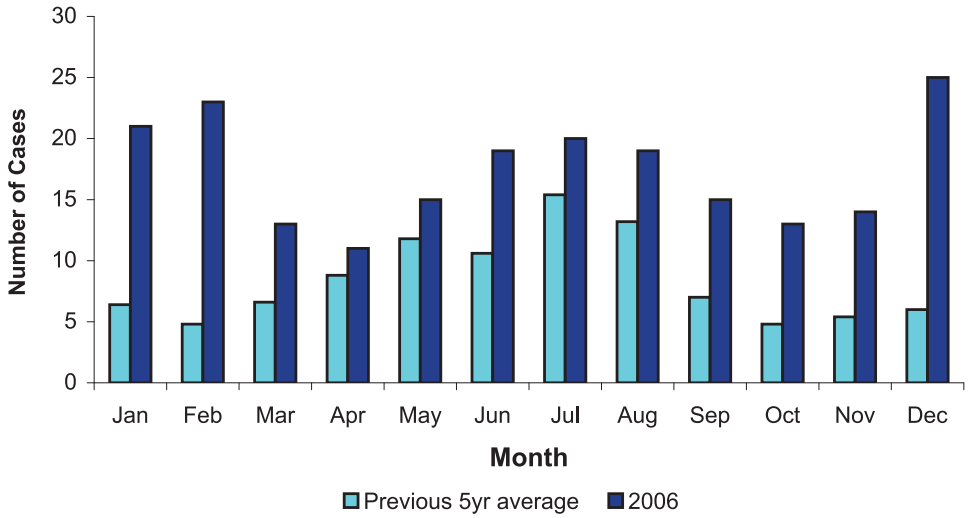
Figure 1.
Pertussis Incidence Rate by Year Reported, Florida, 1997-2006



Description

Pertussis, or whooping cough, is caused by the bacterium *Bordetella pertussis*. It is characterized by paroxysmal coughing followed by a characteristic inspiratory whoop. Pneumonia is the cause of most pertussis-related deaths. Other complications, though infrequent, can include: neurological complications, such as seizures and encephalopathy; and, secondary bacterial infections, such as otitis media, pneumonia, or sepsis. Conditions resulting from the pressure effects of severe paroxysmal coughing include pneumothorax, epistaxis, subdural hematomas, hernias, and rectal prolapse. Disease rates and risk of serious complications, including death, are highest among young children. Disease in adolescents and adults tends to be less severe, although there have been reports of apnea, rib fractures, and other complications.

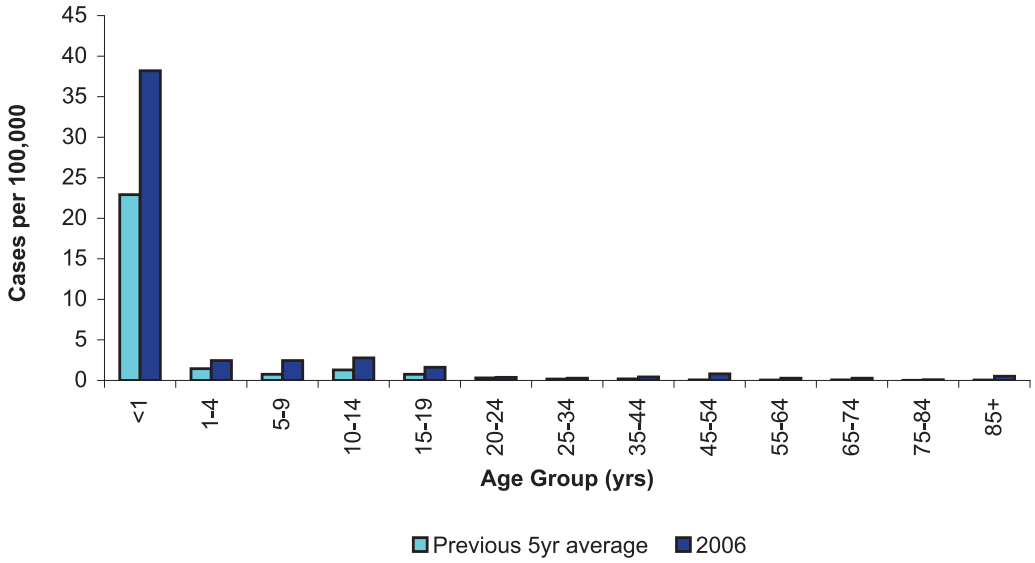
Figure 2. Pertussis by Month of Onset, Florida, 2006



Disease Abstract

Disease trends in Florida, and nation-wide, indicate that pertussis cases have increased significantly since 2001 (Figure 1). Case numbers went from 30 cases in 2001 (22 confirmed cases and 8 probable cases) to 228 cases in 2006 (121 confirmed cases and 107 probable cases). In the previous five years, most cases occurred during the summer months, but many of the 2006 cases were identified in January, February, and December (Figure 2). In the previous five years, pertussis cases were consistent between gender and race. In 2006, however, white males and females were identified in significantly greater numbers (Figure 4).

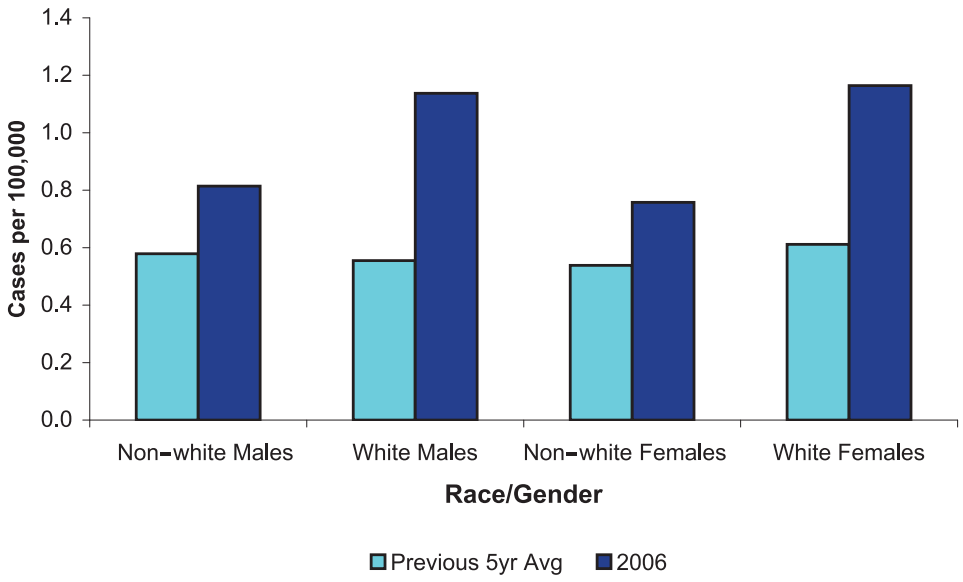
Figure 3. Pertussis Incidence Rate by Age Group, Florida, 2006



As in the previous five years, most pertussis cases were identified in infants and young children. The majority of cases were reported in infants <6 months of age, too young to have completed the vaccine series (Figure 3). In 2006, of the 121 confirmed cases, 87 were in children under seven years of age.

There were two deaths, both in Hispanic infants, one at 23 days old, and one at two months of age. In both cases, adult family members had a history of a cough lasting longer than 14 days.

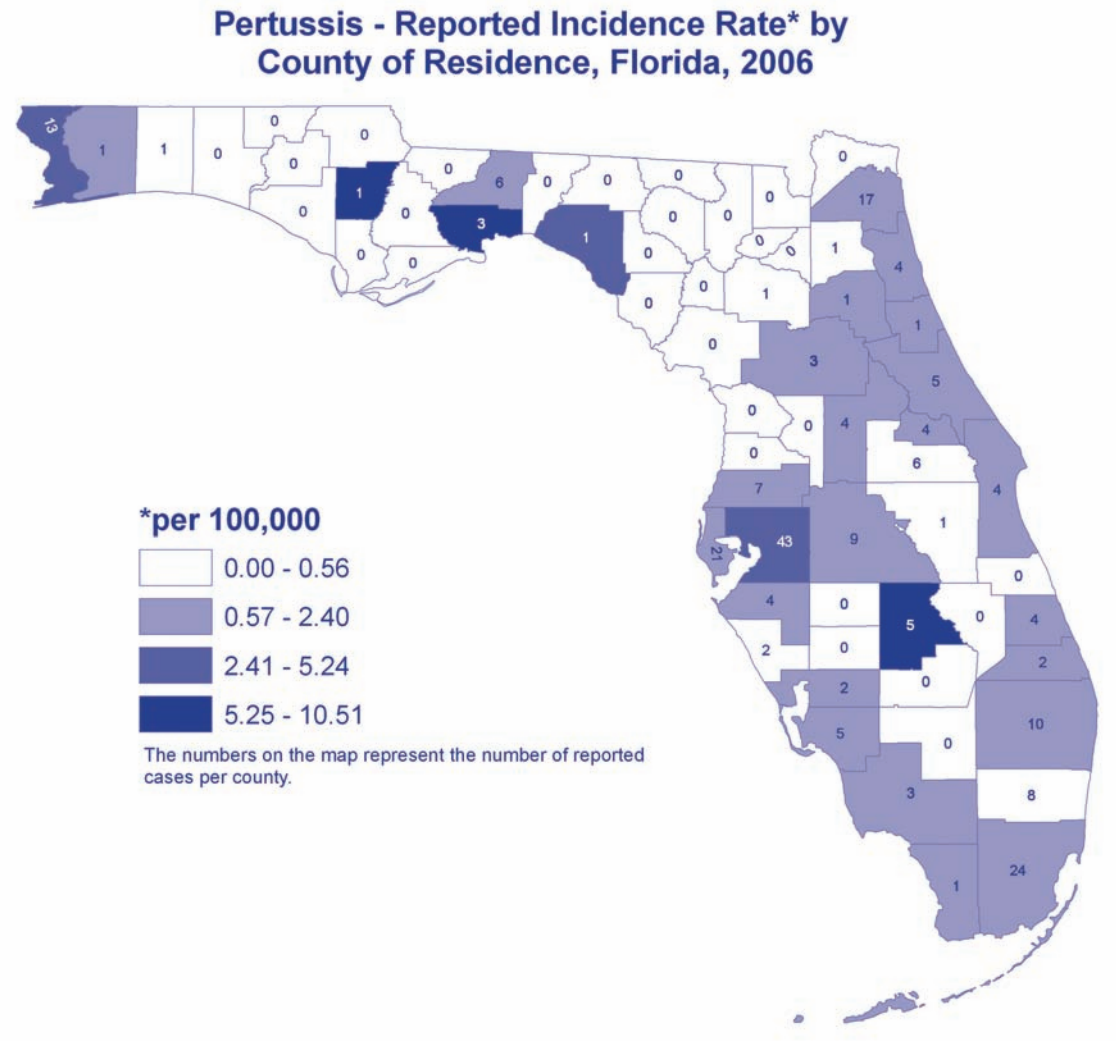
Figure 4. Pertussis Incidence Rate by Race and Gender, Florida, 2006



Pertussis was reported in 36 of the 67 of the counties in Florida. Counties in the northeast, central-east, southwest, and southeast 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 age 2, 4, 6, and 15–18 months, and 4-6 years. 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. Post-exposure antibiotic and vaccine prophylaxis of close contacts are the major outbreak control measures.



References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 3rd ed., 2002, p. 8-1, http://www.cdc.gov/vaccines/pubs/survmanual/default.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

Pesticide-Related Illness/Injury Morbidity Report, 1998-2005

The pesticide poisoning surveillance aggregate report is based on passive ascertainment of pesticide poisoning incidents recorded over a period of eight years, from 1998 to 2005. There were 1,196 cases collected from surveillance partners such as the Florida Poison Information Center Network and County Health Departments. Other reporting sources included exposed persons, public, media, and other non-traditional sources, namely fire departments and Emergency Response Services (EMS). A case was

defined as a person who experienced acute adverse health effects resulting from pesticide exposure. Cases were classified based on the exposure evidence, adverse health effects, and pesticide toxicity per National Institute of Occupational Safety and Health/Sentinel

Event Notification System for Occupational Risk (NIOSH/SENSOR) case definition guidelines. The three categories of cases included in this report were definite, probable, and possible. For definite cases, evidence of the exposure and the health effects are confirmed by medical and/or laboratory evidence. Probable cases are those where the exposure or health effects were verified by medical or laboratory evidence. Possible cases are verified by subjective evidence only which could be derived from the ill/injured person's testimony.

For the years 1998-2005, a majority of the cases were reported from Manatee (147, 12.3%), Miami-Dade (114, 9.5%), and Palm Beach (75, 6.3%) counties. A large number of cases (107) were reported from Manatee County in 1999. Of these 107 cases, more than 50% of the cases reported were a result of a single incident due to aerial application of Malathion to control medfly infestation. The fluctuation in the number of cases reported for counties over the period reviewed may have been influence by a lull in surveillance activities. For example, in 2000 and 2004, fewer cases were captured as one of the main surveillance partners was not reporting regularly to the program.

Additional Resources

Information on pesticides can be accessed through the Florida Department of Health at http://www.doh.state.fl.us/environment/community/pesticide/index.html

Plague

There were no cases of plague (*Yersinia pestis*) infection in Florida from 1997 through 2006. The last outbreak of plague in Florida was in Pensacola early in the 20th century. This gram-negative bacterial zoonosis causes sporadic cases of clinical disease in the western U.S. Human cases can present with bubonic, septicemic, or pneumonic forms. Rodents are the reservoir. Natural transmission can be through direct contact of infectious material, aerosols, or inhalation, but vectoring by fleas is most common. Exposure to infected cats has resulted in pulmonary disease in veterinarians and veterinary staff. Transmission via the pulmonary form between humans poses the greatest risk for caregivers and medical professionals. Mortality in untreated plague cases is 60% for bubonic plague, and virtually 100% for the septicemic and pulmonary forms. Prompt initiation of antibiotic treatment is critical for successful treatment of septicemic and pulmonary forms. The plague bacterium is a CDC Select Agent due to the possibility of aerosol transmission, and its high mortality rate if treatment is delayed.

References

David L. Heyman (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 507.

Psittacosis

Description

Psittacosis is caused by the obligate intracellular bacterial pathogen *Chlamydophila* (formerly *Chlamydia*) *psittaci*. The organism is genetically and antigenically distinct from those in the genus *Chlamydia*. Birds are the primary reservoir although the disease has been reported in mammals such as cattle, goats, sheep, and cats. Although any avian species can be infected, imported or smuggled birds, psittacines (parrots, love birds, cockatiels, macaws, etc.) are most likely to be infected, less often poultry (turkeys), pigeons, canaries and sea birds. Infected birds can appear clinically normal, and can shed the infectious agent intermittently, particularly when stressed. Organisms are shed in feces and bodily secretions. Transmission is generally through inhalation of infectious fecal dust, secretions, or feather dust. Incubation is usually 1-4 weeks. Many human infections are mild and may go undetected. Clinical symptoms are variable and include fever, headache, rash, myalgia, chills, and upper or lower respiratory disease. Splenomegaly may occur, and encephalitis, myocarditis, and thrombophlebitis are occasional complications. Disease can be severe, particularly in the elderly, and relapses can occur. Outbreaks can occur in pet shops, homes, aviaries, and pigeon lofts. Those who work with or own birds, or who work in a laboratory, are at increased risk.

Disease Abstract

There were 19 cases reported between 1997 and 2006. Nine cases were classified as confirmed, and 10 as probable, including one probable case in 2006. Two cases were classified as outbreak-associated, one in 1997 and one in 2002. The single probable case in 2006 involved a 47- year old white non-Hispanic female who became ill 14 days after purchasing a cockatiel. The cockatiel died four days before the patient became sick. Of the 19 total cases, 15 were female (79%) and 4 were male (21%). Most were white non-Hispanic (14, 74%), followed by white Hispanic (2, 11%), and white unknown (2, 11%). There was one case of unknown ethnicity (5%). Age range was from 15 to 79 years old, with median age 45 years.

Prevention

Education of bird owners, and those working with birds, on mode of transmission, links between stress and shedding, proper cleaning and disinfection, and clinical symptoms in humans is important for prevention. Involving veterinarians and public health personnel when outbreaks in avian species occur will help assure appropriate infection control and disinfection of facilities or homes.

References

David L. Heymann (ed.), *Control of Communicable Diseases Manua*l, 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

Information on psittacosis in Florida can be obtained at the Florida Department of Health

website at http://www.doh.state.fl.us/Disease_Ctrl/epi/htopics/popups/psi.htm
Additional information can be found at the Centers for Disease Control and Prevention website at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/psittacosis_t.htm

Q Fever

Description

Q Fever is a zoonotic disease caused by the rickettsia *Coxiella burnetii*. It has a global distribution and is resilient in the environment. The most common natural reservoirs are sheep, goats, and cattle, but rodents and other animals can also harbor the agent. Ticks are thought to play a role in maintaining animal reservoirs, but are not believed to be important in transmission to humans. The agent is shed in animal birthing fluids and may be shed in milk. Transmission to humans occurs primarily through aerosols generated during parturition or from contaminated dust, which can carry infectious particles a half-mile or more, making identification of exposure difficult in some cases. Transmission can also occur through direct contact with contaminated material or through ingestion of unpastuerized dairy products. The infectious dose is very low and a single organism may lead to infection. Of those exposed, 60% can be asymptomatic. Two forms of disease can be seen, acute and chronic. Acute disease generally occurs 2-4 weeks after exposure and is associated with chills, fever, headache, weakness, and other nonspecific signs. Hepatitis is present in 40-60% of acute cases. The acute form of the disease is rarely fatal and is usually self-limiting. The chronic form occurs in approximately 1% of patients with acute illness, and can occur months to years later. Chronic disease often manifests as endocarditis and can be fatal if untreated. Patients with pre-existing cardiac conditions are at greatest risk for developing chronic disease. Hepatitis can also be seen in chronic infections. Relapses can occur even with treatment of chronic cases. Q Fever is a CDC Select Agent and has potential for use as a bioweapon.

Disease Abstract

From 1997 through 2006 there were 20 cases of Q Fever reported in Florida, 10 probable and 10 confirmed. Eight of these cases (40%) were reported in 2006, five of which were classified as probable and three as confirmed. Gender distribution was six male (86%) and one female (14%) in 2006, compared to a 69% male and 31% female distribution for the previous five years. Six of seven cases (86%) were identified as white, one (14%) as unknown race in 2006, compared with 77% white, 8% white Hispanic, and 15% unknown for the previous five years. Age distribution for 2006 ranged from 30 to 68 years of age, with a median age of 65, compared with a range of 18-87 years of age, with a median age of 45 in the previous five years. Place of exposure was described as Florida in five cases and as unknown in two in 2006. Two of the Florida-acquired cases had histories of animal exposure in Kenya or military travel to Iraq and Kuwait. During the previous five years, six cases were designated as originating in Florida, six were of unknown origin, and one was imported from another state. Also of note was a “pseudoepidemic” of Q Fever that occurred in 2003 when a commercial laboratory misinterpreted results for a number of people exposed to an infected animal. Initial seroprevalence of 75% positive actually turned out to be 27% when corrected and in the end only a single individual was found to be actively infected with Q Fever, demonstrating the importance of laboratory quality control in diagnostics.

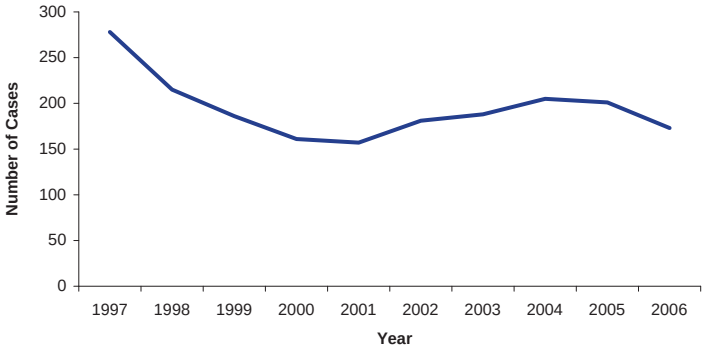
References

David L. Heyman (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 507.

Rabies

Rabies: Crude Data	
Number of cases	176
2006 incidence rate per 100,000	N/A
% change from average 5yr (2001-2005) incidence rate	- 5.9
Age (yrs)	
Mean	N/A
Median	N/A
Range	N/A

Figure 1.
Animal Rabies Cases by Year Reported, Florida, 1997-2006



Description

The rabies virus is a single-stranded RNA virus in the *Rhabdoviridae* family, and causes an estimated 65,000-87,000 human deaths worldwide annually. The virus can infect any mammal, but dogs are the primary urban reservoirs worldwide. Wild carnivores and bats are important reservoirs in rural areas. In the U.S., primary reservoirs include raccoons, skunks, foxes, bats, and coyotes. Geographically-specific virus strain variants circulate in these species, occasionally spilling out into other wild and domestic animal species. People are much more likely to be exposed to domestic animals than to rabid wildlife. Because of this, countries lacking an adequate canine vaccination program often have high numbers of associated human deaths.

The rabies virus is primarily transmitted through infective saliva into bites by an infected animal. Nervous tissue and fluid is also infective. Transmission through mucus membranes or a fresh cut in the skin is possible, but rare. Airborne transmission has been reported rarely in bat caves and laboratory settings. Virus can also be shed in milk. In recent years there have been several human cases involving organ transplants. In domestic animals, rabies virus can be shed for only a few days before clinical symptoms develop, but some wild animals, such as raccoons, may appear clinically normal and shed virus for months before developing clinical signs. The virus shedding period and vaccination efficacy is not established for many wild animals.

Incubation period varies from days to months, or possibly years, depending on species, immune status, and dose and route of exposure. Clinical signs are consistent with central nervous system disease and include behavioral changes. Animals may demonstrate furious and dumb forms of the disease before lapsing into a coma and dying. Although the virus is nearly 100% fatal in unvaccinated humans, timely and appropriately administered prophylaxis is uniformly preventive. Preventive vaccination in domestic

animals is also extremely effective. Unvaccinated animals are at greatest risk for infection, as are people working with or owning unvaccinated animals.

Disease Abstract

From 1997 through 2006 there was one human rabies case in Florida. The person was bitten by a dog in Haiti in 2004 and became ill after returning to Florida. The case was caused by a canine variant strain of rabies then circulating in Haiti. In 2006, post-exposure treatment was recommended for 1,229 individuals in Florida; there were no human cases reported in 2006.

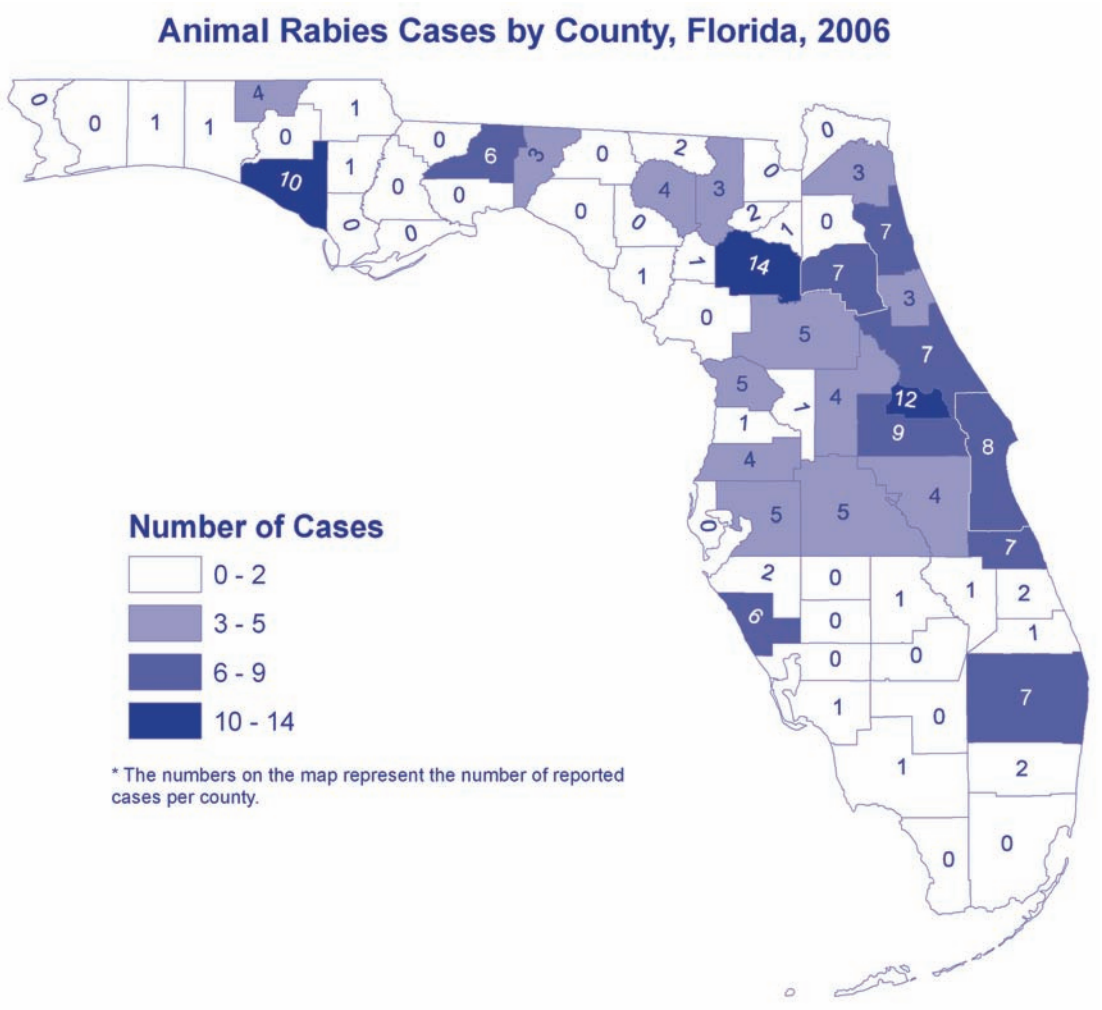
Rabies is endemic in the raccoon and bat populations in Florida, and frequently spills out into other animal populations. Laboratory testing for animal rabies is only done when animals are involved in rabies exposures, and the data do not necessarily correlate the true prevalence of rabies in these animal species. Between 1997 and 2006, a total of 1,948 animals were found to be rabid with an average of 194.8 rabid animals per year. Of the 3,601 animals tested at the state lab in 2006, there were 176 confirmed rabid animals, representing a 5.9% decrease from the previous 5-year average. The decrease could signify a cyclical trough in virus circulation in the raccoon population, or successful public education to avoid contact with wild animals. No cases were identified as being part of outbreaks. In 2006, rabid animals were found in 44 of 67 counties in Florida. Three counties reported ten or more cases: Alachua (14), Bay (10), and Seminole (12). Cases were reported in each month with peaks in October (19), March (19), and June (18).

Raccoons once again accounted for the majority of cases (111, 63%), followed by foxes (27, 15%), bats (20, 11%), and cats (10, 18%). Few cases were reported in other terrestrial wildlife (1 bobcat, 1 skunk, and 1 otter). Since 1997, rabid cats have continued to outnumber rabid dogs, though rabies vaccination is compulsory for both. In 2006, three horses and two dogs were found to be rabid. Testing at the Bureau of Laboratories demonstrates that terrestrial rabies in Florida is all due to the raccoon variant.

Prevention

During 2006, the Florida Rabies Advisory Committee revised the rabies guidebook to provide information for county health departments and others involved in rabies control and prevention. Other preventive measures include vaccination of pets and at-risk livestock, avoiding direct human and domestic animal contact with wild animals, educating the public to reduce incidence of stray and feral animals, supporting animal control in efforts to reduce feral and stray animal populations, bat-proofing homes, and providing pre-exposure prophylaxis for high risk professions, such as animal control and veterinary personnel, laboratory workers, and those working with wildlife. Pre-exposure prophylaxis should also be considered for those traveling extensively where rabies is common in domestic animals. Oral bait vaccination programs for wildlife are possible in some situations. These programs can be effective, but require careful advance planning, and substantial time and financial commitments.

Note: Due to data extraction discrepancies discovered late in 2007, the true number of animal rabies cases in 2006 varies slightly from the tallies provided in the text and the 2007 state rabies guide. The actual number of rabid animals detected in 2006 was 173, with total of rabid bats 21, total of rabid horses 2, and total of rabid raccoons 108. All other tallies are listed correctly.



References

Florida Rabies Advisory Committee, *Rabies Prevention and Control in Florida, 2006*, Florida Department of Health, Bureau of Community Environmental Health, 2006.

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

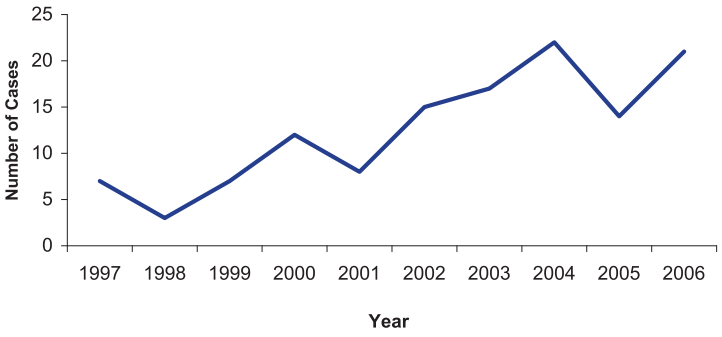
Disease information is available from the Florida Department of Health website at http://www.doh.state.fl.us/Environment/community/rabies/rabies-index.html

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

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever: Crude Data	
Number of cases	21
2006 incidence rate per 100,000	0.11
% change from average 5yr (2001-2005) incidence rate	+ 25
Age (yrs)	
Mean	51.2
Median	61
Range	9-83

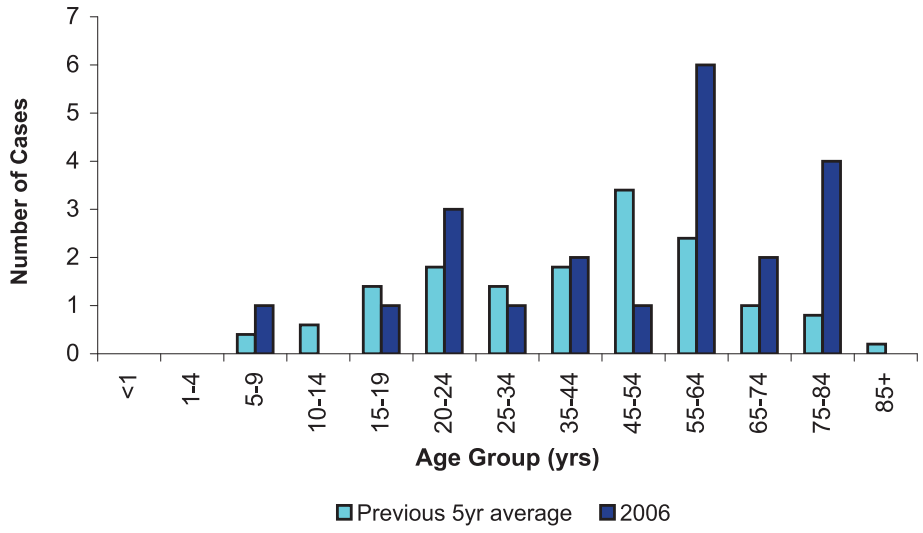
Figure 1.
Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 1997-2006



Description

Rocky Mountain spotted fever (RMSF) is caused by infection with the intracellular coccobacillary bacteria, *Rickettsia rickettsi*i, following tick exposure. An estimated 90% of the thousand rickettsial disease cases that occur annually in the U.S. are RMSF. The principal tick vectors in Florida are the dog tick (*Dermacentor variabilis*) and the Lone Star tick (*Amblyomma americanum*). A tick bite may or may not be apparent. Malaise, muscle pain, headache, and chills are common. In most cases a mild febrile illness develops after an incubation period of a few days to two weeks. About one-half of the cases also develop a maculo-papular rash that appears first on the extremities, and spreads to the trunk.

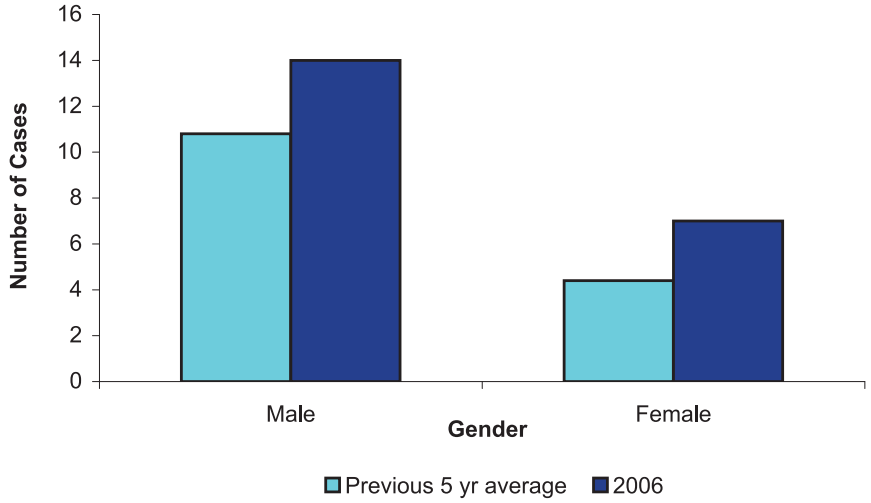
Figure 2. Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2006



Disease Abstract

The number of RMSF cases reported annually has increased since 1997 (Figure 1). The disease tends to affect adults more than young children or the elderly, though in 2006, there were more cases reported in those age 55+ in comparison to the previous 5-year average (Figure 2). Cases are reported more often in males than in females, both in 2006, and during the previous five years (Figure 3).

Figure 3. Rocky Mountain Spotted Fever Cases by Gender, Florida 2006



In Florida, cases of RMSF are reported year-round, though peak transmission occurs during the summer months. Of the cases reported between 1997 and 2006, 74% acquired the disease in Florida, 17% acquired the disease in another U.S. state, 2% acquired the disease in another country, and travel history for the remaining cases is unknown.

Prevention

Effective antibiotic therapy is available for RMSF, though 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 upon return from potentially tick-infested areas. If a tick is found, it should be removed as soon as possible. Controlling tick populations in the yard and on pets can also reduce the risk of disease transmission.

References

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

Resources

Additional information on RMSF and other arthropod-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online http://www.doh.state.fl.us/environment/community/arboviral/pdf_files/UpdatedArboguide.pdf

Disease information is also available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm

Rubella

Description

Rubella is a viral illness caused by a togavirus of the genus *Rubivirus* and is characterized by a mild, maculopapular rash. The rubella rash occurs in 50%-80% of rubella-infected persons. A 1-5 day prodrome of low-grade fever, headache, malaise, mild coryza, and conjunctivitis may occur, with adults likely to experience more of the symptoms. Postauricular occipital, and posterior cervical lymphadenopathy is characteristic, and precedes the rash by 5-10 days. Arthralgia or arthritis may occur in up to 70% of adult women with rubella. Rare complications include thrombocytopenic purpura and encephalitis.

Disease Abstract

In 2006, there was one laboratory-confirmed, imported case of rubella. A 36-year-old employee on a foreign cruise line was identified during an investigation of rash illness. The county health department, in partnership with the Bureau of Immunization and Miami Quarantine, provided 1,152 combined measles-mumps-rubella (MMR) doses on the cruise line in order to prevent further spread among the crew. The employee was confined to the ship, and there were no known Florida cases.

Prevention

Live attenuated rubella virus vaccine, given as MMR, is recommended at 12-15 months of age, with dose two recommended at 4-6 years of age, unless contraindicated. Laboratory confirmation of disease is critical, since clinical diagnosis of rubella is unreliable and should not be considered in assessing immune status.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 3rd ed., 2002, p. 8-1, http://www.cdc.gov/vaccines/pubs/survmanual/default.htm.

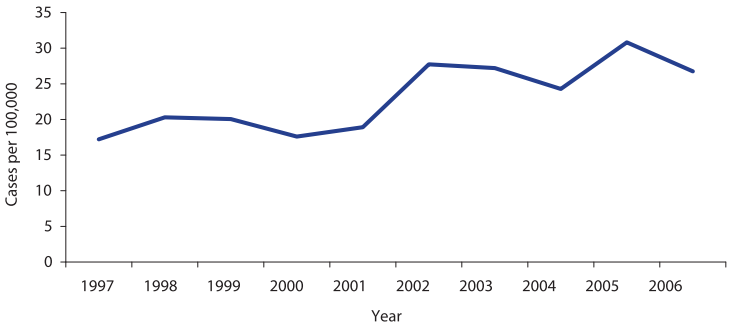
Additional Resources

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

Salmonellosis

Salmonellosis: Crude Data	
Number of cases	4928
2006 incidence rate per 100,000	26.75
% change from average 5yr (2001-2005) incidence rate	+3.4
Age (yrs)	
Mean	22
Median	7
Range	<1-105

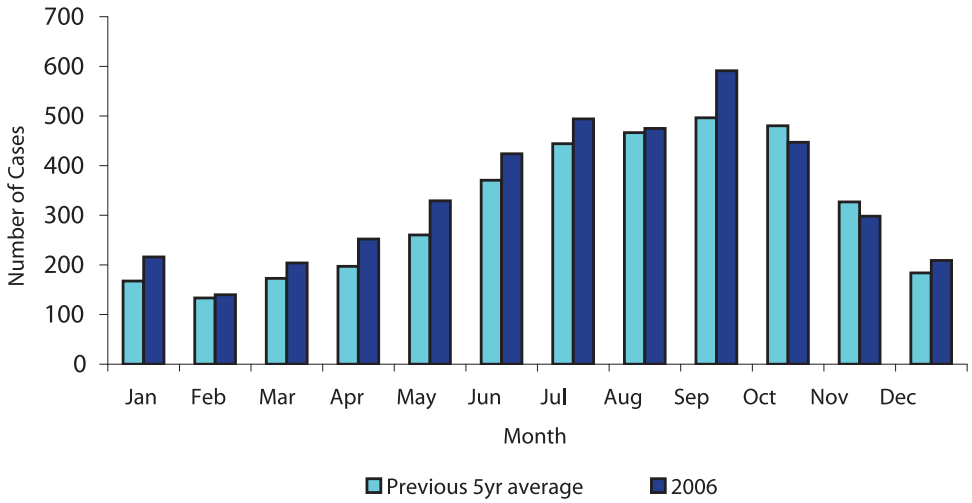
Figure 1.
Salmonellosis Incidence Rate by Year Reported,
Florida, 1997-2006



Description

Salmonellosis is an acute bacterial disease caused by gram-negative bacillus that causes gastroenteritis, and rarely causes systemic disease and other complications. The natural reservoirs for non-typhoid *Salmonella* species are found in association with both warm and cold-blooded animals, which then result in contamination of the environment. Animal sources of *Salmonella* include poultry, cattle, swine, rodents, and pet reptiles. The infection is most often transmitted by ingesting undercooked eggs and meat, contaminated food and water, or raw milk, and from infected pets or farm animals. There have also been known exposures through fresh-squeezed juices, sprouts, and tomatoes. Cross-contamination of surfaces contaminated by raw meat may also be a source of infection. The incubation period is generally 12-36 hours after exposure (range: 6-72 hours). Common symptoms include watery or bloody diarrhea, abdominal pain, fever, malaise, and nausea.

Figure 2. Salmonellosis by Month of Onset, Florida, 2006

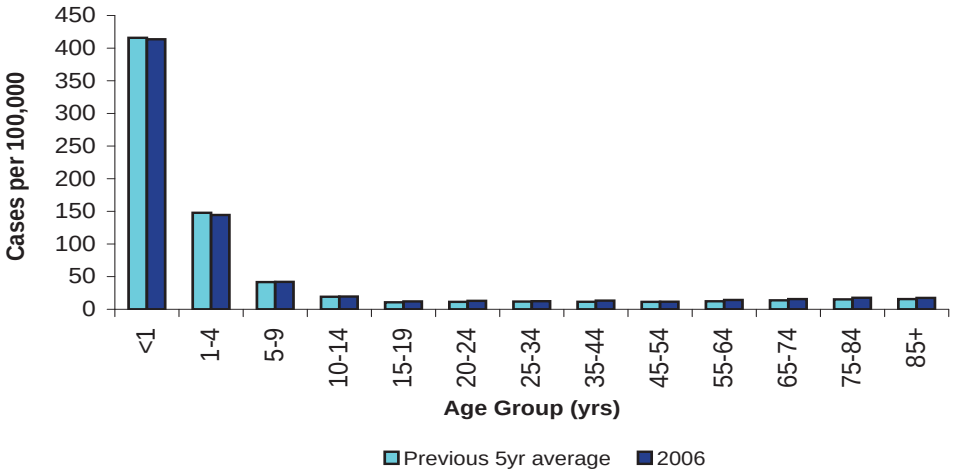


Disease Abstract

The incidence rate for salmonellosis has increased gradually over the last 10 years (Figure 1). In 2006, the incidence was 26.8 cases per 100,000 population, a decrease from the 2005 peak of 30.8 cases

per 100,000 population. A total of 4,928 cases were reported in 2006, of which 97.1% were classified as confirmed. The number of cases reported increased in the summer months. In 2006, the number of cases exceeded the previous 5-year average in all months except for October and November (Figure 2). Overall, 7.6% of the salmonellosis cases were classified as outbreak-related in 2006.

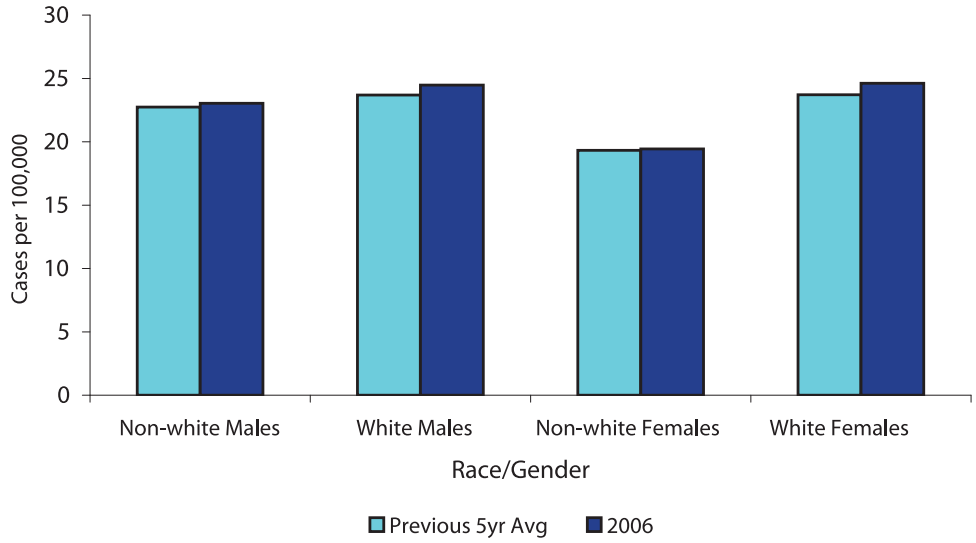
Figure 3. Salmonellosis Incidence Rate by Age Group, Florida, 2006



The highest incidence rates continue to occur among infants <1 year old, and children aged 1-4 years. In 2006, the incidence rates were very similar to the previous 5-year average (Figure 3). Males have a higher incidence than females (27.0 and 26.4 per 100,000, respectively), and in 2006, the incidence in both genders was higher than the previous 5-year average incidence. As has been the case in the past, incidence rates in whites are greater than those in nonwhites (Figure 4).

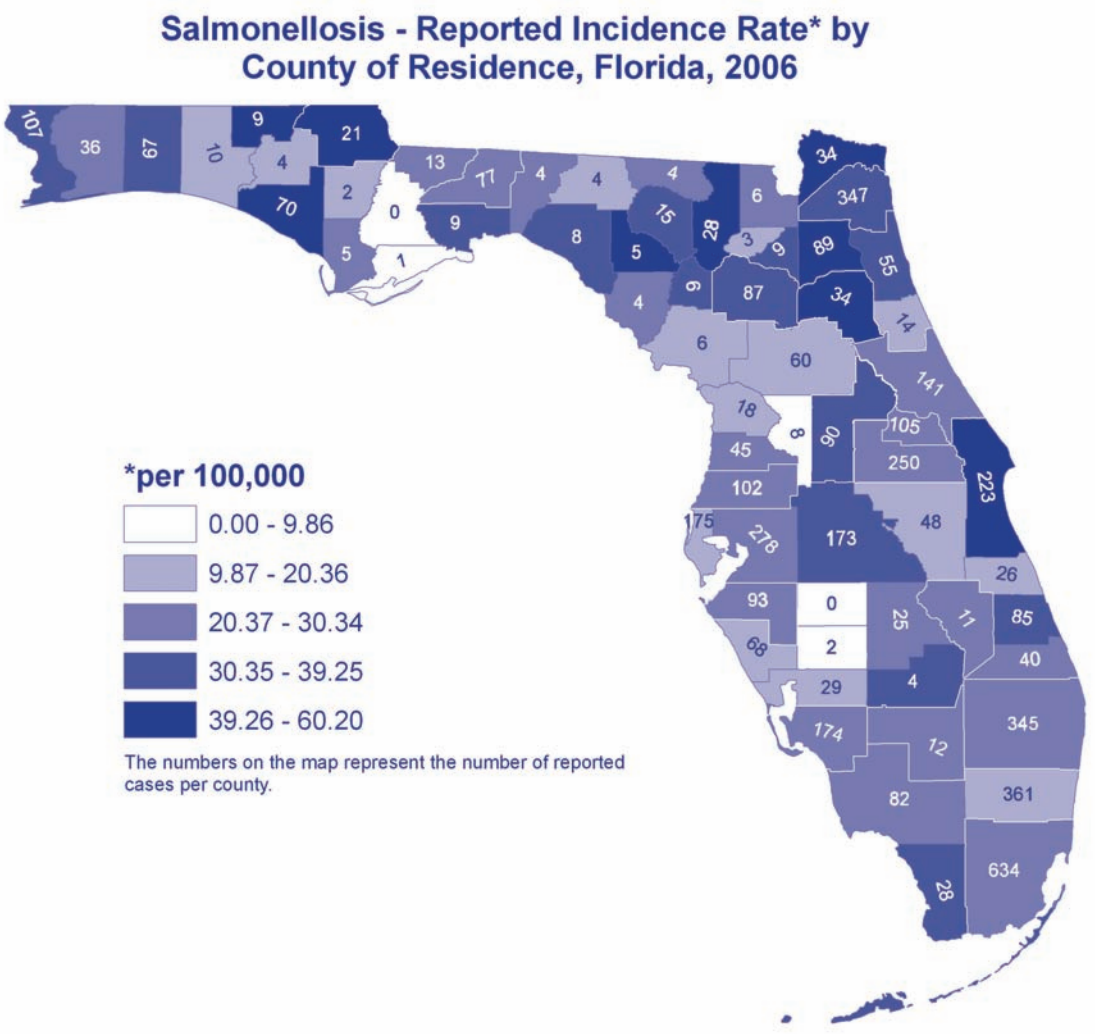
Salmonellosis was reported in 65 of the 67 counties in Florida. Rates are variable across the state, but appear to be consistently higher in the northeastern portion of the state.

Figure 4. Salmonellosis Incidence Rate by Race and Gender, Florida, 2006



Prevention

To reduce the likelihood of contracting salmonellosis, cook all meat products and eggs, 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 hands thoroughly before, during, and after food preparation. Do not allow the fluids from raw poultry or meat to drip on other foods. Consume only pasteurized milk, milk products, or juices. Additionally, it is important to wash hands after coming into contact with any animals or their environment.



References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 700.

Larry Pickering (ed.), et al., *2006 Red Book: Report of the Committee on Infectious Diseases*, 27th ed., Elk Grove Village, Illinois, American Academy of Pediatrics Press, 2006, p. 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 Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/salmonella/

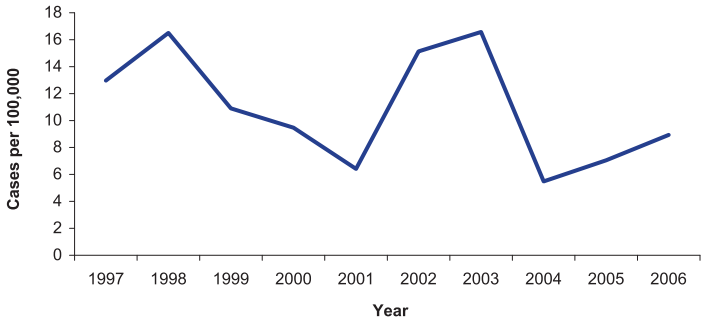
Disease information is also available from the U.S. Food and Drug Administration-Bad Bug book, online at http://www.cfsan.fda.gov/~mow/chap1.html

Centers for Disease Control and Prevention, "Outbreak of Salmonella Serotype Javiana Infections-Orlando, Florida, June 2002," *Morbidity and Mortality Weekly Repor*t, Vol. 51, No. MM31, p. 683.

Shigellosis

Shigellosis: Crude Data	
Number of cases	1646
2006 incidence rate per 100,000	8.93
% change from average 5yr (2001-2005) incidence rate	- 11.4
Age (yrs)	
Mean	12.6
Median	6
Range	<1-105

Figure 1.
Shigellosis Incidence Rate by Year Reported, Florida, 1997-2006



Description

Shigellosis is an acute bacterial disease caused by gram-negative rod-shaped bacteria that cause gastroenteritis. The natural reservoir for *Shigella* species is humans, although other primates may be infected. The infection is most often transmitted by the fecal-oral route either directly from an infected individual or by ingesting contaminated food and water. The incubation period is generally 2-4 days after exposure (range: 1-7 days). Common symptoms include watery or loose stools with or without blood, abdominal pain, and fever.

Disease Abstract

The incidence rate for shigellosis has varied over the last 10 years (Figure 1). Periodic community outbreaks involving childcare centers account for most of the variability. In 2006, there was an 11.9% decrease in comparison to the average incidence from 2001 to 2005. A total of 1,646 cases were reported in 2006, of which 82.1% were classified as confirmed. The number of cases reported increased in late summer and during the fall months. In 2006, the number of cases exceeded the previous 5-year average from July through October (Figure 2). Overall 33.4% of the shigellosis cases were classified as outbreak-related.

Figure 2. Shigellosis by Month of Onset, Florida, 2006

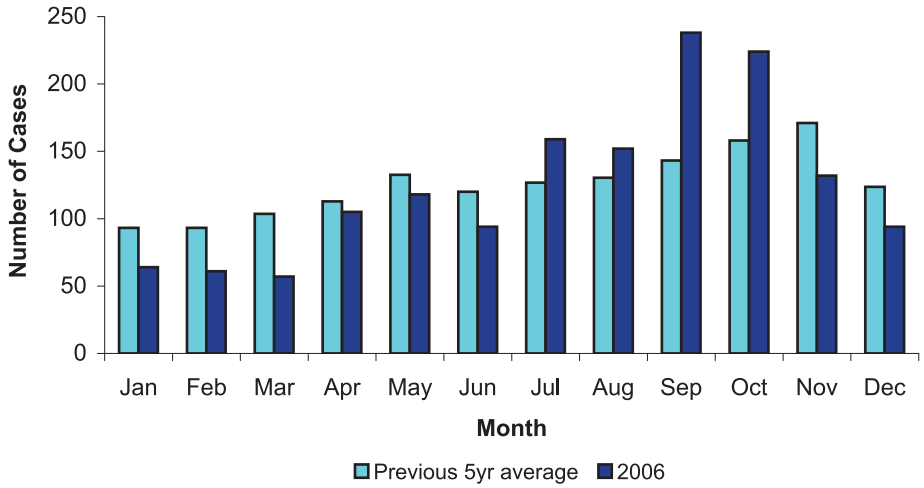
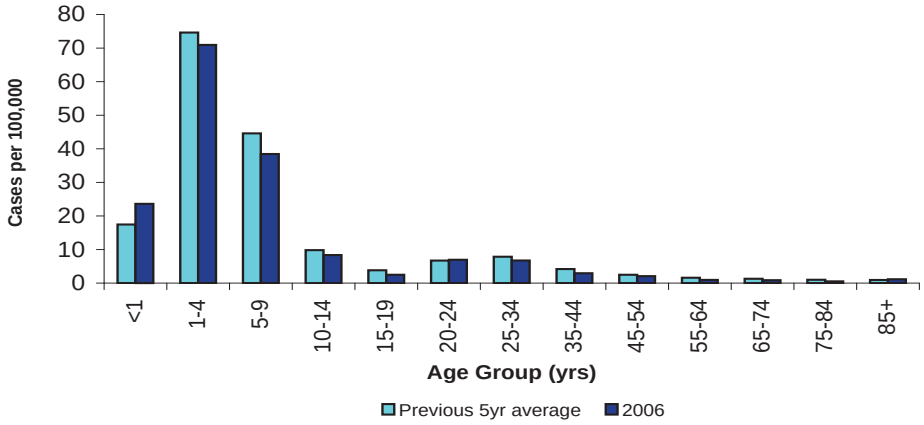


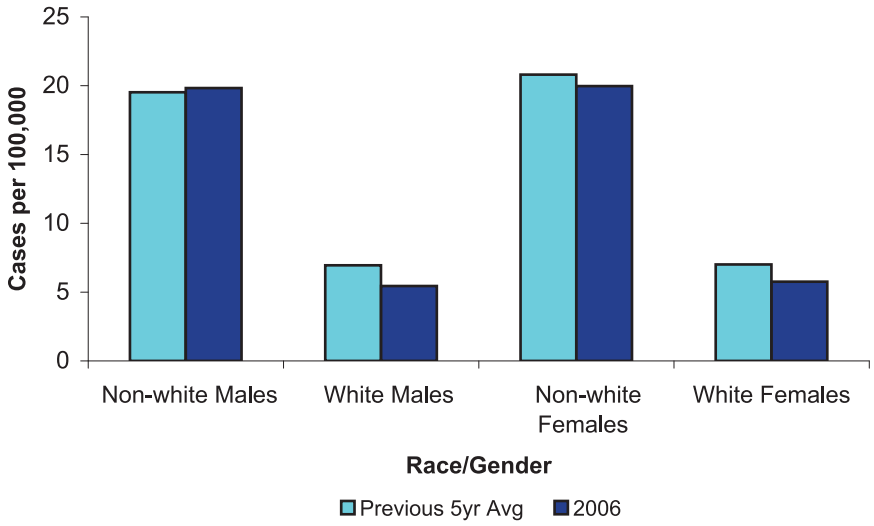
Figure 3. Shigellosis Incidence Rate by Age Group, Florida, 2006



The highest incidence rates continue to occur among children aged 1-4 years. In 2006, the incidence rates were similar to the previous 5-year average (Figure 3). Incidence rates were higher among females than males (9.1 and 8.7 per 100,000, respectively), and higher in non-whites than whites. The 2006 incidence in both genders was similar to the previous 5-year average incidence (Figure 4).

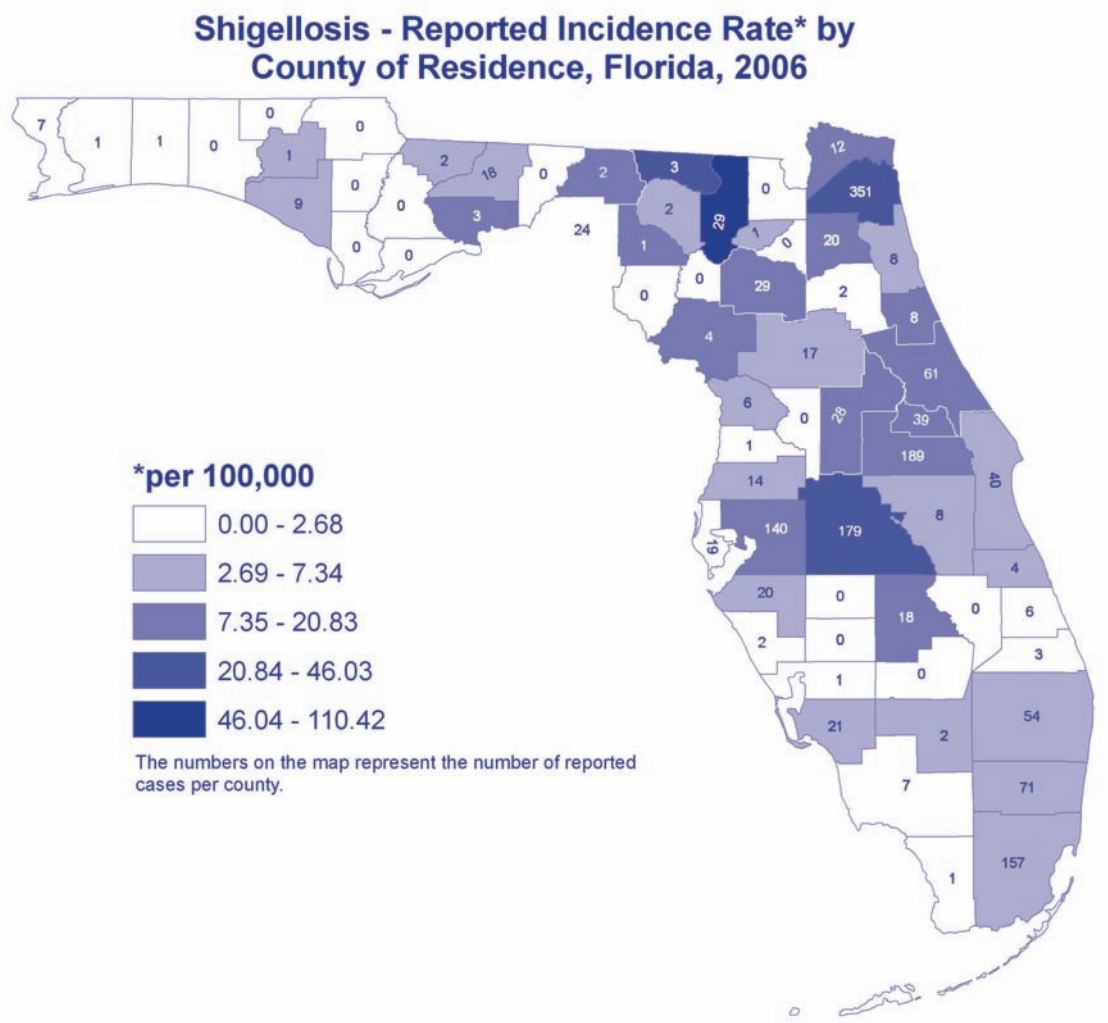
Shigellosis was reported in 50 of the 67 counties in Florida. Counties in the Panhandle reported the lowest rates.

Figure 4. Shigellosis Incidence Rate by Race and Gender, Florida, 2006



Prevention

To reduce the likelihood of contracting shigellosis it is important to practice good hand hygiene. Outbreaks in daycare centers are common and control may be difficult. The Department of Health has published outbreak control measures for childcare settings.



References

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

Larry Pickering (ed.) et al., *2006 Red Book: Report of the Committee on Infectious Diseases*, 27th ed., Elk Grove Village, Illinois, American Academy of Pediatrics Press, 2006, p. 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

Centers for Disease Control and Prevention (CDC) at
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/shigellosis_g.htm

U.S Food and Drug Administration-Bad Bug book, online
http://www.cfsan.fda.gov/~mow/chap19.html

Centers for Disease Control and Prevention, "Outbreak of Gastroenteritis Associated with an Interactive Water Fountain at a Beachside Park-Florida, 1999," *Morbidity and Mortality Weekly Report*, Vol. 49, No. 25, 2000, pp. 565-568, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4925a3.htm.

St. Louis Encephalitis

Description

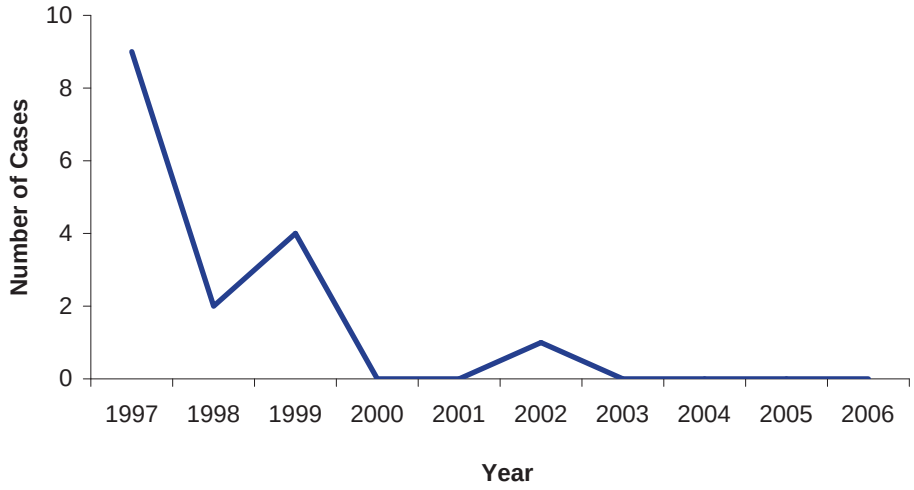
St. Louis encephalitis virus (SLEV), a flavivirus, was the most common mosquito-transmitted human pathogen in the U.S. prior to the introduction of West Nile virus (WNV). During the summer season, SLEV is maintained in a mosquito-bird cycle, with periodic amplification by birds and *Culex* mosquitoes. In Florida, the principal vector is *Cx*. *nigripalpus*, a ubiquitous species found throughout Florida. Infection with SLEV results in unapparent infection in a variety of birds and mammals with a resultant period of viremia that lasts a matter of days. Humans represent an incidental, dead-end host. The estimated incubation range is 4-21 days. The clinical spectrum of human SLEV infection includes unapparent infection, mild illness (fever with headache), aseptic meningitis, and encephalitis that can progress to coma and death. Less than 1% of SLEV infections in people are clinically apparent, and the vast majority of infections remain undiagnosed. Encephalitis, especially that progressing to coma and death, is more common in the elderly.

Disease Abstract

A large SLE outbreak occurred in the Tampa Bay area in 1959, 1961, and 1962, resulting in over 315 cases, and 55 deaths. Another outbreak in 1977 involved 20 counties, 110 cases, and 8 deaths. The most recent large outbreak occurred in 1990, with 223 cases and 11 deaths, in 28 counties. The case fatality rate in Florida SLE epidemics has ranged from 4-30%, with deaths reported almost exclusively

among people age 50+. Since the introduction of WNV to Florida in 2001, only one human case of SLE has been reported (Figure 1). SLE virus and WNV are similar viruses, and are thought to utilize the same bird reservoirs in their respective transmission cycles. WNV transmission peaks slightly earlier in the year than SLEV, and is thus thought to have contributed to the recent decline in SLEV activity seen in Florida.

Figure 1. St. Louis Encephalitis Cases by Year Reported, Florida, 1997-2006



Prevention

There is no specific treatment for SLE, and therapy is supportive for ill persons. Prevention of the disease is a necessity. Measures can be taken to avoid being bitten by mosquitoes. 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 or oil of lemon eucalyptus. Avoid spending time outdoors during dusk and dawn, the time when disease-carrying mosquitoes are most likely to be seeking a blood meal. Dress in long sleeves and long pants to protect skin from mosquitoes. Also, inspect screens on doors and windows for holes to make sure mosquitoes cannot enter the home.

References

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

Resources

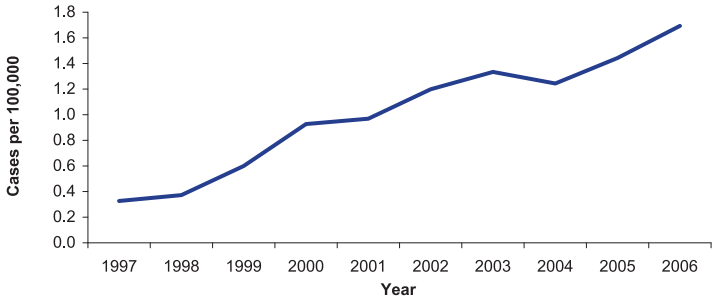
Additional information on SLE and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at http://www.doh.state.fl.us/environment/community/arboviral/pdf_files/UpdatedArboguide.pdf

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

Streptococcal Disease, Invasive Group A

Streptococcal Disease, Invasive Group A: Crude Data	
Number of cases	312
2006 incidence rate per 100,000	1.69
% change from average 5yr (2001-2005) incidence rate	+ 36.4
Age (yrs)	
Mean	50.3
Median	51
Range	<1-101

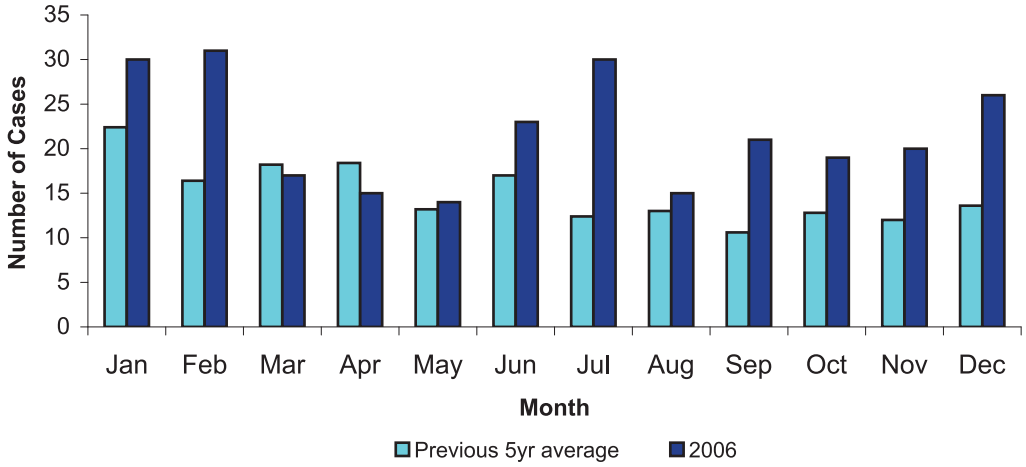
Figure 1.
Streptococcal Disease, Invasive Group A, Incidence Rate by Year Reported, Florida, 1997-2006



Description

Invasive Group A streptococcal disease, caused by Group A *Streptococcus pyogenes*, may manifest as any of several clinical syndromes; including pneumonia and/or bacteremia (septicemia), often in conjunction with cutaneous infections (cellulitis, erysipelas, or wound infections), deep soft tissue infections (myositis or necrotizing fasciitis), meningitis, peritonitis, osteomylitis, septic arthritis, postpartum sepsis (puerperal fever), neonatal sepsis, and toxic shock syndrome. The disease is found worldwide and is spread primarily through direct contact or large respiratory droplets; casual contact rarely leads to infection. Individual carriers are occasionally the source of outbreaks. The incubation period is short, usually 1-3 days. Untreated infections, particularly those with a discharge, may be communicable for days to weeks.

Figure 2. Stretococcal Disease, Invasive Disease Group A, by Month of Onset, Florida, 2006

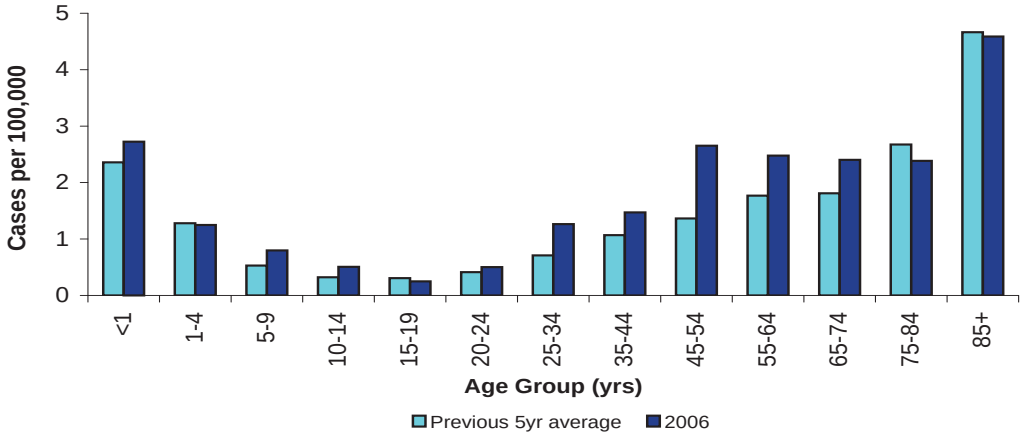


Disease Abstract

The incidence rate for reported invasive group A streptococcal disease in Florida has gradually increased over the past 10 years (Figure 1), with a more than a four-fold cumulative increase. In 2006, there was a 36.4% increase compared to the average incidence for 2001-2005 (Table 1). A total of 312

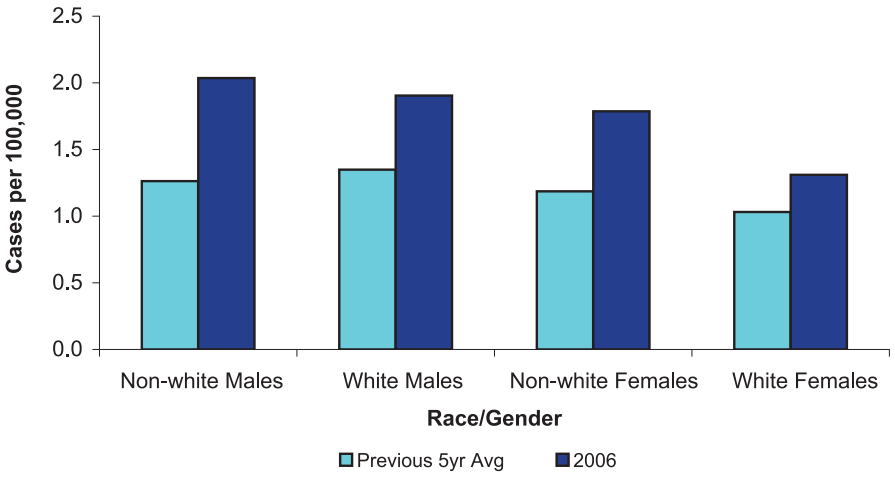
cases were reported in 2006, of which 100% were classified as confirmed. Cases occur throughout all months of the year. Compared to 2001-2005, the number of cases reported in 2006 was higher in all months, except for March and April, with the greatest number occurring in January, February, and July (Figure 2). Almost all cases are sporadic.

Figure 3. Streptococcal Disease, Invasive Group A, Incidence Rates by Age Group, Florida, 2006



The highest incidence rates continue to occur in those aged 85+ years, although those <1 year also show an increased rate compared to those in the age groups between 1-44 years (Figure 3). In 2006, incidence increased in every age group except for those aged 1-4, 15-19, and 75-84 and 85+. Males continue to have a higher incidence than females (1.39 and 1.10 per 100,000, respectively) and in 2006, the incidence in both genders was higher than the previous 5-year average incidence. In 2006, the incidence rate for non-white males surpassed that for white males, and increased in all groups (Figure 4).

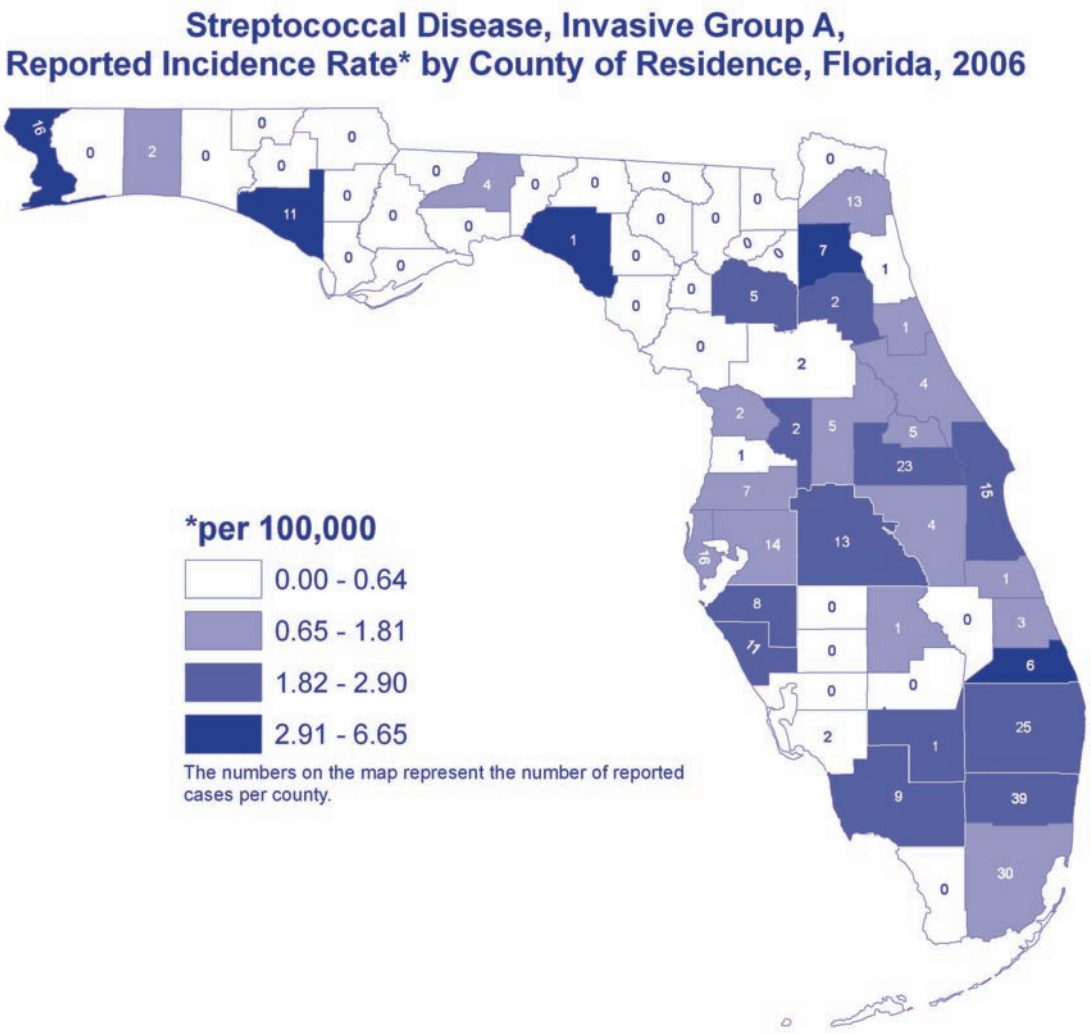
Figure 4. Streptococcal Disease, Invasive Group A, Incidence Rate by Race and Gender, Florida, 2006



Invasive group A streptococcal disease cases were reported in 37 of the 67 counties in Florida. The five counties reporting the highest number of cases were distributed throughout the state.

Prevention

Prevention is through education about modes of transmission, prompt and effective treatment of infections, and appropriate drainage and secretion precautions.



References

David L. Heyman (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 507.

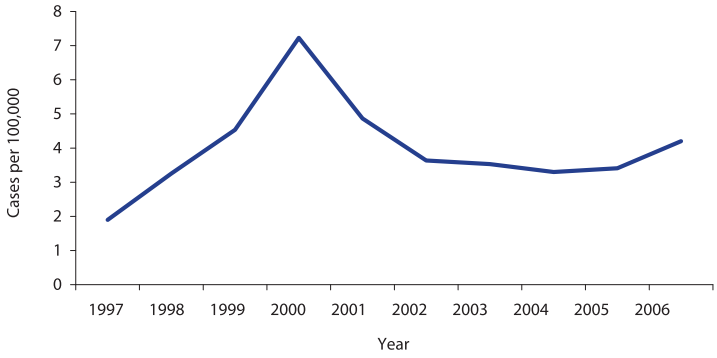
Additional Resources

Information can be accessed through the Centers for Disease Control and Prevention website at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_g.htm

Streptococcus pneumoniae, Drug-Resistant

***Streptococcus pneumoniae*, Invasive Disease, Drug Resistant: Crude Data**	
Number of cases	774
2006 incidence rate per 100,000	4.2
% change from average 5yr (2001-2005) incidence rate	+ 12.5
Age (yrs)	
Mean	46.9
Median	52
Range	<1-100

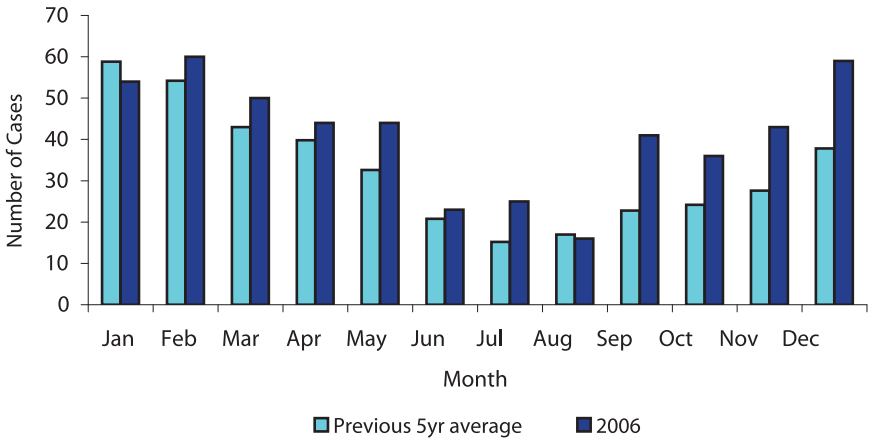
Figure 1. *Streptococcus pneumoniae*, invasive disease, drug-resistant Incidence Rate by Year Reported, Florida, 1997-2006



Description

Drug-resistant *Streptococcus pneumoniae* is an acute bacterial disease caused by grampositive diplococci. Pneumococcal infections range from acute otitis media to invasive infections including: community-associated pneumonia, meningitis, and septicemia. Drugresistant *S. pneumoniae* (DRSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or CSF, which are either intermediate resistant or fully resistant to one or more commonly used antibiotics. *S. pneumoniae* is a human pathogen, and the reservoir for pneumococci is the nasopharynx of asymptomatic human carriers. There is no animal or insect vector. Transmission of S. pneumoniae is from person to person. The incubation period varies, and can be as short as 1-3 days. Persons who attend or work at childcare centers, and persons who recently used antimicrobial agents, are at increased risk for infection with DRSP.

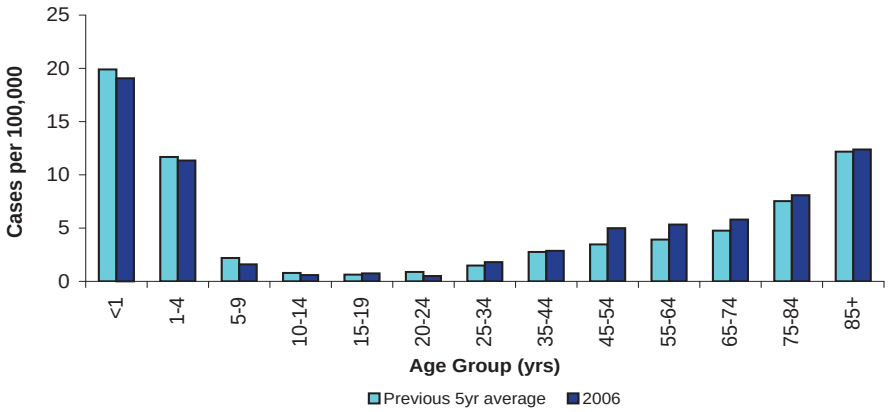
Figure 2. *Streptococcus pneumoniae*, invasive disease, drug-resistant by Month of Onset, Florida, 2006



Disease Abstract

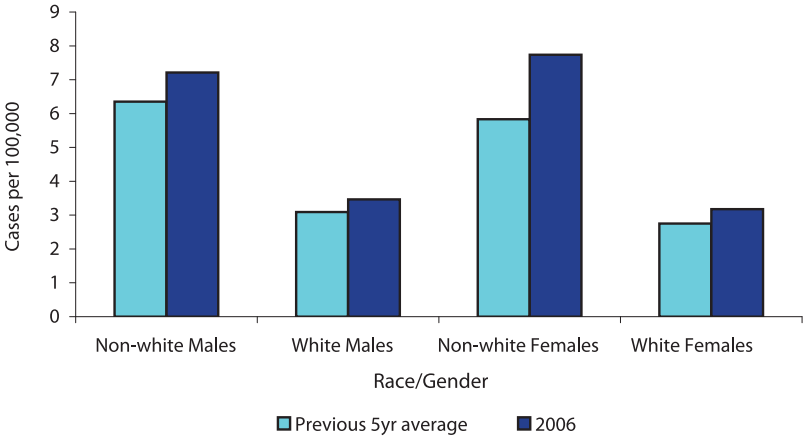
The incidence rate for DRSP peaked in 2000, and gradually declined until 2005 when it started to increase again (Figure 1). There was an increase from 3.4 cases per 100,000 in 2005 to 4.2 cases per 100,000 in 2006. A total of 774 cases were reported in 2006. This is the highest reported incidence since 2001. The number of cases reported tends to increase in the winter months. In 2006, the number of cases exceeded the previous 5-year average in all months, except for January and August (Figure 2).

Figure 3.
Streptococcus pneumoniae, invasive disease, drug- resistant
Incidence Rates by Age Group, Florida, 2006



The highest incidence rates continue to occur among infants <1 year old, children aged 1-4 years, and in those 85 years or older. In 2006, the incidence rates were higher than the previous 5-year average in most age groups (Figure 3). Males have a slightly higher incidence than females (4.3 per 100,000 and 4.1 per 100,000, respectively), and in 2006, the incidence in both genders was higher than the previous 5-year average incidence. As has been the case in the past, incidence rates in non-whites are greater than those in whites (Figure 4).

Figure 4.
Streptococcus pneumoniae, invasive disease, drug-resistant
Incidence Rate by Race and Gender, Florida, 2006

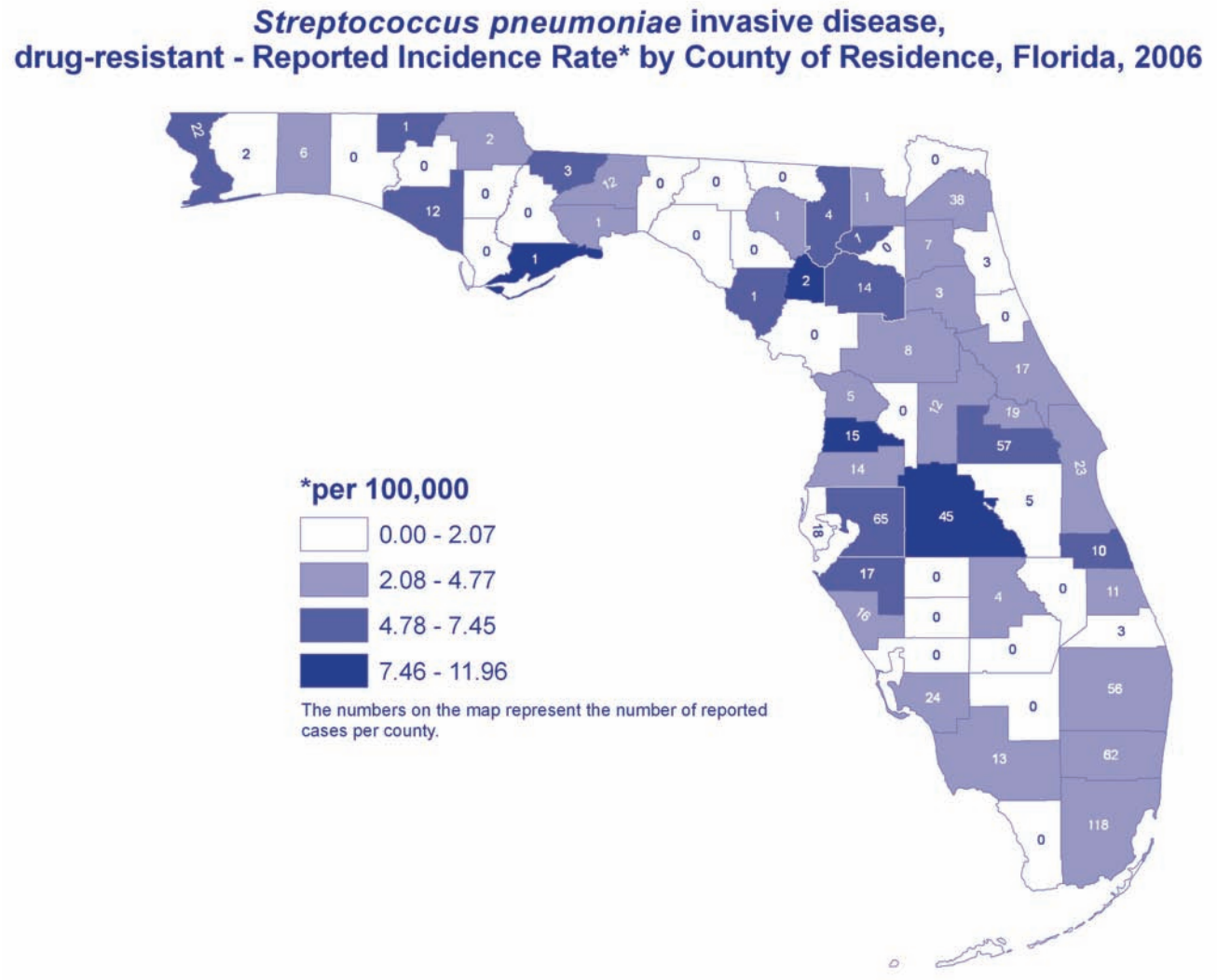


Drug-resistant *S. pneumoniae* was reported in 45 of the 67 counties in Florida.

The data from both the reported drug-resistant and the drug-sensitive S. pneumoniae were used to calculate resistance rates of common antibiotics in 2003 (Table 1). The sensitivity rate varies by the class of antibiotic. In 2003, only 50% of all cultures reported were sensitive to penicillin, while all other antibiotics tested reported had a higher sensitivity rate.

Prevention

The most effective way of preventing pneumococcal infections, including DRSP infections, is to prevent the disease through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children <24 months of age, and children age 24–59 months with a high-risk medical condition. The older pneumococcal polysaccharide vaccine should be administered routinely to all adults over 65 years old. The vaccine is also indicated for persons older than 2 years with a normal immune system who have chronic illnesses. Additionally, it is important to practice good hand hygiene, to take antibiotics only when necessary, and to finish the entire course of treatment.



References

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

Larry Pickering (ed.) et al., *2006 Red Book: Report of the Committee on Infectious Diseases*, 27th ed.,Elk Grove Village, Illinois, American Academy of Pediatrics Press, 2006, pp. 992.

William Atkinson (ed.) et al., *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 10th ed., Centers for Disease Control and Prevention, Washington, District of Columbia, 2007.

Michael Drennon, "Drug Resistant Patterns of Invasive *Streptococcus pneumonia* Infections in the State of Florida in 2003," master's thesis, University of South Florida, Tampa, 2006, pp. 86.

The following are reports available on the Florida Department of Health website
1999 Streptococcus Pneumoniae Surveillance Report
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/popups/anti_res.htm
2000 Streptococcus Pneumoniae Surveillance Report
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/popups/anti_res.htm
1997-1999 Surveillance of SP in Central FL
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/popups/anti_res.htm

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) website 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. October 2000, pp. 1-35, http://www.cdc.gov/MMWR/preview/mmwrhtml/rr4909a1.htm.

Table 1: Reported antibiotic resistance rates of *S. pneumoniae*, Florida 2003

Class	ANTIBIOTIC	TOTAL NUMBER	% of Total Cases	Antibiotic Susceptibility				
				N (%) S	N (%) MS	N (%) I	N (%) R	N (%) I + R
Penicillins	**Penicillin**	882	84%	441 (50%)	15 (2%)	252 (29%)	174 (20%)	452 (49%)
Macrolides	**Erythromycin**	626	59%	414 (66%)	0 (0%)	11 (2%)	201 (32%)	212 (34%)
	Azithromycin	174	16%	212 (64%)	0 (0%)	8 (5%)	54 (31%)	62 (36%)
	Total	698	66%	456 (65%)	0 (0%)	15 (2%)	227 (33%)	242 (35%)
Cephalosporins	**Cefotaxime (3rd)**	512	48%	463 (90%)	2 (0.4%)	31 (6%)	16 (3%)	47 (9%)
	Ceftriaxone (3rd)	635	60%	599 (94%)	2 (0.3%)	24 (4%)	10 (2%)	34 (6%)
	Total (3rd)	792	75%	726 (92%)	4 (0.1%)	49 (6%)	17 (2%)	66 (8%)
	Cefuroxime (2nd)	177	17%	119 (67%)	0 (0%)	11 (6%)	47 (27%)	58 (33%)
Lincosamides	**Clindamycin**	341	32%	274 (80%)	0 (0%)	32 (9%)	35 (10%)	67 (19%)
Carbapenem	**Meropenem**	69	7%	55 (80%)	0 (0%)	8 (11%)	6 (9%)	14 (20%)
	Imipenem	123	12%	96 (78%)	10 (8%)	13 (11%)	4 (3%)	17 (14%)
Fluoroquinolones	**Ofloxacin**	139	13%	127 (91%)	0 (0%)	10 (7%)	2 (1%)	12 (8%)
	Levofloxacin	342	32%	335 (98%)	0 (0%)	2 (1%)	5 (1%)	7 (2%)
Tetracycline	**Tetracycline**	359	34%	312 (87%)	0 (0%)	6 (2%)	41 (11%)	47 (13%)
Glycopeptide	**Vancomycin**	797	75%	797 (100)%	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Other	**Chloramphenicol**	292	28%	258 (88%)	0 (0%)	2 (1%)	32 (11%)	72 (12%)
	TMP/SMX	529	50%	331 (63%)	0 (0%)	40 (7%)	158 (30%)	198 (37%)
	Rifampin	84	8%	84 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

N=Number

3rd=third generation cephalosporins, 2nd=second generation cephalosporins

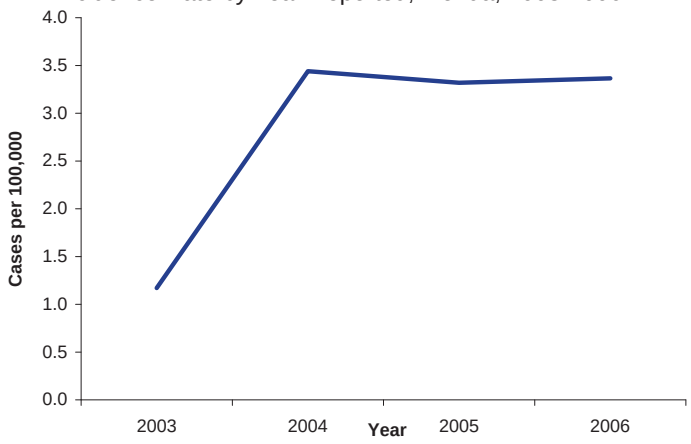
Percent of total cases is out of 1056 S=susceptible, MS=mild susceptible, I=intermediate, R=resistant

Streptococcus pneumoniae, Drug-Susceptible

***Streptococcus pneumoniae*, Invasive Disease, Drug Susceptible: Crude Data**	
Number of cases	620
2006 incidence rate per 100,000	3.4
% change from average 3yr (2001-2005) incidence rate	+ 23.5
Age (yrs)	
Mean	50.1
Median	53
Range	<1-100

Figure 1.

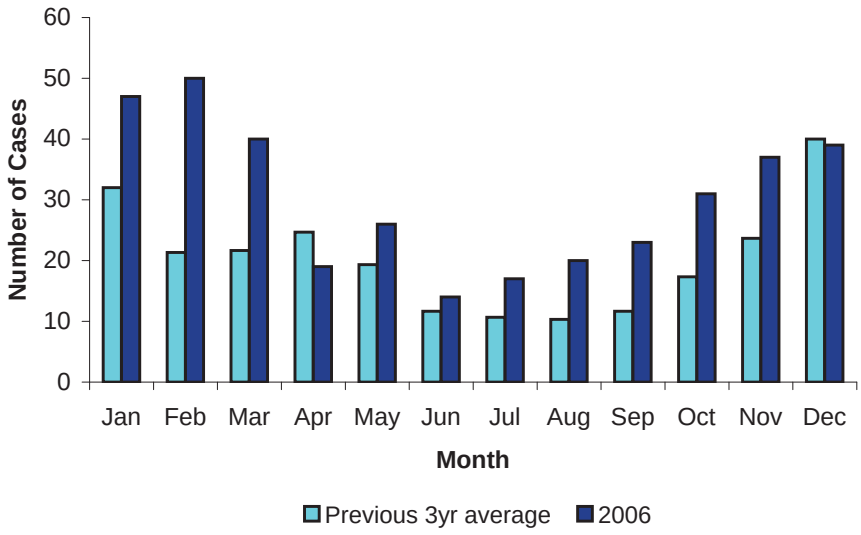
Streptococcus pneumoniae, invasive disease, drug- susceptible
Incidence Rate by Year Reported, Florida, 2003-2006



Description

Drug-sensitive *Streptococcus pneumoniae* is an acute bacterial disease caused by gram-positive diplococci. Pneumococcal infections range from acute otitis media to invasive infections including community-associated pneumonia, meningitis, and septicemia. Drug susceptible *S. pneumonia* (DSSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or CSF, that are sensitive to all of the commonly used antibiotics. *S. pneumoniae* is a human pathogen, and the reservoir for pneumococci is the nasopharynx of asymptomatic human carriers. There is no animal or insect vector. Transmission of *S. pneumoniae* is from person to person. The incubation period varies, and can be as short as 1-3 days. Drug-sensitive and drug-resistant *S. pneumoniae*, when combined, provide a comprehensive picture of invasive pneumococcal infections.

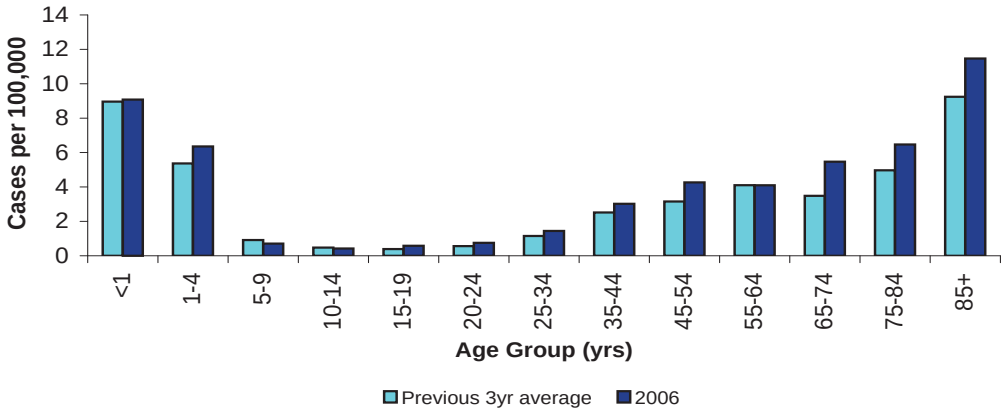
Figure 2.
Streptococcus pneumoniae, invasive disease, drug susceptible
by Month of Onset, Florida, 2006



Disease Abstract

Data on drug-susceptible *S. pneumoniae* has been available for the last four years. Since the second year of reporting in 2004, the incidence rate of DSSP has consistently been around 3.4 per 100,000 (Figure 1). A total of 620 cases were reported in 2006. This is the highest reported incidence since 2001. The number of cases reported tends to increase in the winter months. In 2006, the number of cases exceeded the previous three-year average in all months except April (Figure 2).

Figure 3.
Streptococcus pneumoniae, invasive disease, drug susceptible
Incidence Rates by Age Group, Florida, 2006



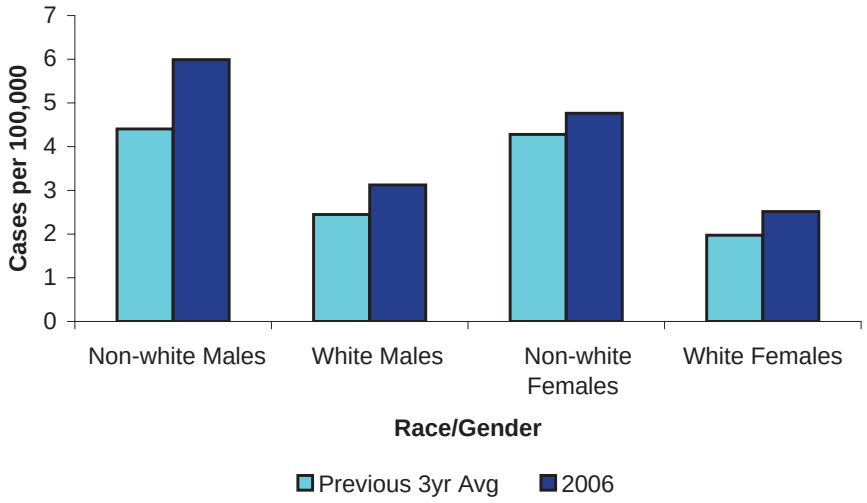
The highest incidence rates continue to occur among infants <1 year old, children aged 1-4 years, and in those 85 years or older. In 2006, the incidence rates were higher than the previous three-year average in all age groups, except for those in the 5-9, 10-14, and 55-64 age groups. Males continue to have a higher incidence than females (3.8 and 3.0 per 100,000, respectively), and in 2006, the incidence in both genders was higher than the previous three-year average incidence. As has been the case in the past, incidence rates in non-whites are greater than those in whites (Figure 4).

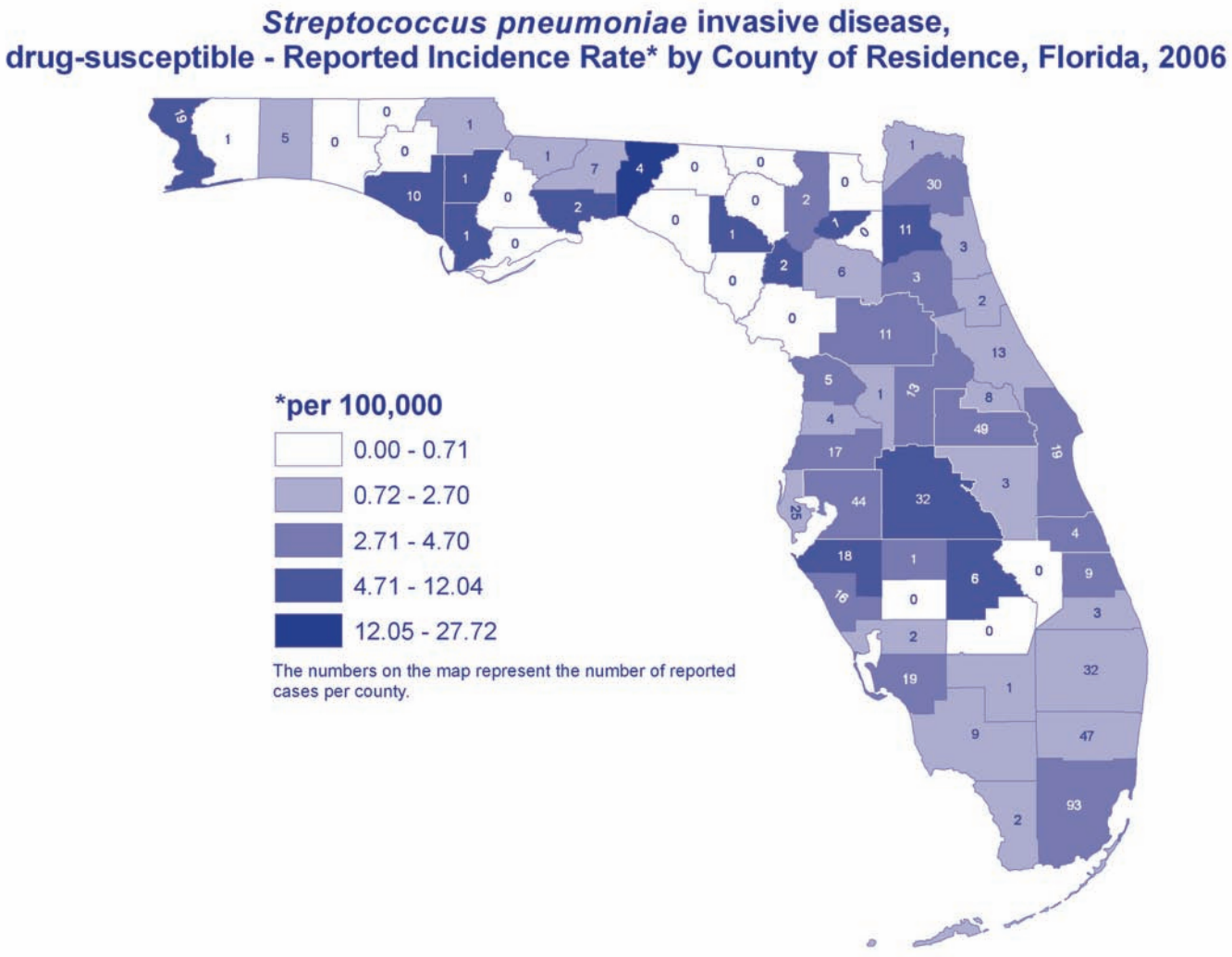
DSSP was reported in 51 of the 67 counties in Florida.

Prevention

The most effective way of preventing pneumococcal infections, including drug-resistant *S. pneumoniae* (DRSP), is to prevent the disease through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children <24 months of age, and children age 24–59 months with a high-risk medical condition. The older pneumococcal polysaccharide vaccine should be administered routinely to all adults 65+ years. The vaccine is also indicated for persons ≥two years of age with a normal immune system who have a chronic illnesses. Additionally, it is important to practice good hand hygiene, take antibiotics only when necessary, and finish the entire course of antibiotics.

Figure 4. *Streptococcus pneumoniae*, invasive disease, drug susceptible: Incidence Rate by Race and Gender, Florida, 2006





References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public

Health Association Press, Washington, District of Columbia, 2004.

Larry Pickering (ed.) et al. *2006 Red Book: Report of the Committee on Infectious Diseases*, 27th ed., Elk Grove Village, Illinois, American Academy of Pediatrics Press, 2006, p. 992.

William Atkinson (ed.) et al., *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 10th ed., Centers for Disease Control and Prevention, Washington, District of Columbia, 2007.

Michael Drennon, "Drug Resistant Patterns of Invasive *Streptococcus pneumonia* Infections in the State of Florida in 2003," master's thesis, University of South Florida, Tampa, 2006, pp. 86.

The following are reports available on the Department of Health website
1999 Streptococcus Pneumoniae Surveillance Report
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/popups/anti_res.htm
2000 Streptococcus Pneumoniae Surveillance Report
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/popups/anti_res.htm
1997 – 1999 Surveillance of SP in Central FL.
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/popups/anti_res.htm

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC)
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. October 2000, pp. 1-35., http://www.cdc.gov/MMWR/preview/mmwrhtml/rr4909a1.htm.

Syphilis

Description

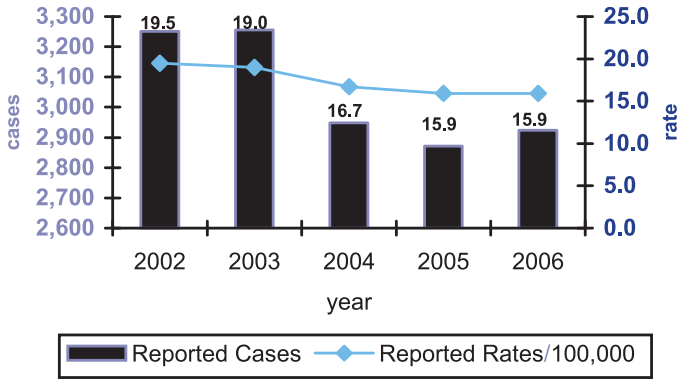
Syphilis, caused by the bacterium *Treponema pallidum*, is passed from person to person through direct contact with a syphilis sore. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Transmission of the organism occurs during vaginal, anal, or oral sex. During pregnancy, the organism can be transferred to a fetus in utero or during delivery (neonatal infections are discussed separately).

Syphilis infection is categorized by the progression to subsequent stages over time: primary, secondary, early latent, and late latent. If untreated, syphilis may progress to neurosyphilis. The data in this report includes cases of primary, secondary, early latent, and late latent syphilis. The epidemiological significance of these disease stages is to focus disease intervention activities, and interrupt the spread

of infection in the community. An effective public health response should identify infections as early as possible in the cycle of progression.

In 2006, there were 2,924 syphilis cases reported among both males and females in Florida, or a rate of 15.9 cases per 100,000 population (Figure 10). This was a 1.8% increase from 2005. Over 66% of Florida's cases of syphilis were reported from four counties in 2006: Broward, Hillsborough, Miami-Dade, and Orange. Historically, syphilis has been isolated in specific geographic areas during specific time periods and outbreaks.

Figure 10. Reported Cases of Syphilis among Males and Females By Year, Florida, 2002-2006



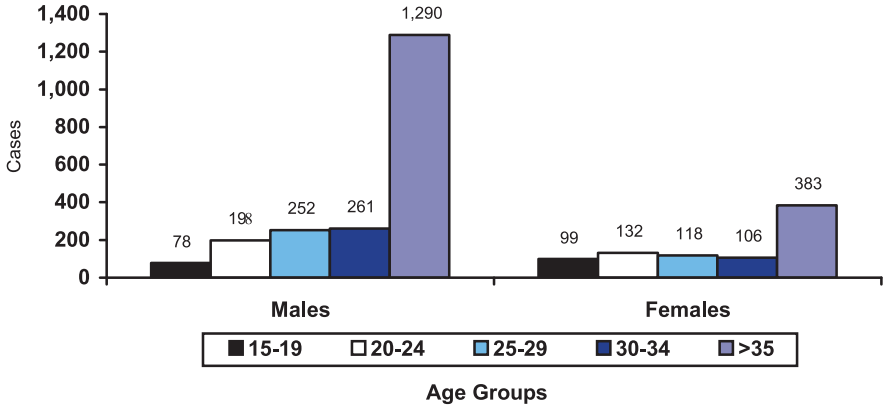
Early (primary, secondary, and early latent) syphilis includes all cases where initial infection has occurred within the previous 12 months. Late latent syphilis is when the initial infection has occurred greater than one year previously. Early syphilis accounted for 1,479 cases, or 50.6% of the total syphilis cases among both males and females. Late latent syphilis accounted for 1,445 cases, or 49.4% of the total syphilis cases.

The number of syphilis cases among males in 2006 was 2,080. This was a 1.3% increase from 2005 and a 0.2% decrease from 2002. The number of syphilis cases among females was 844 in 2006. This was a 3.1% increase from 2005, and a 27.7% decrease from 2002. The ratio of male to female cases (2.5:1) suggests that syphilis has a higher incidence among men who have sex with men than among other men who only have sex with women.

Figure 11 shows the distribution of syphilis by gender and age group. Among males, the number of cases in each age group was greater than that in the next younger group. Among females, the number of cases was highest in the 35+ age group, followed by the 20-24 age group. The number of cases was lowest in the 15-19 age group for both males and females.

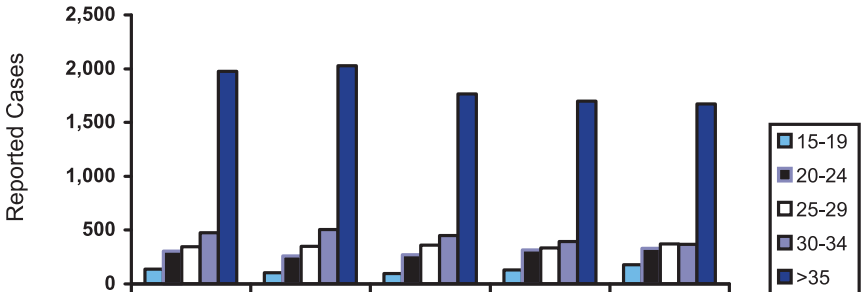
Unlike chlamydia and gonorrhea, the largest number of syphilis cases among both males and females was reported in persons age 35+. This group comprised 57.2% of reported cases of syphilis in 2006 (Figure 12). Syphilis in the 25-29 and 30-34 age groups comprised 25.2% of reported cases. Altogether, syphilis in persons age 25+ years comprised 82.4% of the total cases.

Figure 11. Reported Cases of Syphilis by Gender and Age Group, Florida, 2006



In 2006, approximately 81% of all syphilis cases in males were in persons between the (inclusive) ages of 23 and 54. The rate per 100,000 for this group was 42.9. Approximately 81% of syphilis cases in females were in persons between the (inclusive) ages of 19 and 52. The rate per 100,000 for this group was 16.6.

Figure 12. Reported Cases of Syphilis by Age Group, Florida, 2002-2006

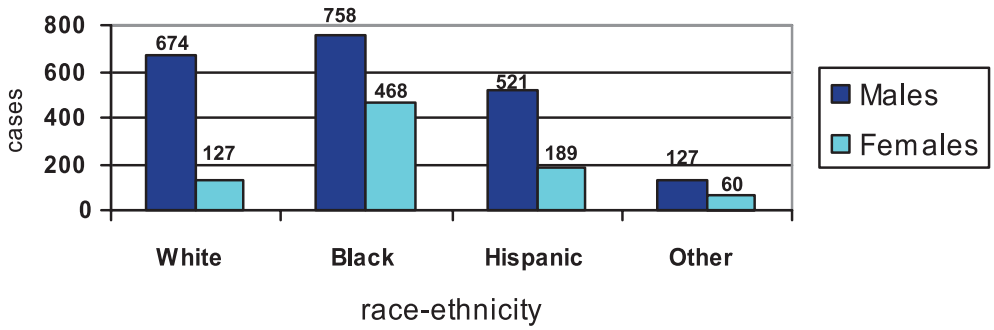


	2002	2003	2004	2005	2006
15-19	139	103	98	130	177
20-24	304	261	273	315	330
25-29	344	350	359	333	370
30-34	476	507	451	394	367
>35	1,978	2,027	1,763	1,697	1,673

When only early syphilis is considered, approximately 83% of cases in males were reported in persons between the (inclusive) ages of 21 and 50. The rate per 100,000 for this group was 26.5. Approximately 81% of early syphilis cases in females were reported in persons between the (inclusive) ages of 18 and 46. The rate per 100,000 for this group was 7.0.

Persons who described themselves as non-Hispanic black accounted for 41.9% of the syphilis cases in 2006 (Figure 13). Persons who self-reported as non-Hispanic white accounted for 27.4% of the cases. Persons who self-reported as Hispanic (white or black) accounted for 24.3% of the cases. Persons who self-reported in other or unidentified racial-ethnic groups accounted for 6.4% of the cases.

Figure 13. Reported Cases of Syphilis by Race-Ethnicity and Gender, Florida, 2006



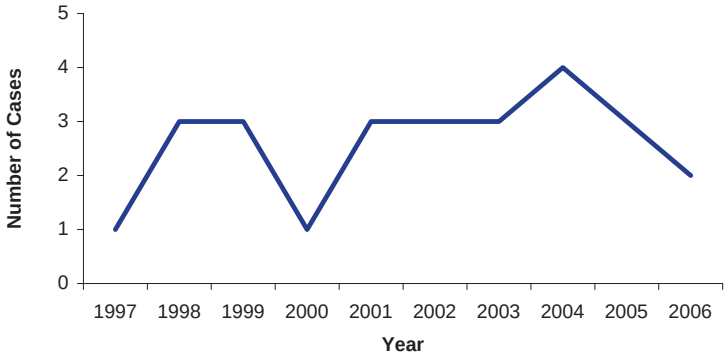
References

Centers for Disease Control and Prevention, "Syphilis-CDC Fact Sheet," Atlanta, GA: U.S.Department of Health and Human Services, May 2004.

Tetanus

Tetanus: Crude Data	
Number of cases	2
2006 incidence rate per 100,000	0.01
% change from average 5yr (2001-2005) incidence rate	- 46.3
Age (yrs)	
Mean	40
Median	40
Range	14-66

Figure 1.
Tetanus Cases by Year Reported, Florida, 1997-2006



Description

Tetanus is an acute, often fatal disease, which is characterized by descending symptoms of trismus (lockjaw), difficulty swallowing, generalized muscle rigidity, and convulsive spasms of skeletal muscles. Tetanus is caused by the spore-forming bacterium *Clostridium tetani*. The dormant spores of *C. tetani* are found in soil and in animal and human feces. Even small breaks in the skin allow entry, and the spores germinate under low oxygen conditions. A potent toxin, tetanospasmin, is excreted, reaches the nervous system, and causes painful and often violent muscular contractions. The rigidity can progress until the respiratory system is compromised, requiring mechanical ventilation and tube feeding.

Disease Abstract

Two confirmed cases of tetanus were reported in Florida in 2006, representing an annual incidence rate of 0.01 per 100,000 population. This is a decrease from the three cases in 2005, and the trend of three cases per year 2001-2003 (Figure 1). The two cases had no recent history of immunization against tetanus disease. No deaths were reported. The first case, with onset in March, was a 14-year-old male

who was hospitalized with symptoms of muscular contractions following an abrasion from attempting to separate fighting dogs. Within a week, he required ventilator support. However, his recuperation was fast, and he was discharged within three weeks. He continued to improve with physical therapy for his lower extremities, and was "fully recovered" per his mother, at one year post-onset. Immunization history showed four doses of tetanus-containing vaccine, but he did not receive the recommended booster at 12 years of age. The second case, a 66-year-old female, had no known current injury. However, she had chronic lesions on her head. She was hospitalized for trismus, and within 48 hours, required ventilator support. Three months after onset, she remained on a ventilator with a feeding tube and other medical conditions.

Prevention

Vaccination against tetanus is recommended to begin at two months of age, and continue through adulthood at appropriate intervals to maintain protection against the disease. Primary tetanus immunization with diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP) is recommended for all persons at least six weeks old, but <7 years of age and without contraindications. Routine tetanus booster immunization, combined with diphtheria toxoid, is recommended for all persons >7 every 10 years. A new vaccine Tdap, the adult formulation of tetanus and diphtheria toxoids and pertussis, is the vaccine of choice for at least one dose. The appropriate use of tetanus toxoid and TIG in wound management is also important for the prevention of tetanus. Since herd immunity does not play a role in protecting individuals against tetanus, potentially all persons must be vaccinated.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 3rd ed., 2002, http://www.cdc.gov/vaccines/pubs/survmanual/default.htm.

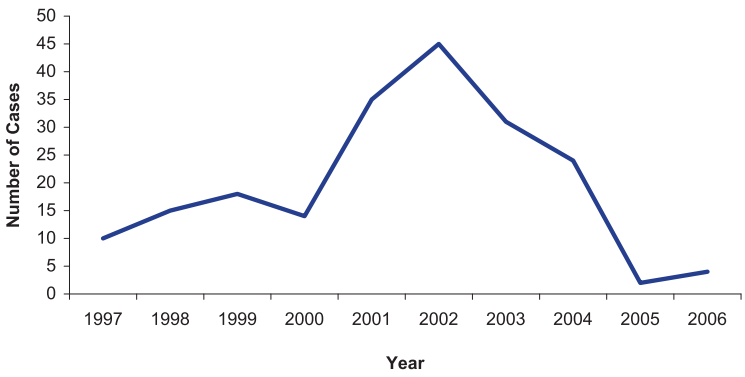
Additional Resources

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

Toxoplasmosis

Toxoplasmosis: Crude Data	
Number of cases	4
2006 incidence rate per 100,000	0.02
% change from average 5yr (2001-2005) incidence rate	- 86.4
Age (yrs)	
Mean	59.7
Median	61.5
Range	47-69

Figure 1.
Toxoplasmosis Cases by Year Reported, Florida, 1997-2006



Description

Toxoplasmosis is a systemic protozoan disease caused by *Toxoplasma gondii*. The disease is frequently asymptomatic, or may present as an acute disease resembling infectious mononucleosis with fever, lymphadenopathy, and increased white blood cell count persisting for days to weeks. In immunodeficient individuals, such as those with HIV infection/AIDS, the disease may include a maculo-papular rash, cerebral involvement, pneumonia, myocarditis, and death. A primary infection during early pregnancy can lead to fetal infection with resultant serious complications or death. Cats, who acquire the infection from eating infected rodents and birds, serve as the primary reservoir for human infections. Transmission to humans can occur through ingesting feces contaminated dirt (litterboxes, sandboxes, playgrounds), eating raw or undercooked infected meat, drinking contaminated water, and occasionally via transfusion or organ transplantation. The incubation period is from 10 to 23 days.

Figure 2. Toxoplasmosis by Month of Onset, Florida, 2006

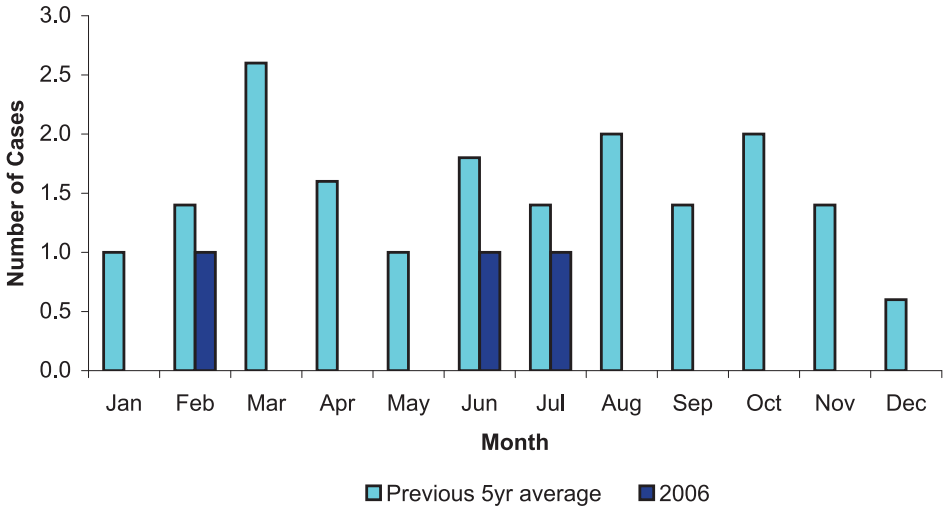
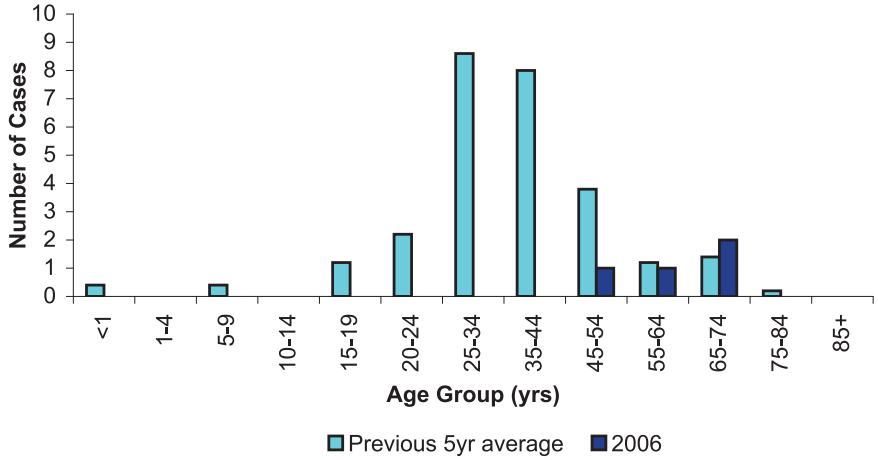


Figure 3. Toxoplasmosis Cases by Age Group, Florida, 2006

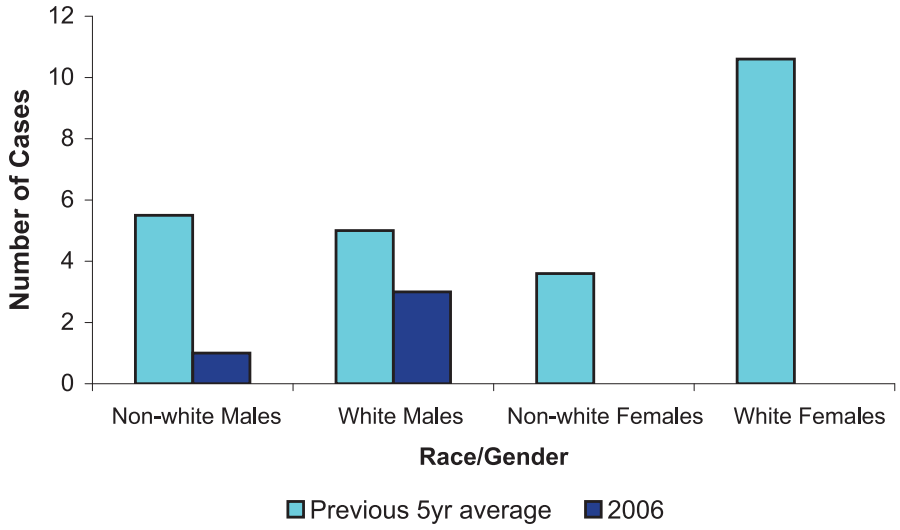


Disease Abstract

The number of cases for toxoplasmosis increased between 1997 (N=10) and 2002 (N= 45), but since then has declined for an annual incidence rate of 0.02 per 100,000 (N =4 cases) in 2006 (Figure 1).

This represents a decline of 86.4% from the prior 5-year incidence rate for 2001-2005. Of the cases reported in 2006, three were confirmed, one was probable. No outbreaks of toxoplasmosis have been reported in the past 10 years. During the past five years, the cases reported were distributed throughout all the months of the year. In 2006, cases occurred only in February, June, and July (Figure 2), each from different counties within the state. The average number of cases for the past five years was highest in those aged 25-34 years (N = 8.5), while in 2006 all four cases reported were in those >45 years (Figure 3). Over the past five years, females overall had a higher incidence rates than males (0.2 and 0.1 per 100,000, respectively). In 2006, all cases were in males, and the overall rate declined to 0.05 per 100,000 (Figure 4).

Figure 4. Toxoplasmosis Cases by Race and Gender, Florida, 2006



Prevention

Prevention measures should include education of immunocompromised persons and pregnant women: proper hand washing, thorough freezing or cooking of meats, avoidance of cleaning cat litter pans, wearing gloves when gardening, as well as containment of cats as indoor pets, daily disposal of cat feces and litter, thorough hand washing, and covering of 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

Centers for Disease Control, “Parasitic Disease Information–Toxoplasmosis,” http://www.cdc.gov/ncidod/dpd/parasites/toxoplasmosis/default.htm.

Centers for Disease Control, “Mordity and Mortality Weekly Reports–Toxoplasmosis,” http://www.cdc.gov/ncidod/dpd/parasites/toxoplasmosis/moreinfo_toxoplasmosis.htm.

Trichinellosis

From 1997 through 2006, there were four confirmed cases of trichinellosis reported. One case was reported in 2006, and involved a 4-year-old white girl from Duval County; source of exposure was not determined. Cases from previous years include a 5-year-old female, race other; a 49-year-old white male; and a 24-year-old male. In the case of the 49-year-old male, exposure to undercooked pork or deer sausage was identified as a potential source of infection.

Trichinella spiralis is the most common causative agent of the disease in humans, although other species found around the world can also cause illness in humans. *Trichinella spiralis* is a roundworm of many wild and domestic animals including hogs, bears, horses, dogs, cats, rats, wolves, foxes, and marine mammals. The parasite larval stage encysts in animal muscle, and is transmitted through ingestion of insufficiently cooked infected meat. Once ingested the parasite migrates through the body, and eventually encysts in muscle. Clinical disease may range from asymptomatic to fatal depending on the infective dose. Successful treatment of encysted larvae can be difficult.

References

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

Tuberculosis

Description

In 2006, Florida reported 1,038 tuberculosis cases (Figure 1). This represented a 5% decrease from the 1,094 cases reported in 2005. Florida's case rate decreased for the first time in three years, to 5.6 per 100,000 population from the 6.1 per 100,000 population reported each year from 2003 to 2005 (Figure 2). In 2006, 98% (1,013/1,038) of TB cases were alive at diagnosis. Five percent (53/1,038) of cases reported previous treatment for tuberculosis disease. The greatest proportion of active TB cases is pulmonary. Eighty-one percent (844/1,038) of Florida's TB case were pulmonary, 14% (148/1,038) were extra-pulmonary, and 4% (45/1,038) were both.

Figure 1. TB Morbidity in Florida, 1990-2006

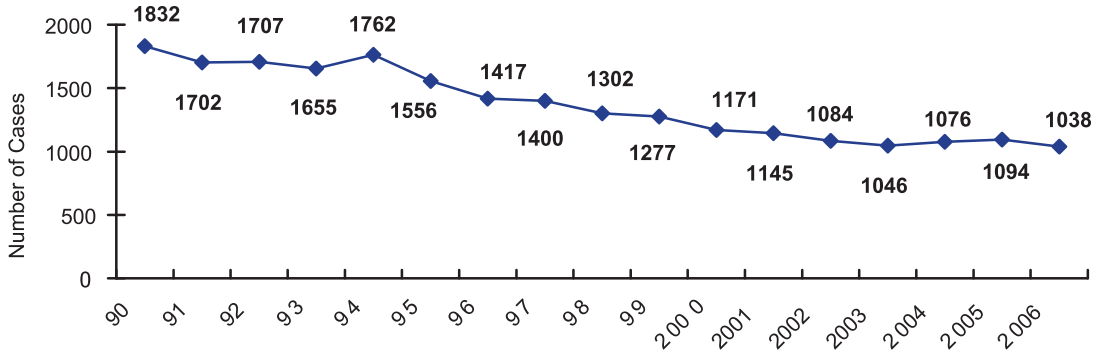
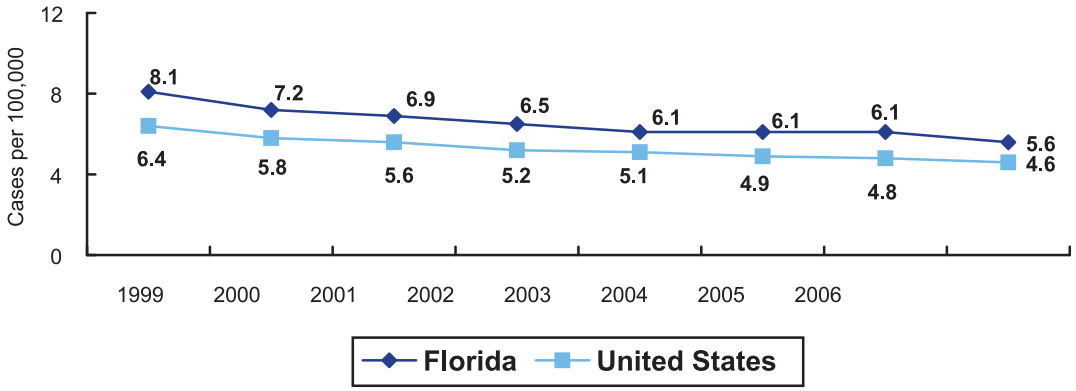


Figure 2. TB Incidence Rates in Florida, 1999-2006



Race and Ethnicity

Medically underserved low-income populations, including high-risk racial and ethnic minorities, such as Blacks, Hispanics, and Asians, have a high rate of TB exposure and infection. These populations disproportionately represent the majority of TB cases in the state of Florida. Non-Hispanic Blacks and Hispanics accounted for 68% (709/1,038) of Florida's total TB morbidity for 2006 (Table 1). In 2006, non-Hispanic Blacks comprised 40% (415/1,038) of Florida's TB morbidity with a case rate of 18.3 per 100,000 population. This rate is eight times higher than that of non-Hispanic Whites. The case rate for non-Hispanic Blacks was twice that of Hispanics (Figure 3). The proportion of TB morbidity among Hispanics has increased from 17% (288/1,742) of TB cases in 1994, to 28% (294/1,038) in 2006. The case-rate for Hispanics in 2006 was 10.9 per 100,000 population (Figure 3). Tuberculosis for non-Hispanic Whites declined from 31% of cases (542/1,742) in 1994 to 24% (242/1,038) in 2006, which represented an overall 55% decrease since 1994. The case rate for non-Hispanic Whites in 2006 was 2.3 per 100,000 population (Figure 3).

Table 1. Tuberculosis Cases by Race/Ethnicity and Place of Birth Florida, 2006

Race/Ethnicity	U.S. Born	% of U.S. Born	Foreign Born	% of Foreign Born	Total	Total %
Black, Non-Hispanic	294	53	122	25	415	40
Hispanic (all races)	38	7	256	52	294	28
White, Non-Hispanic	214	39	28	6	242	23
Asian Only	3	1	76	16	79	8
Amer. Indian/AK Native	1	<1	0	N/A	1	<1
Nat. Hawaiian/P. Islander	0	N/A	3	1	3	<1
Multiple Race	0	N/A	3	1	3	<1
Unknown	0	N/A	0	N/A	N/A	N/A
Total	550		488		1,038	

Gender and Age

According to the World Health Organization, differences in exposure, risk of infection, and progression from infection to disease may cause higher tuberculosis case rates among men than women. In Florida, as well as in most of the world, more men than women are diagnosed with tuberculosis. However, the

impact is far from minimal for women. Worldwide, each year more than three-quarters of a million of women die of TB disease, and over 3 million contract the disease. There are studies that indicate that women may have higher rates of progression from infection to disease, and a higher case fatality rate in their early reproductive years due to issues such as gender differentials in reporting and diagnosing TB in women, as well as passive case finding. In 2006, men represented 66% (687/1,038) of Florida's TB cases. In Florida, the TB incidence rate for males was twice that of females for 2006. The gender and age-specific rates were highest for males and females between the ages of 25 and 44 (Table 2). For 2006, TB cases ≤14 years comprised 5% (57/1,038), 15-24 year olds 10% (105/1,038), 25-44 year olds 36% (375/1,038), 45-64 year olds 35% (358/1,038), and 65+ years comprised 14% (143/1,038) (Table 3).

Figure 3. TB Incidence Rates by Race/Ethnicity Florida, 2006

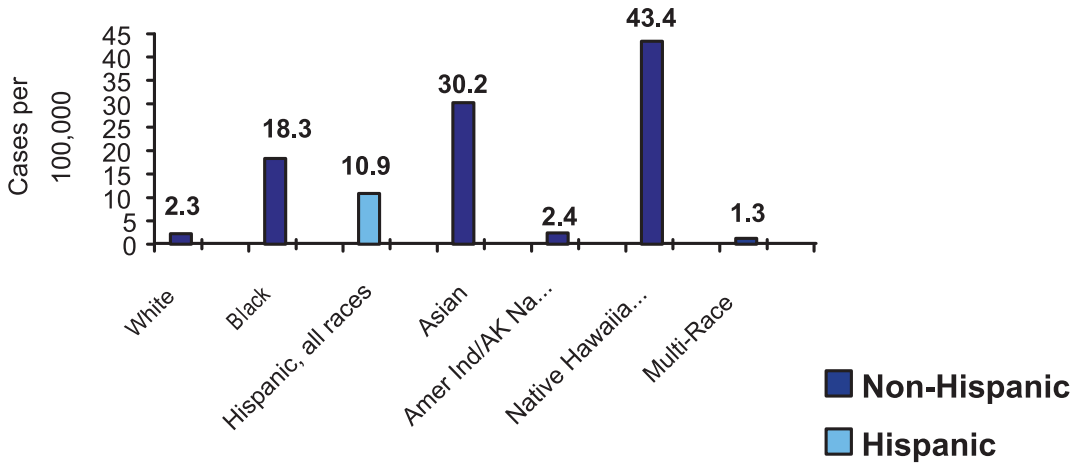


Table 2: Age and Gender Specific Incidence Rates, Florida, 2006

Age Groups	Male	Female	Both
0-4 years	3.0	3.3	3.2
5-14 years	1.0	1.0	1.0
15-24 years	5.8	2.9	4.4
25-44 years	10.0	6.0	7.8
45-64 years	11.3	4.2	7.6
65 and older	7.0	3.0	4.6

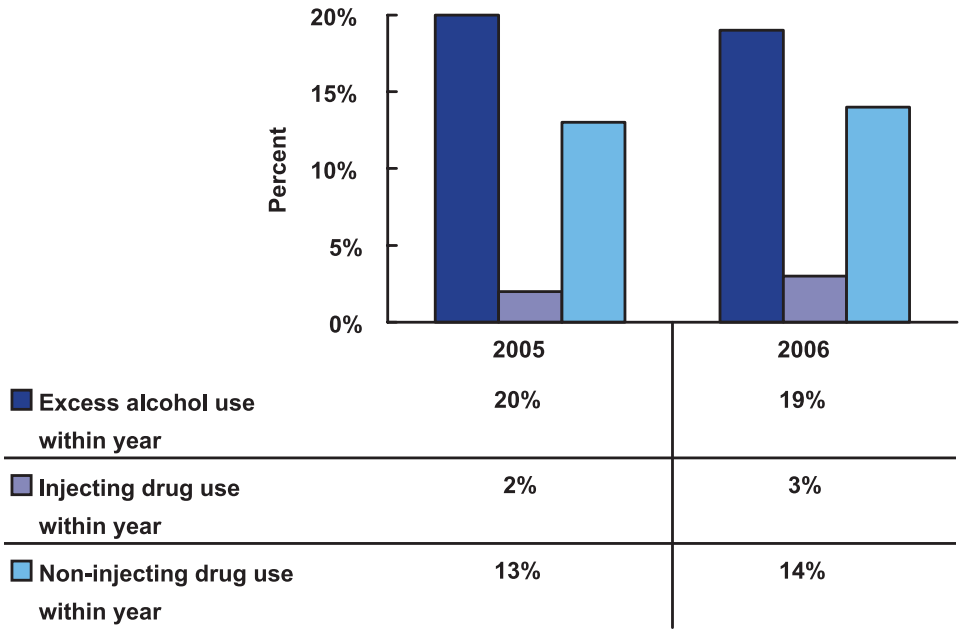
Table 3: Tuberculosis by Age Group, Florida, 2005 and 2006

Age Groups	2005 Cases	% of TB (n=1,094)	2006 Cases	% of TB (n=1,038)
0-4 years	30	3	35	3
5-14 years	27	2	22	2
15-24 years	115	11	105	10
25-44 years	375	34	375	36
45-64 years	382	35	358	35
65 and older	165	15	143	14

Substance Abuse and Tuberculosis

The use of alcohol and/or drugs can have a negative impact on effective TB treatment. Clients with substance abuse issues require more intensive case management and follow-up. Only 14% (245/1,742) of TB cases in 1994 reported drinking excessive amounts of alcohol, injecting drugs, or using non-injectable drugs within the year of TB diagnosis. In 2005, that number increased to approximately 35% (390/1,094) of cases. However, the percentage of cases citing substance abuse slightly increased to 36% (367/1,038) in 2006 (Figure 4).

Figure 4. Tuberculosis and Substance Abuse Florida, 2005 and 2006



Homelessness and Tuberculosis

The homeless are a marginalized population with issues such as poverty, poor nutrition, and in some cases, substance abuse. These factors, as well as frequenting high-risk settings such as homeless shelters, increase the probability of infection and of progression from TB infection to disease. In 2005, 8% (83/1,094) of Florida's TB cases were reported as homeless (Figure 5). The proportion of people with TB who were homeless remained 8% (80/1,038) in 2006 (Figure 5).

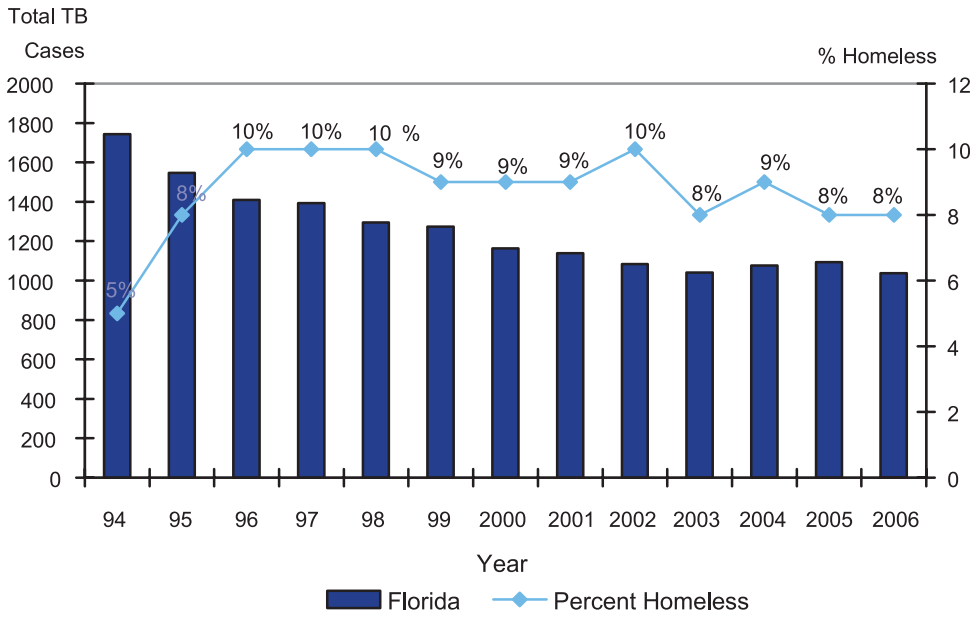
Also, substance abuse is a serious issue for the homeless which increases the level of difficulty when treating this population. In 2006, 65% (52/80) of homeless TB cases self-reported drinking excessively within the year of TB diagnosis. Also, 58% (46/80) admitted to using noninjection drugs, and 10% (8/80) admitted to injection drug use within the year of diagnosis.

Incarceration and Tuberculosis

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

the general community to possible TB infection. In 2006, 5% (53/1,038) of Florida's TB cases were incarcerated at the time of diagnosis. Local jails represented 58% (31/53) of TB cases among those incarcerated (Figure 6). Federal and State Prisons accounted for 38% (20/53) of cases diagnosed during incarceration, 4% (2/53) were assigned to Krome Detention Center (a federal facility that houses both criminal and noncriminal aliens) (Figure 6).

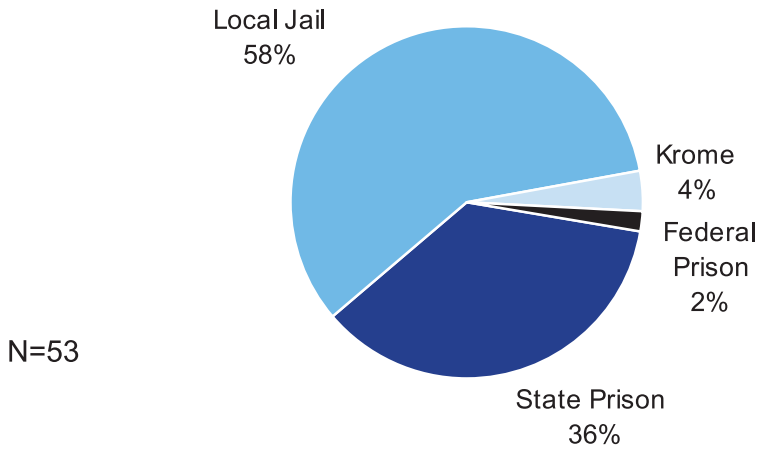
Figure 5. Tuberculosis and Homelessness Florida, 1994-2006



HIV Co-infection (TB/HIV)

Worldwide, TB is the leading cause of death for people with HIV infection. Co-infection with HIV complicates the treatment of TB. Drug interactions and malabsorption are two examples of barriers that must be overcome in case management of co-infected clients.

Figure 6. Tuberculosis in Correctional Facilities Florida, 2006



In Florida, HIV co-infection declined from 20% (208/1,046) in 2003, to 18% (184/1,038) in 2006. From 1994 to 2001, 20% of Florida's TB cases were reported to be co-infected with HIV (Figure 7).

Country of Origin

In Florida, the percent of foreign-born TB cases has been steadily rising since 1993. The increase in the proportion of cases among the foreign-born is a major contributing factor to the increase in Florida's TB morbidity. Between 1990 and 2000, Florida's foreign-born population grew by 61% from 1.7 million to 2.7 million. In 1994, 15% (65/430) of cases were from countries where TB is endemic. By 2004, 18% (96/525) of Florida's foreign-born cases were from countries where tuberculosis is endemic. In 2002 and 2003, the foreign-born represented 44% and 46% of TB cases in Florida, respectively. In 2004, the proportion rose to almost 50% (526/1,076) (Figure 8). The proportion of cases among foreign-born decreased to 45% (496/1,094) in 2005, then increased to represent 47% of cases in 2006 (Figure 8).

Figure 7. Trend of TB/HIV, Florida, 1994-2006

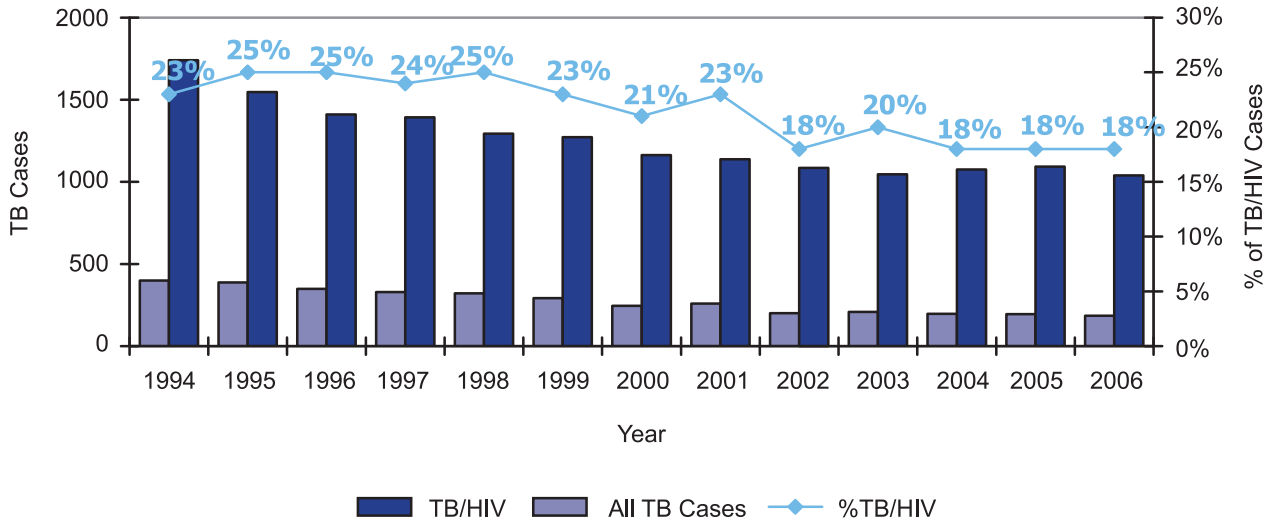
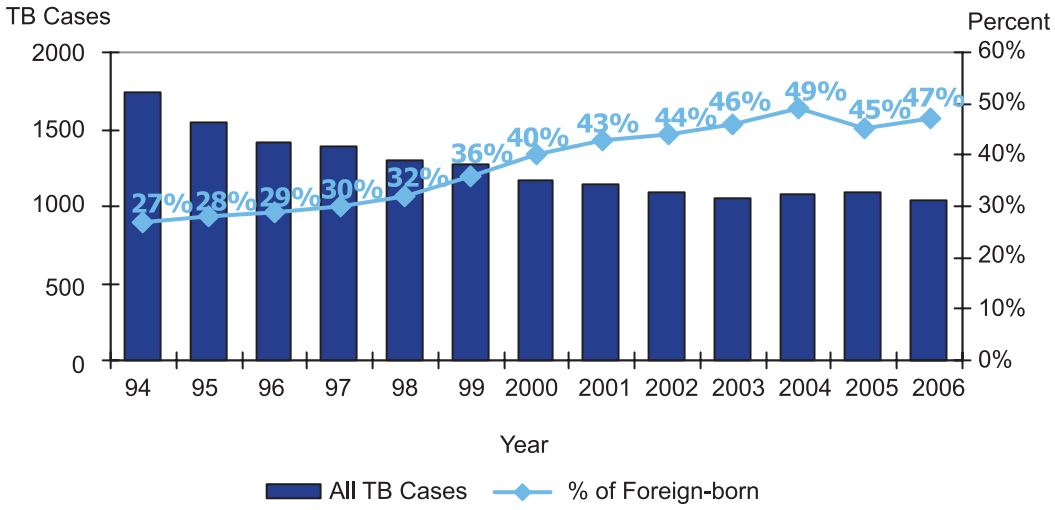


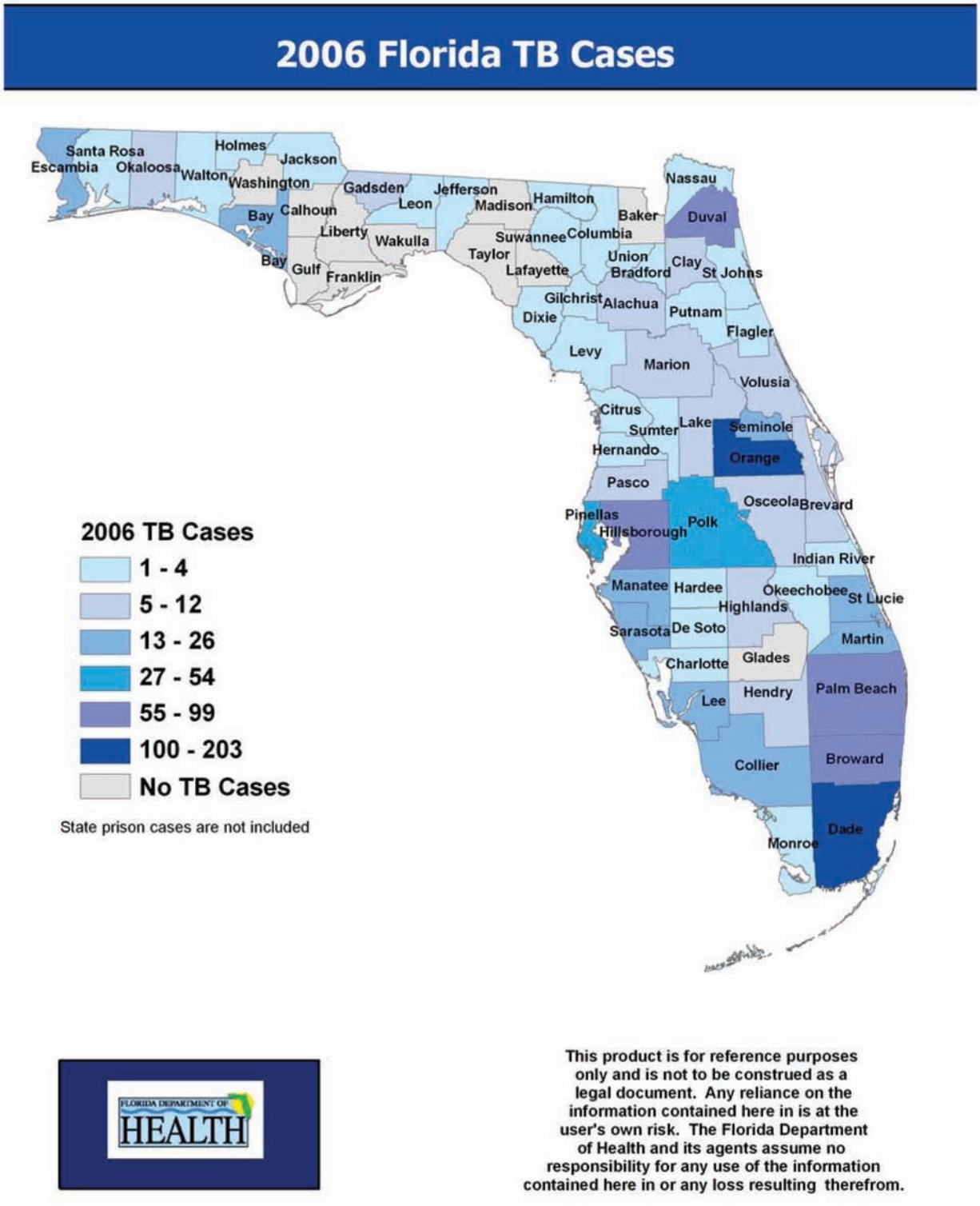
Figure 8. Trends in Foreign-Born TB, Florida 1994-2006



Drug Resistance

Although Florida's TB program has made significant strides in reducing the number of multiple drug-resistant (MDR) cases, all drug-resistant cases require additional resources and expert medical consultation in order to ensure completion of therapy. Cases resistant to one or more drugs present significant barriers that local health departments must address, such as complex and expensive

treatment regimens, and extended time on Directly Observed Therapy (DOT). Seven percent (70/1,038) of Florida's TB cases in 2006 were resistant to isoniazid (INH) (Figure 27). Less than 1% (5/1,038) of Florida's TB cases in 2005 was multi-drug resistant to both isoniazid (INH) and rifampicin (RIF).



Tularemia

Between 1997 and 2006, there was one probable case of tularemia reported. The case, reported in 2005, was a 64-year-old white male who had just returned from a two month hunting trip in the Northeastern U.S. He reported being bitten by ticks while there. The disease is caused by the gram-negative coccobacillus *Francisella tularensis*, which is found throughout the temperate Northern hemisphere. The organism is heat-sensitive but can remain viable in the environment for weeks to months in cool climates. Many mammals can be infected with this agent including rabbits, rodents, cats, and domestic livestock. Inhalation or injection of 10-50 organisms can cause disease in humans. Clinical presentation varies with route of exposure which includes direct contact with infected animal blood or tissues, tick or deerfly transmission, or less commonly, inhalation of contaminated aerosols, and ingestion of contaminated food or water. The most common naturally occurring clinical presentation is ulceroglandular or glandular (75-85%), followed by typhoidal (5-15%). Less commonly oculoglandular, oropharyngeal, intestinal, and pneumonic syndromes can occur. Untreated pulmonary syndrome can have mortality rates near 60%. At greatest risk are hunters, people handling animals, those exposed to infected arthropod vectors, and laboratory workers. This agent has the potential to be weaponized for aerosol transmission, and is a CDC Select Agent.

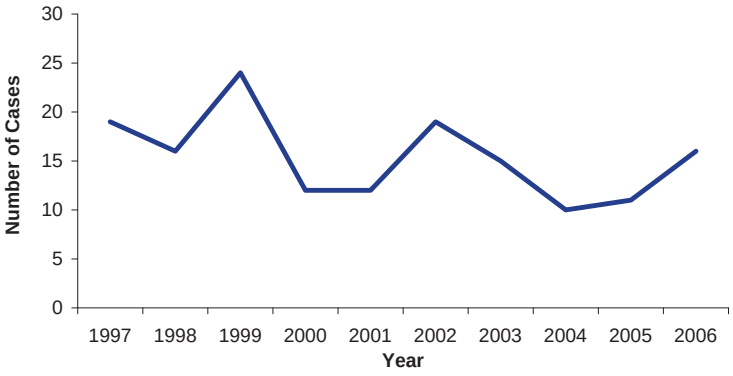
References

David L. Heyman (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 507.

Typhoid Fever

Typhoid Fever: Crude Data	
Number of cases	16
2006 incidence rate per 100,000	0.09
% change from average 5yr (2001-2005) incidence rate	15.5
Age (yrs)	
Mean	26
Median	24
Range	4-52

Figure 1.
Typhoid Fever Cases by Year Reported, Florida, 1997-2006



Description

Typhoid fever is a systemic bacterial disease caused by *Salmonella typhi (S. enteritica)*. It is characterized by an insidious onset of sustained fever, headache, malaise, anorexia, nonproductive cough early in the illness, and GI disturbance (constipation more than diarrhea). The illness can range from mild to severe with multiple complications. Severity is influenced by strain virulence, quantity of inoculum, age of patient, and duration of illness prior to treatment. A carrier state can follow

acute illness. The disease occurs worldwide, with the majority of cases in developing countries. It is contracted by ingestion of food and water contaminated by feces or urine of infected persons or carriers. The incubation period ranges from 3-60 days with an average of 8-14 days. Most cases in the U.S. are in persons who have recently spent time in endemic areas.

Disease Abstract

The overall number of confirmed cases annually for the last 10 years has ranged from 11-23, and in 2006 there were 16 cases, representing an incidence rate of 0.09 per 100,000, which was a 15.5% increase from the average number of cases in the prior five years (Table 1, Figure 1). All of the 2006 cases were classified as confirmed, and the median age was 24. Over the past five years, and consistent with national data, the majority of the cases (75-90%) were acquired outside the U.S. The counties reporting the greatest number of cases include Broward, Miami-Dade, and Palm Beach. Cases tend to be isolated, rather than clustered, and typically occur more frequently in the summer months, perhaps due to increased travel. Serotype D1 is reported most frequently on laboratory analysis. Only a single outbreak of Typhoid fever (N=18, 1997) has been noted during the past 10 years. This outbreak was traced to frozen shakes made with imported frozen mamey fruit.

Prevention

Prevention is through proper sanitation, safe food handling practices, and appropriate case management. These include proper handwashing, appropriate disposal of human waste products, access to safe and purified water supplies, control of insects, appropriate refrigeration, and cleanliness in preparation of food products in both home and commercial settings. In endemic areas, this includes 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.

References

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004, p. 577.

Additional Resources

Additional information can be found on the Centers for Disease Control and Prevention website http://www.cdc.gov/ncidod/dbmd/diseaseinfo/typhoidfever_g.htm

Venezuelan Equine Encephalitis

Description

Venezuelan Equine Encephalitis virus (VEEV) is a mosquito-borne alphavirus that causes encephalitis in horses and humans. It is an important veterinary and public health problem in Central and South America. Human infections with VEEV are generally less severe than with Eastern Equine Encephalitis virus, and fatalities are rare. Adults usually develop only an influenza-like illness, and encephalitis is usually confined to children. Effective VEEV vaccines are available for equines. Prevention measures

for this group of viruses are the same as those for other mosquito-borne viruses. VEE is listed, along with other alphaviruses, as a potential bioterrorism agent because of its potential for weaponization in an aerosolized form.

Disease Abstract

No human cases of VEE have been reported in Florida. However, a closely related, but less virulent virus, named Everglades virus, is endemic to south Florida. Three human cases of Everglades virus encephalitis (EVE) have been reported in Florida, the most recent being in 1971. Evidence suggests that the virulent strain of VEEV introduced from South or Central America may be able to amplify in south Florida.

References

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

Additional Resources

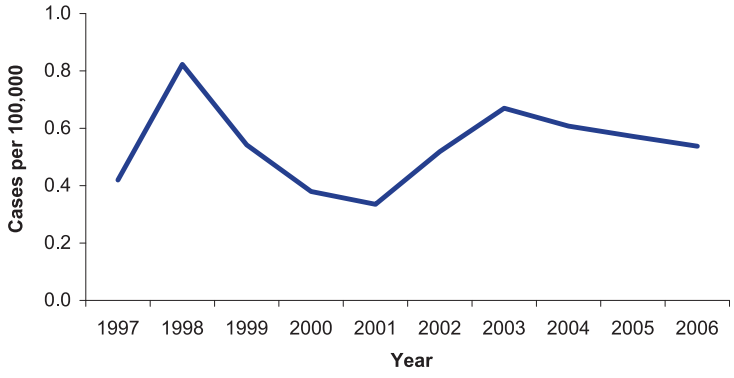
Additional information is available from the Florida Department of Health at http://doh.state.fl.us/Disease_ctrl/epi/htopics/reports/veepres1.pdf

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

Vibriosis

***Vibrio* infections: Crude Data**	
Number of cases	99
2006 incidence rate per 100,000	0.54
% change from average 5yr (2001-2005) incidence rate	- 1.1
Age (yrs)	
Mean	46.2
Median	52
Range	3-86

Figure 1.
Vibrio infections Incidence Rate by Year Reported, Florida, 1997-2006

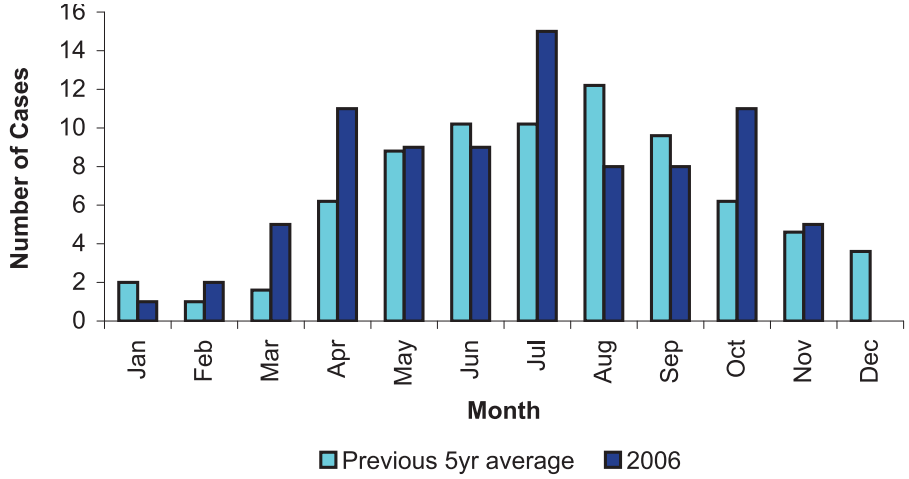


Description

The genus *Vibrio* consists of gram-negative, curved, motile rods, and contains about a dozen species known to cause human illness. Transmission occurs through the foodborne route, and in Florida it is 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. V. vulnificus* typically manifests as septicemia in persons who have chronic liver disease, chronic alcoholism, or are immunocompromised, whereas *V. parahaemolyticus* is a gastrointestinal disorder with symptoms of diarrhea, abdominal pain, nausea, fever, and headache. Both are commonly associated with consumption of raw oysters.

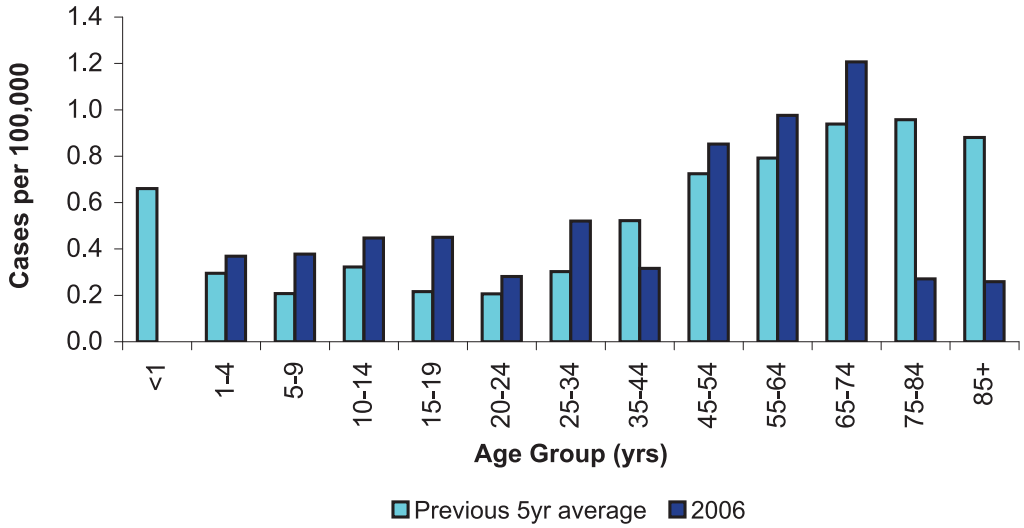
Figure 2. *Vibrio* infections by Month of Onset, Florida, 2006



Disease Abstract

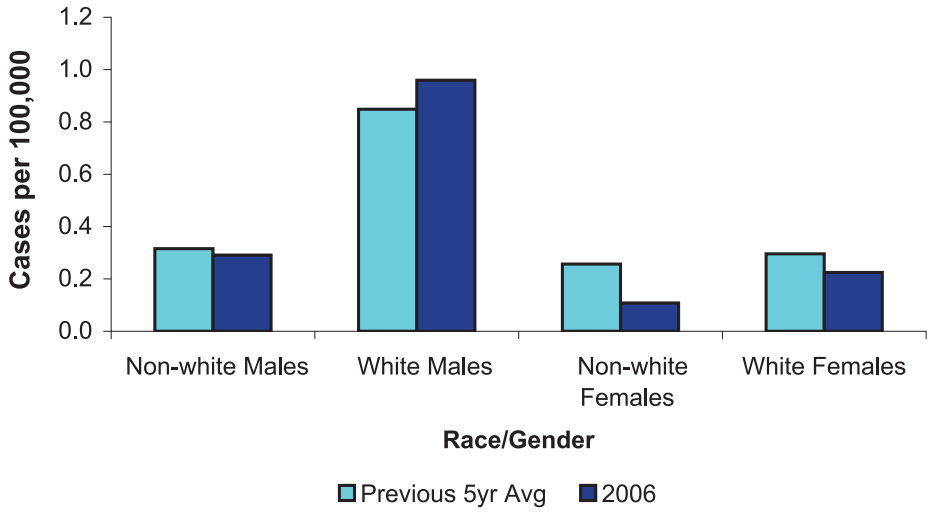
This report combines data on *Vibrio* infections to provide a general measure of disease burden. The reported numbers of species-specific illnesses are as follows: *V. alginolyticus* (N=26), *V. cholerae non-O1* (N=4), *V. cholerae type-O1* (N=0), *V. fluvialis* (N=6), *V. hollisae* (N=6), *V. mimicus* (N=1), *V. parahaemolyticus* (N=24), *V. vulnificus* (N=27), and other *Vibrio* species (N=5). In comparison to the previous average 5-year incidence, the incidence for *Vibrio* infections in 2006 declined slightly (1.1%) (Figure 1). A total of 99 cases were reported in 2006, of which 99% were confirmed. All of the cases were considered sporadic, not outbreak-associated. *Vibrio* infections typically increase during the warmer months. In 2006, 49% of the cases occurred from May to August (Figure 2).

Figure 3. *Vibrio* Infections Incidence Rate by Age Group, Florida, 2006

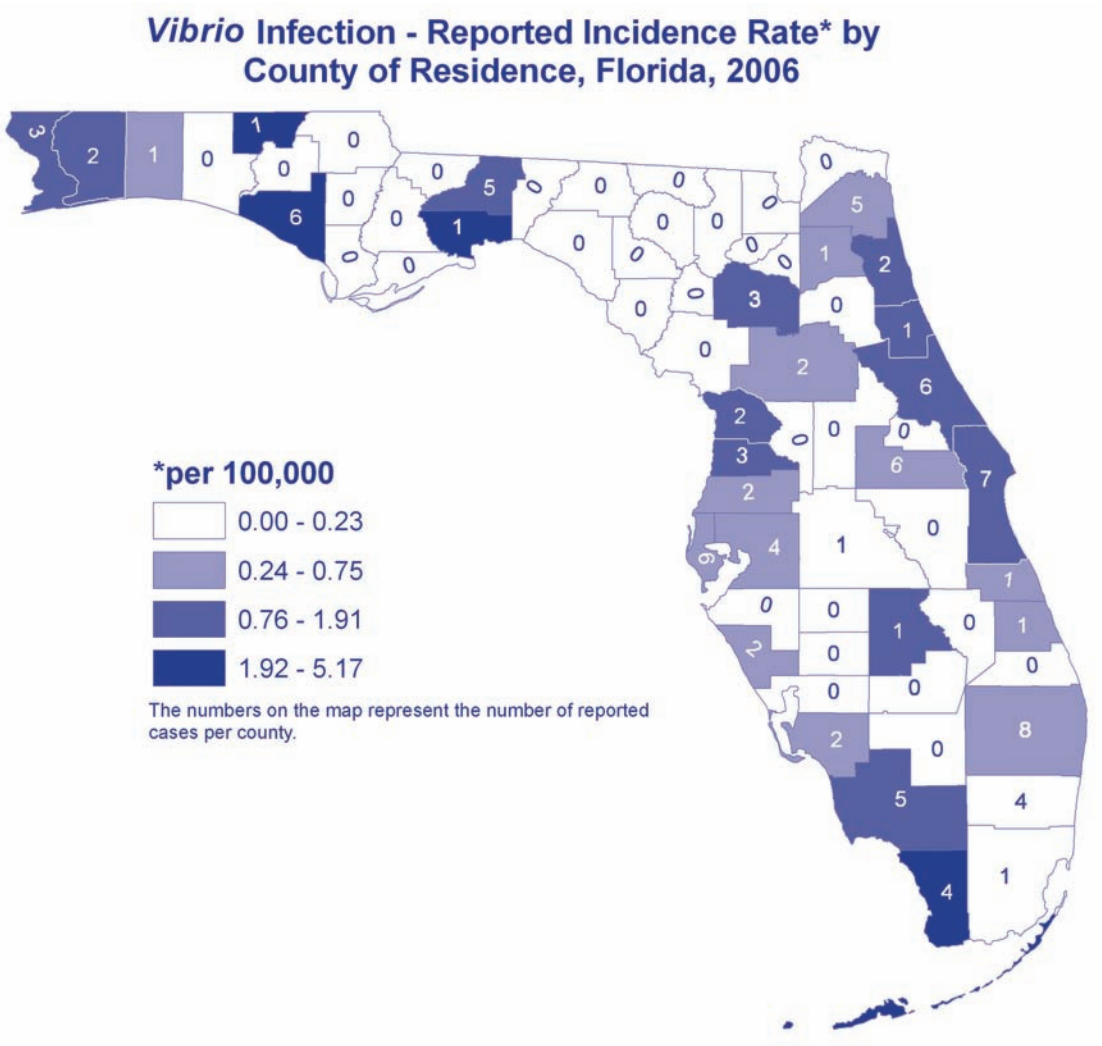


The highest incidence rates continue to occur among individuals 45+ years with the peak incidence occurring in the 65-74 age group (1.21 per 100,000), which is also the population more likely to have chronic conditions that predispose them to these infections (Figure 3). Historically, white males have the highest incidence rate. In 2006, incidence exceeded the previous 5-year average incidence for white males (0.96 per 100,000), but decreased among the other gender/race categories (Figure 4).

Figure 4. *Vibrio* infections Incidence Rate by Race and Gender, Florida, 2006



Vibrio cases were reported in 32 of the 67 counties in Florida in 2006. The higher-incidence counties appear to be along the coasts. Of the *Vibrio* sp. reported in 2006, 27 were *Vibrio vulnificus*, an important *Vibrio* infection causing serious illness and death in 47% of reported cases. Of the 27 reported *Vibrio vulnificus* cases, 10 were wound infections (three deaths), five were attributed to oyster consumption (three deaths), one was attributed to crab consumption, and 11 had unknown exposures.



References

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

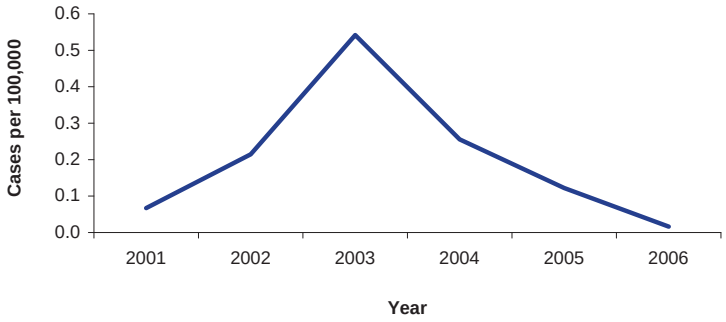
Additional Resources

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

West Nile Virus

West Nile Virus: Crude Data	
Number of cases	3
2006 incidence rate per 100,000	0.02
% change from average 5yr (2001-2005) incidence rate	- 93.2
Age (yrs)	
Mean	31.7
Median	43
Range	9-43

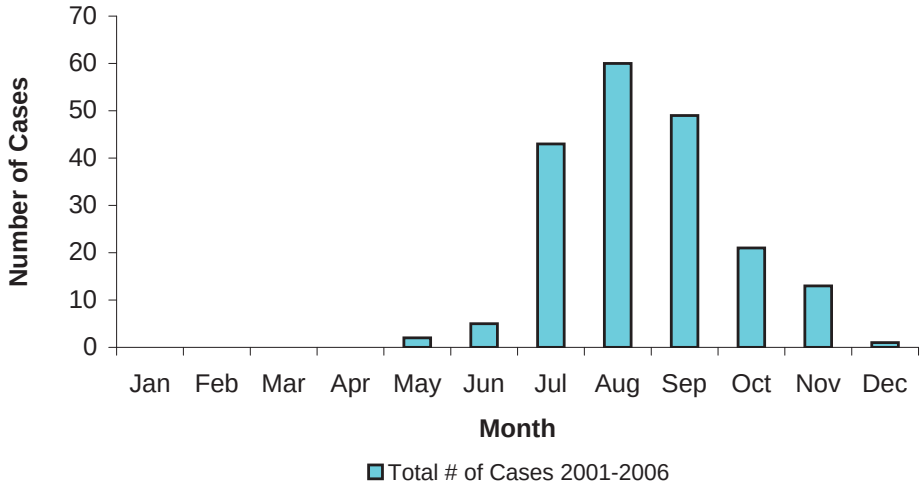
Figure 1. West Nile Virus Incidence Rate by Year Reported, Florida, 2001-2006



Description

West Nile virus (WNV) disease is caused by a mosquito-borne flavivirus that was first detected in the U.S. in New York City in 1999. The virus spread quickly and by the end of 2006 it had been detected in 48 states with over 23,000 human cases reported. WNV was first reported in Florida in 2001. The natural transmission cycle of WNV involves *Culex* mosquitoes and wild birds. Infection can cause high rates of mortality among certain families of birds, especially corvids. WNV is also pathogenic to horses. Over 1,000 equine cases were reported in Florida between 2001 and 2006. Humans and horses are considered incidental dead-end hosts. The clinical spectrum for human WNV infection includes asymptomatic infection, mild illness (fever and headache), aseptic meningitis, and encephalitis that can progress to coma and death. Approximately 80% of those infected show no clinical symptoms. Twenty percent have mild symptoms, and <1% experience the most severe form of illness. Typically, symptoms appear between three and 14 days after the bite of an infected mosquito. In Florida, case fatality rates range from 4% for all cases to 7% among those who develop the neuroinvasive form of the disease.

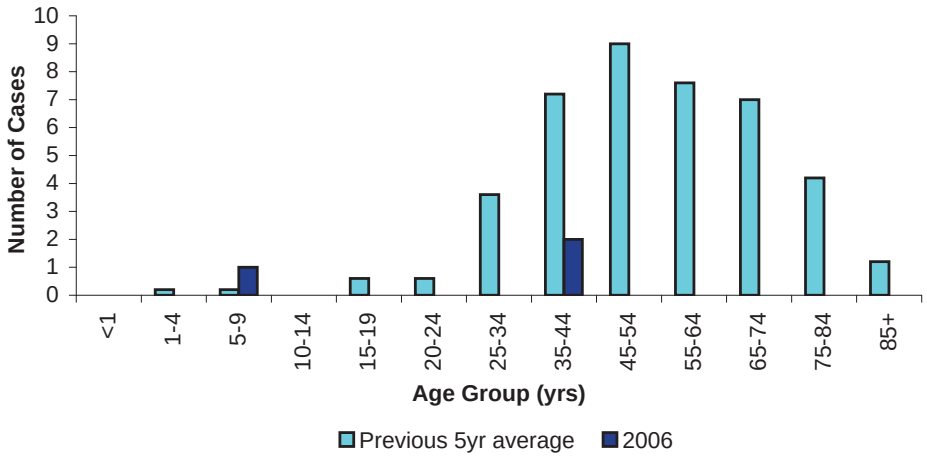
Figure 2. West Nile Virus by Month of Onset, Florida, 2001-2006



Disease Abstract

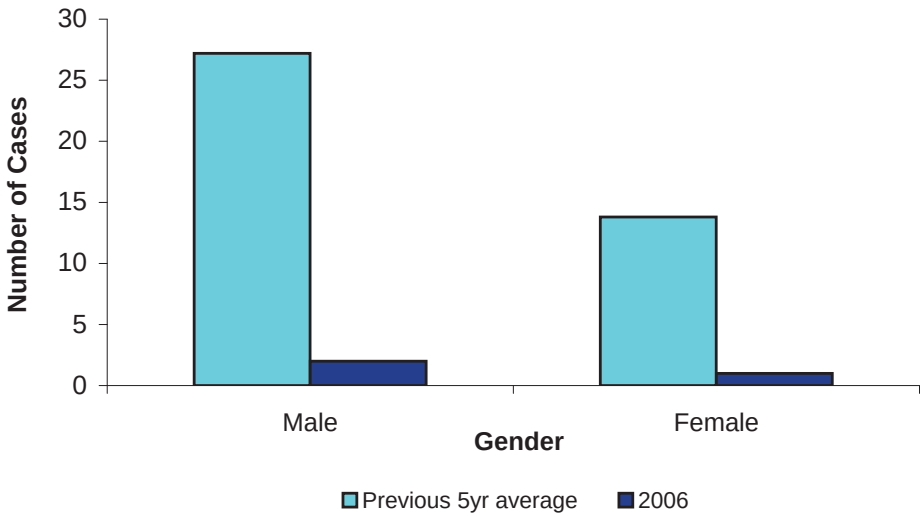
The incidence rate for WNV disease, including the neuroinvasive and non-neuroinvasive forms, peaked in 2003 (Figure 1). In 2006, there were no locally-acquired human cases, though three Floridians did become ill after being exposed in other states. The level of virus transmission between bird and mosquito populations is dependent on a number of environmental factors. The low levels of activity reported in 2006 were likely a result of the dry conditions experienced by much of the state. The peak transmission period for WNV in Florida occurs in July through September (Figure 2).

Figure 3. West Nile Virus Cases by Age Group, Florida, 2006



The greatest number of cases occur in individuals over the age of 35 (Figure 3), with more cases among males than females (Figure 4). 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.

Figure 4. West Nile Virus Cases by Gender, Florida 2006



Prevention

There is no specific treatment for WNV disease, and therapy is supportive for ill persons. Prevention of

the disease is a necessity. Measures can be taken to avoid being bitten by mosquitoes. 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 or oil of lemon eucalyptus. Avoid spending time outdoors during dusk and dawn, the time when disease-carrying mosquitoes are most likely to be seeking a blood meal. Dress in long sleeves and long pants to protect skin from mosquitoes. Also, inspect screens on doors and windows for holes to make sure mosquitoes cannot enter the home.

References

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

Additional Resources

Additional information on WNV 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/community/arboviral/pdf_files/UpdatedArboguide.pdf
Disease information is also available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dvbid/westnile/index.htm

Western Equine Encephalitis

Description

Western equine encephalitis virus (WEEV) is a mosquito-borne alphavirus that, like the closely related eastern equine encephalitis virus, is capable of causing morbidity in horses, birds, and humans. Symptoms can range from a mild flu-like illness to encephalitis, coma, and death. Survivors may be left with minor to severe neurologic deficits. Prevention measures for this virus are the same as those for other mosquito-borne viruses.

Disease Abstract

WEEV generally circulates in the west and central parts of the U.S. No human cases of WEE have been reported in Florida.

References

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

Resources

Additional information is available from the Florida Department of Health website at http://www.doh.state.fl.us/ENVIRONMENT/community/arboviral/pdf_files/weepres.pdf
Disease information is also available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dvbid/arbor/weefact.htm