Section 2

List of Notifiable Diseases and Conditions Included

Acquired Immune Deficiency Syndrome/
Human Immunodeficiency Virus
Brucellosis
Campylobacteriosis
Chlamydia
Ciguatera Fish Poisoning
Cryptosporidiosis
Cyclosporiasis
Dengue Fever
Ehrlichiosis/Anaplasmosis
Escherichia coli (O157:H7)
Giardiasis
Gonorrhea
Haemophilus influenzae, Invasive Disease
Hepatitis A
Hepatitis B (+HBsAg in Pregnant Women)
Hepatitis B, Acute
Hepatitis C, Acute
Lead Poisoning
Legionellosis
Listeriosis
Lyme Disease
Measles
Meningitis (other bacterial, cryptococcal, mycotic)
Mumps
Neonatal Infections
Pertussis
Pesticide-related Illness and Injury
Psittacosis
Q Fever
Rabies, Human or Animal
Rabies, Possible Exposure
Rocky Mountain Spotted Fever
Rubella
Salmonellosis
Shigellosis
Streptococcal Disease, Invasive Group A
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible
Syphilis
Tetanus
Toxoplasmosis
Tuberculosis
Typhus Fever
Varicella
Vibrio Infections
West Nile Virus

Acquired Immune Deficiency Syndrome/Human Immunodeficiency Virus

In 2006, Florida ranked second among states in the number of reported acquired immune deficiency syndrome (AIDS) cases. New York reported 5,495 (14%), followed by Florida with 4,932 cases (13%), then California with 3,960 cases (10%), and Texas with 2,998 cases (8%). Florida ranked fifth among the 38 states that reported human immunodeficiency virus (HIV) cases in 2006. California, reported 6,581 cases (13%), followed by Illinois with 6,241 cases (12%), then New York with 5,326 cases (11%) and Pennsylvania with 4,269 cases (8%).

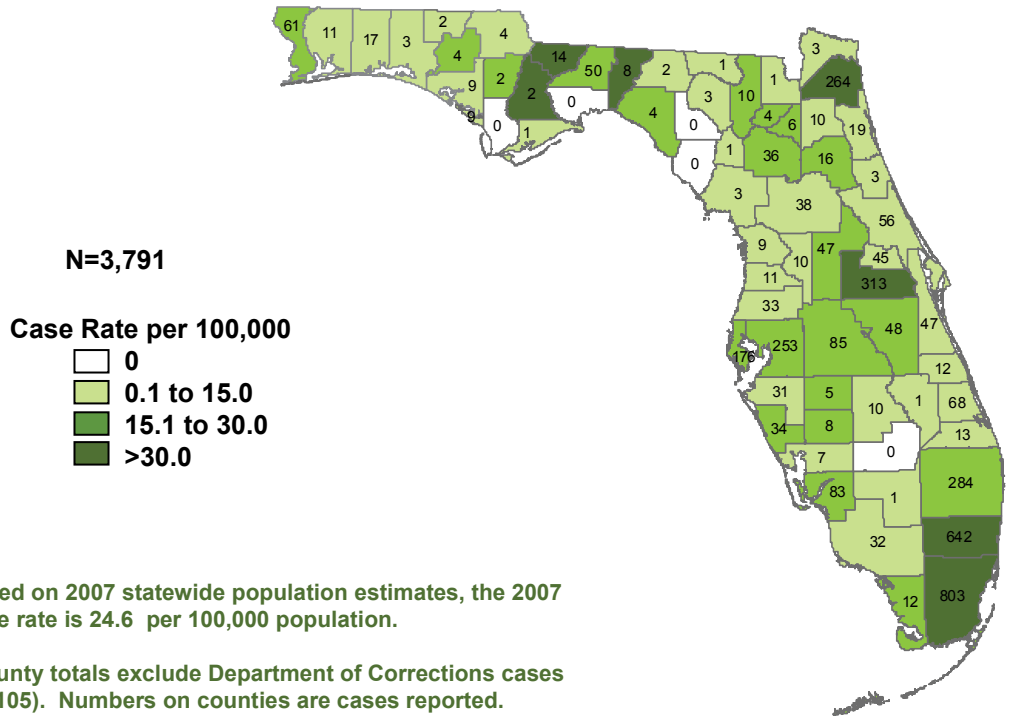
In 2007, Florida reported a higher percentage of AIDS cases among heterosexuals (26%) than the U.S. reported in 2006 (14%) (Note: US data not available for 2007). Florida reported a lower percentage of AIDS cases among men who had sex with men (MSM) and injection drug users (IDU) than the U.S.. MSM/IDU cases accounted for 5% of total reported cases in Florida and 7% in the U.S.. A slightly higher proportion of cases with no identified risk (NIR) were reported in Florida (13%) than in the U.S. as a whole (11%). Florida reported a slightly higher percentage of AIDS cases among blacks (54%) compared with the U.S. (49%). Florida also reported a higher percentage of cases among women (32%) compared with the U.S. (19%).

Similar to reported AIDS cases in 2007, Florida reported a higher percentage of HIV heterosexual cases (32%) compared to reported cases in the U.S. (20%). Florida reported a lower percentage of IDU than the U.S.. MSM/IDU cases accounted for 3% of total reported cases in Florida and 4% in the U.S.. The U.S. reported a slightly higher percentage of cases with NIR compared with Florida, 25% versus 22%. The state reported a lower percentage of HIV cases among blacks (45%) compared with the U.S. (49%). Florida also reported a slightly higher percentage of cases among women (30%) compared with the U.S. (27%).

In 2007, at least one AIDS case was reported in all but five counties (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 2,735 cases, or 72%, of Florida's total reported cases in 2007. The greatest numbers of AIDS cases were reported from three counties located in the southeastern part of the state, Broward, Miami-Dade, and Orange. These three counties reported a combined total of 1,758 cases in 2007, or 46% of the statewide total.

Analysis of county-specific AIDS case rates per 100,000 population for 2007, in counties with 20 or more reported AIDS cases in 2007, indicate that Broward County ranked the highest with a rate of 43.5, followed, Miami-Dade (39.2), Duval (35.6), and Orange (34.5) Counties.

Figure 1. AIDS cases and rates per 100,000 population, by county of residence, Florida, 2007 (excluding Department of Corrections)



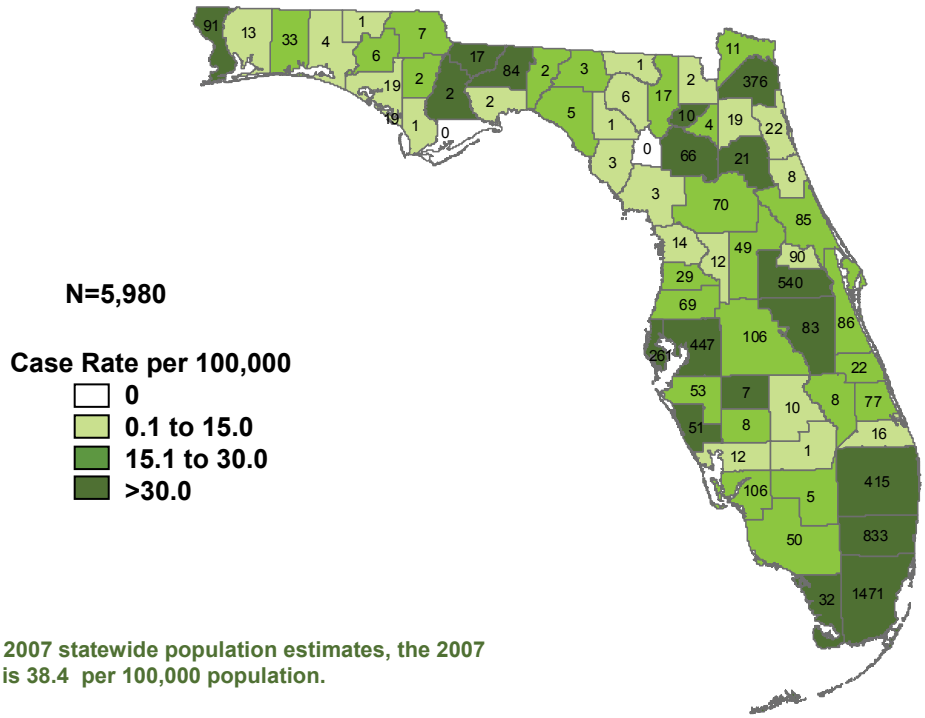
Based on 2007 statewide population estimates, the 2007 state rate is 24.6 per 100,000 population.

***County totals exclude Department of Corrections cases (N=105). Numbers on counties are cases reported.**

In 2007, at least one HIV case was reported in all counties but two (Figure 2). The majority of HIV cases were also reported from the same seven counties listed above. These seven counties reported a combined total of 4,343 cases, or 73%, of Florida's total reported cases in 2007. The greatest numbers of HIV cases were reported from Miami-Dade, Broward, and Orange Counties. These three counties reported a combined total of 2,844 cases in 2007, or 47% of the statewide total.

Analysis of county-specific data for 2007 indicate that Miami-Dade County ranked the highest with 25% of the HIV cases, followed by Broward (14%), Orange (9%), Hillsborough (7%), and Palm Beach (7%).

Figure 2. HIV cases and rates, by county of residence, Florida, 2007 (excluding Department of Corrections)

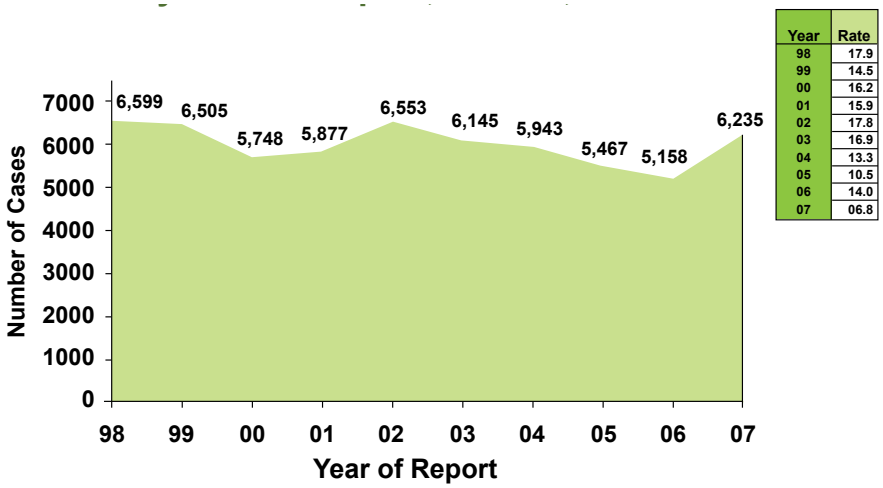


Based on 2007 statewide population estimates, the 2007 state rate is 38.4 per 100,000 population.

***County totals exclude Department of Corrections cases (N=255). This map does not reflect HIV incidence. Numbers on counties are cases reported.**

Generally, the number of HIV cases remained fairly stable over the past ten years with an increase in 2002 due to increased HIV testing statewide as part of the "Get to Know Your Status" campaign. Since that time, newly reported HIV cases have decreased each year (Figure 3). Note: enhanced reporting laws were implemented in Nov. 2006, leading to an artificial peak in HIV cases in 2007.

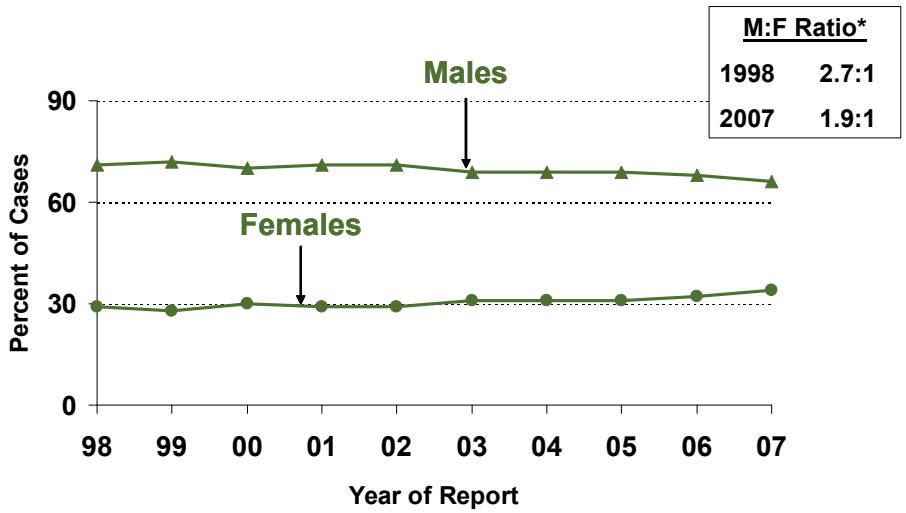
Figure 3. HIV case numbers and rates per 100,000 population*, by year of report, Florida, 1998-2007.



Comment: Generally, HIV cases remained fairly stable with an increase in 2002 due to increased HIV testing statewide as part of the "Get to Know Your Status" campaign. Since that time, newly reported HIV cases have decreased each year. Note: enhanced reporting laws were implemented in Nov. 2006, leading to an artificial peak in HIV cases in 2007.

In 1998, 29% of the AIDS cases reported in Florida were female (Figure 4). Over the past ten 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 1998 to 1.9:1 in 2007. In 2007, the case rate per 100,000 population was 33.5 among men and 16.2 among women, indicating that AIDS cases, in this period, were still more likely to be reported among men than women in Florida.

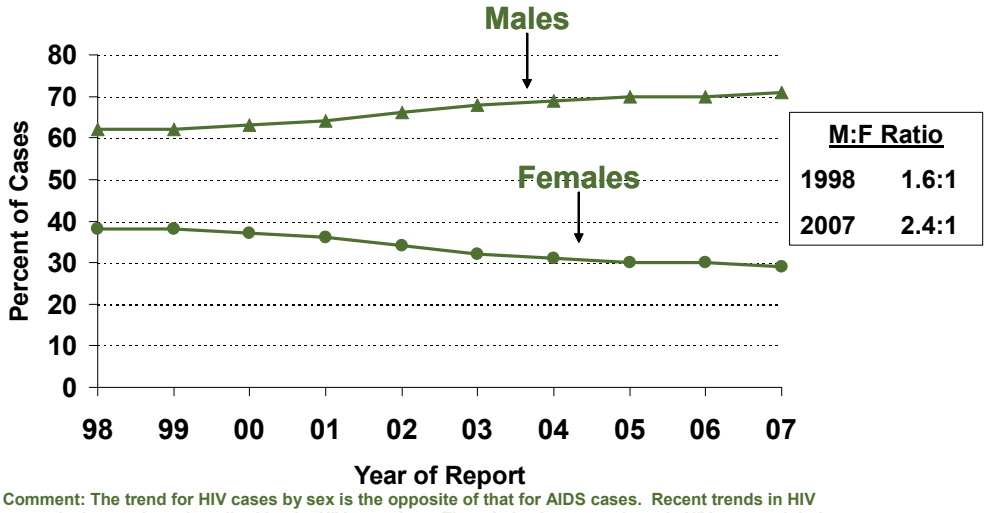
Figure 4. Percent of adult AIDS cases by sex and year of report, Florida, 1998 – 2007



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 ten years. The result is an increase of the male-to-female ratio, from 1.6:1 in 1998 to 2.4:1 in 2007. This increase in the male-to-female ratio differs from the pattern seen for the ratio for AIDS cases during the same time period.

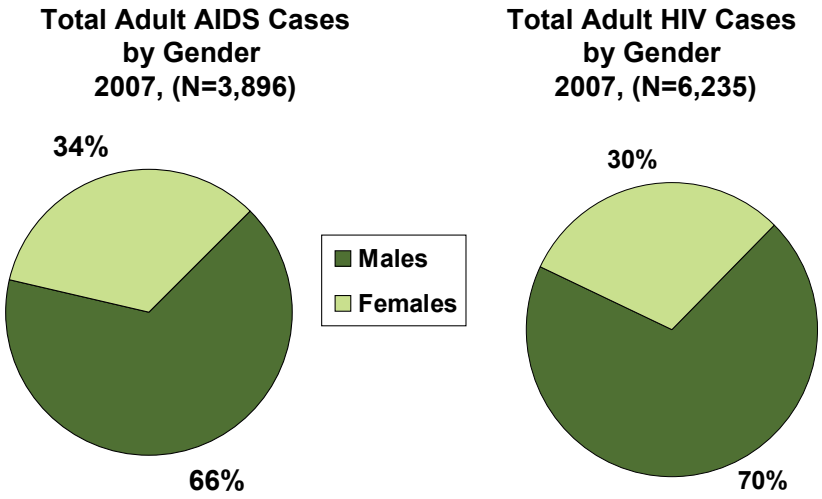
Figure 5. Percent of adult HIV cases by sex and year of report, Florida, 1998–2007



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 2007, a total of 2,571 men and 1,317 women were reported with AIDS, representing 66% and 34% of cases, respectively (Figure 6). Also in 2007, a total of 3,608 men and 1,579 women were reported with HIV infection, representing 70% and 30% of cases, respectively.

Figure 6. Percentage of adult AIDS cases by sex, Florida, compared with percentage of adult HIV cases by sex, Florida, 2007.

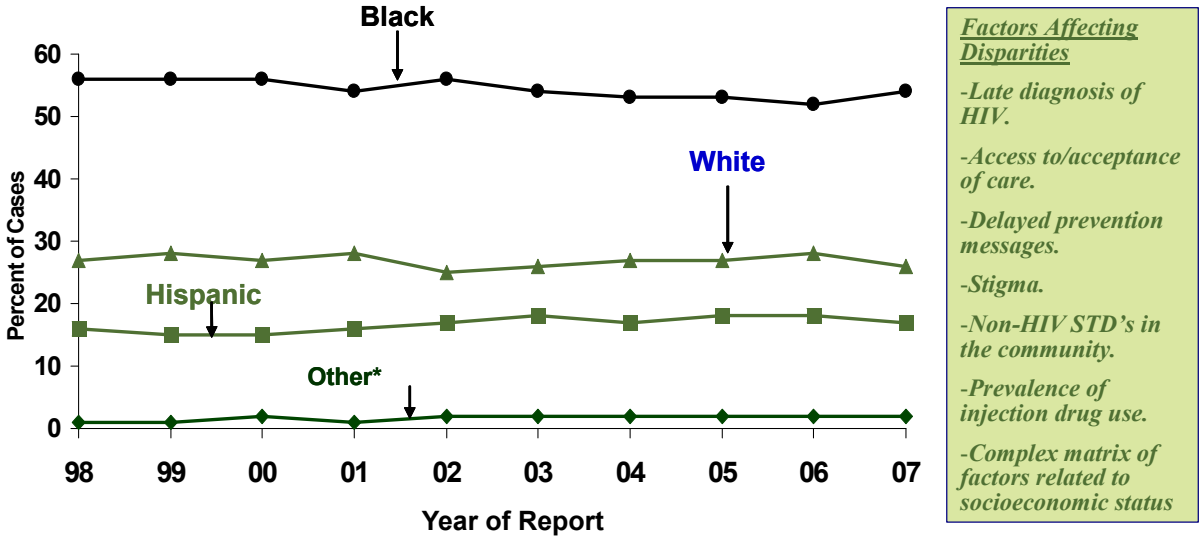


Comment: Florida's Adult Population is: 49% Male and 51% Female, therefore male cases are disproportionately impacted.

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

Twenty-seven percent of the adult AIDS cases reported in Florida in 1998 were white, compared with 56% black, and 16% Hispanic (Figure 7). Over the past ten years the proportion of AIDS cases among whites, blacks and Hispanics has remained fairly stable.

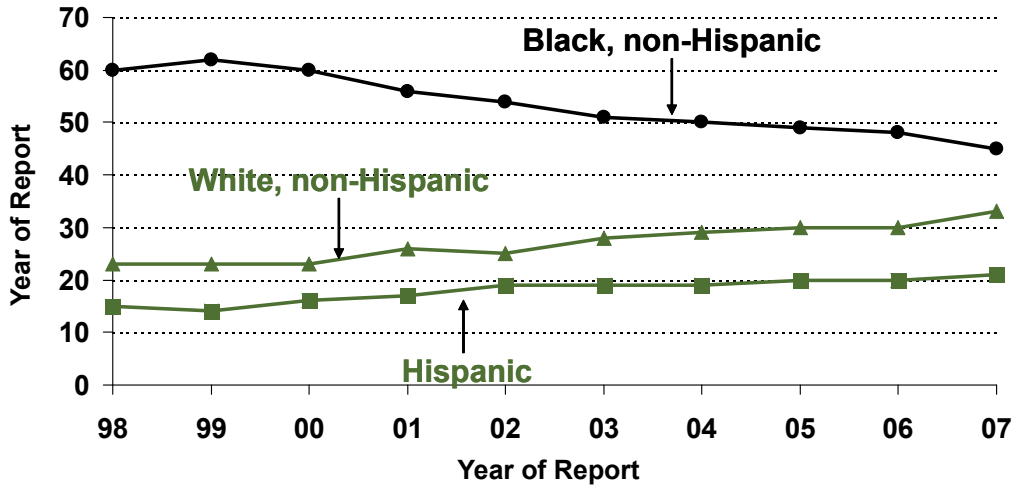
Figure 7. Percent of adult AIDS cases by race/ethnicity and year of report, Florida, 1998–2007



Comment: In 2007, blacks accounted for 54% of reported AIDS cases, but only 15% of the population. Hispanic cases remain stable at 17% in 2007. Disparities 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.**

Twenty-three percent of the adult HIV cases reported in Florida in 1998 were white, while 60% were black (Figure 8). By 2007, the percentage of HIV cases increased for whites (to 33%) and decreased among blacks (to 45%). The proportion of HIV cases among Hispanics shows a slight, but steady, increase since 2000.

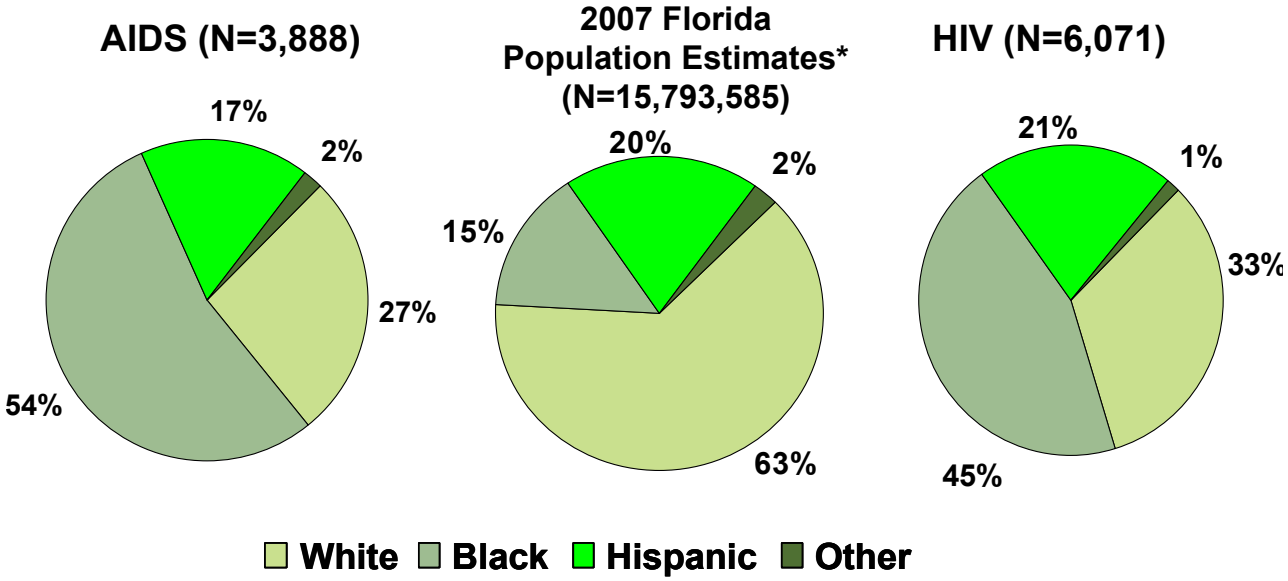
Figure 8. Percent of adult HIV cases by race/ethnicity and year of report, Florida, 1998–2007



Comment: In absolute numbers, from 1998-2007, HIV cases among blacks decreased by 31%, while increasing by 33% among whites and 27% 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 in Florida, but represent 54% of the AIDS cases and 45% of the HIV cases reported in 2007 (Figure 9). Hispanics comprise 20% of Florida's adult population, and account for 17% of the AIDS cases and 21% of the HIV cases.

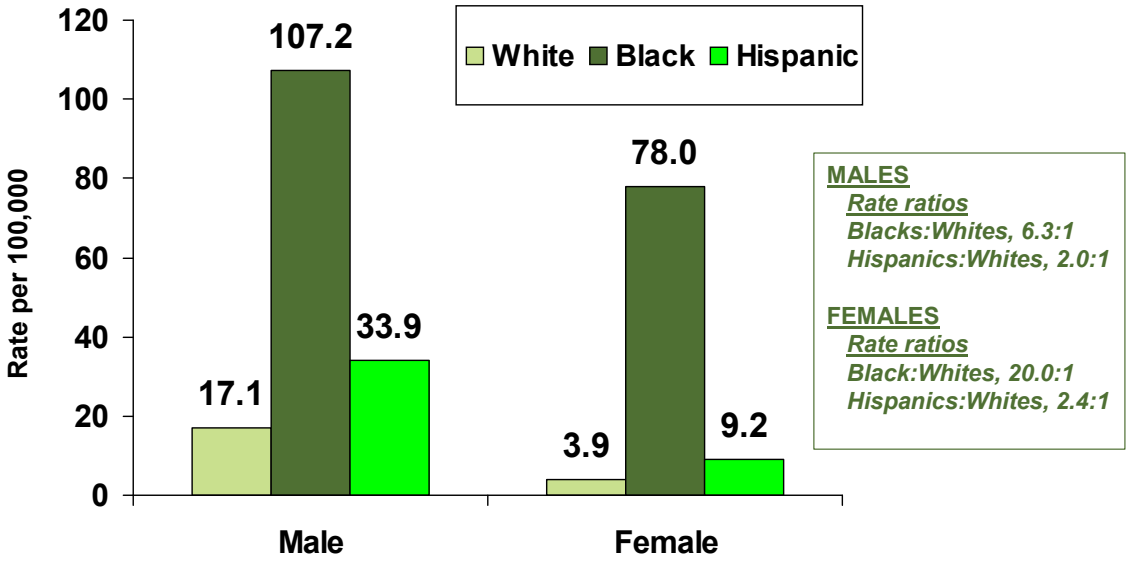
Figure 9. Percentage of adult AIDS cases by race/ethnicity, Florida, compared with percentage of adult HIV cases by race/ethnicity, Florida, 2007



Comment: In 2007, blacks are over-represented among the AIDS and HIV cases, accounting for 54% of adult AIDS cases and 45% of adult HIV cases, but only 15% of the adult population. Hispanics represent 20% of the adult population and account for 17% of the adult AIDS cases and 21% 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.
*2007 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 men and women are also over-represented, when compared to the percentage of Hispanic population in Florida.

Figure 10. Adult AIDS case rates per 100,000 population by sex and race/ethnicity, Florida, 2007

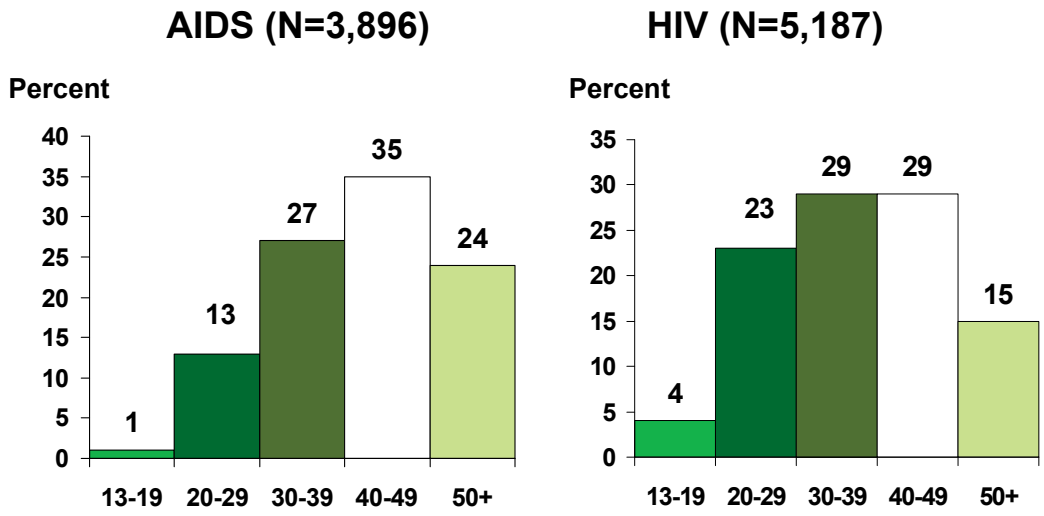


Comment: Among black males, the AIDS case rate for 2007 is 6 times higher than among white males. Among black females, the AIDS case rate is 20 times higher than among white females. Hispanic male rates are 2 times higher and Hispanic female rates are 2 times higher than the rates among their white counterparts.
***2007 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 2007 was among persons 40-49 years old (35%) (Figure 11). The 30-39 age group was second, with 27% of the reported AIDS cases. The 20-29 age group accounted for 13% of these cases, and the 50-and-older age group accounted for 24%. Persons reported with AIDS in the 40-49 age group account for 35% of the cases but only 16% of the total population.

Compared with AIDS cases, a greater proportion of HIV cases in 2007 were reported among those aged 30-39 (29%), those aged 20-29 (23%) and those 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 and older (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, 2007



Comment: HIV cases tend 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.

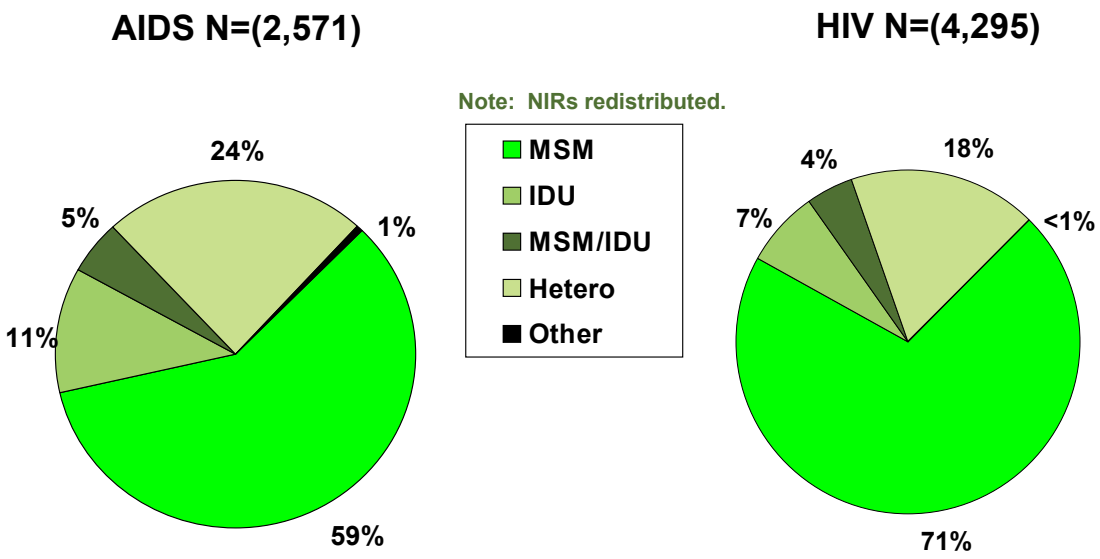
HIV/AIDS By Mode Of Exposure

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 2007, MSM was the most common risk factor (59% and 71% respectively) followed by cases with a heterosexual risk (24% for AIDS and 18% for HIV) (Figure 12). People with an IDU risk are more common among AIDS cases (11%) than HIV cases (7%) as 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, 2007

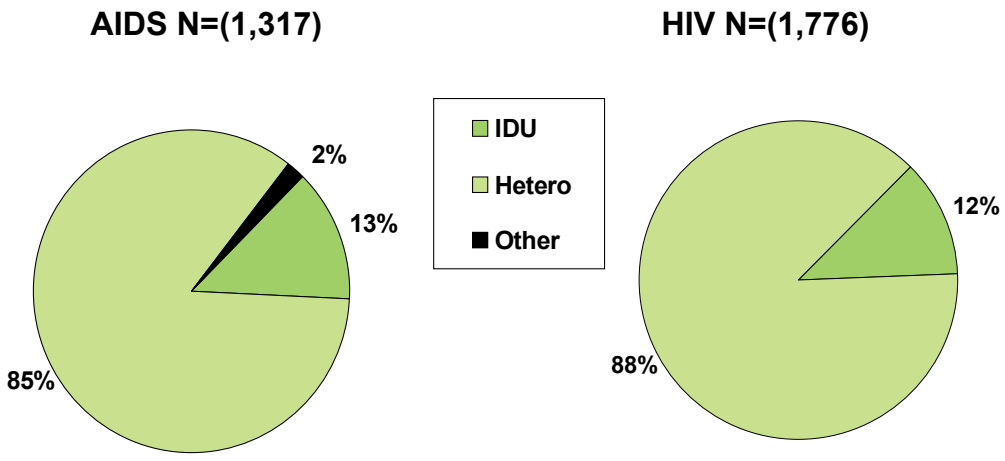


Comment: The recent increase among MSM is indicated by the higher percent of MSM among HIV cases compared to AID cases, as HIV cases tend to represent a more recent picture of the epidemic.

Females

Among the female AIDS and HIV cases reported for 2007, heterosexual contact was the highest risk followed by IDU (Figure 13).

Figure 13. Adult female AIDS and HIV cases by mode of exposure, Florida, 2007



Comment: Among females, heterosexual is the dominant risk.

Prevalence Estimate 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. The HIV prevalence estimate—the estimated number of persons living with HIV infection—includes those living with a diagnosis of HIV or AIDS and those who are infected but unaware of their serostatus. Approximately 1,039,000–1,185,000 persons are living with HIV infection in the United States (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 Department of Health now estimates that approximately 125,000 people, or roughly 11.7% of the national total, are currently living with HIV infection in Florida as of the end of 2007.

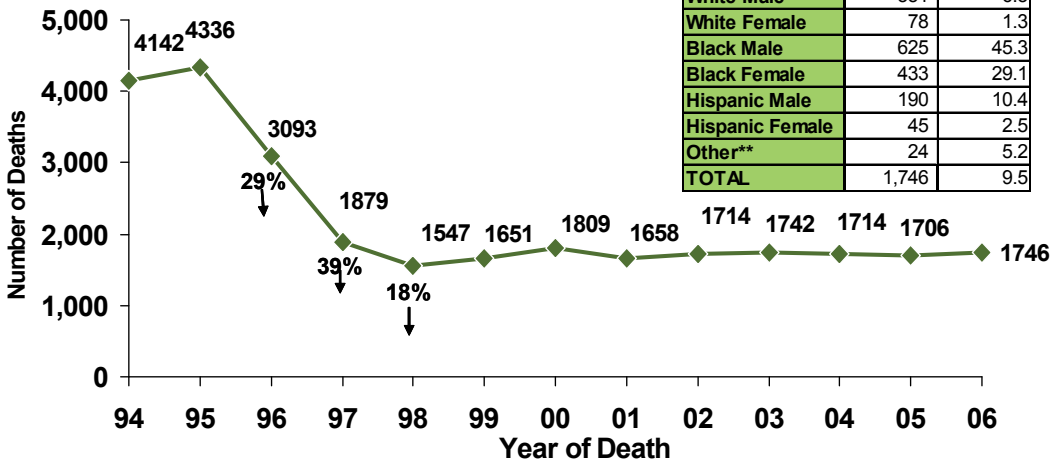
Impact of HIV-related Deaths

As of December 31, 2007, a total of 109,364 AIDS cases were known to have been reported in Florida. Some cases are lost to follow-up, so vital status is unknown. Of these cumulative cases, 60,288 (55%) were known to have died.

HIV/AIDS deaths decreased markedly from 1996-1998, associated with the advent of highly active antiretroviral therapy (HAART) in 1996. Deaths in 2006 were 60% 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, 1994–2006

Race/Ethnicity	2006	
	No.	rate
White Male	351	6.3
White Female	78	1.3
Black Male	625	45.3
Black Female	433	29.1
Hispanic Male	190	10.4
Hispanic Female	45	2.5
Other**	24	5.2
TOTAL	1,746	9.5

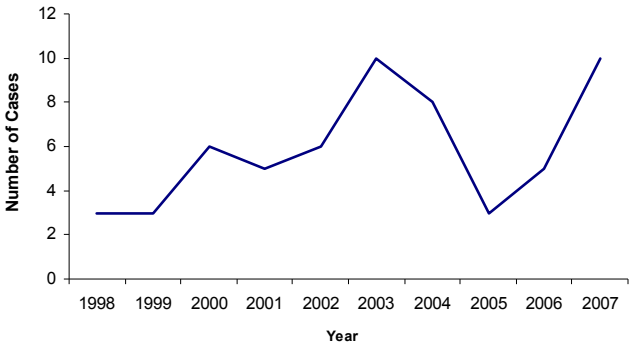


Rates are expressed as deaths per 100,000 population based on 2006 Population Estimates, DOH, Office of Planning, Evaluation and Data Analysis
Comment: HIV/AIDS deaths decreased markedly from 1996-1998, associated with the advent of HAART in 1996. Deaths in 2006 were 60% lower than in the peak year, 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. Racial/ethnic disparities are evident in the death rate data.
Source: Office of Vital Statistics and Bureau of HIV/AIDS, death certificates coded to HIV/AIDS as underlying cause.

Brucellosis

Brucellosis: Crude Data	
Number of Cases	10
2007 incidence rate per 100,000	0.04
% change from average 5 year (2002-2006) incidence rate	46.59
Age (yrs)	
Mean	44
Median	36
Min-Max	18 - 78

Figure 1.
Brucellosis Cases by Year Reported, Florida, 1998-2007



Description

Brucellosis is an important disease of ruminants, swine, dogs and coyotes 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; *B. canis* occurs sporadically in dogs. *Brucella* sp. are also 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 (soft cheeses). Though less common, aerosol transmission is also possible in areas contaminated with high concentrations of the 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, and 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 the liver, spleen and other organs can occur.

Joint and bone 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 rate is ≤2%. Mortality is usually associated with endocarditis caused by *B. melitensis*. The relatively non-specific clinical presentation along with the low disease incidence may result in delay in clinical diagnosis of brucellosis.

Disease Abstract

A total of 61 cases of human brucellosis were reported in Florida from 1997 to 2007, of which 52 or (85.2%) were classified as confirmed. The incidence rate has increased over the past ten years with an annual average of 4.25 cases reported from 1998-2001 compared to 8.4 in 2002-2007. Speciation was provided in 31 cases with 19 *B. suis*, 6 *B. abortus* and 6 *B. melitensis* infections identified. Site of

exposure was determined in nine of the ten cases from 2007, with seven being acquired in Florida and two being acquired outside of the U.S. Men accounted for 75% of the cases. Affected people ranged from 18-78 years old. Incidence was highest in those aged 55-64 and 75-84, representing 4 cases or 40% of the total reports from 2007. All of the cases were in whites. Risk factors identified in 24 cases included hunting, handling carcasses or handling bloody clothing (14 cases; 13 specifically mentioned hogs), consuming unpasteurized milk (4 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).

Hog hunting was a significant risk factor, with eight of ten cases identified in 2007 being associated with that activity. Interestingly, two of these cases included spouses of hog hunters with the suspected exposure being contact with bloody clothing or possibly uncooked meat. Two hunter infections in 2007 were epidemiologically linked to butchering a single feral hog from a private hunting facility in Brevard County; one of these patients had a relapse following antibiotic treatment. Earlier in the year the spouse of a hunter who had a membership at the same facility was also diagnosed with brucellosis. Not included in the 2007 case count, a veterinarian diagnosed with *Brucella* eight years previously but not treated with aminoglycosides was identified as having a likely chronic brucellosis infection.

Prevention

Prevention can best be accomplished through 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* sp. 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. Heymann (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.

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

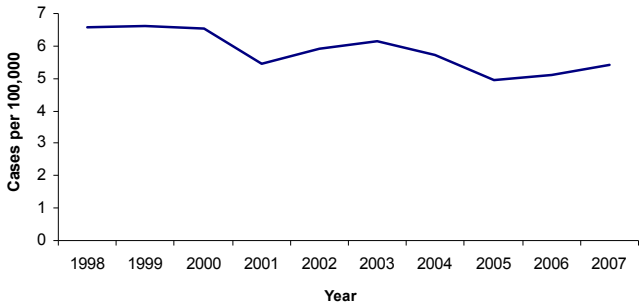
Additional information can also be found at the United States Department of Agriculture, Animal and Plant Health Inspection Services website at http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/

As well as the Centers for Disease Control and Prevention website at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis_g.htm

Campylobacteriosis

Campylobacteriosis: Crude Data	
Number of cases	1,017
2007 incidence rate per 100,000	5.42
% change from average 5yr (2002-2006) incidence rate	- 2.54
Age (yrs)	
Mean	33.15
Median	32
Min-Max	<1-98

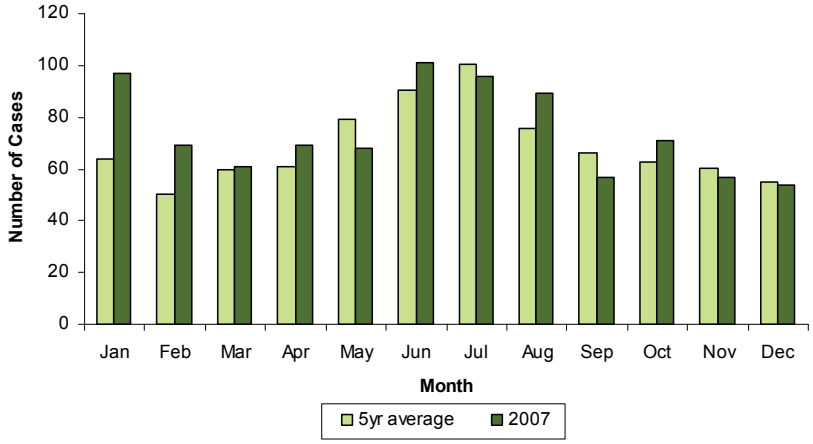
Figure 1.
Campylobacteriosis Incidence Rate by Year Reported, Florida, 1998-2007



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 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, 2007



Disease Abstract

The incidence rate for campylobacteriosis has declined slightly over the last ten years (Figure 1). In 2007 there was a 2.54% decrease in comparison to the average incidence from 2002-2006 even though there was a slight increase in the incidence rate from 2006 to 2007. A total of 1,017 cases were reported in 2007, of which 94.89% were classified as confirmed. The number of cases reported tends to increase in the summer months but there were a high number of cases reported in January of 2007. In 2007, the number of cases exceeded the previous 5-year average in seven months of the year (Figure 2). Overall, 7.2% of the campylobacteriosis cases were classified as outbreak related as compared to 4.8% in 2006.

The highest incidence rates continue to occur among infants <1 year old and children aged 1-4 years (Figure 3). Males continue to have a higher incidence than females (6.08 per 100,000 and 4.79 per 100,000, respectively), and in 2007, 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, 2007

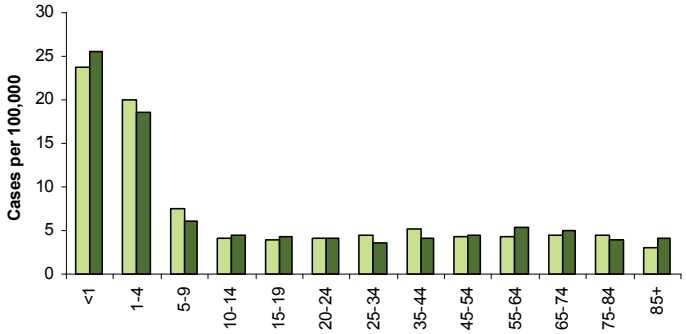
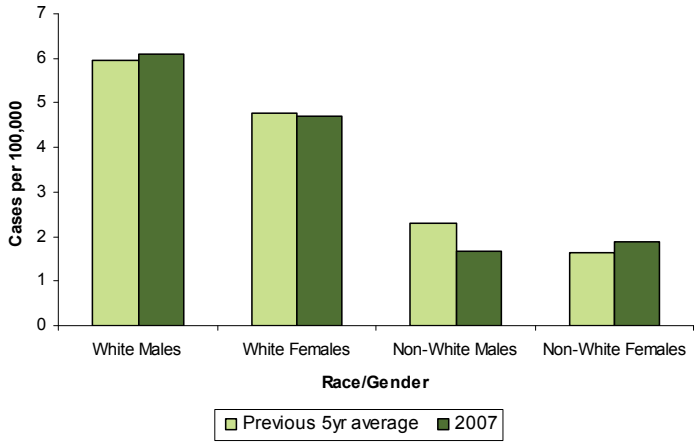


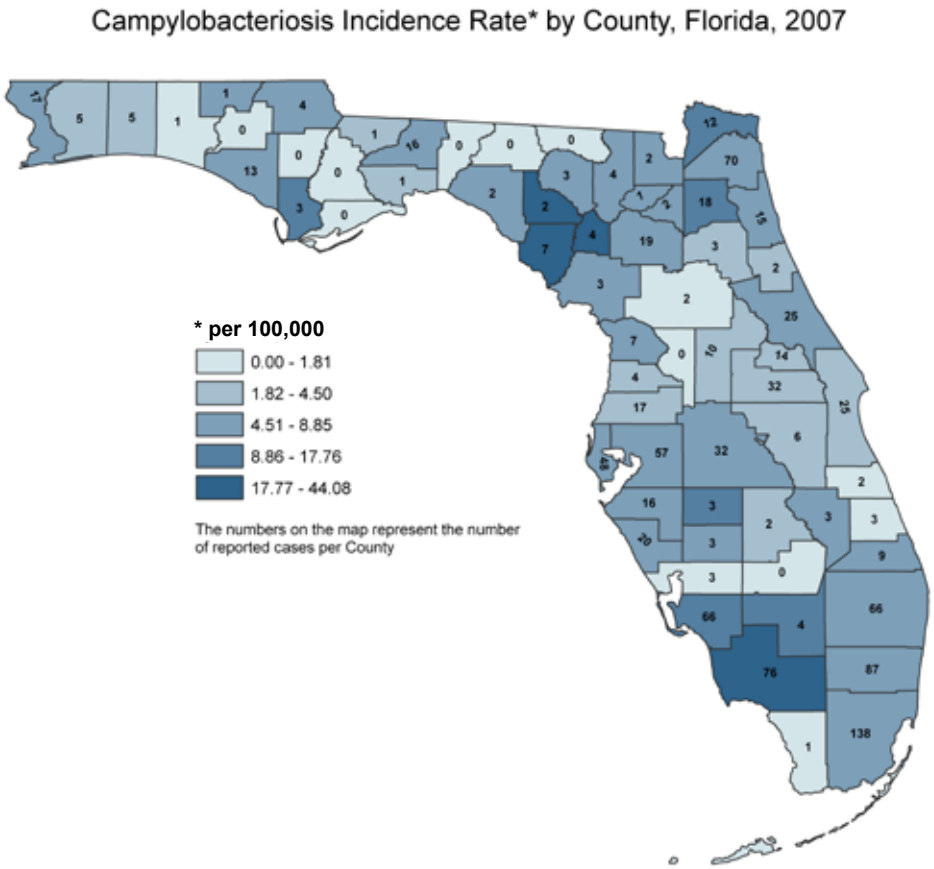
Figure 4. Campylobacteriosis Incidence Rate by Race and Gender, Florida, 2007



Campylobacteriosis was reported in 58 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. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

Additional Resources

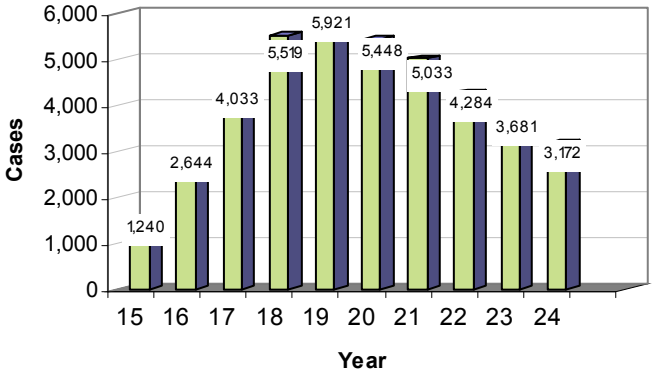
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

Chlamydia

Chlamydia, caused by the bacterium *Chlamydia trachomatis*, is the most commonly reported sexually transmitted disease in the U.S. 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 2007, there were 57,580 chlamydia cases reported in Florida, or 306.9 cases per 100,000 total population. Close examination of the disease distribution reveals that two-thirds of all reported cases of chlamydia are reported in populations under the age of 26; further, C*hlamydia trachomatis* is the most prevalent sexually transmitted bacterial infection reported among 15-24 year olds in Florida. This report will focus attention on trends associated with adolescents and young adult populations; but will conclude with a brief summary of overall trends. *Data on congenital chlamydia cases in neonates under 1 years of age will be discussed within the section "Neonatal Infections."*

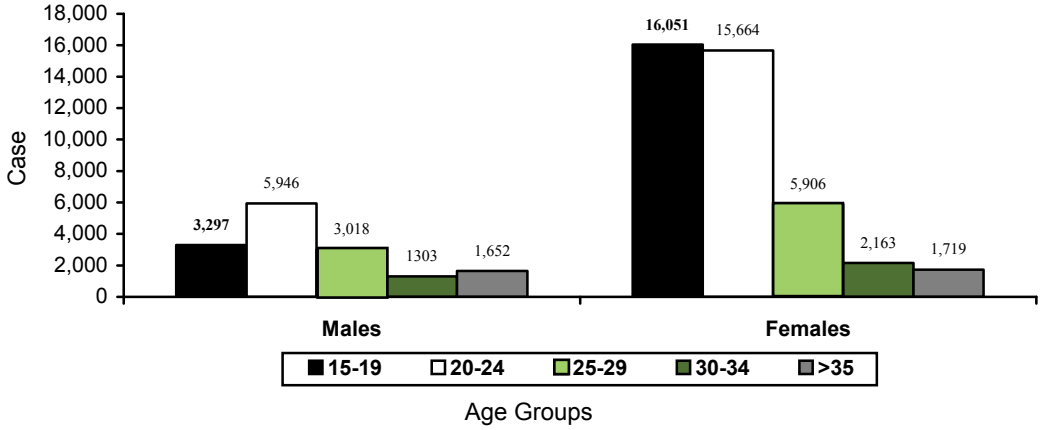
Figure 1: Reported Number of Chlamydia Cases by Single Age Group (15-24), Florida, 2007



Age, as a risk factor for chlamydia, is extremely important as the prevalence of chlamydia is the highest among those under 25 years of age. Approximately 50% of all STD cases reported from 2000 to 2007 have an age of initial report of an STD at age 22 or under. Although 15-24 year olds represent 16% of the population 15 and over, this population represents approximately 70% of all reported chlamydia cases in Florida. A total of 40,975 chlamydia cases were reported in persons between the ages of 15-24 in 2007. From 2006 to 2007, reported cases in this population increased by 15.9%. Chlamydia cases in the 15-19 age group comprised 33.6% of all cases reported, and chlamydia cases in the 20-24 age group comprised 37.5% of all cases reported in 2007. The overall rate for 15-24 year olds was 1,692.1 per 100,000. The mean age of all reported chlamydia cases was 23; however, 17-22 year olds reported at least 4,000 cases in each single age (Figure 1). When single ages are compared within the 15-24 age range, the number of cases reported peaked at the age of 19 (mean=19.7) with a gradual decline of cases as age in years increased above 19.

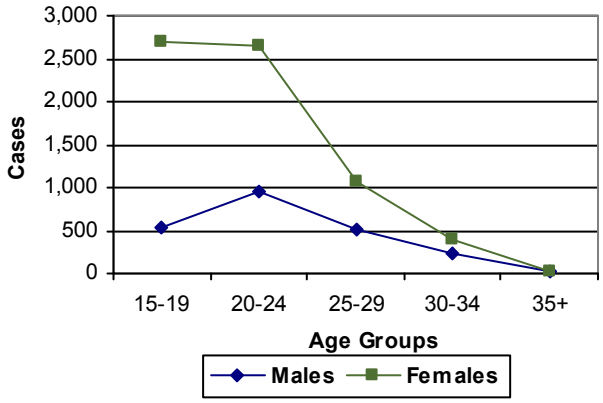
The burden of morbidity occurs in young women for several reasons. Young women may have an increased susceptibility to the bacterium *Chlamydia trachomatis* compared to mature women that may develop immune response and/or decreased target cell availability for infection. Consequently, these physiological differences make it highly common to observe a high number of infections before the age of 35 (Figure 2). In 2007, and preceding years, the highest number of cases in females were reported in the 15-24 age group with the highest rate, across both genders, occurring among females 15-19 (2,700.8 per 100,000). The rate for females in the 20-24 age group was slightly lower at 2,658.2 per 100,000. Florida specific trends parallel national data that indicates infection is most prevalent in women under the age of 25.

Figure 2. Reported Cases of Chlamydia by Gender and Age Group, Florida, 2007



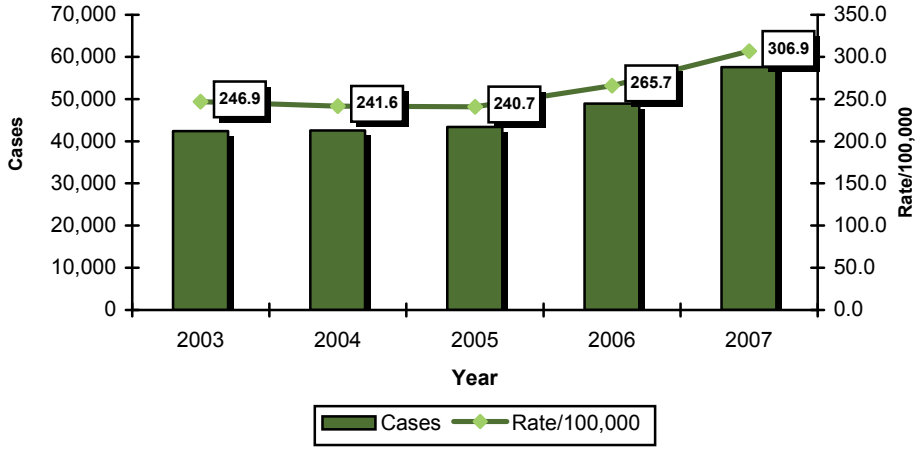
Gender differences in health care services and healthcare seeking behaviors account for significant differences in rates between males and females. Rates in men underestimate the prevalence of chlamydia as clinical guidelines strongly recommend screening of asymptomatic women, but not men, due to the severity of complications and sequelae associated with infection in women as compared to men. Although rates are considerably lower in males (Figure 3), disparities exist with men under the age of 25 as well. In 2007, 20-24 year olds had the highest rate among male populations (963.1 per 100,000 population). This rate was trailed by a rate of 531.3 per 100,000 population for males between the ages of 15-19.

Figure 3. Chlamydia Rates Per 100,000 Population By Gender and Age Group, Florida, 2007



Chlamydia impacts adolescents and young women regardless of race and ethnic groupings (Figure 4). Non-Hispanic black females in adolescence and young adult populations have higher rates compared to white and Hispanic populations in Florida. Among women, the case rate for non-Hispanic black 15-24 years olds was nearly 8 times higher than the second highest rate, in non-Hispanic white females 15-24 (1,967.4 per 100,000). In 2007, adolescents and young adults (15-24) who self reported as non-Hispanic black accounted for 53.7% of the chlamydia cases reported that year (Figure 4). People who self reported as non-Hispanic white accounted for 22.0% of cases. People who self reported as Hispanic (white or black) accounted for 8.3% of cases. People who self reported in other or unidentified racial-ethnic groups accounted for 16.0% of cases. It is important to note that race and ethnicity in the United States are risk markers that correlate with other more fundamental determinants of health status such as poverty, access to quality health care, health care seeking behavior, and residence in

Figure 5. Reported Cases of Chlamydia among Males and Females by Year, Florida, 2003-2007



communities with high prevalence of STDs. These factors contribute to disparities in young minority women.

The vast differences in adverse outcomes, STD susceptibility, and a combination of other factors leave adolescents and young adults disproportionately affected with chlamydia compared to older populations; however, the overall chlamydia rate continues to increase in all age groups. From 2006 to 2007, there was an overall 15.5% increase in the state chlamydia rate (Figure 5). The number of cases reported among females increased by 9.4%, from 38,535 in 2006 to 42,175 in 2007 and the number of cases reported among males increased by 47.7%, from 10,410 in 2006 to 15,379 in 2007. This upward trend of increase in both males and females reflects a change in state administrative code to require electronic laboratory reporting, the expanded use of highly sensitive urine-based screening, and broad community prevalence. Nevertheless, under-reporting is still common due to the large proportion of infections that are asymptomatic or very mild, the lack of resources in adolescent and male populations, and the widespread prevalence of the infection.

References

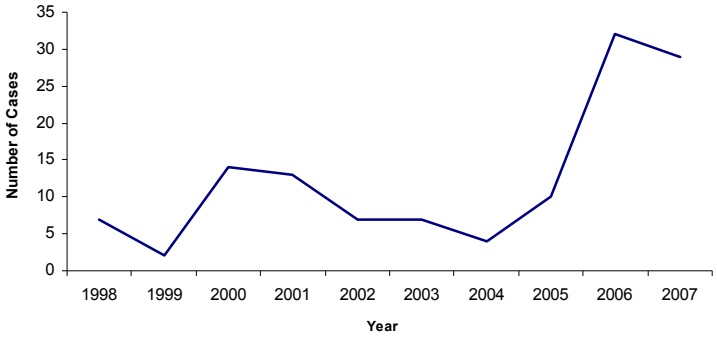
American Social Health Association, *Chlamydia> Questions & Answers*, Published July 30, 2007, available at http://www.ashastd.org/learn/learn_chlamydia.cfm.

Centers for Disease Control and Prevention, *Sexually Transmitted Disease Surveillance, 2001*, Centers for Disease Control and Prevention, Atlanta, GA, 2002.

Ciguatera Fish Poisoning

Ciguatera: Crude Data	
Number of Cases	29
2007 incidence rate per 100,000	0.15
% change from average 5 year (2002-2006) incidence rate	141.67
Age (yrs)	
Mean	38.9
Median	43
Min-Max	2 - 56

Figure 1.
Ciguatera Cases by Year Reported, Florida, 1998-2007



Description

Ciguatera poisoning in humans is caused by the consumption of certain tropical and subtropical finfish which accumulate naturally-occurring toxins through their diets. The toxins are produced by several algae species known as dinoflagellates. The fish that are most commonly associated with ciguatera fish poisoning are grouper, barracuda, snapper, jack, mackerel, and triggerfish. However, many other types of warm water marine fish can harbor the toxin.

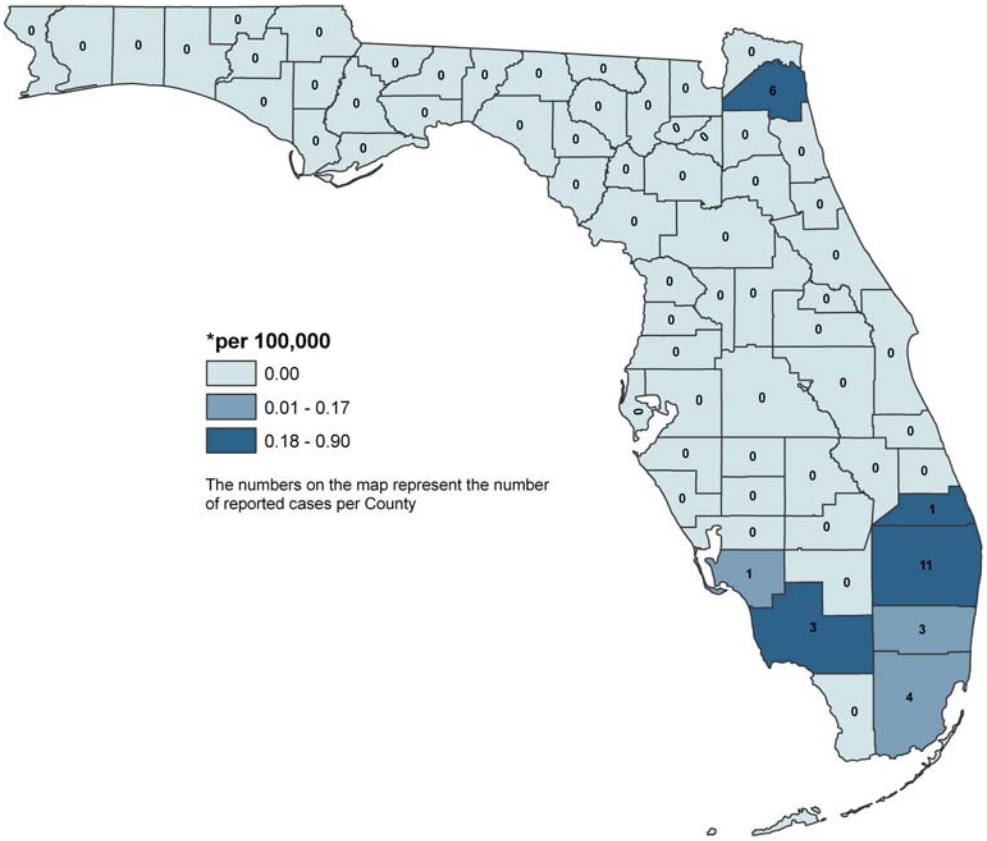
Symptoms can manifest within six hours of fish consumption and include numbness around the mouth and tingling which may spread to the hands and feet, nausea, vomiting, and diarrhea. Neurological involvement may occur and includes joint and muscle pain, headache, temperature sensory reversal, acute sensitivity to temperature extremes, vertigo, and muscle weakness to the point of prostration. Abnormally slow, fast or irregular heart rate and reduced blood pressure may also be observed. The poisoning is usually self-limiting and very rarely fatal. Symptoms usually subside within several days but neurological symptoms have been reported to last for weeks or months. There are no clinical tests that can identify ciguatera fish poisoning in humans and so diagnosis is based on symptoms and dietary history.

Disease Abstract

The epidemiology of ciguatera fish poisoning in the U.S. is not known. This may be due to lack of recognition among the medical community, the non-fatal nature of the disease, and the short duration. However, the epidemiology in Florida is more complete, although it is still likely that there is significant under-reporting. In 2007, nine ciguatera outbreaks were reported in Florida, involving a total of 34 people. Eight of these outbreaks were confirmed (33 outbreak-related cases) and one was suspected (1 outbreak-related case). One of the outbreaks involved amberjack consumed at a restaurant (7 cases) and another was linked to barracuda purchased at a retail store (3 cases). The rest of the outbreaks were linked to recreationally-caught fish: barracuda (4 outbreaks – 18 outbreak-related cases), amberjack (1 outbreak – 3 outbreak-related cases), grouper (1 outbreak – 2 outbreak-related cases) and king mackerel (1 outbreak – 1 outbreak-related case). A total of 24 of the outbreak-related cases were attributed to recreationally-caught fish. The FDOH Aquatic Toxin and Food and Waterborne Disease Programs are working on an educational campaign to target this difficult-to-reach audience of recreational fishers. Note: the number of outbreak-related cases may not match Merlin case report numbers due to the fact that outbreaks often include ill people who are not residents of the State of Florida (i.e., visitors who were exposed and got sick while in Florida), or ill people were not available

for interview, and were therefore not posted in Merlin. Also, outbreak cases may not match with Merlin across counties (often people cross county boundaries to eat in other counties). Outbreaks are generally reported by county/state of exposure; individual reportable diseases are generally reported by county/state of residence.

Ciguatera Reported Incidence Rate* by County, Florida, 2007



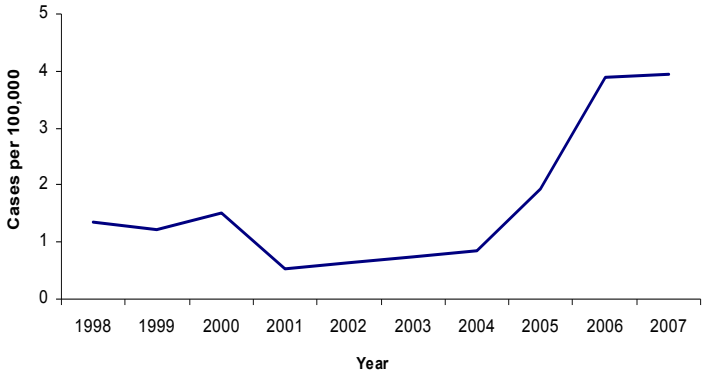
References

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

Cryptosporidiosis

Cryptosporidiosis: Crude Data	
Number of cases	738
2007 incidence rate per 100,000	3.93
% change from average 5yr (2002-2006) incidence rate	138.75
Age (yrs)	
Mean	25.64
Median	24
Min-Max	<1-98

Figure 1.
Cryptosporidiosis Incidence Rate by Year Reported, Florida, 1998-2007



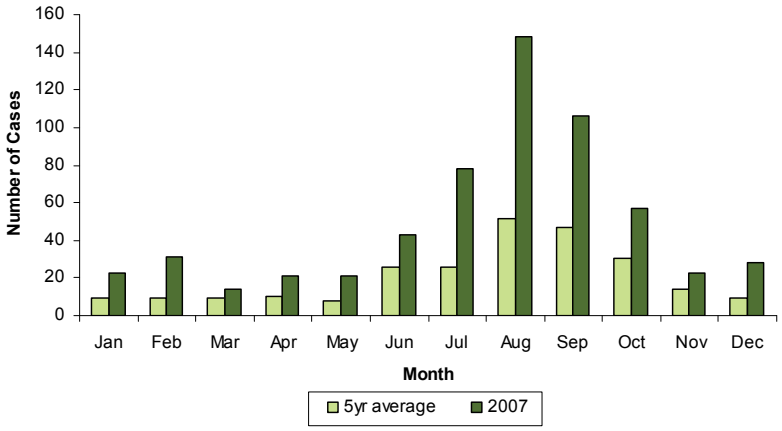
Description

Cryptosporidiosis is an acute gastrointestinal illness caused by the protozoan parasite *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 and makes the parasite resistant to chlorine-based disinfectants. Large outbreaks have previously been linked to recreational water exposures such as public swimming pools, water parks, and interactive fountains. The usual incubation period is 1-12 days and typical symptoms include watery diarrhea, abdominal cramps, and occasional low-grade fever. Asymptomatic infections are common and can also serve as a source of transmission. The disease is of particular concern for immunocompromised people, in whom it can cause life-threatening diarrhea and dehydration.

Disease Abstract

A total of 738 cases of cryptosporidiosis were reported in 2007, of which 90% were classified as confirmed. Sixteen percent of all reported cases were classified as outbreak related; 4% of cases were acquired outside the U.S. Since 2001, the incidence rate for cryptosporidiosis has increased, with a sharp increase observed since 2004 (Figure 1). The incidence rate in 2007 was 138% higher than the average incidence from 2002-2006 but only slightly higher than the previous year (2006: 717 cases; 3.89 cases/100,000 population). Seasonal increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water settings is more common. In 2007, the number of cases exceeded the previous 5 year average in all months, though the increase was particularly great in the summer months (Figure 2). The overall increase in cryptosporidiosis over the past decade is consistent with national trends and is likely due to a combination of actual increased disease incidence, increased clinical recognition, and increased diagnostic testing. Increased use of recreational water settings by young children may account for increases in disease incidence. The recent introduction of nitazoxanide, the first licensed treatment for the disease, may have influenced clinical practice because diagnostic testing for *Cryptosporidium* now can lead to specific treatment. Testing may also lead to case reporting.

Figure 2.
Cryptosporidiosis Cases by Month of Onset, Florida, 2007



Rates are higher among children <10 years old, with the highest rates occurring in the 1-4 age group (19.51 per 100,000) (Figure 3). In 2007, approximately 13% of reported cases attended day care centers. A second smaller peak among adults 25-44 years old may be attributed to family contact with infected children (Figure 3). The 2007 incidence exceeded the previous 5-year average incidence across genders and race (Figure 4).

Figure 3.
Cryptosporidiosis Incidence Rate by Age Group, Florida, 2007

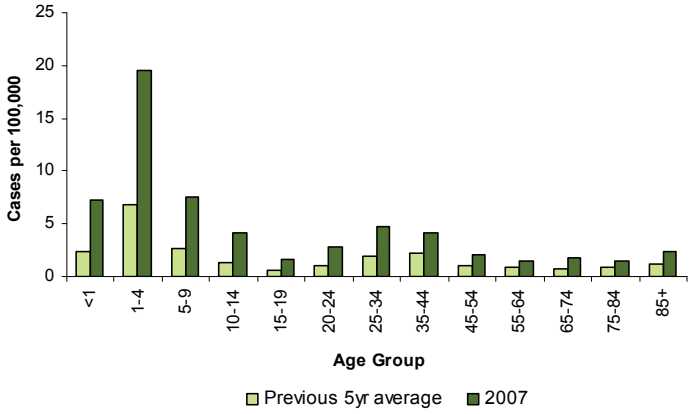
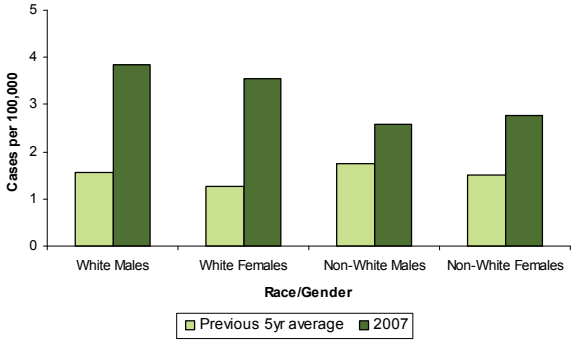


Figure 4. Cryptosporidiosis Incidence Rate by Race and Gender, Florida, 2007

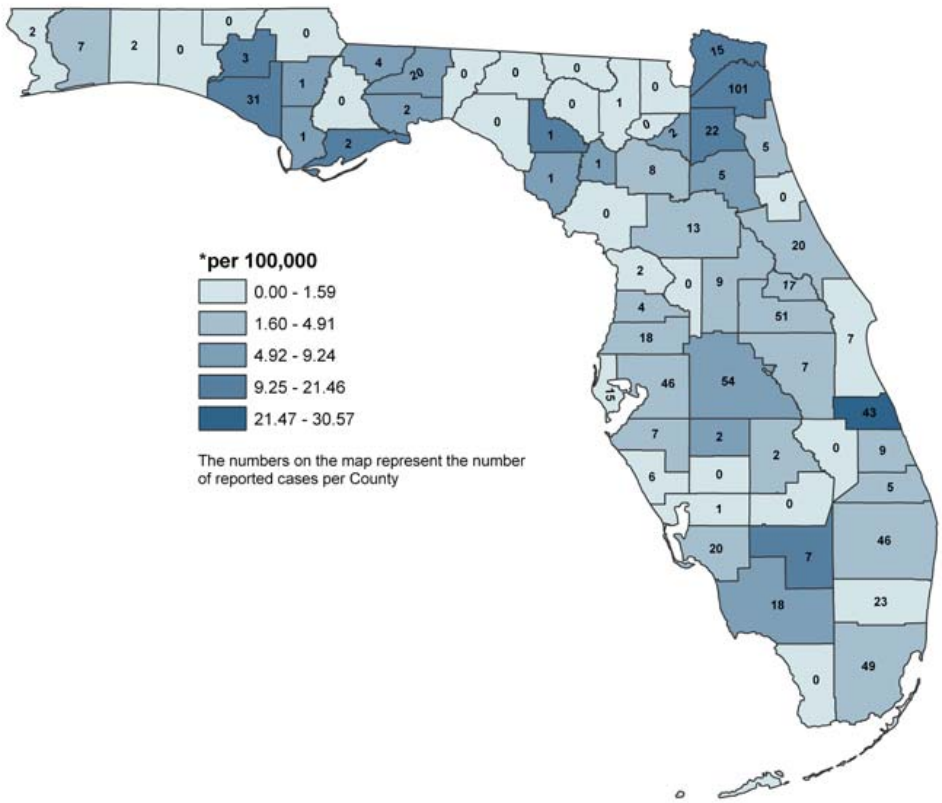


Cases of cryptosporidiosis were reported in 49 of the 67 counties in Florida. The county with the highest incidence, Indian River, reported outbreaks associated with a recreational water fountain and a daycare. Duval County reported several cases associated with an out-of-state gathering. In both of these counties, nearly half the reported cases were outbreak associated.

Prevention

The likelihood of contracting cryptosporidiosis can be reduced by practicing good hand hygiene, by washing hands before handling or eating food and after diaper changing. Water in recreational settings such as swimming pools or water parks should not be ingested or swallowed. Outbreaks associated with recreational water, especially water parks and interactive fountains, can be prevented by following established guidelines for management of these facilities.

Cryptosporidiosis Incidence Rate* by County, Florida, 2007



References

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

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. 565-8.

Centers for Disease Control and Prevention, "Summary of notifiable diseases – United States, 2006," *Morbidity and Mortality Weekly Report*, Vol. 55, No. 53, 2006.

L.M. Fox, et al., "Nitazoxanide: a new thiazolide antiparasitic agent." *Clinical Infectious Diseases*, Vol. 40, 2005, pp. 1173-80.

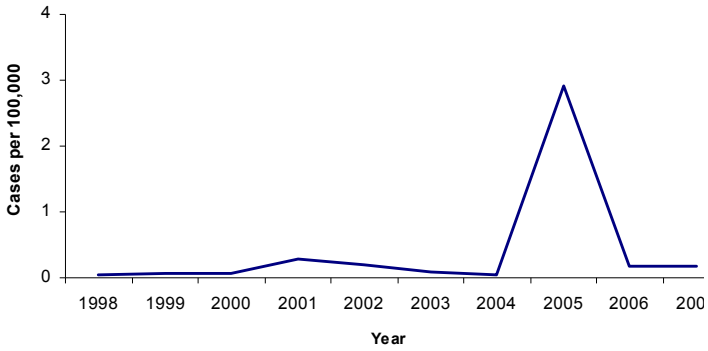
Additional Resources

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

Cyclosporiasis

Cyclosporiasis: Crude Data	
Number of cases	32
2007 incidence rate per 100,000	0.17
% change from median 5yr (2002-2006) incidence rate	-3.16
Age (yrs)	
Mean	52.3
Median	50.5
Min-Max	14-95

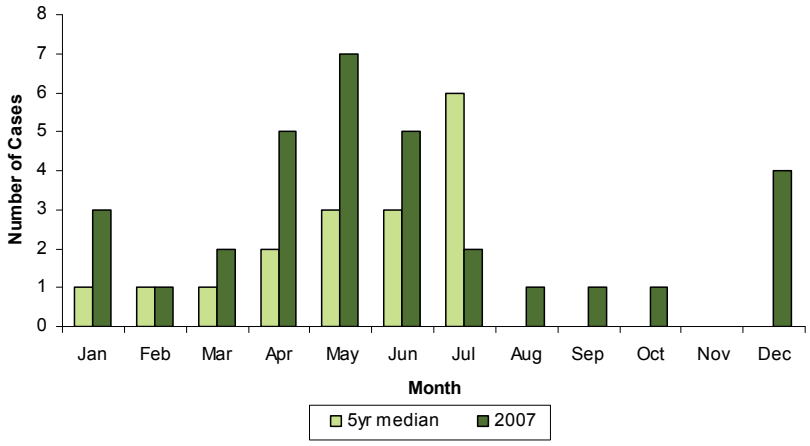
Figure 1.
Cyclosporiasis Incidence Rate by Year Reported, Florida, 1998-2007



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. Outbreak investigations, including several in Florida, have previously implicated imported fresh fruits and vegetables as the source of infection (raspberries, basil, and lettuce).

Figure 2.
Cyclosporiasis Cases by Month of Onset, Florida, 2007



Disease Abstract

With the exception of a large outbreak of cyclosporiasis in 2005 (493 cases from Florida; see the notable outbreaks section of the 1997-2006 AMSR for more details), the incidence rate for cyclosporiasis has remained stable (Figure 1). In comparison to the median incidence for the last 5 years, the incidence in 2007 has decreased by 3.16%, with a total of 32 cases reported. None of the cases reported in 2007 were considered outbreak associated. In 2007, the number of cases by month of disease onset exceeded the previous 5-year median during nine months of the year (Figure 2). The peak in late spring and early summer may reflect the seasonal variation of endemic cyclosporiasis in countries whose fruit and vegetables the U.S. imports.

In 2007, 56% of the cases were reported in those who were between the ages of 35 and 64, with the largest increase occurring in the 35-44 age group (Figure 3). Reported incidence rates are much higher in whites than in non-whites (Figure 4).

Figure 3.
Cyclosporiasis Cases by Age Group, Florida, 2007

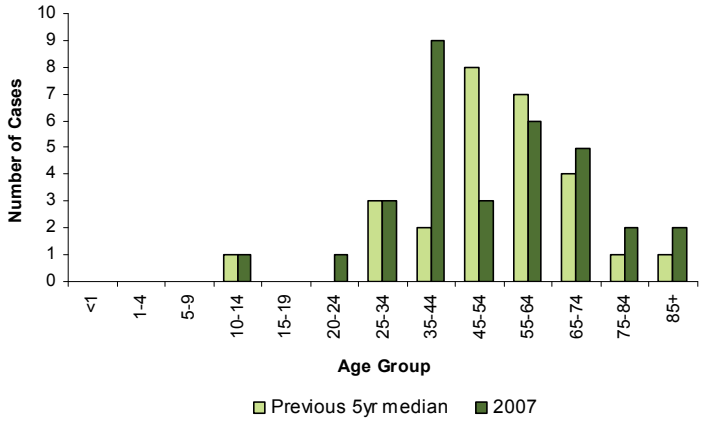
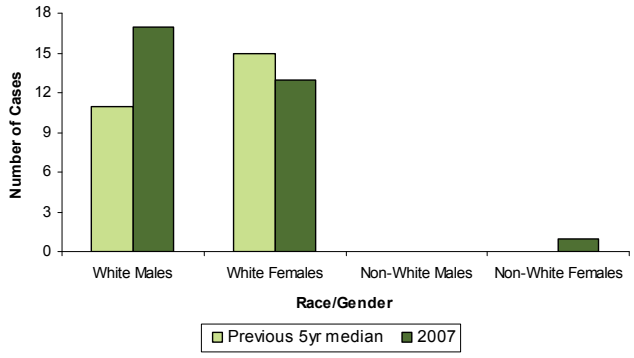
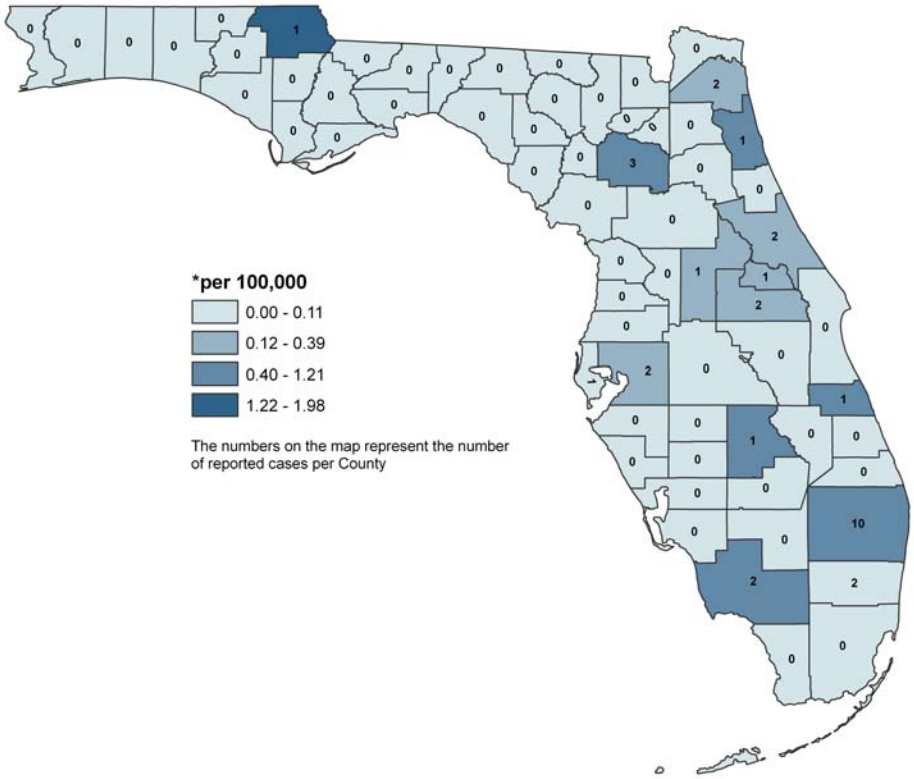


Figure. 4 Cyclosporiasis Cases by Race and Gender, Florida, 2007



Cyclosporiasis was reported in 15 of the 67 counties in Florida, with the largest number of cases occurring in Palm Beach County.

Cyclosporiasis Incidence Rate* by County, Florida, 2007



References

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

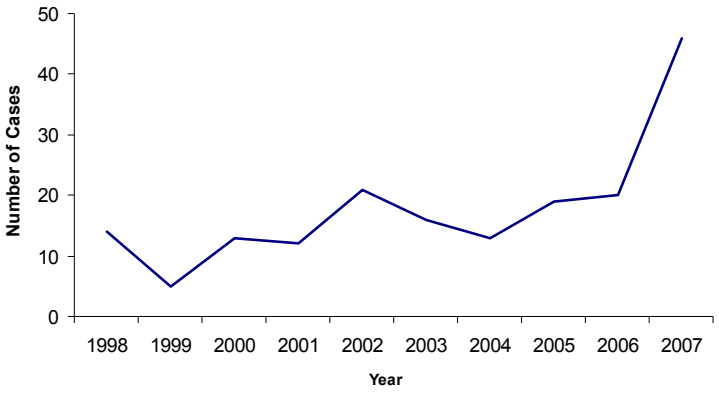
Additional Resources

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

Dengue

Dengue Fever: Crude Data	
Number of cases	46
2007 incidence rate per 100,000	0.25
% change from average 5yr (2002-2006) incidence rate	142.45
Age (yrs)	
Mean	37.9
Median	42.5
Min-Max	<1-65

Figure 1.
Dengue Fever Cases by Year Reported, Florida, 1998-2007



Description

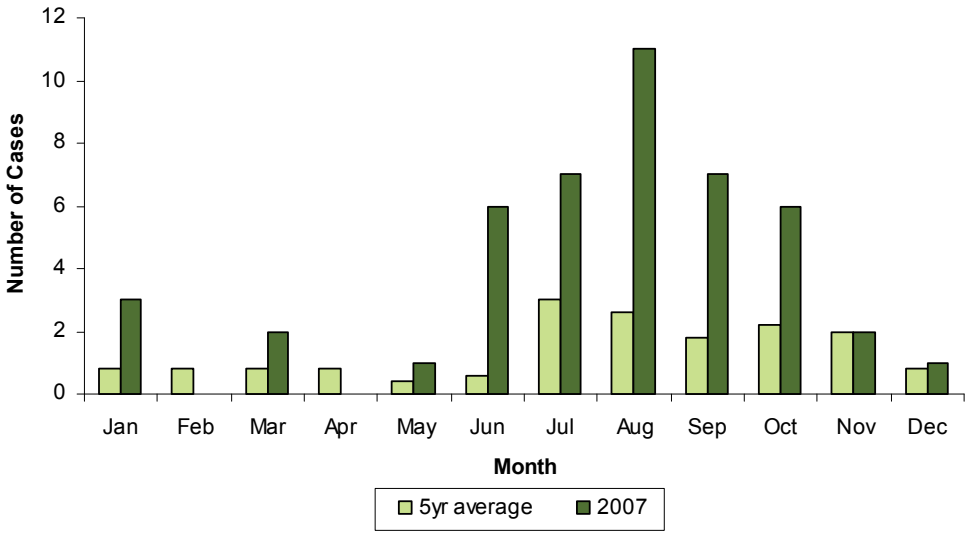
Dengue, caused by a mosquito-borne virus (DENV) has historically plagued Florida, although disease acquired in Florida was last documented in the early 1960's. The symptoms of infection, collectively referred to as "dengue" and dengue hemorrhagic fever (DHF), are caused by any of four closely related 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 uncertain, but appear to be related to more virulent infection or second infection with another dengue serotype. Humans are the only hosts of DENV, there is no reservoir outside of humans. In past Florida epidemics, the sole vector of the dengue viruses was the native *Aedes aegypti* mosquito. The more recent arrival of *Aedes albopictus* to many parts of Florida is a concern because this species is an important vector of DENV in Asia. Dengue has become an increasingly common disease 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, DENV was not often considered among diagnoses for ill travelers returning from areas where dengue is endemic. 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 ranged from 10-20 per year until 2006. When, 46 cases were reported. Typically, disease onset for travelers returning to Florida peaks during mid-summer and fall, though cases are reported year-round (Figure 2).

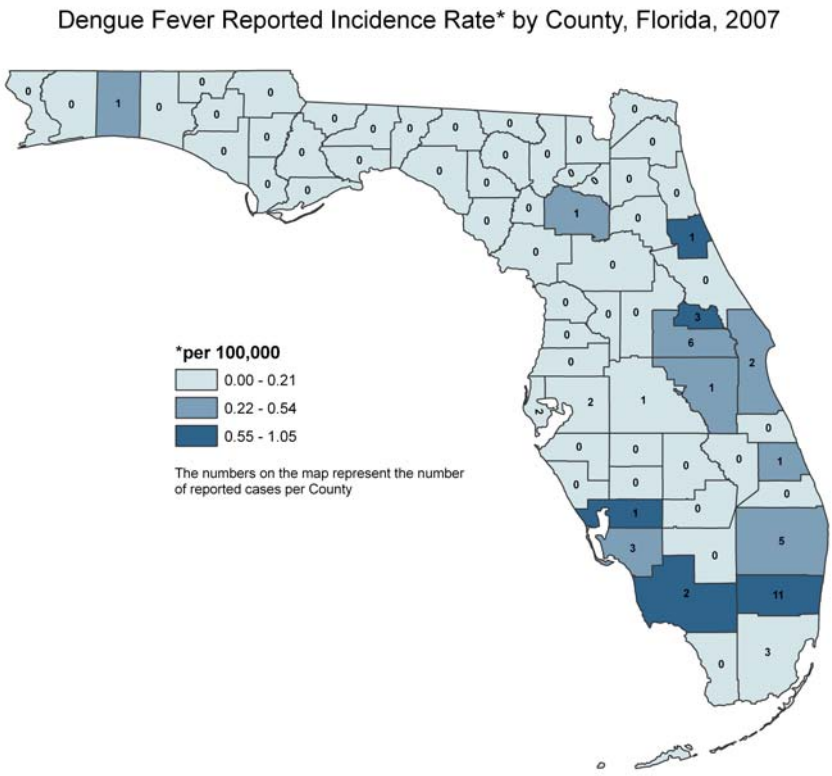
In 2007, 54% percent of cases were male, and 26% occurred among those 40-49 years of age. Thirty-five percent of dengue cases reported travel history to Puerto Rico in 2007. Thirty-two percent traveled to countries in the Caribbean, and 23% traveled to South or Central America, or to Mexico. The remaining 10% traveled to countries in Asia or Africa.

Figure 2.
Dengue Fever Cases by Month of Onset, Florida, 2007



Prevention

There is currently no vaccine available against DENV infection. Travelers to dengue-endemic countries should be warned of the risk of disease and instructed to avoid mosquito bites. Use insect repellents that contain DEET or other EPA-approved ingredients such as Picaridin, oil of lemon eucalyptus, or IR3535. Avoid spending time outdoors during daytime hours when disease-carrying mosquitoes are most likely to be seeking a blood meal, and drain any standing water in containers around the home. Dress in long sleeves and long pants to protect your skin from mosquitoes. Also, try to remain in well-screened or air-conditioned areas.



References

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

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

Additional Resources

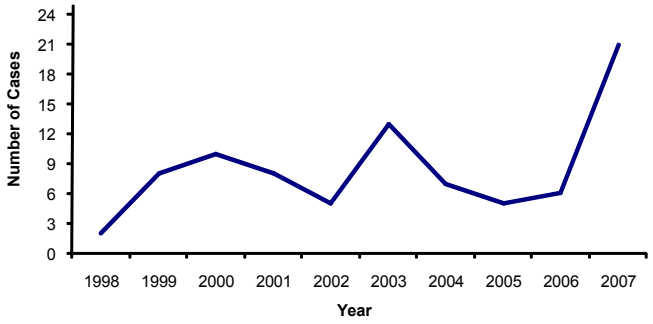
Additional information on DENV and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at http://www.doh.state.fl.us/environment/community/arboviral/pdf_files/UpdatedArboguide.pdf.

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

Ehrlichiosis / Anaplasmosis

Ehrlichiosis/Anaplasmosis: Crude Data	
Number of Cases	21
2007 incidence rate per 100,000	0.11
% change from average 5 year (2002-2006) reported cases	191.67
Age (yrs)	
Mean	54.76
Median	59
Min-Max	16 - 82

Figure 1.
Ehrlichiosis/Anaplasmosis Cases by Year Reported, Florida, 1998-2007



Description

Tick-borne bacteria in the genera *Ehrlichia* and *Anaplasma* can cause fever illnesses in humans with a potentially fatal outcome. *Ehrlichia chaffeensis*, discovered in 1987, causes human monocytic ehrlichiosis (HME) which is nationally notifiable. What was originally thought to be a second species of *Ehrlichia,* causing human granulocytic ehrlichiosis (HGE), was reclassified as *Anaplasma phagocytophilum*, with the associated illness renamed to human granulocytic anaplasmosis (HGA). HGA became nationally notifiable in 1999. Nonspecific clinical findings make both diseases difficult to diagnose. They may account for many cases of tick-associated fevers of unknown origin, for example, some illnesses diagnosed as Lyme disease.

Amblyomma americanum (lone star tick), and possibly other ticks, can be vectors for HME. The disease is reported most commonly in the southeastern and south central US. The spectrum of illness ranges from asymptomatic to fatal. Changes in blood cell count and blood chemistries are common in symptomatic cases. Most cases have a nonspecific febrile illness without rash, with over 60% of ill patients being hospitalized. About 15% of ill people have severe disease, including renal failure, disseminated intravascular coagulopathy, seizures, and coma, with death occurring in 2-3% of cases. The primary tick vector for HGA is *Ixodes scapularis* (blacklegged tick) in the Midwestern and eastern US, and *Ixodes pacificus* (western blacklegged tick) in the west. HGA is reported most frequently in the northeast, north central, and focal areas of the West Coast of the U.S.. HGA is clinically similar to HME, and usually presents as an undifferentiated fever without rash. Elderly patients are more likely to have severe disease. Mortality is less than 1%.

Disease Abstract

Between 1998 and 2006, the total number of combined cases of HME and HGA reported ranged from 2 to 13 cases per year but in 2007 there were 21 cases reported (Figure 1). Increased educational efforts and awareness probably contributed to the increase in reported cases. Since HGA was recognized as a separate reportable disease in 1999, there have been more HME cases than HGA cases reported in Florida annually, with 86% of the cases occurring in 2007 being HME. In 2007, 57% of HME and HGA cases were in women. The majority, 76%, of cases are reported as being acquired in Florida. Though cases of both HME and HGA are reported year-round, peak transmission occurs during the late spring and summer months (Figure 2).

Figure 2.
Ehrlichiosis (all codes) Cases by Month of Onset, Florida, 2007

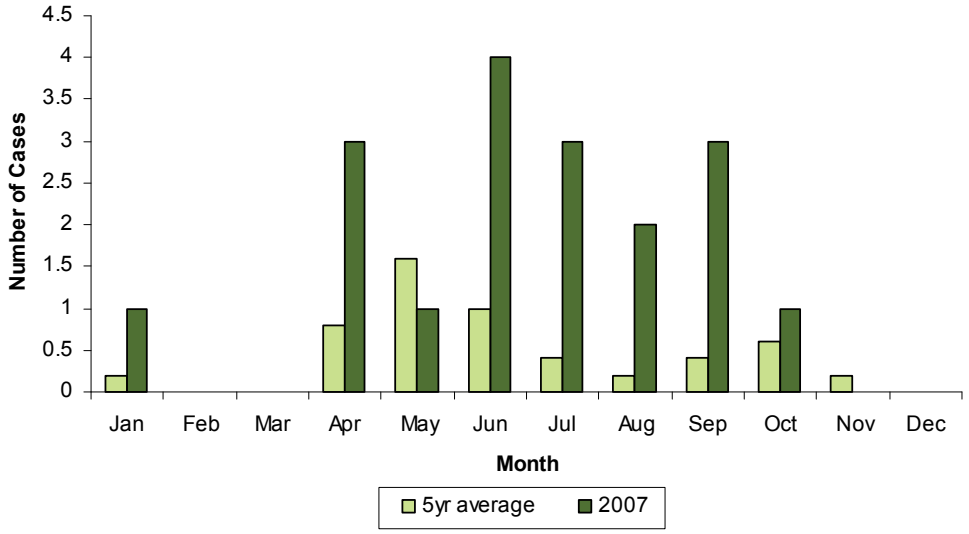
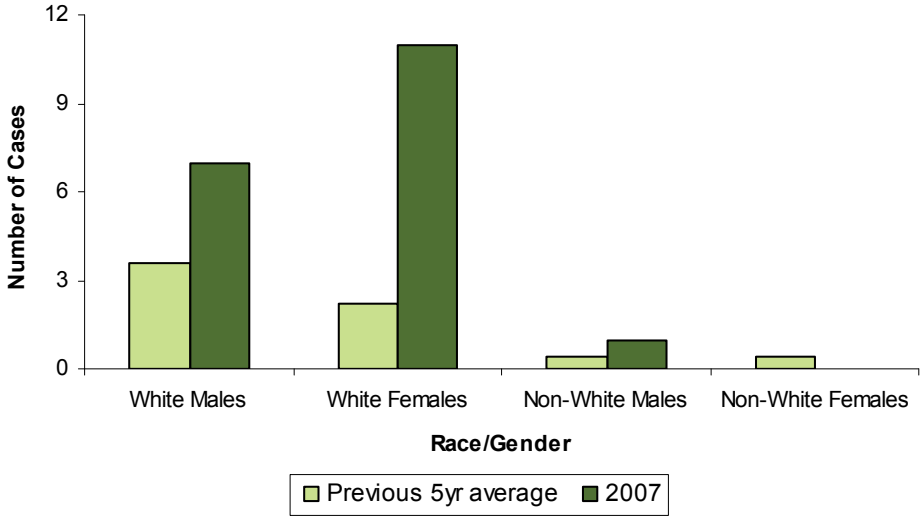


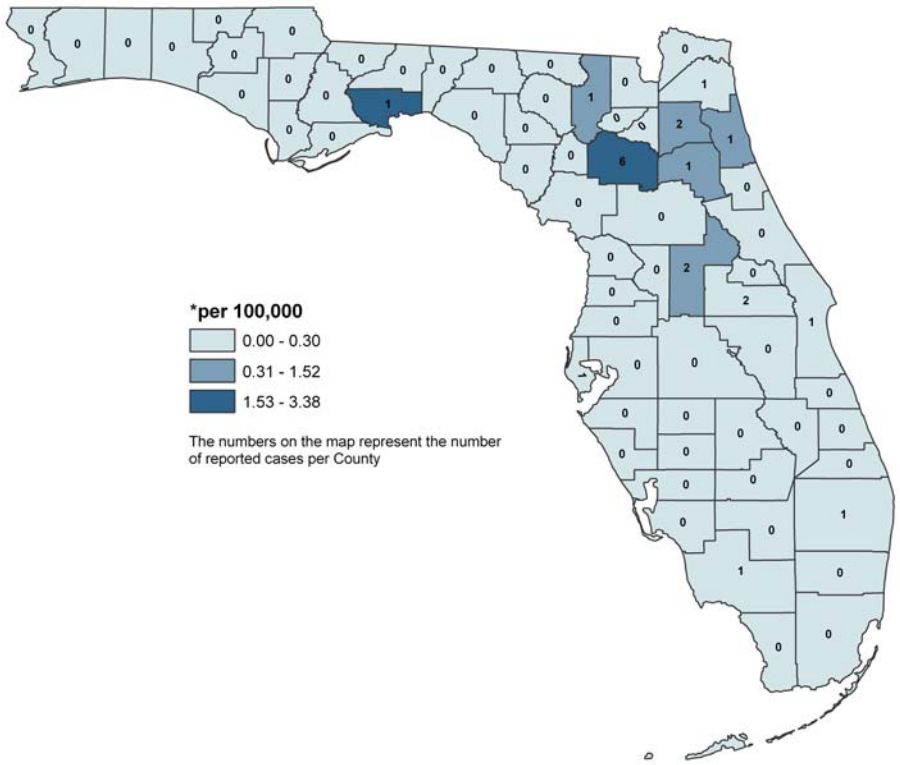
Figure 3. Erhlichiosis/Anaplasmosis Cases by Race and Gender, Florida, 2007



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 pants legs into socks so that ticks cannot crawl inside clothing. Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary. Search the body for ticks frequently when spending time in potentially tick-infested areas. If a tick is found, it should be removed as soon as possible. Controlling tick populations in the yard and on pets can also reduce the risk of disease transmission.

Ehrlichiosis/Anaplasmosis Reported Incidence Rate* by County, Florida, 2007



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 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.

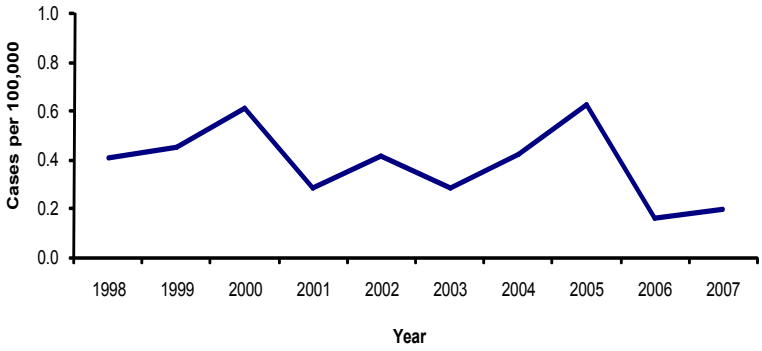
Disease information is also available from the Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/ncidod/dvrd/ehrlichia/Index.htm.

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

Escherichia coli O157:H7

***E. coli* O157:H7: Crude Data**	
Number of Cases	37
2007 incidence rate per 100,000	0.20
% change from average 5 year (2002-2006) incidence rate	-47.72
Age (yrs)	
Mean	29.78
Median	17
Min-Max	1 - 80

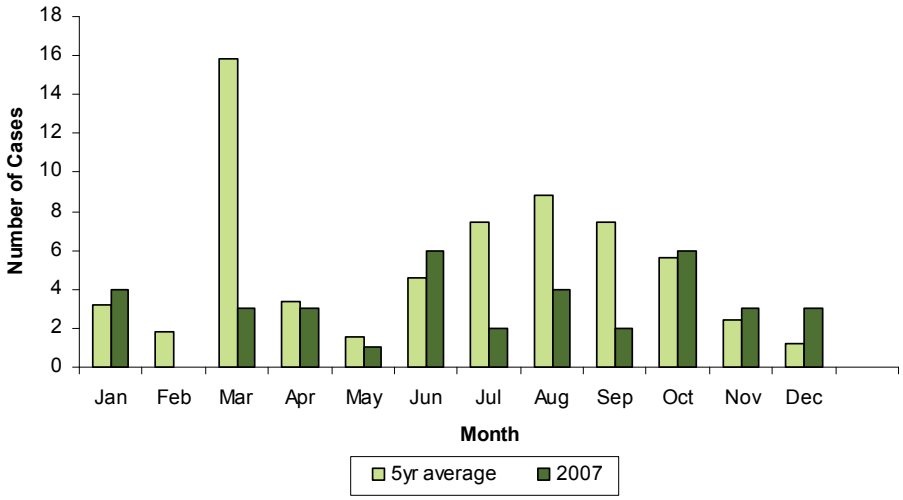
Figure 1.
E. coli O157 Incidence Rate by Year Reported, Florida, 1998-2007



Description

Escherichia coli O157:H7 is a specific serotype of the shiga-toxin producing *Escherichia coli* bacteria that cause acute diarrheal illnesses. 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 by raw meat may also be a source of infection. Person-to-person and waterborne transmission can also occur. The incubation period is generally 3-4 days after exposure (range: 2-8 days). Common symptoms include diarrhea (often containing blood), abdominal pain, 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.

Figure 2.
E. coli 0157:H7 Cases by Month of Onset, Florida, 2007



Disease Abstract

A total of 37 cases were reported in 2007, of which 36 were confirmed. None were classified as outbreak associated. The incidence rate for *E. coli* O157:H7 has varied over the last ten years (Figure 1). One source of variation is large outbreaks involving food products distributed across multiple states or other common source exposures. In 2007, there was a 47% decrease in incidence of new cases in comparison to the average incidence from 2002 to 2006, likely due to the absence of large outbreaks

tied to a common source. However, the 37 cases in 2007 represent a slight increase over the 29 cases reported in 2006.

In 2007, no clear seasonal patterns were observed (Figure 2). Incidence was greatest among children and teenagers under and incidence rates were generally the same or lower than the previous 5-year average in all age groups except those aged 55-64 (Figure 3). In 2007, 54% of cases were female and incidence in both genders was lower than the previous 5-year average incidence (Figure 4).

Figure 3.
E. coli O157:H7 Incidence Rate by Age Group, Florida, 2007

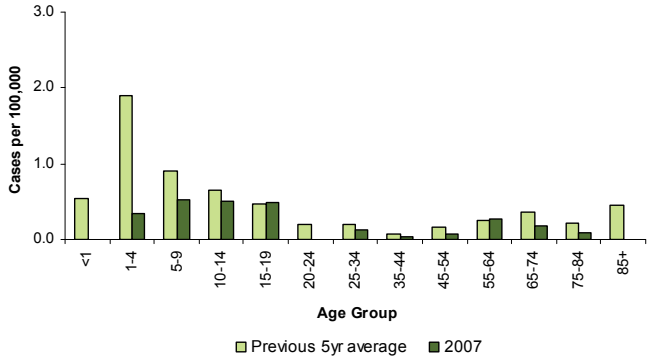
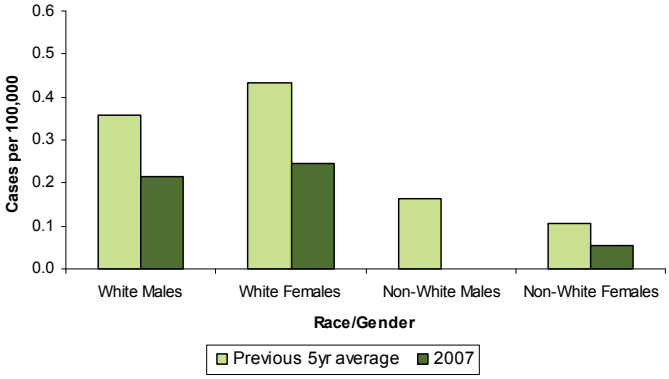


Figure 4.1 *E. coli* O157:H7 Incidence Rate by Race and Gender, Florida, 2007



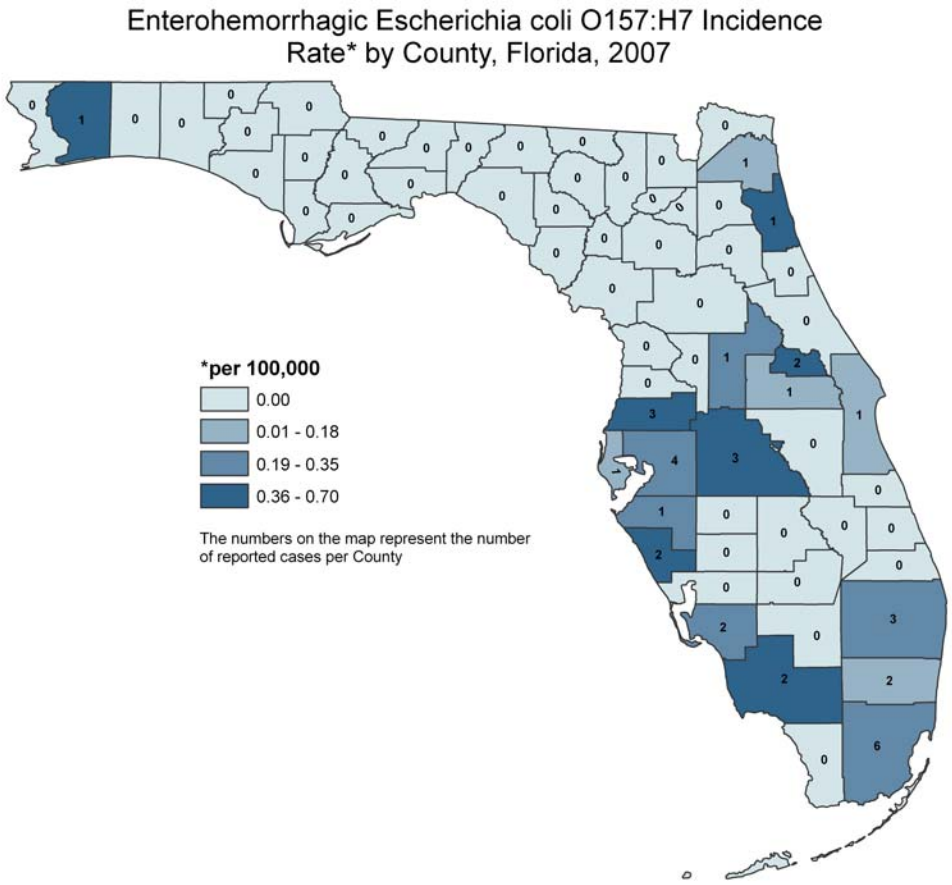
E. coli O157:H7 cases were reported in 18 of the 67 counties in Florida.

Infection with *E. coli* other than O157

There were 10 reported cases of illness due to shiga-toxin producing enterohemorrhagic *E. coli* that were serogrouped as not O157, reported in Florida during 2007. Among these isolates, the most common serotype was O26:H11 (4 cases), followed by serotype O103:H2 (2 cases). In general, non-O157 serotypes cause similar, though often less severe, illness. Among these 10 cases, seven were female, three were 60 years or older, none were outbreak associated, and one was acquired outside the U.S.

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

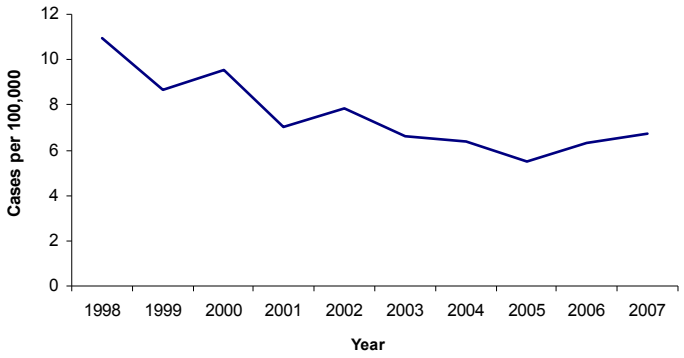
Additional Resources

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

Giardiasis

Giardiasis: Crude Data	
Number of Cases	1,268
2007 incidence rate per 100,000	6.76
% change from average 5 year (2002-2006) incidence rate	3.84
Age (yrs)	
Mean	26.97
Median	25
Min-Max	<1 - 91

Figure 1.
Giardiasis Incidence Rate by Year Reported, Florida, 1998-2007

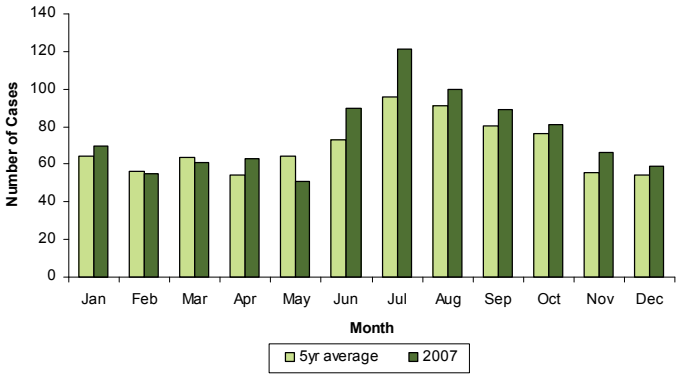


Description

Giardiasis is a parasitic diarrheal disease caused by infection by the flagellate protozoan *Giardia intestinalis* (also known as *Giardia lambia*). *Giardia* parasites live in the intestine of humans and animals, although only the cyst form is infective. *Giardia* is found in soil, food, water, and surfaces that have been contaminated with the feces of 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 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. The disease is communicable for as long as the infected person excretes cysts, which can be up to months.

Figure 2.
Giardiasis Cases by Month of Onset, Florida, 2007

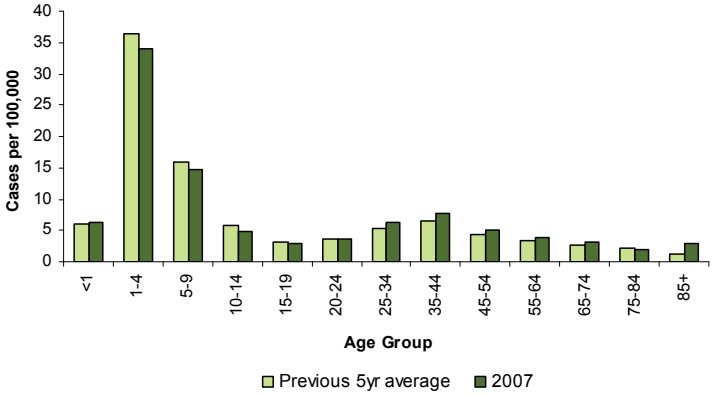


Disease Abstract

The incidence rate for giardiasis has declined by about half over the nine years from 1997-2005 but increased slightly in 2006 and 2007 (Figure 1). In 2007, there was a 3.84% increase in comparison to the 5-year average incidence from 2002 to 2006. A total of 1,268 cases were reported in 2007, slightly higher than the number reported in 2006 (1,165 cases). Of the 1,268 cases reported in 2007, 97%

were classified as confirmed. Although asymptomatic infections are common, in Florida, only acute cases with symptoms are reported. The number of cases increases in the summer months (Figure 2). The month of July historically has the largest number of reported cases (2002-2006: 5-year average 95.8 cases per 100,000), and in 2007, the largest number of cases occurred in July (121 cases). In 2007, all months of except for February, March, and May exceeded the previous 5-year average number of cases. Among the 1,268 giardiasis cases reported in 2007, 83, or 6.55%, were reported as outbreak associated, and 965, or 76.1%, were acquired in Florida. There were 214 cases that were reported as acquired outside of the U.S. with 119 of these cases, or 55.6%, indicating infection was acquired in Cuba.

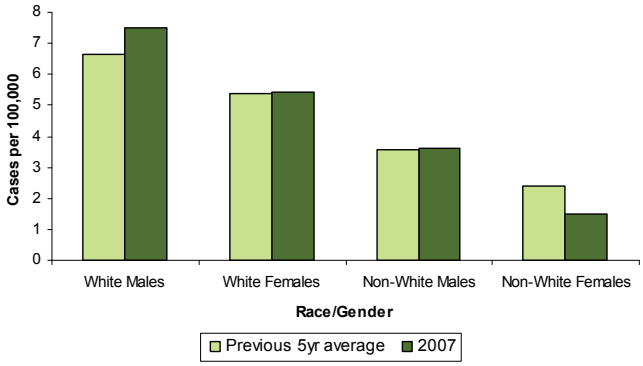
Figure 3.
Giardiasis Incidence Rate by Age Group, Florida, 2007



The highest reported incidence rates continue to occur among in children aged 1-4 years (34.09 cases per 100,000) and 5-9 years (14.75 cases per 100,000) (Figure 3). There were a total of 304 cases reported among children aged 1-4 years. Approximately one-third of the 304 cases aged 1-4 years attended daycare.

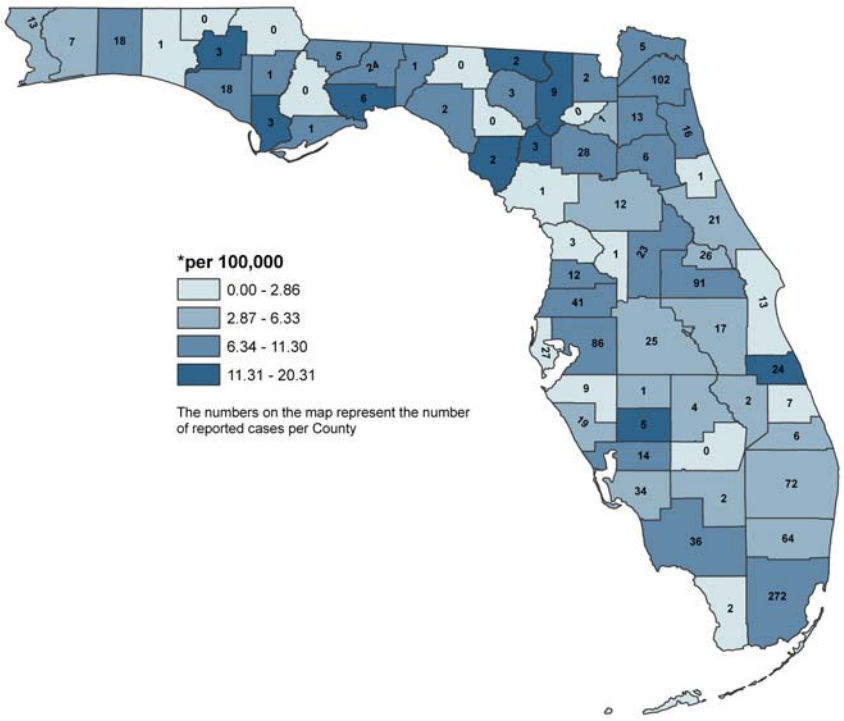
Overall, males continue to have a higher reported incidence than females (7.89 and 5.63 per 100,000, respectively). Following previous annual trends, incidence rates in whites are greater than those in non-whites (Figure 4).

Figure 4. Giardiasis Incidence Rate by Race and Gender,
Florida, 2007



In 2007, giardiasis was reported in 60 of the 67 counties in Florida. The highest incidence rate was in Wakulla County, with 20.31 cases per 100,000.

Giardiasis Incidence Rate* by County, Florida, 2007



Prevention

Most *Giaridia* infection can be avoided or reduced by practicing good hand hygiene. This is particularly important in child care centers and after toilet use, before handling food, and before eating. Avoid 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. Avoid drinking tap 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 the effectiveness of chlorine 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.

References

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

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

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC).

Gonorrhea

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae* which grows and multiplies in the warm, moist areas of the reproductive tract. The bacterium can also grow in the mouth, throat, eyes, and anus, and can cause systemic infections in rare cases.

In 2007, there were 23,308 gonorrhea cases reported among men and women in Florida, which is a rate of 124.2 cases per 100,000 population (Figure 1). Over 75% of all reported cases of gonorrhea are reported in people under 30 years old. Further, gonorrhea is the second most prevalent sexually transmitted bacterial infection reported among 15-24 year olds in Florida. This reason, this report will focus attention on trends associated with adolescents and young adults and will conclude with a brief summary of overall morbidity. Data on congenital gonorrhea cases in neonates under 1 years of age will be discussed within the section "Neonatal Infections."

Figure 1. Reported Cases of Gonorrhea among Males and Females by Year, Florida, 2003-2007

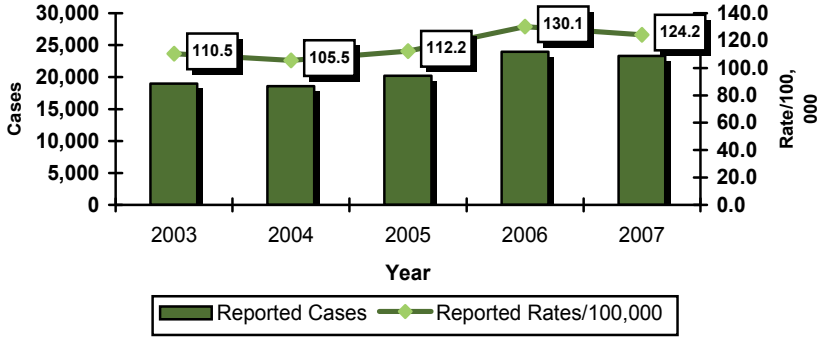


Figure 2: Reported Number of Cases by Single Age Group (15-30), Florida, 2007

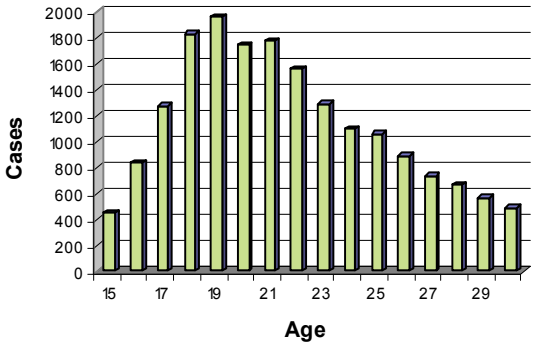
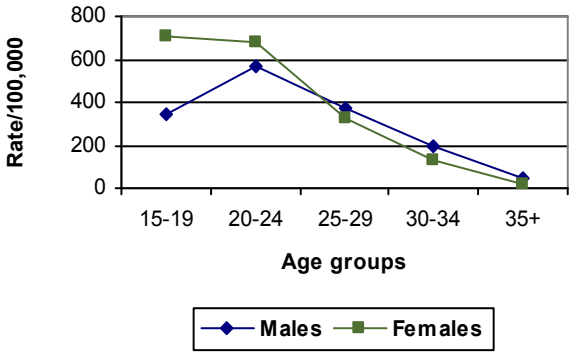


Figure 3. Gonorrhea Rates By Gender and Age Group, Florida, 2007

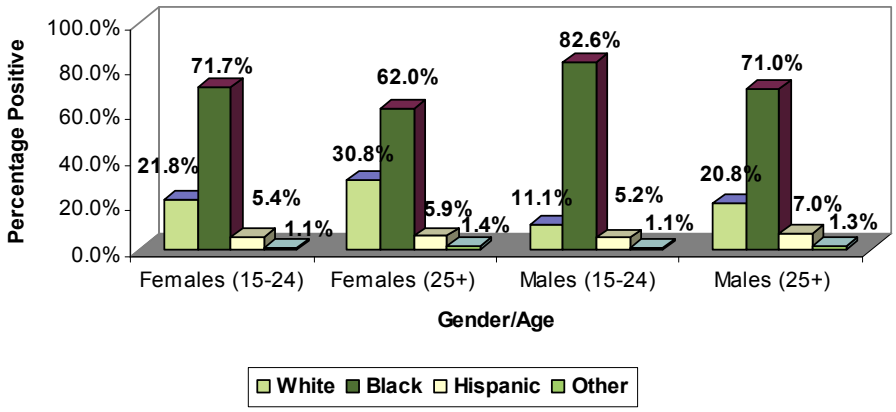


Over the past five years, the total number of reported gonorrhea cases reached a low of 18,580 cases in 2004 and increased to 23,976 cases in 2006, then decreased by 2.7% in 2007 (Figure 2). More cases of gonorrhea infection have been reported in the 20-24 year old age group consistently since 1998; further, 15-24 year olds accounted for 60% of infections reported in 2007. The age specific case rate for 15-24 year olds was 572.6 per 100,000. The mean age of all reported gonorrhea cases was 25.3. However, when ages are compared within the 15-30 age group, cases peaked at the age of 19 with a gradual decline in case numbers as age increased (Figure 2).

Adolescents and young adults had a minimal change in the number of cases reported from 2006 to 2007. Although reported cases decreased 5.5% in 15-19 year olds from 2006 to 2007, cases in 20-24 year olds increased by 0.2% (Figure 3). Women under 25 accounted for the largest proportion of cases reported (60%), which is much like chlamydia trends. Among women, the highest number of cases was reported in 15-19 year olds (4,619 cases) with a rate of 710.6 per 100,000. The second highest rate among females was in 20-24 year olds (676.8 per 100,000). Among men, the highest number of cases was reported in the 20-24 age group (3,494 cases) with a rate of 566.9 cases per 100,000. Men 15-19 had the second highest rate (346.9 per 100,000). Unlike chlamydia trends, men over 25 had higher rates than women.

In 2007, the distribution of gonorrhea by race and ethnicity in people 15-24 disproportionately affected non-Hispanic blacks. Non-Hispanic black adolescents and young adults (15-24) have the highest rates among all race, ethnicity, and age groups in Florida. In 2007, non-Hispanic black females 15-19 years old had a case rate of 2,121.6 per 100,000. This rate was eight times higher than the second highest rate which was in non-Hispanic white females 15-24 years old (257.45 per 100,000). Non-Hispanic black males 15-19 years old had a case rate of 1,172.3 per 100,000. This rate was 23 times higher than the second highest rate which was in non-Hispanic white males 15-19 years old (50.1 per 100,000).

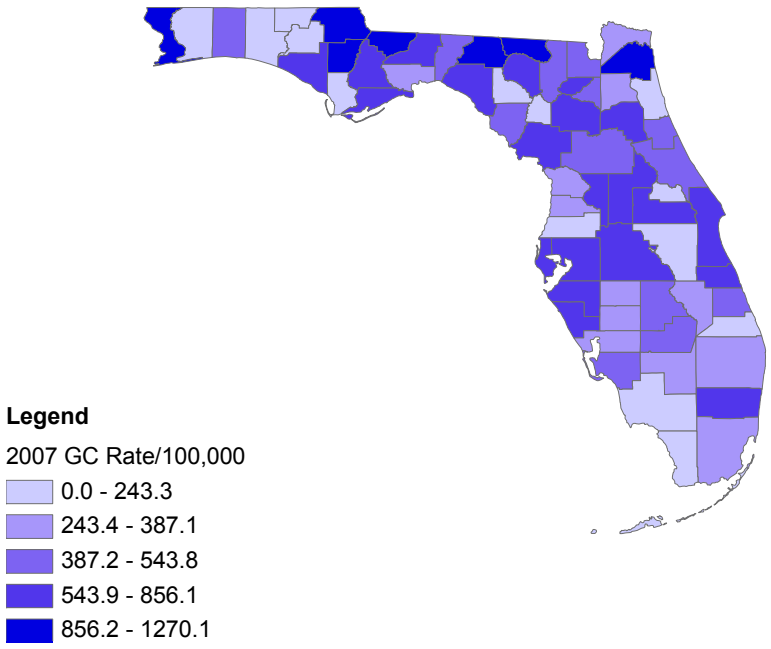
Figure 4: Proportion of Reported Gonorrhea Cases by Race/Ethnicity and Age, Florida 2007



Sexually transmitted diseases, especially syphilis and gonorrhea, are associated with many adverse socioeconomic indicators, and in the U.S., these are often correlated with residential housing patterns. In highly impacted areas evaluated by census tract, STD rates may be an order of magnitude higher than in surrounding areas. Over 45% of all gonorrhea cases are reported from the larger, more populous counties (Duval, Broward, Orange, Dade, Hillsborough). However, rates of infection, regardless of age, are generally high in the panhandle and northern portion of the state (Figure 5). In 15-24 year olds, Duval County had the highest rate with 1,270.1 cases per 100,000. High rates of

infection in this age cohort were also found in the following rural counties: Gadsden, Jackson, Calhoun, and Hamilton. Although certain counties have a higher rate of disease, all counties in the state are impacted by this infection.

Figure 5: Gonorrhea Rates Per 100,000 Population
By County, Age Group 15-24, 2007



Gonorrhea incidence may be related to the availability of improved test technology, expanded targeted screening, and prevalence of risk-taking behaviors amongst those connected within various sexual networks. There is no known acquired immunity to the *Neisseria gonorrhoeae.* Overall, cases are distributed equally between genders. The high and consistant number of cases in youth indicates a possible increased risk for youth to become infected with life-threatening HIV due to their similar risk factors for infection. Additionally, the disparity in minority populations and increases in gonorrhea in MSM (men who have sex with men) populations, despite decreases in overall cases, require special attention to important contributory factors. Such factors include: access to quality health care, individual health seeking behaviors, the level of community drug use, the scope of prevention education, and sexual networks with high prevalence of sexually transmitted infections. These factors may be influential in increasing risk.

References

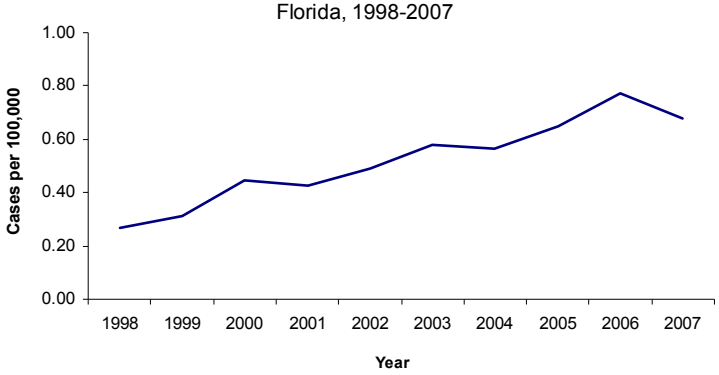
Centers for Disease Control and Prevention, *Gonorrhea-CDC Fact Sheet*, Centers for Disease Control and Prevention, Atlanta, GA, 2006.

K.E. Nelson, C.M. Williams, N. Graham, *Infectious Disease Epidemiology Theory and Practice*, Aspen Publishers, 2001.

Haemophilus influenzae (Invasive Disease)

Haemophilus influenzae, Invasive Disease: Crude Data	
Number of Cases	127
2007 incidence rate per 100,000	0.68
% change from average 5 year (2002-2006) incidence rate	9.91
Age (yrs)	
Mean	50.34
Median	59
Min-Max	<1 - 98

Figure 1.
Haemophilus influenzae Incidence Rate by Year Reported, Florida, 1998-2007



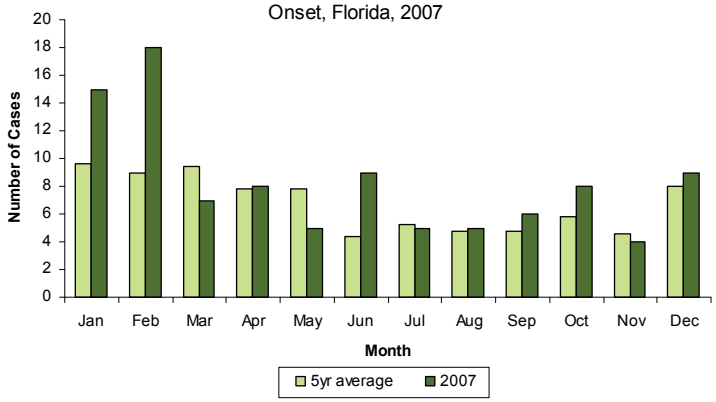
Description

Invasive disease caused by *Haemophilus influenzae* may cause a variety of clinical syndromes including meningitis, bacteremia (septicemia), epiglottitis, or pneumonia; however, this report does not include 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

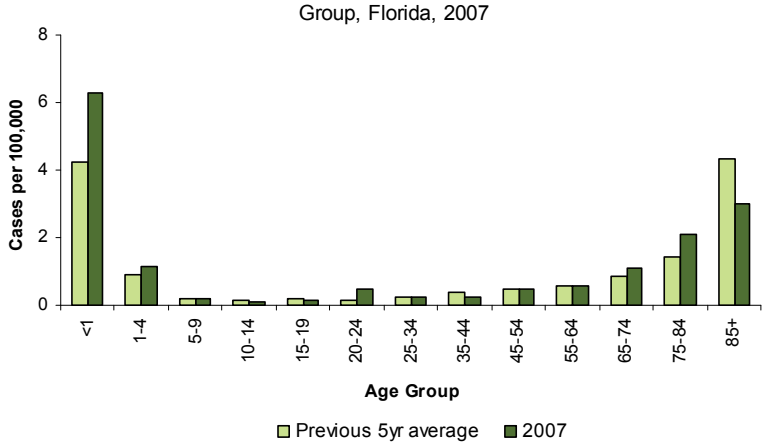
The incidence rate for all invasive diseases caused by *Haemophilus influenzae* has gradually increased over the past ten years (Figure 1). In 2007 there was a 9.91% increase compared to the average incidence from 2002-2006. A total of 127 cases were reported in 2007, of which all were classified as confirmed. The number of cases reported is highest in the winter, during the months of December through February (Figure 2). In 2007, the number of cases significantly exceeded the previous 5-year average in January, February, and June. Nearly all cases of invasive disease caused by *Haemophilus influenzae* are sporadic in nature.

Figure 2.
Haemophilus influenzae, invasive disease, Cases by Month of Onset, Florida, 2007



The highest reported incidence rates occur in those aged <1 year or in those >85 years (Figure 3). In 2007, the incidence rates were higher than the previous 5-year average in those <1, 1-4, 20-24, 65-74, and 75-84 years. The incidence of disease in males and females does not differ (0.69 per 100,000 and 0.67 per 100,000 respectively) and in 2007 the incidence in males was higher than the previous 5-year average incidence (0.69 per 100,000 and 0.56 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, 2007



Invasive disease caused by *Haemophilus influenzae* was reported in 27 of the 67 counties in Florida. Overall, counties in northeastern, central, and southwestern Florida reported the highest incidence rate.

Invasive disease caused by *Haemophilus influenzae* b in those under age five:

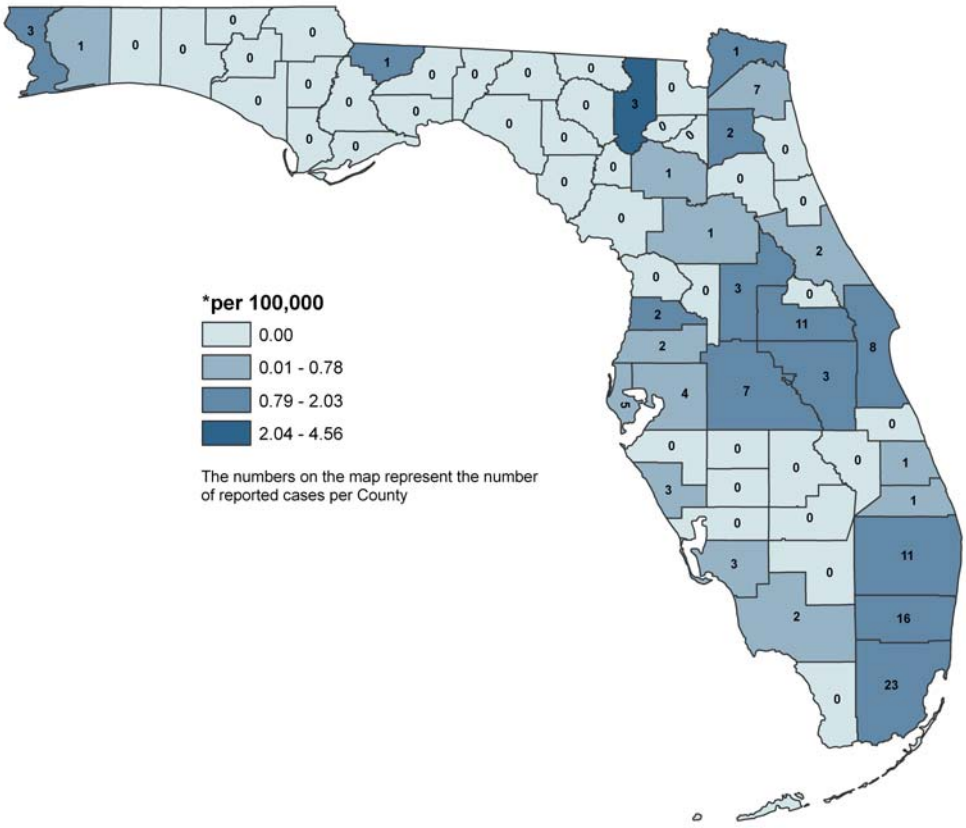
In 2007, there were no cases of invasive disease caused by *Haemophilus influenzae* serotype b in those under age 5.

Figure 4.
Haemophilus influenzae, Invasive Disease Incidence Rate by Gender, Florida 2007

Prevention

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

Haemophilus influenzae Invasive Disease Reported Incidence Rate* by County, Florida, 2007



References

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

Additional Resources

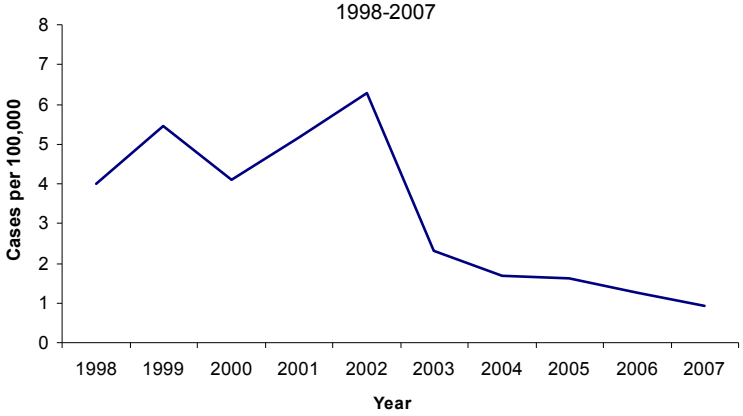
Additional information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/haeminfluserob_t.htm and http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm

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

Hepatitis A

Hepatitis A: Crude Data	
Number of Cases	171
2007 incidence rate per 100,000	0.91
% change from average 5 year (2002-2006) Incidence rate	-64.70
Age (yrs)	
Mean	33.52
Median	28
Min-Max	3 - 94

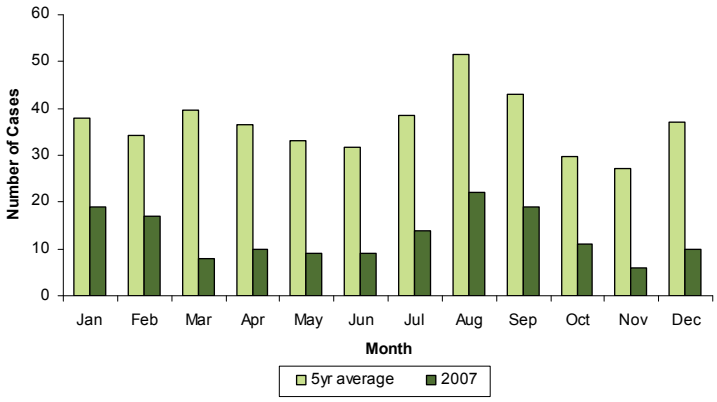
Figure 1.
Hepatitis A Incidence Rate by Year Reported, Florida, 1998-2007



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.

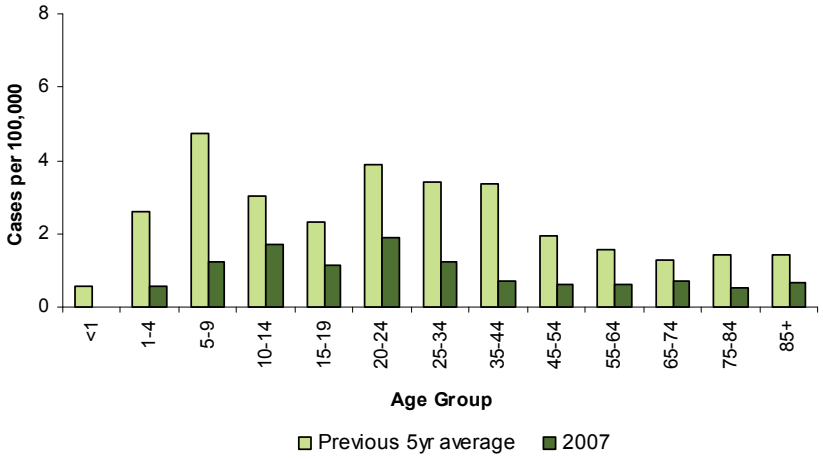
Figure 2.
Hepatitis A Cases by Month of Onset, Florida, 2007



Disease Abstract

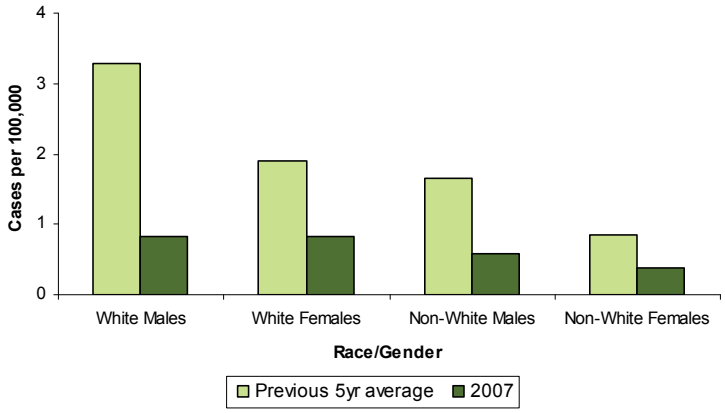
A total of 171 cases of hepatitis A were reported in 2007, of which 89% were classified as confirmed. At least 44% of hepatitis A cases were hospitalized. Approximately 11% of cases were classified as outbreak related and 11% reported contact with a person with confirmed or suspected hepatitis A infection in the 2-6 weeks prior to their illness. Approximately 41% of cases reported a travel history outside the U.S. and Canada in the 2-6 weeks prior to their illness. The incidence rate for hepatitis A in Florida has declined markedly since 2002, which mirrors a similar decline observed nationally (Figure 1). The annual incidence in Florida from 2004 to 2007 was around 1-2 cases per 100,000. This is a substantial decrease from the annual incidence of 4-6 cases per 100,000 observed between 1998 and 2002. The decrease in Florida, and nationally, is likely due, to increased use of vaccines to protect against hepatitis A virus, which first became commercially available in 1995.

Figure 3.
Hepatitis A, acute Incidence Rate by Age Group, Florida, 2007



Hepatitis A occurs throughout the year (Figure 2). In 2007, incidence rates were lower than the previous 5-year average in all age groups (Figure 3). The largest decrease in incidence was observed among children five to nine years old. The incidence in 2007, in both males and females, was lower than the previous 5-year average incidence, and the greatest decrease occurred among white males (Figure 4).

Figure 4. Hepatitis A Incidence Rate by Race and Gender,
Florida, 2007



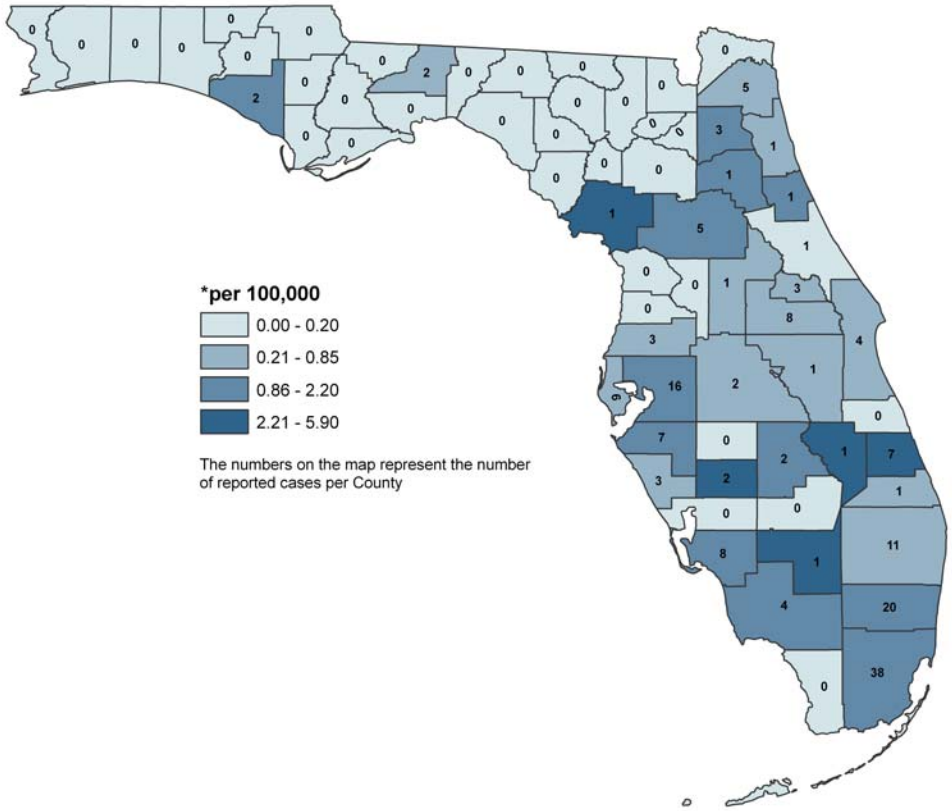
During 2007, hepatitis A was reported in 32 of the 67 counties in Florida.

Prevention

Currently, the single antigen, two-dose, hepatitis A vaccine is recommended as part of the routine immunization schedule for all children starting at age one. However, this is not a requirement for childcare or school entry in Florida. The doses should be spaced at least six months apart. A combined hepatitis A and hepatitis B vaccine is available for adults >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 countries, men who have sex with men (MSM), injection and non-injection drug users, and persons with a clotting factor disorder.

Other efforts to prevent hepatitis A infection should focus on disrupting transmission through good personal hygiene, hand washing, and washing fruits and vegetables before eating. Illness among food-handlers or persons in a childcare setting should be promptly identified and reported to prevent further spread of the disease in those settings. In outbreak settings, immune-globulin may be administered to at-risk contacts of infected individuals, particularly children <1 year and adults over age 40. Recently updated guidelines based on results from a clinical trial, recommend vaccine for post-exposure prophylaxis in healthy individuals between 1 and 40 years old. All post-exposure prophylaxis should be administered within two weeks of exposure.

Hepatitis A Reported Incidence Rate* by County, Florida, 2007



References

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

Centers for Disease Control and Prevention, "Update: Prevention of hepatitis A after exposure to hepatitis A virus and in international travelers. Updated recommendations of the Advisory Committee on Immunization Practices (ACIP)", *MMWR* 2007; 56(41); pp1080-84.

Centers for Disease Control and Prevention, "Summary of Notifiable Diseases-United States, 2006"; *MMWR* 2006; 55(53).

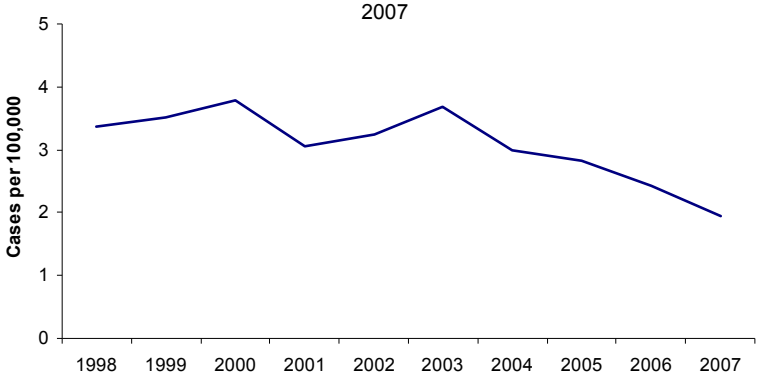
Additional Resources

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

Hepatitis B, Acute

Hepatitis B, Acute: Crude Data	
Number of Cases	368
2007 incidence rate per 100,000	1.96
% change from average 5 year (2002-2006) incidence rate	-35.38
Age (yrs)	
Mean	43.4
Median	42
Min-Max	18 - 88

Figure 1.
Hepatitis B, Acute Incidence Rate by Year Reported, Florida, 1998-2007



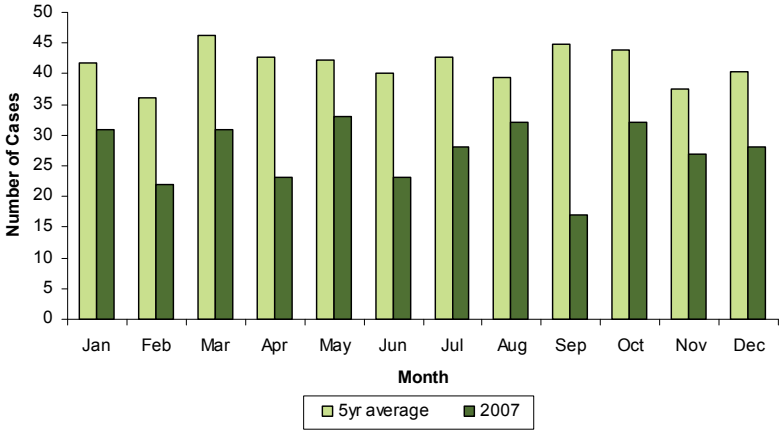
Description

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

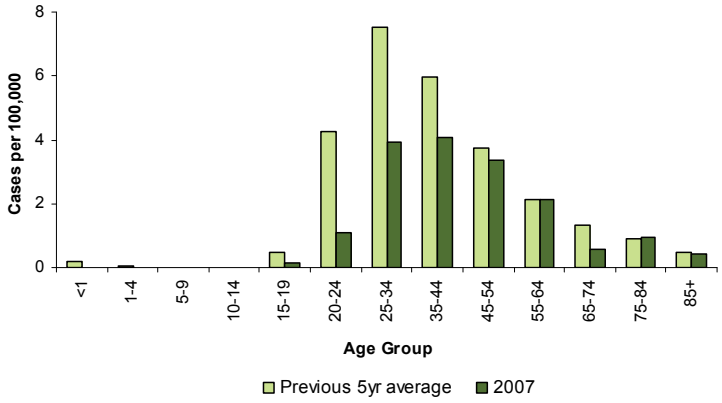
The incidence rate for acute Hepatitis B has declined gradually over the last ten years (Figure 1). The 2007 rate was 35.38% lower than the average from 2002-2006. A total of 368 cases were reported in 2007, of which 91.53% were classified as confirmed. There is no seasonal trend for acute hepatitis B infection (Figure 2). Overall, 84.15% of the acute hepatitis B cases were classified as sporadic.

Figure 2.
Hepatitis B, acute Cases by Month of Onset, Florida, 2007



The highest historical incidence rates occurred in the 25-34 yr old age group, and for 2007 the incidence rate in this group was high along with those aged 35-44. In 2007, the incidence rates were lower than the previous 5-year average in all age groups except in those 75-84, 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 (2.28 per 100,000 and 1.64 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, 2007



Hepatitis B is a vaccine-preventable disease. Among the 338 people diagnosed with acute hepatitis B, 68.2 % never received the vaccine and 27.17% 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 53.8% of those diagnosed with acute hepatitis B were hospitalized. In 2007, death occurred in five of the 368 people with acute hepatitis B infection. Twenty-six of the 368 people with hepatitis B reported having had contact with someone confirmed or suspected of having a hepatitis B infection, and of these, 73% reported the ill person was a sexual partner. Drug use has also been associated with hepatitis B infection. Of the 368 acute hepatitis B cases, 6.3% reported injection drug use and 23.6% 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 2007, 16% of those with an acute hepatitis B infection had recently received a tattoo.

Sexual behavior may place an individual at risk for hepatitis B infection. However, individuals may often decline to comment on the frequency of sexual partners and/or their sexual preference. For 2007, sexual preference and frequency of sexual partnerships are summarized in Table 2. Poepole's risk factors may change over time.

Acute hepatitis B was reported in 44 of the 67 counties in Florida. A cluster of high-rate counties can be seen in the center of the state and along the northern border.

Table 2. Distribution of the number of sexual partners in the six months prior to symptoms among four sexual preference groups, for people with acute hepatitis B reported in 2007.

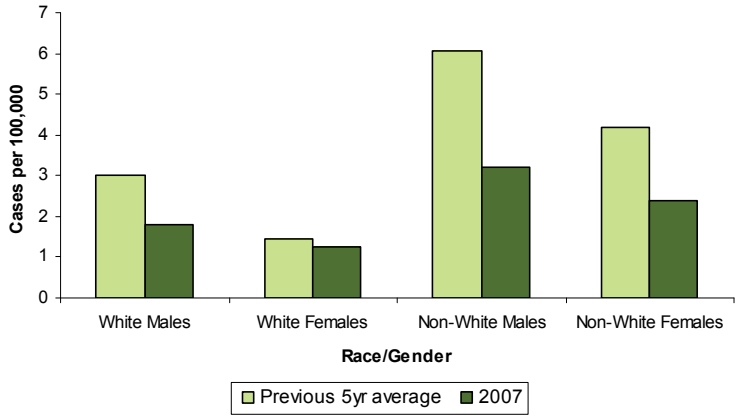
Sexual Behavior Risk Factors	Men having sex with men	Men having sex with women	Women having sex with men	Women having sex with women
1 Sexual partner	6%	34%	35%	4 %
2-5 Sexual partners	6%	12%	18%	0%
More than 5 sexual partners	4 %	6%	4%	0%
Reported no sexual partner	52%	22%	15%	65%
Not Answered	4%	1%	0%	1%
Unknown	28%	25%	28%	30%
Total	100%	100%	100%	100%
% of Cases in each sexual preference group	17%	52%	57%	4%

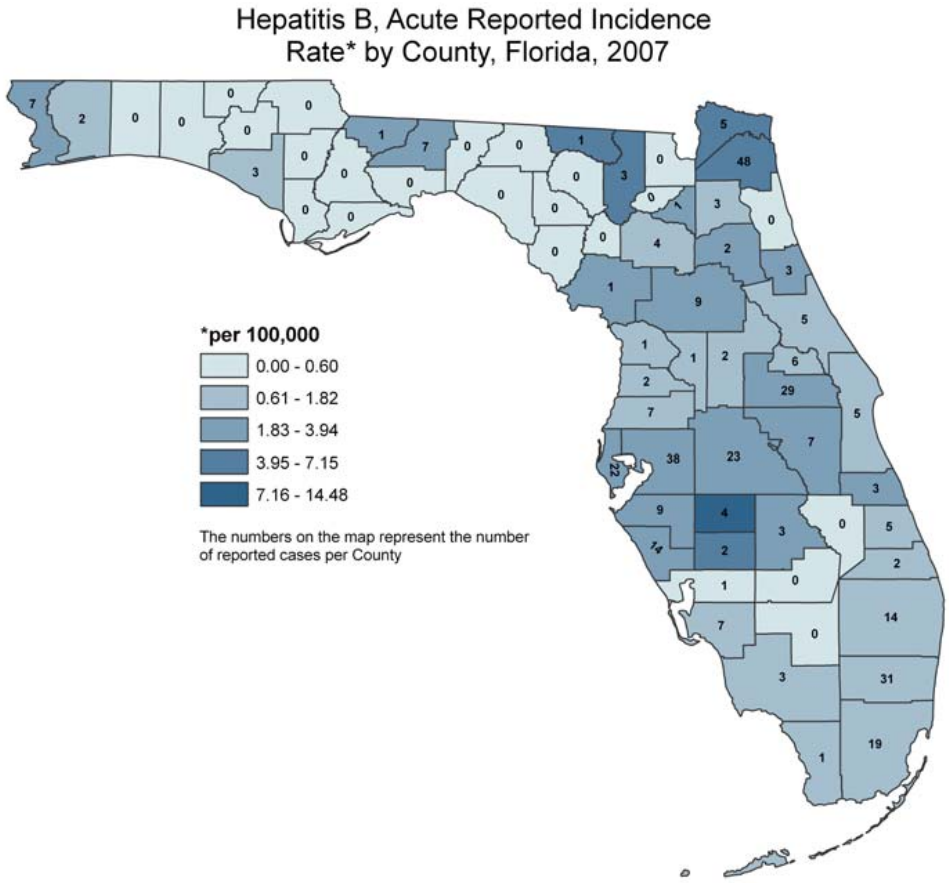
*Total number of acute hepatitis b positive males is 209 and females is 159
**In, 2007, all 368 acute cases of hepatitis occurred in individuals 18 years of age and older
*** Sexual history is collected by asking about the number of sexual partnership in the last 6 months prior to having symptoms, regardless of gender.

Prevention

Hepatitis B vaccines are available to protect against hepatitis B virus infection. In addition, in health care 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 (men who have sex with men), people who have multiple sexual partners, household contacts of infected persons, and infants born to mothers who are hepatitis B carriers.

Figure 4. Hepatitis B, acute Incidence Rate by Race and Gender, Florida, 2007





References

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

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

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

Centers for Disease Control and Prevention, "Update: Recommendations to Prevent Hepatitis B Virus Transmission-United States," *Morbidity and Mortality Weekly Report*, Vol. 48, 1999, pp. 33-4.

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

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

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

Additional Resources

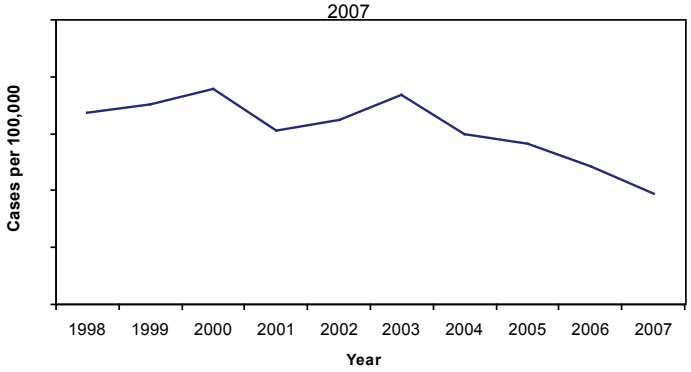
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at http://www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm and http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm

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

Hepatitis B (HBsAg + Pregnant Women)

Hepatitis B, (HBsAg + Pregnant Women): Crude Data	
Number of cases	644
2007 incidence rate per 100,000	16.85
% change from average 5yr (2002-2006) incidence rate	11.81
Age (yrs)	
Mean	28.47
Median	28
Min-Max	15 - 47

Figure 1.
Hepatitis B, Acute Incidence Rate by Year Reported, Florida, 1998-2007



Description

Hepatitis B is caused by infection with the hepatitis B virus (HBV), which is 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 infection that is transmitted by percutaneous and mucosal exposure to infectious body fluids and can include sexual transmission. 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 a 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+ 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 endemic.

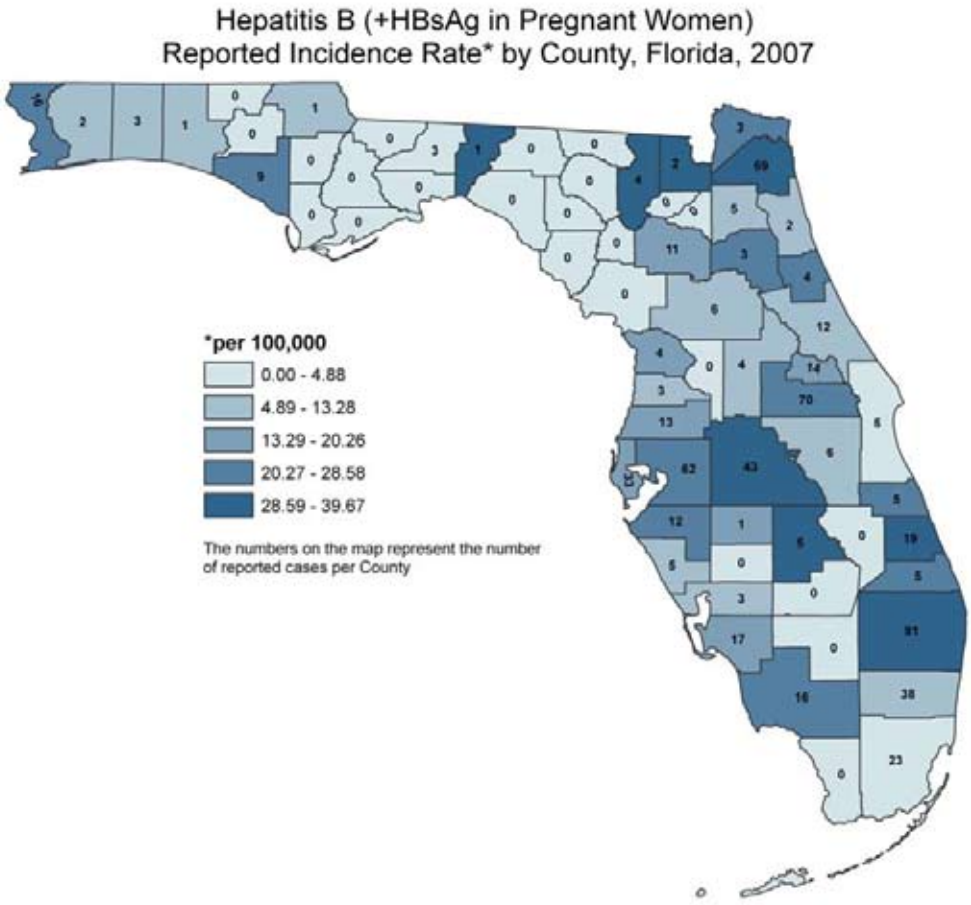
Disease Abstract

The number of cases of HBsAg+ pregnant women was 644 in 2007, which is an increase from 448 in 2006. The case increase for 2007 may indicate better case identification activities; since the incidence of acute hepatitis B disease continues to decrease. An important note for infants and children, there were only two cases of perinatal hepatitis B, a decrease from six cases reported in 2006.

Prevention

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

combination vaccines. Information on the recommended schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm



References

Centers for Disease Control and Prevention, Manual for the Surveillance of Vaccine-Preventable Diseases, 3rd ed., 2002.

Centers for Disease Control and Prevention, "A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP); Part 1: Immunization of Infants, Children, and Adolescents," Morbidity and Mortality Weekly Report, Vol. 54, No. RR-16, 2005.

Centers for Disease Control and Prevention, "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults," Morbidity and Mortality Weekly Report, Vol. 55, No. RR-16, 2006.

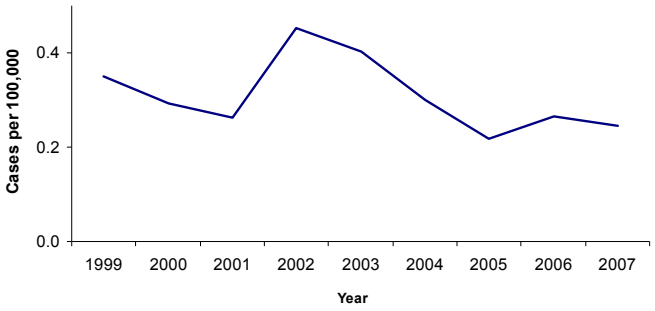
Additional Resources

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

Hepatitis C, Acute

Hepatitis C, acute: Crude Data	
Number of Cases	46
2007 incidence rate per 100,000	0.25
% change from average 5 year (2002-2006) incidence rate	-24.55
Age (yrs)	
Mean	39.13
Median	39
Min-Max	17 - 68

Figure 1.
Hepatitis C, Acute Incidence Rate by Year Reported, Florida, 1998-2007



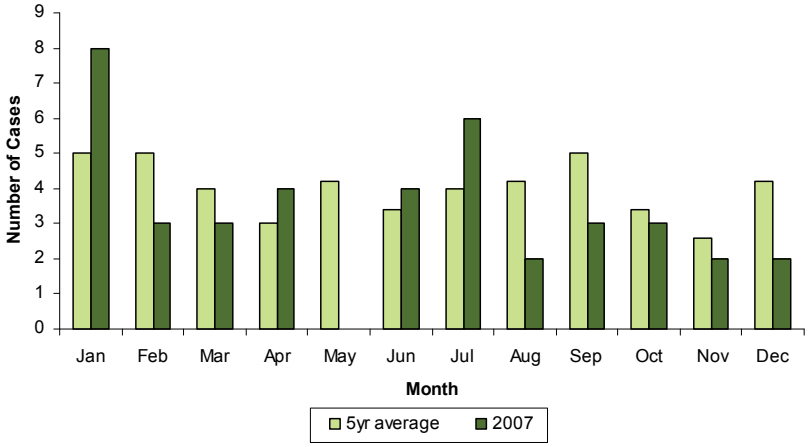
Description

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 injection drug use, 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 Florida surveillance system. Common symptoms include jaundice, abdominal pain, dark urine, clay-colored stool, weight loss, and nausea.

Disease abstract

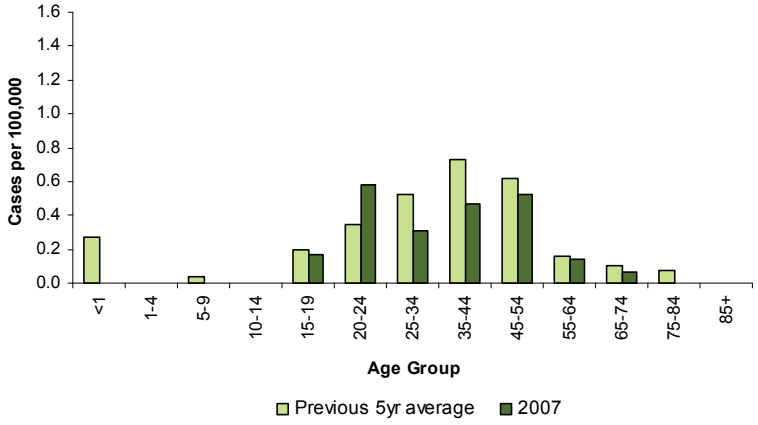
The incidence rate for acute hepatitis C has been variable over the last eight years (Figure 1). In 2007, there was a 24.55% decrease in comparison to the average incidence from 2002-2006. A total of 46 cases were reported in 2007, of which 34.76% were classified as confirmed cases. There is no seasonal trend for acute hepatitis C infection (Figure 2). There were no acute hepatitis C cases classified as outbreak related.

Figure 2.
Hepatitis C, acute Cases by Month of Onset, Florida, 2007



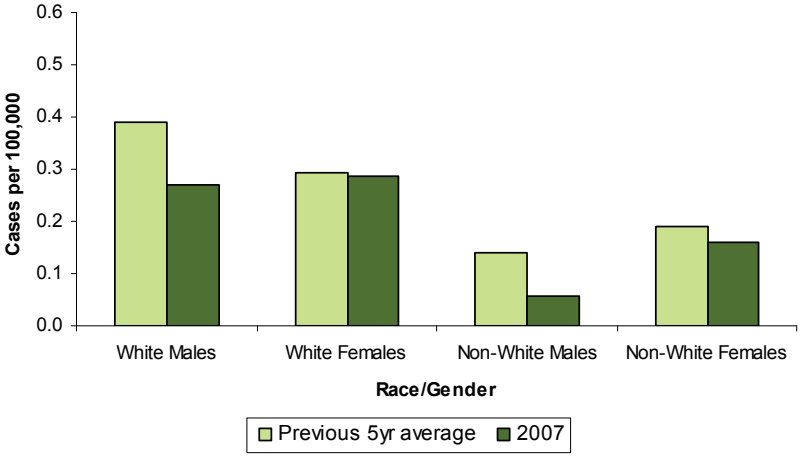
The highest incidence rates for 2007 occurred among those 20-24 years old which is a change from historical trends where the highest rates occurred among those in the 35-44 year old age group. In 2007, the incidence rates were lower than the previous 5-year average in all age groups except in those in the 20-24 age group where the incidence rate was slightly increased (Figure 3).

Figure 3.
Hepatitis C, acute Incidence Rate by Age Group, Florida, 2007



The passive transfer of maternal HCV antibodies may be present in infants up to 18 months of age. A positive Anti-HCV result in an infant <18 months is a not a true indicator of hepatitis C infection in an infant. In 2007, men and women had similar incidence of acute hepatitis C (0.23 per 100,000 and 0.26 per 100,000 respectively). The incidence rates in whites are greater than those in non-whites (Figure 4).

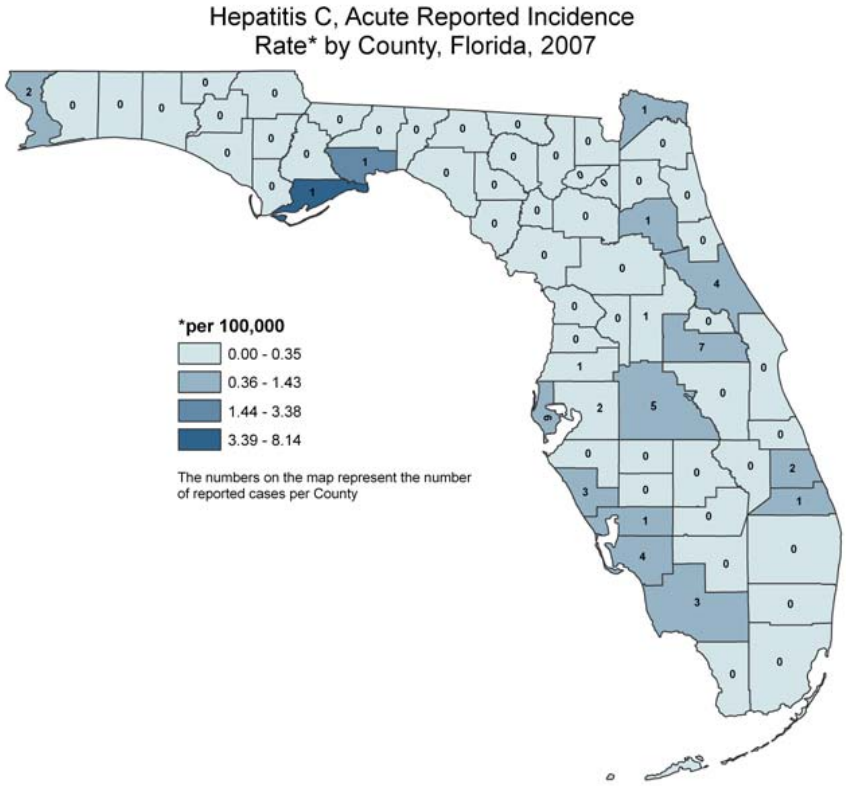
Figure 4. Hepatitis C, acute Incidence Rate by Race and Gender, Florida, 2007



Acute Hepatitis C was reported in 18 of the 67 counties in Florida.

Prevention

Universal precautions should be implemented for individuals in contact with body fluids in health care 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.



References

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

Centers for Disease Control and Prevention, "Sexually Transmitted Diseases Treatment Guidelines, 2006," *Morbidity and Mortality Weekly Report*, Vol. 55, No. RR-11, 2006, pp. 1-101.

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

Centers for Disease Control and Prevention, "Guidelines for Laboratory Testing and Result Reporting of Antibody to Hepatitis C Virus," *Morbidity and Mortality Weekly Report*, Vol. 52, No. RR-03, 2003, pp. 1-16.

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

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

M.I Gismondi, E.I. Turazza, S. Grinstein, et al., "Hepatitic C Virus Infection in Infants and Children from Argentina," *Journal of Clinical Microbiology*, Vol. 42, 2004, pp. 1199-1202.

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

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

Lead Poisoning

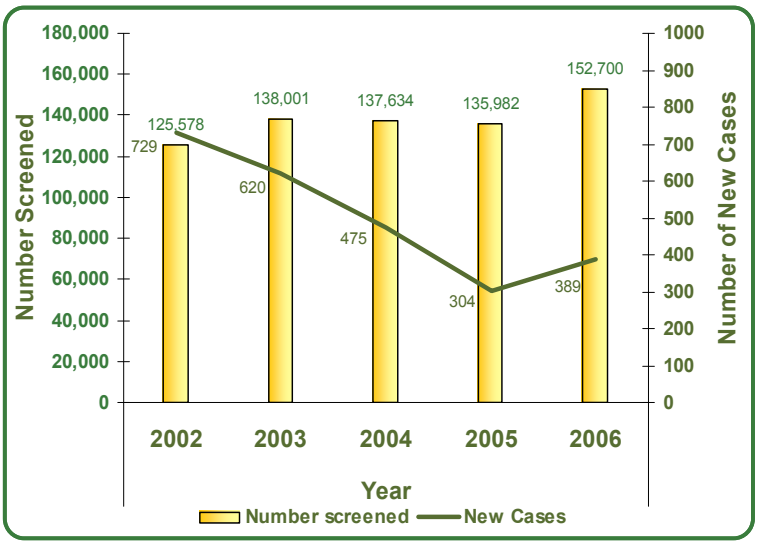
Description

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

The Florida Childhood Lead Poisoning Prevention Program (FL CLPPP) monitors all reported blood lead levels in children <72 months of age. The program then determines the reported number of children per year who meet the case definition of lead poisoning and the reported number of children screened. Although some children are tested multiple times in a single year, only the first test per year is considered a screening test, all subsequent tests are considered follow up tests. Figure 1 shows that the number of reported lead cases in Florida declined steadily between 2002 and 2005. However, the number of cases increased from 304 in 2005 to 389 in 2006. The reported number of children screened has increased substantially from 125,578 to 152,700 in 2006. The increase in screenings reported to FL CLPPP may be attributed to the program's efforts to improve reporting of blood lead data by physicians and laboratories.

Figure 1. Reported new cases of lead poisoning and screenings among children less than 72 months of age, Florida, 2002 to 2006



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 by lead in the state.

Prevention

Lead poisoning is completely preventable. Prevention efforts of the FL CLPPP 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.

References

Centers for Disease Control and Prevention, *Preventing Lead Exposure in Young Children: A Housing Based Approach to Primary Prevention of Lead Poisoning*, Atlanta, GA, Centers for Disease Control and Prevention, 2004.

Additional Resources

Additional information is available on the Florida Department of Health website at http://www.doh.state.fl.us/environment/community/lead/index.html

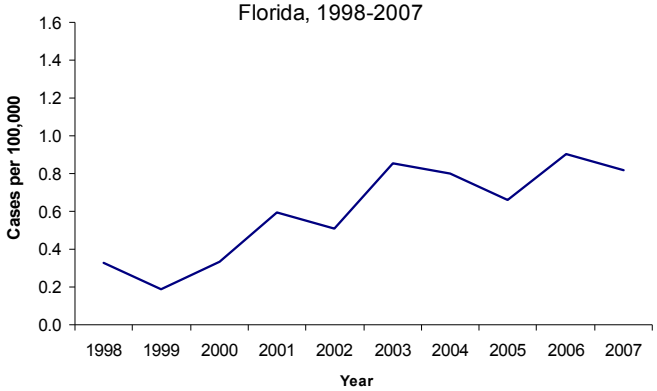
Florida Department of Health Lead Program website also includes information and disease statistics http://www.doh.state.fl.us/environment/community/lead/index.html

Information is also available on the Centers for Disease Control and Prevention website at http://www.cdc.gov/nceh/lead/faq/about.htm

Legionellosis

Lefionellosis: Crude Data	
Number of Cases	153
2007 incidence rate per 100,000	0.82
% change from average 5 year (2002-2006) incidence rate	-8.91
Age (yrs)	
Mean	65.03
Median	64
Min-Max	22 - 92

Figure 1.
Legionellosis Incidence Rate by Year Reported, Florida, 1998-2007



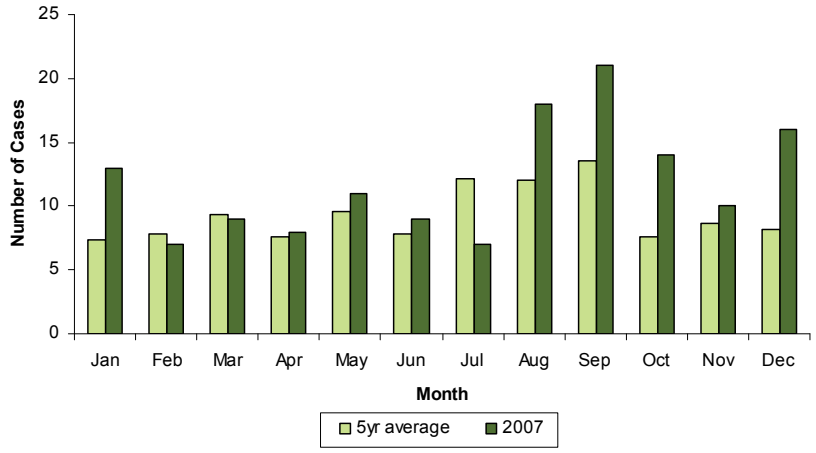
Description

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, or parts of air-conditioning systems of large buildings. The infection is transmitted through the air to the lungs of people through aerosolization. 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. Travel is often identified as a risk factor for people with Legionnaires' disease, most likely due to exposures to hot tubs, pools, decorative fountains, and large air-conditioning systems while at a hotel.

Disease Abstract

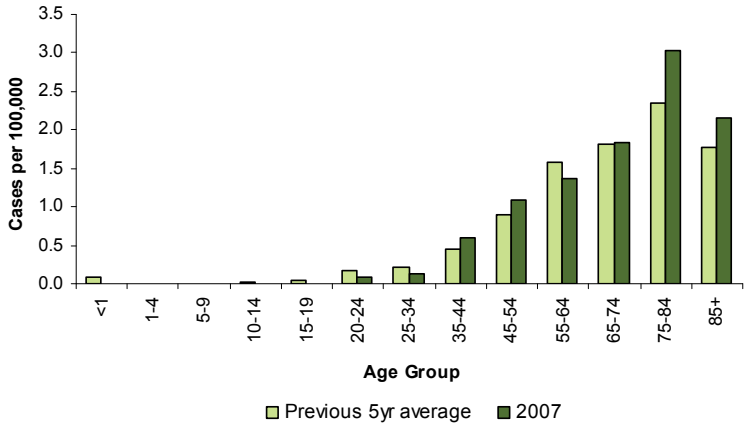
The Florida incidence rate for legionellosis has steadily increased over the last ten years (Figure 1). In 2007, there was an 8.91% increase in comparison to the average incidence from 2002-2006. A total of 153 cases were reported in 2007, of which 100% were classified as confirmed cases and 7.84% were acquired outside of Florida. The number of cases reported tends to increase in the summer months. In 2007, the number of cases exceeded the previous 5-year average for each month of the year with the exception of February, March, and July (Figure 2). None of the legionellosis cases were classified as outbreak related.

Figure 2.
Legionellosis Cases by Month of Onset, Florida, 2007



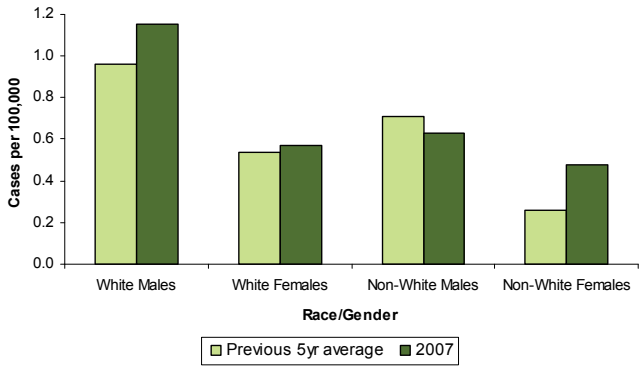
The highest incidence rates continue to occur among adults 45 years of age and older with incidence rates ranging from 1.09 per 100,000 in the 45-54 age group to 3.04 per 100,000 in the 75-84 age group. In 2007, the incidence rates were higher than the previous 5-year average in those 35-54 and those 65 and older. 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 1-9 (Figure 3). Males continue to have a higher incidence than females (1.09 and 0.55 per 100,000, respectively). In 2007, the incidence of disease increased in white males and decreased in non-white males compared to 2002-2006. 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, 2007



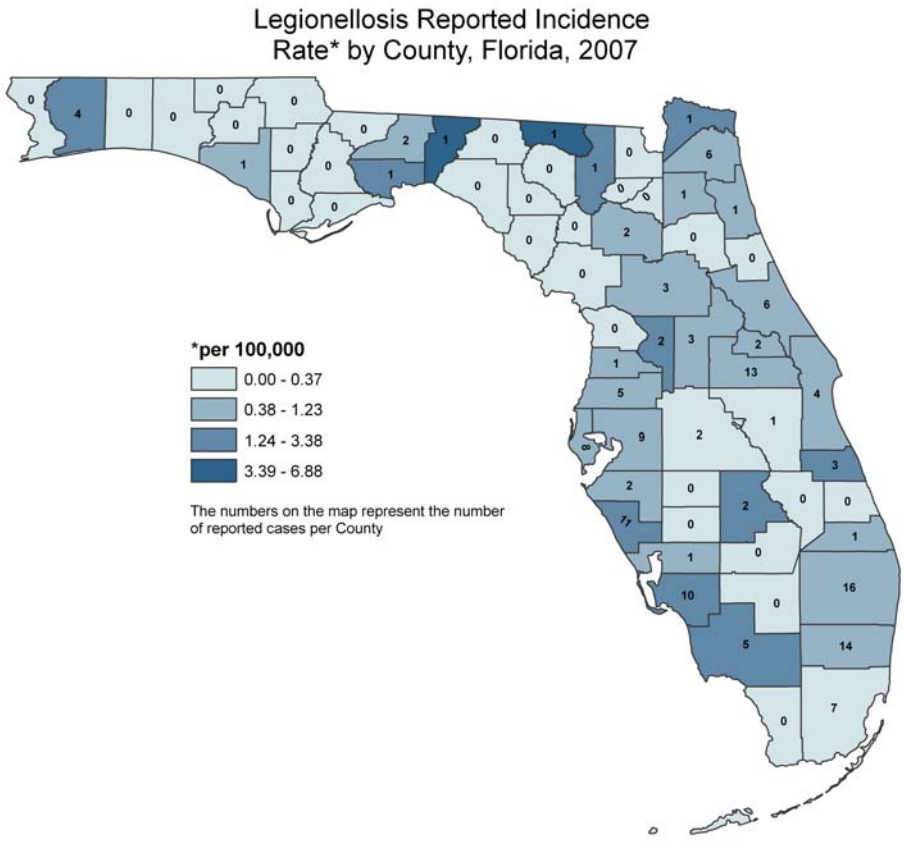
Legionellosis was reported in 31 of the 67 counties in Florida. Counties in the northeast, central-west, southwestern, and southeastern regions Florida reported the highest incidence rates.

Figure 4. Legionellosis Incidence Rate by Race and Gender, Florida, 2007



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 slime-forming organisms. Tap water should not be used in respiratory therapy devices. Maintaining hot water system temperatures at 50°C (122°F) or higher as well as proper hot tub/spa maintenance may reduce the risk of transmission.



References

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

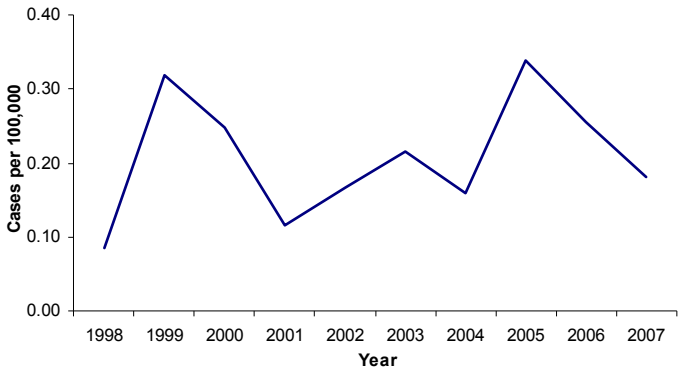
Additional Resources

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

Listeriosis

Listeriosis: Crude Data	
Number of Cases	34
2007 incidence rate per 100,000	0.18
% change from average 5 year (2002-2006) incidence rate	-21.43
Age (yrs)	
Mean	69.82
Median	73.5
Min-Max	<1 - 89

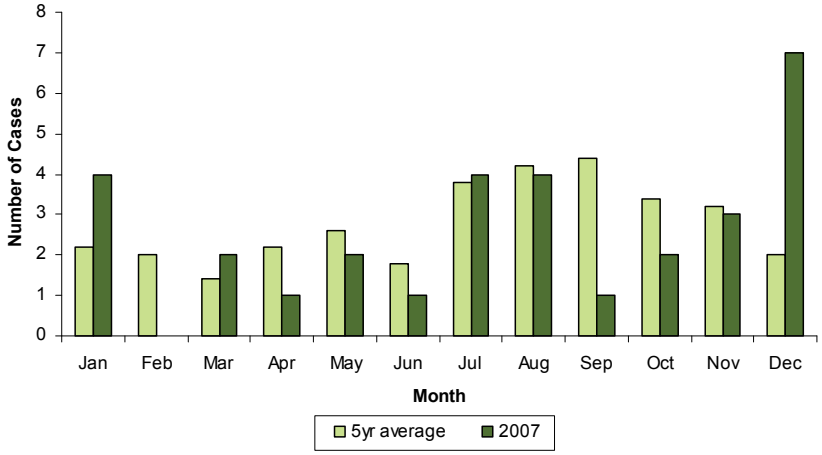
Figure 1.
Listeriosis Incidence Rate by Year Reported, Florida, 1998-2007



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 miscarriage. 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 processed foods that become contaminated after processing (e.g., soft cheeses, cold cuts). Unlike other foodborne pathogens, *Listeria* can to multiply in refrigerated foods that are contaminated. Those at highest risk for infection include neonates, the elderly, immunocompromised people, pregnant women, and alcoholic, cirrhotic or diabetic adults.

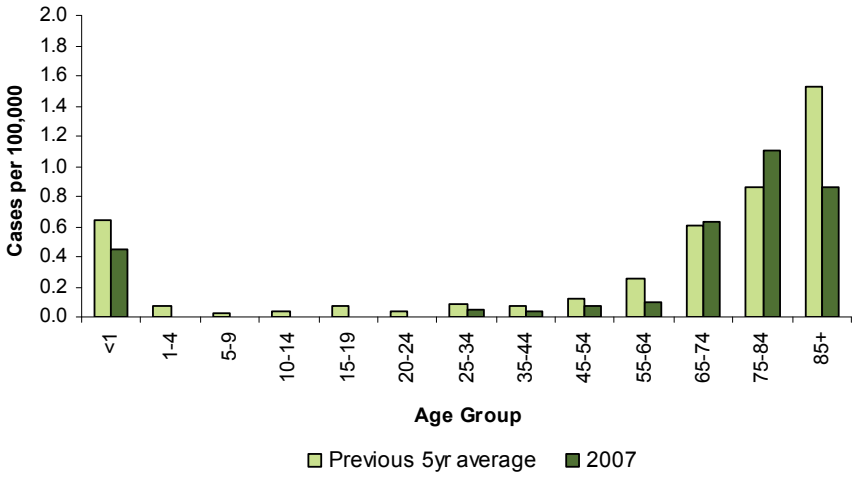
Figure 2.
Listeriosis Cases by Month of Onset, Florida, 2007



Disease Abstract

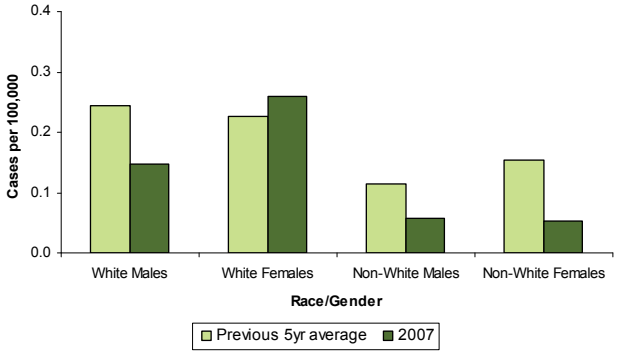
The reported incidence rate for listeriosis has been variable over the last ten years with no clear trend (Figure 1). In 2007, there was a 21.43% decrease in comparison to the previous 5-year average incidence. A total of 34 cases were reported in 2007. All of the 2007 cases were sporadic and not outbreak related. Historically, the number of cases reported tends to increase slightly in the late summer months with a high number of cases in July, August, and September. In 2007, the number of cases exceeded the previous 5-year average during four months of the year, most notably in January and December (Figure 2).

Figure 3.
Listeriosis Incidence Rate by Age Group, Florida, 2007



The very young and the elderly are at increased risk of infection in comparison to other age groups (Figure 3). In 2007, the incidence rate for those 65-84 years old was higher than the previous 5-year average for that age group. The incidence rate in females was higher than in males (0.22 and 0.14 per 100,000, respectively), and in 2007, the incidence in both genders was lower than the previous 5-year average incidence. Historically, incidence rates in whites are greater than those in non-whites, and this was seen in 2007 as well, with white females having the highest incidence (Figure 4).

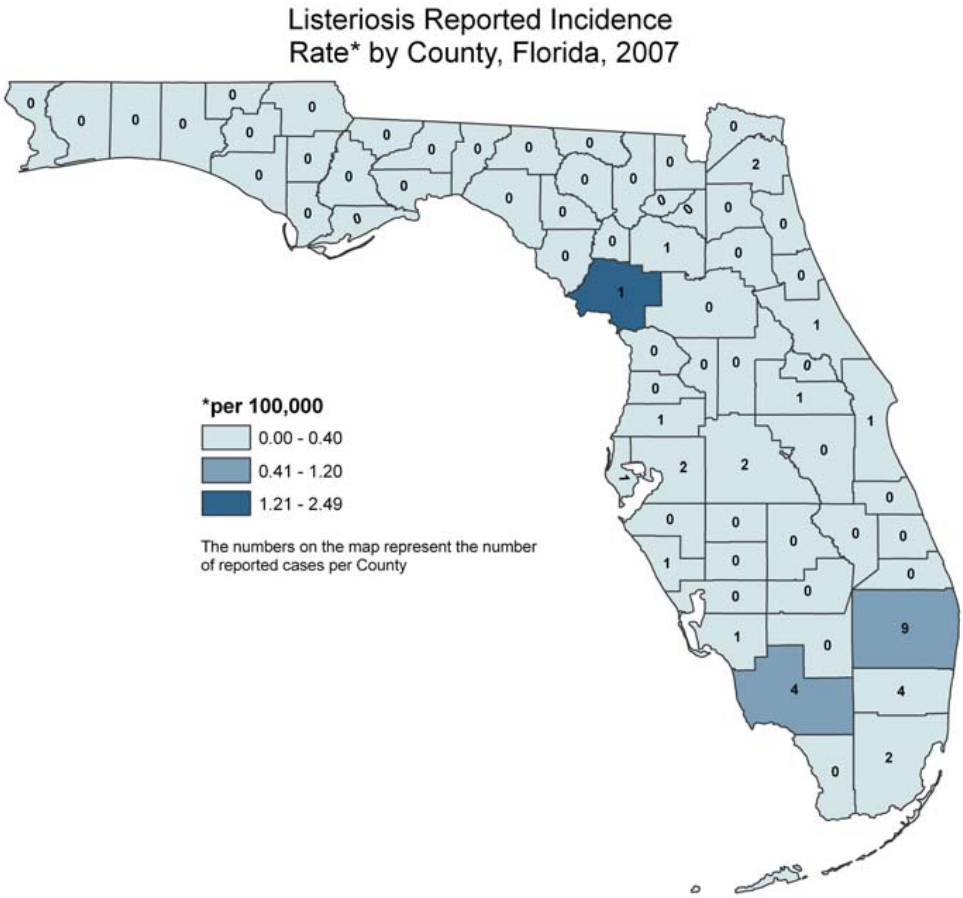
Figure 4. Listeriosis Incidence Rate by Race and Gender, Florida, 2007



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, and cutting boards after handling uncooked foods, may also prevent listeriosis. Those at high risk for listeriosis (the elderly, pregnant women, those with cancer, HIV, diabetes, or weakened immune systems) should follow additional recommendations: avoid soft cheeses such as feta, brie, camembert, blue-veined, and Mexican-style cheese. 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. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

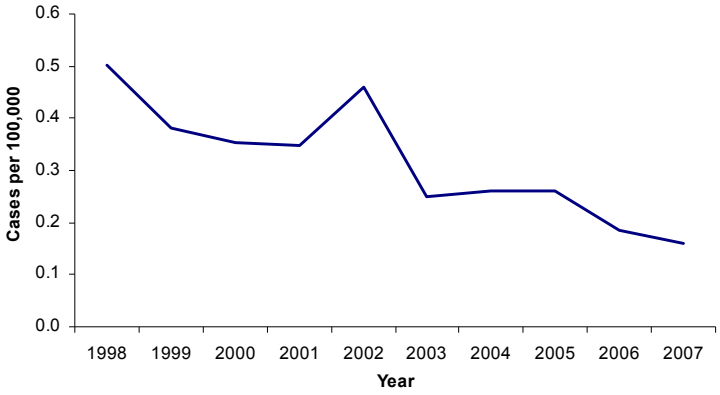
Additional Resources

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

Lyme Disease

Lyme Disease: Crude Data	
Number of Cases	30
2007 incidence rate per 100,000	0.16
% change from average 5 year (2002-2006) incidence rate	-43.03
Age (yrs)	
Mean	47.97
Median	54.5
Min-Max	7 - 86

Figure 1.
Lyme Disease Incidence Rate by Year Reported, Florida, 1998-2007



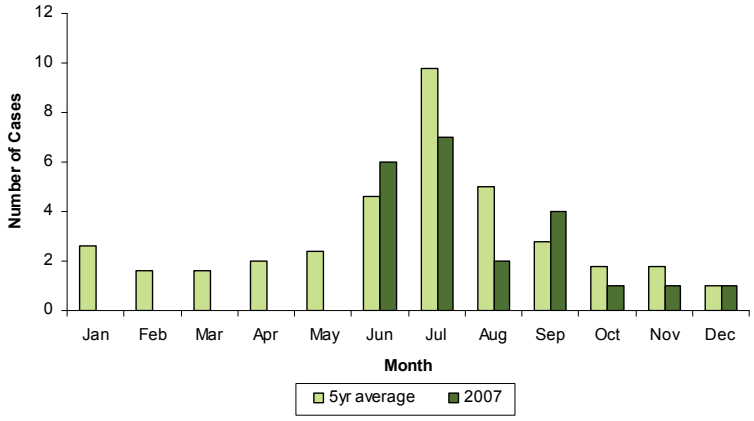
Description

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 for the organism; deer act as a mammalian maintenance host for the *Ixodes* tick vectors which spread the disease. Small reptiles acting as alternative tick hosts may play a role in reducing risk of human disease in Florida. The clinical manifestations of acute Lyme disease include: 1) early localized disease, and 2) early disseminated disease. Early localized disease and early disseminated disease may occur within 1-55 days following exposure.

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 neuropathies of the cranial nerves (especially VII-Bell's palsy), lymphocytic meningitis, and conjunctivitis.

Late Lyme disease may develop two months to several years following primary exposure. 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 Cases by Month of Onset, Florida, 2007



Disease Abstract

The reported incidence rate for Lyme disease in Florida has dropped steeply over the past ten years and has decreased in 2007 from what it was in 2006 (Figure 1). In 2007, there was a 43.03% decrease in comparison to the average incidence from 2002-2006. Changes in testing procedures by private laboratories may have contributed to this decline. In 2007, a positive ELISA test followed by a Western blot was required to meet surveillance criteria for case confirmation. Some laboratories provided only EIA testing which did not allow cases to meet the case definition, or did not report the results of the Western Blot testing along with the initial EIA result. These practices could have resulted in recognition of fewer cases and a decline in the reported incidence.

A total of 30 cases were reported in 2007, all classified as confirmed cases. More cases were acquired in the state of Florida for 2007 (30%) as compared to 2006 (18%) but the majority of cases were acquired outside of the state for both years. Highest case incidence was in the summer, with peak incidence in July and no cases reported prior to June. In 2007, the number of cases exceeded the previous 5-year average in June and September (Figure 2). None of the 2007 cases were classified as outbreak related.

The highest incidence in 2007 was in 65-74 year olds which is consistent with the previous five-year average for age. Three of the four highest age group incidences were in older patients (65-74, 75-84, and those 85 and over) 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 and those 10-14 (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 (0.06 per 100,000) in 2007 relative to the 5-year average (Figure 5).

Figure 3.
Lyme Disease Incidence Rate by Age Group, Florida, 2007

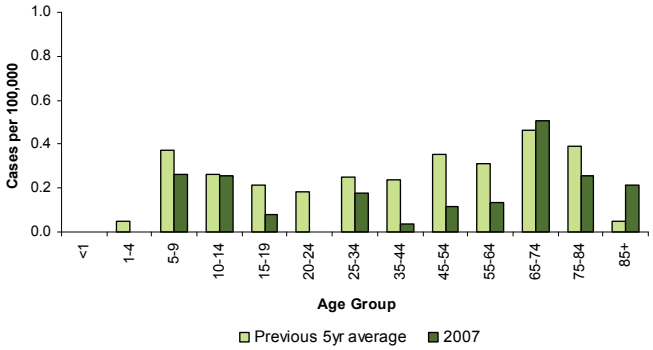
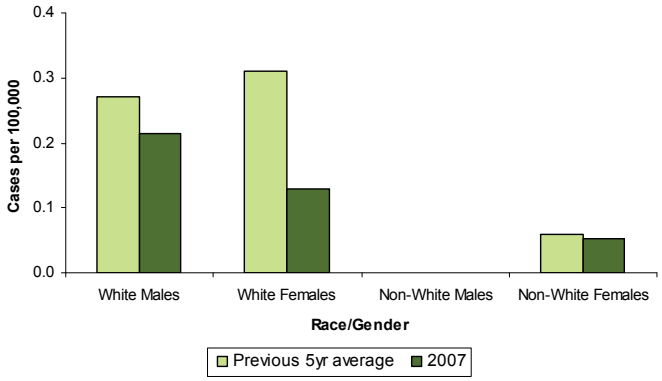


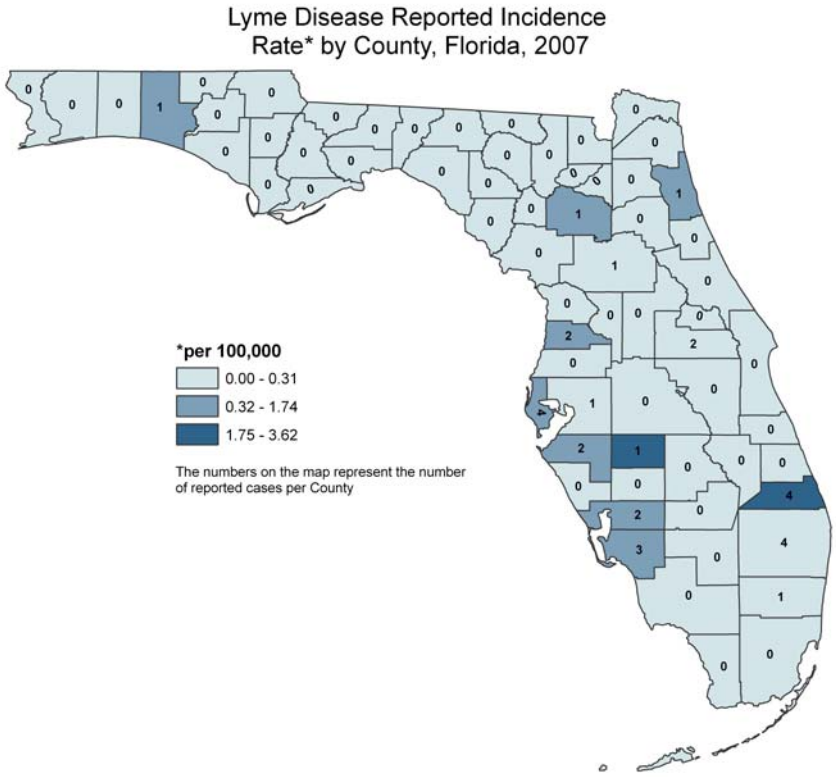
Figure 4. Lyme Disease Incidence Rate by Race and Gender, Florida, 2007



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



References

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

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

Additional Resources

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

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

Measles

Description

Measles is an acute viral illness caused by a virus in the family paramyxovirus, genus *Morbillivirus.* Measles is characterized by the onset of fever, malaise, cough, cold-like symptoms, 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, and in death in approximately 10-30 cases per 10,000. Pneumonia complicates 6% of measles cases in the U.S., and 19% of cases are hospitalized.

Disease Abstract

In 2007, five laboratory-confirmed cases of measles were reported for a statewide incidence rate of 0.03 per 100,000 population. This is a significant increase from the zero cases reported in 2005 and a slight increase from the four cases reported in 2006. Of the 2007 cases, one case was imported and the other four were acquired in Florida. 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.

All cases in 2007were part of one outbreak. The index case had visited India in April. This case resulted in four linked cases, one in an infant. Onset in the index case occurred on 4/2/07 and onset in the fifth case was 4/25/07. Four cases were identified by case investigation; only one case was initially identified by the healthcare provider. The cases are members of a religious community that does not routinely immunize. None of the cases had received vaccination. Once notified, rapid response by the county health department, local educational institutions, and surrounding communities prevented any spread of measles outside of the religious group.

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 grades. All children attending or entering childcare facilities or family day care must be age-appropriately vaccinated with one or two doses of measles vaccine.

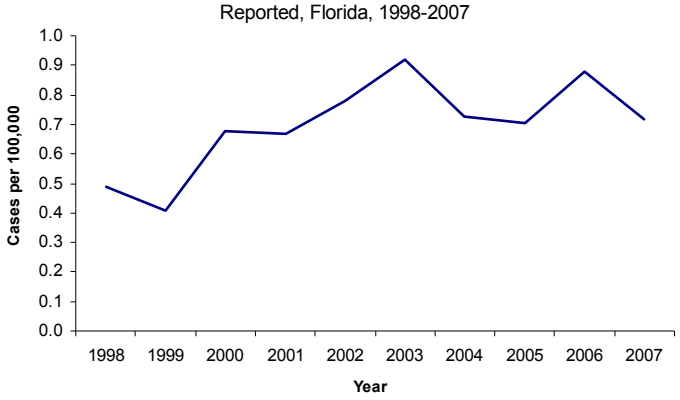
Resources

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 3rd ed., 2002.

Meningitis, Other

Menengitis, other: Crude Data	
Number of Cases	135
2007 incidence rate per 100,000	0.72
% change from average 5 year (2002-2006) incidence rate	-10.30
Age (yrs)	
Mean	38.22
Median	42
Min-Max	<1 - 86

Figure 1.
Meningitis, other (bacterial/mycotic) Incidence Rate by Year Reported, Florida, 1998-2007



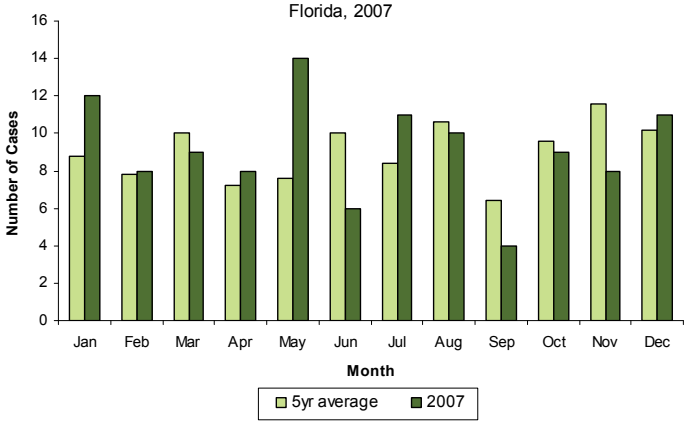
Description

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 2007, some common pathogens isolated were *Cryptococcus neoformans*, *Escherichia coli, Pseudomonas* species, *Klebsiella pneumoniae, Staphylococcal* species, and *Streptococcal* species.

Disease Abstract

The incidence rate of meningitis, other has increased gradually over the previous ten years (Figure 1). However, in 2007 there was a 10.30% decrease in the incidence rate as compared to the previous 5-year average. A total of 135 cases were reported in 2007, all confirmed. The number of cases of meningitis, other shows little difference by season when averaged over several years. In 2007, there were more cases in the winter but there were several cases in May (Figure 2). There were no meningitis, other outbreaks in 2007.

Figure 2.
Meningitis, other (bacterial/mycotic) Cases by Month of Onset, Florida, 2007



The highest incidence rates continue to occur in infants <1 year (Figure 3). Immunosuppressed or immunocompromised people in the older age groups may also be at risk for infection. Males continue to have a higher incidence than females (0.91 per 100,000 and 0.53 per 100,000 respectively). Incidence rates in non-white males are greater than those in white males (Figure 4).

Figure 3.
Meningitis, other (bacterial/mycotic) Disease Incidence Rate by Age Group, Florida, 2007

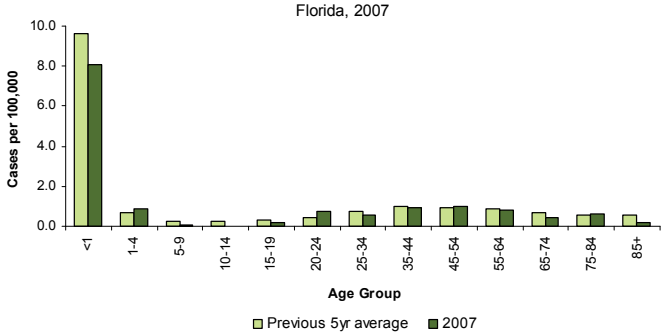
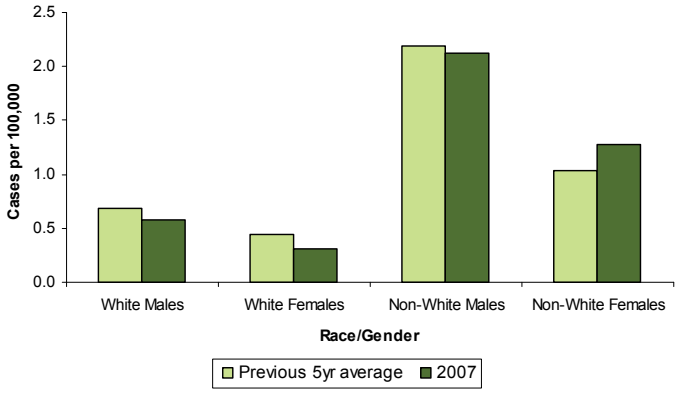


Figure 4. Meningitis, other (bacterial/mycotic) Incidence Rate by Race and Gender, Florida, 2007

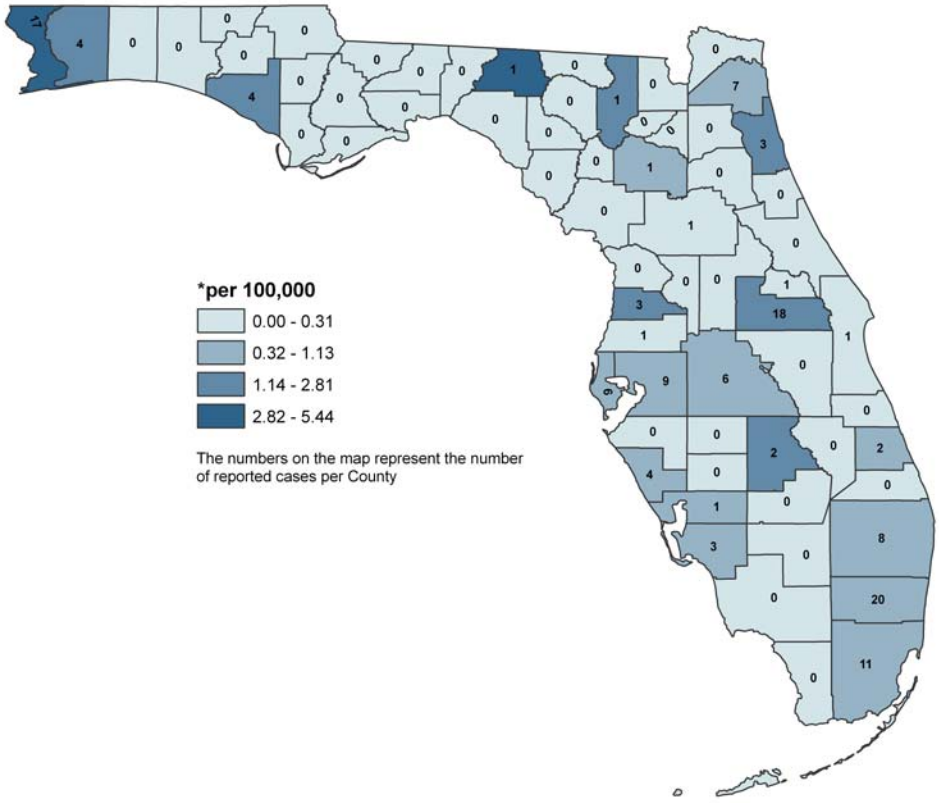


"Meningitis, other" was reported by 23 of the 67 counties in Florida. Counties with the highest incidence rates were widely scattered.

Prevention

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

Meningitis, other (bacterial/mycotic) Reported Incidence Rate* by County, Florida, 2007



References

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

N. Jabbour, J. Reyes, S. Kusne, M. Martin, J. Fung, "Cryptococcal meningitis after liver transplantation," *Transplantation,* Vol. 61, 1996, pp. 146-167.

J.H. Price, J. de Louvois, 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, M. Mathur, "S*almonella* enteritidis meningitis – A case report," *Indian Journal of Medical Microbiology*, Vol. 19. 2001, pp. 151-152.

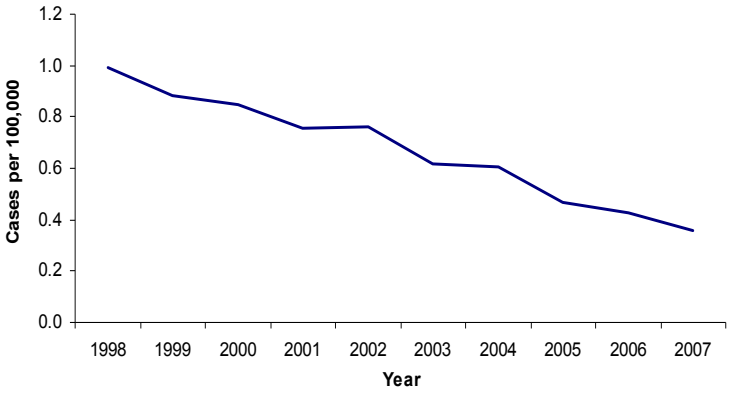
A. Zuger, E. Louie, R.S. Holzman, M.S. Simberkoff, J.J. Rahal, "Cryptococcal disease in patients with the acquired immunodeficiency syndrome. Diagnostic features and outcome of treatment," *Annals of Internal Medicine*, Vol. 104, 1986, pp.234-40.

A. Lerche, N. Rasmussen, J.H. Wandall, 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	67
2007 incidence rate per 100,000	0.36
% change from average 5 year (2002-2006) incidence rate	-37.77
Age (yrs)	
Mean	25.82
Median	19
Min-Max	<1 - 94

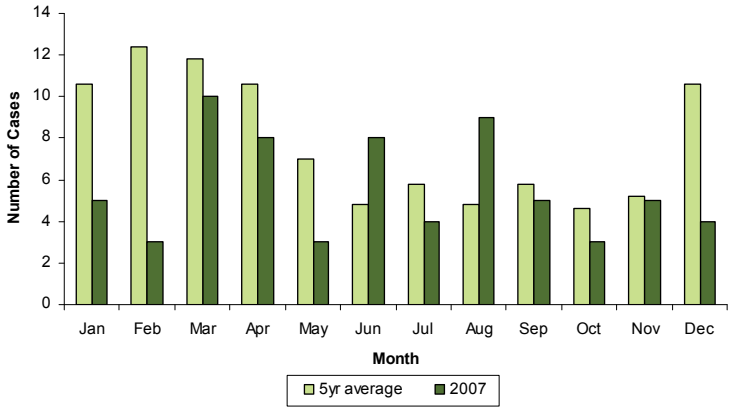
Figure 1.
Meningococcal Disease Incidence Rate by Year Reported, Florida, 1997-2006



Description

Meningococcal disease includes both meningitis and septicemia due to the bacteria *Neisseria mengitidis.* There are many different serogroups of *Neisseria menigitidis* around the world. The common ones in the United States include A, B, C, W-135, 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.

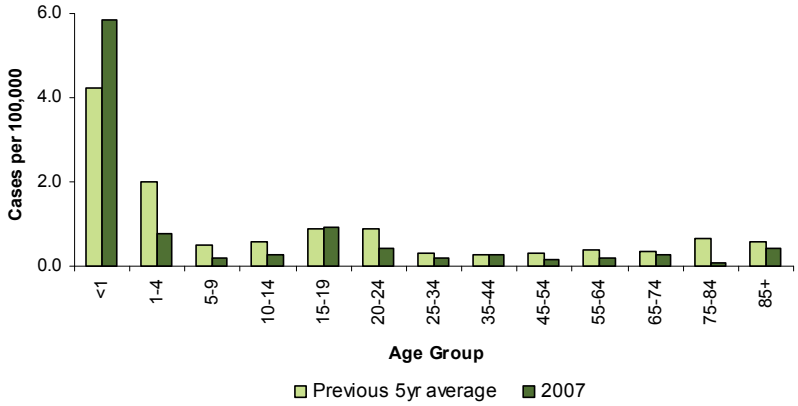
Figure 2.
Meningococcal Disease Cases by Month of Onset, Florida, 2007



Disease Abstract

The reported incidence rate for meningococcal disease has declined gradually over the previous ten years, and in 2007 is about half of what it was ten years ago (Figure 1). In 2007, there was a 37.77% decrease in comparison to the average incidence from 2002-2006. A total of 67 cases were reported in 2007, of which 97% were classified as confirmed cases. There is a general increase in cases in early winter and late spring (Figure 2). This may be due in part to social gatherings as well as staying indoors in the fall and winter months. There were no cases reported as outbreak related in 2007 and five cases resulted in death.

Figure 3.
Meningococcal Disease Incidence Rate by Age Group, Florida, 2007

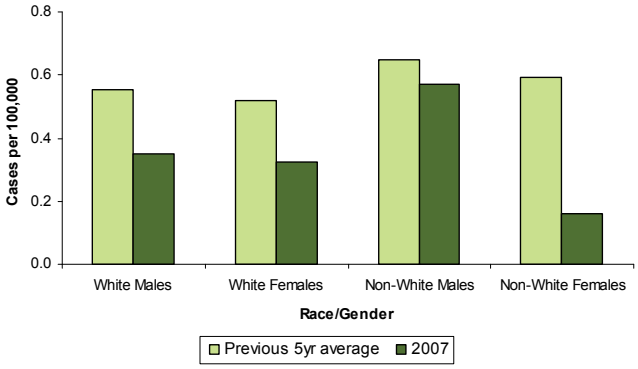


The highest incidence rates continue to occur in infants <1 year. There are no vaccines approved for use in those less than two years old. In 2007, the incidence rates were lower than the previous 5-year average in all age groups except those <1 year where the incidence rate was slightly increased and those 15-19 where the incidence rate was unchanged (Figure 3). In 2007, the incidence rates in non-whites males were greater than those in white males (figure 4). Sixty of the 67 cases had specimens submitted to the Bureau of Laboratories for serogrouping (Table 1).

Table 1. Frequency of *Neisseria Meningitidis* Serogroups, 2007

Serogroup	Number of Cases
Group B	18
Group C	13
Group Y	17
Group W135	2
Group X	1
Group Z	1
Non Groupable	3
Not Answered	10
Other	2
Total 2007	67

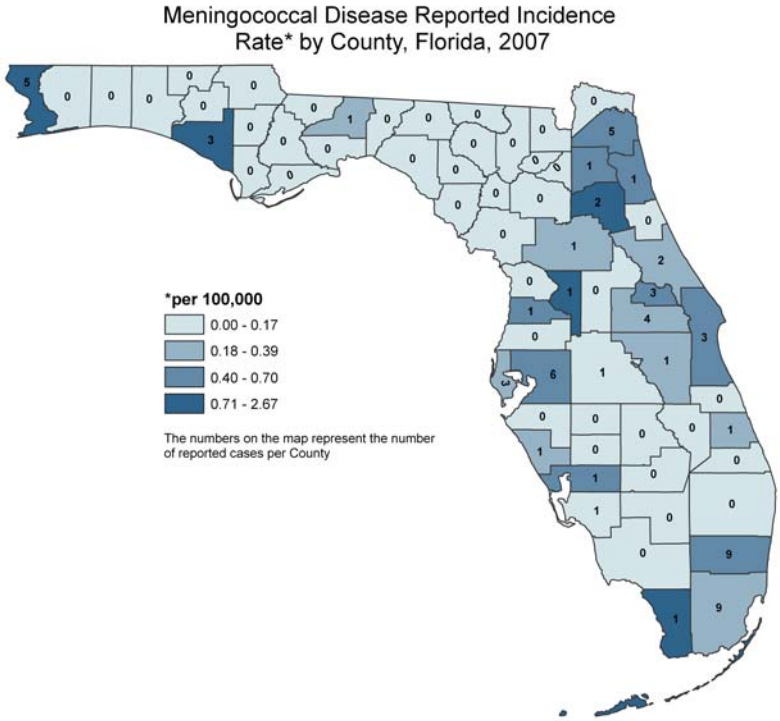
Figure 4. Meningococcal Disease Incidence Rate by Race and Gender, Florida, 2007



Meningococcal disease was reported in 24 of the 67 counties in Florida. Counties in central and northeastern 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 respiratory or 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).



References

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, "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. RR-5, 1997, pp. 1-21.

Centers for Disease Control and Prevention, "Meningococcal disease and college students: recommendations of the Advisory Committee on Immunization Practices (ACIP)," *Morbidity and Mortality Weekly Report*, Vol. 49, No. RR-7, 2000, 11-20.

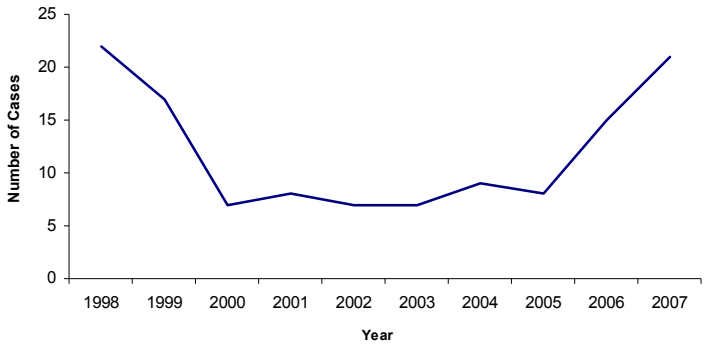
Additional Resources

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	21
2007 incidence rate per 100,000	0.11
% change from average 5 year (2002-2006) incidence rate	128.26
Age (yrs)	
Mean	26.24
Median	28
Min-Max	3 - 59

Figure 1.
Mumps Cases by Year Reported, Florida, 1998-2007



Description

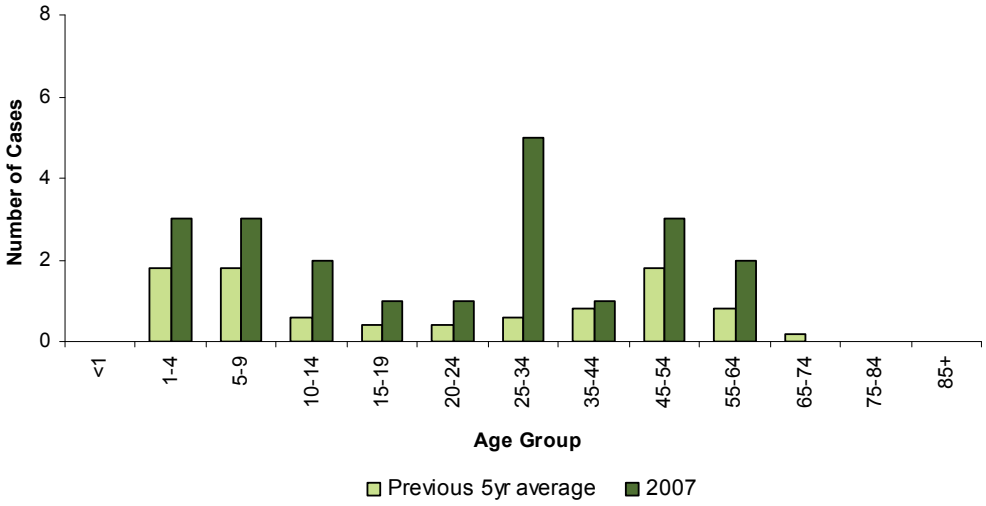
Mumps is a viral illness caused by a paramyxovirus of the genus *Rubulavirus*. The classic symptom is swollen salivary glands, parotitis, commonly bilateral, which develops an average of 16 to 18 days after exposure. Nonspecific symptoms including muscle aches, weakness, anorexia, headache, and low-grade fever may occur days before parotitis. Mumps can cause acquired sensorineural hearing loss in children; incidence is estimated at five events per 100,000 cases. In the U.S., mumps-associated encephalitis occurs in <2 cases per 100,000 and approximately 1% of encephalitis cases are fatal. Adults have a higher risk for mumps meningoencephalitis than children. Orchitis (inflamed testicles) occurs in up to 38% of cases in post-pubertal males, but rarely causes sterility. Mastitis (inflamed breasts) 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 confirmed and probable cases for all ages was 0.11 per 100,000 population. The ages ranged from 3-59 years of age. There were 10 confirmed cases and 11 probable cases of mumps reported in 2007, of which two cases were acquired in a state other than Florida. Two adults were hospitalized, one case was confirmed, and the other was probable. Four of the cases had received vaccine; the other six cases had not received any vaccine or had unknown immunization status.

The ten confirmed cases represent a slight increase from the eight cases in 2006. Additionally, seven probable cases were reported, six of whom had a history of mumps vaccination, and five had not received any doses or had unknown immunization status. The incidence was not significantly changed from 2000 to 2005. However, in 2006 there was a significant increase in cases in the U.S., especially in the college-age population. This trend has continued in 2007 with an increase of 114.15% over the average number of cases reported in the previous five years.

Figure 3.
Mumps Cases by Age Group, Florida, 2007



Prevention

Vaccination with two doses of mumps (preferably MMR) vaccine is recommended. The first dose of MMR should be given at 12 months of age and the second dose at kindergarten entrance. Information on the recommended schedule is available at http://www.cdc.gov/vaccines/recs/schedules/default.htm. Proof of MMR is required for entry and attendance in childcare facilities, family day care homes, and kindergarten through twelve grades. Many colleges in Florida also require 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.

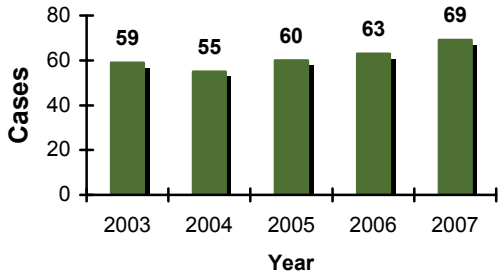
Additional Resources

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 the sexually transmitted infections 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 case definition.

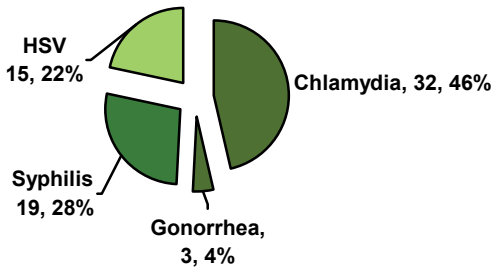
Figure 1. Reported Neonatal Infections by Year, Florida, 2003-2007



Inadequate or no prenatal care is the primary risk factor associated with neonatal infections. In 2007, there were 69 infants reported with neonatal infections. This number represents a 9% increase from 2006. Included are infants born in late 2006 but reported in 2007. Figure 1 shows the total number of neonatal infections from 2003-2007.

The 2007 distribution of neonatal infections by disease is displayed in Figure 2. During 2007, there were no cases of HPV reported. Nearly half (46%) of all neonatal infections were attributed to infection with *Chlamydia trachomatis*.

Figure 2. Reported Neonatal Infections by Desease, Florida, 2007

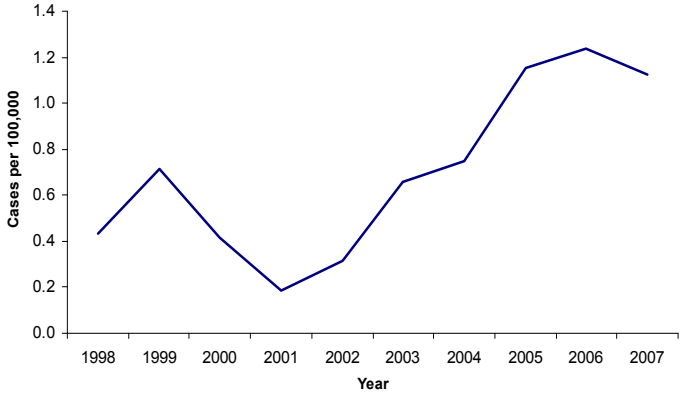


The counties with the highest number of neonatal infections in 2007 were Dade, Duval, Hillsborough, and Orange – each reporting nine cases. Combined, these four counties reported 52% of the total 69 cases for the year.

Pertussis

Pertussis: Crude Data	
Number of Cases	211
2007 incidence rate per 100,000	1.12
% change from average 5 year (2002-2006) incidence rate	34.84
Age (yrs)	
Mean	18
Median	9
Min-Max	<1 - 84

Figure 1.
Pertussis Incidence Rate by Year Reported, Florida, 1998-2007



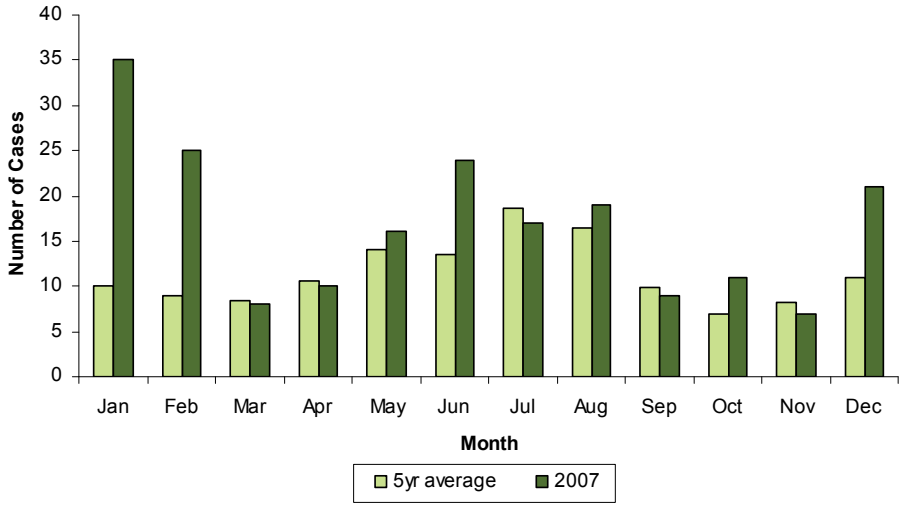
Description

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 including 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. Mild cases in older children and adults are often the source of infection for young children.

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 a peak of 228 cases in 2006 (121 confirmed cases and 107 probable cases). In 2007, there were 211 reported cases (128 confirmed cases and 83 probable cases) which is a slight decrease from the previous year. In the previous five years, most cases occurred during the summer months, but many of the 2007 cases were identified in December, January, and February (Figure 2). In the previous five years, pertussis cases were consistent between gender and race. In 2007, however, white males and females had significantly higher rates (Figure 4).

Figure 2.
Pertussis Cases by Month of Onset, Florida, 2007



As in the previous five years, most pertussis cases were identified in infants and young children. Of the 2007 cases, 64 were reported in infants less than 12 months of age, too young to have completed the vaccine series (Figure 3). In 2007, of the 128 confirmed cases, 80 were in children under 7 years old. No pertussis-related deaths were reported in 2007.

Figure 3.
Pertussis Incidence Rate by Age Group, Florida, 2007

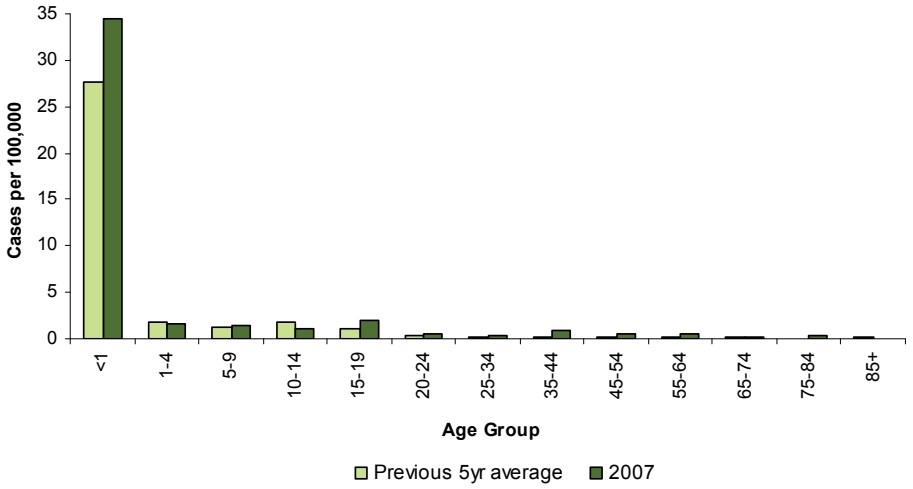
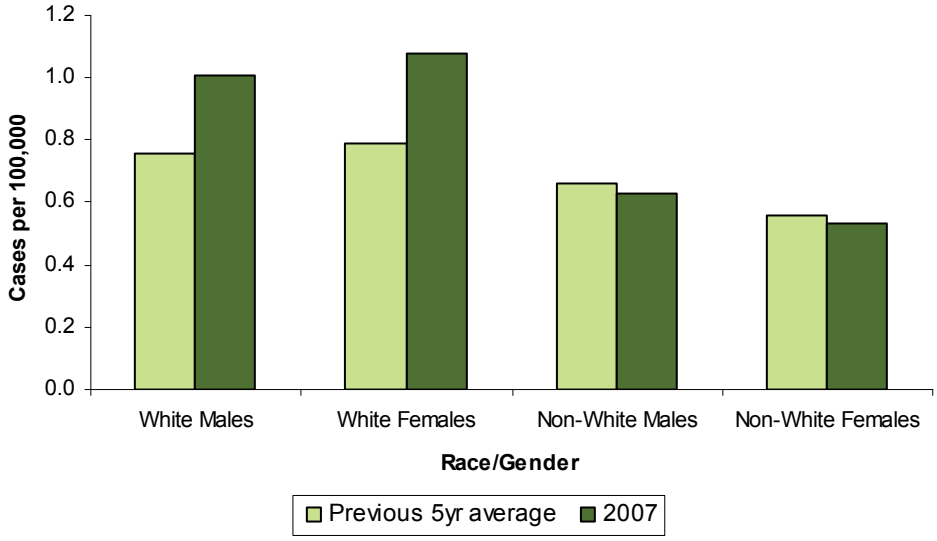


Figure 4. Pertussis Incidence Rate by Race and Gender, Florida, 2007

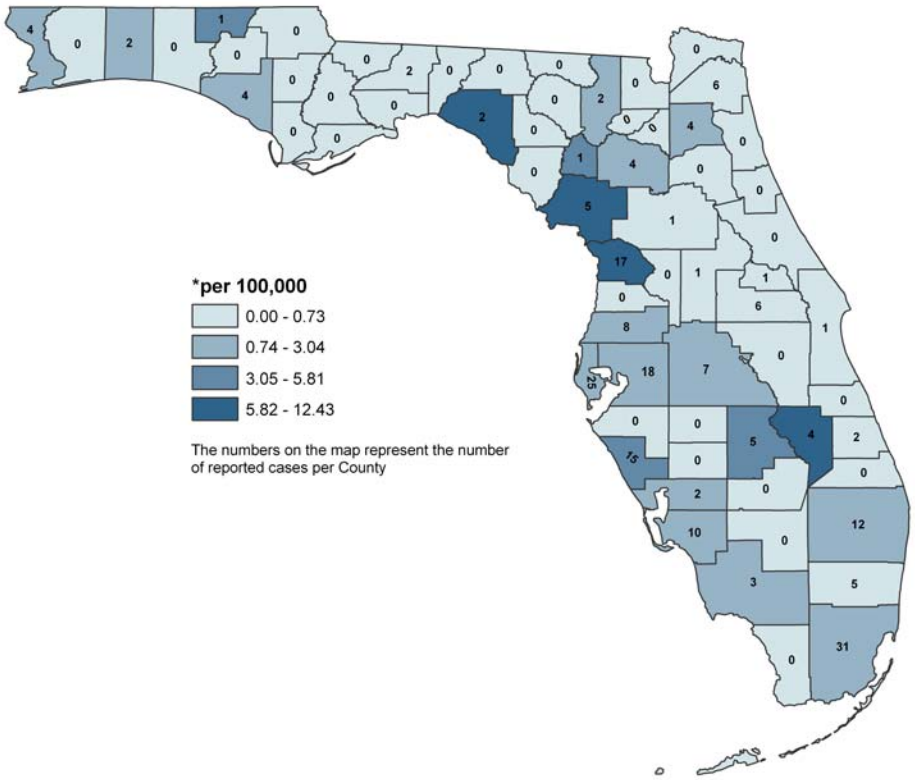


Pertussis was reported in 32 of the 67 of the counties in Florida. Counties in the northeast, central-east, southwest, and southeast regions of Florida reported the highest incidence rates.

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. This vaccine is available in combination with other childhood vaccines. Information on the recommended schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm. 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. Many counties are providing Tdap vaccine to students for the seventh grade vaccine requirement. Post-exposure antibiotic and vaccine prophylaxis of close contacts are the major outbreak control measures.

Pertussis Reported Incidence Rate* by County, Florida, 2007



References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 3rd ed., 2002, p.8-1.

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

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 and Injury, 2006

Description

The case definition for pesticide-related illness and injury (pesticide poisoning) is: a condition with clinical presentation of two or more acute adverse health effects resulting from exposure to a pesticide. The post-exposure signs and symptoms may be systemic (including respiratory, gastrointestinal, allergic, and neurological), dermatologic or ocular. The health effects of the illness/injury must be consistent with the toxic effects of the pesticide and the evidence of exposure must be temporally related to the health effects for a causal relationship to be established.

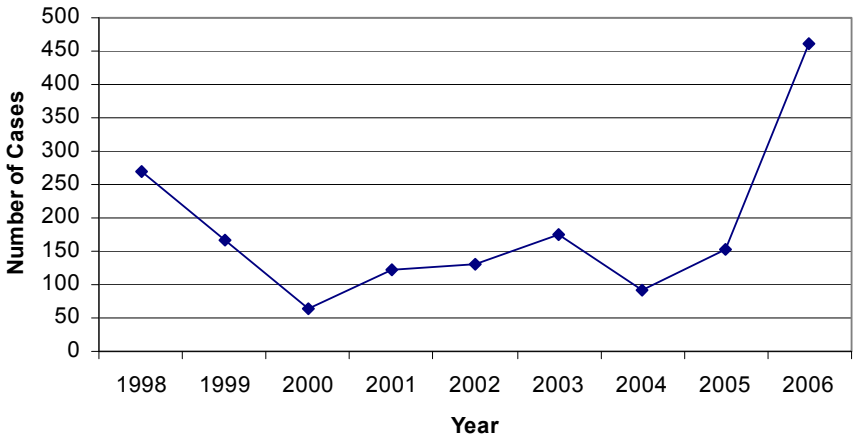
There are seven classification descriptions for pesticide-related illness and injury that are based on the National Institute of Occupational Safety and Health case surveillance guidelines. Only three of these classification descriptions meet the reportable case criteria. They are definite, probable, and possible. A definite (confirmed) case is one where objective evidence (environmental and/or biological) confirms the pesticide exposure and health effects. A case is denoted as probable when there is objective evidence for the pesticide exposure or health effects. For a possible case there is only subjective (no environmental or biological) evidence for the pesticide exposure and the health effects. The additional four classification descriptions are suspicious, unlikely, insufficient information, and not a case.

Disease Abstract

The Florida Department of Health, Pesticide Exposure Surveillance program collects exposure reports from various sources which include Florida Poison Control Information Network (FPCIN), Department of Agriculture and Consumer Services (DACS), and workers' advocacy groups. Some pesticide exposure events are self-reported. Information about the exposure and health effects is ascertained through follow up interviews with the exposed person or witness/proxy. Site inspection and environmental assessment reports (from DACS) as well as medical and laboratory reports are used in evaluating the exposure and health status of the exposed person.

Pesticide–related illness and injury varies from year to year (Figure 1). This variation may be based on case ascertainment (intake of case reports) and/or changes in magnitude and distribution of the condition. The intake of case reports is dependent on accessibility and utilization of the surveillance systems operated by the program and the contributing surveillance partners. Reporting bias (fear of repercussions, clinicians' reluctance, disease misconceptions, etc.) may also play a significant role in the number of cases report annually. Enhanced access to pesticide exposure incident reports via FPCIN accounts for the increase in the number of cases from 2005 to 2006 (Figure 1).

Figure 1. Number of Pesticide-Related Illness and Injury, 1998-2006



For 2006, 460 definite, probable, or possible case reports were received. Of the 460 cases, 432 (93.9%) were non-occupational exposures and the other 28 (6.1%) were work-related. For the non-occupational cases, the largest number of exposure incidents occurred in a residential setting (423, 97.9%). The occupational cases included only a few farm-related exposures (2, 7.1%). Most cases were of low severity (395, 85.9%) and did not involve any hospitalization or loss of time from work or regular activities.

More than 25 cases were reported from Hillsborough (44), Miami-Dade (33), Pinellas (31), Orange (29) and Duval (27) counties (Table 1). No cases were reported for seventeen of the sixty-seven counties. Some traditional agricultural counties such as Collier (4), Desoto (0), Glades (0), and Highlands (2) had few or no cases. This reflects the small number of agriculture-related exposure incidents captured in 2006. The larger number of cases in Hillsborough (44), Miami-Dade (33), and Pinellas (31) were mostly due to residential exposures.

Prevention

Educational outreach to target groups is aimed at increasing awareness about pesticide exposure risk and reducing illness and injury. Periodically, training of farm workers is conducted through the Interagency Farmworker Focus group and in collaboration with farm worker advocacy groups. The program staff participates in health fairs and other educational forums hosted by community organizations and the Catholic charities. Educational materials are available in three languages (English, Spanish, and Haitian-Creole) on the program website to promote safe practices when using pesticides at work and at home.

Table 1. Number of Pesticide-Related Illness and Injury by County, 2006

COUNTY	COUNT	COUNTY	COUNT	COUNTY	COUNT
Alachua	9	Hardee	0	Okeechobee	2
Baker	0	Henry	0	Orange	29
Bay	8	Hernando	8	Osceola	6
Bradford	0	Highlands	2	Palm Beach	21
Brevard	21	Hillsborough	44	Pasco	15
Broward	21	Holmes	0	Pinellas	31
Calhoun	0	Indian River	1	Polk	15
Charlotte	6	Jackson	2	Putman	10
Citrus	4	Jefferson	0	Santa Rosa	3
Clay	7	Lafayette	0	Sarasota	10
Collier	4	Lake	11	Seminole	7
Columbia	3	Lee	10	St. Johns	3
Desoto	0	Leon	11	St. Lucie	2
Dixie	2	Levy	0	Sumter	1
Duval	27	Liberty	0	Suwannee	5
Escambia	13	Madison	0	Taylor	0
Flagler	4	Manatee	4	Union	1
Franklin	2	Marion	8	Volusia	8
Gadsden	1	Martin	4	Wakulla	1
Gilchrist	0	Miami-Dade	33	Walton	0
Glades	0	Monroe	3	Washington	1
Gulf	0	Nassau	2	Unknown	8
Hamilton	3	Okaloosa	3	Total	**460**

References

National Institute of Occupational Safety and Health: Pesticide Illness and Injury Surveillance available at http://www.cdc.gov/niosh/topics/pesticides/.

Pesticide Exposure Surveillance and Prevention Program available at http://www.myfloridaeh.com/community/pesticide/.

Additional Resources

M.M.S. Barnett, G.M. Calvert, *Pesticide-Related Illness and Injury Surveillance: A How-To Guide for State-Based Programs*. NIOSH Publications Dissemination, Cincinnati, OH, 2005.

R.J. Reigart, J.R. Roberts, *Recognition and Management of Pesticide Poisonings* (5TH Ed.), United Book Press, Baltimore, MD, 1999.

Psittacosis / Avian Chlamydiosis

Description

Chlamydophila psittaci is shed in the feces and nasal discharges of infected birds, and can be transmitted to people via aerosolization of fecal dust or respiratory secretions. Disease in people, known as psittacosis, is uncommon. Those coming into prolonged contact with birds such as pet store workers and pet bird owners are at greatest risk of infection. The disease can be more severe in pregnant women. The incubation period is typically 5-14 days but can be longer. Symptoms may include fever, chills, headache, muscle pain, weakness, photophobia and/or respiratory symptoms such as a non-productive cough. Less commonly, infections can affect other organs or organ systems such as the heart, liver, joints, and central nervous system. Rarely, cases may be fatal. Recommended diagnostic testing is microimmunofluorescence (MIF) or complement fixation (CF) using serum. Cross-reaction with *Chlamydia pneumoniae* or *C. trachomatis* can occur with serologic assays, particularly the CF test. Tetracyclines are the drugs of choice; adequate duration of treatment is important to prevent relapses. The organism is killed on surfaces by most common disinfectants.

Disease Abstract

Avian chlamydiosis is reportable to both the FDOH and Florida Department of Agriculture and Consumer Services (FDACS). The causative agent of psittacosis, *Chlamydophila psittaci* (formerly *Chlamydia psittaci*) is a relatively common bacterial infection in birds and can infect many avian species, particularly psittacine type birds (i.e. cockatiels, parakeets, parrots, macaws, etc.). Birds can be asymptomatic carriers and may shed the bacteria intermittently, especially following stresses such as shipping, crowding and chilling. Incubation periods in birds usually range from three days to several weeks, but disease can appear with no identifiable exposure. Symptoms in birds are non-specific and can include decreased activity, decreased appetite, ruffled feathers, discharge from the eyes or nose, diarrhea, abnormal stool color, and death. Various diagnostic tests are available and should be selected and interpreted in consultation with a veterinarian, particularly when testing asymptomatic birds. Doxycycline treatment is effective when administered using adequate duration and dose. A veterinarian should be consulted when determining treatment protocols.

In December of 2007, the Florida Department of Health (FDOH) became aware of a nationwide avian chlamydiosis event involving a Florida pet bird vendor. The vendor routinely received birds from hundreds of breeders nationwide and then distributed them to national and regional pet store chains. The incident is suspected to have been initiated with changes in management of juvenile cockatiels dating from the beginning of September, 2007. Management changes involved modifications in isolation and antibiotic prophylaxis and resulted in the potential exposure of approximately 75,000 birds. All state public health veterinarians or other appropriate health and agriculture officials in the forty-seven states that received potentially exposed birds were notified. Impacted pet stores received guidance from their state and local health and agriculture departments for management of birds and people that may have been exposed. Four human illnesses were associated with this event including two pet store employees in Minnesota and two people in Wisconsin. No human illnesses were reported in Florida.

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 animal birthing or from contaminated dust which can carry infectious particles a half mile or more, making identification of the source of exposure difficult in some cases. Transmission can also occur through direct contact with contaminated material or through ingestion of unpastuerized dairy products. Infectious dose is very low and a single organism may lead to infection. Of those infected, 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 non-specific signs. Hepatitis is present in 40-60% of acute cases. The acute form of the disease is only 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 disease. Relapses can occur even with treatment of chronic cases. Q Fever is a CDC Select Agent and has potential for use as a bioweapon.

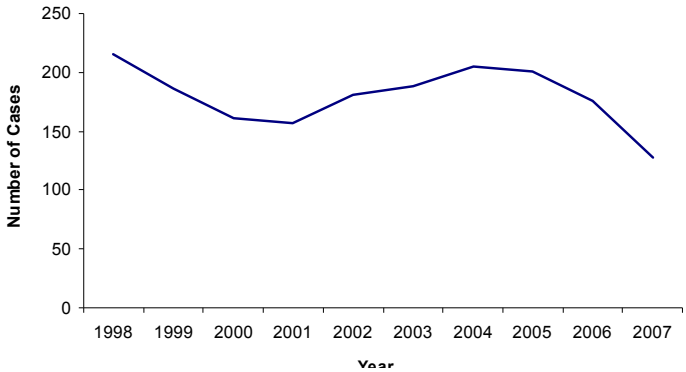
Disease Abstract

From 1998 through 2007 there were 22 cases of Q Fever reported in Florida, 12 probable and 10 confirmed. Two of these cases were reported in 2007, both of which were classified as probable. One case was a 49 year old black woman and the other was a 49 year old white woman. One case was acquired in Florida, the other was unknown. Of the 22 cases reported since 1998, 68% were male and 32% were female. Seventeen of all cases (77%) were described as white, one as white Hispanic (5%), one as black (5%), and three (14%) were of unknown race. The age range of all cases was 18 to 87 years of age, with a median age of 61. Place of exposure was described as Florida in 12 cases, one case was imported from another state, and nine were of unknown origin. 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. This demonstrates the importance of laboratory quality control in diagnostics.

Rabies, Animal

Rabies, Animal: Crude Data	
Number of Cases	128
2007 incidence rate per 100,000	NA
% change from average 5 year (2002-2006) incidence rate	32.70
Age (yrs)	
Mean	NA
Median	NA
Min-Max	NA

Figure 1.
Animal Rabies by Year Reported, Florida, 1998-2007



Description

Rabies virus is caused by a single stranded RNA virus in the *Rhabdoviridae* family and leads to an estimated 65,000-87,000 human deaths worldwide annually. The virus can infect any mammal, but dogs are the primary urban reservoir 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 dog 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. The 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 are not established for many wild animals.

Incubation period varies from days to months, or possibly years, depending on species, immune status, 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 1998 through 2007 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 2007 post-exposure treatment was recommended for 1,474 people in Florida; there were no human cases reported in 2007.

Rabies is endemic in the raccoon and bat populations of 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 with the true prevalence of rabies in these animal species. Of the 3,476 animals tested at the state lab in 2007, there were 128 confirmed rabid animals, representing a 32.7 % decrease from the previous 5-year average. The large decrease is suspected to be associated with a statewide distemper epidemic in the raccoon reservoir population. No cases were identified as being part of outbreaks. In 2007, rabid animals were found in 39 of 67 counties in Florida. One county reported more than 10 cases: Leon (11) (see map). Cases were reported in each month with peaks in August (17), February (16), and January (13). August is historically a peak month for rabies activity in Florida and is one of the peak months for bat rabies cases. January and February are generally not peak months for rabies in Florida this may be a reflection of the progressing raccoon distemper outbreak during the spring and fall months when peaks in raccoon rabies are more typically seen.

Raccoons once again accounted for the majority of cases (64, 50%), followed by foxes (20, 16%), bats (18, 14%), and cats (14, 11%). Few cases were reported in other terrestrial wildlife (one bobcat, one skunk, and one otter). Since 1997, rabid cats have continued to outnumber rabid dogs, though rabies vaccination is compulsory for both. In 2007, one horse and one dog were found to be rabid. Four bobcats, four otters, and two skunks were also positive for rabies. Testing at the Bureau of Laboratories demonstrates that terrestrial rabies in Florida is due to the raccoon variant.

Prevention

During 2007, 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 contact with 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.

References

Florida Rabies Advisory Committee, *Rabies Prevention and Control in Florida, 2007,* 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

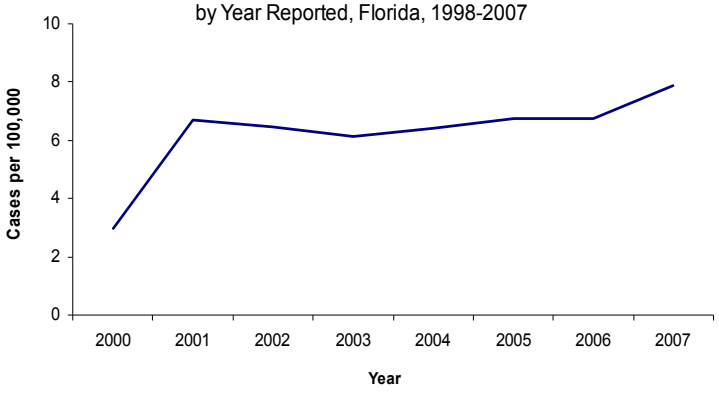
Information is available from the Florida Department of Health website at http://www.cdc.gov/ncidod/dvrd/rabies/introduction/intro.htm

Disease information is also available from the Centers for Disease Control and Prevention at http://www.doh.state.fl.us/Environment/community/rabies/rabies-index.html

Rabies, Possible Exposure

Rabies, Possible Exposure: Crude Data	
Number of Cases	1,474
2007 incidence rate per 100,000	7.85
% change from average 5 year (2002-2006) incidence rate	20.88
Age (yrs)	
Mean	36.52
Median	37
Min-Max	<1 - 108

Figure 1.
Animal Bite, Rabies Post-Exposure Prophylaxis Incidence Rate by Year Reported, Florida, 1998-2007



Description

Electronic reporting through Merlin 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 laboratory confirmed 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 vaccine on day 0 and 3 after exposure. The series is costly and can cause side effects such as redness, itching, and swelling.

Disease Abstract

The annual incidence of cases for which PEP is recommended has increased from 2000-2007 (Figure 1). In 2007, the incidence rate was up 20.88% over the previous 5-year average. This is thought to be due to an increase in awareness of animal bites and PEP. The average age of the victim was 36.52 years, with a range of <1 to 108 years of age. In 2007, the highest incidence was seen in individuals

between 15 and 19 years of age (Figure 2), but incidence was similar from ages 10 to 54. The incidence rate for males is slightly higher than that for females and the incidence rate among white males is almost double that of non-white males (Figure 3).

Figure 2.
Rabies, Possible Exposure, Incidence Rate by Age Group, Florida, 2007

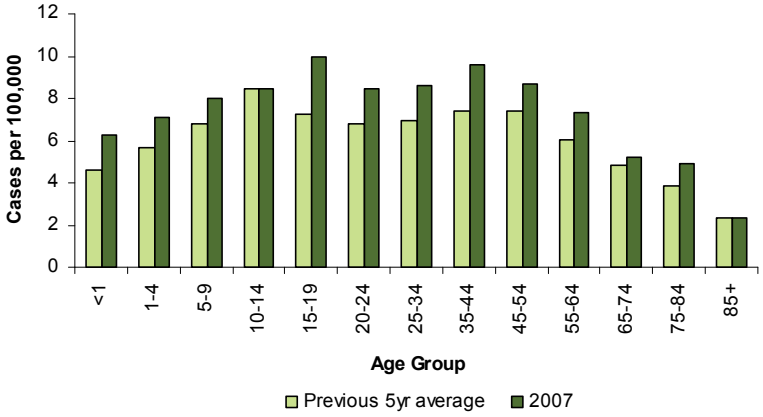
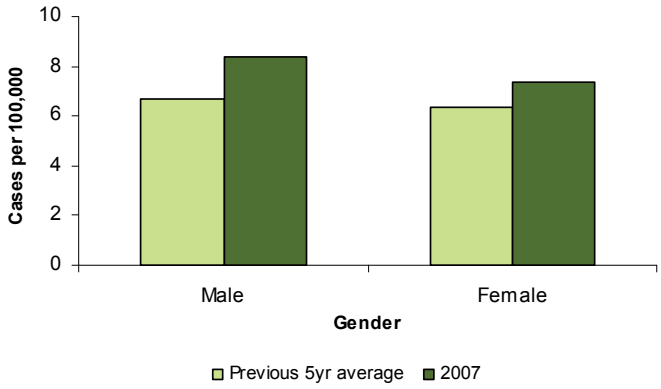
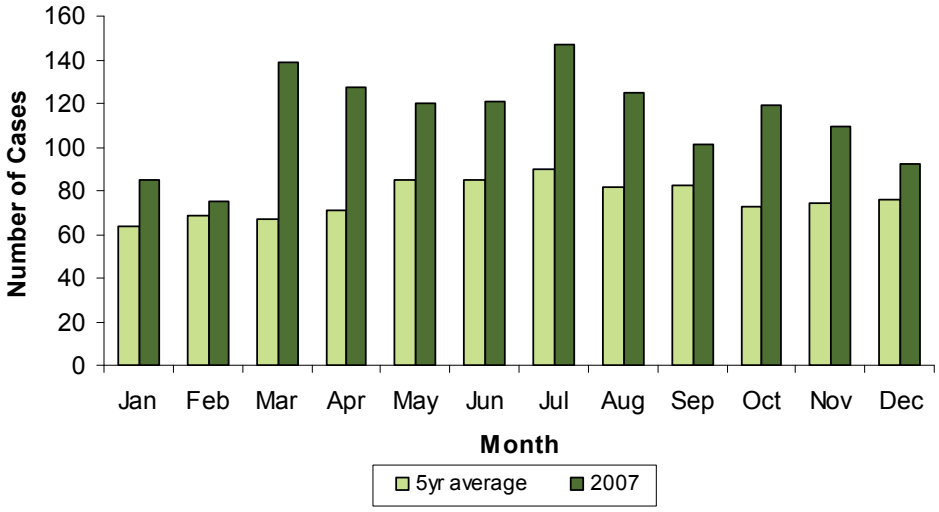


Figure 3. Rabies, Possible Exposure, Incidence Rate by Race and Gender, Florida, 2007



The type of animal involved in the exposure was available for 78% of cases. Of these, 40% of exposures involved a dog, 27% a cat, 15% a raccoon, 11% a bat, 2% a fox, and the remaining 5% of exposures were other animals. PEP is recommended year round in Florida, though the number of treatment incidents increases somewhat during the summer months (Figure 4).

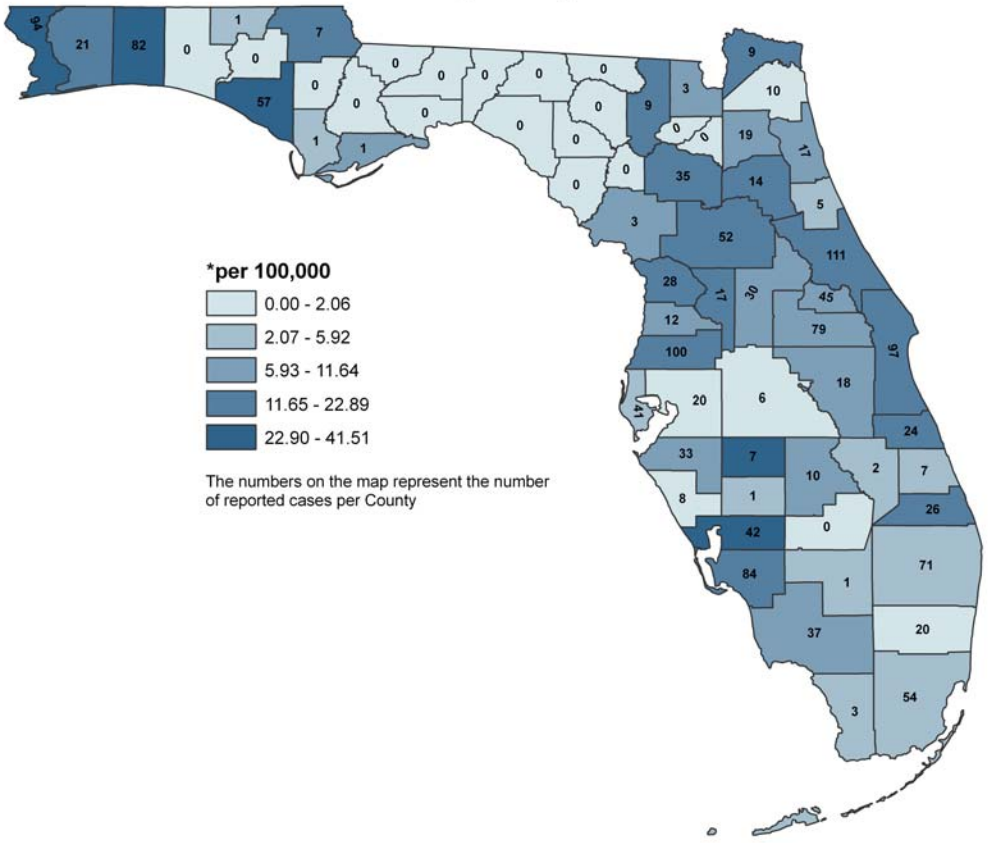
Figure 4.
Rabies, Possible Exposure Cases by Month of Onset, Florida, 2007



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.

Animal Bites, post Exposure Prophylaxis recommended,
Incidence Rate* by County, Florida, 2007



Additional Resources

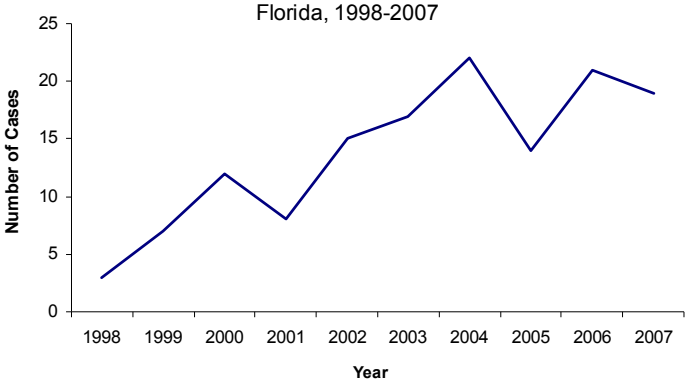
Additional information on animal bites and PEP can be found in the Rabies Prevention and Control in Florida, 2008 Guidebook, online at http://www.doh.state.fl.us/environment/community/arboviral/Zoonoses/Rabiesguide2008.pdf.

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

Rocky Mountain Spotted Fever

Rockie Mountain Spotted Feaver: Crude Data	
Number of Cases	19
2007 incidence rate per 100,000	0.10
% change from average 5 year (2002-2006) incidence rate	6.74
Age (yrs)	
Mean	45.68
Median	47
Min-Max	8 - 73

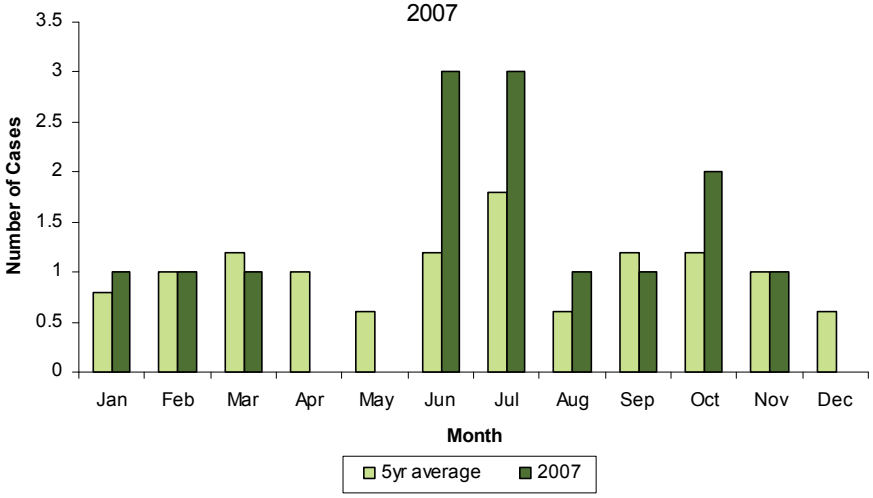
Figure 1.
Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 1998-2007



Description

Rocky Mountain spotted fever (RMSF) is caused by infection with the intracellular coccobacillary bacteria, *Rickettsia rickettsii,* following tick exposure. The principal tick vector in Florida is the dog tick (*Dermacentor variabilis*); several other tick species can also transmit the bacteria. A tick bite may or may not be apparent. Weakness, muscle pain, headache, and chills are common along with changes in blood count and blood chemistries. In most cases, a mild febrile illness develops after an incubation period of a few days to two weeks. Approximately 80% of adults and 90% of children develop a rash that starts as maculopapular and then may evolve into petechiae over several days. The rash can appear first on the extremities and spread to the trunk and might involve the soles of the feet and palms of the hands. However, rash may initially be subtle and distribution can be variable. Up to 20% of untreated illnesses and approximately 5-10% of treated illnesses may be fatal. Risk groups for severe disease include advanced age, male gender, black race and chronic alcohol abuse. Glucose-6-phosphate-dehydrogenase (G6PD) deficiency, which is present in approximately 12% of the U.S. black male population, increases the risk of fulminant disease.

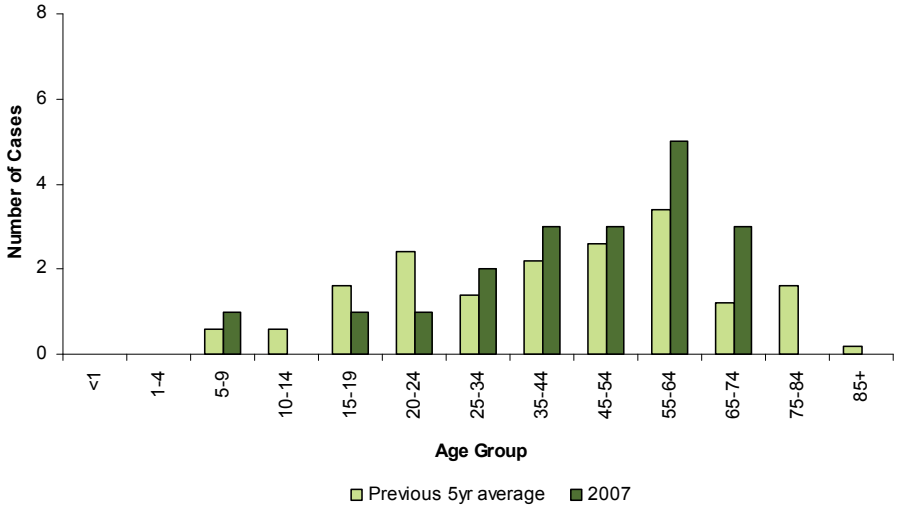
Figure 2.
Rocky Mountain Spotted Fever Cases by Month of Onset, Florida, 2007



Disease Abstract

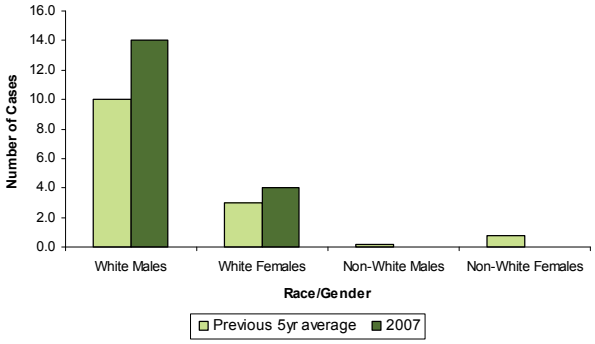
The number of RMSF cases reported annually has increased markedly since 1998 (Figure 1). The disease tends to affect adults more than young children or the elderly, though in 2007, there were more cases reported in those age 55-74 and in those age 5-9 than the previous 5-year average (Figure 3). Cases are reported more often in males than in females, (Figure 4).

Figure 3.
Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2007



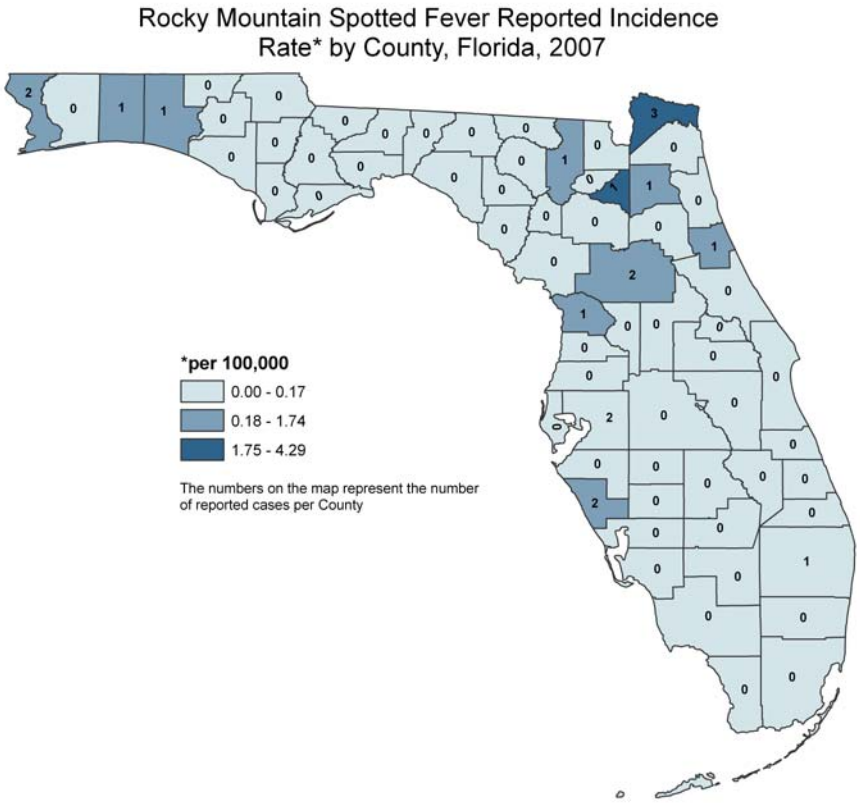
In Florida, cases of RMSF are reported year-round, though peak transmission occurs during the summer months. Of the cases reported in 2007, 58% acquired the disease in Florida, 26% acquired the disease in another U.S. state, 5% acquired the disease in another country, and travel history for the remaining cases is unknown.

Figure 4. Rocky Mountain Spotted Fever Cases by Race and Gender, Florida, 2007



Prevention

Prevention of tick bites is the best way to avoid disease. Wear light-colored clothing so that ticks crawling on clothing are visible. Tuck pants legs into socks so that ticks cannot crawl inside clothing. Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary. Search the body for ticks frequently when spending time in potentially tick-infested areas. If a tick is found, it should be removed as soon as possible. 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.

Additional 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.

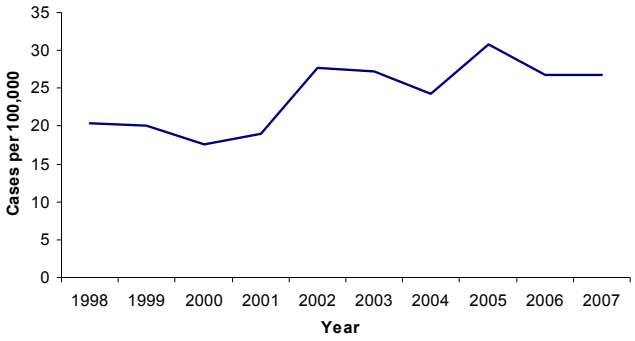
Disease information is also available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm.

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

Salmonellosis

Salmonellosis: Crude Data	
Number of Cases	5,022
2007 incidence rate per 100,000	26.77
% change from average 5 year (2002-2006) incidence rate	-2.15
Age (yrs)	
Mean	21.54
Median	6
Min-Max	<1 - 106

Figure 1.
Salmonellosis Incidence Rate by Year Reported, Florida, 1998-2007



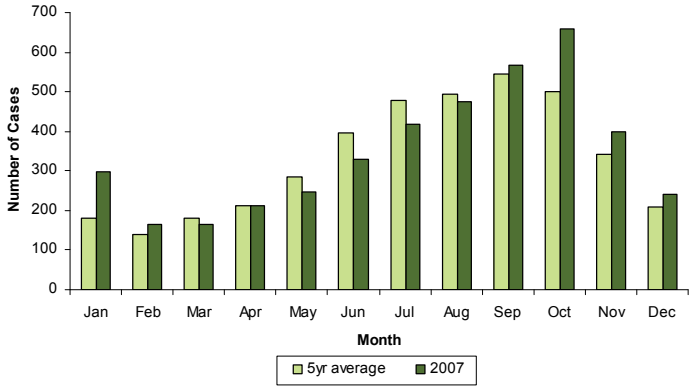
Description

Salmonellosis is an acute bacterial disease caused by gram-negative bacilli of the genus *Salmonella.* Infection causes gastroenteritis and rarely also systemic disease and other complications. The natural reservoirs for non-typhoid *Salmonella* species are 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 acquired in people by ingesting undercooked eggs and meat, contaminated food and water, or raw milk, and from infected pets or farm animals. Cross-contamination of surfaces and uncooked foods 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.

Disease Abstract

The incidence rate for salmonellosis has increased gradually over the last ten years (Figure 1). In 2007, the incidence was 26.77 cases/100,000, a decrease from the 2005 peak of 30.8 cases/100,000. A total of 5,022 cases were reported in 2007, of which 95.5% were classified as confirmed. The number of cases reported increases in the summer months. In 2007, the number of cases exceeded the previous 5-year average in January and February and then again from September through December (Figure 2). Overall, 8.6% of the salmonellosis cases were classified as outbreak-related in 2007.

Figure 2.
Salmonellosis Cases by Month of Onset, Florida, 2007



The highest incidence rates continue to occur among infants <1 year old and children 1-4 years old. In 2007, the incidence rates were slightly higher than the previous 5-year average in those <1 and the incidence rates were similar in the others (Figure 3). Males have a slightly higher incidence than females (27.57 and 25.79 per 100,000, respectively), and in 2007, the incidence in both genders was the same or slightly lower than the previous 5-year average incidence. As has been the case in the past, reported incidence rates in whites are greater than those in non-whites (Figure 4).

Figure 3.
Salmonellosis Incidence Rate by Age Group, Florida, 2007

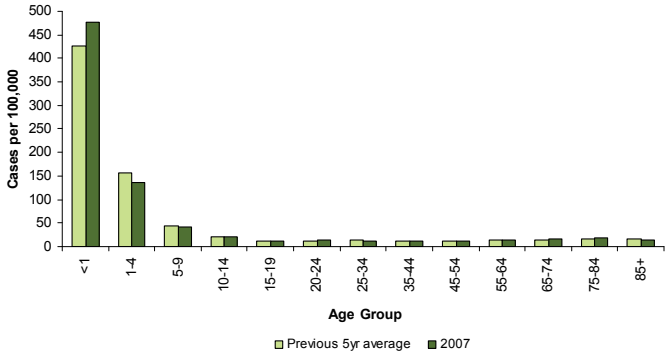
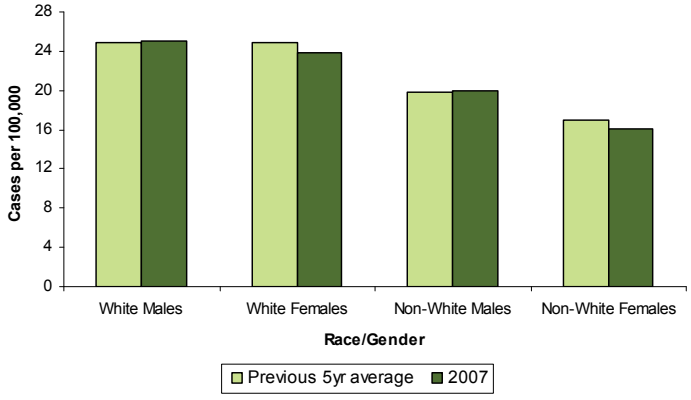


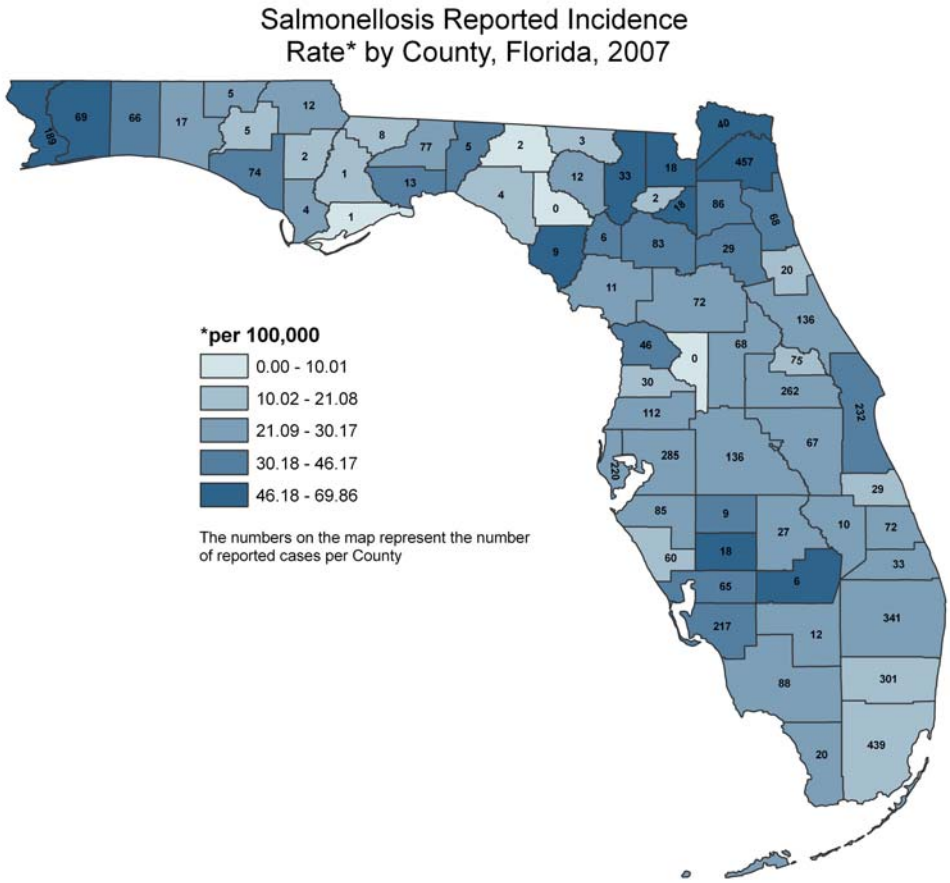
Figure 4. Salmonellosis Incidence Rate by Race and Gender, Florida, 2007



Salmonellosis was reported in 65 of the 67 counties in Florida. Rates vary across the state, but appear to be higher in the western panhandle and the northeastern portion of the state.

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 onto 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.

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

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

Additional Resources

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

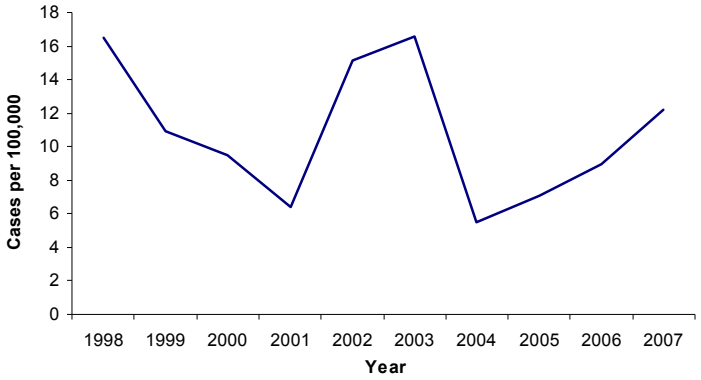
Additional information is available from the U.S Food and Drug Administration – Bad Bug book at http://www.cfsan.fda.gov/~mow/chap1.html

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

Shigellosis

Shingellosis: Crude Data	
Number of Cases	2,288
2007 incidence rate per 100,000	12.19
% change from average 5 year (2002-2006) incidence rate	15.85
Age (yrs)	
Mean	13.26
Median	6
Min-Max	<1 - 95

Figure 1.
Shigellosis Incidence Rate by Year Reported, Florida, 1998-2007



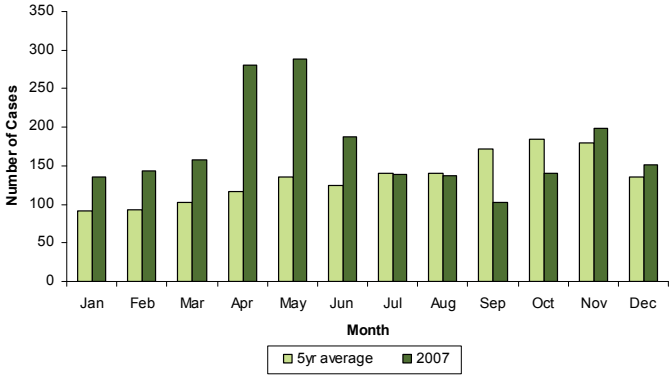
Description

Shigellosis is an acute bacterial disease caused by gram-negative rod-shaped bacteria of the genus *Shingella* that cause gastroenteritis. The only 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 ten years (Figure 1). Periodic community outbreaks involving child-care centers account for most of the variability. In 2007, there was a 15.85% increase in comparison to the average incidence from 2002-2006. A total of 2,288 cases were reported in 2007, of which 79.5% were classified as confirmed. Historically, the number of cases reported tends to increase in late summer and the fall months. However, in 2007, the number of cases exceeded the previous 5-year average from January to June and decreased through September (Figure 2). Overall, 36.84% of the shigellosis cases were classified as outbreak related.

Figure 2.
Shigellosis Cases by Month of Onset, Florida, 2007



The highest incidence rates continue to occur among children aged 1-4 years old. In 2007, the incidence rates were similar to or higher than the previous 5-year average (Figure 3). Incidence rates were higher among females than males (12.4 and 11.94 per 100,000 respectively) and higher in non-whites than whites. The 2007 incidence in both genders was slightly higher than the previous 5-year average incidence (Figure 4).

Figure 3.
Shigellosis Incidence Rate by Age Group, Florida, 2007

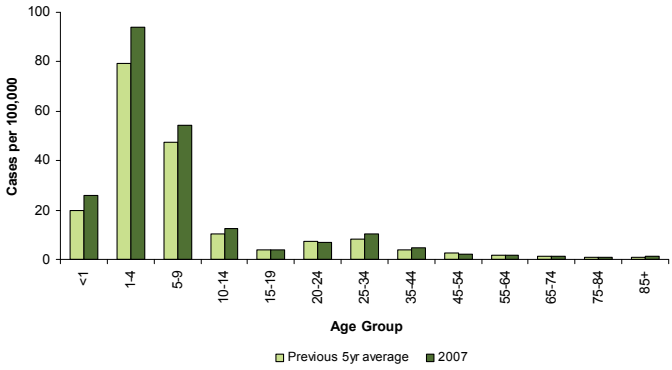
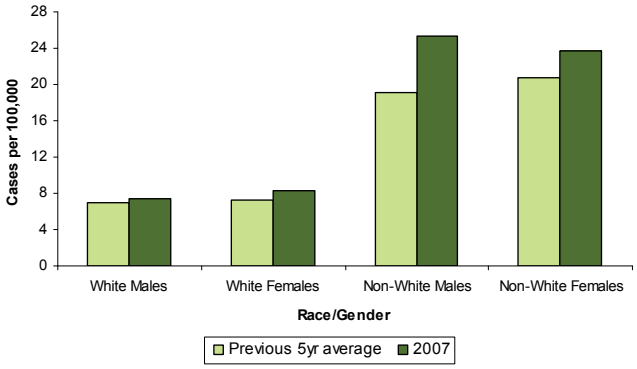


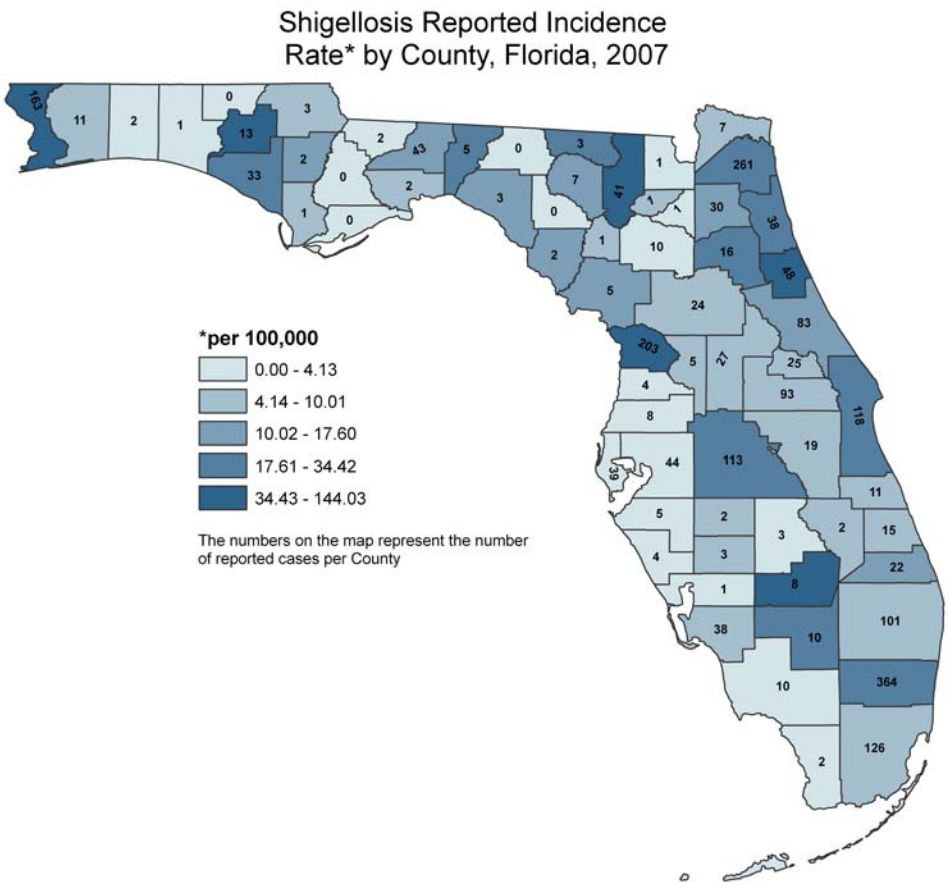
Figure 4. Shigellosis Incidence Rate by Race and Gender, Florida, 2007



Shigellosis was reported in 62 of the 67 counties in Florida. There were no distinct geographic patterns in the distribution of shigellosis cases throughout the state.

Prevention

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



References

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

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

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

Additional Resources

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

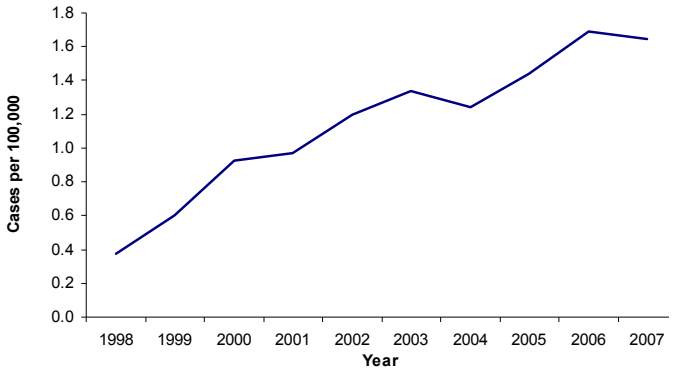
Additional information is available from the U.S Food and Drug Administration – Bad Bug book at http://www.cfsan.fda.gov/~mow/chap19.html

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. 565-8.

Streptococcal Disease, Invasive, Group A

Strepococcal Disease, Invasive Group A: Crude Data	
Number of Cases	309
2007 incidence rate per 100,000	1.65
% change from average 5 year (2002-2006) incidence rate	18.71
Age (yrs)	
Mean	49.8
Median	52
Min-Max	<1 - 94

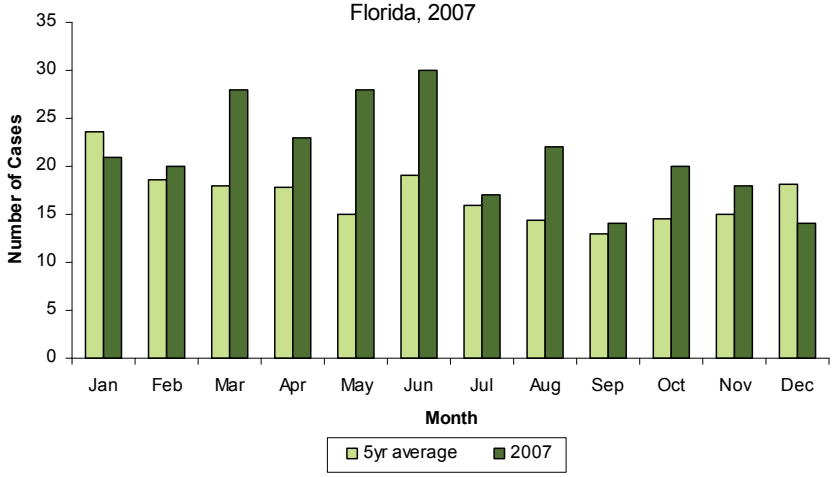
Figure 1.
Streptococcal Disease, Invasive, Group A Incidence Rate by Year Reported, Florida, 1998-2007



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.

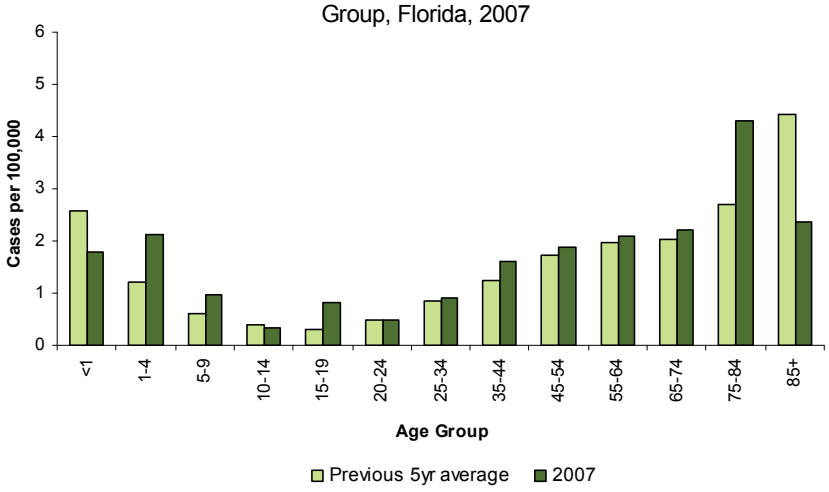
Figure 2.
Streptococcal Disease, Invasive Group A Cases by Month of Onset, Florida, 2007



Disease Abstract

The incidence rate for reported invasive group A streptococcal disease in Florida has gradually increased over the past ten years, with a more than four-fold cumulative increase (Figure 1). In 2007, there was a 18.71% increase compared to the average incidence for 2002-2006 but the incidence rate decreased from the rate in 2006 (Table 1). A total of 309 cases were reported in 2007, of which 100% were classified as confirmed. Cases occur throughout all months of the year. Compared to 2002-2006, the number of cases reported in 2007 was higher in all months except for January and December, with the greatest number occurring in March, May, and June (Figure 2). Almost all cases are sporadic.

Figure 3.
Streptococcal Disease, Invasive Group A Incidence Rate by Age Group, Florida, 2007



The highest incidence rate for 2007 occurred in those 75-84 which is slightly younger than the age group with the highest rates historically which are those 85+ (Figure 3). In 2007, incidence increased in every age group except for those aged <1, 10-14, and 85+. Males continue to have a higher incidence than females (1.91 and 1.40 per 100,000 respectively) and in 2007, the incidence in both genders was

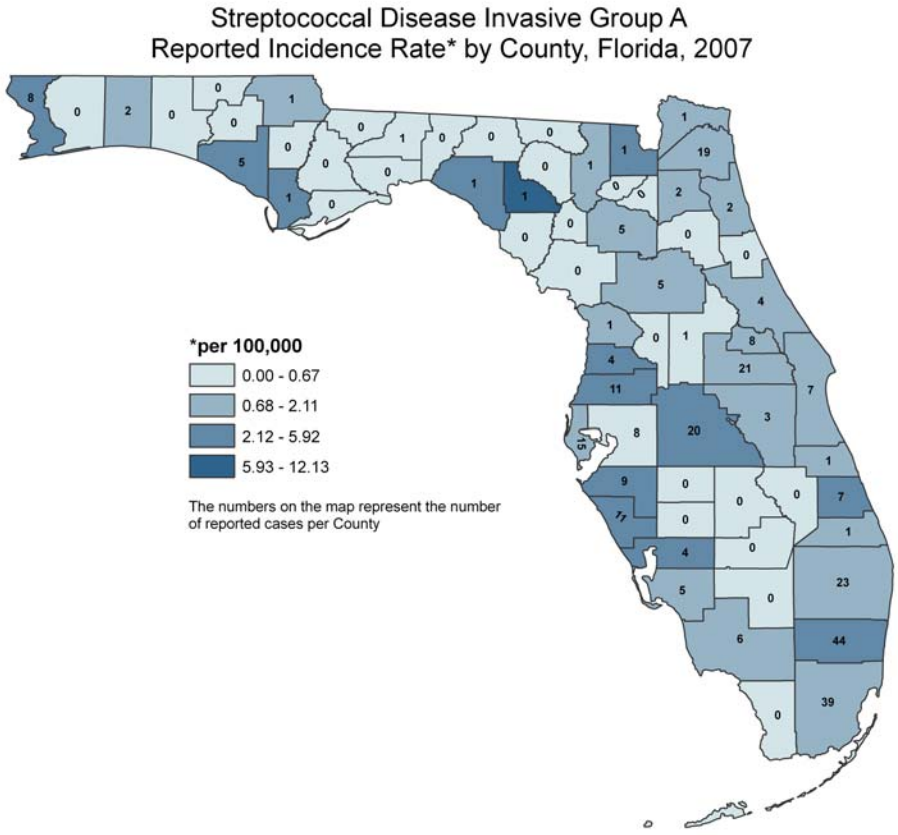
higher than the previous 5-year average incidence (Figure 4). In 2007, the incidence rate for white males surpassed that for non-white males, and increased in all groups.

Figure 4.
Streptococcal Disease, Invasive Group A Incidence Rate by Gender,
Florida 2007

Invasive group A streptococcal disease cases were reported in 39 of the 67 counties in Florida. The five counties reporting the highest number of cases were primarily in the central and southern part of the state with relatively few cases occurring in the panhandle region.

Prevention

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



References

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

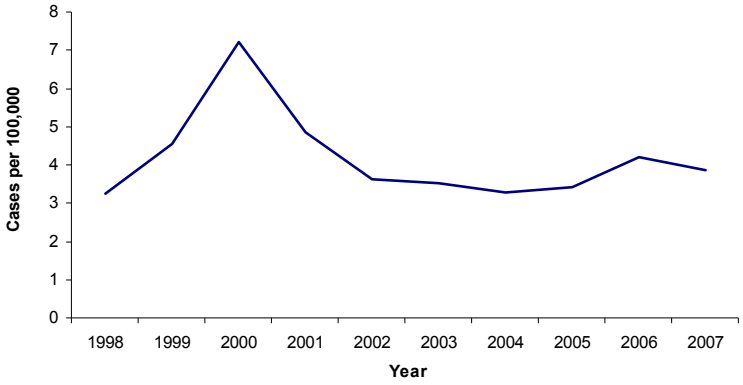
Additional Resources

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

Streptococcus pneumoniae, Drug-Resistant

***Stretpococcuspneumoniae*, Invasive Disease, Group A: Crude Data**	
Number of Cases	725
2007 incidence rate per 100,000	3.86
% change from average 5 year (2002-2006) incidence rate	6.78
Age (yrs)	
Mean	45.77
Median	51
Min-Max	<1 - 101

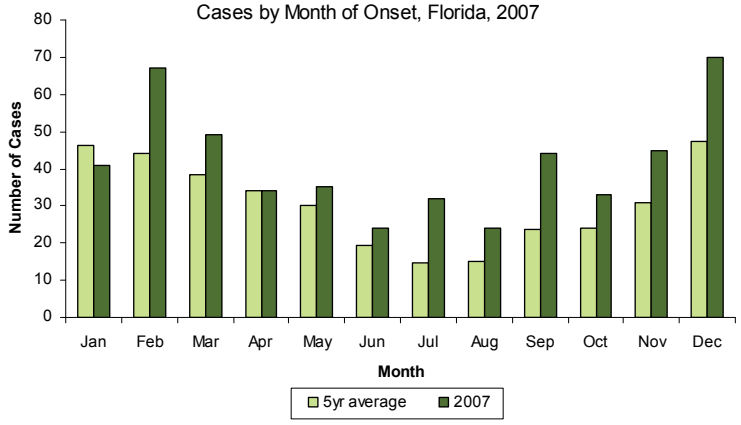
Figure 1.
Streptococcus pneumoniae Invasive Disease, Drug-Resistant
Incidence Rate by Year Reported, Florida, 1998-2007



Description

Drug resistant *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-resistant *S. pneumoniae* (DRSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or CSF, that 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 child-care centers, and persons who recently used antimicrobial agents, are at increased risk for infection with DRSP.

Figure 2.
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant
Cases by Month of Onset, Florida, 2007

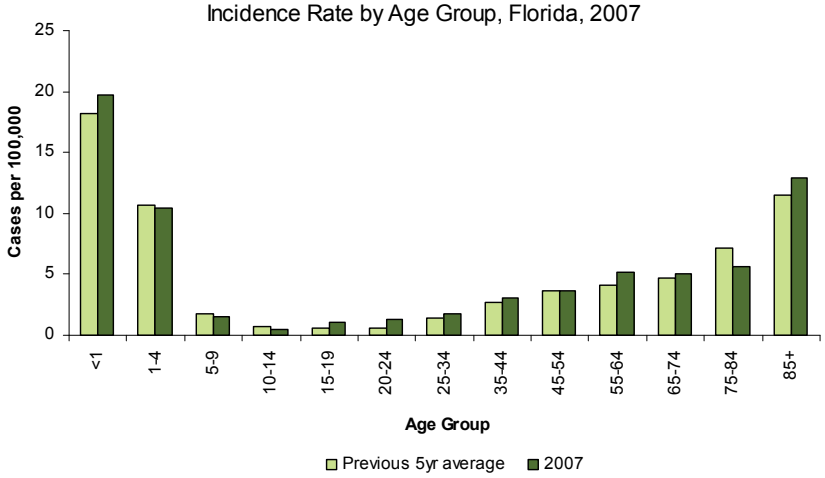


Disease Abstract

The incidence rate for DRSP peaked in 2000 and gradually declined until 2005 when it started to increase again with a peak in 2006 (Figure 1). There was a decrease from 4.2 cases/100,000 in 2006

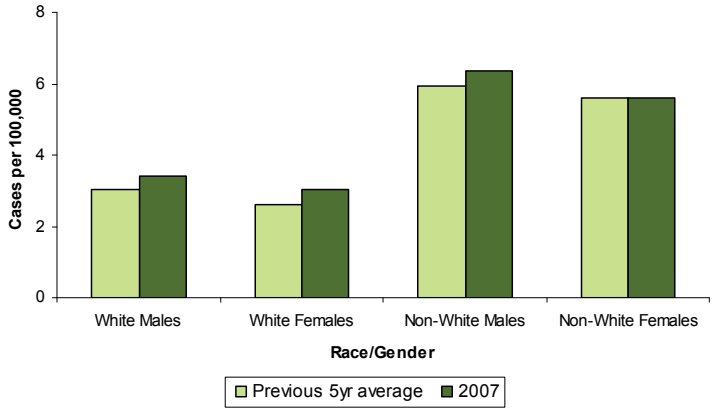
to 3.86 cases/100,000 in 2007. A total of 725 cases were reported in 2007. The number of cases reported tends to increase in the winter months which was also true for 2007, with the highest number of cases reported in February and December. In 2007, the number of cases exceeded the previous 5-year average in all months except for January and April (Figure 2).

Figure 3.
Streptococcus pneumoniae , Invasive Disease, Drug-Resistant
Incidence Rate by Age Group, Florida, 2007



The highest incidence rates continue to occur among infants <1 year old, children 1-4 years, and those 85+. In 2007, 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 (4.13 per 100,000 and 3.61 per 100,000, respectively), and in 2007, 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,
2007

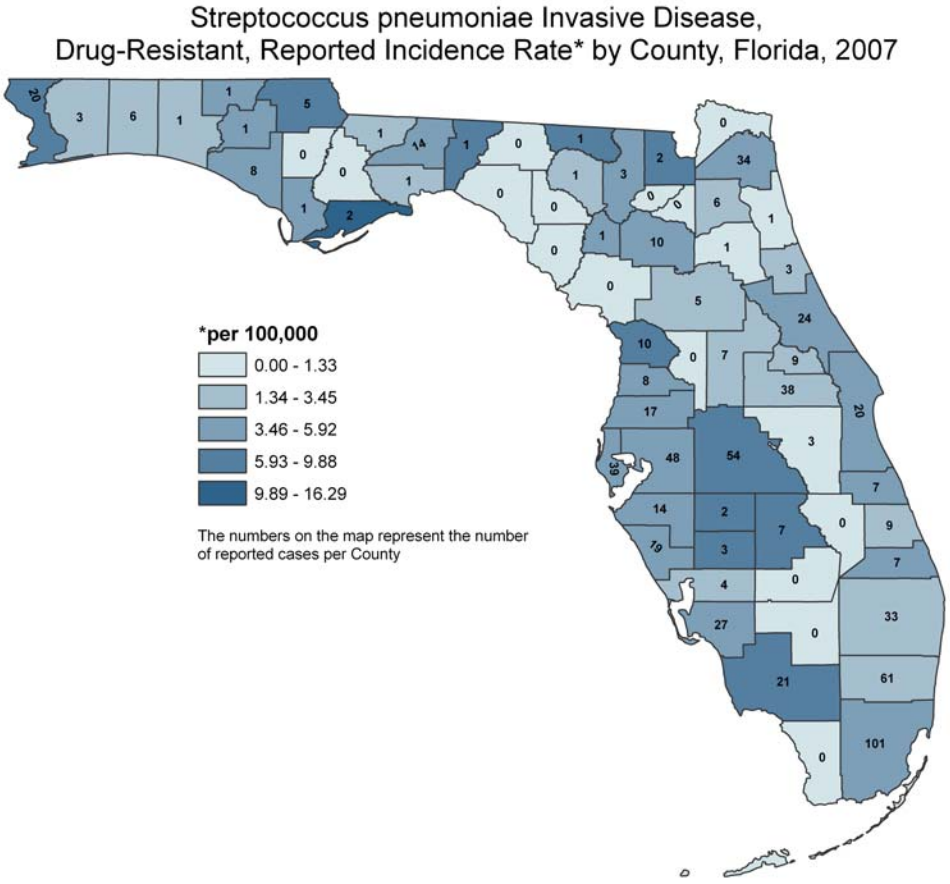


Drug-resistant *S. pneumoniae* was reported in 52 of the 67 counties in Florida.

The data from both the drug-resistant and drup-sensitive *S. pneumoniae* isolates reported were used to calculate resistance rates of common antibiotics for 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 had a higher sensitivity rate.

Prevention

The most effective way of preventing pneumococcal infections, including DRSP infections, is through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children <24 months, 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 people >2 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, Control of Communicable Diseases Manual 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

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

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

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

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

Additional Resources

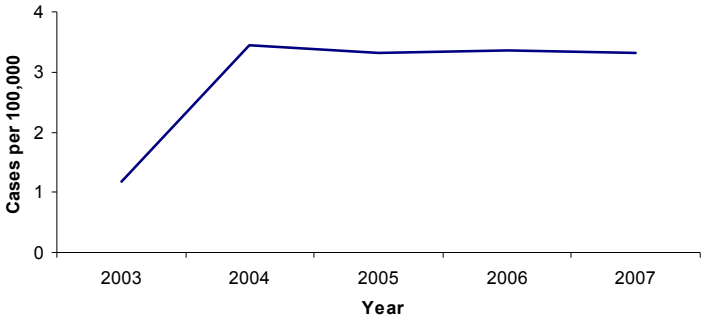
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm

Centers for Disease Control and Prevention, "Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices (ACIP)," *Morbidity and Mortality Weekly Report*, Vol. 49, No. RR-9, 2000, pp. 1-35.

Streptococcus pneumoniae – Drug-Susceptible

***Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant: Crude Data**	
Number of Cases	725
2007 incidence rate per 100,000	3.86
% change from average 5 year (2002-2006) incidence rate	6.78
Age (yrs) Mean Median Min-Max	 45.77 51 <1 - 101

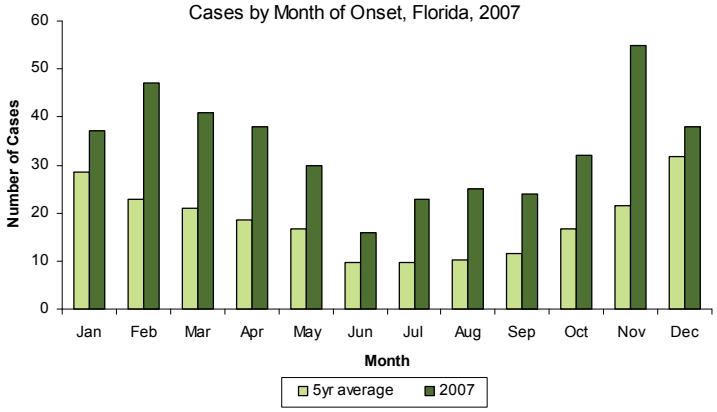
Figure 1.
Streptococcus pneumoniae , Invasive Disease, Drug Susceptible Incidence Rate by Year Reported, Florida, 2003-2007



Description

Drug-susceptible *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-sensitive *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-susceptible and drug-resistant *S. pneumoniae,* when combined, provide a comprehensive picture of invasive pneumococcal infections.

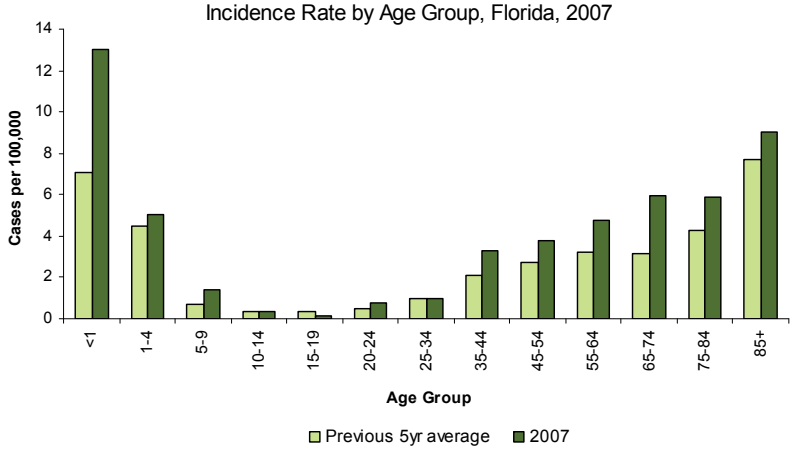
Figure 2.
Streptococcus pneumoniae , Invasive Disease, Drug-Susceptible Cases by Month of Onset, Florida, 2007



Disease Abstract

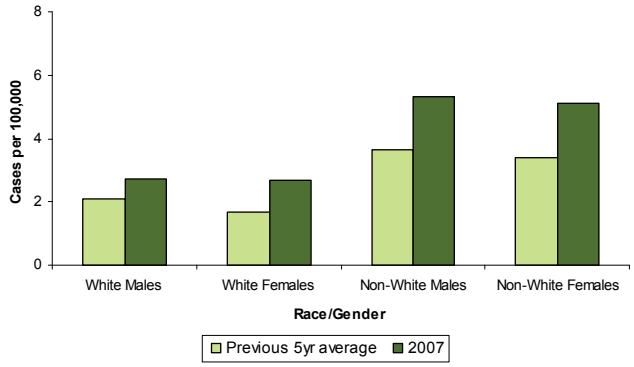
Data on drug-susceptible *S. pneumoniae* has been available for the last five years. Since the second year of reporting, in 2004, the incidence of DSSP has consistently been about 3.36 per 100,000. A total of 622 cases were reported in 2007. This is the highest reported incidence since 2004. The number of cases reported tends to increase in the winter months. In 2007, the number of cases exceeded the previous 4-year average in all months except December (Figure 2).

Figure 3.
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible
Incidence Rate by Age Group, Florida, 2007



The highest incidence rates continue to occur among infants <1, children aged 1-4 years, and those 85+. In 2007, the incidence rates were higher than the previous 4-year average in those <1, those 5-9, and those 35-84 (Figure 3). Males continue to have a higher incidence than females (3.36 and 3.27 per 100,000, respectively), and in 2007 the incidence in both genders was higher than the previous 4-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-Susceptible Incidence Rate by Race and Gender,
Florida, 2007

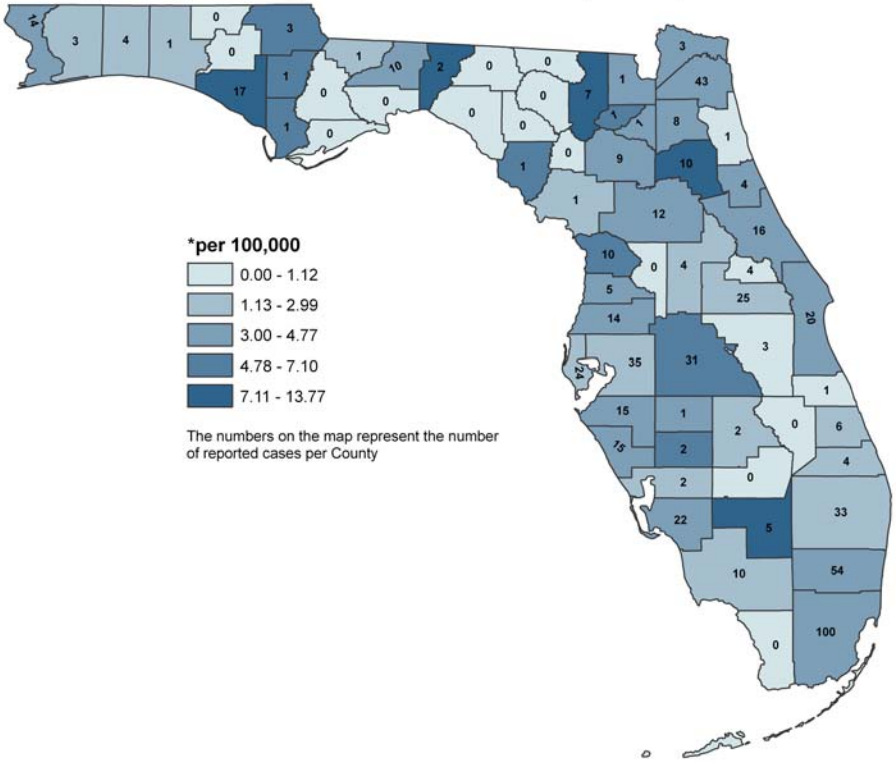


DSSP was reported in 52 of the 67 counties in Florida.

Prevention

The most effective way of preventing pneumococcal infections including DRSP is 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 >2 with a normal immune system with a chronic illnesses. Additionally, it is important to practice good hand hygiene, take antibiotics only when necessary, and finish the entire course of treatment.

Streptococcus pneumoniae Invasive Disease,
Drug-Susceptible, Reported Incidence Rate* by County, Florida, 2007



References

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

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

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

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Additional Resources

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

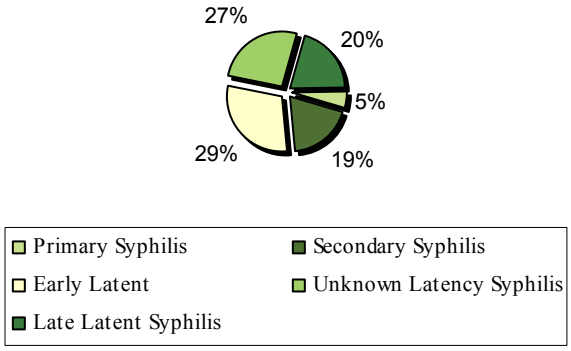
Centers for Disease Control and Prevention, "Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices (ACIP)," *Morbidity and Mortality Weekly Report*, Vol. 49, No. RR-9, 2000, pp. 1-35.

Syphilis

Syphilis, caused by the bacterium *Treponema pallidum*, is passed from person to person through direct contact with an infectious sore, or with infectious mucous patches and syphilitic warts (condylomata lata). Primary sores, also known as lesions, occur at the site of inoculation and can include: genitalia (penis, vaginal lips or wall, cervix), anus or rectum, lips or mouth, as well as digits (fingers) and nipples. Transmission of the organism occurs during vaginal, anal, or oral sex. During pregnancy, the organism can infect a fetus in utero or during delivery. Congenital syphilis in neonates and children under 12 years of age is discussed in the section "Neonatal Infections".

Syphilis infection, when left untreated, is characterized by the progression of stages over time: primary, secondary, latency (lacking clinical manifestations – early latent, unknown duration latency, late latent), and tertiary syphilis. Neurosyphilis, which has central nervous system involvement, may occur during any stage of syphilis. Early (primary, secondary, and early latent) syphilis includes all cases where initial infection has occurred within the previous 12 months. This report will focus attention on trends associated with early syphilis, but will conclude with an overall summary of syphilis morbidity.

Figure 1: Reported Cases of Syphilis by Diagnosis, Florida, 2007



In 2007, there were 3,928 syphilis cases reported in Florida, a 34% increase from 2006. Of the total cases reported, 53%, or 2,064 cases, were diagnosed as primary, secondary, or early latent infection (Figure 1). Infectious syphilis (primary and secondary stages) increased 26% from 2006; whereas early latent illness increased 53% in the same period. The case rate for early syphilis in 2006 was 11.0 per 100,000 compared to 8.0 per 100,000 in 2007. Of the 2,064 early syphilis cases in 2007, nearly 70% were reported from five counties: Miami-Dade (424), Broward (342), Hillsborough (364), Orange (218), and Palm Beach (77).

Total reported cases of syphilis increased in all age groups from 2006 to 2007. Unlike chlamydia and gonorrhea trends, early syphilis cases are more equally distributed among 15-49 year olds. However, there has been an increase of 146% in early syphilis cases reported in 15-24 year olds since 2003. An outbreak in adolescents and young adults in Hillsborough County in 2007 is discussed in the outbreak sectionof this report.

People 20-24 years old have the greatest number of early syphilis cases among both men and women. Nineteen percent of all cases are in this age group. In 2007, 60% of early syphilis in females occurs in those less than 30 years old compared to 40% for males. Men 30-49 account for 70% of reported early syphilis cases in people over 30.

The number of early syphilis cases among males increased 25% from 2006 to 2007 with a 17% increase from 2003. The ratio of male to female early syphilis cases was 3.4 to 1 (Table 1).

Table 1: Reported Early Syphilis by Age and Gender, Florida, 2007

	Total		Males		Females	
Age	#	%	#	%	#	%
15 – 19	210	10.3%	94	5.9%	116	25.2%
20 – 24	381	18.6%	279	17.6%	102	22.1%
25 – 29	314	15.3%	239	15.1%	75	16.3%
30 – 34	232	11.3%	185	11.7%	47	10.2%
35 – 39	257	12.6%	217	13.7%	40	8.7%
40 – 44	262	12.8%	233	14.7%	29	6.3%
45 – 49	205	10.0%	172	10.9%	33	7.2%
50 – 55	97	4.7%	84	5.3%	13	2.8%
55 -59	51	2.5%	49	3.1%	2	0.4%
60+	37	1.8%	33	2.1%	4	0.9%
Total	2046	100.0%	1585	100.0%	461	100.0%

In 2007, the distribution of early syphilis cases by race/ethnicity disproportionately affected non-Hispanic blacks. Persons who self reported as non-Hispanic black accounted for 43.9% of the syphilis cases in 2007. Persons who self reported as non-Hispanic white accounted for 29.4% of the cases. Persons who self reported as Hispanic (white, black, or other) accounted for 15.5% of the cases. Persons who self reported in other or unidentified racial and ethnic groups accounted for 11.3% of the cases. The rate per 100,000 for Non-Hispanic blacks was 30.9 per 100,000. This rate was six times greater than the second highest rate in non-Hispanic whites (5.26 per 100,000).

In terms of gender and racial/ethnic distribution, the trends for early syphilis represent the total picture of syphilis. However, syphilis of unknown duration, late latent syphilis, and neurosyphilis are more commonly associated with older age as compared to early syphilis trends. It is critical, from the perspective of epidemiological significance, to focus disease intervention activities on early syphilis in order to interrupt the spread of infection in the community. An effective public health response should identify infections as early as possible, and rapidly intervene in the spread from the source case. Regardless of stage, cases reported in 2007 reflect an upward trend among both male and female populations. This upward trend in both males and females most likely reflects a change in state administrative code to require electronic laboratory reporting. However, community prevalence and higher risk-taking behaviors associated with certain populations continue to contribute to morbidity.

References

Centers for Disease Control and Prevention, *Syphilis-CDC Fact Sheet*, Centers for Disease Control and Prevention, Atlanta, GA, 2004.

Tuberculosis

In 2007, Florida reported 989 tuberculosis (TB) cases (Figure 1). This represented a five percent decrease from the 1,038 cases reported in 2006. Florida's case rate decreased from 5.6 per 100,000 in 2006 to 5.2 per 100,000 in 2007 (Figure 2). In 2007, 98% (968) of TB cases were alive at diagnosis. Four percent (44) of cases reported previous treatment for tuberculosis disease. Eighty-one percent (803) of Florida's TB cases were pulmonary, 14% (140) were extra-pulmonary and 5% (46) were both.

Figure 1: TB Cases in Florida, 1990-2007

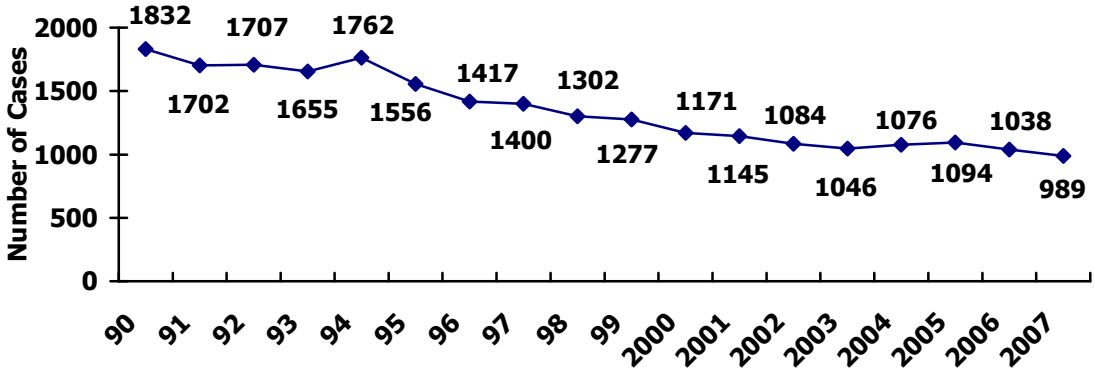
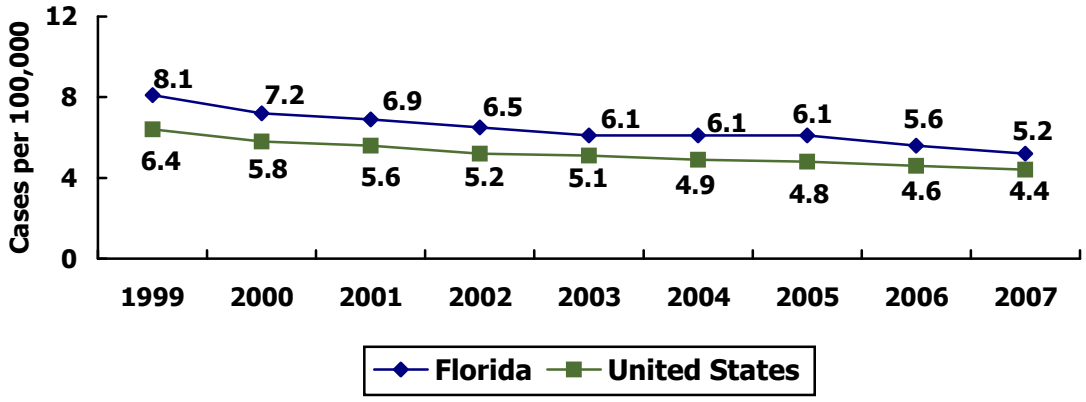


Figure 2: TB Incidence Rates in Florida, 1999-2007



Race and Ethnicity

Medically underserved and low-income populations, including high risk racial and ethnic minorities such as blacks, Hispanics and Asians have a high rates of TB exposure and infection. These populations are disproportionately represented among TB cases in Florida. Non-Hispanic blacks and Hispanics accounted for 68% (672) of Florida's total TB morbidity in 2007 (Table 1).

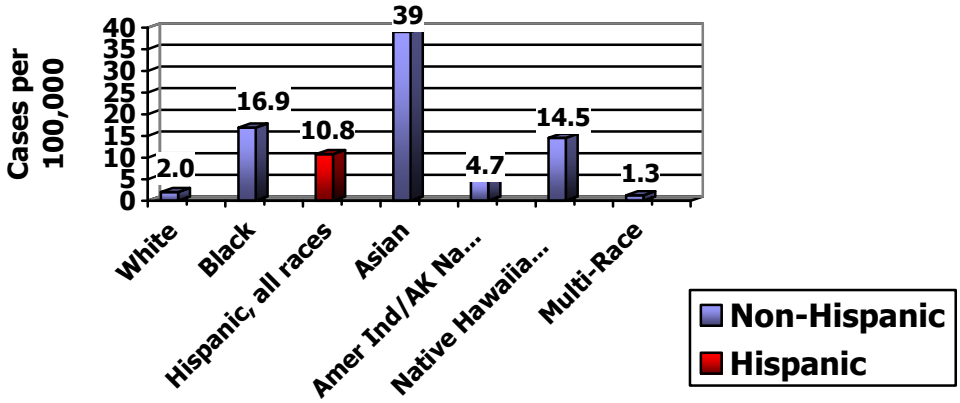
- In 2007, non-Hispanic blacks comprised 39% (382) of Florida's TB morbidity with a case rate of 16.9 per 100,000. This rate is about eight times higher than that of non-Hispanic whites (Figure 3).
- Since 1994, TB morbidity among Hispanics has increased from 17% (288/1,742) of the TB cases to 29% (290/989) in 2007. The case rate for Hispanics in 2007 was 10.8 per 100,000 (Figure 3).
- Tuberculosis for non-Hispanic whites declined from 31% of cases (542/1,742) in 1994 to 21% of cases (209/989) in 2007, which represented an overall 61% decrease since 1994. The case rate for non-Hispanic whites in 2007 was 2.0 per 100,000 (Figure 3).

Table 1: Tuberculosis Cases by Race/Ethnicity and Place of Birth
Florida, 2007

	U.S. Born	% U.S. Born	Foreign Born	% Foreign Born	Total	Total %
Race/Ethnicity						
Black, Non-Hispanic	271	53	111	23	382	39
Hispanic (all races)	51	10	239	50	290	29
White, Non-Hispanic	184	36	25	5	209	21
Asian Only	4	<1	98	21	102	10
Amer. Indian/AK Native	2	<1	0	N/A	2	<1
Native Hawaiian/Pacific Islander	0	N/A	1	<1	1	<1
Multiple Race	2	<1	1	<1	3	<1
Unknown	0	N/A	0	N/A	N/A	N/A
Total	514		475		989	

Due to rounding percents may not add to 100%

Figure 3: TB Incidence Rates by Race/Ethnicity
Florida, 2007



Gender and Age

- In 2007, men represented 62% (612) of Florida's TB cases with women accounting for 38% (377) of TB cases.
- In Florida, the TB incidence rate for males was twice that of females for 2007.
- The gender and age-specific rate was highest for men between the ages of 45 and 64 and women between the ages of 25 and 44 (Table 2).
- Overall, people <14 years old comprised 6% (61) of TB cases and 15-24 year olds were 10% (103). Those 25-44 comprised 34% (332) of the TB cases, those 45-64 years old comprised 34% (377) in 2007. People 65 years or older were 15% (156) of the TB cases (Table 3).

Table 2. Age and Gender Specific Incidence Rates, Florida, 2007

Age Groups	Male	Female	Both
0-4 years	2.8	4.6	3.7
5-14 years	0.8	0.9	0.9
15-24 years	5.2	3.3	4.2
25-44 years	8.2	5.6	6.9
45-64 years	10.0	4.2	7.0
65 and older	6.4	3.6	4.8

Table 3. Tuberculosis by Age Group, Florida, 2006 and 2007

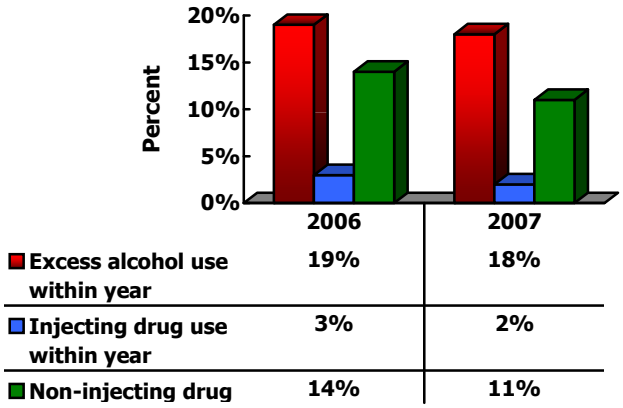
Age Groups	2006 Cases	% of TB (n=1,038)	2007 Cases	% of TB (n=989)
0-4 years	35	3	41	4
5-14 years	22	2	20	2
15-24 years	105	10	103	10
25-44 years	375	36	332	34
45-64 years	358	35	337	34
65 and older	143	14	156	16

Risk Factors and Tuberculosis

Substance Abuse and Tuberculosis

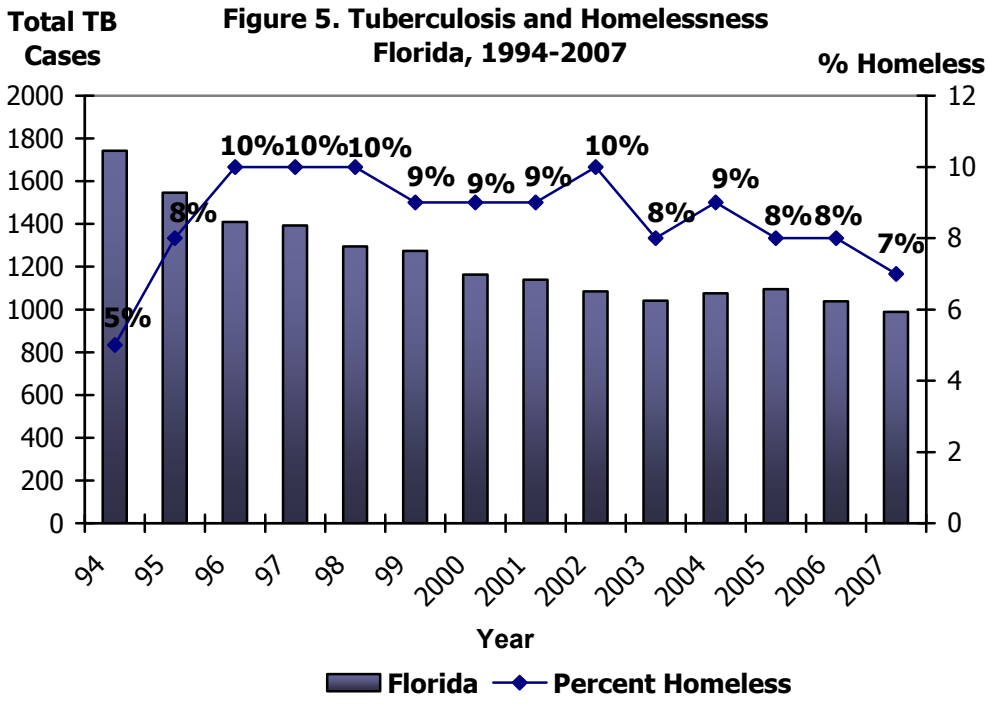
In 2006, 36% (367/1,038) of TB cases self-reported substance abuse. In 2007, the percentage declined to 31% (308/989) (Figure 4).

Figure 4: Tuberculosis and Substance Abuse
Florida, 2006 and 2007



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 progression from TB infection to disease. In 2006, 8% (80/1,038) of Florida's TB cases were reported as homeless (Figure 5). The number of homeless TB cases declined to 7% (70/989) in 2007 (Figure 5).

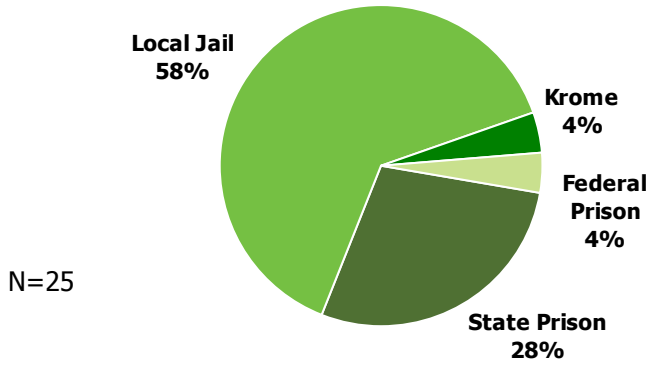


Incarceration and Tuberculosis

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 2007, 3% (25/989) of Florida's TB cases were incarcerated at the time of diagnosis.
- Local jails represented 64% (16/25) of incarcerated cases (Figure 6).
- Federal and state prisons account for 32% (8/25) of cases diagnosed during incarceration, four percent (1/25) were assigned to Krome Detention Center (a federal facility that houses both criminal and non-criminal aliens) (Figure 6).

Figure 6. Tuberculosis in Correctional Facilities Florida, 2007

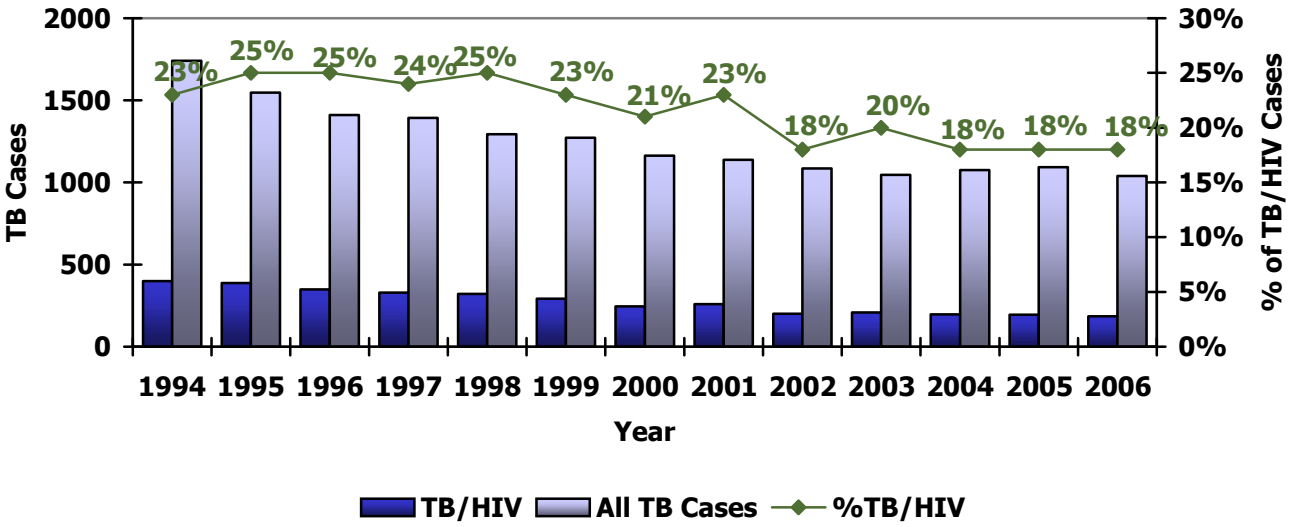


HIV Co-infection (TB/HIV)

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.

In Florida, HIV co-infection declined from 20% (208/1,046) in 2003 to 15% (151/989) in 2007. From 1994-2001, 20% of Florida's TB cases were reported to be co-infected with HIV (Figure 7).

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

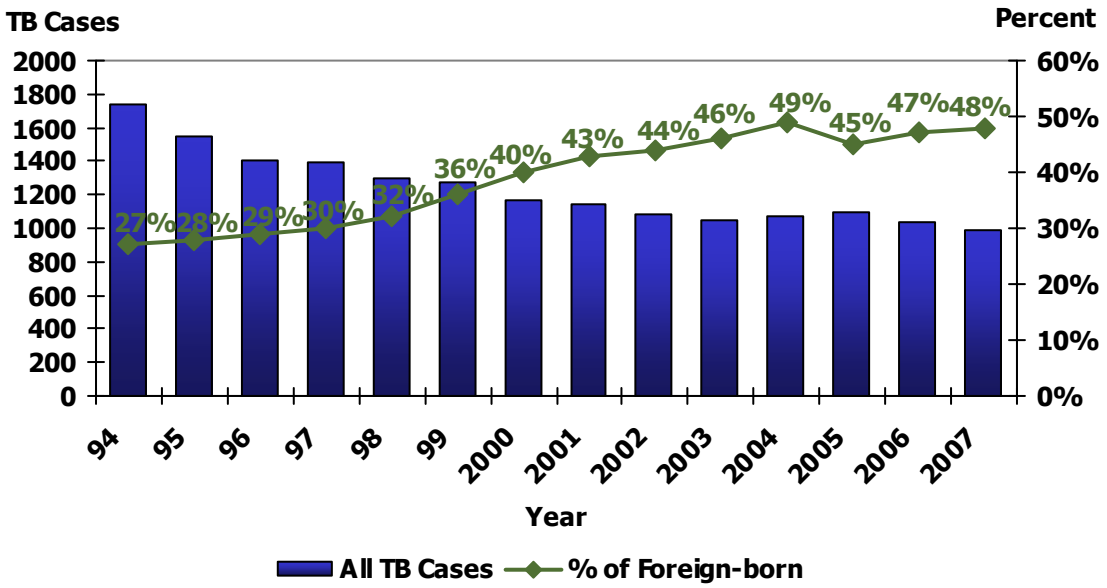


Country of Origin

In Florida, the percentage of TB cases in foreign-born people 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 TB is endemic. In 2002 and 2003, foreign-born people 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

people decreased to 45% (496/1,094) in 2005, then began to rise again in 2006 to represent 47% of total TB cases and 48% of total TB cases in 2007 (Figure 8).

Figure 8: Trends in Foreign-Born TB, Florida 1994-2007

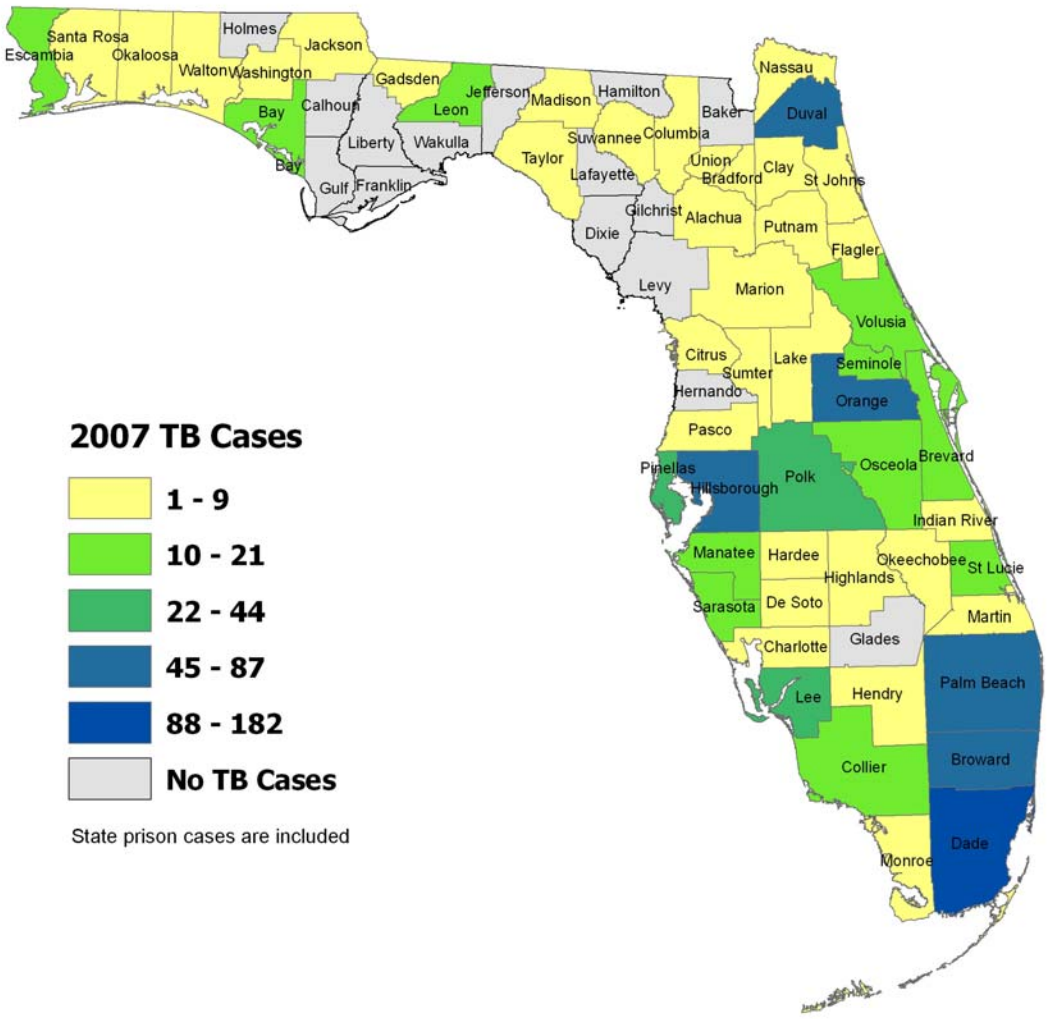


Drug Resistance

Florida's TB program has made significant strides in reducing the number of multiple drug resistant (MDR) cases and preventing extensively drug resistant (XDR) cases. MDR and XDR cases require considerable additional resources and expert medical consultation in order to ensure completion of therapy.

- Six percent (62) of Florida's TB cases in 2007 were resistant to Isoniazid (INH) (Figure 27).
- Less than 1% (6) of Florida's TB cases in 2007 were resistant to Isoniazid (INH) and Rifampin (RIF) – MDR (Figure 27).
- In 2007, Florida reported one case of Extensively Drug Resistant tuberculosis (XDR-TB).

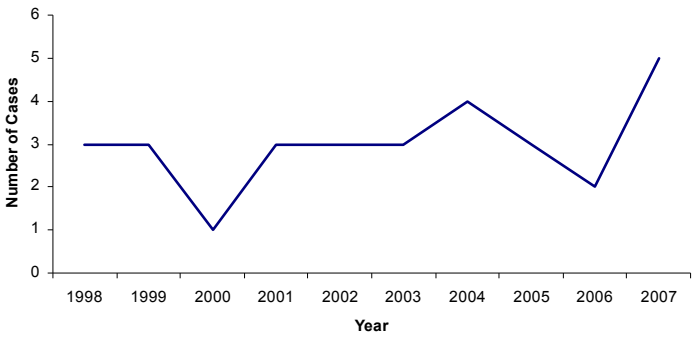
2007 Florida TB Cases



Tetanus

Tetanus: Crude Data	
Number of Cases	5
2007 incidence rate per 100,000	0.03
% change from average 5 year (2002-2006) incidence rate	66.67
Age (yrs) Mean Median Min-Max	 53.61 62 5-86

Figure 1.
Tetanus Cases by Year Reported, Florida, 2001-2007



Description

Tetanus is an acute, often fatal disease that 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

Five confirmed cases of tetanus were reported in Florida for 2007, which is an increase from the two cases in 2006 (Figure 1). Only one case, a man, had any documented history of vaccine. One man died, and the other cases are convalescing, with varying degrees of recovery. All cases were hospitalized.

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. This vaccine is available in combination with other childhood vaccines. Routine tetanus booster immunization, combined with diphtheria toxoid, is recommended for all persons >7 years of age every ten 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. Tdap vaccine is used by many counties as the vaccine of choice for the seventh grade requirement. This dose can be given five years from the last dose of tetanus-containing vaccine. Information on the recommended schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

The appropriate use of tetanus toxoid and tetanus immune globulin (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, all persons must be vaccinated.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 3rd ed., 2002.

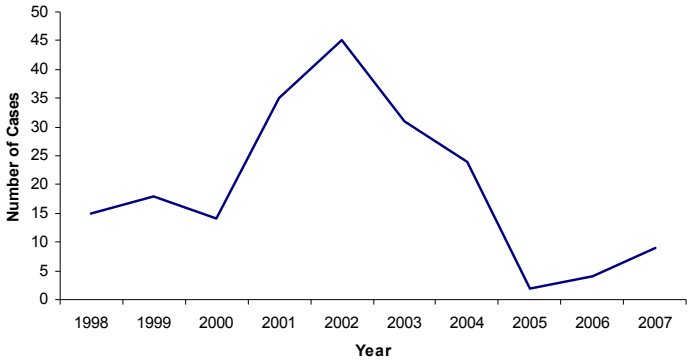
Additional Resources

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	9
2007 incidence rate per 100,000	0.05
% change from average 5 year (2002-2006) incidence rate	-57.55
Age (yrs) Mean Median Min-Max	 38.33 39 16 - 59

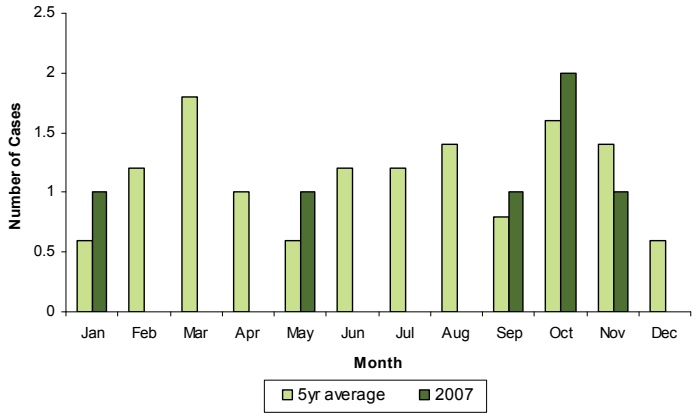
Figure 1.
Toxoplasmosis Cases by Year Reported, Florida, 1998-2007



Description

Toxoplasmosis is a systemic protozoan disease caused by the protozoan *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 people, such as those with HIV/AIDS, the disease may include a maculopapular rash, cerebral involvement, pneumonia, myocarditis, and death. A primary infection during early pregnancy can lead to fetal infection with 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 (litter boxes, 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 Cases by Month of Onset, Florida, 2007



Disease Abstract

The number of cases of Toxoplasmosis increased between 1997 (10) and 2002 (45), but since then has declined to nine cases in 2007 (Figure 1). This represents a 57.55% decline from the prior 5-year average incidence rate for 2002-2006. Of the cases reported in 2007, three were confirmed, six were probable. No outbreaks of toxoplasmosis have been reported in the past ten years. During the past five years, the cases reported were distributed throughout all the months of the year; in 2007, cases occurred only in January, May, September, October, and November and came from only five counties (Clay, Columbia, Dade, Hillsborough, and Orange) (Figure 2). The average number of cases for the past five years was highest in those aged 25-34 years with a bell-shaped distribution surrounding this group. The 2007 data shows a less uniform distribution with all cases occurring in those aged 16-59 years, but with peaks in the 25-34, 35-44, and 55-64 year old age groups (Figure 3). Over the past five years, females had a higher incidence rate than males (0.16 and 0.08 per 100,000, respectively). In 2007, two-thirds of cases were in females and females also had fewer cases than the 5-year average (Figure 4).

Figure 3.
Toxoplasmosis Cases by Age Group, Florida, 2007

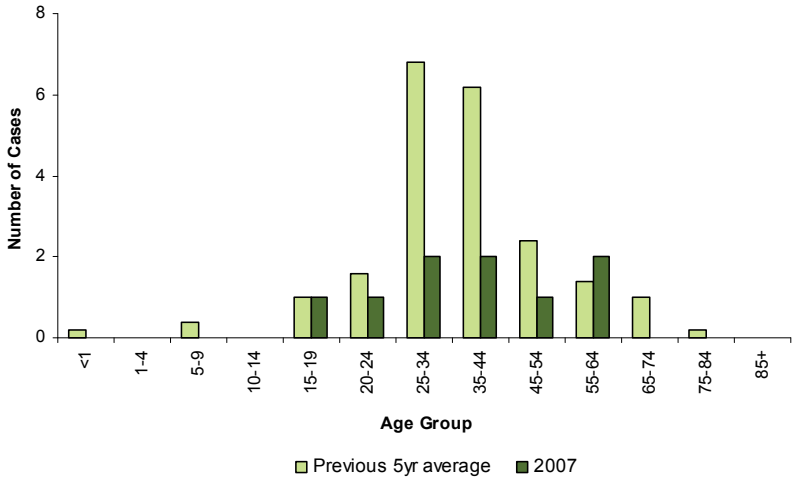
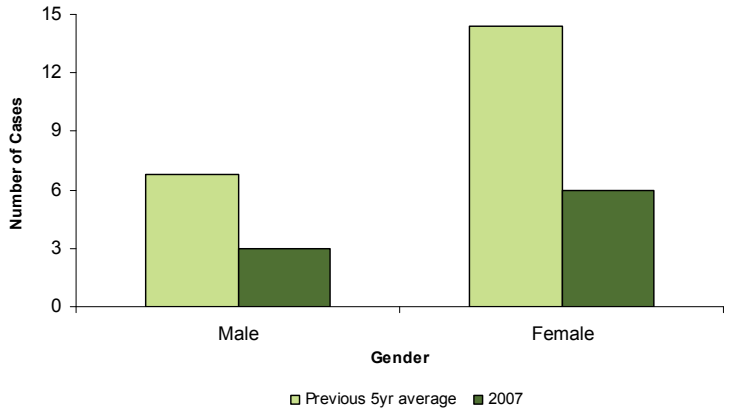


Figure 4.
Toxoplasmosis Cases by Gender, Florida 2007



Prevention

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

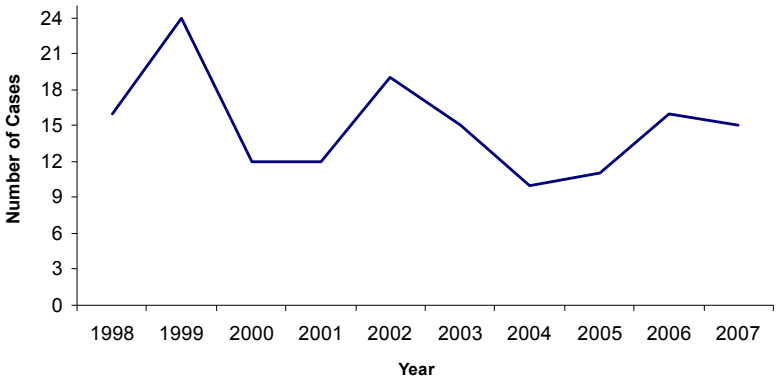
Additional Resources

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

Typhoid Fever

Typhoid Fever: Crude Data	
Number of Cases	15
2007 incidence rate per 100,000	0.08
% change from average 5 year (2002-2006) incidence rate	5.63
Age (yrs) Mean Median Min-Max	 26.13 28 7 - 44

Figure 1.
Typhoid Fever Cases by Year Reported, Florida, 1998-2007



Description

Typhoid Fever is a systemic bacterial disease caused by *Salmonella typhi* (also known as *S. enterica* serovar Typhi) which is a member of *Salmonella* serogroup D1 and may be reported as such by laboratories. 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, infectious dose, 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 for the last 10 years has ranged from 10-24 annually, and in 2007 was 15 cases, representing an incidence rate of 0.08 per 100,000. This was a 5.63% increase from the average number of cases in the prior five years (Figure 1). All of the 2007 cases were classified as confirmed, and the median age was 28. Over the past five years, and consistent with national data, the majority of the cases (66-90%) are acquired outside the U.S. The counties reporting the greatest number of cases include Orange, Dade, and Palm Beach. Cases tend to be isolated, rather than clustered. They typically occur more frequently in the summer months, although in 2007 the majority of the cases occurred in the fall and winter months between January-February and September-December. Only a single outbreak of typhoid fever (18 cases, 1997) has been noted during the past ten 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.

Additional Resources

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

Typhus Fever

Epidemic typhus, or louseborne typhus, is caused by *Rickettsia prowazekii*. It is transmitted human to human by the human body louse and is rare in the United States. Endemic, fleaborne, or murine typhus, is more common and infection is caused by *Rickettsia typhi*. The vector in this case is the rat flea with rats acting as the natural reservoir for the organism. A related, and relatively newly identified organism, is *Rickettsia felis*, which is thought to be vectored by the cat flea. The epizootiology has not been fully explained but opposums may be the natural reservoir for *R. felis*. Clinical presentation for all three organisms include: fever, headache, myalgia, and rash. However, *R. prowazekii* generally has more severe symptoms. Antibody tests for *R. typhi* cross-react with *R. felis*. Currently there are no routinely available tests specific for *R. felis*.

Between 1998 and 2007, there were five cases of typhus fever. Four cases were classified as confirmed and one as probable. There was one confirmed case acquired in Florida, reported in 2007, involving a 62 year old white female. Previously identified patients included two females and two males, all white non-Hispanics. Two of those cases were imported from other states. The age range for all five cases was 55 to 75 years old, with the median age being 65 years.

Varicella

Varicella: Crude Data	
Number of Cases	1321
2007 incidence rate per 100,000	7.04
% change from average 5 year (2002-2006) incidence rate	NA*
Age (yrs)	
Mean	12.4
Median	9
Min-Max	<1 - 98

*Varicella was added to the List of Notifiable Diseases in FL 11/2006. No trend data is available.

Description

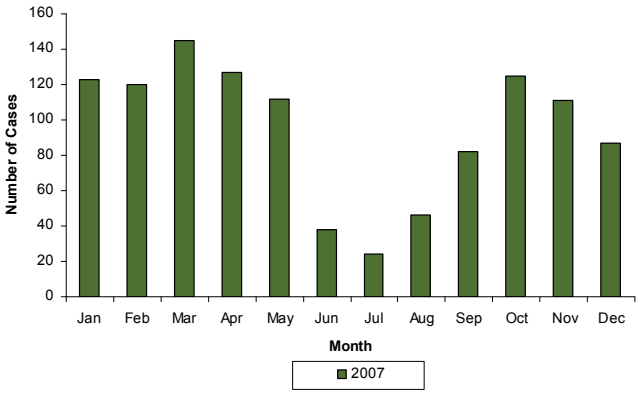
Varicella (chickenpox) is a febrile rash illness resulting from primary infection with the varicella-zoster virus (VZV). Humans are the only source of infection for this virus. Varicella is highly infectious with secondary infection rates in susceptible household contacts from 65%–86%. Transmission occurs from person to person by direct contact with patients with either varicella or herpes zoster lesions or by airborne spread from respiratory secretions. The incubation period for varicella is 10-21 days, most commonly 14-16 days. Varicella is characterized by a pruritic, maculopapular vesicular rash that evolves into non-infectious dried crusts over a 5-6 day period.

Varicella severity and complications are increased among immunocompromised persons, neonates, children <1 year, and adults. However, healthy children and adults may also develop serious complications and even die from varicella infection. Serious complications include secondary bacterial infections (most notably those caused by group A beta-hemolytic *Streptococcus* including cellulitis, necrotizing fasciitis, septicemia, and toxic shock syndrome), pneumonia, encephalitis, cerebellar ataxia, Reye syndrome, and death.

Infants born to women who develop varicella within the period of five days before delivery to two days after delivery are at risk of neonatal varicella, which may be severe. Congenital varicella syndrome, characterized by hypoplasia of an extremity, skin abnormalities, encephalitis, microcephaly, ocular abnormalities, mental retardation, and low birth weight, may occur among 0.4%-2.0% of infants born to women infected with varicella during the first two trimesters of pregnancy.

Although immunity following varicella infection is considered to be long lasting, second cases of varicella do occur rarely among immunologically normal persons. VZV remains in a latent state in human nerve tissue and reactivates in approximately 15% of infected persons, resulting in herpes zoster (shingles).

Figure 2.
Varicella Cases by Month of Onset, Florida, 2007



Disease Abstract

Varicella was reported in 51 of the 67 Florida counties. Cases may be under-reported as 2007 was the first full year of case reporting in Florida. The 1,321 cases include confirmed and probable cases. Of these cases, 847 had one reported dose of varicella vaccine; 30 of these cases had two doses of vaccine reported. Childcare centers and schools are the most common sites for varicella outbreaks.

Figure 3.
Varicella Incidence Rate by Age Group, Florida, 2007

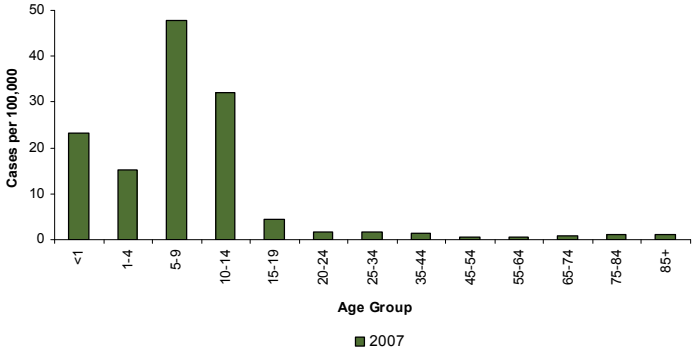
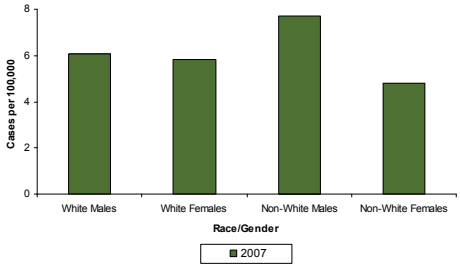


Figure 4. Varicella Incidence Rate by Race and Gender, Florida, 2007



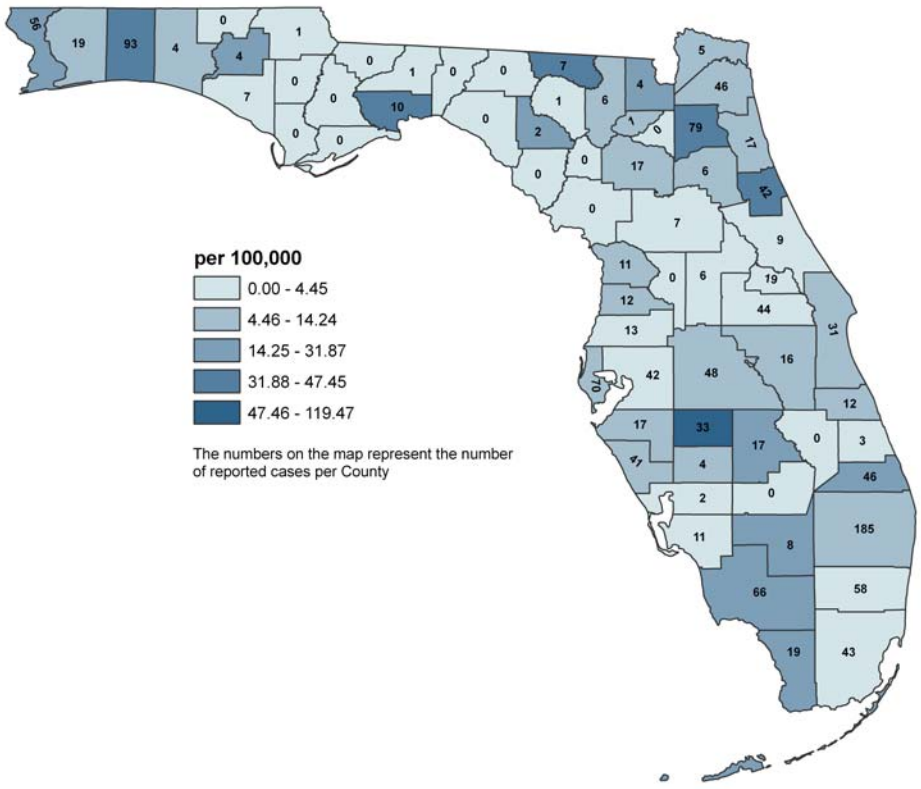
Prevention

The varicella vaccine is recommended at 12–15 months of age and at 4–6 years old. Doses given prior to 13 years of age should be separated by at least three months. Doses given after 13 years of age should be separated by at least four weeks. Due to the occurrence of disease after one dose of vaccine, the current recommendation is now for two doses of vaccine. Information on the recommended schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm. Proof of varicella vaccine or healthcare provider documentation of disease is required for entry and attendance in childcare facilities, family day care homes, and schools for certain grades.

The ACIP recommends the use of varicella vaccine for susceptible persons following exposure to varicella. If administered within 72 hours, and possibly up to 120 hours following varicella exposure, varicella vaccine may prevent or significantly modify disease. Post-exposure vaccine use should be considered following exposures in health care settings, where transmission risk should be minimized at all times, and in households. If exposure to varicella does not cause infection, post-exposure vaccination with varicella vaccine should induce protection against subsequent infection. If exposure results in infection, the vaccine may reduce the severity of the disease.

Varicella zoster immune globulin (VZIG), if available, is recommended for post-exposure prophylaxis of susceptible persons who are at high risk for developing severe disease and when varicella vaccine is contraindicated. VZIG is most effective in preventing varicella infection when given within 96 hours of varicella exposure. Varicella zoster immune globulin can be ordered from the distributor (FFF Enterprises, Inc., Temecula, CA) by calling 800-843-7477.

Varicella Reported Incidence Rate* by County, Florida, 2007



References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 3rd ed., 2002, chapter 14.

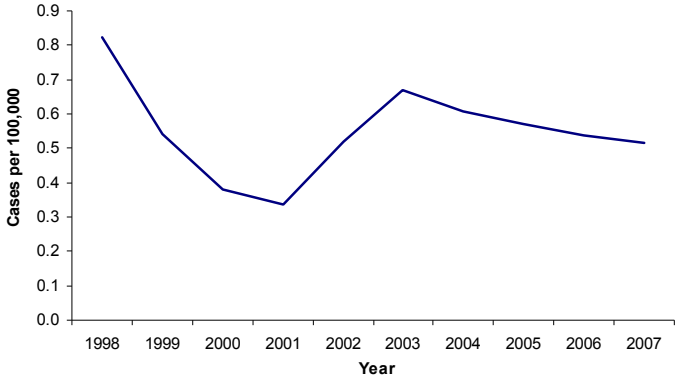
Additional Resources

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

Vibriosis

Vibrio Infections: Crude Data	
Number of Cases	97
2007 incidence rate per 100,000	0.52
% change from average 5 year (2002-2006) incidence rate	10.96
Age (yrs) Mean Median Min-Max	 43.96 45 <1 - 90

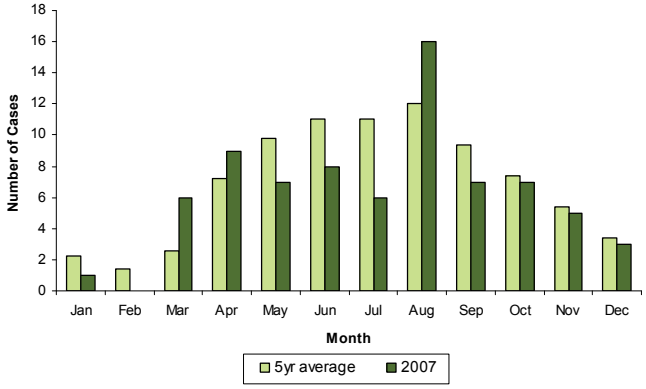
Figure 1.
Vibrio Infections Incidence Rate by Year Reported, Florida, 1998-2007



Description

The genus *Vibrio* consists of gram-negative, curved, motile rods, and contains about a dozen species known to cause human illness. Transmission occurs primarily through the foodborne route, and in Florida 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 the consumption of raw oysters and *Vibrio parahaemolyticus* is also associated with the consumption of cross-contaminated crustacean shellfish (crab, shrimp, and lobster).

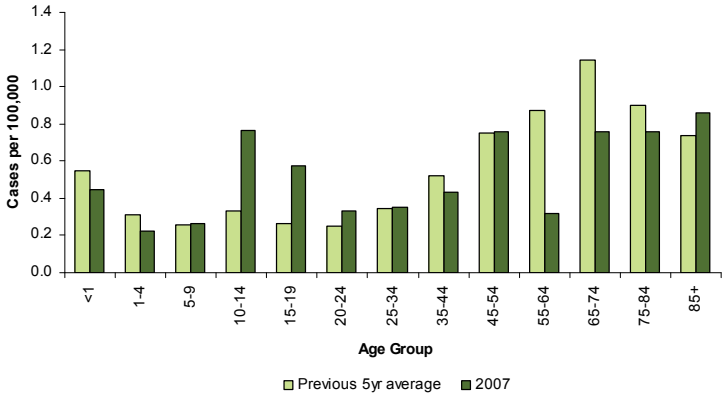
Figure 2.
Vibriosis Cases by Month of Onset, Florida, 2007



Disease Abstract

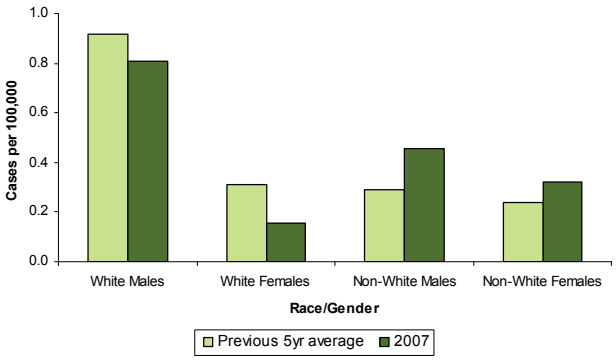
This report combines data on *Vibrio* infections to provide a general measure of disease burden. The reported numbers of species specific illnesses are as follows: *V. alginolyticus* (N=33), *V. cholerae* non-O1 (N=5), *V. cholerae* type-O1 (N=0), *V. fluvialis* (N=4), *V. hollisae* (N=2), *V. mimicus* (N=0), *V. parahaemolyticus* (N=26), *V. vulnificus* (N=22), and other *Vibrio* species (N=7). In comparison to the previous average 5-year incidence, the incidence for *Vibrio* infections in 2007 declined (10.09%) (Figure 1). A total of 97 cases were reported in 2007, of which 99% were confirmed. The majority of cases were considered sporadic (97%), not outbreak-associated, and three were of unknown origin. *Vibrio* infections typically increase during the warmer months. In 2007, forty-seven percent of the cases occurred from April to August (Figure 2).

Figure 3.
Vibrio Infections Incidence Rate by Age Group, Florida, 2007



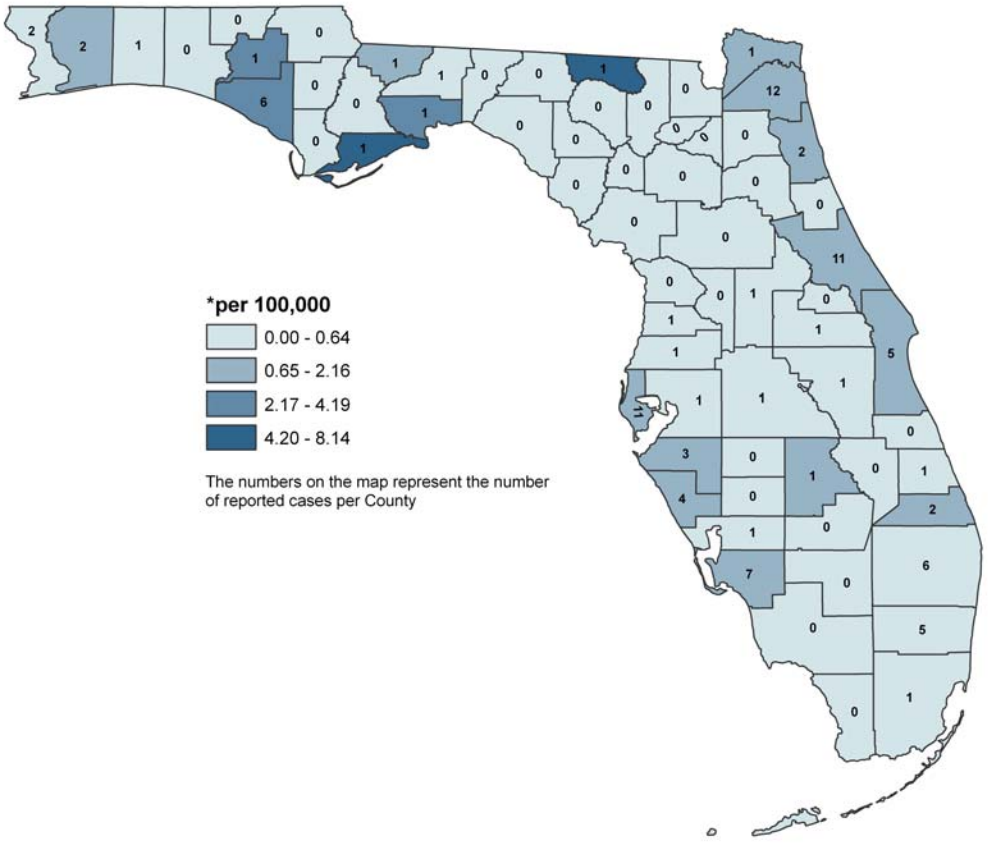
There are consistently high incidence rates among individuals 45+ years with a historical peak incidence occurring in the 65-74 age group (1.21 per 100,000), which is a population that is likely to have chronic conditions that predispose them to these infections (Figure 3). However, in 2007, there were relatively high incidence rates among those 10-19 years old. Historically, white males have the highest incidence rate and that continued in 2007. In 2007, incidence exceeded the previous 5-year average incidence for non-whites, both males and females (0.46 and 0.32 per 100,000, respectively), but decreased among whites, both males and females (Figure 4).

Figure 4. *Vibrio* Infections Incidence Rate by Race and Gender, Florida, 2007



Vibrio cases were reported in 34 of the 67 counties in Florida in 2007. The higher-incidence counties appear to be along the coasts. Of the *Vibrio* spp. reported in 2007, 22 were *Vibrio vulnificus*, an important vibrio infection causing serious illness and death in 47% of reported cases. Of the 227 reported *Vibrio vulnificus* cases, ten were wound infections, seven were attributed to oyster consumption (four deaths), one was attributed to clam consumption and four had unknown exposures.

Vibrio Infections Reported Incidence Rate* by County, Florida, 2007



References

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

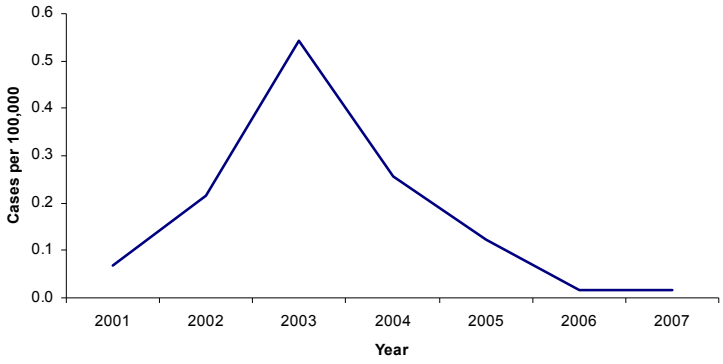
Additional Resources

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

West Nile Virus

West Nile Virus: Crude Data	
Number of Cases	3
2007 incidence rate per 100,000	0.02
% change from average 5 year (2002-2006) incidence rate	-92.96
Age (yrs)	
Mean	52.33
Median	63
Min-Max	25 - 69

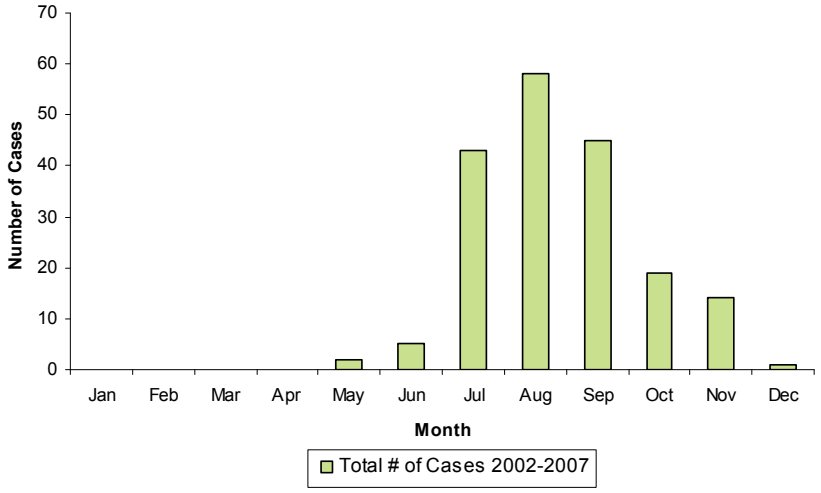
Figure 1.
West Nile Virus Incidence Rate by Year Reported, Florida, 2001-2007



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 2007 it had been detected in 48 states with over 27,500 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 2007. 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 fourteen 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.

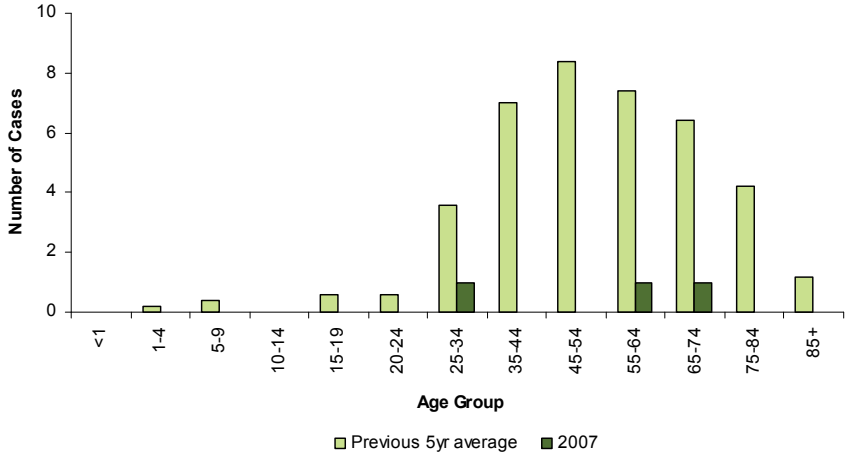
Figure 2.
West Nile Virus by Month of Onset, Florida, 2002-2007



Disease Abstract

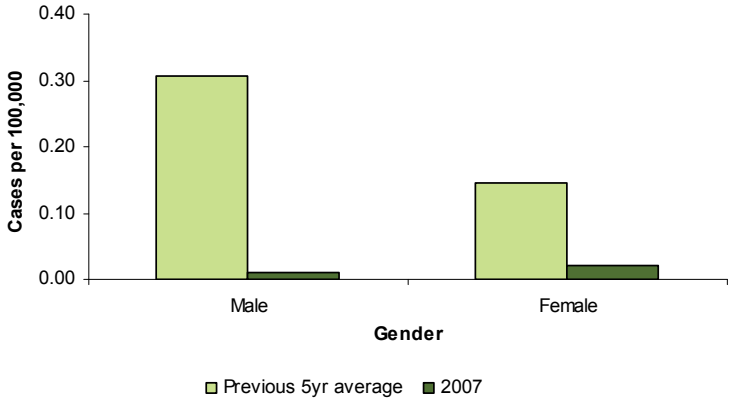
The incidence rate for WNV disease, including the neuroinvasive and non-neuroinvasive forms, peaked in 2003 (Figure 1). In 2007, there were two locally-acquired human cases, and one Floridian became ill after being exposed in another state. The level of virus transmission between bird and mosquito populations is dependent on a number of environmental factors. The low levels of activity reported in 2007 were likely a result of the dry conditions experienced by much of the state. The peak transmission period for WNV in Florida occurs July through September (Figure 2).

Figure 3.
West Nile Virus Cases by Age Group, Florida, 2007



The greatest number of cases occur in individuals over the age of 35, with more cases among males than females (Figures 3 and 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 Incidence Rate by Gender, Florida 2007



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, oil of lemon eucalyptus, or IR3535. 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 your 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.

Summary of Foodborne Diseases

Section 3

2006 and 2007 Summary

Summary of Foodborne Diseases

Description

Foodborne disease investigation and surveillance are essential public health activities. Globalization of the food supply, changes in individual eating habits and behaviors, and newly emerging pathogens has increased the risk of contracting foodborne diseases. The Centers for Disease Control and Prevention (CDC) estimates foodborne diseases account for approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths per year in the U.S. However, only an estimated 14 million illnesses, 60,000 hospitalizations, and 1,800 deaths are accounted for by confirmed pathogens. Florida has had a unique program in place since 1994 to oversee food and waterborne disease surveillance and investigation for the state with the intent to better capture and investigate food and waterborne diseases, complaints, and outbreaks as well as to increase knowledge and prevent illness with regard to this important public health issue.

Foodborne disease outbreaks, as defined by the Florida Department of Health's Food and Waterborne Disease Program, are incidents in which two or more people have the same disease, have similar symptoms, or excrete the same pathogens; and there is a person, place, and/or time association between these people along with ingestion of a common food. A single case of suspected botulism, mushroom poisoning, ciguatera or paralytic shellfish poisoning, other rare disease, or a case of a disease that can be definitely related to ingestion of a food, is considered as an incident of foodborne illness, and warrants further investigation.

The Florida Department of Health has criteria established for suspected and confirmed foodborne disease outbreaks. A suspected foodborne outbreak is one for which the sum of the epidemiological evidence is not strong enough to consider it a confirmed outbreak. A confirmed foodborne outbreak is an outbreak that has been thoroughly investigated and the results include strong epidemiological association of a food item or meal with illness. A thorough investigation is documented by:

- diligent case finding,
- interviewing of ill cases and well individuals,
- collecting clinical and food lab samples where appropriate and available,
- confirmation of lab samples where possible,
- field investigation of the establishment(s) concerned, and
- statistical analysis of the information collected during the investigation.

The summary report of all of the information collected in an investigation in a confirmed outbreak will indicate a strong association with a particular food and/or etiologic agent and a group of two or more people, or single incidents as described above.

Overview

In 2006 and 2007, Florida reported 260 foodborne disease outbreaks with a total of 1,969 associated cases (Table 1).

Table 1. Summary of Foodborne Disease Outbreaks, Florida 1998-2007

Year	# Outbreaks	# Cases	Proportion of Outbreaks per 100, 000 population	Proportion of Cases per 100, 000 population	Cases per Outbreak
1998	300	3251	1.96	21.23	10.84
1999	273	1465	1.74	9.34	5.37
2000	269	1569	1.67	9.76	5.83
2001	288	1922	1.75	11.71	6.67
2002	240	1450	1.43	8.65	6.04
2003	185	1563	1.08	9.11	8.45
2004	174	1937	0.99	11.00	11.13
2005	128	1944	0.71	10.79	15.19
2006	143	1142	0.78	6.19	7.99
2007	117	827	0.62	4.41	7.07

Foodborne disease outbreaks in Florida are classified by outbreak status (confirmed or suspected) as well as by pathogen status (confirmed, suspected, or unknown). Among the 260 reported foodborne disease outbreaks in 2006 and 2007, 73 (28.08%) were determined to be confirmed foodborne disease outbreaks, accounting for 1056 (53.63%) of the 1,969 reported cases. Of the total reported outbreaks, 149 (57.31%) had a suspected and/or confirmed etiology, accounting for 1,428 (72.52%) of the total cases. Of the total reported outbreaks, 111 (42.69%) had unknown etiologies, accounting for 541 (27.48%) of the total cases (Table 2).

Table 2. Total Number and Percentage of Reported Foodborne Outbreaks and Cases by Pathogen Status,,Florida 2006-2007

	# Outbreaks	# Cases	% Outbreaks	% Cases
Suspected Outbreaks	**187**	**913**	**71.92%**	**46.37%**
Confirmed Pathogens	10	168	3.85%	8.53%
Suspected Pathogens	72	317	27.69%	16.10%
Unknown Pathogens	105	428	40.38%	21.74%
Confirmed Outbreaks	**73**	**1056**	**28.08%**	**53.63%**
Confirmed Pathogens	57	813	21.92%	41.29%
Suspected Pathogens	10	130	3.85%	6.60%
Unknown Pathogens	6	113	2.31%	5.74%

Trends

There is a general decreasing trend in the total number of reported foodborne disease outbreaks and number of reported foodborne disease outbreaks per 100,000 population in Florida over the last 10 years (Figures 1 & 2).

Figure 1. Total Number of Reported Foodborne Florida, 1998-2007

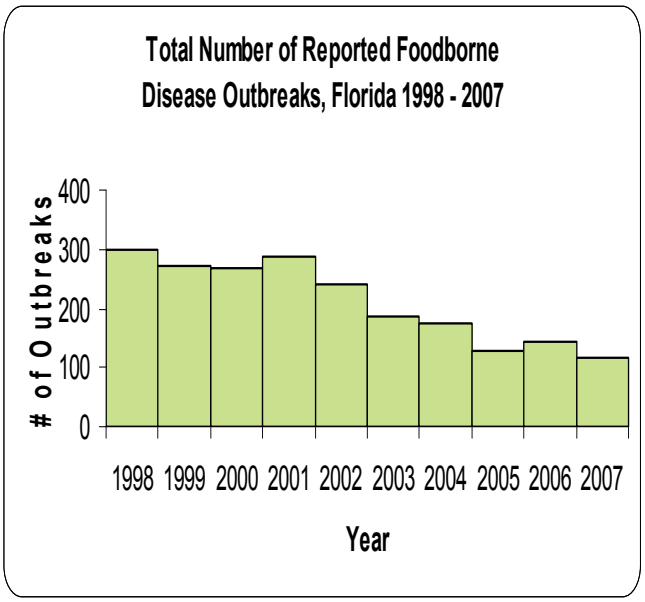
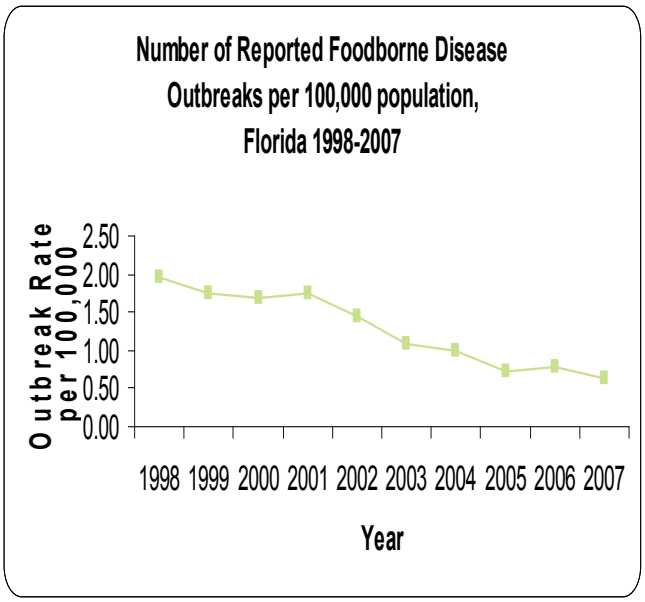


Figure 2. Number of Reported Foodborne Disease Outbreaks per 100,000 population Florida, 1998-2007



The total number of reported foodborne illness cases and the number of reported foodborne illness cases per 100,000 population in Florida has fluctuated over the last 10 years (Figure 3). There appears to be a decreasing trend in the number of reported foodborne disease outbreak cases and number of reported foodborne disease outbreak cases per 100,000 population for 2006 and 2007. (Figure 4).

Figure 3. Total Number of Reported Foodborne Disease Outbreak Cases Florida, 1998-2007

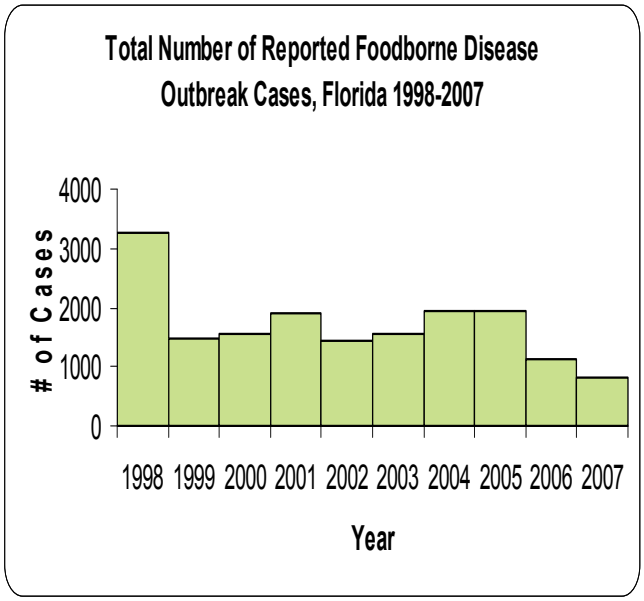
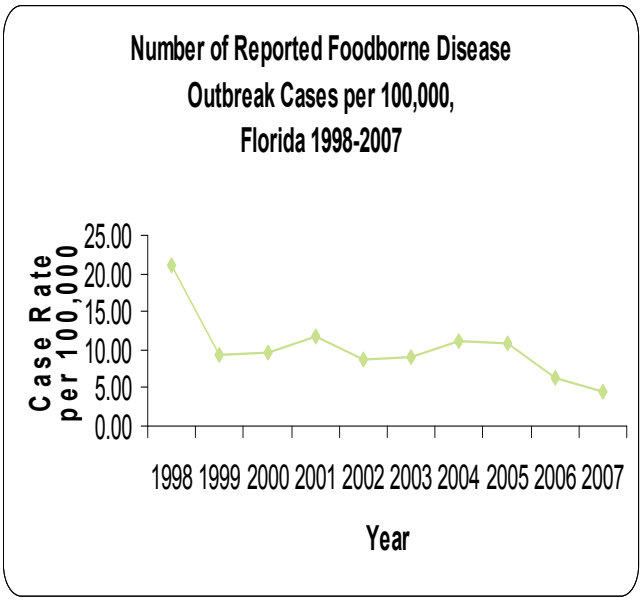


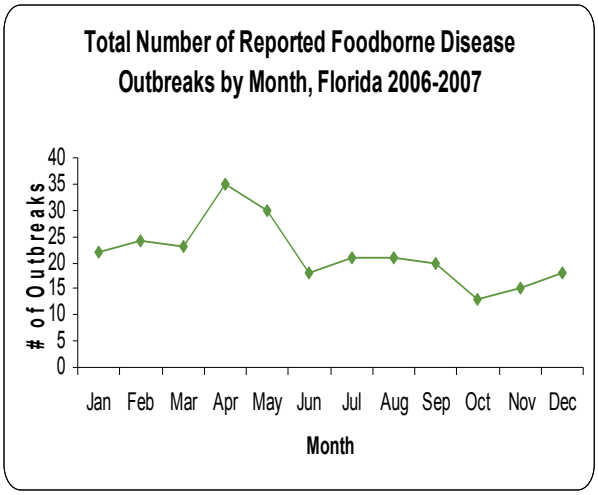
Figure 4. Number of Reported Foodborne Outbreak Cases per 100,000 population Florida, 1998-2007



Seasonality

Occurrence of reported foodborne disease outbreaks in Florida for 2006 and 2007 were most frequent during the spring months of April and May (Figure 5).

Figure 5. Total Number of Reported Foodborne Disease Outbreaks by Month, Florida 2006-2007



Agent

Foodborne disease outbreaks caused by bacterial pathogens accounted for the highest proportion of the reported foodborne disease outbreaks with a known etiology and accounted for 24.62% of foodborne disease outbreaks overall (Figure 6). This is in contrast to foodborne disease outbreaks caused by viral pathogens which accounted for the highest proportion of reported cases with a known etiology and accounted for 45.69% of all foodborne disease outbreak cases (Figure 7). Pathogen type was unknown for 42.69% of the total reported foodborne disease outbreaks and 27.48% of the total reported cases.

Figure 6. Percentage of Reported Foodborne Disease Outbreaks by Pathogen Type, Florida 2006-2007

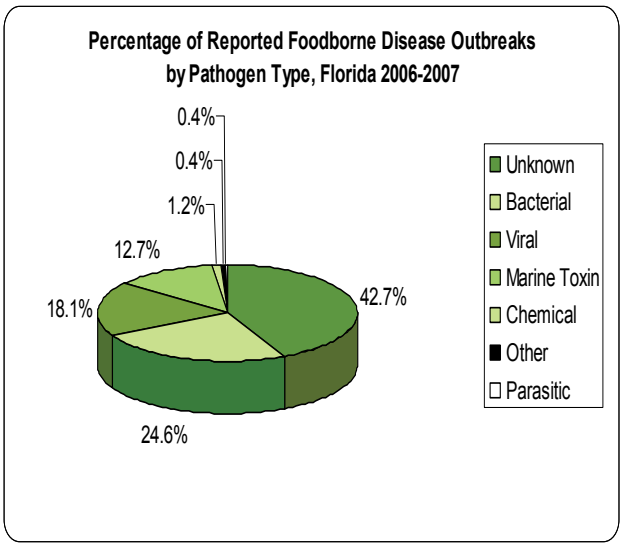
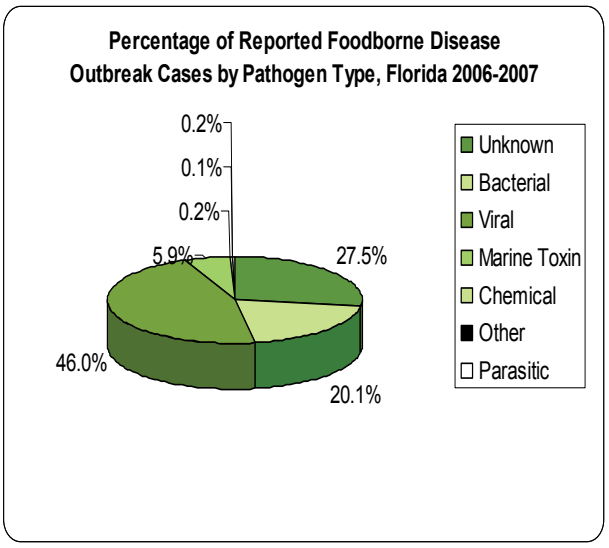


Figure 7. Percentage of Reported Foodborne Disease Outbreak Cases by Pathogen Type, Florida 2006-2007



The number and percentage of foodborne disease outbreaks and cases by etiology for 2006-2007 is summarized in Table 3. Among foodborne disease outbreaks with a suspected and/or confirmed etiology, Norovirus was the most frequently reported etiology for outbreaks in Florida for 2006 and 2007 accounting for 46 (16.69%) outbreaks followed by *Staphylococcus* and Ciguatera which accounted for 19 (7.31%) outbreaks each. Norovirus accounted for the highest number of cases associated with reported foodborne disease outbreaks with 902 (45.81%) cases followed by *Salmonella,* which accounted for 154 (7.82%) cases.

Table 3. Number and Frequency of Foodborne Outbreaks and Cases by Etiology, Florida 2006-2007

	Outbreaks		Cases	
Pathogen	#	%	#	%
Unknown				
Total Unknown	111	42.69%	541	27.48%
Bacterial				
Staphylococcus	19	7.31%	117	5.94%
B. cereus	16	6.15%	86	4.37%
V. vulnificus	15	5.77%	15	0.76%
Salmonella	7	2.69%	154	7.82%
C. perfringens	4	1.54%	19	0.96%
E. coli O157:H7	2	0.77%	4	0.20%
C. botulinum	1	0.38%	1	0.05%
Total Bacterial	64	24.62%	396	20.11%
Viral				
Norovirus	46	17.69%	902	45.81%
Hepatitis A	1	0.38%	3	0.15%
Total Viral	47	18.08%	905	45.96%
Parasitic				
Giardia	1	0.38%	4	0.20%
Total Parasitic	1	0.38%	4	0.20%
Marine Toxin				
Ciguatera	19	7.31%	71	3.61%
Scombroid	10	3.85%	24	1.22%
Neurotoxic Shellfish Poisoning	3	1.15%	18	0.91%
Total Marine Toxin	32	12.31%	113	5.74%
Other				
Chemical	3	1.15%	4	0.20%
Gempylotoxin	1	0.38%	4	0.20%
MSG	1	0.38%	2	0.10%
Total Other	5	1.92%	10	0.51%
Total				
Total	260	100.00%	1969	100.00%

Implicated Food Vehicles

Multiple items (23.46%), fish (15.00%), and multiple ingredients (13.85%) were the most frequently reported general vehicles contributing to foodborne disease outbreaks and cases in Florida for 2006 and 2007 (Table 4).

Table 4. Reported Foodborne Illness Outbreaks and Cases by General Vehicle, Florida 2006-2007

	# Outbreaks	% Outbreaks	# Cases	% Cases
*Multiple Items	61	23.46%	635	32.25%
Fish	39	15.00%	126	6.40%
**Multiple Ingredients	36	13.85%	189	9.60%
Poultry	24	9.23%	168	8.53%
Shellfish-Mulluscan	22	8.46%	51	2.59%
Unknown	16	6.15%	409	20.77%
Beef	13	5.00%	34	1.73%
Produce-Vegetable	11	4.23%	144	7.31%
Pork	8	3.08%	52	2.64%
Shellfish-Crustacean	7	2.69%	29	1.47%
Beverage	6	2.31%	38	1.93%
Pizza	6	2.31%	41	2.08%
Produce-Fruit	4	1.54%	11	0.56%
Dairy	2	0.77%	4	0.20%
Ice	2	0.77%	27	1.37%
Rice	2	0.77%	9	0.46%
Pasta	1	0.38%	2	0.10%
Total	260	100.00%	1969	100.00%

*****Multiple Items are food vehicles in which several foods are individually prepared or cooked and more than one food is suspected or confirmed to be contaminated (e.g. buffet, salad bar, chicken and shrimp, etc.).
******Multiple Ingredients are food vehicles in which several foods are combined during preparation or cooking and the entire food product is suspected or confirmed to be contaminated (e.g. casseroles, soups, sandwiches, salads, etc.).

Outbreak Location

Most of the reported foodborne disease outbreaks (73.08%) and cases (46.11%) were associated with restaurants (Table 5).

Table 5. Reported foodborne Illness Outbreaks and Cases by Site Florida 2006-2007

Site	**# Outbreaks**	**% Outbreaks**	**# Cases**	**% Cases**
Restaurant	190	73.08%	908	46.11%
Home	30	11.54%	145	7.36%
Grocery	14	5.38%	82	4.16%
Caterer	9	3.46%	253	12.85%
Other	5	1.92%	131	6.65%
Prison	3	1.15%	138	7.01%
Lunch Truck	2	0.77%	12	0.61%
Bakery	1	0.38%	6	0.30%
Country Club	1	0.38%	3	0.15%
Hospital	1	0.38%	11	0.56%
Oyster Bar	1	0.38%	1	0.05%
School	1	0.38%	248	12.60%
Shrimp Festival	1	0.38%	30	1.52%
Unknown	1	0.38%	1	0.05%
Total	260	100.00%	1969	100.00%

Contributing Factors

The current systematic data collection regarding contributing factors associated with reported foodborne disease outbreaks began in 2000. The top contributing factors associated with reported foodborne disease outbreaks in Florida for 2006 and 2007 were associated with time/temperature abuse, poor personal hygiene, and cross contamination (Table 6).

Table 6. Most Common Reported Foodborne Contributing Factors, Florida 2006-2007

Contributing Factor	# Outbreaks	# Cases
Inadequate cold-holding temperatures**	70	256
Unknown	64	469
Bare-handed contact by handler/worker/preparer*	59	705
Inadequate cleaning of processing/preparation equipment/utensils*	55	342
Toxic substance*	32	113
Cross contamination from raw ingredient of animal origin*	30	143
Insufficient time and/or temperature during hot holding**	22	201
Contaminated raw product/ingredient*	20	38
Ingestion of raw products*	19	33
Infected person or carrier*	18	597

Note: There are 3 categories of contributing factors (contamination factor, proliferation factor, survival factor) and up to three contributing factors per category can be attributed in an outbreak; therefore, the reported numbers may not match the actual number of reported outbreaks and cases.

* Contamination Factor

** Proliferation/Amplification Factor

References

J.B. Bender, et al., “Foodborne disease in the 21st century: What challenges await us?” *Postgraduate Medicine*, Vol. 106, No. 2, 1999, pp. 106-119.

P.S. Mead, et al., “Food-related illness and death in the United States,” *Emerging Infectious Diseases*, Vol. 5, No. 5, 1999, pp. 607-625.

Section 4