Summary of Selected Notifiable Diseases and Conditions

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
Eastern Equine Encephalitis
Ehrlichiosis/Anaplasmosis
Escherichia coli, Shiga Toxin Producing
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
Malaria
Measles
Meningitis, Other (Bacterial, Cryptococcal, Mycotic)
Meningococcal Disease
Mumps
Neonatal Infections
Pertussis
Rabies, Animal
Rabies, Possible Exposure
Rocky Mountain Spotted Fever
Salmonellosis
Shigellosis
Streptococcal Disease, Invasive Group A
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible
Syphilis
Tetanus
Tuberculosis
Toxoplasmosis
Typhoid Fever
Varicella
Vibrio Infections
West Nile Virus

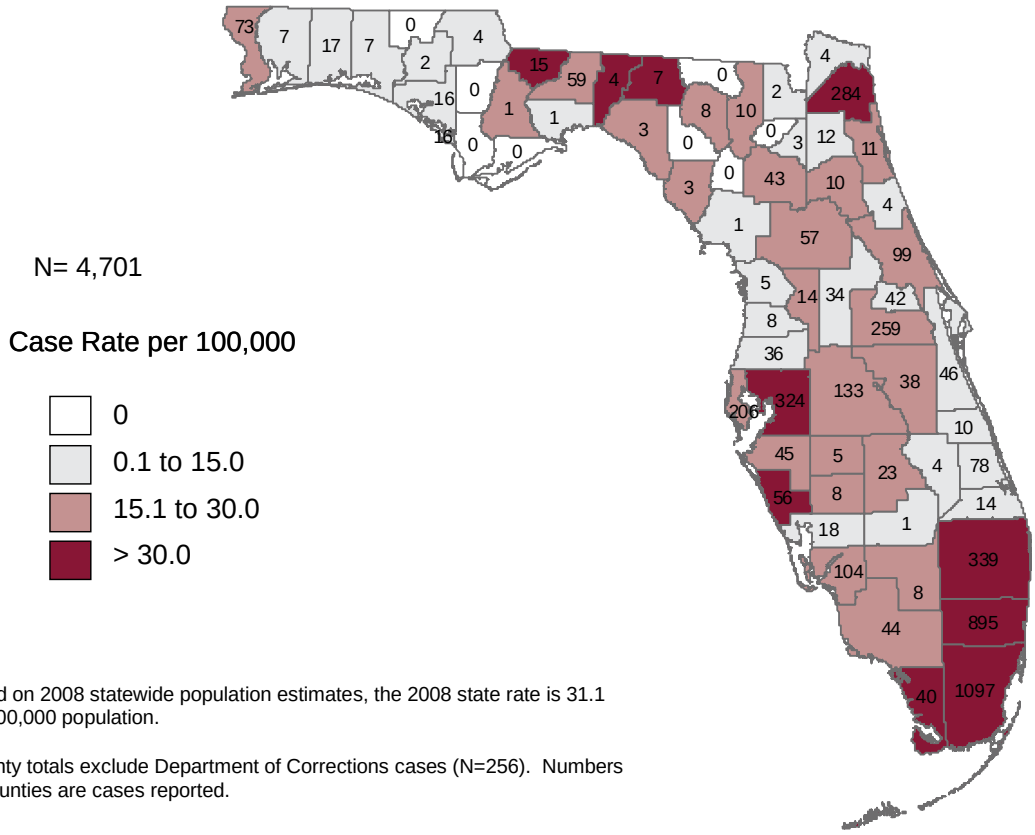
Acquired Immune Deficiency Syndrome/ Human Immunodeficiency Virus

In 2008, Florida ranked third among states in the number of reported acquired immune deficiency syndrome (AIDS) cases. California reported 4,952 (13%), followed by New York with 4,810 cases (13%), then Florida with 3,960 cases (10%), and Texas with 2,964 cases (8%). Florida ranked third among the 38 states that reported human immunodeficiency virus (HIV) cases in 2008. California reported 17,588 cases (28%), followed by New York with 5,197 cases (8%), then Florida with 5,165 cases (8%), and Pennsylvania with 3,694 cases (6%).

In 2008, Florida reported a higher percentage of adult AIDS cases among heterosexuals (33%) than the U.S. reported in 2007 (20%) (Note: U.S. data not available for 2008). Florida reported a lower percentage of adult AIDS cases among men who had sex with men (MSM) (34%) than the U.S. (38%) and among injection drug users (IDU) (8%) than the U.S. (12%). MSM/IDU cases accounted for 3% of total reported cases in Florida and 4% in the U.S. A lower proportion of cases with no identified risk (NIR) were reported in Florida (22%) than in the U.S. (26%). Florida reported a higher percentage of adult AIDS cases among blacks (53%) compared with the U.S. (41%). Florida also reported a higher percentage of cases among women (31%) compared with the U.S. (27%).

As with reported AIDS cases in 2008, Florida reported a higher percentage of cases of HIV among heterosexuals (23%) compared to reported cases in the U.S. (16%). Florida reported a lower percentage of adult HIV cases among MSM (42% vs. 47%) and among IDU (4% vs. 9%) than the U.S. MSM/IDU cases accounted for 2% of total reported cases in Florida and 4% in the U.S. A higher proportion of cases with no identified risk (NIR) were reported in Florida (29%) than in the U.S. (24%). Florida reported a higher percentage of adult HIV cases among blacks (46%) compared with the U.S. (34%). Florida reported the same percentage of cases among women (26%) as the U.S.

Figure 1. AIDS Cases and Rates per 100,000 Population, by County of Residence*, Florida, 2008



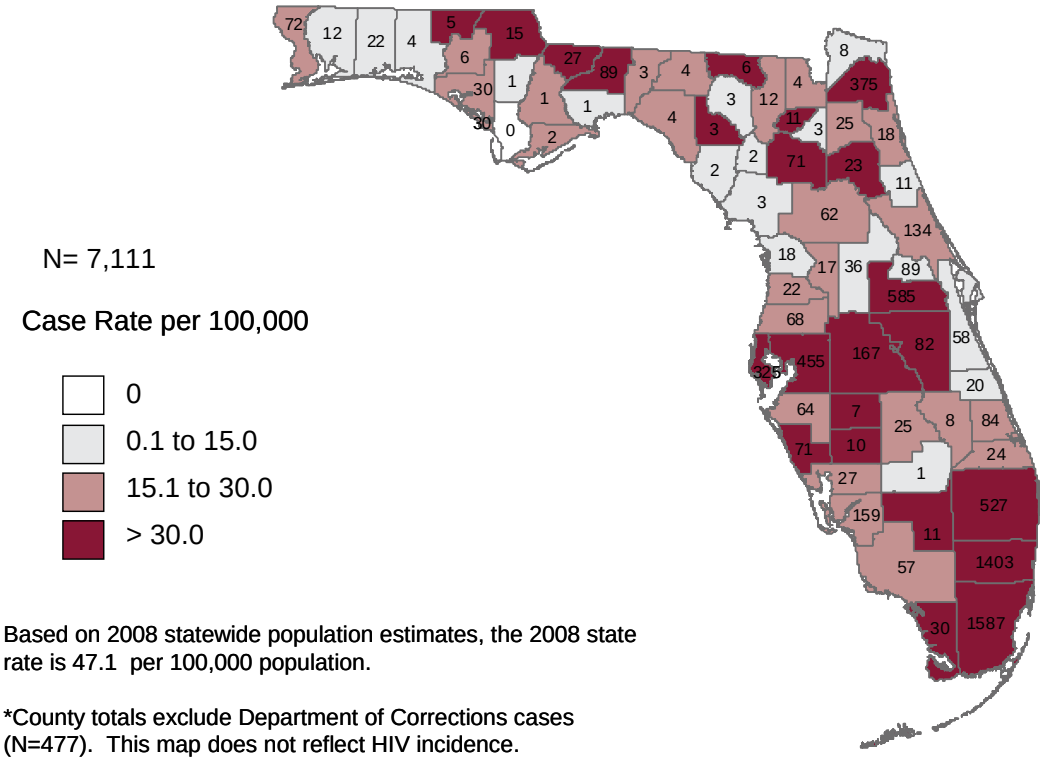
Based on 2008 statewide population estimates, the 2008 state rate is 31.1 per 100,000 population.

*County totals exclude Department of Corrections cases (N=256). Numbers on counties are cases reported.

In 2008, at least one AIDS case was reported in all but eight counties (Figure 1). Although the AIDS epidemic is widespread throughout Florida, the majority of cases were reported from nine counties: Broward, Duval, Hillsborough, Lee, Miami-Dade, Orange, Palm Beach, Pinellas, and Polk. These seven counties reported a combined total of 3,641 cases, or 77% of Florida's total reported cases in 2008. The greatest numbers of AIDS cases were reported from three counties located in the southeastern part of the state; Broward, Miami-Dade, and Palm Beach. These three counties reported a combined total of 2,331 cases in 2008, or 49% of the statewide total.

Analysis of county-specific AIDS case rates per 100,000 population for 2008 in counties with 20 or more reported cases, indicate that Monroe County ranked the highest with a rate of 51.2, followed by Broward (50.4), Miami-Dade (44.3), and Duval (31.3) counties.

Figure 2. HIV cases, by County of Residence*, Florida, 2008



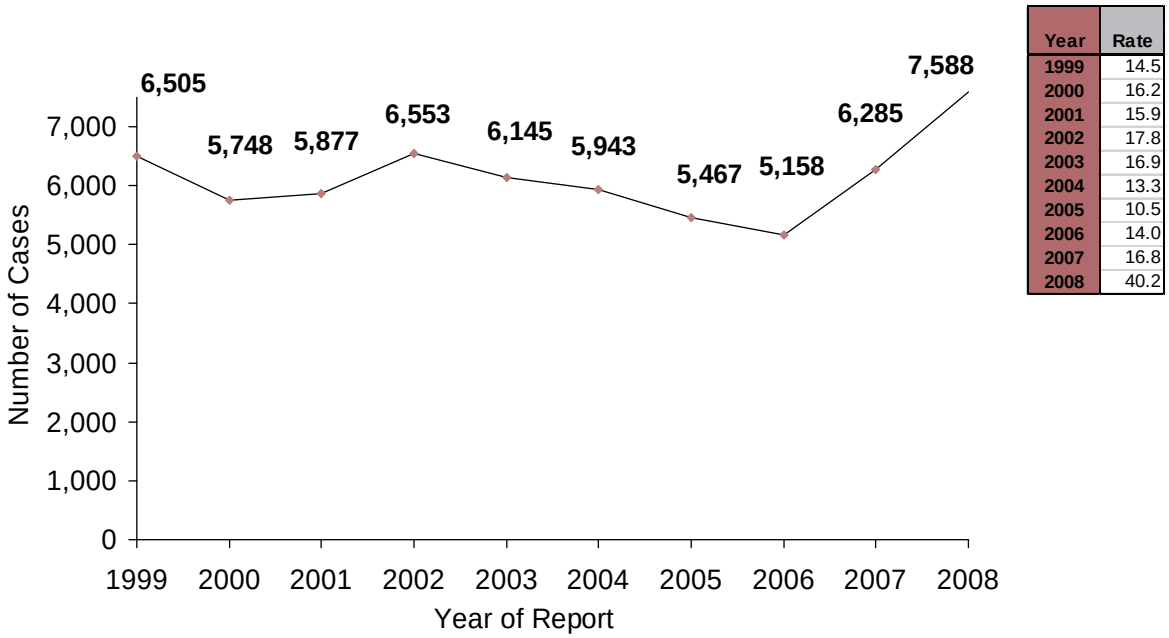
Based on 2008 statewide population estimates, the 2008 state rate is 47.1 per 100,000 population.

*County totals exclude Department of Corrections cases (N=477). This map does not reflect HIV incidence. Numbers on counties are cases reported.

In 2008, at least one HIV case was reported in all but one county, and ten counties reported 100 or more cases (Figure 2). These ten counties included the same nine counties that reported the majority of AIDS cases plus Volusia County. These ten counties reported a combined total of 5,717 cases, or 80% of Florida's total reported HIV cases in 2008. The greatest numbers of HIV cases were reported from Miami-Dade, Broward, and Orange Counties. These three counties reported a combined total of 3,575 cases in 2008, or 50% of the statewide total.

Generally, reported numbers of HIV cases remained fairly stable from 1999 to 2006. The slight increase in 2002 was due to increased HIV testing statewide as part of the "Get to Know Your Status" campaign. Since that time, newly reported HIV cases have decreased each year until 2006. Enhanced reporting laws were implemented in November 2006, leading to an increase in reported cases of HIV in 2007 and 2008 (Figure 3). This change in reporting laws allowed more people to meet the case definition for newly diagnosed HIV and therefore the increase observed is not a true increase in incidence of HIV infection but rather an increase in reported cases.

Figure 3. HIV Cases and Case Rates per 100,000 Population*,
by Year of Report, Florida, 1999-2008

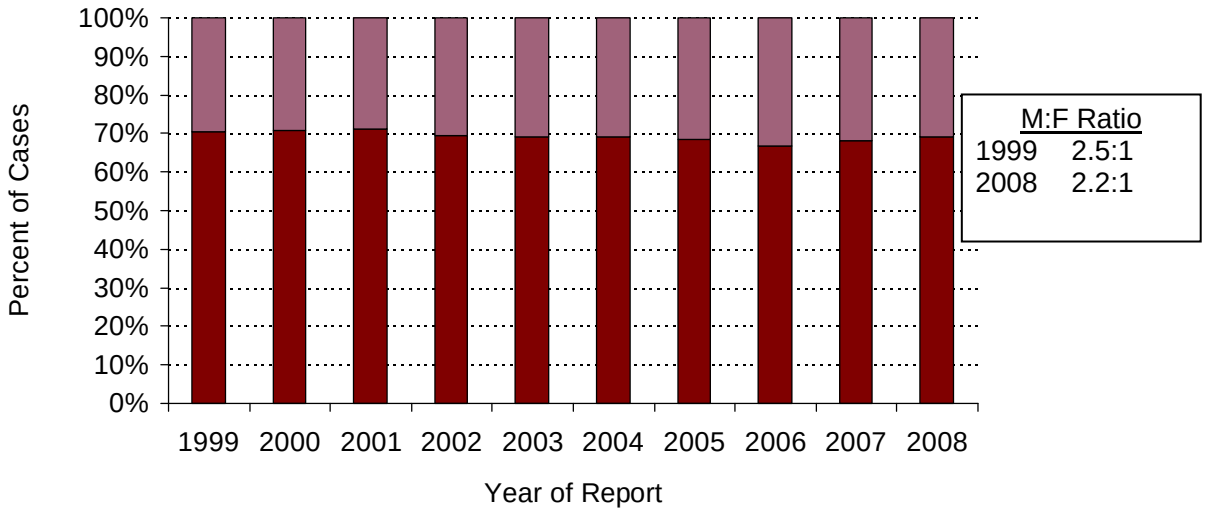


Year	Rate
1999	14.5
2000	16.2
2001	15.9
2002	17.8
2003	16.9
2004	13.3
2005	10.5
2006	14.0
2007	16.8
2008	40.2

*Rates are expressed as deaths per 100,000 population based on 2006 Population Estimates, DOH, Office of Planning, Evaluation and Data Analysis

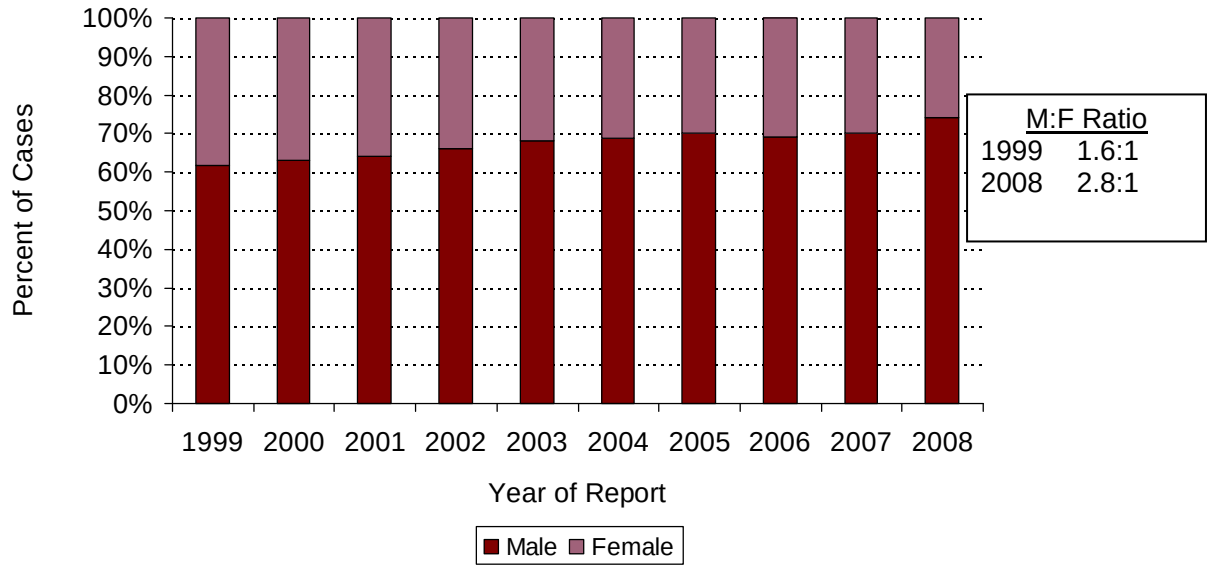
In 1999, 28% of the adult AIDS cases reported in Florida were women (Figure 4). Over the past ten years, the proportion of AIDS cases among women has increased slightly. This has resulted in a decline of the male-to-female ratio, from 2.5:1 in 1999 to 2.2:1 in 2008. In 2008, the case rate per 100,000 population was 33.5 among adult males and 16.2 among adult females, indicating that AIDS cases in this time period were still more likely to be reported among males than females in Florida.

Figure 4. Percent of Adult AIDS Cases by Sex and
Year of Report, Florida, 1999-2008



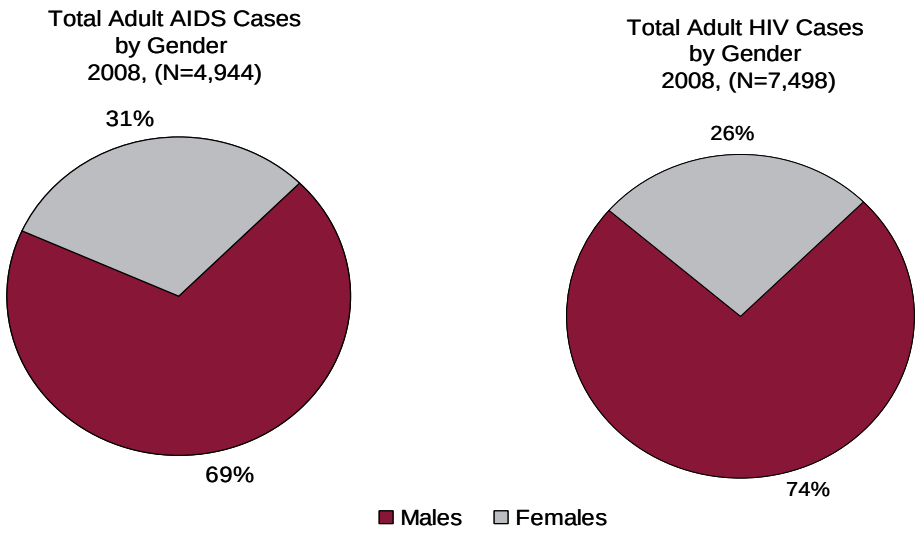
In 1999, 38% of the HIV cases reported in Florida were female (Figure 5). The proportion of HIV cases among women has decreased steadily over the past ten years. The result is an increase of the male-to-female ratio, from 1.6:1 in 1999 to 2.8:1 in 2008. This increase in the male-to-female ratio differs from the pattern seen for AIDS cases during the same time period.

Figure 5. Percent of Adult HIV Cases by Sex and Year of Report, Florida, 1999-2008



In 2008, a total of 3,415 men and 1,529 women were reported with AIDS, representing 69% and 31% of cases, respectively (Figure 6). Also in 2008, a total of 5,532 men and 1,966 women were reported with HIV infection, representing 74% and 26% of cases, respectively.

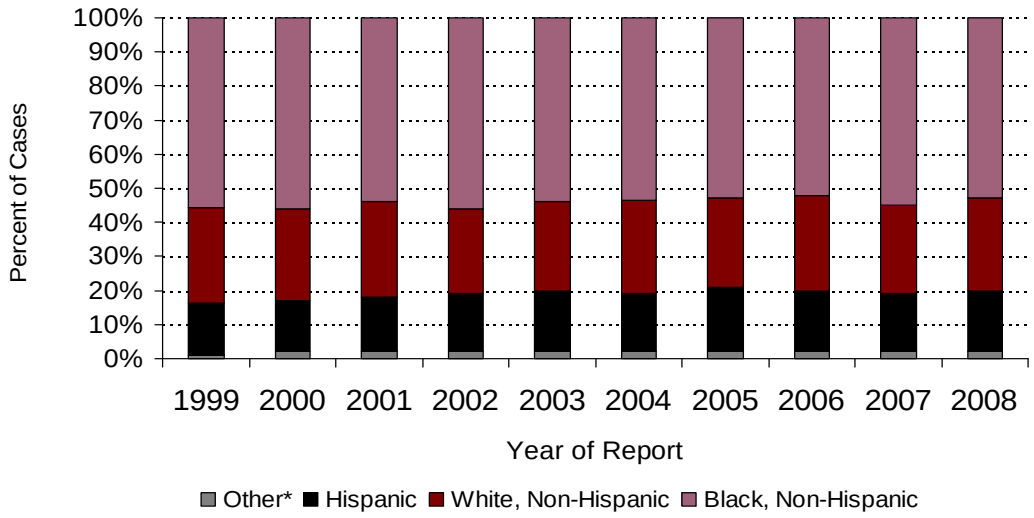
Figure 6. Percentage of Adult AIDS Cases by Sex, Florida, Compared with Percentage of Adult HIV Cases by Sex, Florida, 2008



HIV case reporting, implemented in July 1997, tends to indicate newer infections than are reflected by AIDS case data, although we do not know the proportion of diagnosed HIV cases that were recently

acquired. HIV case reports augment AIDS case data and provide good information by age, sex and race/ethnicity on persons who have been tested confidentially. Twenty-eight percent of the adult AIDS cases reported in Florida in 1999 were white, compared with 55% black and 15% 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, 1999-2008



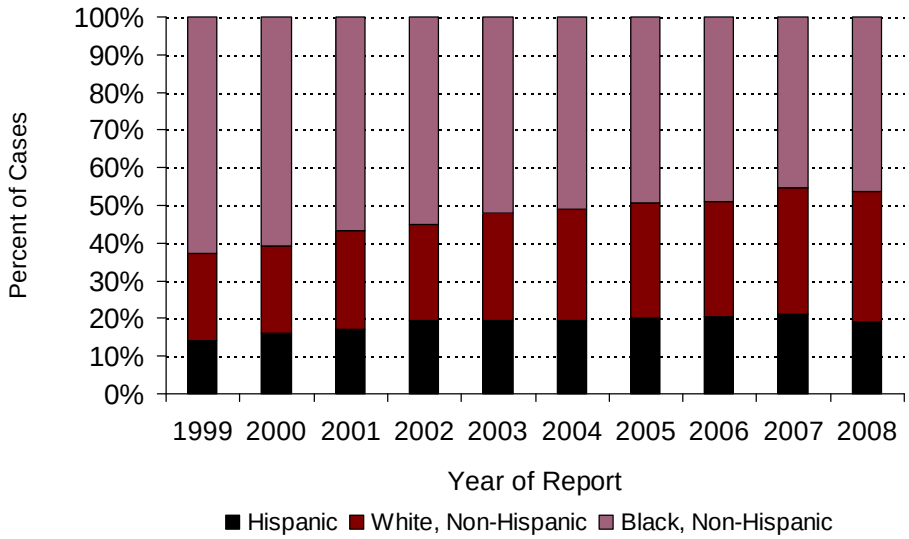
*Other includes American Indian/Alaska Native, Asian/Pacific Islander, and Multi-racial

Factors Affecting Disparities

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

Twenty-three percent of the adult HIV cases reported in Florida in 1999 were white, compared with 62% black (Figure 8). By 2008, the percentage of HIV cases increased for whites (34%) and decreased among blacks to 46%. The percentage of HIV cases among Hispanics had a slight but steady increase since 1999.

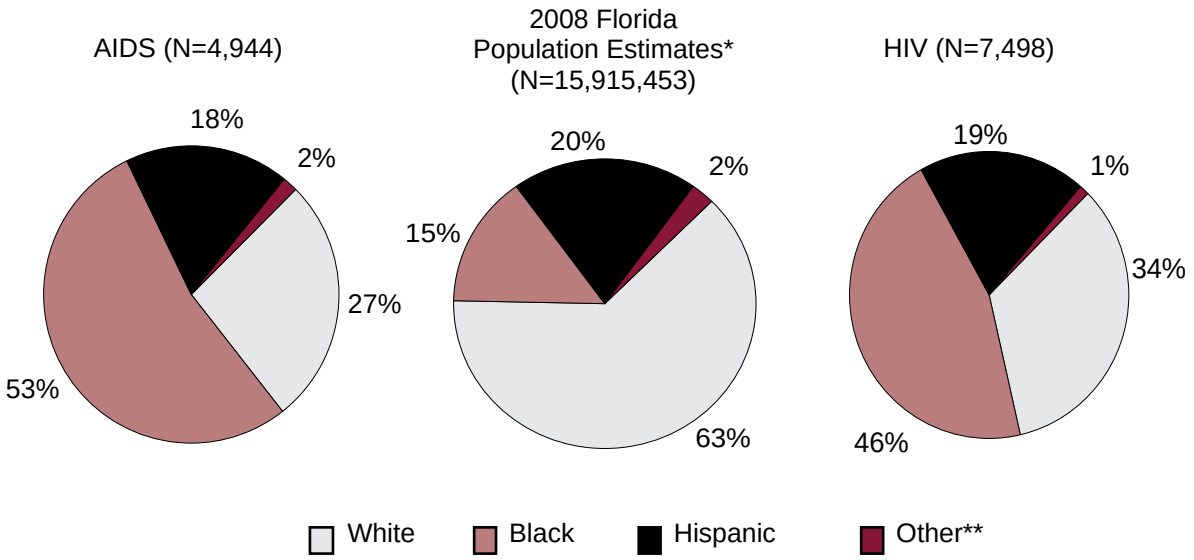
Figure 8. Percent of Adult HIV Cases by Race/Ethnicity* and Year of Report, Florida, 1999-2008



*Other races represent less than 1% of the cases and are not included

Blacks comprise only 15% of the adult population, but represent 53% of the AIDS cases and 46% of the HIV cases reported in 2008 (Figure 9). Hispanics comprise 20% of Florida's adult population, and account for 18% of the AIDS cases and 19% of the HIV cases.

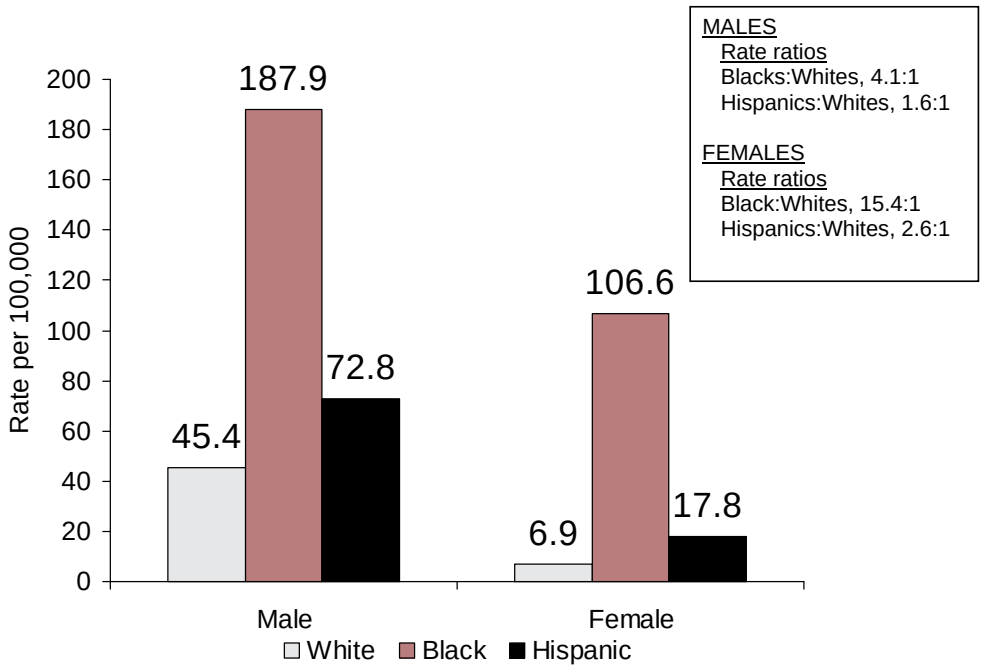
Figure 9. Percentage of Adult AIDS Cases by Race/Ethnicity, Florida, Compared with Percentage of Adult HIV Cases by Race/Ethnicity, Florida, 2008



*2008 Florida Population Estimates, Adults (Ages 13+), DOH, Office of Planning, Evaluation and Data Analysis
**Other includes Asian/Pacific Islanders, Native Alaskans/American Indians and people of mixed race.

Black men and, to an even greater extent, black women are over-represented in the HIV epidemic (Figure 10). The HIV case rate for 2008 is four times higher among black men than among white men. Among black women, the HIV case rate is 15 times higher than among white women. Hispanic male and Hispanic female rates are double the rates among their white counterparts.

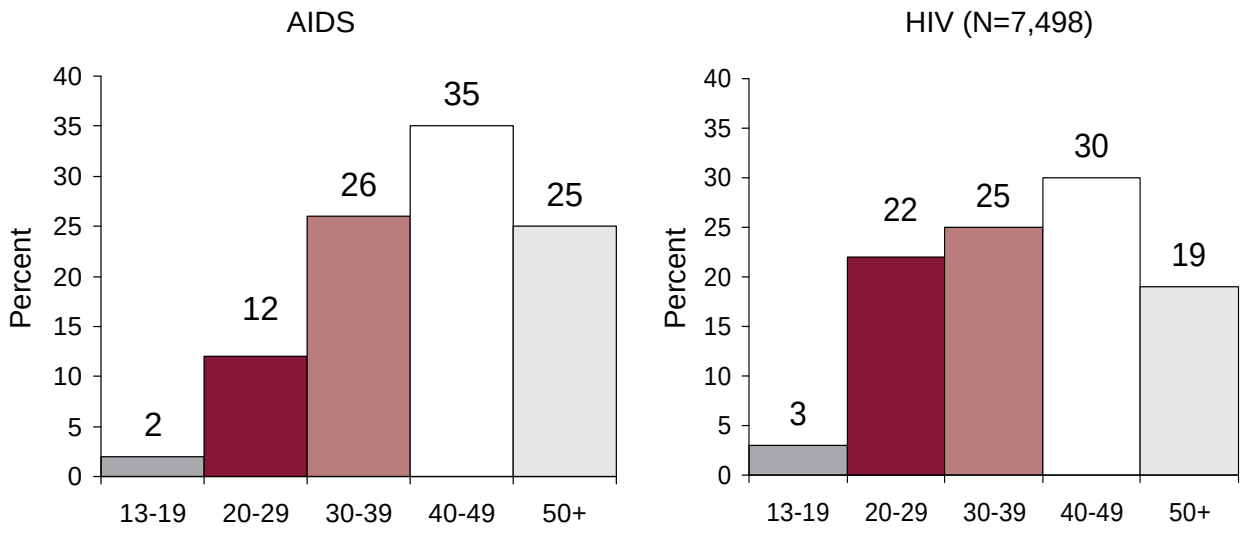
Figure 10. Adult HIV Cases and Case Rates per 100,000 Population
by Sex and Race/Ethnicity, Florida, 2008



As in previous years, the greatest proportion of AIDS cases reported in 2008 was among persons 40 to 49 years old (35%) but this age group only accounts for 16% of the total population (Figure 11). The 30-39 age group was second, with 26% of the reported AIDS cases. The 20-29 age group accounted for 12% of the cases, and the 50 and older age group accounted for 25%.

Compared with AIDS cases, a greater proportion of HIV cases in 2008 was reported among those aged 20-29 (22%), those aged 30-39 (25%), and those aged 40-49 (30%). There was a lower proportion among those aged 13-19 (3%) and a higher proportion among those aged 20-29 years (22%), but a lower proportion for those aged 50 and older (19%), 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, 2008



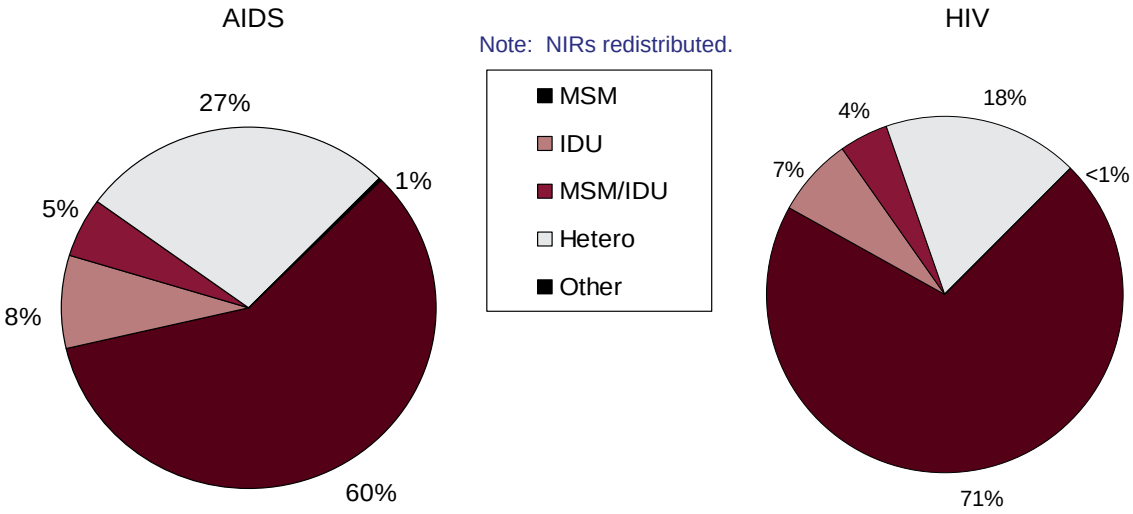
HIV/AIDS by Mode of Exposure

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. Cases reported with no identified risks (NIRs) have been redistributed into known risk categories, based on previous patterns of re-classification for NRIs once a risk has been identified.

Males

Among the male AIDS and HIV cases reported for 2008, MSM was the most common risk factor (60% and 71%, respectively) followed by cases with a heterosexual risk factor (27% for AIDS and 18% for HIV) (Figure 12). People with an IDU risk factor are similar among AIDS cases (8%) and HIV cases (7%).

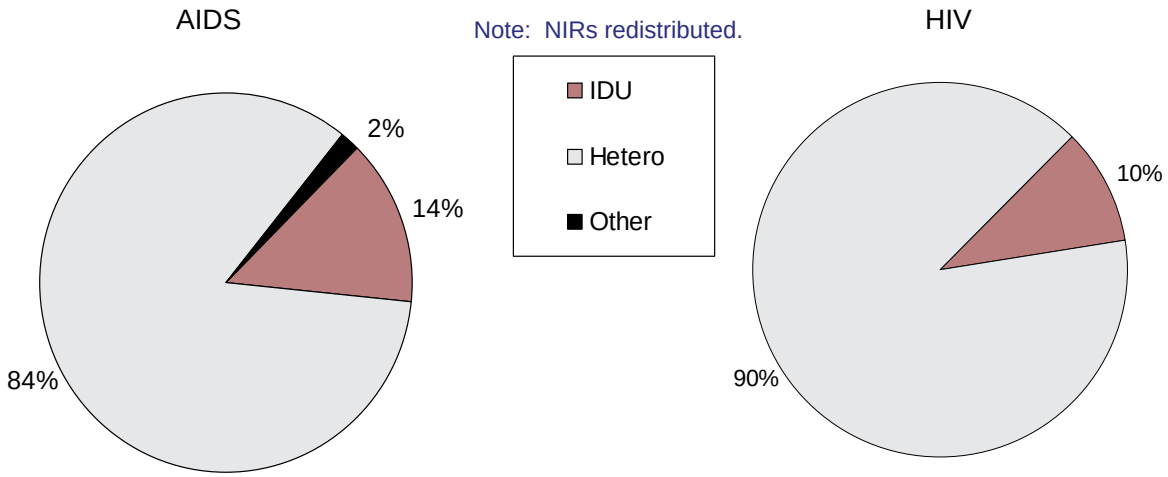
Figure 12. Adult Male AIDS and HIV Cases by Mode of Exposure, Florida, 2008



Females

Among the female AIDS and HIV cases reported for 2008, heterosexual contact was the highest risk factor (Figure 13).

Figure 13. Adult Female AIDS and HIV Cases by Mode of Exposure, Florida, 2008



Prevalence Estimates of HIV/AIDS

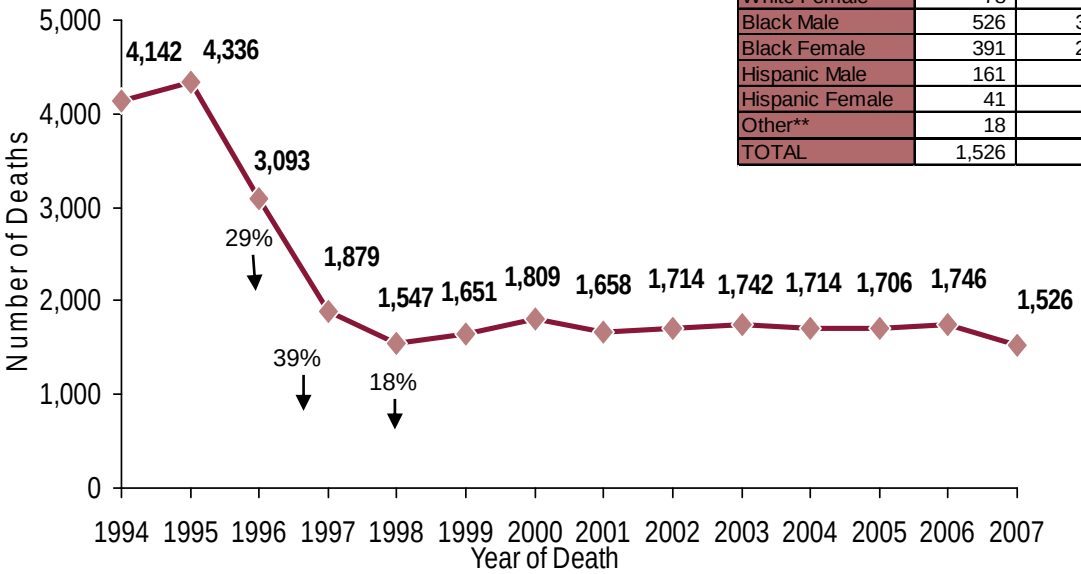
Assessment of the extent of the HIV epidemic is an important step in community planning for HIV prevention and HIV/AIDS patient care. The HIV prevalence estimate, the estimated number of persons living with HIV infection, includes those living with a diagnosis of HIV or AIDS and those who may be infected but are unaware of their serostatus. Approximately 1,039,000 to 1,185,000 persons are currently living with HIV infection in the U.S. Florida has consistently reported 10%-12% of the national AIDS morbidity and currently accounts for 11% of all persons living with AIDS in the U.S. The Florida Department of Health now estimates that approximately 125,000 persons, or roughly 11.7% of the national total of persons living with HIV infection, are currently living in Florida as of the end of 2007.

Impact of HIV-related Deaths

As of December 31, 2008 a total of 114,057 AIDS cases had been reported in Florida. Of these cumulative cases, 62,565 (55%) were known to have died.

Annual numbers of HIV/AIDS deaths decreased markedly from 1995 to 1998, associated with the advent of highly active anti-retroviral therapy (HAART) in 1996. A leveling of the trend since 1998 may reflect factors such as viral resistance, late diagnosis of HIV, adherence problems, and lack of access to or acceptance of care (Figure 14). In 2007, the number of HIV/AIDS deaths decreased by 13% from the previous year, which is a 65% decrease since the peak year in 1995. Decreases among males and females were observed in all racial/ethnic groups, except white females where there was no change at all. Racial/ethnic disparities are evident in the death rate data.

Figure 14. Resident HIV deaths, by Year of Death, Florida, 1994–2007



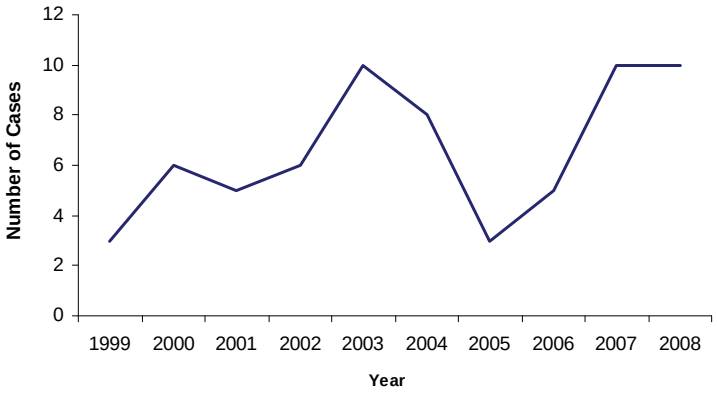
Race/Ethnicity	2007	
	No.	rate *
White Male	311	5.6
White Female	78	1.3
Black Male	526	38.1
Black Female	391	26.3
Hispanic Male	161	8.8
Hispanic Female	41	2.2
Other**	18	3.9
TOTAL	1,526	8.3

*Rates are expressed as deaths per 100,000 population based on 2006 Population Estimates, DOH, Office of Planning, Evaluation and Data Analysis

Brucellosis

Brucellosis: Crude Data	
Number of Cases	10
2008 incidence rate per 100,000	0.05
% change from average 5-year (2003-2007) reported cases	38.89
Age (yrs)	
Mean	49
Median	50.5
Min-Max	36 - 69

Figure 1.
Brucellosis Cases by Year Reported, Florida, 1999-2008



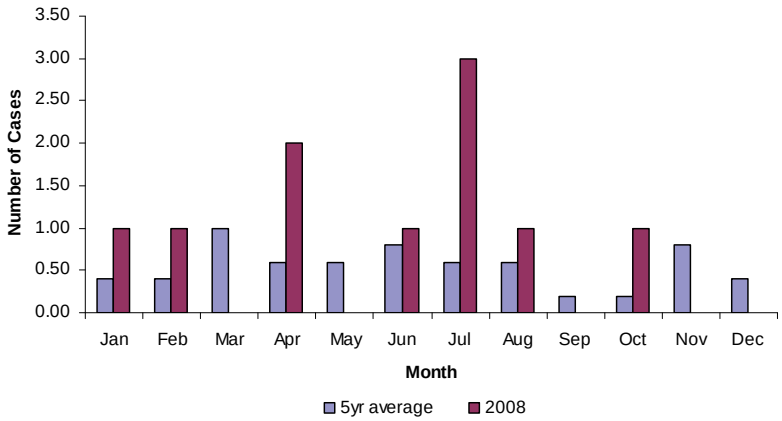
Disease Abstract

A total of 76 cases of human brucellosis were reported in Florida from 1999 to 2008, of which 67 (88%) were classified as confirmed. There were 10 cases reported in 2008, nine confirmed and one probable, compared with a 10 year annual average of 6.3. Speciation was provided in nine cases; seven *Brucella suis* and two *B. melitensis* infections were identified. Site of exposure was determined for all of the cases from 2008, with eight reported as being acquired in Florida and both *B. melitensis* cases being acquired in Mexico. Men accounted for all cases except for one infection acquired outside the U.S. (90% male). Affected people ranged from 36-69 years old. Incidence was highest in those aged 35-44 and 45-54, representing eight of the ten cases. Risk factors identified in the nine of the ten cases include: hunting feral pigs and/or handling carcasses with open cuts while not using appropriate personal protective equipment (six cases); consuming unpasteurized milk products (two, both imported); and eating meat from wild animals including pigs (one). The tenth case (culture positive for *B. suis*) denied pertinent exposure history other than eating semi-soft cheese made from cow's milk acquired from U.S. states reported to be free of *B. suis,* and also had immigrated 15 years previously from a country (Cuba) with a high prevalence of *B. suis*.

Hog hunting was a significant risk factor, with six of ten cases identified in 2008 as being associated with that activity. A seventh case was associated with preparing or eating meat from wild pigs or other wild animals. Cases acquired outside Florida and the U.S. were most likely to be associated with eating unpasteurized milk products. In addition, cultures from patients with *Brucella* infections posed a significant exposure risk for laboratory personnel. There were at least eight laboratory workers in private laboratories that were exposed to *Brucella* cultures while working with diagnostic specimens in 2008.

Brucella has potential for relapse or chronic infection, particularly for patients who do not receive complete and appropriate treatment, patients who delay treatment, and patients with underlying disease conditions. A hog hunter who was in remission for cancer had been diagnosed with brucellosis infection in 2007 and initially responded well to six weeks of antibiotic treatment following primary diagnosis. In the spring of 2008, when the patient's cancer went out of remission, a relapse of *Brucella* symptoms occurred and *Brucella suis* was isolated from his blood (not included in the 2008 case count). Two additional patients reported to have *B. suis* infections in 2008 were still symptomatic and culture-positive several months following primary diagnosis.

Figure 2.
Brucellosis Cases by Month of Onset, Florida, 2008



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. Outreach should be done for laboratory personnel to ensure knowledge of appropriate specimen handling (aerosol protection), and clinicians should be reminded to always forewarn laboratories working with patient culture samples if *Brucella* is in the differential diagnosis. Laboratories should be periodically reminded of state and federal confirmation and reporting requirements for this select agent. Continued surveillance and management programs for *Brucella* sp. in domestic livestock will keep exposure risk 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*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

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

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

Additional Resources

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

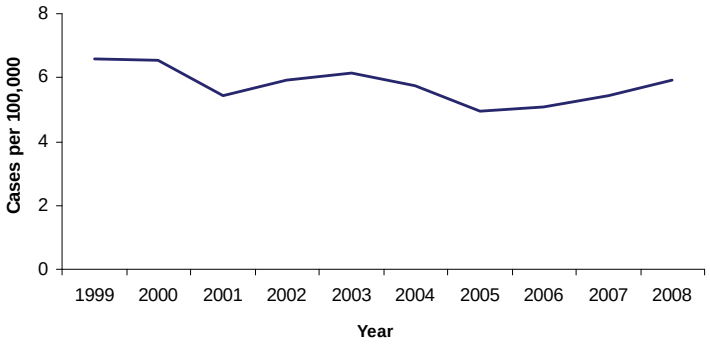
Additional information can also be found at the United States Department of Agriculture, Animal and Plant Health Inspection Services website at http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/

As well as the 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	1,118
2008 incidence rate per 100,000	5.92
% change from average 5-year (2003-2007) incidence rate	8.25
Age (yrs)	
Mean	31.38
Median	28
Min-Max	<1 - 93

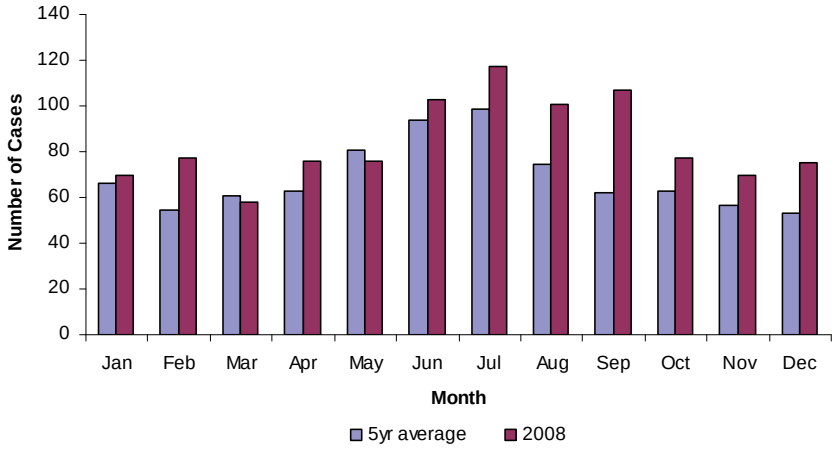
Figure 1.
Campylobacteriosis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

The incidence rate for campylobacteriosis had declined slightly from 1999 through 2005, but has been increasing since 2005 (Figure 1). In 2008, there was an 8.25% increase in comparison to the average incidence from 2003-2007. A total of 1,118 cases were reported in 2008, of which 95.89% 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 the fall of 2008 compared to the previous 5-year average. In 2008, the number of cases exceeded the previous 5-year average in all months of the year except March and May (Figure 2). The highest incidence occurs among infants <1 year old and children aged 1-4 years (Figure 3). Overall, 5.72% of the campylobacteriosis cases were classified as outbreak-related as compared to 7.2% in 2007.

Figure 2.
Campylobacteriosis Cases by Month of Onset, Florida, 2008



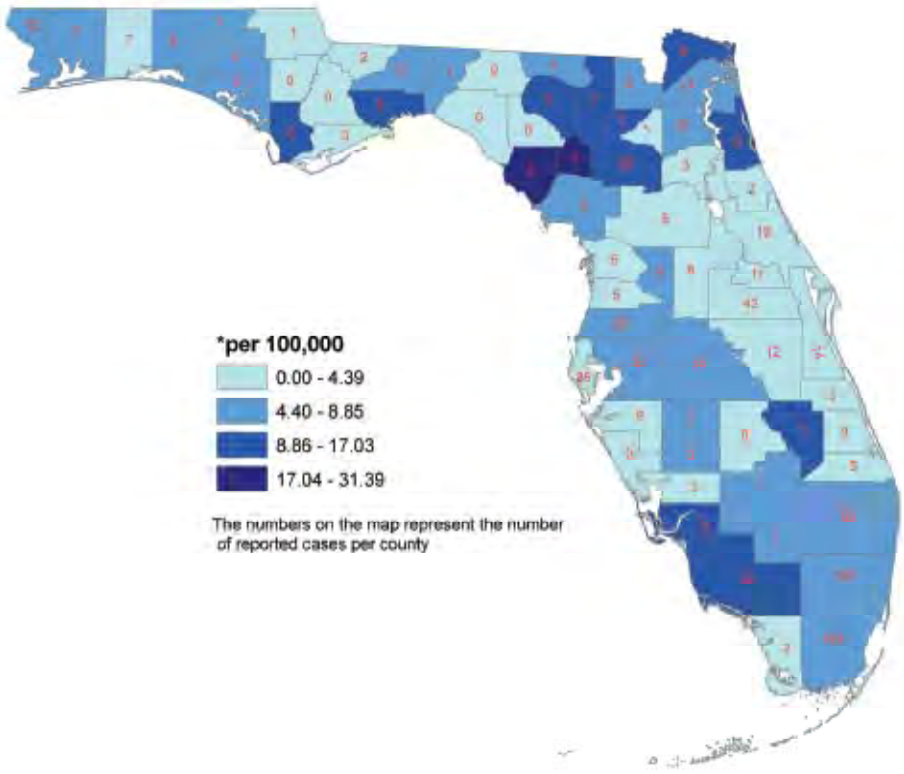
Campylobacteriosis was reported in 60 of the 67 counties in Florida. Counties in north-central and southwestern Florida reported the highest incidence rates.

Figure 3.
Campylobacteriosis Incidence Rate by Age Group, Florida, 2008

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.

Campylobacteriosis Incidence Rate* by County, Florida, 2008



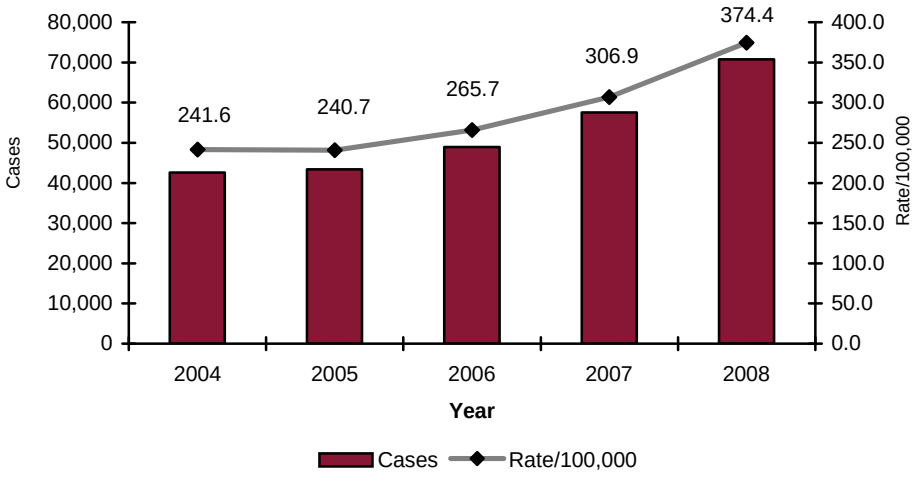
References
David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

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

Disease Abstract
Chlamydia remains the most commonly reported sexually transmitted infection in Florida and the most prevalent sexually transmitted bacterial infection reported among 15-24 year olds. Reported chlamydia cases in Florida have increased 66% since 2004 (Figure 1). In 2008, there were 70,751 chlamydia cases reported in Florida, or 374.4 cases per 100,000 population. Although the prevalence of chlamydia is the highest among those under 25 years of age, specific populations, i.e. females and minorities, bear a huge burden of this infection. The vast differences in adverse outcomes, higher susceptibility to infection with STDs, and a combination of other factors leave adolescents and young adults disproportionately affected with chlamydia compared to older populations; however, chlamydia continues to increase in all age groups.

Figure 1. Reported Cases of Chlamydia by Year, Florida, 2004-2008



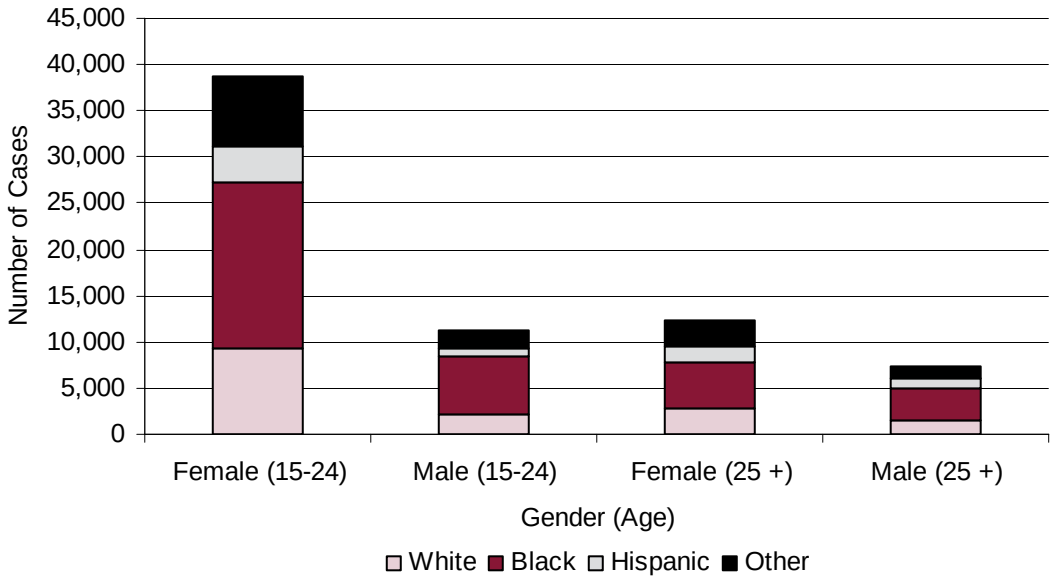
Persons between the ages of 15-24 only represented 12% of Florida's population in 2008, yet account for 71% of all reported chlamydia cases in Florida. In this age cohort, over 50,000 cases were reported in 2008 (Table 1). From 2007 to 2008, reported cases in this population increased by 21.8%. These Florida-specific trends parallel national data which also indicate infection is most prevalent in women under the age of 25. In 2008 and preceding years, the highest number of cases in females was reported in the 15-24 age group. When that age group is broken down further, the highest rate is among females 15-19 (3,280.0 per 100,000 population), which is the highest rate for any gender/age grouping. The rate for women in the 20-24 age group was slightly lower at 3,238.7 per 100,000 population.

Table 1. Rate/100,000 For Select Age Groups, 2008		
Age Groups	**Cases Reported**	**Rate/100,000**
15-19	23,739	1,946.1
20-24	26,456	2,168.6
25-29	11,305	972.6
30-34	4,315	379.0
35-39	2,050	169.5
40-44	1,027	78.6

Much of the difference between the rates by gender is due to the strong clinical recommendations for women and the lack of screening in men. Although the rate of chlamydia in men is lower overall than it is in women, similar age distributions are seen within each gender (Figure 2). Men 15 to 24 years old had almost double the number of reported cases compared to those over 25, which is similar to what is seen in women. However, when that age group is broken down further, the incidence is reversed from what it is in women. In 2008, 20 to 24 year old men had the highest rate among male age groups (1,136.9 per 100,000 population). This rate was trailed by a rate of 654.5 per 100,000 population for males between the ages of 15-19. The most important risk factor for chlamydial infection is age. When data is examined by age in single years, rather than as age groups, reported cases peaked at the age of 19 with a gradual decline in number of cases as age in years increased above that age.

Disparities among racial and ethnic groups exist in the number of cases reported annually. Non-Hispanic black female adolescents and young adults have higher rates compared to non-Hispanic white and Hispanic populations in Florida. Among women, the case rate for non-Hispanic black 15 to 24-year-olds is nearly five times higher than the second highest rate, which is in non-Hispanic whites 15-24 (733.68 per 100,000 population). In all cases reported, non-Hispanic blacks accounted for 47.1% of the chlamydia cases in 2008, non-Hispanic whites accounted for 22.6% of cases, Hispanics (white or black) accounted for 10.4% of cases, and people in other or unidentified racial-ethnic groups accounted for 19.9% of cases.

Figure 2. Reported Cases of Chlamydia by Race/Ethnicity, Gender, Age, 2008



Prevention

The Centers for Disease Control and Prevention (CDC) recommends annual chlamydia screening for all sexually active women under age 26, as well as older women with risk factors such as new or multiple sex partners. Routine screening is necessary for these populations because approximately three quarters of infected women and greater than half of infected men have no symptoms. If untreated, chlamydia may lead to complications including infertility and ectopic pregnancy.

Treating infected patients prevents transmission to sex partners. In addition, treating pregnant women usually prevents transmission of *C. trachomatis* to infants during birth. Treatment of sex partners helps to prevent reinfection of the index patient and infection of other partners. Co-infection with *C. trachomatis* frequently occurs among patients who have gonorrhea; therefore, presumptive treatment of those patients for chlamydia is recommended. Main treatment options include azithromycin (1 g orally in a single dose) or doxycycline (100 mg orally twice a day for seven days). Recent studies show that azithromycin and doxycycline were equally effective in treating chlamydia with microbial cure rates of 97% and 98%, respectively. Doxycycline costs less than azithromycin and has no higher risk for adverse events; however, if it is not likely that a patient will comply with the multi-day dosing schedule for doxycycline, azithromycin should be prescribed. Erythromycin, ofloxacin, and levofloxacin are all effective in treating chlamydia infection but have disadvantages such as more severe side effects or cost. Other quinolones either are not reliably effective against chlamydia infection or have not been evaluated adequately.

The CDC recommends that to maximize compliance with recommended therapies, medications for chlamydia infections should be dispensed on site, and the first dose should be directly observed. Additionally, people being treated for chlamydia should abstain from sexual intercourse for seven days after their single dose of azithromycin or until completion of the 7-day regimen for one of the other recommended medications. To minimize the risk for re-infection, patients should abstain from sexual intercourse until all of their sex partners are treated.

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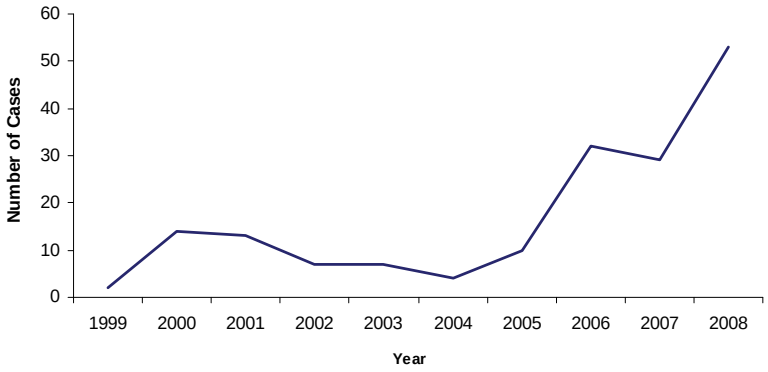
Ciguatera Fish Poisoning

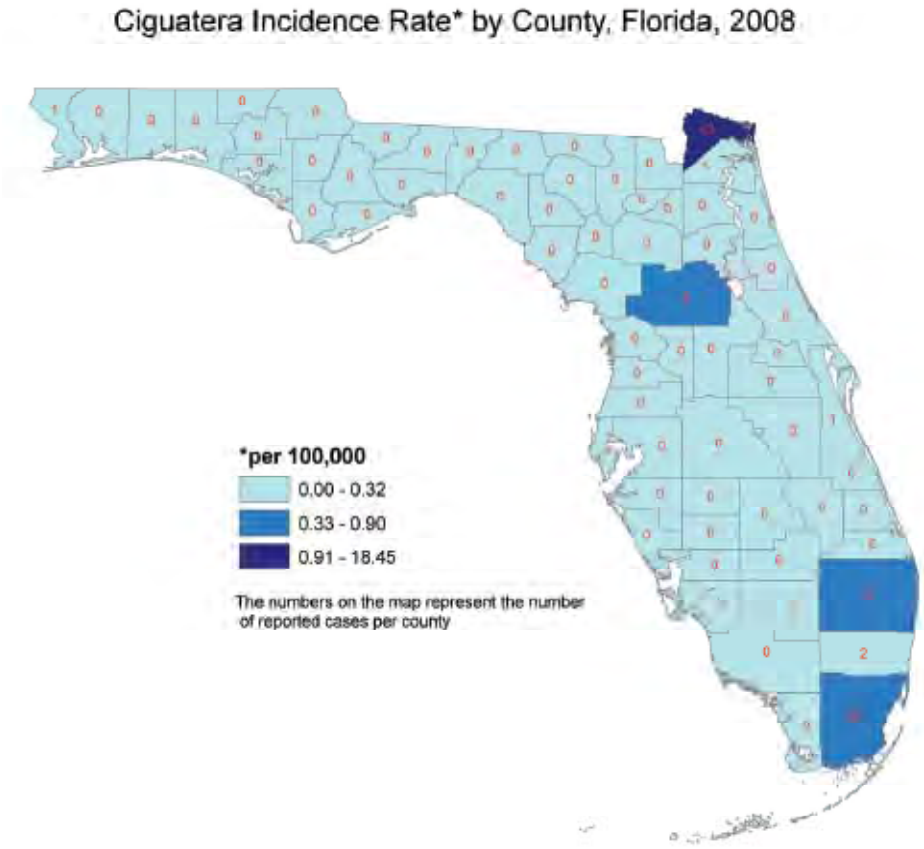
Ciguatera: Crude Data	
Number of Cases	53
2008 incidence rate per 100,000	0.28
% change from average 5 year (2003-2007) incidence rate	207.73
Age (yrs)	
Mean	46
Median	48
Min-Max	5 - 94

Figure 1.
Ciguatera Cases by Year Reported, Florida, 1999-2008



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 likely that there is significant under-reporting. In 2008, a total of 11 ciguatera outbreaks were reported in Florida between January-July 2008, resulting in 51 cases. In comparison, from January-July of 2007, six ciguatera outbreaks were reported and seven were reported in 2006. The state's 10 year average during 1998-2007 was 3.1 outbreaks during this same time period. In six of 2008's 11 ciguatera outbreaks, ciguatoxin was laboratory confirmed. Species of fish implicated in these outbreaks include: grouper (7), barracuda (2), eel (1), and mahi-mahi (1). The Food and Drug Administration (FDA) product trace-back identified a common seafood distributor in two of the seven grouper outbreaks. Grouper sold by that implicated vendor was of Bahamian origin. 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.



References

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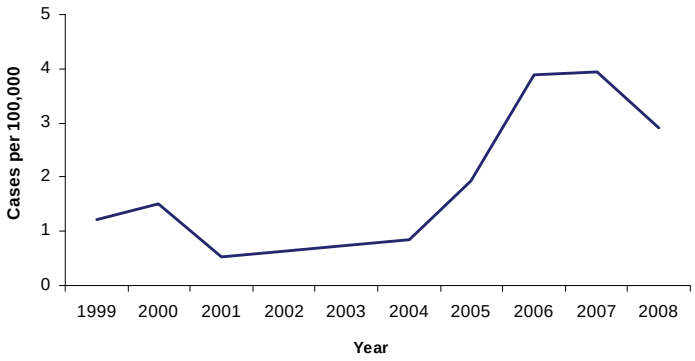
Cryptosporidiosis

Cryptosporidiosis: Crude Data	
Number of Cases	549
2008 incidence rate per 100,000	2.91
% change from average 5-year (2003-2007) incidence rate	25.54
Age (yrs)	
Mean	27.86
Median	25
Min-Max	<1 - 92

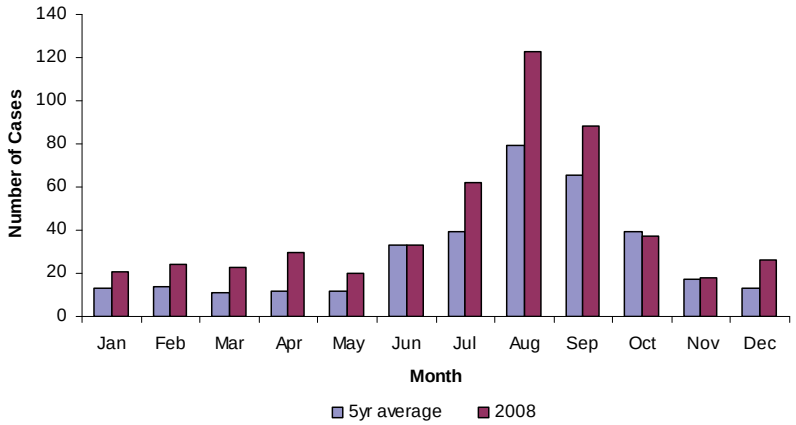
Figure 1.
Cryptosporidiosis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

A total of 549 cases of cryptosporidiosis were reported in 2008, of which 88.52% were classified as confirmed. Thirteen percent of all reported cases were classified as outbreak-related, which is a decrease from 16% the previous year; 5% 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). However, in 2008 there was a decrease in the incidence rate (2.91 cases/100,000 population) below that in 2006. Seasonal increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water settings is more common. In 2008, the number of cases exceeded the previous 5-year average in all months but three, 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 which would explain the increase in cases seen between 2004 and 2007.

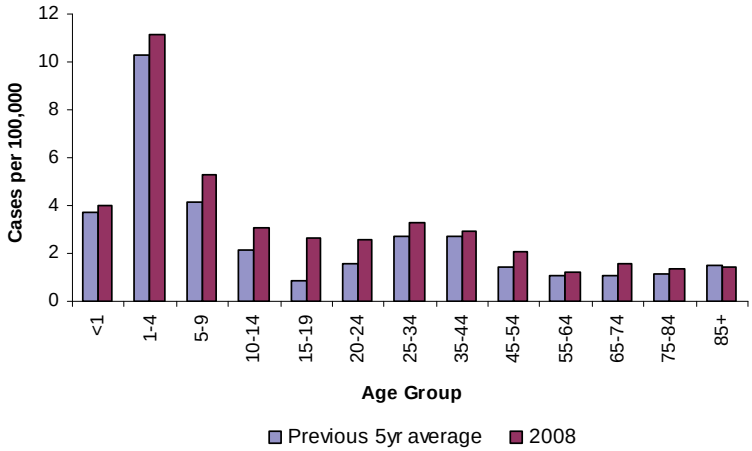
Figure 2.
Cryptosporidiosis Cases by Month of Onset, Florida, 2008



Rates are higher among children <10 years old, with the highest rates occurring in the 1-4 age group (20.43 per 100,000) (Figure 3). However, there has been a significant increase in incidence among those aged 10-24 years above the previous 5-year average. In 2008, approximately 29% of reported cases among those less than five years old attended day care centers. The smaller second peak in incidence among adults 20 to 44 years old may be attributed to family contact with infected children (Figure 3).

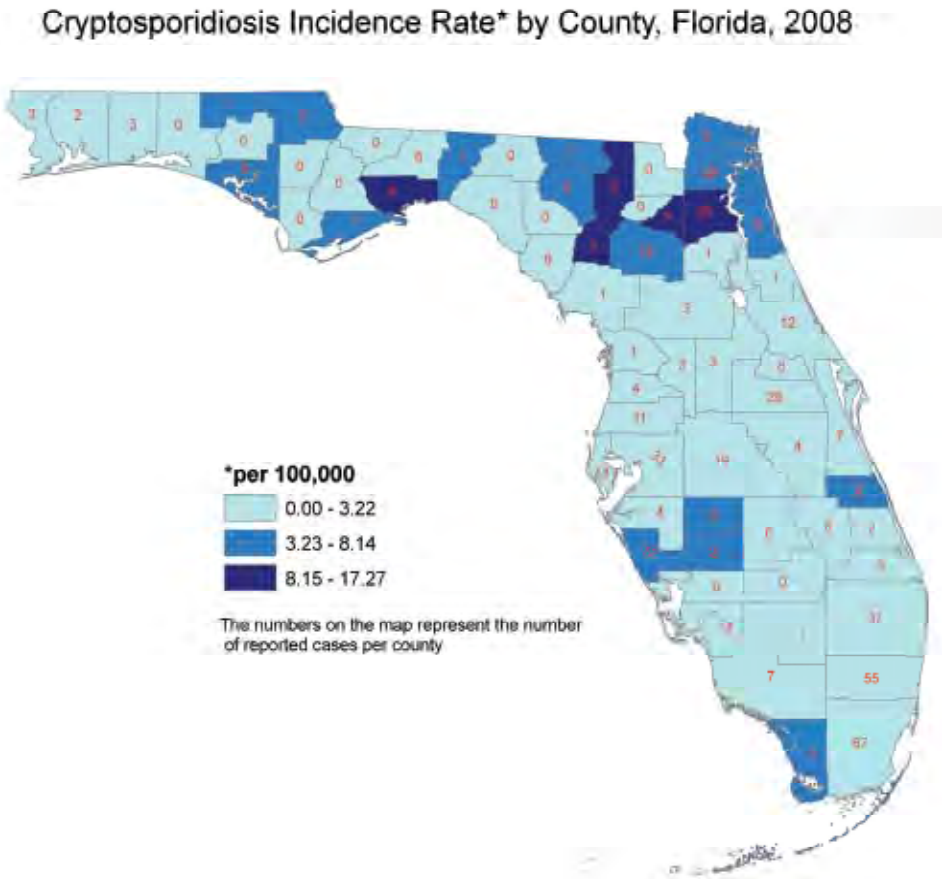
Cases of cryptosporidiosis were reported in 51 of the 67 counties in Florida. The county with the highest incidence, Clay, reported 24.1% of their cases as being outbreak-associated. Sarasota County had a lower incidence rate, but reported 76.5% of their cases as being associated with a single outbreak among swim team participants. Wakulla County reported all four of their cases as outbreak associated and they were all linked to a single daycare that has “waterplay”. The children were allowed access to a small waterslide and play pool at the daycare location. Additional counties with a high proportion of outbreak associated cases include Duval (41.2%) and Broward (12.7%).

Figure 3.
Cryptosporidiosis Incidence Rate by Age Group, Florida, 2008



Prevention

The likelihood of contracting cryptosporidiosis can be reduced by practicing good hand hygiene, such as washing hands before handling or eating food and after diaper changing. Water in recreational settings, such as swimming pools or water parks, should not be ingested or swallowed. Outbreaks associated with recreational water, especially water parks and interactive fountains, can be prevented by following established guidelines for management of these facilities. The likelihood of contracting cryptosporidiosis in a recreational water setting can be reduced by practicing healthy swimming behaviors. Avoid swallowing pool water or even getting it in your mouth. Shower before swimming and wash your hands after using the toilet or changing diapers. Take children on bathroom breaks or check diapers often. Change diapers in a bathroom and not at poolside and thoroughly clean the diaper changing area. Protect others by not swimming if you are experiencing diarrhea (this is essential for children in diapers). Swimming is not recommended for at least two weeks after diarrhea stops.



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

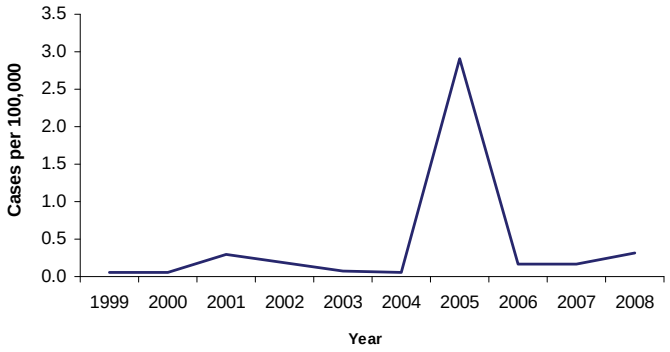
Additional Resources

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	59
2008 incidence rate per 100,000	0.31
% change from median 5 year (2003-2007) reported cases	81.23
Age (yrs)	
Mean	49.75
Median	49
Min-Max	3 - 83

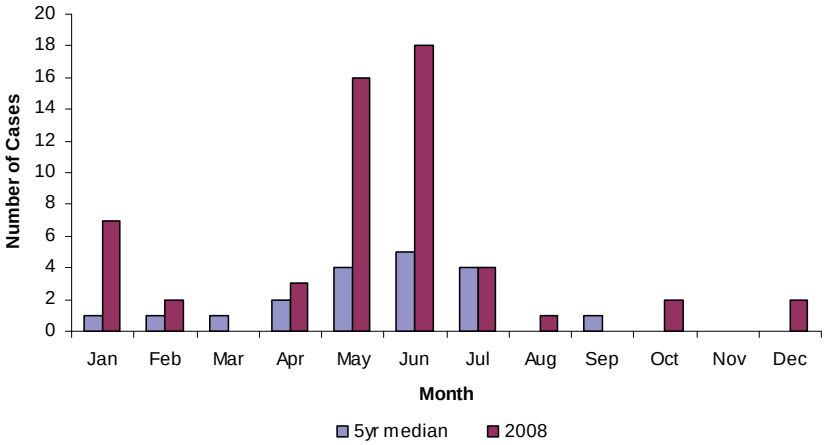
Figure 1.
Cyclosporiasis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

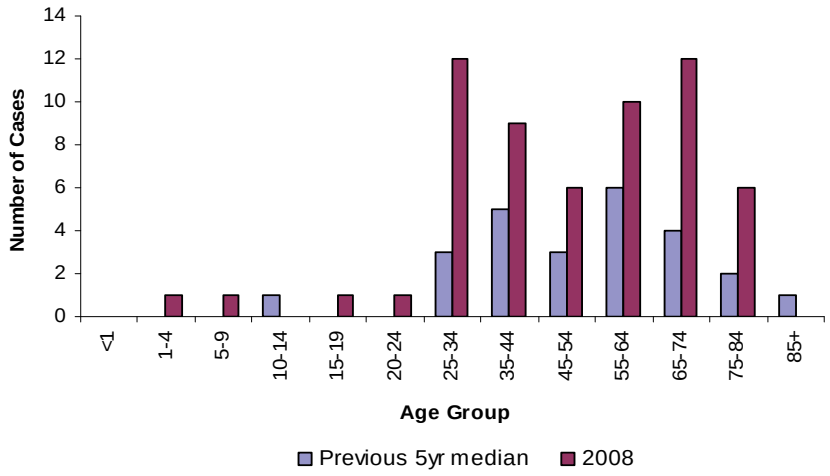
With the exception of a large outbreak of cyclosporiasis in 2005 (493 cases from Florida; see the notable outbreaks section of the 1997-2006 Annual Morbidity Statistics Report for more details), the incidence rate for cyclosporiasis has remained stable in recent years (Figure 1). In comparison to the median incidence for the last five years, the incidence in 2008 has increased by 81.23%, with a total of 59 cases reported. Thirteen percent of the cases reported in 2008 were considered outbreak-associated. In 2008, the number of cases by month of disease onset met or exceeded the previous 5-year median during all months of the year when cases were reported (Figure 2). The peak in late spring and early summer may reflect the seasonal variation of endemic cyclosporiasis in countries who export fruits and vegetables to the U.S. However, the large increase in cases occurring in May and June of 2008 prompted the Food and Waterborne Disease Program within the Florida Department of Health to launch a case-control study aimed at discovering if there was a common source for these cases. No definitive conclusion was reached regarding these cases and the case numbers returned to their expected levels shortly after. Please see the “Summary of Notable Outbreaks and Case Investigations” section for further details.

Figure 2.
Cyclosporiasis Cases by Month of Onset, Florida, 2008

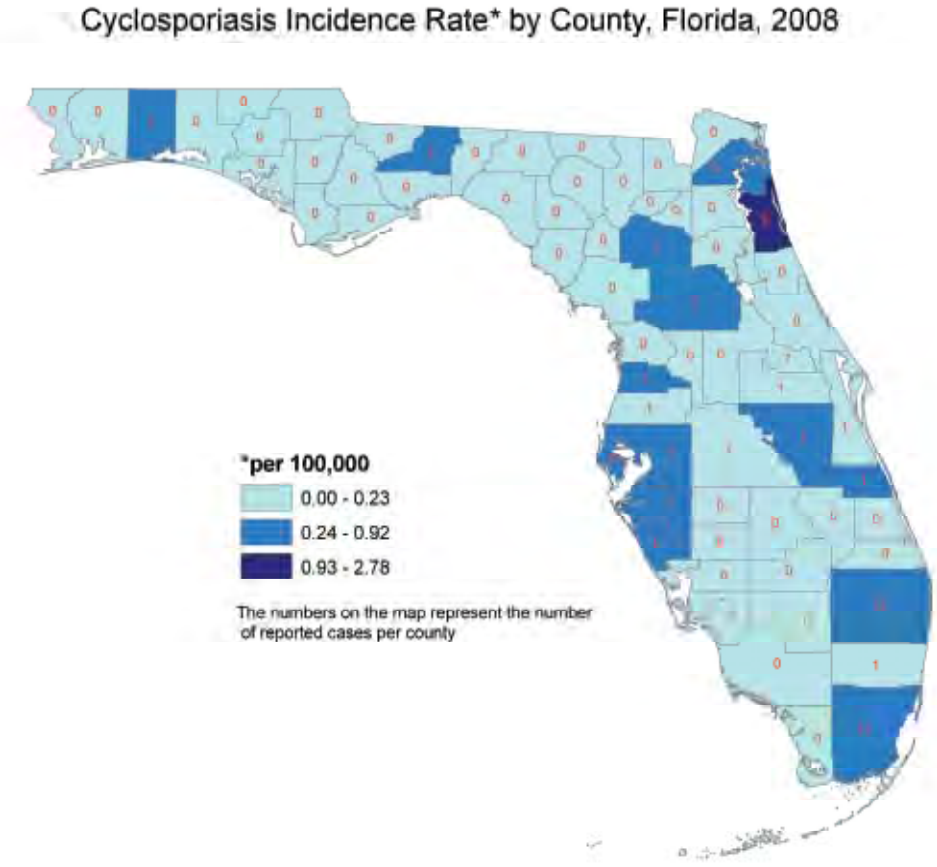


In 2008, 93% of the cases were reported in those who were between the ages of 25 and 84, with the largest increase occurring in the 25-34 age group (Figure 3).

Figure 3.
Cyclosporiasis Cases by Age Group, Florida, 2008



Cyclosporiasis was reported in 21 of the 67 counties in Florida, with the largest number of cases occurring in Palm Beach County.



Additional Resources

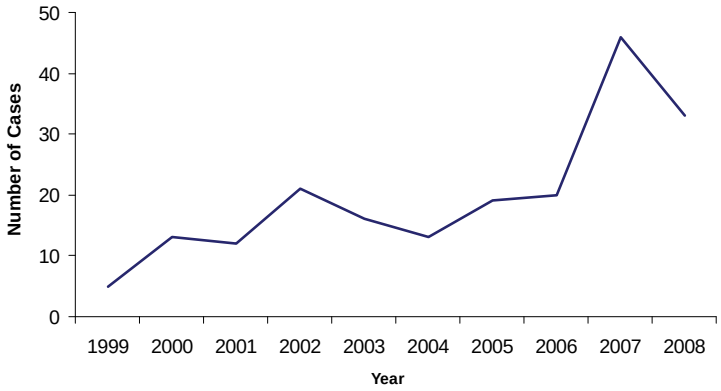
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dpd/parasites/cyclospora/default.htm

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

Dengue

Dengue Fever: Crude Data	
Number of Cases	33
2008 incidence rate per 100,000	0.17
% change from average 5-year (2003-2007) incidence rate	37.82
Age (yrs)	
Mean	43.85
Median	40
Min-Max	<1 - 80

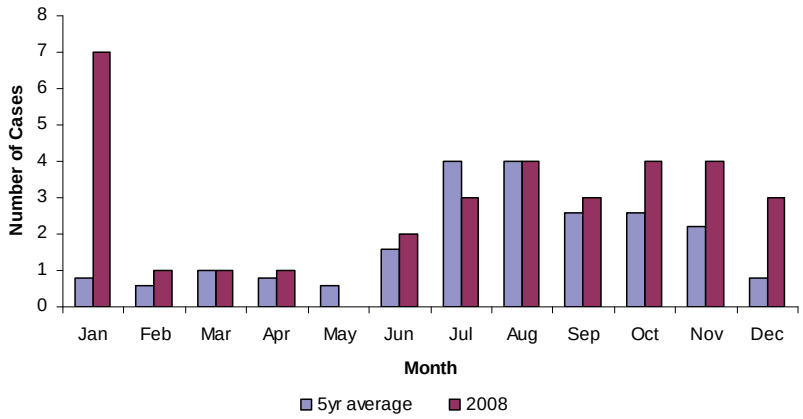
Figure 1.
Dengue Fever Cases by Year Reported, Florida, 1999-2008



Disease Abstract

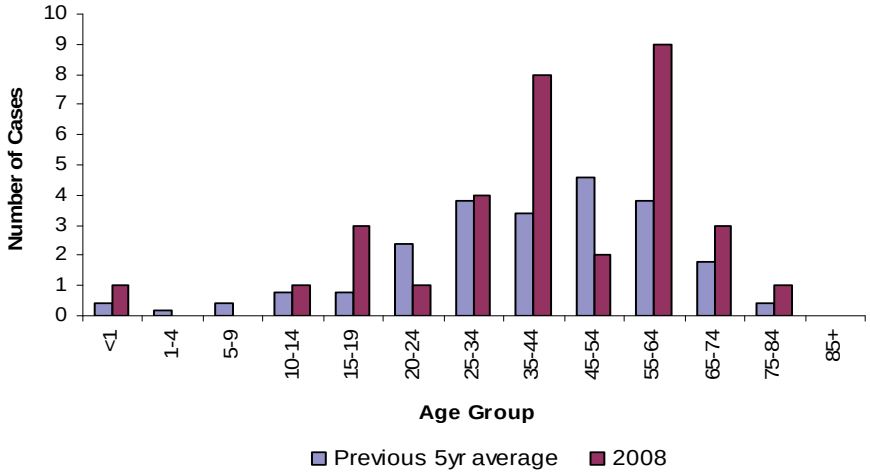
Prior to 1998, dengue virus (DENV) infection was not often considered among diagnoses for ill travelers returning from areas where dengue is endemic. A 1998 study on an active surveillance program for recent dengue infections in Florida led to an increase in awareness as well as enhanced laboratory capacity to test for the viruses. Since 1998, dengue cases have been reported in Florida each year (Figure 1). The number of imported cases reported typically ranged from 10-20 per year until 2007 when 46 cases were reported; 33 cases were reported in 2008. This increase may be due to epidemics outside the continental U.S., including Puerto Rico, the Dominican Republic, Central and South America, and Asia, which began in 2007 and are ongoing in many instances. Increased activity in Puerto Rico and the Caribbean is especially concerning for Florida given the many Floridians that travel to the area. Though local transmission has not been reported in recent years, the disease was previously endemic to Florida and competent mosquito vectors are still present. Typically, disease onset for travelers returning to Florida peaks during mid-summer and fall, though cases are reported year-round (Figure 2). There were a large number of cases reported in January; this may have been due to holiday travel as well as late reporting as several cases who had onset dates in 2007.

Figure 2.
Dengue Fever Cases by Month of Onset, Florida, 2008



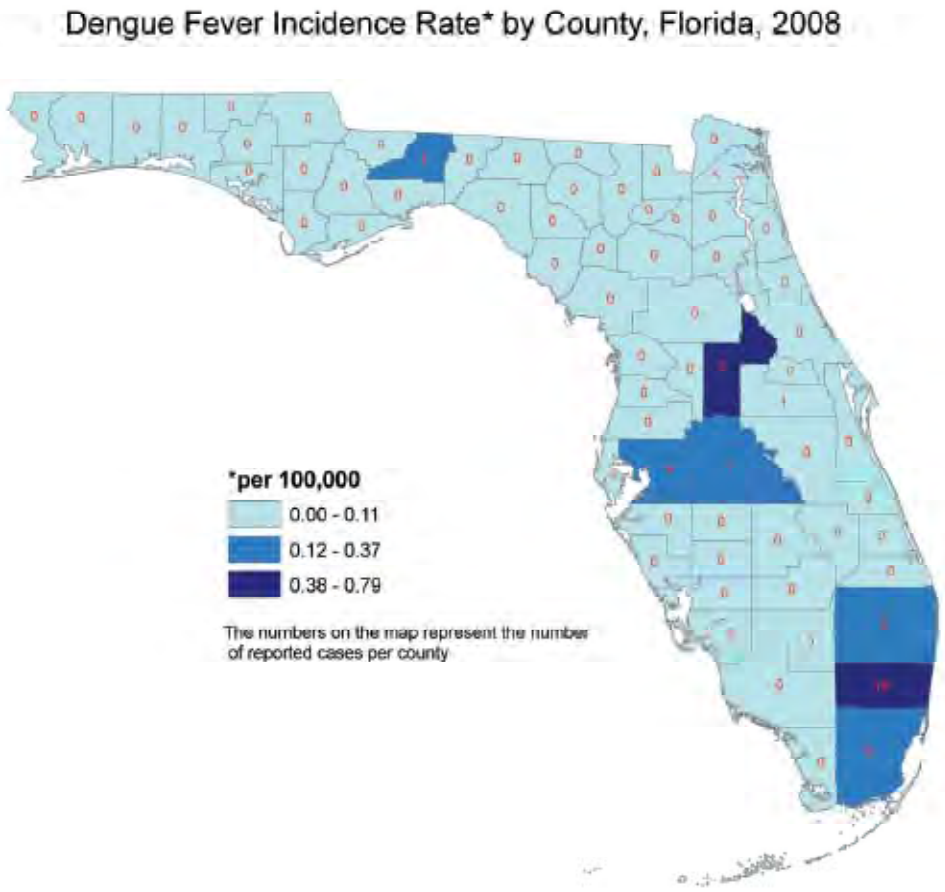
In 2008, 57% percent of cases were male, and 27% occurred among those 55-64 years of age. In 2008, 28% of dengue cases reported travel history to Puerto Rico, 15% traveled to the Dominican Republic, 24% traveled to other countries in the Caribbean, 18% traveled to South or Central America, and 9% traveled to Asia. The remaining 6% were listed as unknown.

Figure 3.
Dengue Fever Cases by Age Group, Florida, 2008



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.



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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

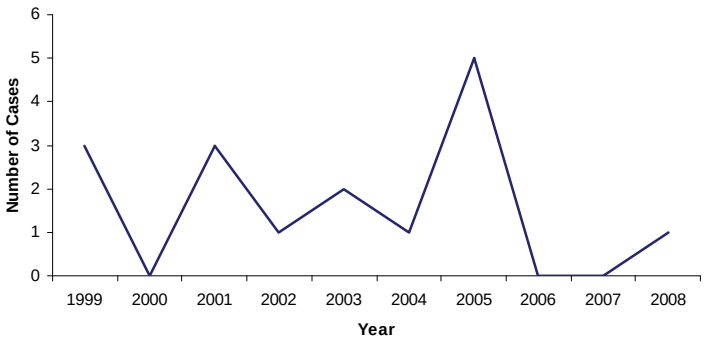
Additional information on DENV and other mosquito-borne diseases can be found in the *Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook*, online at http://www.doh.state.fl.us/environment/medicine/arboviral/pdf_files/2009MosquitoGuide.pdf.

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

Eastern Equine Encephalitis

Eastern Equine Encephalitis: Crude Data	
Number of Cases	1
2008 incidence rate per 100,000	0.01
% change from average 5 year (2003-2007) reported cases	-40.49
Age (yrs)	
Mean	N/A
Median	N/A
Min-Max	N/A

Figure 1.
Eastern Equine Encephalitis Cases by Year Reported, Florida, 1999-2008

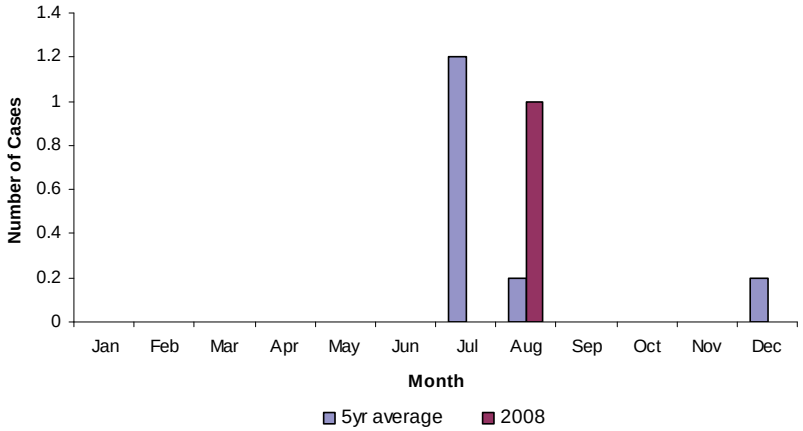


Disease Abstract

Eastern equine encephalitis virus (EEEV) is a mosquito-borne alphavirus that was first identified in the 1930s. EEEV occurs in natural cycles involving birds and *Culiseta melanura* in freshwater swampy areas, with a peak of activity occurring between May and August. In this usual cycle of transmission (enzootic cycle), the EEEV remains in the swampy areas, as the mosquito involved prefers to feed upon birds, and does not usually bite humans or other mammals. Most human cases are thought to occur when the virus occasionally moves into other mosquito species that are more likely to bite people and act as bridge vectors.

All evidence indicates that human eastern equine encephalitis (EEE) does not have epidemic potential in Florida, but can cause severe disease in those infected. Continuous surveillance since 1957 has documented only 78 human cases (average 1.5 cases per year, range: 0-5), including one in 2008. The cases reported each year from 1999 to 2008 suggest that it remains infrequent (Figure 1). The peak illness onset period for human cases is from June to August (Figure 2), though transmission can occur year-round. Unlike some other mosquito-borne diseases, which typically affect the elderly, EEE tends to affect individuals in younger age groups (Figure 3). In fact, of the cases reported since 1998, 63% were in those <15 years of age. Of the 13 cases reported between 2001 and 2008, four (31%) resulted in death. This is consistent with the known case fatality rate for EEE (approximately 1 death/3 cases), with another 1/3 of patients suffering permanent brain damage requiring long-term medical care. Between 2001 and 2008, 62% of cases were reported in individuals residing in counties in the panhandle or northern region of the state. Thirty-two percent of cases were reported from the central region. One non-fatal case involving a child was reported from Leon County in 2008.

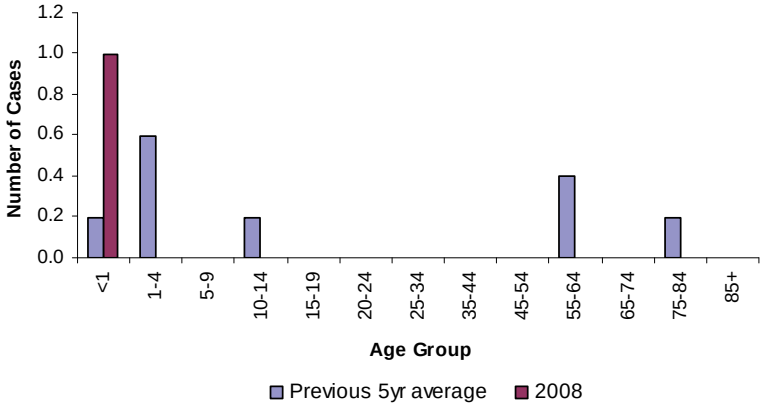
Figure 2.
Eastern Equine Encephalitis Cases by Month of Onset, Florida, 2008



Prevention

Prevention of the disease is a necessity, as there is no cure for EEE; only supportive care is available. Measures can be taken to avoid being bitten by mosquitoes. Drain any areas of standing water from around the home to eliminate mosquito breeding sites. Use insect repellents that contain DEET or other EPA-approved ingredients such as Picaridin or oil of lemon eucalyptus. Avoid spending time outdoors during dusk and dawn, the time when disease-carrying mosquitoes are most likely to be seeking a blood meal. Dress in long sleeves and long pants to protect skin from mosquitoes. In addition, inspect screens on doors and windows for holes to make sure mosquitoes cannot enter the home. Horses are also quite susceptible to this virus and vaccination is strongly recommended.

Figure 3.
Eastern Equine Encephalitis Cases by Age Group, Florida, 2008



References

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

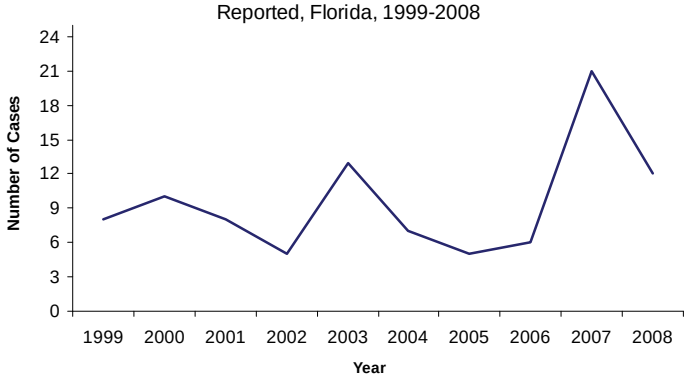
Additional Resources

Additional information on EEE and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at http://www.doh.state.fl.us/environment/medicine/arboviral/pdf_files/2009MosquitoGuide.pdf.
Disease information is also available from the Centers for Disease Control and Prevention (CDC) website http://www.cdc.gov/ncidod/dvbid/arbor/eeefact.htm.

Ehrlichiosis/Anaplasmosis

Ehrlichiosis (all codes): Crude Data	
Number of Cases	12
2008 incidence rate per 100,000	0.06
% change from average 5-year (2003-2007) reported cases	15.38
Age (yrs)	
Mean	51.92
Median	58.5
Min-Max	4 - 89

Figure 1.
Ehrlichiosis/Anaplasmosis (combined) Cases by Year Reported, Florida, 1999-2008

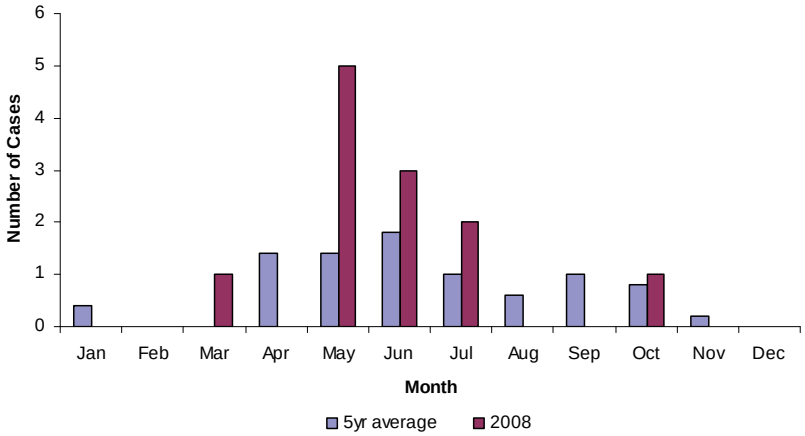


Disease Abstract

Ehrlichia chaffeensis, discovered in 1987, causes human monocytic ehrlichiosis (HME), which is nationally notifiable. *Ehrlichia ewingii* is indistinguishable from *E. chaffeensis* using serologic testing and is present in Florida, therefore some cases classified as HME may actually be due to *E. ewingii*. The principal vector for both agents is the Lone Star Tick, *Amblyomma americanum*. Due to testing limitations, *E. ewingii* is not as well characterized as *E. chaffeensis*; however it has most frequently been identified in immunocompromised patients. Human granulocytic ehrlichiosis (HGE) was originally thought to be caused by another species of *Ehrlichia*, but was later reclassified as *Anaplasma phagocytophilum*, with the associated illness renamed to human granulocytic anaplasmosis (HGA). The principal vector for *A. phagocytophilum* is *Ixodes scapularis*. HGA became nationally notifiable in1999.

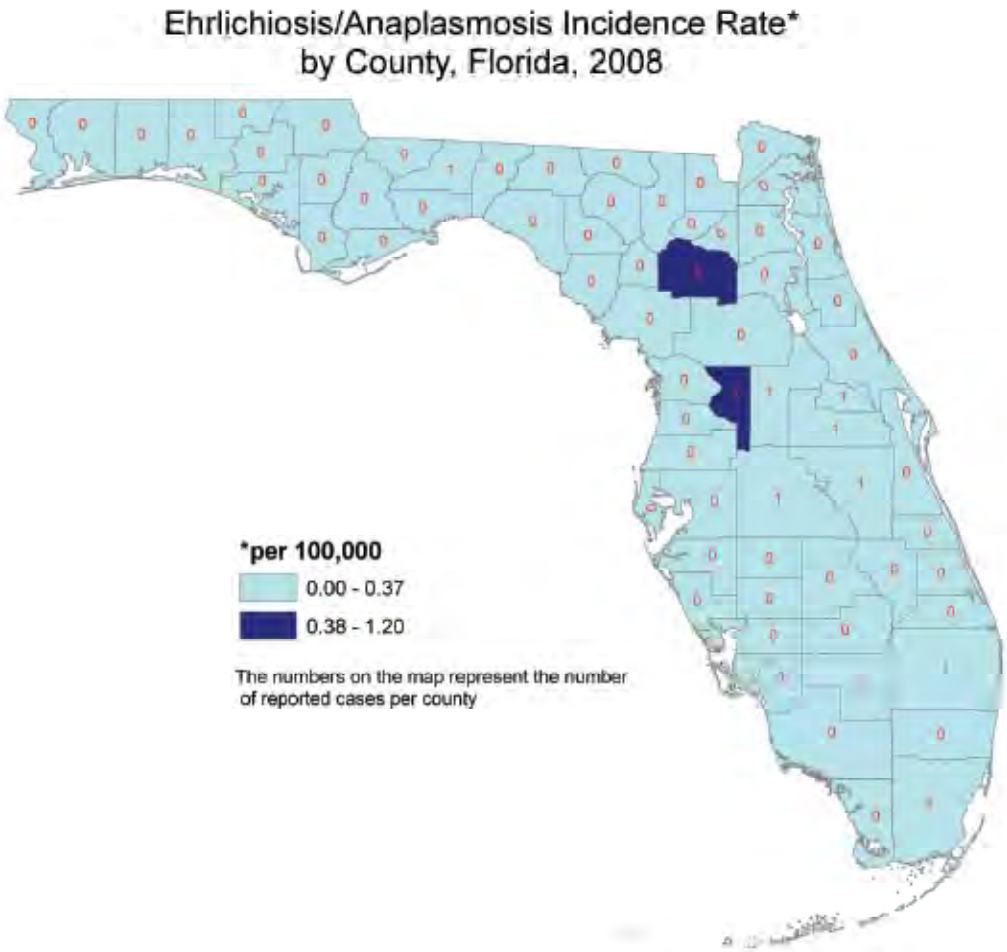
Between 1998 and 2006 the total number of combined cases of HME and HGA reported ranged from two to thirteen cases per year, but in 2007 there were 21 cases reported (18 HME and 3 HGA). This number decreased to more typical levels in 2008 (Figure 1), with 10 cases of HME and two cases of HGA reported. Increased educational efforts and awareness may have contributed to the increase in reported cases in 2007. White-tailed deer are an important reservoir species for *E. chaffeensis*. Less is known regarding other potential wildlife reservoirs. In addition, there is no standardized tick surveillance program in Florida. These gaps in knowledge make it difficult to ascertain why case numbers might fluctuate from year to year. Since HGA was recognized as a separate reportable disease in 1999, there have been consistently more HME cases than HGA cases reported in Florida. In 2008, 58% of HME and HGA cases were men. The majority of HME cases (70%) are reported as being acquired in Florida, primarily in the north and central parts of the state. HGA is more likely to be acquired outside Florida and is more prevalent in the northeast United States. One locally-acquired case of HGA was reported from Dade County in 2008. Though cases of both HME and HGA are reported year-round, peak transmission occurs during the late spring and summer months (Figure 2). Sixty percent of reported cases in 2008 were over the age of 50. No deaths were reported in 2008.

Figure 2.
Ehrlichiosis (all codes) Cases by Month of Onset, Florida, 2008



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.



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

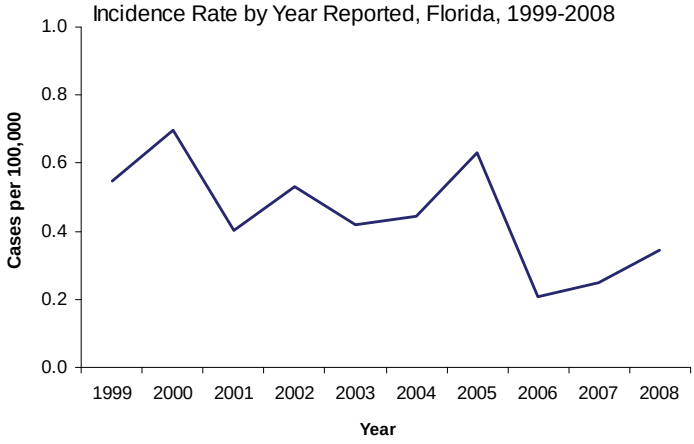
Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) http:// www.cdc.gov/ncidod/dvrd/ehrlichia/Index.htm.

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

Escherichia coli, Shiga Toxin Producing

***Escherichia coli, S*higa Toxin Producing**	
Number of Cases	65
2008 incidence rate per 100,000	0.34
% change from average 5-year (2003-2007) incidence rate	-11.33
Age (yrs)	
Mean	19.42
Median	14
Min-Max	<1 - 85

Figure 1.
Escherichia coli , Shiga Toxin Producing
Incidence Rate by Year Reported, Florida, 1999-2008

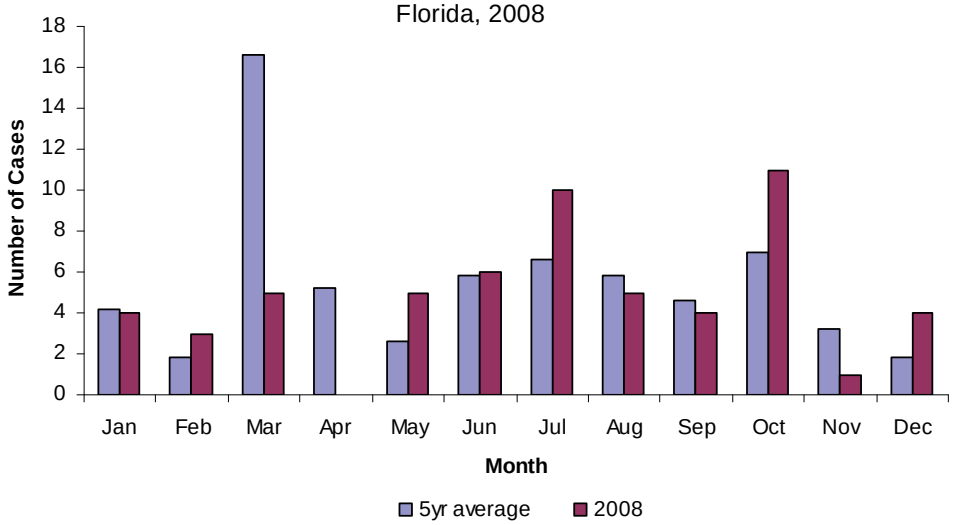


Description
The most commonly identified Shiga toxin producing *Escherichia coli* (STEC) in the U.S. is *E. coli* serogroup O157:H7; however, there are many other serogroups that cause disease due to Shiga toxin. Serogroups O26, O111, and O103 are the non-O157 serogroups that most often cause illness in people in the U.S. As a whole, the non-O157 serogroups are less likely than *E. coli* O157:H7 to cause severe illness; however, some non-O157 STEC serogroups can cause the most severe manifestations of STEC illness.

Prior to 2008, STEC was reported under multiple disease codes, depending on the serogroup. One reporting code captured only serogroup O157:H7. Another reporting code captured known serogroups other than O157:H7. Previous Florida Morbidity Statistics Reports included only the disease code for *E. coli* O157:H7. However, in 2008, these reporting codes were combined into one and *E. coli* O157:H7 is no longer separated from the non-O157 strains.

The figures in this report reflect all STEC serogroups reported over the past 10 years, not just serogroup O157:H7, and therefore cannot be compared to previous years' reports.

Figure 2.
Escherichia coli, Shiga Toxin Producing, Cases by Month of Onset,
Florida, 2008

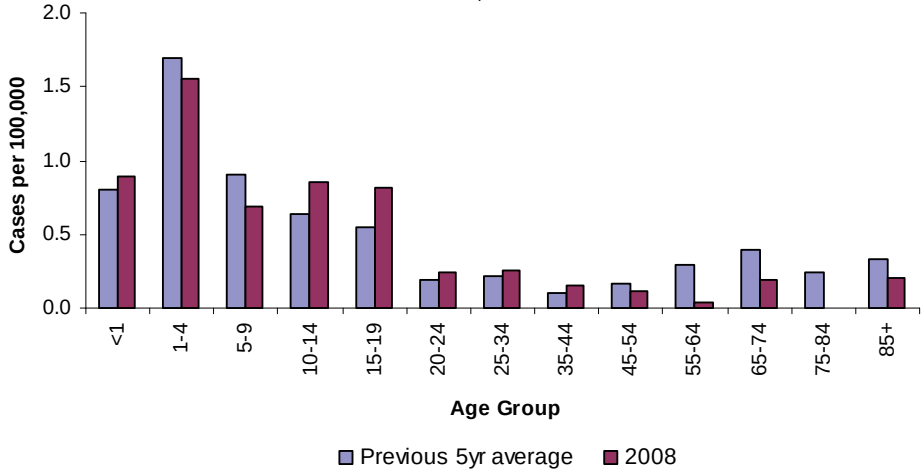


Disease Abstract

A total of 65 cases were reported in 2008, of which 59 were confirmed. Eleven were classified as outbreak-associated. Four cases were acquired in states other than Florida and three were acquired outside the U.S. Most of the confirmed cases were caused by serogroup O157:H7 (49) and a few were caused by O157:non-motile (2). Non-O157 serogroups included O103:H2 (3), O111:H8 (1), O26:H11 (1), O73:H18 (1), O45:unknown H (1) and O rough:H18 (1).

The incidence rate for STEC has varied over the last ten years (Figure 1). One source of variation is large outbreaks involving food products distributed across multiple states or other common source exposures. In 2008, there was an 11% decrease in incidence of new cases in comparison to the average incidence from 2003 to 2007, likely due to the absence of large outbreaks tied to a common source. However, the 65 cases in 2008 represent a substantial increase over the 47 cases reported in 2007.

Figure 3.
Escherichia coli, Shiga Toxin Producing, Incidence Rate by Age Group,
Florida, 2008



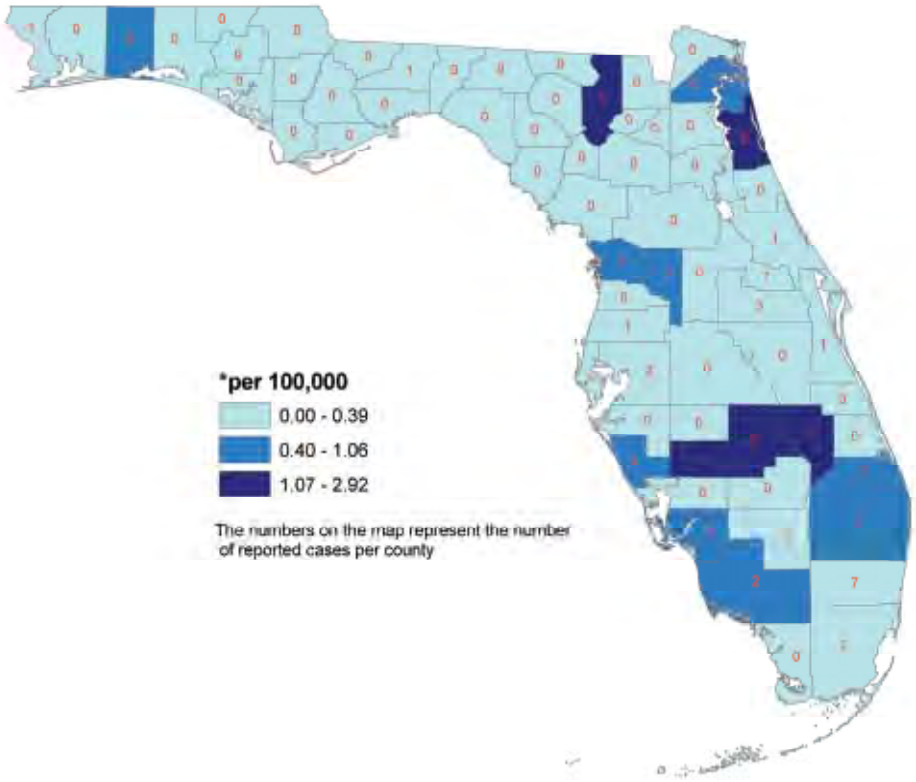
In 2008, no clear seasonal patterns were observed (Figure 2). Incidence was greatest among children and teenagers (Figure 3). Incidence was lower than the previous 5-year average in those aged 45 and older, but higher in those aged 10-19 and less than one (Figure 3).

STEC cases were reported in 25 of the 67 counties in Florida.

Prevention

To reduce the likelihood of becoming infected with STEC, all meat products should be cooked thoroughly, 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 settings of petting zoos or when they come in contact with farm animals which harbor the organism.

Escherichia coli, Shiga Toxin Producing, Incidence Rate*
by County, Florida, 2008



References

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

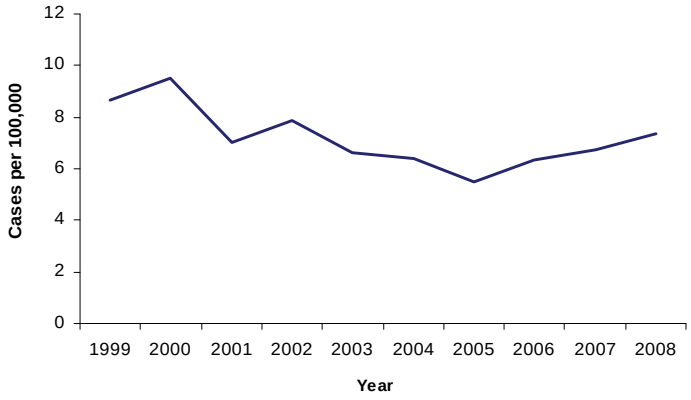
Additional Resources

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	1,391
2008 incidence rate per 100,000	7.36
% change from average 5 year (2003-2007) reported cases	16.64
Age (yrs)	
Mean	27.56
Median	24
Min-Max	<1 - 93

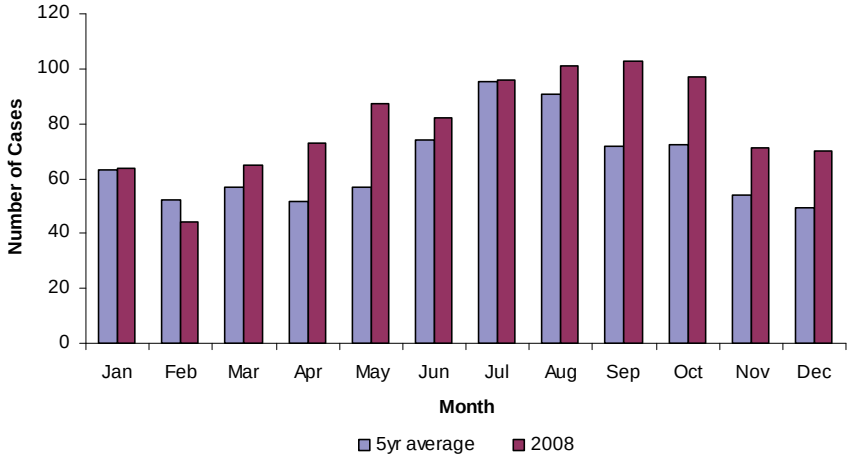
Figure 1.
Giardiasis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

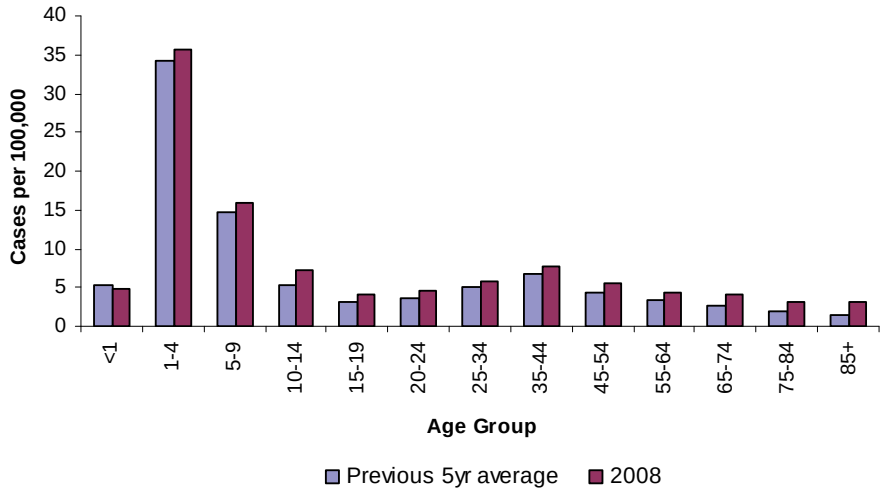
The incidence rate for giardiasis has declined by about half over the nine years from 1999-2008 but increased slightly starting in 2006 (Figure 1). In 2008, there was a 16.64% increase in comparison to the 5-year average incidence from 2003 to 2007. A total of 1,391 cases were reported in 2008, slightly higher than the number reported in 2007 (1,268 cases). Of the 1,391 cases reported in 2008, 98% were classified as confirmed. The number of cases increases in the summer and early fall months (Figure 2). The month of July historically has the largest number of reported cases (2003-2007: 5-year average 95.2 cases per 100,000), but in 2008, the largest number of cases occurred in September (103 cases) and July had the fourth highest case count. In 2008, all months of except for January and February exceeded the previous 5-year average number of cases. Among the 1,391 giardiasis cases reported in 2008, 82, or 5.89%, were reported as outbreak associated. Over 70% of all reported cases indicated infection had been acquired in Florida. There were 290 cases that were reported as acquired outside of the U.S. with 155 of these cases, or 53.8%, indicating infection was acquired in Cuba.

Figure 2.
Giardiasis Cases by Month of Onset, Florida, 2008



The highest reported incidence rates continue to occur among in children aged 1-4 years (35.63 cases per 100,000) and 5-9 years (15.96 cases per 100,000) (Figure 3). There were a total of 313 cases reported among children aged 1-4 years. Approximately forty percent of the 313 cases aged 1-4 years attended daycare.

Figure 3.
Giardiasis Incidence Rate by Age Group, Florida, 2008

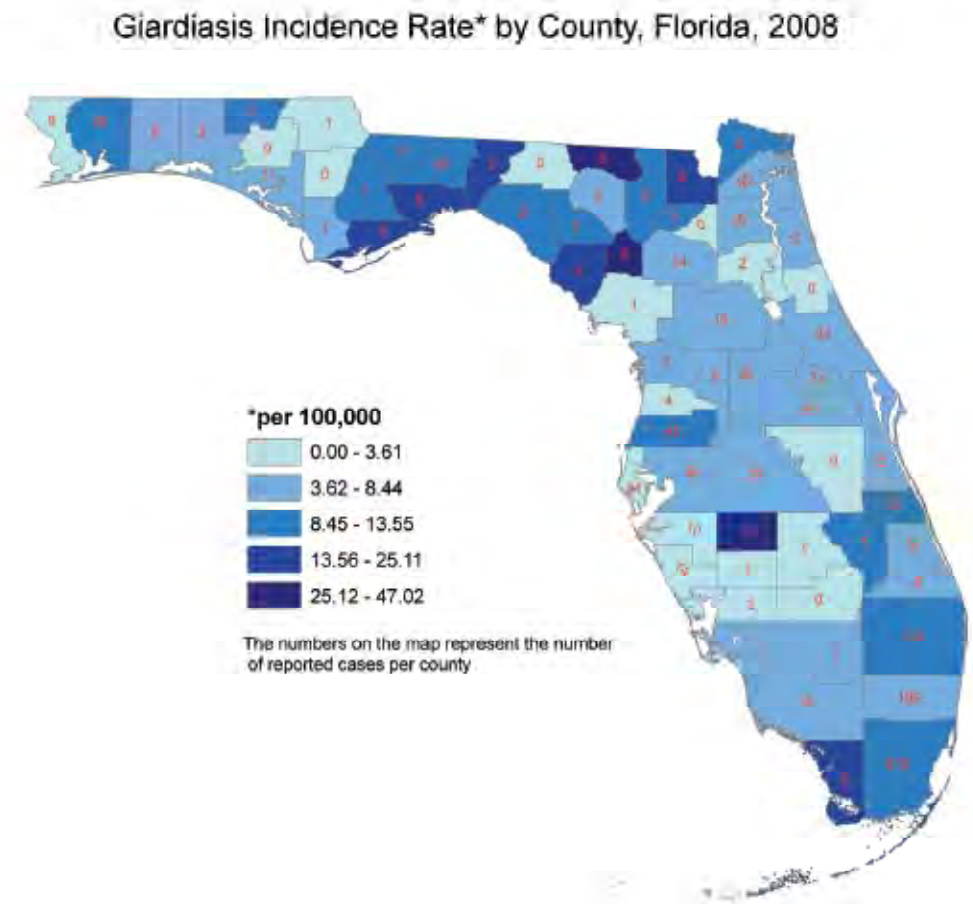


Overall, males continue to have a higher reported incidence than females (8.58 and 6.18 per 100,000, respectively). Following previous annual trends, incidence rates in whites are greater than those in non-whites.

In 2008, giardiasis was reported in 61 of the 67 counties in Florida.

Prevention

Most *Giaridia* infections 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) at http://www.cdc.gov/ncidod/dpd/parasites/giardiasis/default.htm.

Gonorrhea

Disease Abstract

In 2008, there were 23,237 gonorrhea cases reported among both males and females in Florida, or a rate of 122.9 cases per 100,000 population. Overall cases decreased by 8.2% from 2007. Over 48% of all gonorrhea cases are reported from the larger, more populous counties (Duval, Broward, Dade, Hillsborough, Orange) and although certain counties bear a larger proportion of disease, smaller counties absorb higher rates (Table 1).

Figure 1. Reported Cases of Gonorrhea by Year, Florida, 2004-2008

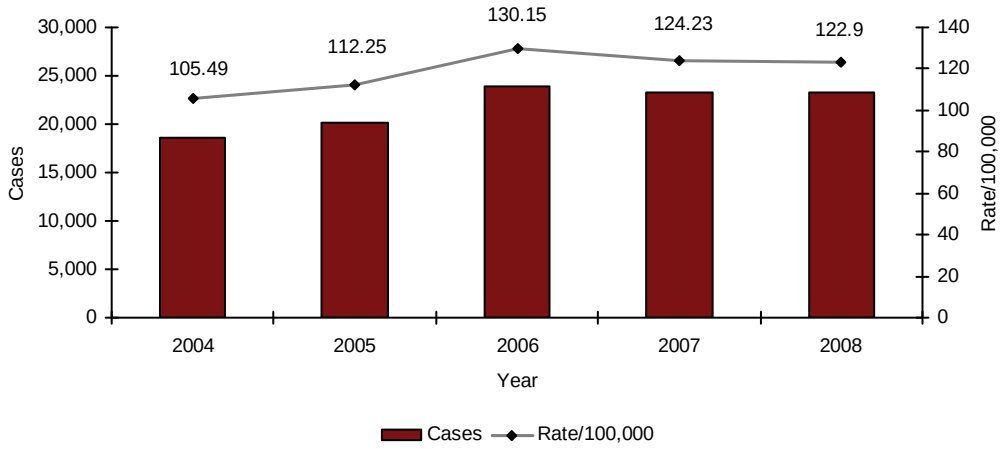


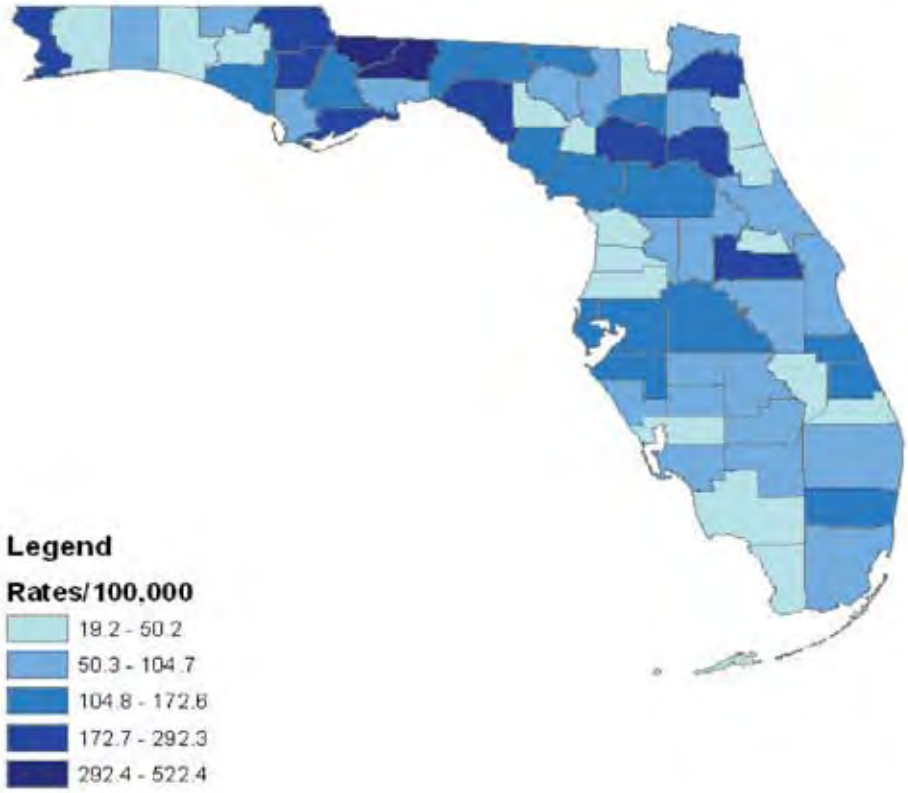
Table 1. Counties with the Highest Rate/100,000 of Gonorrhea, Florida, 2008

County	Rank	Population	Cases	Rate per 100,000
Gadsden	1	50,152	262	522.4
Leon	2	273,741	1,050	383.6
Duval	3	908,378	2,655	292.3
Calhoun	4	14,688	40	272.3
Putnam	5	74,903	182	243.0

In the urban environment of the U.S. disease incidence can be 20 to 30 times that of surrounding areas. However, in Florida rates of infection are highest in the panhandle and the northern portion of the state which are some of the least populated and most rural portions of the state (Figure 2).

Much like chlamydia trends, gonorrhea cases disproportionately affect those under the age of 25. Close examination of the disease distribution reveals that over 75% of all reported cases of gonorrhea are reported in populations under the age of 30; further, gonorrhea is the second most prevalent sexually transmitted bacterial infection reported among 15 to 24-year-olds in Florida. More cases have been reported in the 20-24 age group for gonorrhea consistently since 1998; further, 15- to 24-year-olds accounted for 61% of infections reported in 2008. The age specific case rate for 15- to 24-year-olds was 581.6 per 100,000 population. The mean age of all reported gonorrhea cases was 24.9 years. However, when data is examined by age in single years for those 15-24, rather than as an age group, reported cases peaked at the age of 19 with a gradual decline in number of cases as age in years increased.

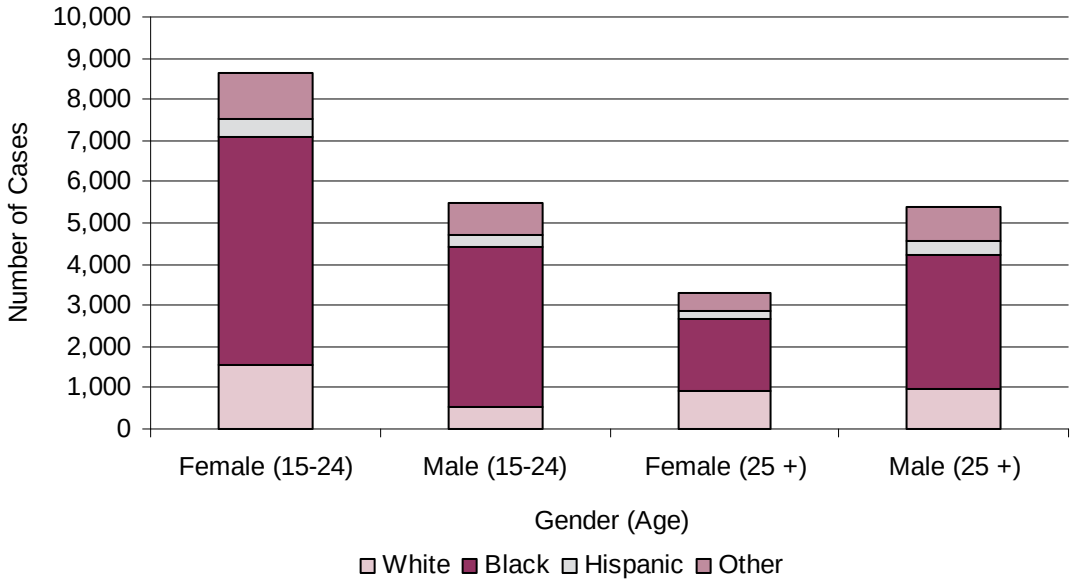
Figure 2. Gonorrhea Rates/100,000, 2008



When comparing gender-specific data in populations under 25, females under the age of 25 accounted for the largest proportion of cases reported (52.6%) (Figure 3). Among females, the highest number of cases was reported in 15- to 19-year-olds (4,546 cases) with a rate of 761.8 per 100,000 population. The second highest rate among females was in 20- to 24-year-olds (690.8 per 100,000 population). Among males, the highest numbers of cases was reported in the 20-24 age group (3,370 cases) with a rate of 539.9 cases per 100,000 population. Men 25-29 had the second highest rate (348.9 per 100,000 population). Unlike chlamydia trends, men aged 25 and over had higher rates compared to women of the same age group. Nevertheless, all cases reported, regardless of gender, occur disproportionately in populations under 25 years of age. One explanation for the higher rates of gonorrhea among men as compared to chlamydia is that a majority of urethral infections with *N. gonorrheae* cause symptoms that prompt the patient to seek care. This could lead to greater detection of gonorrhea cases among men, not necessarily reflect higher incidence of infection.

In 2008, the distribution of gonorrhea by race/ethnicity disproportionately affected non-Hispanic blacks (Figure 3). Non-Hispanic black adolescents and young adults (15-24) had the highest rates by race/ethnicity and age group in Florida. In 2008, non-Hispanic blacks age 15-24 had a case rate of 1,833.1 per 100,000 population. This rate was 11 times higher than the second highest rate in non-Hispanic whites 15-24 (163.2 per 100,000 population).

Figure 3. Reported Cases of Gonorrhea by Race/Ethnicity, Gender, Age, 2008



Prevention

STD infections in women can lead to complications such as pelvic inflammatory disease (PID). Both symptomatic and asymptomatic cases of PID can result in tubal scarring that can lead to infertility or ectopic pregnancy. Because gonococcal infections among women are frequently asymptomatic, an essential component of gonorrhea control in the U.S. is screening of women at high risk for STDs. The U.S. Preventive Services Task Force (USPSTF) recommends screening all sexually active women, including those who are pregnant, for gonorrhea infection if they are at increased risk. Risk factors include age <25 years, a previous gonorrhea infection, other sexually transmitted infections, new or multiple sex partners, inconsistent condom use, commercial sex work, and drug use. The USPSTF does not recommend screening for men or women who are at low risk for infection.

Patients infected with *N. gonorrhoeae* are frequently co-infected with *C. trachomatis* which has led to the recommendation that patients treated for gonococcal infection also be treated routinely with a regimen that is effective against Chlamydia. Because the majority of gonococci in the United States are susceptible to doxycycline and azithromycin (used to treat chlamydia), routine co-treatment might also hinder the development of antimicrobial-resistant *N. gonorrhoeae*. Due to the prevalence of antimicrobial-resistant *N. gonorrhoeae* in the U.S. and globally, the treatment recommendations for patients are specific to the site of the infection, the geographical area of exposure, patient health status, and other factors. The most current treatment guidelines can be accessed from the CDC at http://www.cdc.gov/std/treatment/default.htm.

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

References

Centers for Disease Control and Prevention. "Gonorrhea- CDC Fact Sheet." Atlanta, GA: U.S. Department of Health and Human Services, April 2006.

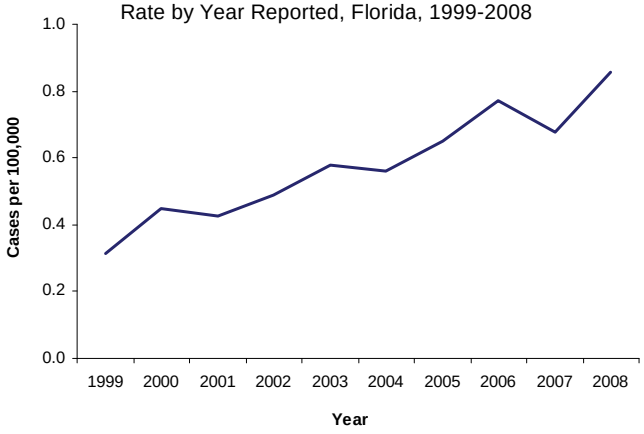
Nelson KE, Williams CM, Graham NMH (Eds.). *Infectious Disease Epidemiology: Theory and Practice*. Gaithersburg, Md, Aspen Publishers, 2001.

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

Haemophilus influenzae (Invasive Disease)

***Haemophilus influenzae* (Invasive Disease): Crude Data**	
Number of Cases	162
2008 incidence rate per 100,000	0.86
% change from average 5-year (2003-2007) incidence rate	31.62
Age (yrs)	
Mean	54.06
Median	62
Min-Max	<1 - 100

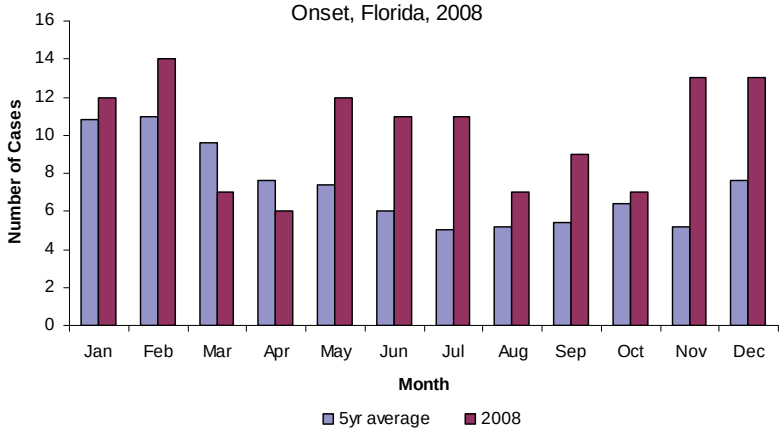
Figure 1.
Haemophilus influenzae, Invasive Disease, Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

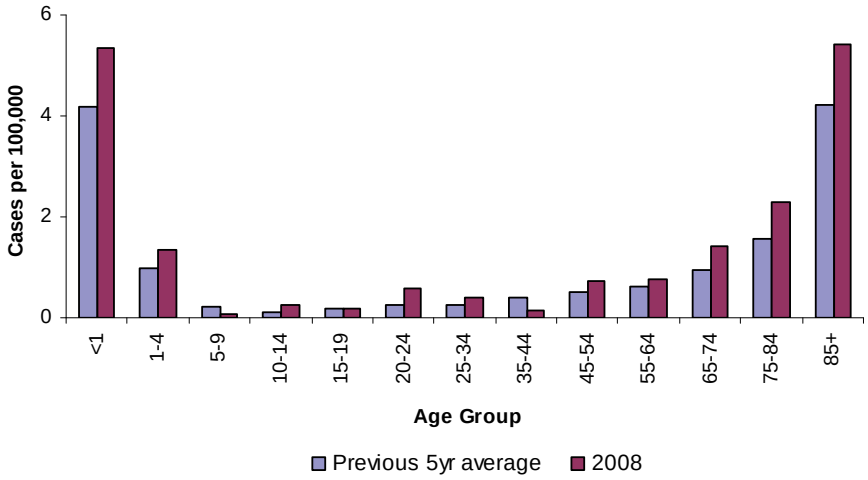
The incidence rate for all invasive diseases caused by *Haemophilus influenzae* has gradually increased over the past ten years (Figure 1). In 2008, there was a 31.62% increase compared to the average incidence from 2003 to 2007. A total of 162 cases were reported in 2008, all of which were classified as confirmed. The number of cases reported is highest in the winter, during the months of December through February (Figure 2). In 2008, the number of cases significantly exceeded the previous 5-year average in most months of the year. Nearly all cases of invasive disease caused by *Haemophilus influenzae* are sporadic in nature.

Figure 2.
Haemophilus influenzae, Invasive Disease, Cases by Month of Onset, Florida, 2008



The highest reported incidence rates occur in those aged <1 year or in those >85 years (Figure 3). In 2008, the incidence rates were higher than the previous 5-year average in all age groups except those 5-9, 15-19, and 35-44 years. The incidence of disease in males and females does not differ significantly (0.76 per 100,000 and 0.95 per 100,000 respectively). As in the past, incidence rates in non-whites are greater than those in whites with the highest incidence being in non-white males (1.24 per 100,000).

Figure 3.
Haemophilus influenzae, Invasive Disease, Incidence Rate by Age Group, Florida, 2008

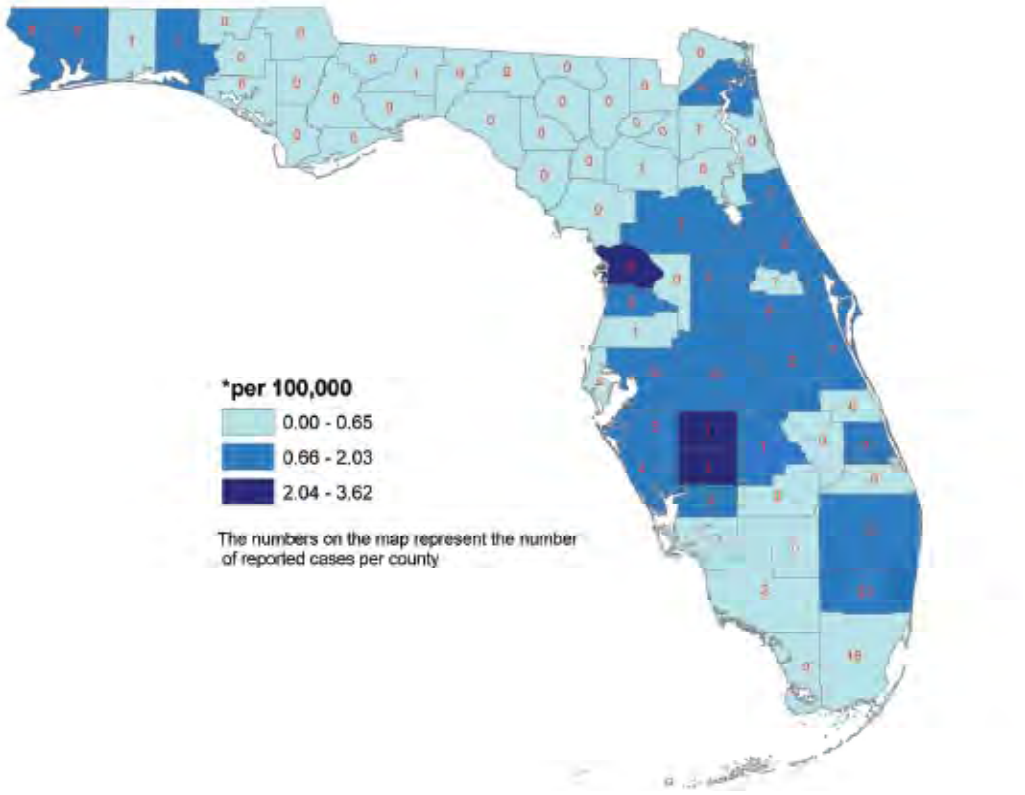


Invasive disease caused by *Haemophilus influenzae* was reported in half (33) of the 67 counties in Florida. Overall, counties in central and southwestern Florida reported the highest incidence rates.

Invasive disease caused by *Haemophilus influenzae* b in those under age five:
In 2008, there was one case of invasive disease (meningitis) caused by *Haemophilus influenzae* serotype b in a child under age 5 that resulted in death.

Prevention
A conjugate vaccine series against Haemophilus influenzae type B (Hib) is recommended by the Advisory Committee on Immunization Practices for infants and children, birth to five years of age. A full series is four doses, but the recommended number of doses varies by age and immunization history. As of January 2009, the age-appropriate number of doses, or valid exemption, is required for entry and attendance at childcare facilities. Additional information may be found at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm and http://www.cdc.gov/vaccines/ recs/schedules/downloads/child/2007/child-schedule-color-print.pdf

Haemophilus influenzae Invasive Disease Incidence Rate* by County, Florida, 2008



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

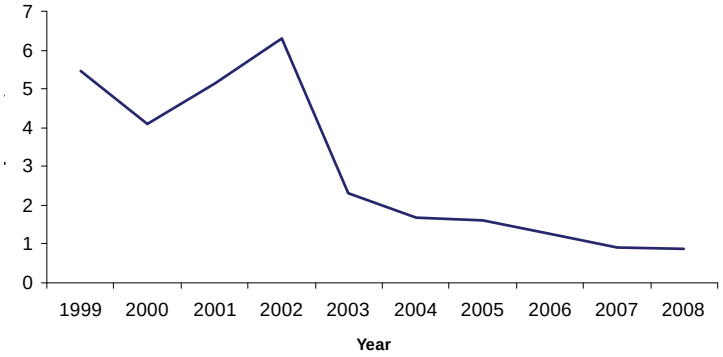
Immunization Recommendations are available from:

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	165
2008 incidence rate per 100,000	0.87
% change from average 5-year (2003-2007) incidence rate	-43.36
Age (yrs)	
Mean	40.82
Median	41
Min-Max	1 - 88

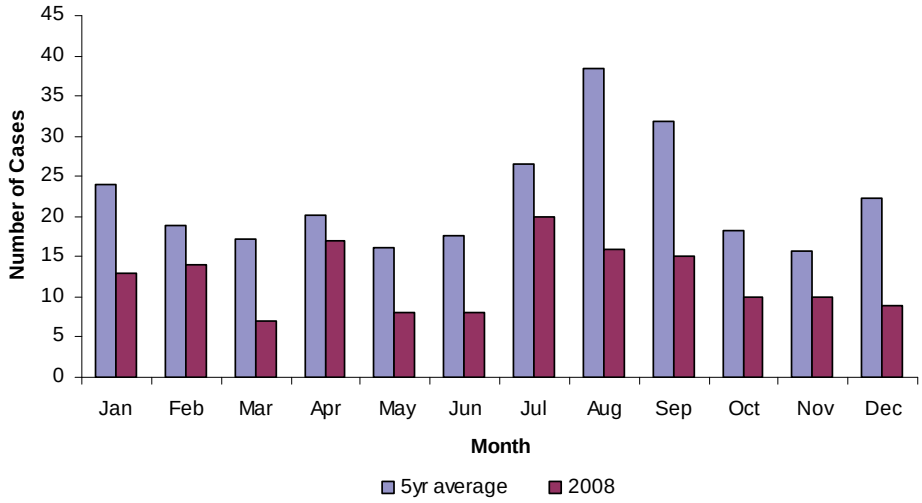
Figure 1.
Hepatitis A Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

A total of 165 cases of hepatitis A were reported in 2008, of which 88.48% were classified as confirmed. Approximately 38.8% of hepatitis A cases were hospitalized. Approximately 11% of cases were classified as outbreak-related and only 15% reported contact with a person with confirmed or suspected hepatitis A infection in the 2-6 weeks prior to their illness. Approximately 35% of cases reported a travel history outside the U.S. and Canada in the 2-6 weeks prior to their illness; additionally, 23% of cases reported that someone in their household had traveled outside of the U.S. or Canada. Four cases were associated with daycare centers and two cases were reported in food-handlers. The incidence rate for hepatitis A in Florida has declined markedly since 2002, which mirrors a similar decline observed nationally (Figure 1). The annual incidence in Florida from 2004 to 2008 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.

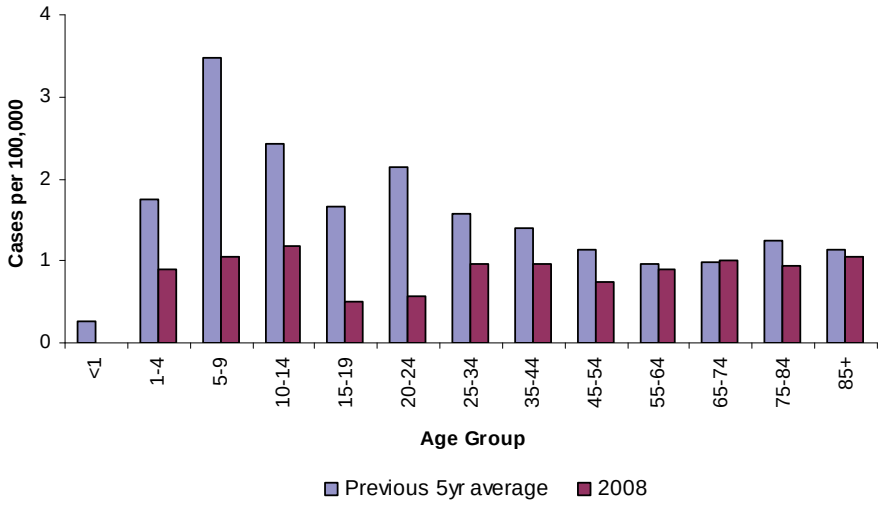
Figure 2.
Hepatitis A Cases by Month of Onset, Florida, 2008



Hepatitis A occurs throughout the year (Figure 2). In 2008, 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 5 to 9 years old and adults 20 to 24 years old. The incidence in 2008 was lowest among non-white females (0.21 per 100,000) and highest among white males (0.96 per 100,000).

During 2008, hepatitis A was reported in 31 of the 67 counties in Florida.

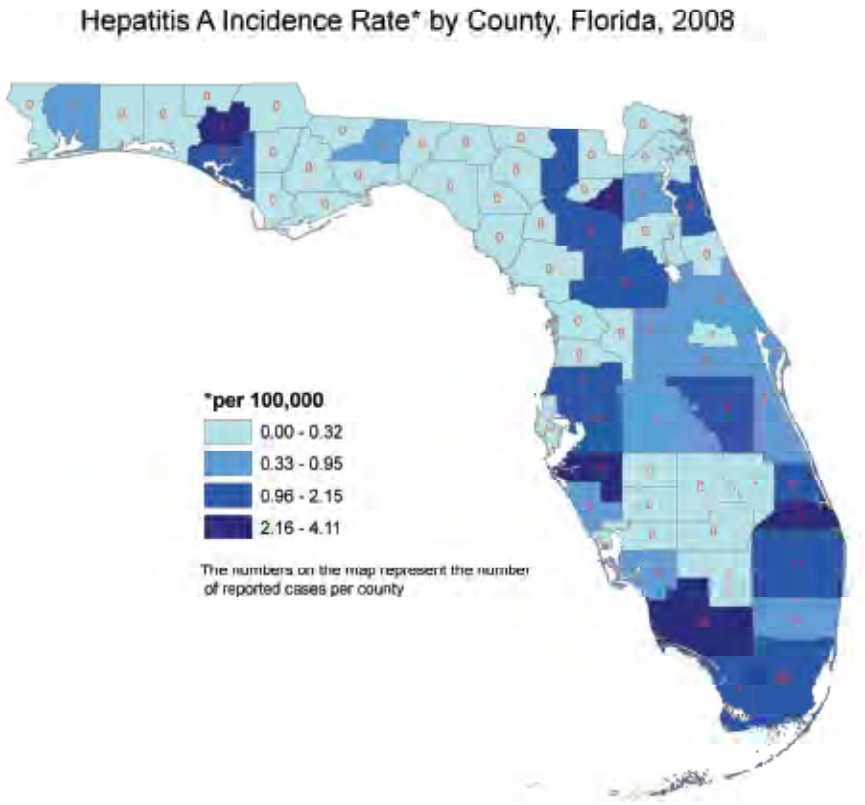
Figure 3.
Hepatitis A Incidence Rate by Age Group, Florida, 2008



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.



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

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

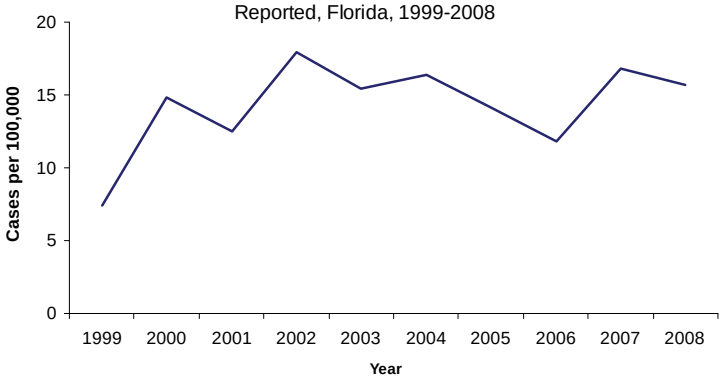
Additional Resources

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

Hepatitis B (HBsAg + Pregnant Women)

Hepatitis B (HBsAg + Pregnant Women): Crude Data	
Number of Cases	599
2008 incidence rate per 100,000	15.69
% change from average 5-year (2003-2007) incidence rate	5.32
Age (yrs)	
Mean	28.64
Median	29
Min-Max	14 - 51

Figure 1.
Hepatitis B (HBsAg + Pregnant Women) Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

There were 599 pregnant women that tested positive for the hepatitis B surface antigen (HBsAg+) in 2008, which is a decrease from 644 women in 2007. In 2008, one Florida-born infant was identified as a perinatal case of hepatitis B (disease code 07744) and was identified by post-vaccination blood testing. This is a decrease from the two infants identified as perinatal hepatitis B cases in 2007.

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.

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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.

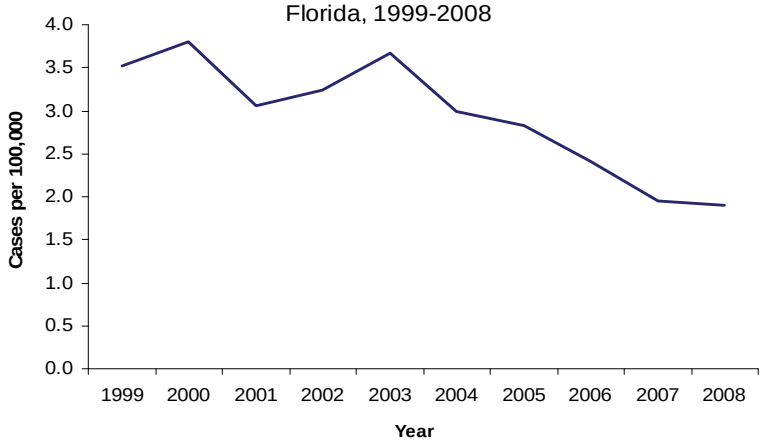
Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/vaccines/vpd-vac/hepatitis/default.htm

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

Hepatitis B, Acute

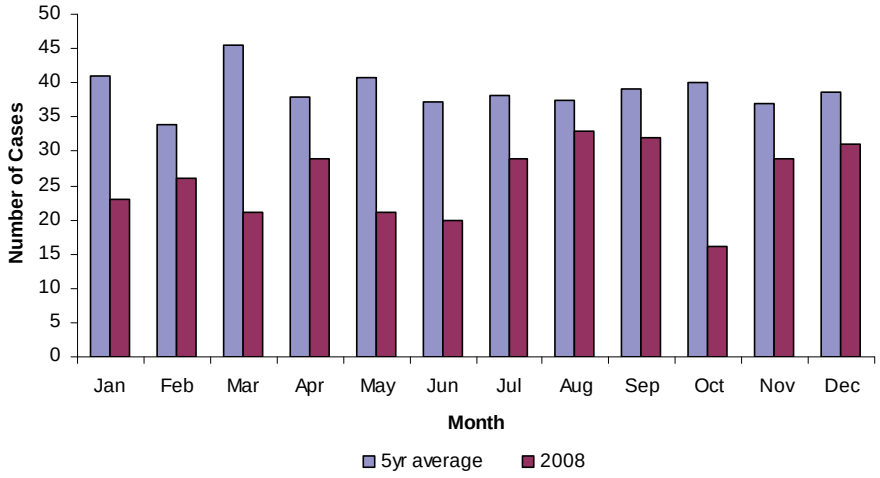
Hepatitis B, Acute: Crude Data	
Number of Cases	358
2008 incidence rate per 100,000	1.89
% change from average 5-year (2003-2007) incidence rate	-31.27
Age (yrs)	
Mean	42.34
Median	41
Min-Max	18 - 85

Figure 1.
Hepatitis B, Acute Incidence Rate by Year Reported, Florida, 1999-2008



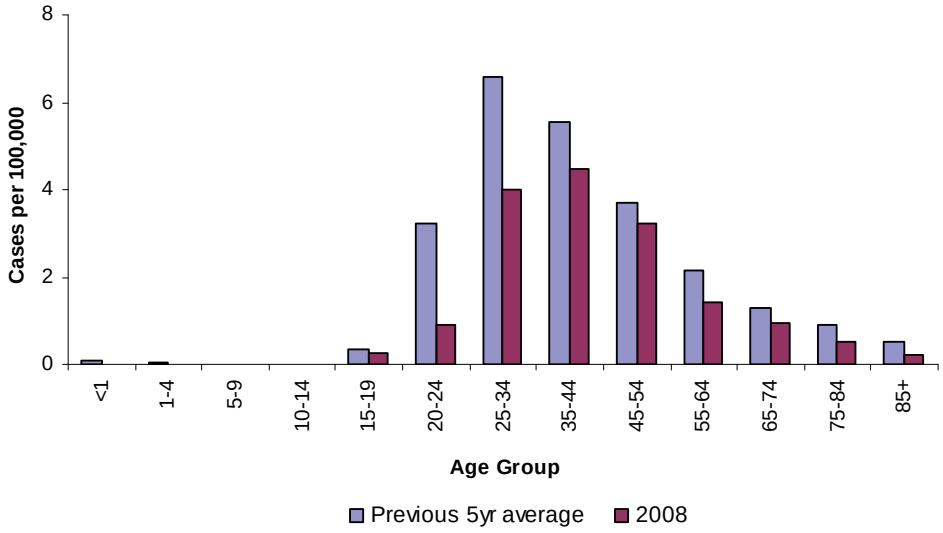
Disease Abstract
The incidence rate for acute Hepatitis B has declined gradually over the last ten years (Figure 1). The 2008 rate was 31.27% lower than the average from 2003-2007. A total of 358 cases were reported in 2008, of which 96.09% were classified as confirmed. There is no seasonal trend for acute hepatitis B infection (Figure 2). Overall, 91.89% of the acute hepatitis B cases were classified as sporadic.

Figure 2.
Hepatitis B, Acute Cases by Month of Onset, Florida, 2008



The highest historical incidence rates occurred in the 25 to 34-year-old age group, and for 2008 the incidence rate in this group was high, but the highest incidence was among those aged 35-44 which was the same for 2007. In 2008, the incidence rates were lower than the previous 5-year average in all age groups (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 (2.53 per 100,000 and 1.28 per 100,000, respectively).

Figure 3.
Hepatitis B, Acute Incidence Rate by Age Group, Florida, 2008



Hepatitis B is a vaccine-preventable disease. Among the 358 people diagnosed with acute hepatitis B, 68.2 % never received the vaccine and 26.26% 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 56.7% of those diagnosed with acute hepatitis B were hospitalized. In 2008, death occurred in one of the 358 people with acute hepatitis B infection. Twenty-nine of the 368 people with acute hepatitis B reported having had contact with someone confirmed or suspected of having a hepatitis B infection, and of these, 76% reported the ill person was a sexual partner. Drug use has also been associated with hepatitis B infection. Of the 358 acute hepatitis B cases, 9.5% reported injection drug use and 19.6% 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 2008, 9.5% 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 2008, sexual preference and frequency of sexual partnerships are summarized in Table 2. People's risk factors may change over time.

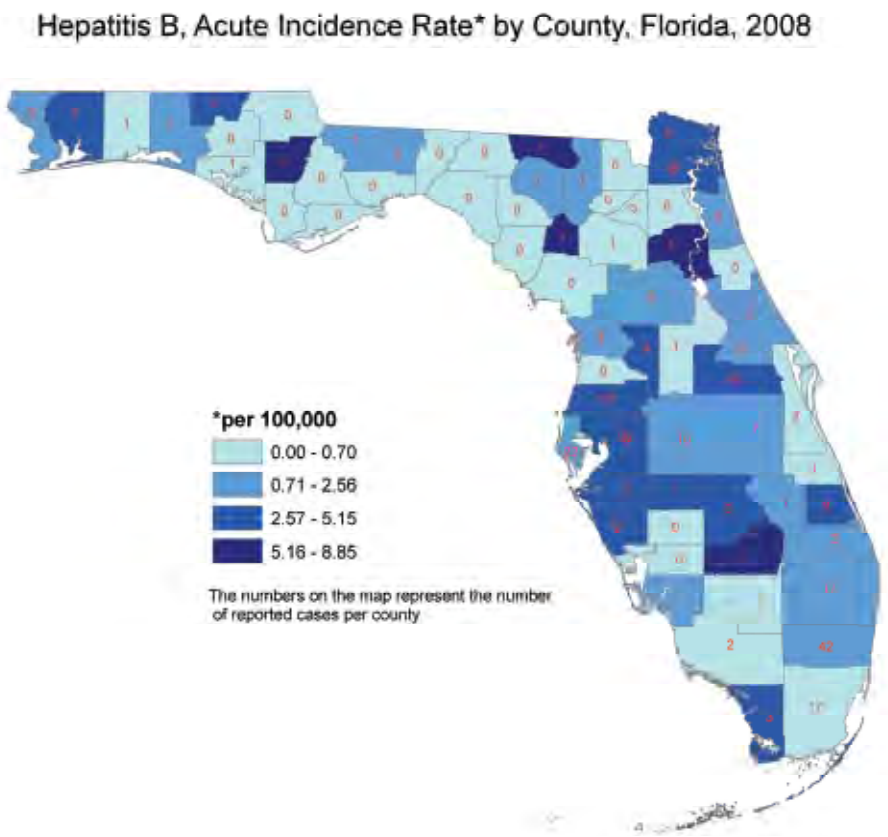
Acute hepatitis B was reported in 47 of the 67 counties in Florida. A cluster of high-rate counties can be seen in the center of the state and along the northern border.

Table 2. Distribution of the Number of Sexual Partners in the Six Months Prior to Symptoms in Four Sexual Preference Groups, for People with Acute Hepatitis B Reported in 2008.

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	4%	29%	42%	2%
2-5 Sexual Partners	6%	16%	19%	0%
More than 5 Sexual Partners	3%	3%	3%	0%
No Reported Sexual Partners	55%	23%	13%	74%
Not Answered	3%	1%	2%	4%
Unknown	29%	28%	21%	20%
Total	100%	100%	100%	100%
% of Cases in Each Sexual Preference Group†	12%	48%	64%	2%

* Total number of acute hepatitis B positive males is 234 and females is 123. One person identified themselves as unknown. In 2008, all 358 acute cases of hepatitis B occurred in individuals 18 years of age and older.

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



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.

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Additional Resources

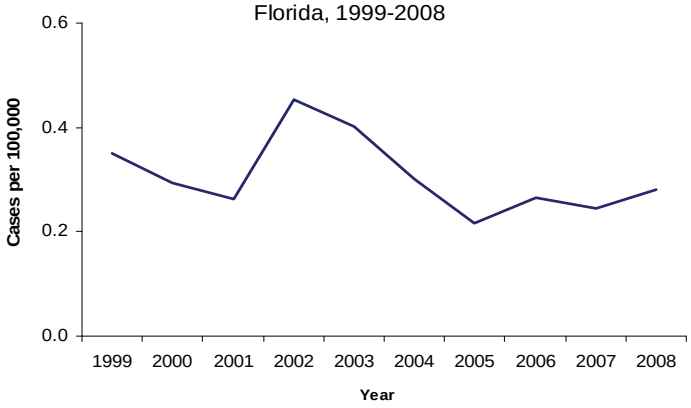
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at http://www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm and http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm

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

Hepatitis C, Acute

Hepatitis C, Acute: Crude Data	
Number of Cases	53
2008 incidence rate per 100,000	0.28
% change from average 5-year (2003-2007) incidence rate	-1.43
Age (yrs)	
Mean	39.13
Median	41
Min-Max	14 - 72

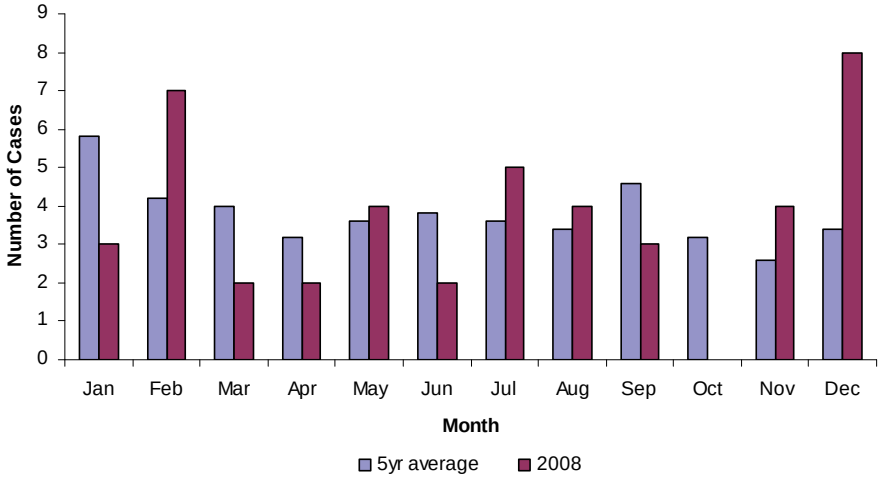
Figure 1.
Hepatitis C, Acute Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

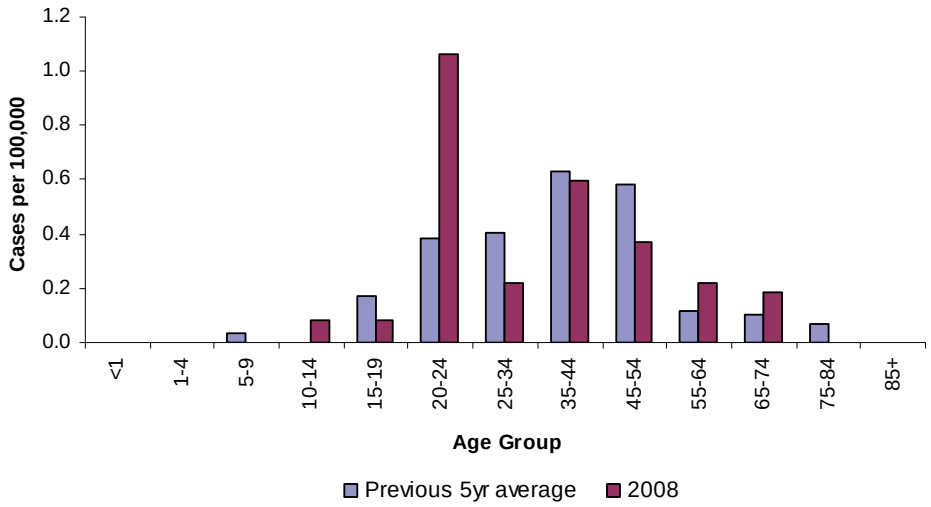
The incidence rate for acute hepatitis C has been variable over the last eight years, but has been increasing since 2005 (Figure 1). In 2008, there was a 1.43% decrease in comparison to the average incidence from 2003-2007. A total of 53 cases were reported in 2008, of which 60.38% were classified as confirmed cases. It is important to note that the hepatitis C acute surveillance case definition changed in 2008, therefore more cases may have been classified as confirmed compared to previous reporting years (2006:36%, 2007:34.7%, 2008:60.4%). There is no seasonal trend for acute hepatitis C infection (Figure 2). There were no acute hepatitis C cases classified as outbreak-related.

Figure 2.
Hepatitis C, Acute Cases by Month of Onset, Florida, 2008



The highest incidence rates for 2008 occurred among those 20 to 24 years old which is a change from historical trends where the highest rates occurred among those in the 35 to 44 year old age group, where the incidence actually decreased in 2008. In 2008, the incidence rates were higher than the previous 5-year average in those 10 to 14, 20 to 24, 55 to 64, and 65 to 74 years old (Figure 3).

Figure 3.
Hepatitis C, Acute Incidence Rate by Age Group, Florida, 2008

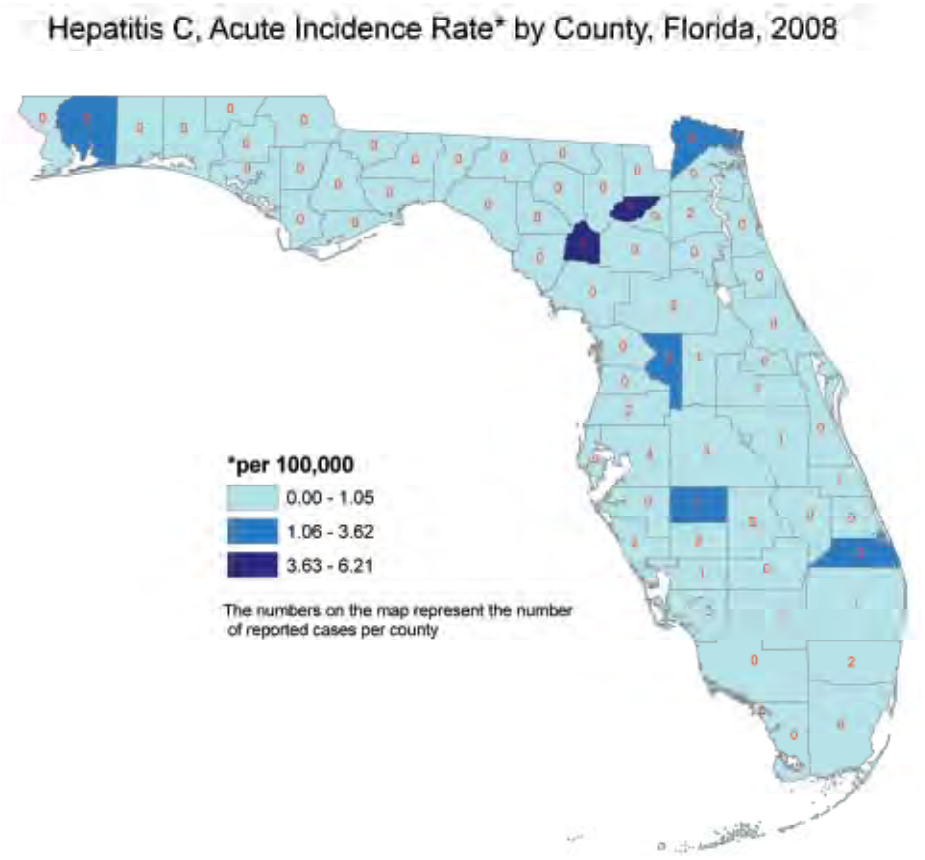


The passive transfer of maternal HCV antibodies may be present in infants up to 18 months of age. A positive Anti-HCV result in an infant <18 months is a not a true indicator of hepatitis C infection in an infant. In 2008, men and women had similar incidence of acute hepatitis C (0.29 per 100,000 and 0.27 per 100,000 respectively). The incidence rates in whites are greater than those in non-whites.

Acute Hepatitis C was reported in 21 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, and infants born to mothers who are hepatitis C carriers.



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

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

Lead Poisoning

Disease Abstract

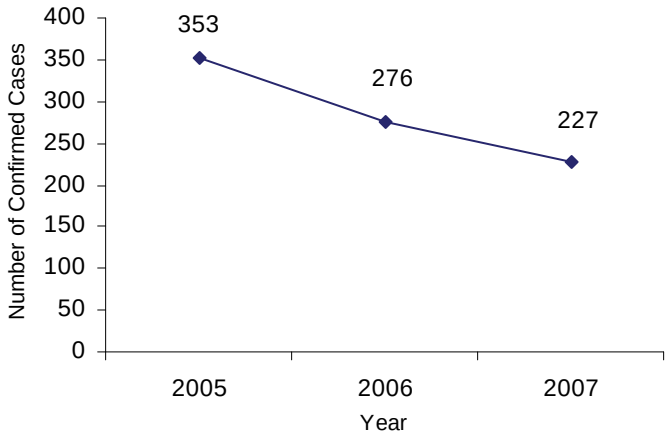
The Florida Childhood Lead Poisoning Prevention Program (FL CLPPP) monitors all reported blood lead levels in children less than 72 months of age. The program documents the reported number of children per year who meet the case definition of lead poisoning (≥ 10 ug/dL) and the reported number of children 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.

The total number of new cases reported to FL CLPPP increased from 304 in 2005 to 389 in 2006. Additionally, an overall increase in lead screening was observed during that same time period. The 2007 and 2008 FL CLPPP laboratory data is not yet available due to data system limitations. A comprehensive review of that data will be completed in the future. The observed increase in cases of lead poisoning is likely explained by increased outreach and education in targeted counties and a subsequent increase in the reporting of blood lead data by physicians and laboratories. Additional efforts are underway to ensure that the laboratory data collected by FL CLPPP is available to the county health departments for timely follow-up on cases.

Currently, county health departments receive reports of lead poisoning cases from local physicians and local laboratories. These cases are entered into the State's notifiable disease reporting surveillance

system, Merlin. Figure 1 shows that the number of confirmed lead poisoning cases in Florida for 2005 to 2007 as reported through Merlin. The data shows a steady decline in the number of confirmed cases reported from 2005 to 2007. The number of reported cases decreased from 353 in 2005 to 227 in 2007. Two hundred and seventy-six cases were reported in 2006. It should be noted that the number of confirmed cases reported in Merlin each year from 2005 to 2007 is not reflective of the total number of confirmed cases reported to the FL CLPPP surveillance system on an annual basis. Access to test result data from FL CLPPP at the county health department level would supplement the current reporting procedures of having physicians and local labs report to their respective counties. This will allow for consistency in the reporting of confirmed cases between FL CLPPP and Merlin surveillance data systems.

Figure 1: Confirmed Cases of Lead Poisoning Among Children Less Than 72 Months of Age as Reported in Merlin, Florida, 2005 to 2007



The discordance between the number of confirmed cases of lead poisoning reported in the two systems (FL CLPPP and Merlin) is a result of the way the data is initially collected. The FL CLPPP surveillance system collects all blood lead test results electronically from laboratories regardless of test result. County health departments rely on physicians and local laboratories to report cases with elevated blood lead levels. This system relies on the physician or laboratorian to know when and how to report the case and to whom to report it. Automated laboratory reporting is more complete and the number of cases reported to the FL CLPPP database is therefore expected to be larger than the number of cases reported in Merlin. That trend has been observed over the previous two years when comparing the available data.

Prevention

According to the CDC, Florida ranks eighth in the nation for the 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 suffer from lead poisoning in the state (CDC 2003 Program Announcement 03007, Appendix III). 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. Other prevention efforts have been initiated through the “Healthy Home” component of the program.

Additional Resources

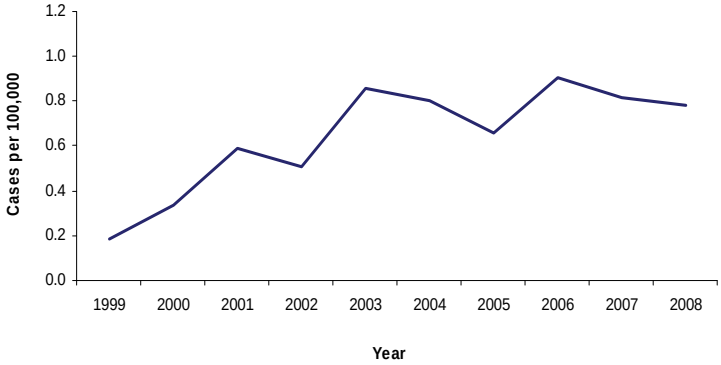
Florida Department of Health FL CLPPP website can be accessed at http://www.doh.state.fl.us/environment/medicine/lead/index.html.

Centers for Disease Control and Prevention (CDC) Lead Program website can be accessed at http://www.cdc.gov/nceh/lead/faq/about.htm.

Legionellosis

Legionellosis: Crude Data	
Number of Cases	148
2008 incidence rate per 100,000	0.78
% change from average 5-year (2003-2007) incidence rate	-3.08
Age (yrs)	
Mean	63.25
Median	64
Min-Max	22 - 92

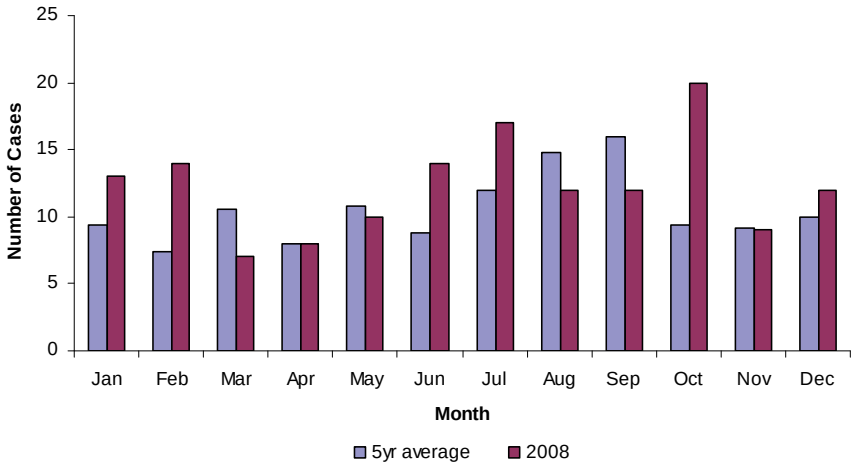
Figure 1.
Legionellosis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

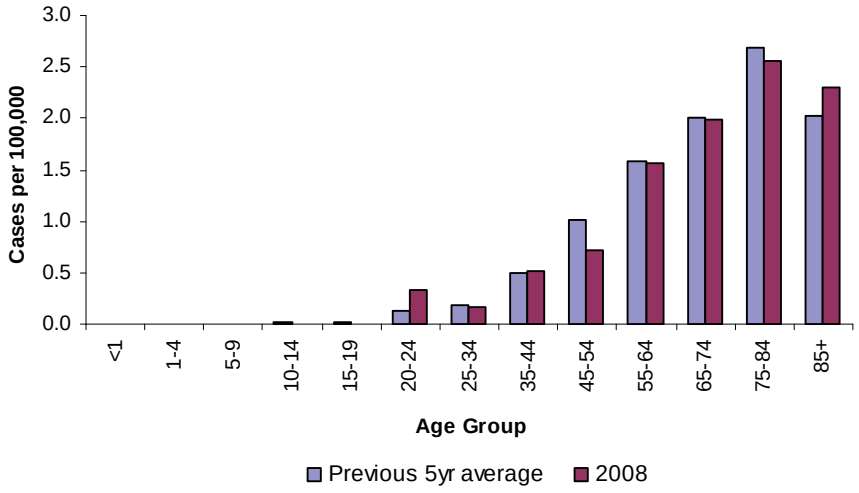
The Florida incidence rate for legionellosis has increased over the last ten years (Figure 1). In 2008, there was a 3.08% decrease in comparison to the average incidence from 2003-2007. A total of 148 cases were reported in 2008, of which 100% were classified as confirmed cases and 7.43% were acquired outside of Florida. The number of cases reported tends to increase in the summer months. In 2008, the number of cases exceeded the previous 5-year average for January, February, June, July, October, and December (Figure 2). Three of the legionellosis cases were classified as outbreak-related.

Figure 2.
Legionellosis Cases by Month of Onset, Florida, 2008



The highest incidence rates continue to occur among adults 45 years of age and older with incidence rates ranging from 0.71 per 100,000 in the 45-54 age group to 2.55 per 100,000 in the 75-84 age group. In 2008, the incidence rates were higher than the previous 5-year average in those 35-44 and those 85 and older; there was also a very interesting increase in incidence among those 20 to 24 years old. There were four cases reported in this age group for 2008 compared to only two cases in 2007. 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 slightly higher incidence than females (0.86 and 0.71 per 100,000, respectively).

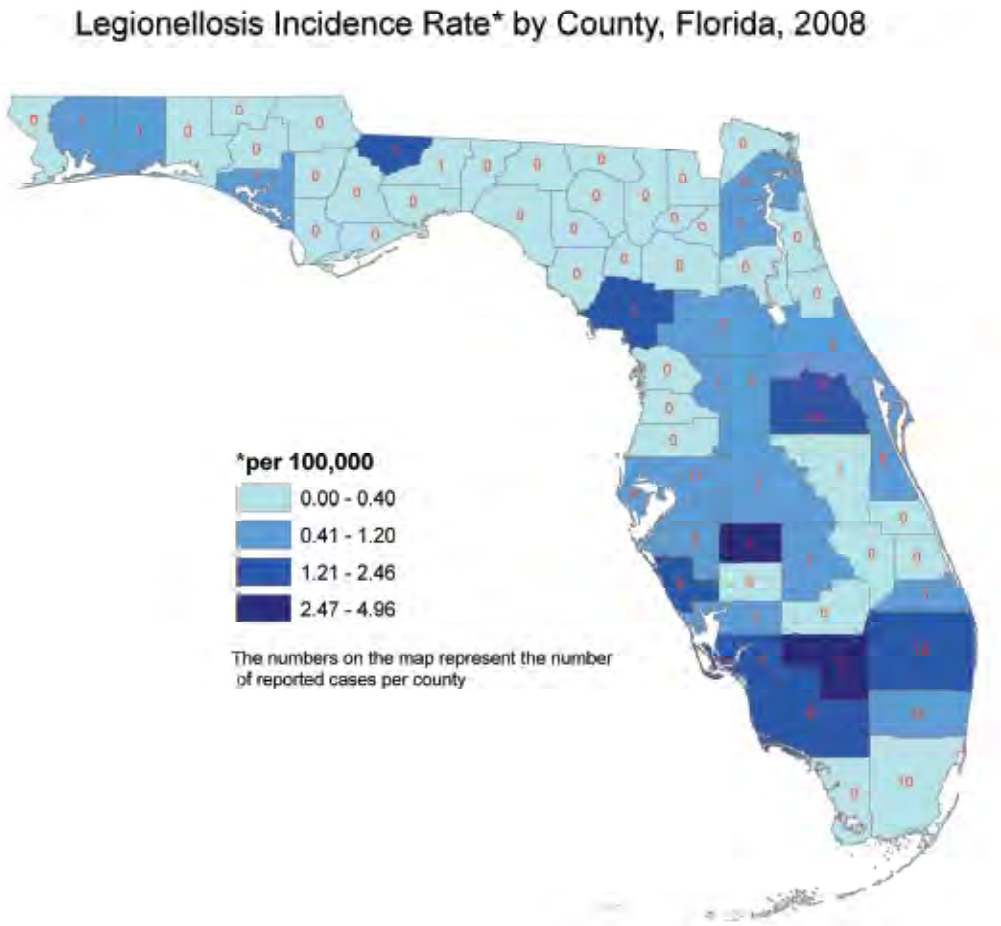
Figure 3.
Legionellosis Incidence Rate by Age Group, Florida, 2008



Legionellosis was reported in 30 of the 67 counties in Florida. Counties in the central, southwestern, and southeastern regions Florida reported the highest incidence rates.

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.



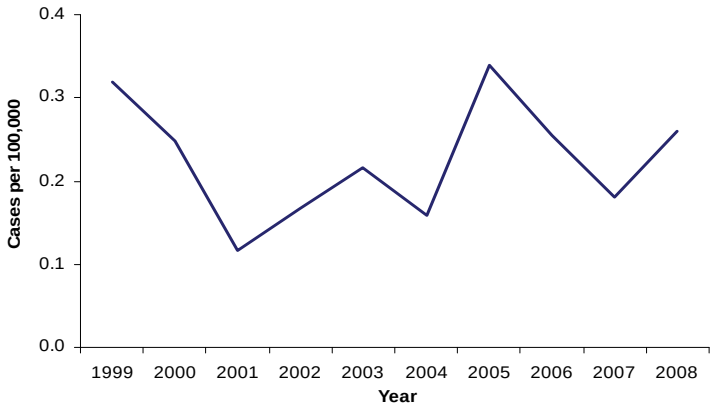
References
David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 18th ed., American Public Health Association Press, Washington, District of Columbia, 2004.

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

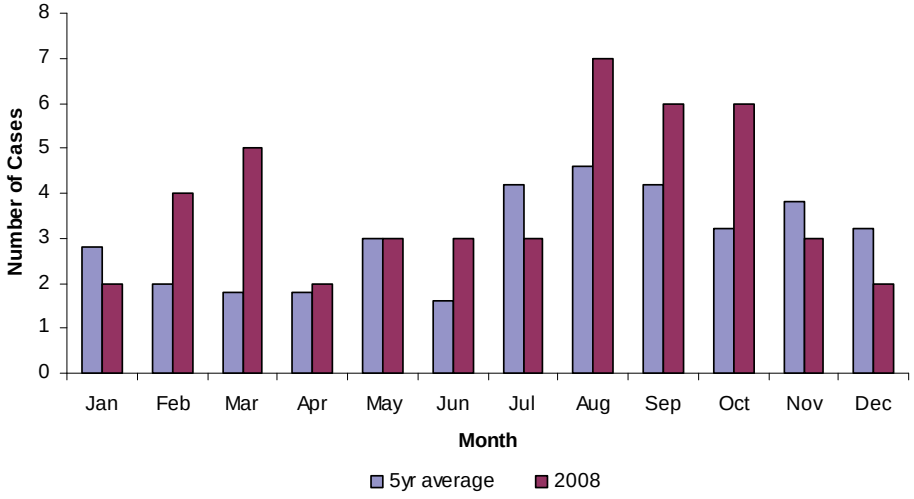
Listeriosis: Crude Data	
Number of Cases	49
2008 incidence rate per 100,000	0.26
% change from average 5-year (2003-2007) incidence rate	11.62
Age (yrs)	
Mean	62.04
Median	70.5
Min-Max	<1 - 99

Figure 1.
Listeriosis Incidence Rate by Year Reported, Florida, 1999-2008



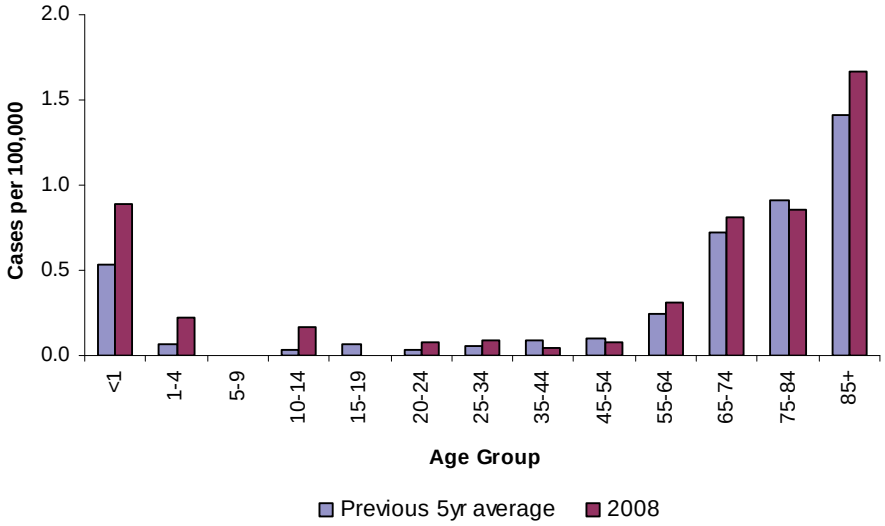
Disease Abstract
The reported incidence rate for listeriosis has been variable over the last ten years with no clear trend (Figure 1). In 2008, there was an 11.62% increase in comparison to the previous 5-year average incidence. A total of 49 cases were reported in 2008. All of the 2008 cases were sporadic 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 2008, a similar trend was observed with the number of cases exceeding the previous 5-year average during seven months of the year, most notably in August through October (Figure 2).

Figure 2.
Listeriosis Cases by Month of Onset, Florida, 2008



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 was higher than the previous 5-year average for most age groups except those 15-19, 35-44, 45-54, and 75-84. The incidence rate in males was higher than in females (0.33 and 0.20 per 100,000, respectively) for 2008 which is different from the historical trend. Historically, incidence rates in whites are greater than those in non-whites, and this was seen in 2008 as well, with white males having the highest incidence.

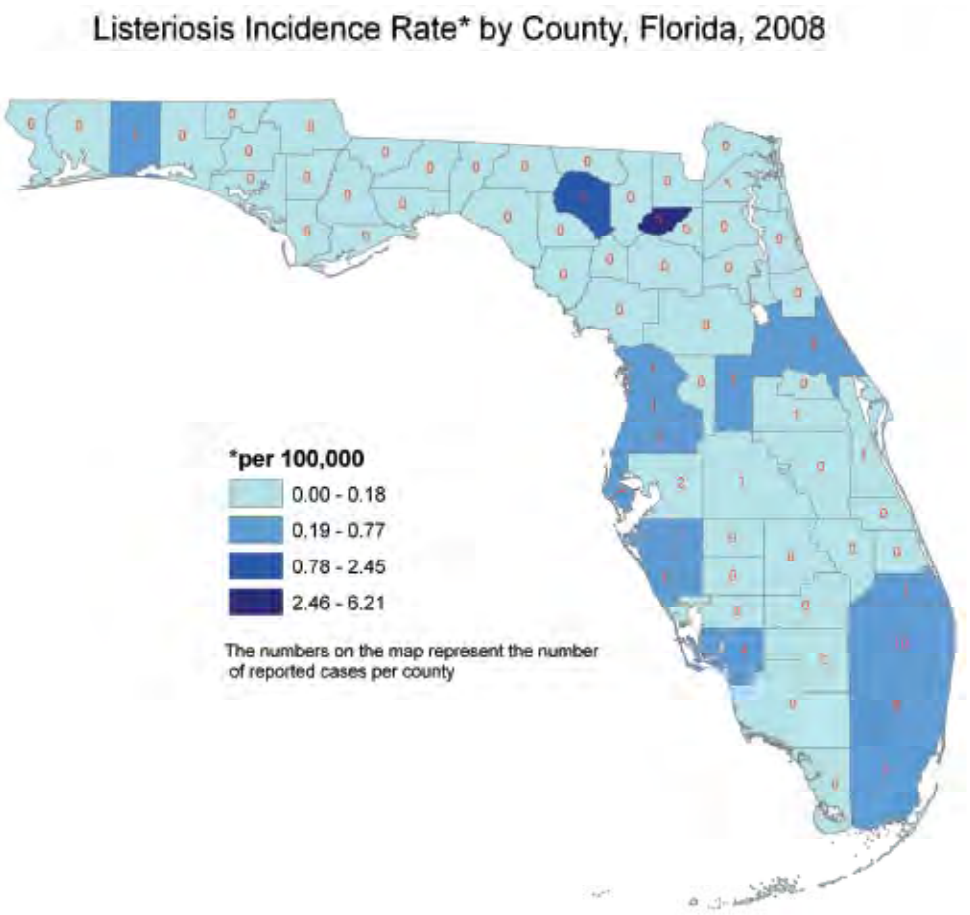
Figure 3.
Listeriosis Incidence Rate by Age Group, Florida, 2008



Listeriosis was reported in 21 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.

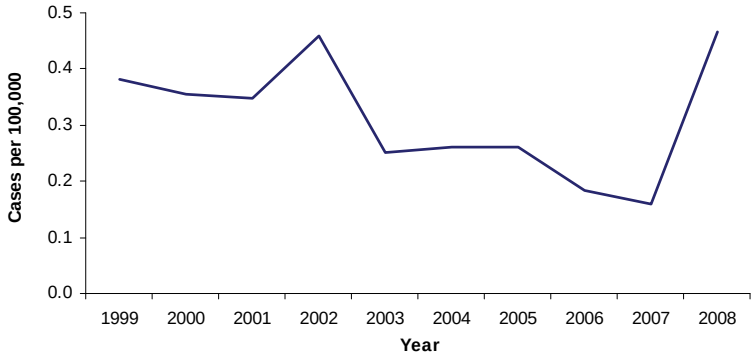
Additional Resources

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	88
2008 incidence rate per 100,000	0.47
% change from average 5-year (2003-2007) incidence rate	109.49
Age (yrs)	
Mean	39.56
Median	40.5
Min-Max	1 - 84

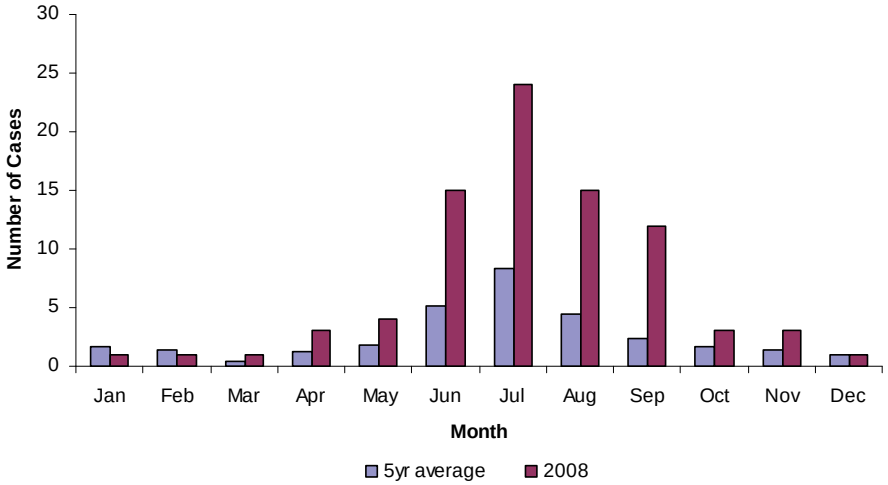
Figure 1.
Lyme Disease Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

The reported incidence rate for Lyme disease caused by *Borrelia burgdorferi* in Florida has dropped steeply over the past ten years, but there was a very sharp increase in incidence between 2007 and 2008 (Figure 1). In 2007, there had been 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. Prior to 2008, 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. However, in 2008 there was a 109% increase in reported cases over the previous 5-year average which can be partly attributed to a change in the case definition and possibly to increased public awareness and media attention. In Florida, the increase was primarily observed in cases imported from out of state, particularly from the northeast United States. There are gaps in knowledge regarding other *Borrelia* species that might be present in Florida.

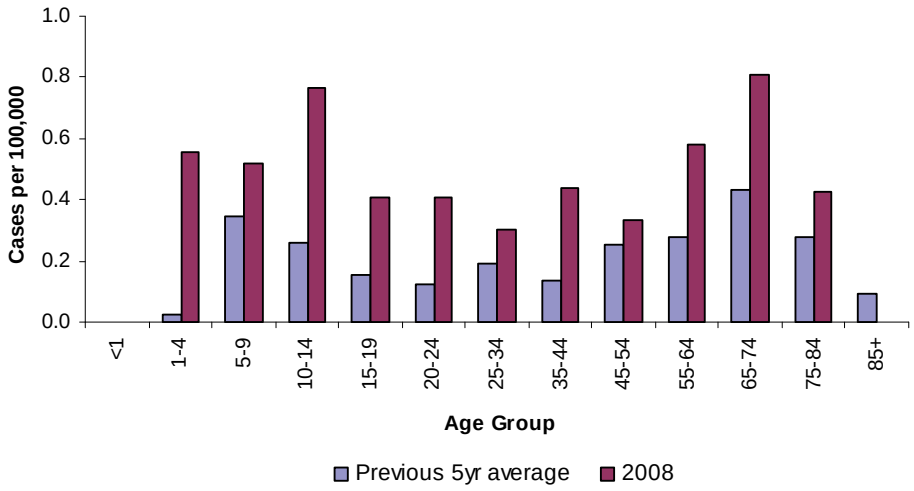
Figure 2.
Lyme Disease Cases by Month of Onset, Florida, 2008



A total of 88 cases were reported in 2008, of which 82% were classified as confirmed cases. A smaller proportion of cases were acquired in the state of Florida for 2008 (11 cases, 13%) as compared to 2007 (9 cases, 30%) but the majority of cases (71 cases, 81% in 2008) were acquired outside of the state for both years. Most imported cases were acquired in the northeast United States, particularly New York, Massachusetts, and Connecticut. Highest case incidence was in the summer, with peak incidence in July, but cases occurred year round. In 2008, the number of cases exceeded the previous 5-year average in all months except January, February, and December, which are low periods of tick activity (Figure 2). Two of the 2008 imported cases from Minnesota were classified as outbreak related.

The highest incidence in 2008 was in 65- to 74-year-olds which is consistent with the previous 5-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 five to nine years old and those 10-14 (Figure 3). Incidence rates in whites continue to be higher than in non-whites with the highest incidence occurring among white males (0.64 per 100,000) and the second highest incidence occurring among white females (0.41 per 100,000).

Figure 3.
Lyme Disease Incidence Rate by Age Group, Florida, 2008

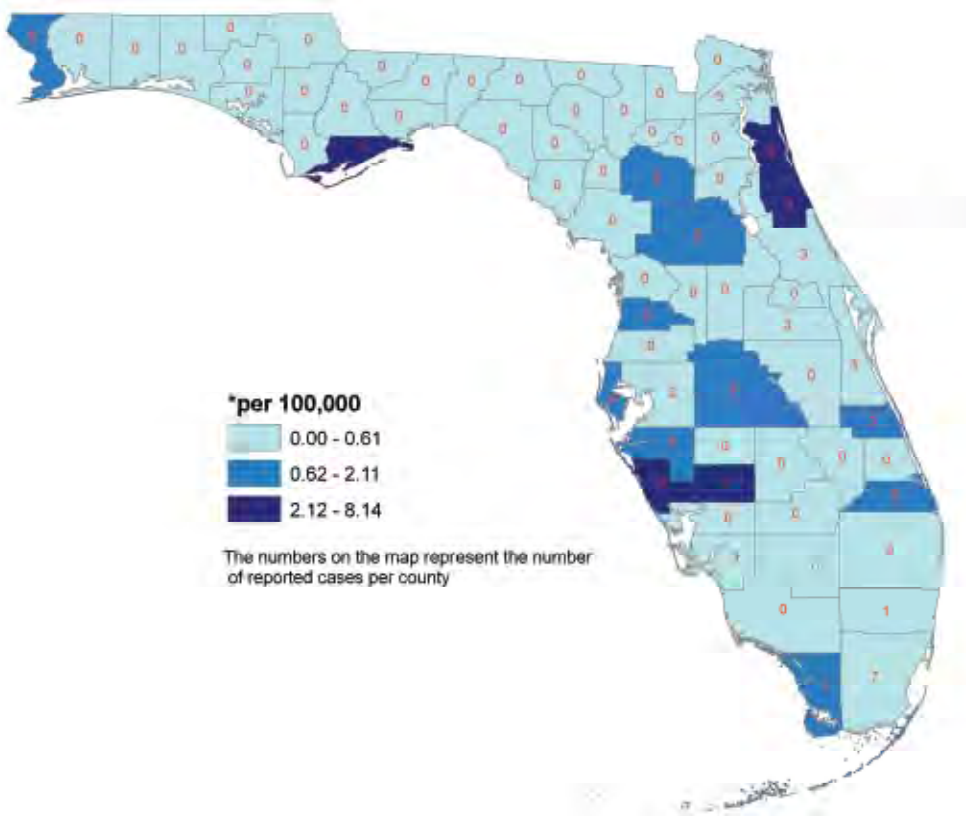


Lyme disease was reported in 24 of 67 Florida counties. Most cases were reported from central and south Florida, with four cases reported from the Panhandle.

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 see 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. Landscaping measures around the home to reduce ground cover can also reduce contact with ticks. Any ticks found attached to children, adults, or pets should be removed promptly. Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting. Do not use bare fingers to crush ticks. Wash hands following tick removal. Most Florida cases are acquired in Lyme-endemic areas of the northeastern U.S.; these prevention measures are especially important while visiting those areas.

Lyme Disease Incidence Rate* by County, Florida, 2008



References

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

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

Additional Resources

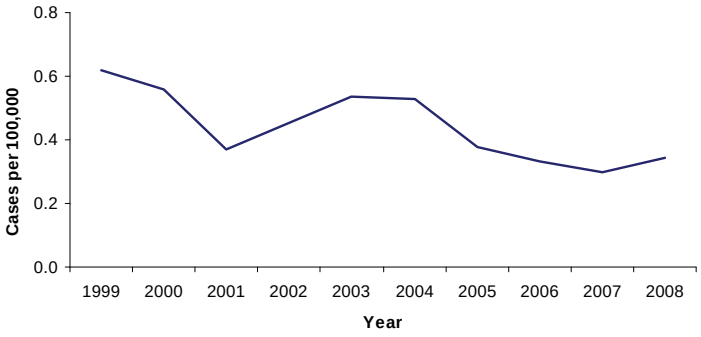
Disease information is available from the Centers for Disease Control and Prevention at http://www.cdc.gov/ncidod/dvbid/lyme/ and http://www.cdc.gov/healthypets/diseases/lyme.htm.

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

Malaria

Malaria: Crude Data	
Number of Cases	65
2008 incidence rate per 100,000	0.34
% change from average 5-year (2003-2007) incidence rate	-16.37
Age (yrs)	
Mean	39.43
Median	43
Min-Max	4 - 74

Figure 1.
Malaria Incidence Rate by Year Reported, Florida, 1999-2008

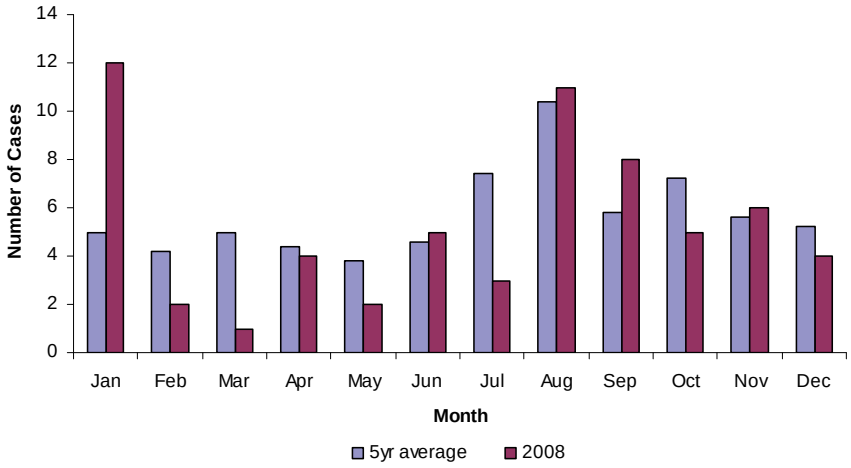


Disease Abstract

Human malaria is caused by four species of protozoan parasites of the genus *Plasmodium*: *P. vivax, P. falciparum, P. malariae,* and *P. ovale*. All four are transmitted to people via the bite and blood-feeding behavior of mosquitoes of the genus *Anopheles*. Malaria was endemic in Florida up until the 1940s. Currently, nearly all cases are among travelers returning to the state from malaria endemic regions of the world, though competent vectors do exist in the state, providing the possibility for local transmission. The incidence rate for malaria in Florida has declined over the last 10 years (Figure 1) with 65 cases reported in 2008. In 2008, there was a 16% decrease in comparison to the average incidence from 2003 to 2007. More cases are reported during the summer and early fall months, but cases are reported year-round (Figure 2). The highest historical incidence rates occur among those in the 20-34 age group but there was a second peak in 2008 in those 45-54 (Figure 3). The average age of reported malaria cases in Florida is 39.4 years (range: 4-74). In 2008, 86% of the 65 reported malaria cases were diagnosed with *P. falciparum* and 11% were diagnosed with *P. vivax*. One case was diagnosed with *P. ovale* and species was unable to be determined for one case. Sixty-nine percent of cases were non-white, 28% were white, and the remaining were of unknown race.

Thirty-eight percent of cases had recent travel history to Haiti, 26% traveled to Nigeria, 23% traveled to another African country, 9% traveled to Central or South America, and the remaining 3% traveled to countries in Asia. Of those for whom additional data was available (39/65), the largest proportion (49%) acquired malaria while visiting relatives or friends. Persons “visiting friends and relatives” are considered a high-risk group since prior immunity they may have had has waned and they tend to not take proper malaria prevention precautions. Other reasons for travel to malaria endemic areas were missionary/ volunteer work (33%) and tourism (8%). Malaria was also identified in new immigrants or students studying in the United States.

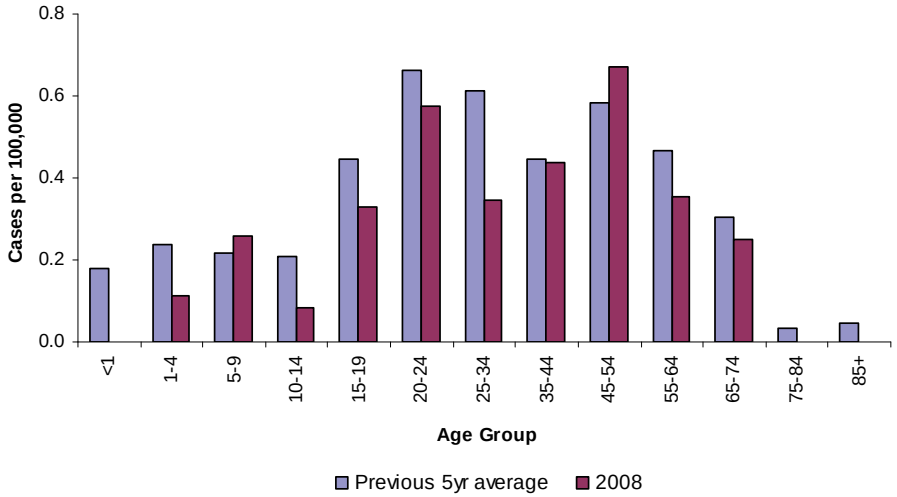
Figure 2.
Malaria Cases by Month of Onset, Florida, 2008

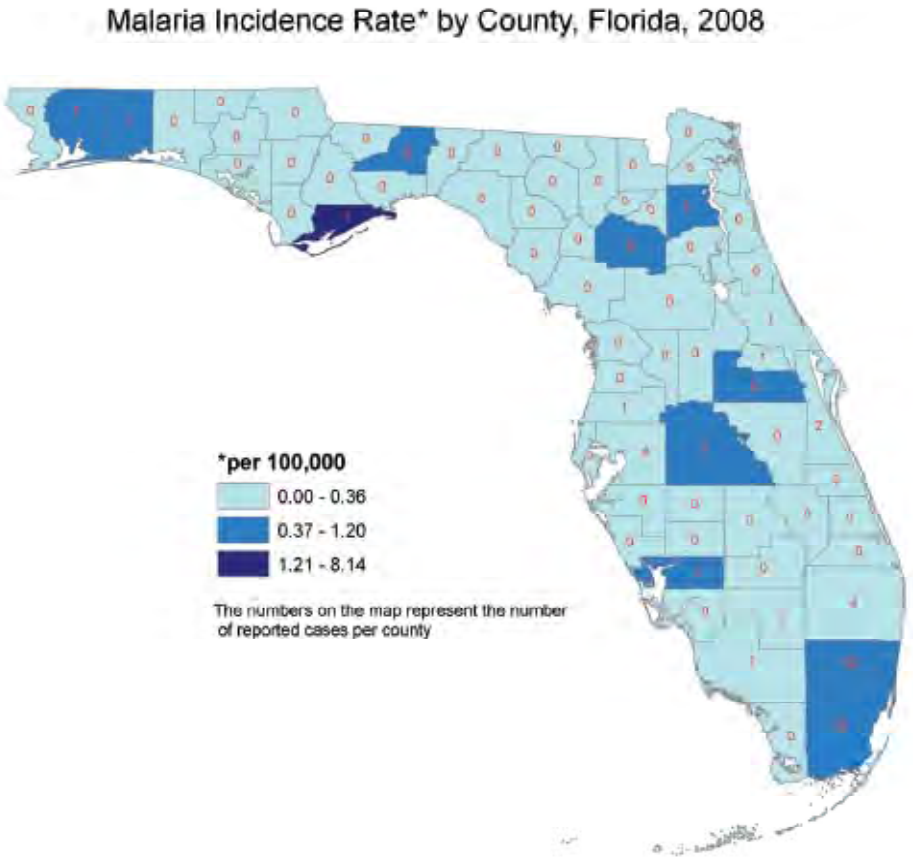


Prevention

No vaccine is currently available. Travelers to malaria-endemic countries should consult with their doctor to make sure they receive an appropriate preventative chemoprophylactic regimen and should also take the full course of chemoprophylaxis as prescribed. A number of factors should be taken into consideration prior to prescribing chemoprophylaxis including, but not limited to, risk, the species of malaria present, drug resistance, and how well the drug is tolerated. Personal protection measures can also help prevent malaria infection. Avoid contact with mosquitoes by using an insect repellent containing DEET or other EPA-approved ingredient, remaining in well-screened areas, keeping skin covered in clothing, and using insecticide-treated bed nets.

Figure 3.
Malaria Incidence Rate by Age Group, Florida, 2008





References

Centers for Disease Control and Prevention, *Traveler's Health: Yellow Book, Health Information for International Travel, 2008*, 22 June 2007, http://wwwn.cdc.gov/travel/contentYellowBook.aspx.

Additional Resources

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

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

Measles

Disease Abstract

In 2008, one laboratory-confirmed case of measles was reported for a statewide incidence rate of 0.005 cases per 100,000 population. This is a significant decrease from the five cases reported in 2007 and the four cases reported in 2006. The 2008 case was imported from England where there has been an increase in measles activity over the past few years due to decreased vaccination rates. England currently has endemic transmission of measles. A case is officially classified as internationally imported when it has its source outside the country, with rash onset within 21 days after entering the country, and is not linked to local transmission.

Measles is a disease of urgent public health importance, so even one case requires tracking of all contacts and conducting interviews to assess susceptibility. Florida has many possible sources of infection due to the many foreign visitors each year, ease of international travel, and increasing incidence of measles in the U.S. and abroad. When a case is identified in another state or country, all possible contacts in Florida must be tracked in order to identify other potential cases and prevent continued transmission.

Prevention

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

References

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

Additional Resources

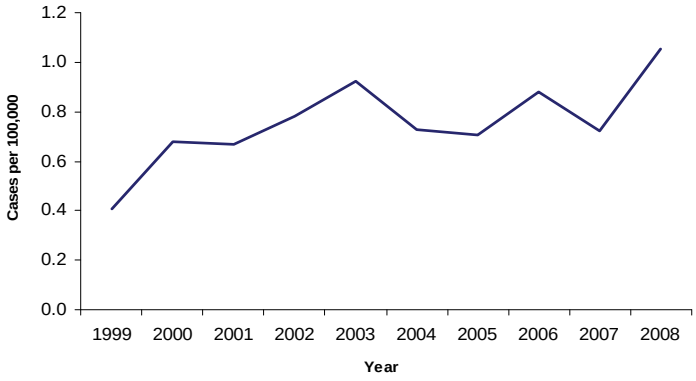
Disease information is available from the Centers for Disease Control and Prevention (CDC) at www.cdc.gov/vaccines/vpd-vac/measles/default.htm.

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

Meningitis, Other

Meningitis, Other (bacterial, cryptococcal, mycotic): Crude Data	
Number of Cases	199
2008 incidence rate per 100,000	1.05
% change from average 5 year (2003-2007) incidence rate	33.44
Age (yrs)	
Mean	36.75
Median	41
Min-Max	<1 - 93

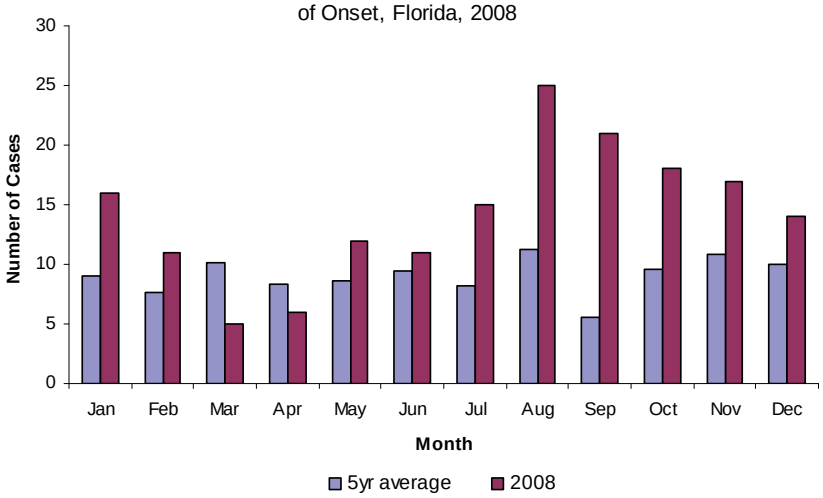
Figure 1.
Meningitis, Other (bacterial, cryptococcal, mycotic) Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

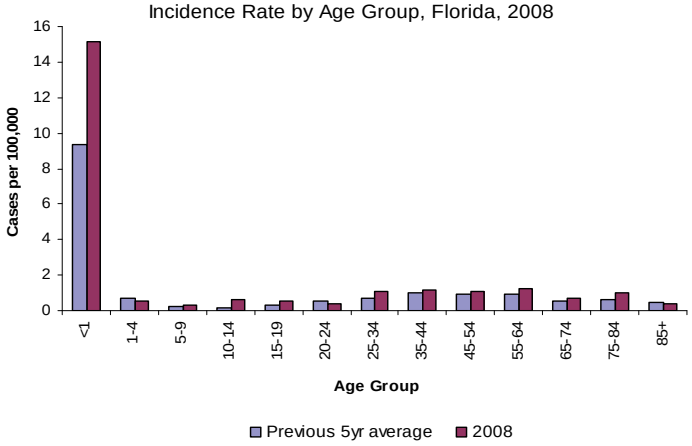
The "meningitis, other" category includes any meningitis due to any bacterial or fungal species other than *Neisseria meningitidis* or *Haemophilus influenzae*, with an isolate from the blood or cerebral spinal fluid. In 2008, some common pathogens isolated were *Cryptococcus* species (61), *Staphylococcal* species (40), *Streptococcal* species (27), *Klebsiella pneumoniae* (6), *Escherichia coli* (5), and *Pseudomonas* species (5).

Figure 2.
Meningitis, Other (bacterial, cryptococcal, mycotic) Cases by Month of Onset, Florida, 2008



The incidence rate of "meningitis, other" has increased gradually over the previous 10 years and in 2008 there was a 33.44% increase in the incidence rate as compared to the previous 5-year average (Figure 1). A total of 199 cases were reported in 2008, all confirmed. The number of cases of "meningitis, other" shows little difference by season when averaged over several years but there did seem to be increased incidence in the fall and winter of 2008 (Figure 2). There were no "meningitis, other" outbreaks in 2008.

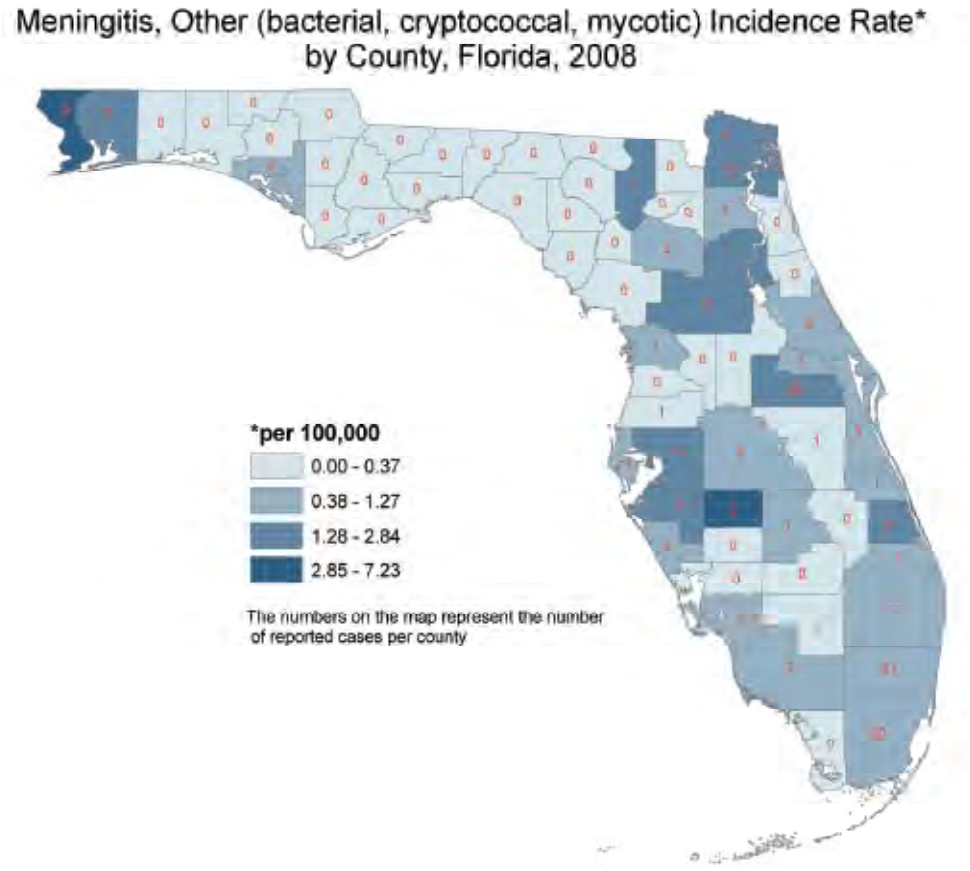
Figure 3.
Meningitis, Other (bacterial, cryptococcal, mycotic) Disease
Incidence Rate by Age Group, Florida, 2008



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 (1.40 per 100,000 and 0.72 per 100,000 respectively). Incidence rates in non-white males are more than double the incidence rates in white males.

"Meningitis, other" was reported by 32 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.



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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, "*Salmonella enteritidis* meningitis – A case report," *Indian Journal of Medical Microbiology*, Vol. 19. 2001, pp. 151-152.

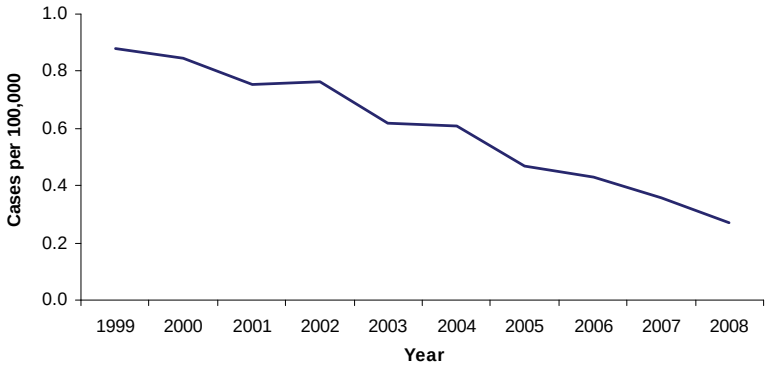
A. Zuger, E. Louie, R.S. Holzman, M.S. Simberkoff, J.J. Rahal, "*Cryptococcal* disease in patients with the acquired immunodeficiency syndrome. Diagnostic features and outcome of treatment," *Annals of Internal Medicine*, Vol. 104, 1986, pp. 234-40.

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	51
2008 incidence rate per 100,000	0.27
% change from average 5-year (2003-2007) incidence rate	-45.19
Age (yrs)	
Mean	33.45
Median	30
Min-Max	<1 - 83

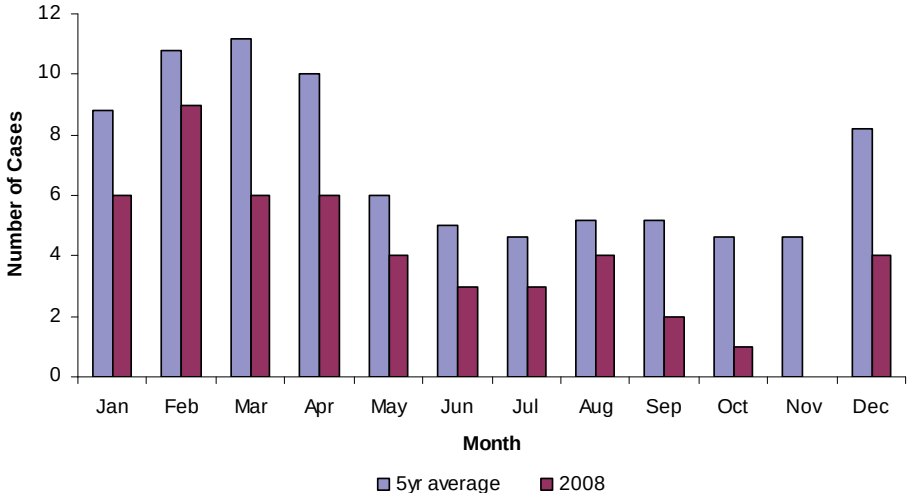
Figure 1.
Meningococcal Disease Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

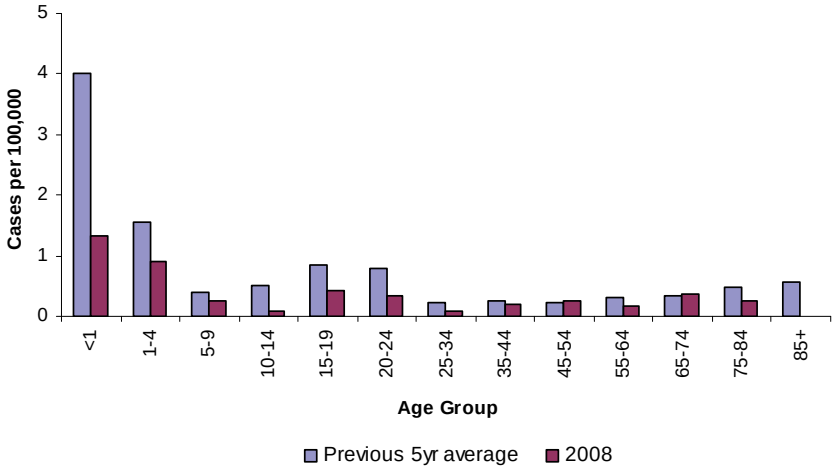
Meningococcal disease includes both meningitis and septicemia due to the bacteria *Neisseria mengitidis*. There are many different serogroups of *Neisseria menigitidis* around the world. The common ones in the United States include A, B, C, W-135, and Y. The reported incidence rate for meningococcal disease has declined gradually over the previous 10 years, and in 2008 was less than half of what it was 10 years ago (Figure 1). In 2008, there was a 45.19% decrease in comparison to the average incidence from 2003-2007. A total of 51 cases were reported in 2008, of which 96% 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 four cases reported as outbreak-related in 2008 due to a primary and secondary case among family members. There were seven cases that resulted in death.

Figure 2.
Meningococcal Disease Cases by Month of Onset, Florida, 2008



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 2008, the incidence rates were lower than or equal to the previous 5-year average in all age groups (Figure 3). In 2008, the incidence rate in white females was greater than that in non-white females (0.32 and 0.05 per 100,000, respectively). Forty-five of the 51 cases had specimens submitted to the Bureau of Laboratories for serogrouping (Table 1).

Figure 3.
Meningococcal Disease Incidence Rate by Age Group, Florida, 2008



Meningococcal disease was reported in 21 of the 67 counties in Florida. Counties in central and northeastern Florida reported the highest incidence rates.

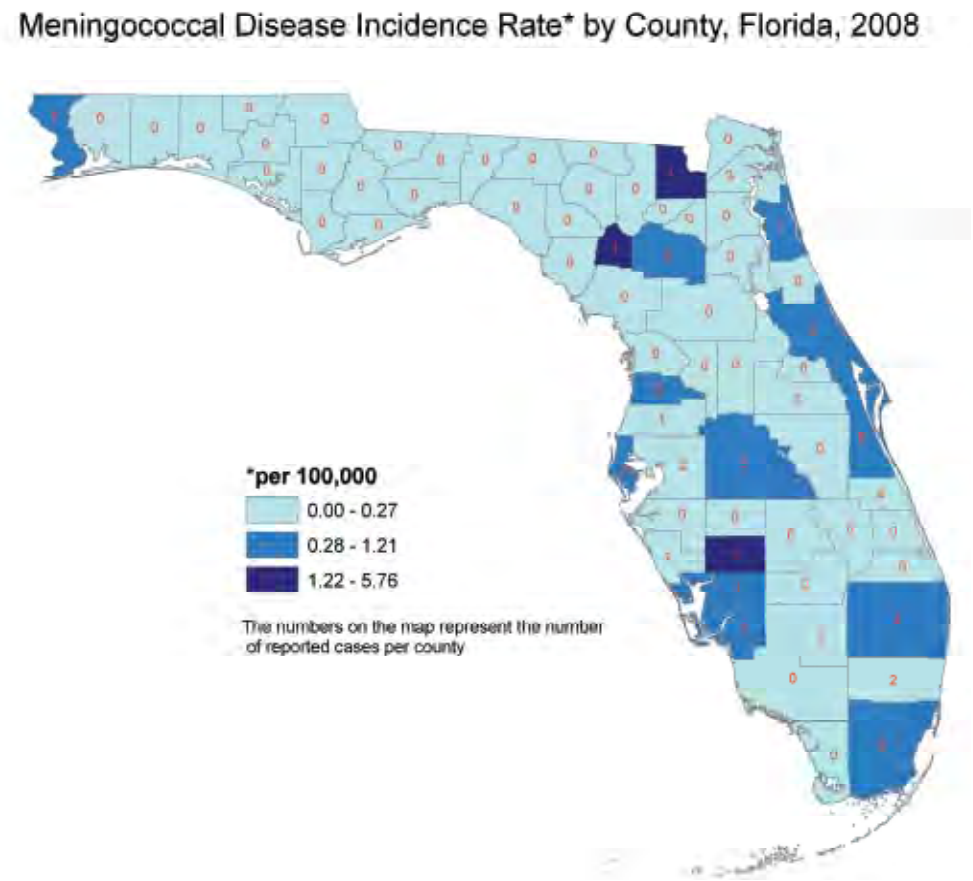
Table 1. Cases of Meningococcal Disease, by Serogroup, Florida, 2008

Serogroup	Number of Cases
Group A	0
Group B	17
Group C	7
Group Y	13
Group W-135	5
Non-Groupable	1
Not Answered	7
Unknown	1
Total	51

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) and are recommended for selected populations at increased risk of meningococcal disease. 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).

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



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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, pp. 11-20.

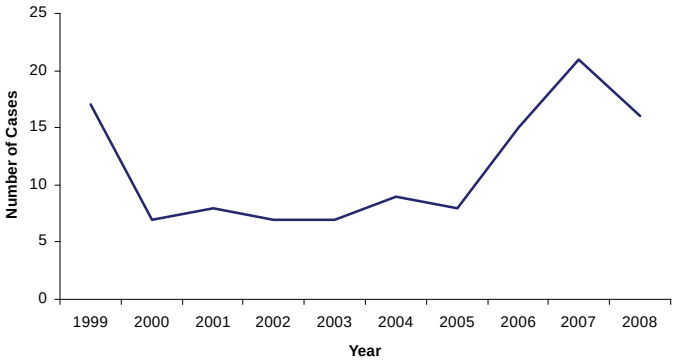
Additional Resources

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	16
2008 incidence rate per 100,000	0.08
% change from average 5-year (2003-2007) reported cases	33.33
Age (yrs)	
Mean	23.5
Median	23
Min-Max	1 - 54

Figure 1.
Mumps Cases by Year Reported, Florida, 1999-2008

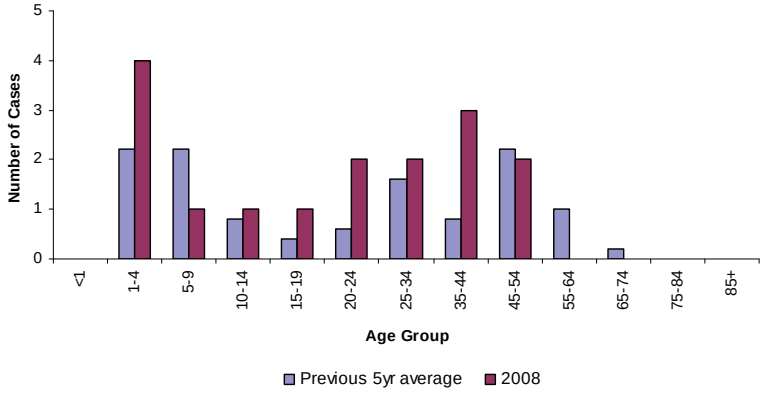


Disease Abstract

The statewide incidence rate for confirmed and probable cases of mumps for all ages was 0.08 per 100,000 population. The ages ranged from 1-54 years. There were 12 confirmed cases and four probable cases of mumps reported in 2008, of which one was acquired in a state other than Florida and four were acquired outside of the U.S. Three of the cases were hospitalized. Seven of the 16 total cases had received vaccine, two had no history of vaccine, and seven had unknown immunization status.

The twelve confirmed cases represent a slight increase from the ten confirmed cases in 2007 even though the total number of cases (confirmed plus probable) declined in 2008. Incidence of mumps was relatively unchanged from 2000 to 2005. However, in 2006 there was a significant increase in cases in the U.S., especially in the college-age population. This trend continued in 2007 with an increase of 128% over the average number of cases reported in the previous five years, but slowed for 2008 when there was an increase of 33% over the previous 5-year average.

Figure 3.
Mumps Cases by Age Group, Florida, 2008



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

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

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

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

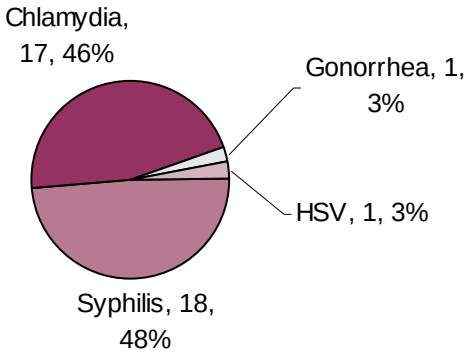
Neonatal Infections

Description
The term “neonatal infections” includes reported cases of chlamydia, gonorrhea, syphilis, herpes simplex virus (HSV), and human papillomavirus (HPV) diagnosed in infants up to six months of age. This extended age range is used in order to capture delayed identification of chlamydial pneumonia and human papillomavirus infections that are not readily identifiable upon birth. Reporting parameters for neonatal infections were updated in November 2008 in *F.A.C.* 64D-3.

Disease Abstract
In 2008, 11,150 pregnant women were infected with a sexually transmitted disease (STD). During the same time period, thirty-seven infants were diagnosed with an STD-related neonatal infection.

The 2008 distribution of these 37 neonatal infections by disease is displayed in Figure 1. During 2008, chlamydia and syphilis accounted for nearly 95% of these neonatal infections. There were no cases of HPV reported among neonates. Fourteen counties reported neonatal infections in 2008 with the highest number of neonatal infections occurring in Dade (12) followed by Broward (5) and Duval (4).

Figure 1. Reported Cases of Neonatal Infections, 2008



The racial/ethnic distribution of neonatal infections is reflective of trends seen in all reported STD cases, with an excess in minority populations. Non-Hispanic black neonates accounted for 54.1% of the neonatal infections; whereas non-Hispanic whites accounted for 21.8%. The remaining cases were reported in Hispanics (8.1%) or the other/unknown category (12.0%). There were no significant racial/ethnic differences among disease categories.

Prevention

Inadequate or no prenatal care is the primary risk factor for neonatal infections. Untreated STD infections in pregnancy can have adverse effects on the baby before, during, or after the baby's birth. These infections remain a leading cause of preventable morbidity among newborns. Adverse outcomes include: low birth weight, eye infections, neurological damage, and death. However, the frequency and severity of complications related to STD infections in neonates are underestimated, as is the true burden of disease in Florida. It is imperative that women be routinely screened for STDs during pregnancy and be appropriately treated.

References

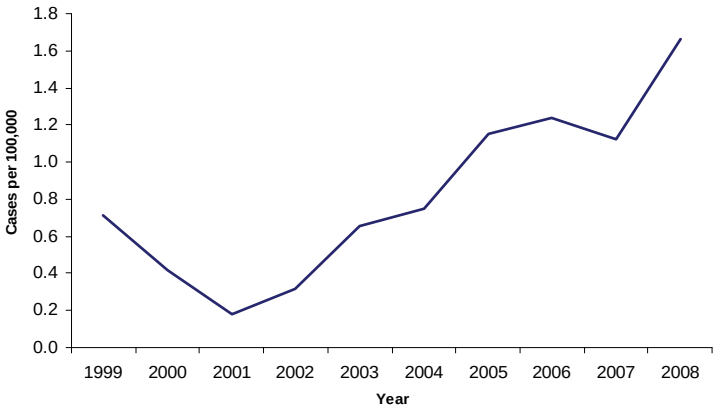
Florida Administrative Code, Chapter 64D-3. Florida Department of State. November 24, 2008. Available online at https://www.flrules.org/gateway/ChapterHome.asp?Chapter=64D-3.

Schrag SJ, Arnold KE, Mohle-Boetanie JC, et. al., "Prenatal Screening for Infectious Diseases and Opportunities for Prevention." *Obstetrics and Gynecology*, 2003, Vol. 102, pp. 753-760.

Pertussis

Pertussis: Crude Data	
Number of Cases	314
2008 incidence rate per 100,000	1.66
% change from average 5-year (2003-2007) incidence rate	67.60
Age (yrs)	
Mean	9.97
Median	5
Min-Max	<1 - 73

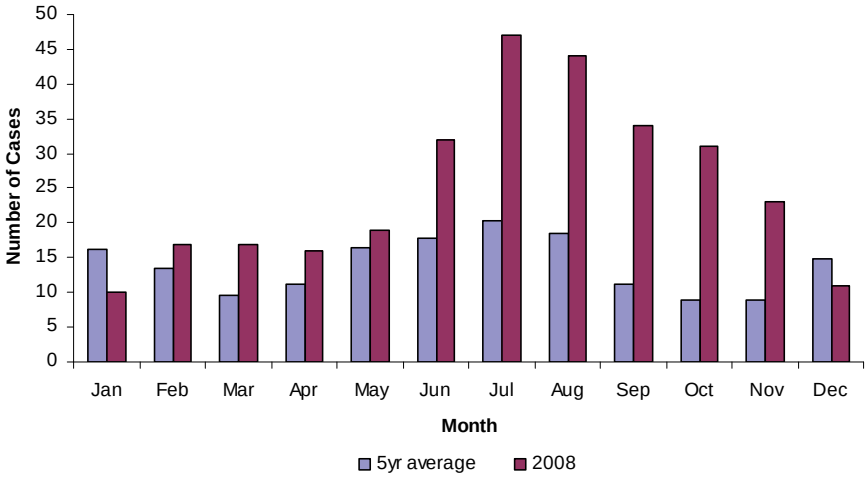
Figure 1.
Pertussis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

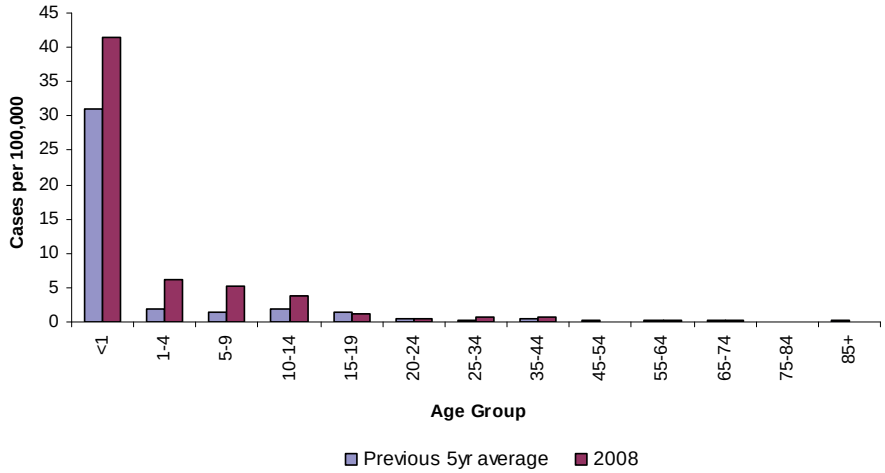
Disease trends in Florida, and nationwide, indicate that pertussis cases have increased significantly since 2001 (Figure 1). Case numbers went from 30 in 2001 (22 confirmed and 8 probable) to a high of 314 cases in 2008 (239 confirmed cases and 75 probable cases). In the previous five years, most cases occurred during the summer months, but many cases occurred in the fall and winter months of 2008 (Figure 2). In the previous five years, pertussis rates were similar by gender and race. In 2008, however, white males and females had significantly higher rates.

Figure 2.
Pertussis Cases by Month of Onset, Florida, 2008



As in the previous five years, most pertussis cases were identified in infants and young children. Of the 314 reported cases in 2008, 93 were reported in infants less than 12 months of age, too young to have completed the vaccination series (Figure 3). Of the 2008 cases, 208 were in children under nine years old, and 96 were hospitalized. One death occurred in a two-week-old Hispanic infant; the mother also had a cough illness that was undiagnosed. Another two-week-old Hispanic infant with pertussis developed acute encephalopathy with severe sequela. Case reports show that 139 cases did not receive vaccine; of these, 41 (30%) had refused vaccination.

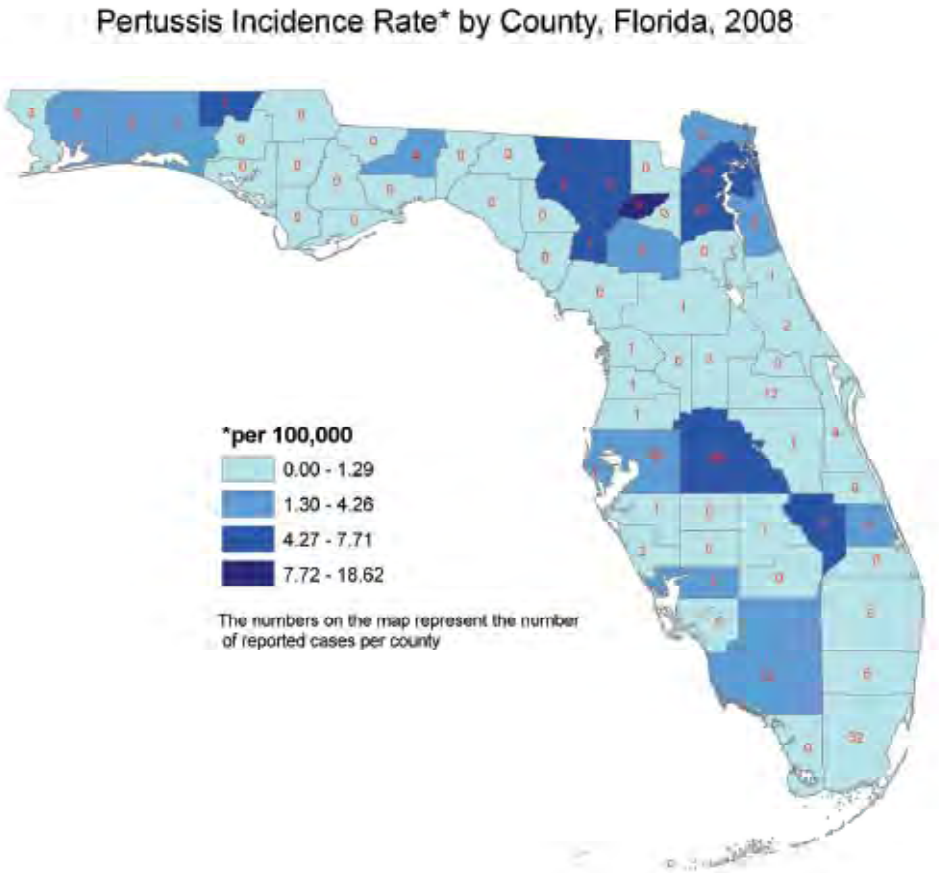
Figure 3.
Pertussis Incidence Rate by Age Group, Florida, 2008



Pertussis was reported in 41 of the 67 counties in Florida. Counties in the northeast, northwest, and central regions of Florida reported the highest incidence rates.

Prevention

Currently, only acellular pertussis vaccines combined with diphtheria and tetanus toxoids (DTaP and Tdap) are available in the U.S. The five DTaP doses should be administered to children at two months, four months, six months, 15–18 months, and 4–6 years of age. This vaccine is also available in combination with other childhood vaccines. The increase in disease in the early teenage years indicates that immunity decreases over time. Vaccine recommendations now include one dose of Tdap vaccine to be given between 10 and 64 years of age. As of school year 2009-2010, Tdap vaccine is required to meet the seventh grade vaccination requirement. Post-exposure antibiotic and vaccine prophylaxis of close contacts of a case are the major outbreak control measures to stop pertussis transmission.



References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed., 2008, Chapter 10.

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

Additional Resources

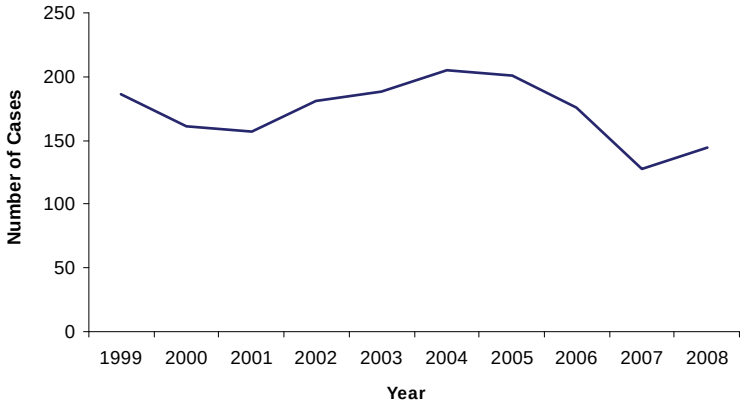
Disease information is available from the Centers for Disease Control and Prevention (CDC) at www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm.

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

Rabies, Animal

Rabies, Animal: Crude Data	
Number of Cases	144
2008 incidence rate per 100,000	NA
% change from average 5-year (2003-2007) reported cases	-19.82
Age (yrs)	
Mean	NA
Median	NA
Min-Max	NA

Figure 1.
Animal Rabies by Year Reported, Florida, 1999-2008



Disease Abstract

From 1999 through 2008, 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. A canine variant strain of rabies then circulating in Haiti was isolated from the patient. In 2008, post-exposure treatment was recommended for 1,618 people in Florida; there were no human cases reported in 2008.

Rabies is endemic in the raccoon and bat populations of Florida, and frequently spills out from raccoons into other animal populations. Laboratory testing for animal rabies is only done when animals are involved in exposures to humans or domestic animals, and the data do not necessarily correlate with the true prevalence of rabies in Florida. Of the 3,598 animals tested at the Bureau of Laboratories (BOL) in 2008, there were 144 confirmed rabid animals, representing a 19.8% decrease from the previous 5-year average but a 10% increase from 2007. After a trough in reported cases in 2007 suspected to be associated with raccoon distemper outbreaks statewide, overall case numbers seem to be increasing to more typical levels (20-year avg. 186 cases/yr). No cases were identified as being associated with outbreaks. In 2008, rabid animals were found in 42 of 67 counties in Florida, with highest activity in the central part of the state. Three counties reported more than 10 cases: Leon (15); Marion (19); and Orange (10) (see map). Cases were reported in each month of the year, with peaks in July (17), June (15), and February (14). Case numbers peaked slightly earlier in 2008 as August is historically the peak month for rabies activity in Florida, and March rather than February is often a peak month in the early part of the year. Highest numbers of positive raccoon cases were reported in February, March, June,

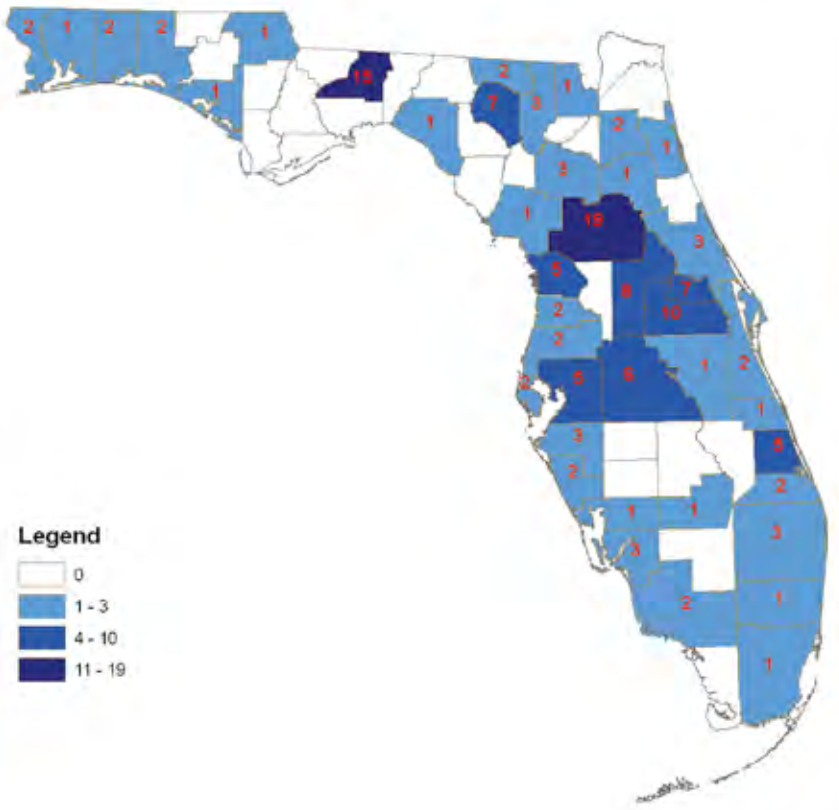
and July with nine cases each. September and April had the most rabid fox reports, with five and four cases respectively. Although rabid bat cases typically peak in August, in 2008 the most rabid bat cases were reported in October (4), followed by June (3) and July (3).

Raccoons once again accounted for the majority of cases (88, 61%), followed by foxes (20, 14%), bats (20, 14%), and cats (9, 6%). Two rabid raccoons that had been "adopted" as pets each exposed multiple people including children (see Section 6). There were no dogs found to be rabid in 2008, although over 1,000 were tested. Since 1997, rabid cats have continued to outnumber rabid dogs, though rabies vaccination is compulsory for both. All positive cats were either not vaccinated for rabies or had unknown rabies vaccination history. All positive cats were feral or primarily resided outdoors. Two of the cats that tested positive for rabies in 2008 each exposed 15 or more people (see Section 6). One horse and one mule were found to be rabid, and three bobcats and two skunks were also positive for rabies. Testing at the BOL demonstrates that terrestrial rabies in Florida is primarily due to the raccoon variant.

Prevention

During 2008, 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 people in 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.

Animal Rabies Cases by County, Florida, 2008



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

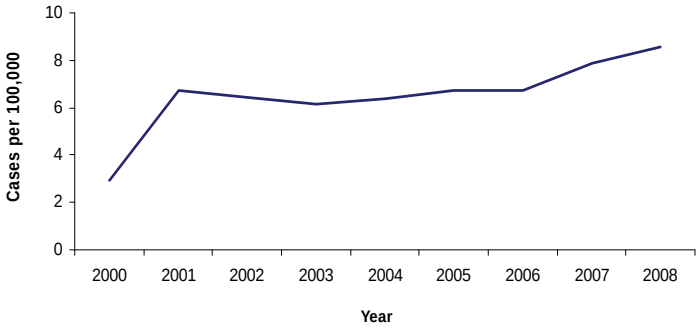
Information is available from the Florida Department of Health website at http://www.doh.state.fl.us/environment/medicine/rabies/rabies-index.html

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

Rabies, Possible Exposure

Rabies, Possible Exposure: Crude Data	
Number of Cases	1618
2008 incidence rate per 100,000	8.56
% change from average 5-year (2003-2007) incidence rate	26.04
Age (yrs)	
Mean	36.53
Median	36
Min-Max	<1 - 108

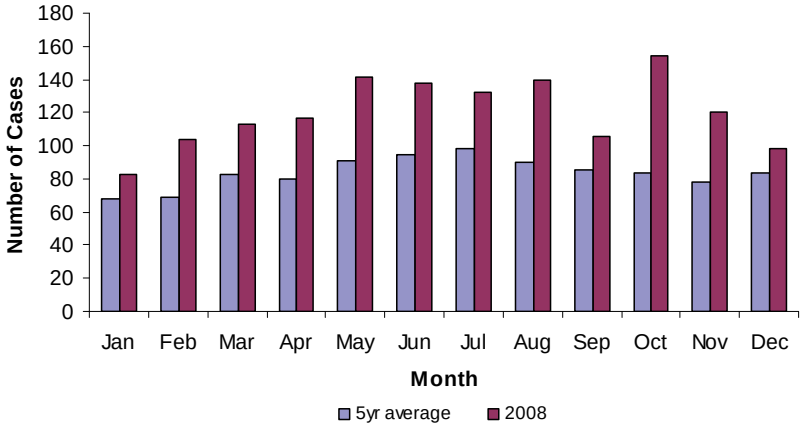
Figure 1.
Rabies, Possible Exposure Incidence Rate by Year Reported, Florida, 2000-2008



Disease Abstract

Electronic reporting through the Merlin system 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, scratched, or has mucous membrane or flesh wound contact with the saliva or nervous tissue of a laboratory confirmed rabid animal or a suspected rabid animal that is not available for testing.

Figure 2.
Rabies, Possible Exposure Cases by Month of Onset, Florida, 2008

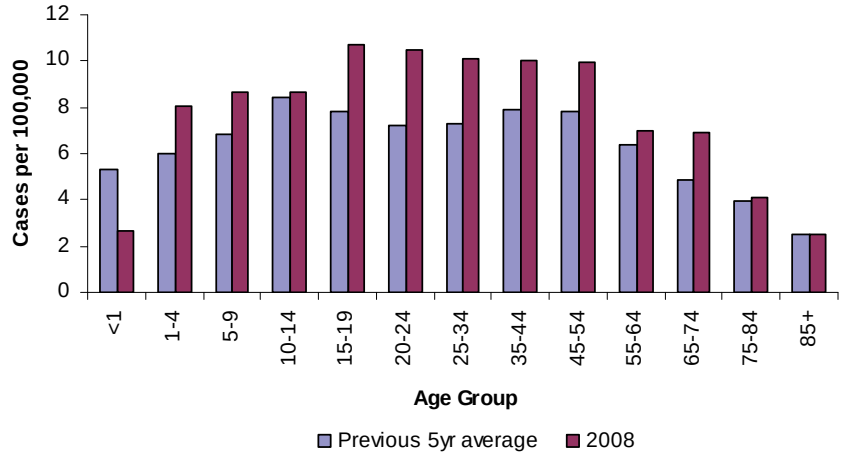


The annual incidence of cases for which PEP is recommended has increased since electronic reporting was initiated (Figure 1). In 2008, the incidence rate was up 26.04% over the previous 5-year average. This increase is thought to be largely due to the rabies vaccine shortage experienced throughout most of 2008. During much of this time, healthcare providers were required to contact local and state health officials on a case by case basis in order to obtain rabies post-exposure vaccines, which led to more cases being reported.

PEP is recommended year round in Florida, though the number of treatment incidents increases somewhat during the summer months (Figure 2). Treatment information was provided in 91% of cases. Of these reports, 86% of cases received at least one dose of PEP, 8% refused PEP, 5% were lost to follow-up, and 1% were determined not to need PEP after the animal tested negative or was well at the end of the observation period.

The average age of the victim for the 1,618 cases reported in 2008 was 36.5 years, with a range of <1 to 108 years of age. In 2008, the highest incidence was seen in individuals between 15 and 19 years of age, but incidence was similar from ages 15 to 54 (Figure 3). The incidence rate for males is approximately the same as that for females, but the incidence rate among white males is almost double that of non-white males.

Figure 3.
Rabies, Possible Exposure Incidence Rate by Age Group, Florida, 2008



The type of animal involved in the exposures was available for 97% of cases. Of these, 40% involved a dog, 27% a cat, 18% a raccoon, 9% a bat, 1% a fox, and the remaining 5% of exposures were other animals. Victims exposed to rabid or suspected rabid dogs were 55% male. Approximately 26% of all dog exposures occurred in children less than 15 years of age, and of these, 60% of exposures were in boys. Victims exposed to rabid or suspected rabid cats were 65% female and, although 35% of all exposures occurred in children under the age of 15, only 10% of all cat exposures occurred in that age group. Children less than 15 years of age were also involved in only 14% of all wild animal exposures. Exposure type was available for 54% of all reported cases. Of these, 80% of exposures involved bites, 6% involved scratches, and 14% involved saliva or other non-bite/non-scratch exposures. Among bite exposures, 54% had an exposure site listed. The most common exposure sites were the hand (49%), leg/foot (24%), and the arm (18%). Only 14% of the bites occurred above the neck. The majority of these injuries occurred among children under 10 years of age (54%) and involved a dog (75%).

Emergency department utilization and hospital discharge data are useful for demonstrating the magnitude of animal bites in general. Rates of hospitalization and emergency department visits related to dog bites among children far exceed rates among older age groups (Figures 4 and 5).

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, and report the bite to the local county health department.

Figure 4.
Non-Fatal Dog Bite-Related Hospitalization Rates by Age, Florida Residents, 1999-2007

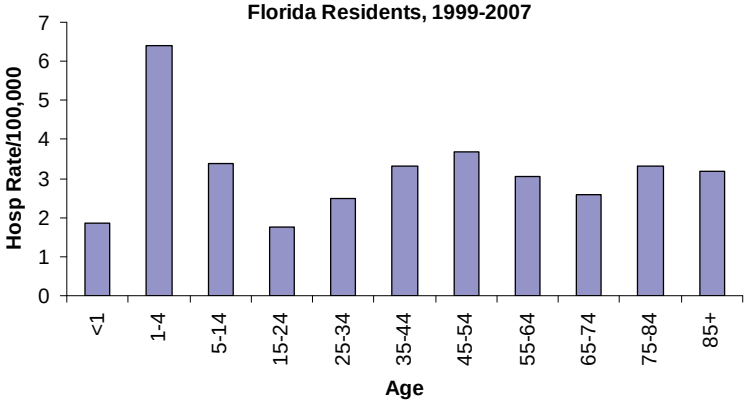
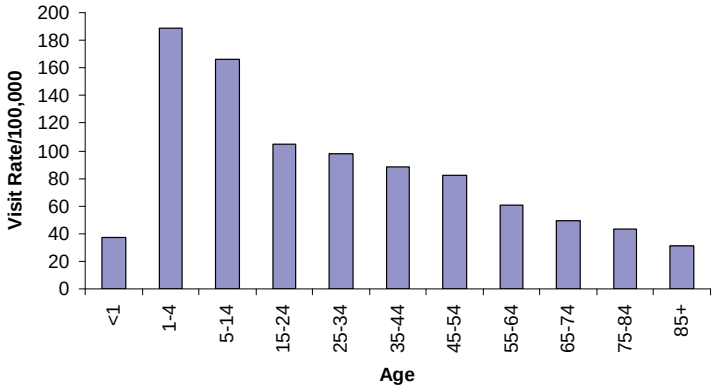
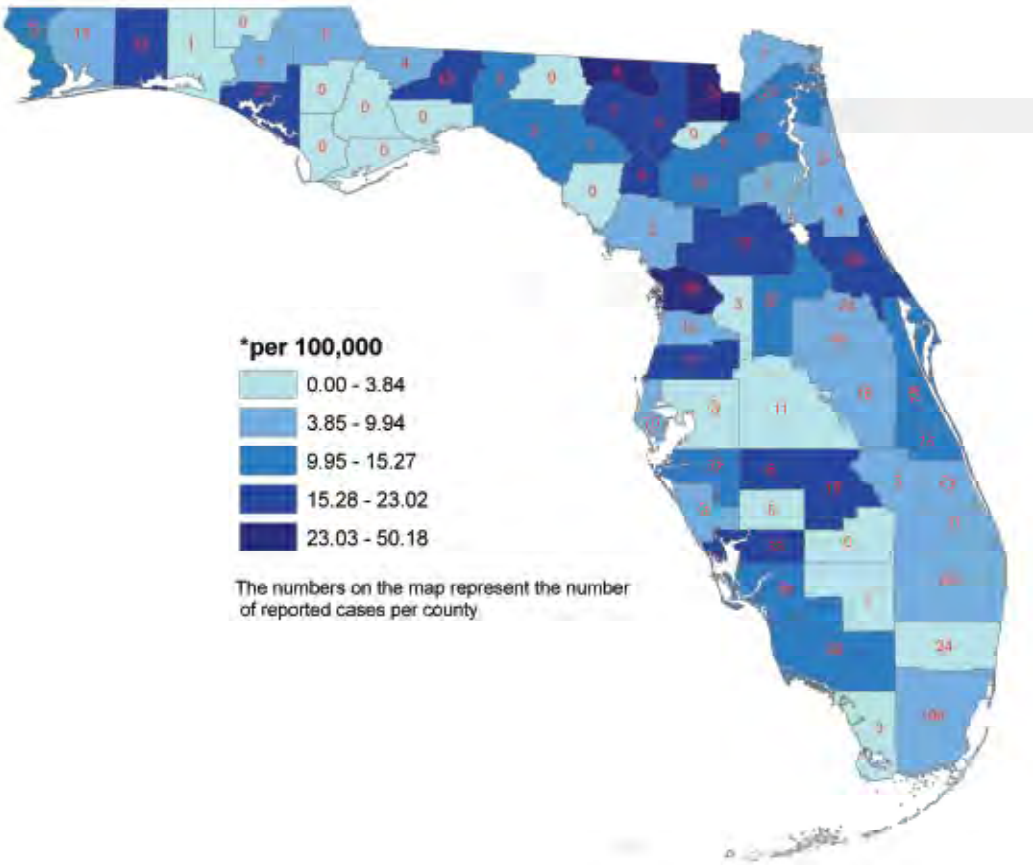


Figure 5.
Non-Fatal Dog Bite-Related Emergency Department Visit Rates by Age, Florida Residents, 2005-2007



Data Source: Hospital and Emergency Department Discharge Data, Agency for Health Care Administration

Rabies, Possible Exposure Incidence Rate* by County, Florida, 2008



Additional Resources

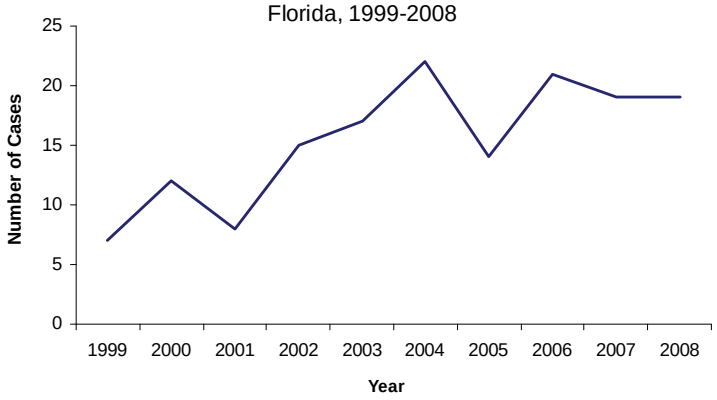
Additional information on animal bites and PEP can be found in the *Rabies Prevention and Control in Florida, 2008 Guidebook*, online at http://www.doh.state.fl.us/environment/community/arboviral/Zoonoses/Rabiesguide2008.pdf or http://www.doh.state.fl.us/environment/medicine/rabies/Documents/Rabiesguide2008.pdf.

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 or http://www.doh.state.fl.us/environment/medicine/rabies/rabies-index.html.

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever: Crude Data	
Number of Cases	19
2008 incidence rate per 100,000	0.10
% change from average 5-year (2003-2007) reported cases	2.15
Age (yrs)	
Mean	47.29
Median	47
Min-Max	12 - 86

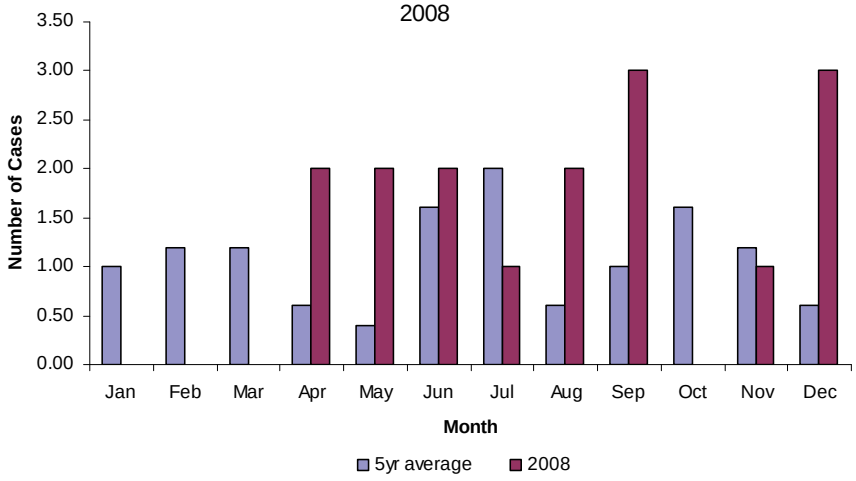
Figure 1.
Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 1999-2008



Disease Abstract

The number of Rocky Mountain spotted fever (RMSF) cases reported annually has increased markedly since 1999 (Figure 1). The disease tends to affect adults more than other age groups, although in 2008, there were more cases reported in those age 10-14 than the previous 5-year average (Figure 3). The elderly, males, those of black race, those with glucose-6-phosphate-dehydrogenase (G6PD) deficiency, and those with a history of alcohol abuse are at greatest risk for severe disease. Approximately 12% of black males in the U.S. are G6PD deficient.

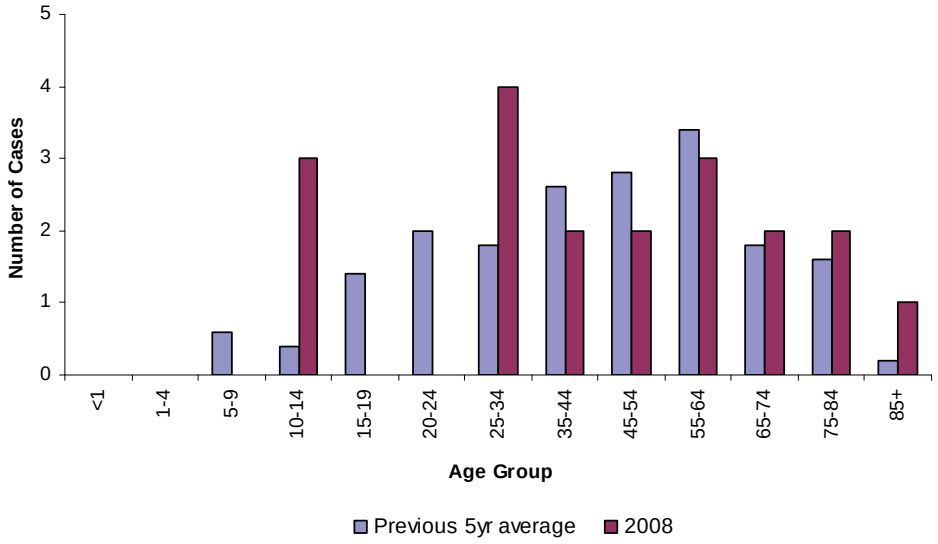
Figure 2.
Rocky Mountain Spotted Fever Cases by Month of Onset, Florida, 2008



In Florida, cases of RMSF are reported year-round, though peak transmission occurs during the summer months (Figure 2). Of the 19 cases reported in 2008, 13 (68.4%) acquired the disease in Florida, five (26%) acquired the disease in another U.S. state; travel history for the remaining case is unknown. Most cases were reported from the Panhandle and central areas of the state. Fifteen patients (83%) in 2008 were over 30 years old, with the highest proportion in those over 60. Males accounted for 11 cases (61%). No deaths were reported in 2008, but at least six patients (32%) were hospitalized. The national case fatality rate for treated cases is approximately 5% and is up to 20% in untreated cases. Antibodies for other rickettsial species, such as *Rickettsia parkeri* and *Rickettsia amblyommii,* cross-react with tests for the RMSF agent, *Rickettsia rickettsii*, which may explain changes in national disease incidence and

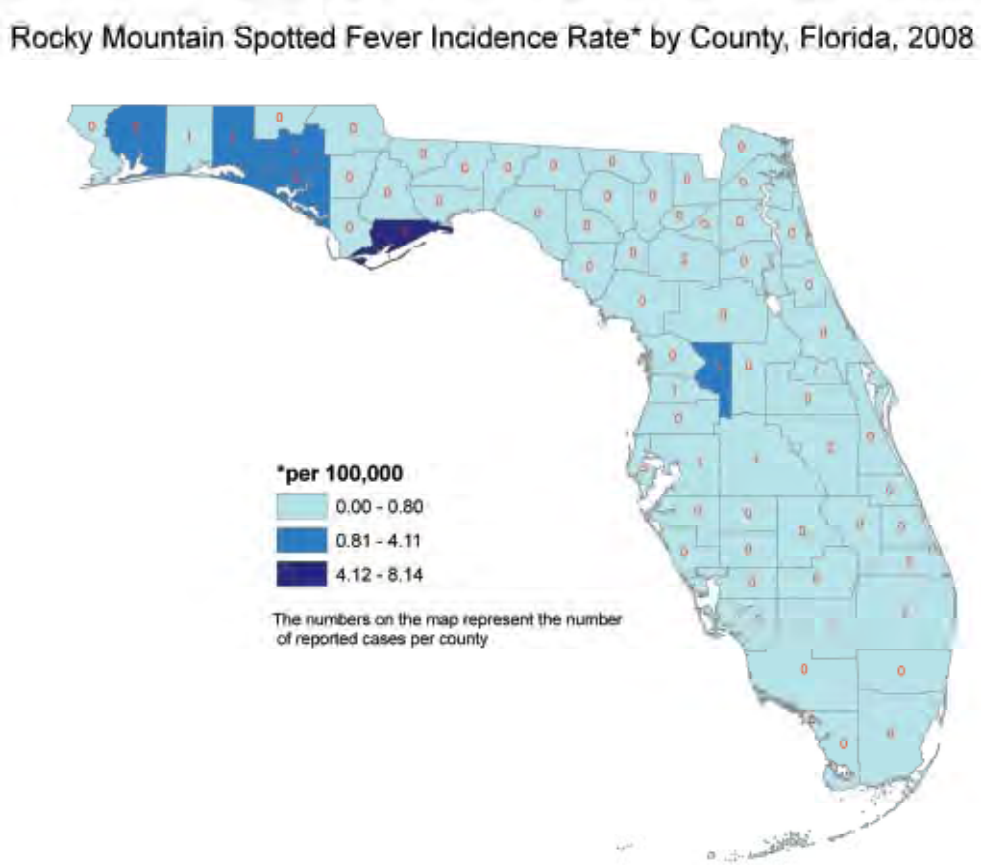
geographic distribution in recent years. The American dog tick, *Dermacentor variabilis*, is the principal RMSF vector in Florida, the primary vector for *R. parkeri* is the Gulf Coast Tick, *Amblyomma maculatum,* and the primary vector for *R. amblyomma* is believed to be the Lone Star Tick, *Amblyomma americanum*. Eschars at the site of the tick bite are associated with *R. parkeri* infections, but uncommonly reported in cases of RMSF.

Figure 3.
Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2008



Prevention

Prevention of tick bites is the best way to avoid disease. Wear light-colored clothing so that ticks crawling on clothing are visible. Tuck pants legs into socks so that ticks cannot crawl inside clothing. Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary. Search the body for ticks frequently when spending time in potentially tick-infested areas. If a tick is found, it should be removed as soon as possible. Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting. Do not use bare fingers to crush ticks. Wash hands following tick removal. 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*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

Additional Resources

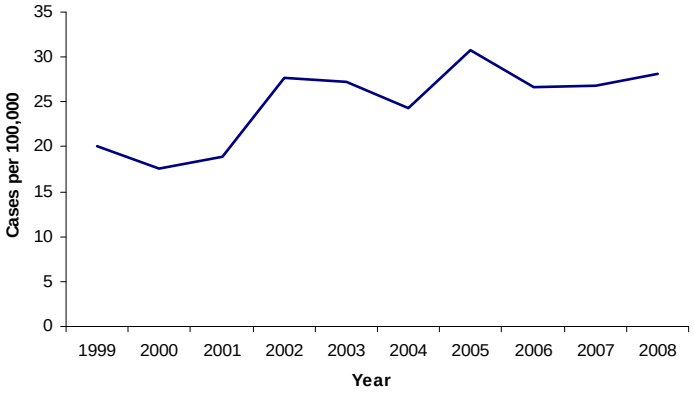
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm.

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

Salmonellosis

Salmonellosis: Crude Data	
Number of Cases	5,312
2008 incidence rate per 100,000	28.11
% change from average 5 year (2003-2007) incidence rate	3.45
Age (yrs)	
Mean	23.15
Median	8
Min-Max	<1 - 106

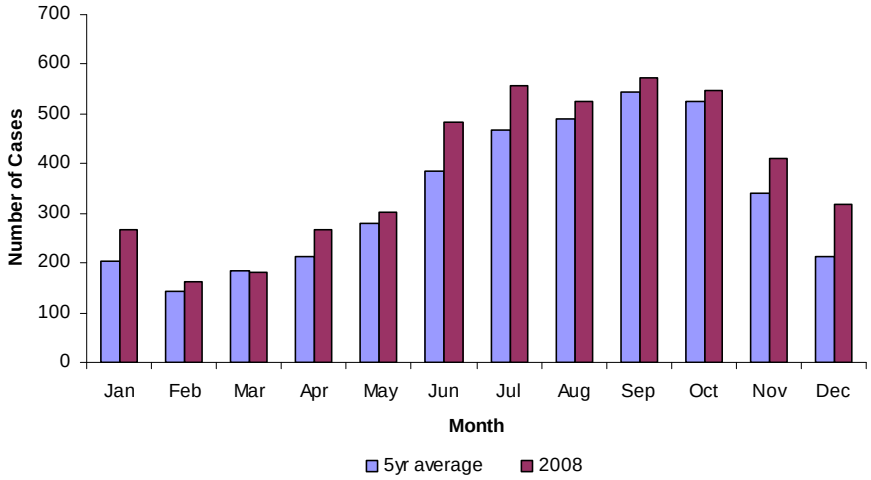
Figure 1.
Salmonellosis Incidence Rate by Year Reported, Florida, 1999-2008



Abstract

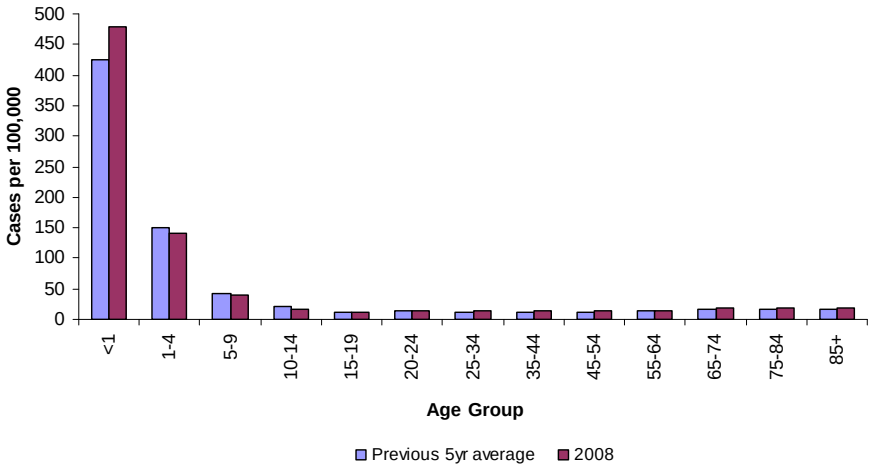
The incidence rate for salmonellosis has increased gradually over the last ten years (Figure 1). In 2008, the incidence was 28.11 cases/100,000, a decrease from the 2005 peak of 30.8 cases/100,000. A total of 5,312 cases were reported in 2008, of which 95.73% were classified as confirmed. The number of cases reported increases in the summer and early fall. In 2008, the number of cases exceeded the previous 5-year average in all months except March which was only slightly lower (Figure 2). Overall, 7.7% of the salmonellosis cases were classified as outbreak-related in 2008.

Figure 2.
Salmonellosis Cases by Month of Onset, Florida, 2008



The highest incidence rates continue to occur among infants <1 year old and children 1-4 years old. In 2008, 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 and females have almost identical incidence rates (28.10 and 28.05 per 100,000, respectively). The incidence rate among non-white females (11.06 per 100,000) is less than half of that of any other gender-race group.

Figure 3.
Salmonellosis Incidence Rate by Age Group, Florida, 2008

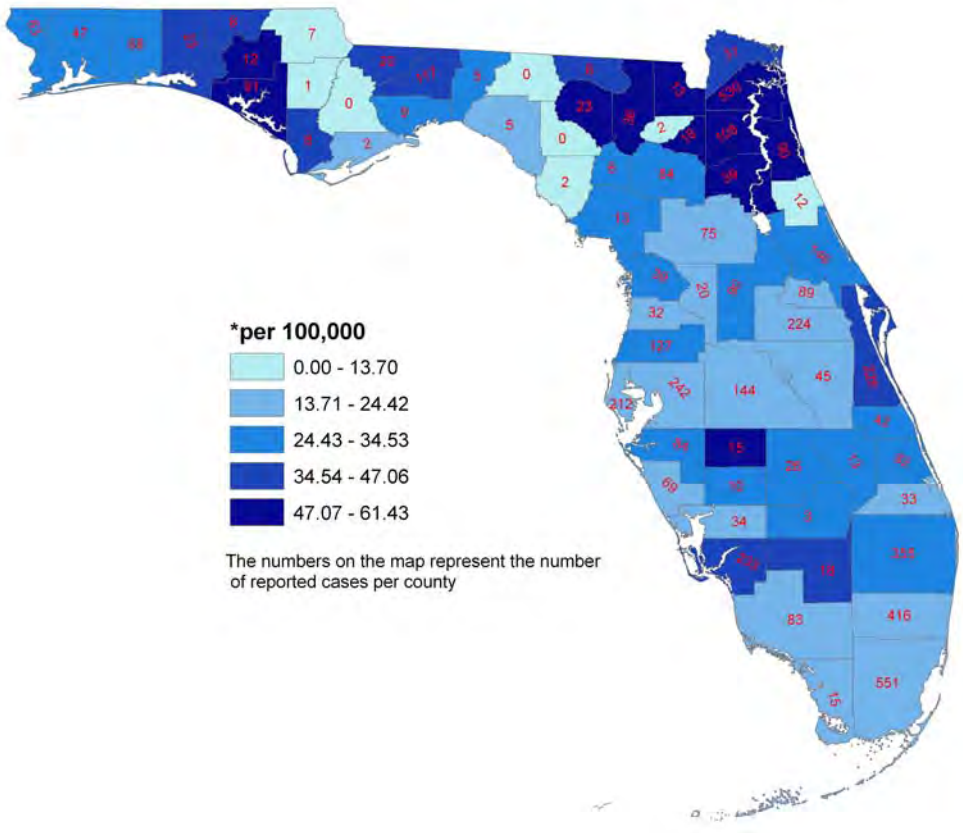


Salmonellosis was reported in 64 of the 67 counties in Florida. Rates vary across the state, but appear to be higher in the western panhandle and the northeastern portion of the state.

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.

Salmonellosis Incidence Rate* by County, Florida, 2008



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/

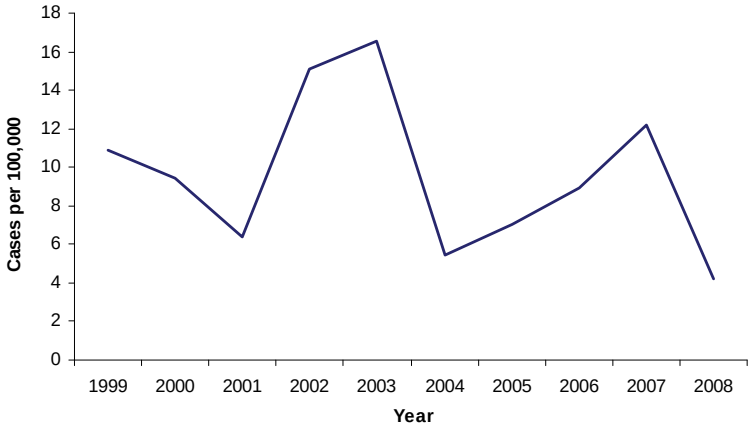
Additional information is available from the U.S Food and Drug Administration – Bad Bug book at http://www.cfsan.fda.gov/~mow/chap1.html.

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

Shigellosis: Crude Data	
Number of Cases	801
2008 incidence rate per 100,000	4.24
% change from average 5 year (2003-2007) incidence rate	-57.69
Age (yrs)	
Mean	16.71
Median	8
Min-Max	<1 - 88

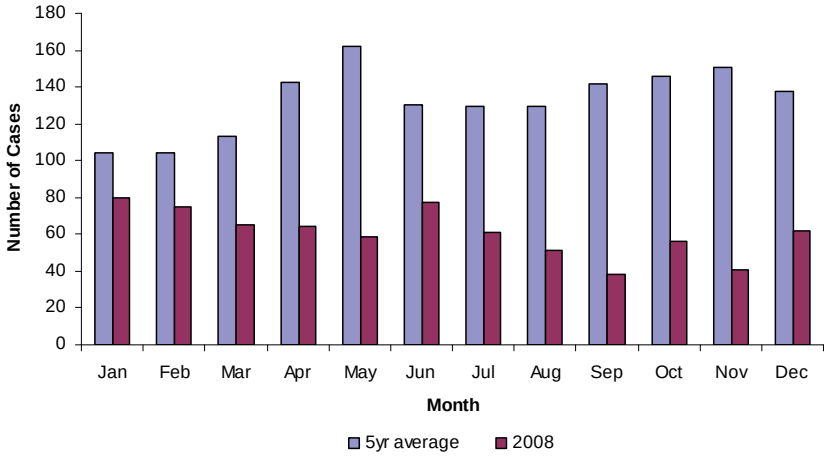
Figure 1.
Shigellosis Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

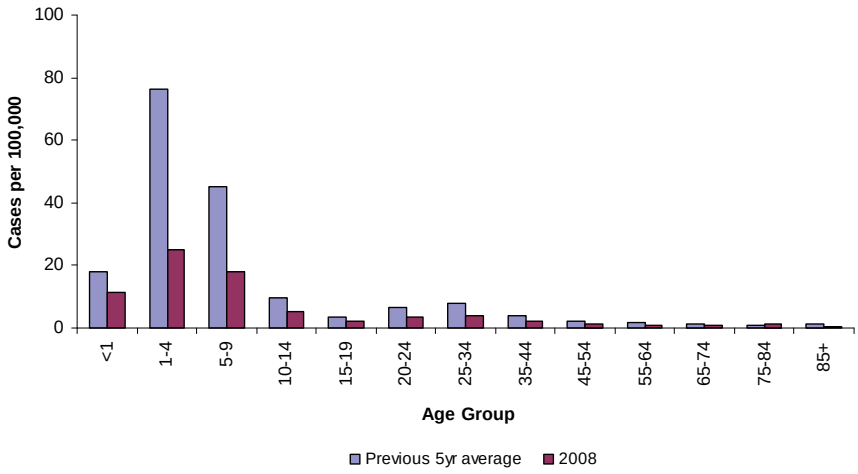
The incidence rate for shigellosis has varied over the last ten years (Figure 1). Periodic community outbreaks involving childcare centers account for most of the observed variability. Over 20% of the cases reported in 2008 were in children who attend daycare or staff who work at affected daycares. This number does not take into account the proportion of cases that are secondary to the initial daycare-associated case. In 2008, there was a 57.69% decrease in comparison to the average incidence from 2003-2007. A total of 801 cases were reported in 2008 (2007= 2,288 cases), of which 79.53% were classified as confirmed. Historically, the number of cases reported tends to increase in late summer and the fall months. However, in 2008, the number of cases was highest at the beginning of the year, in January and February, and steadily decreased through the year (Figure 2). Overall, 32.21% of the shigellosis cases were classified as outbreak-related and 19.23% of the shigellosis cases were daycare attendees.

Figure 2.
Shigellosis Cases by Month of Onset, Florida, 2008



The highest incidence rates continue to occur among children aged 1 to 4 years old. In 2008, the incidence rates were similar in trend to the 5-year average but were at much lower levels (Figure 3). Incidence rates were higher among females than males (4.32 and 4.16 per 100,000 respectively) and higher in non-whites than whites, with the highest incidence being among non-white males (7.97 per 100,000).

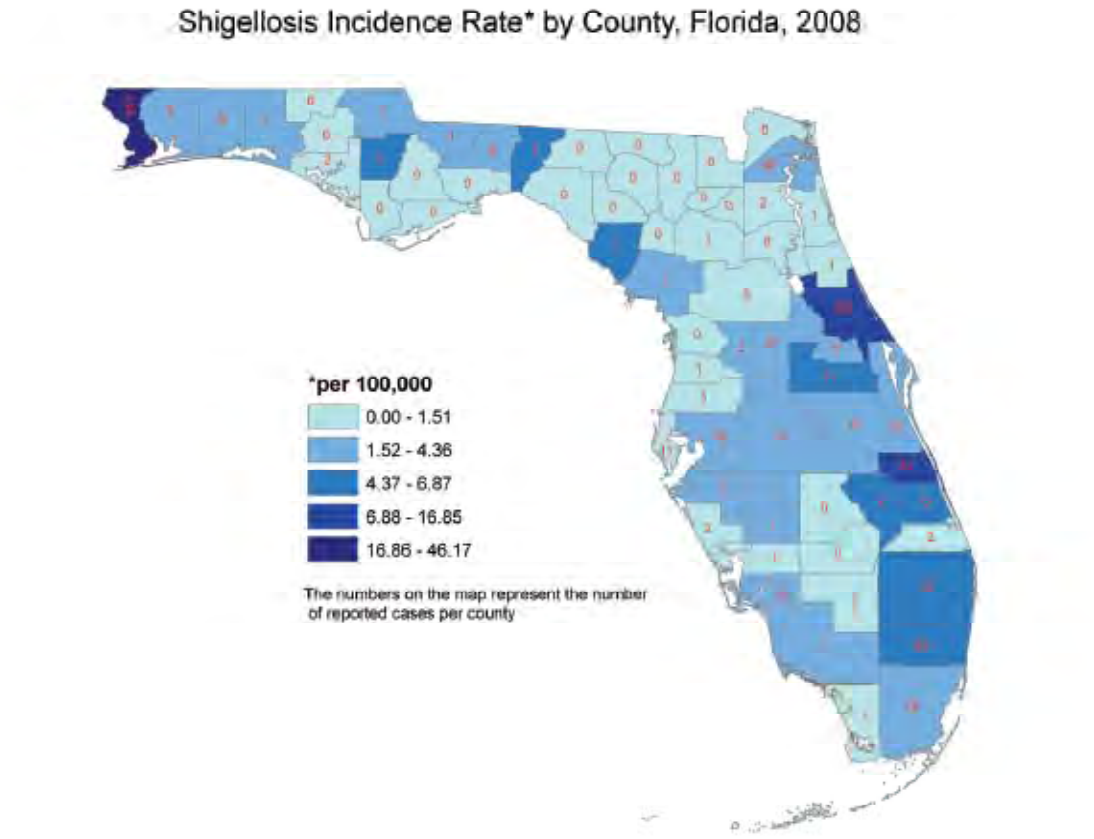
Figure 3.
Shigellosis Incidence Rate by Age Group, Florida, 2008



Shigellosis was reported in 45 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 daycare 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.

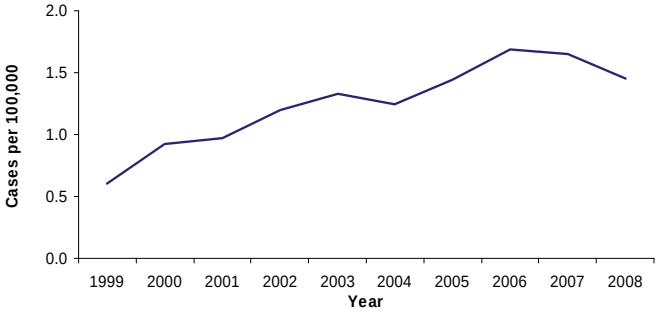
Additional information is available from the U.S Food and Drug Administration – Bad Bug book at http://www.cfsan.fda.gov/~mow/chap19.html.

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

Streptococcal Disease, Invasive Group A: Crude Data	
Number of Cases	275
2008 incidence rate per 100,000	1.46
% change from average 5-year (2003-2007) incidence rate	-1.48
Age (yrs)	
Mean	52.29
Median	57
Min-Max	<1 - 100

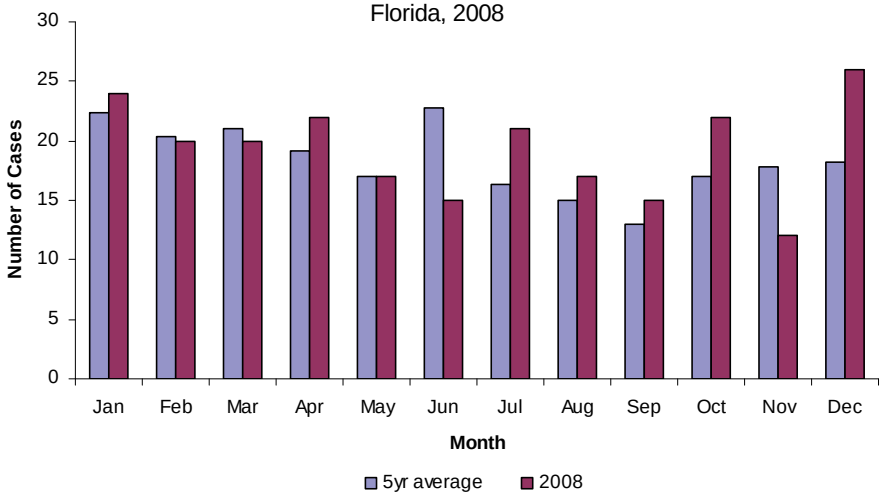
Figure 1.
Streptococcal Disease, Invasive Group A Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

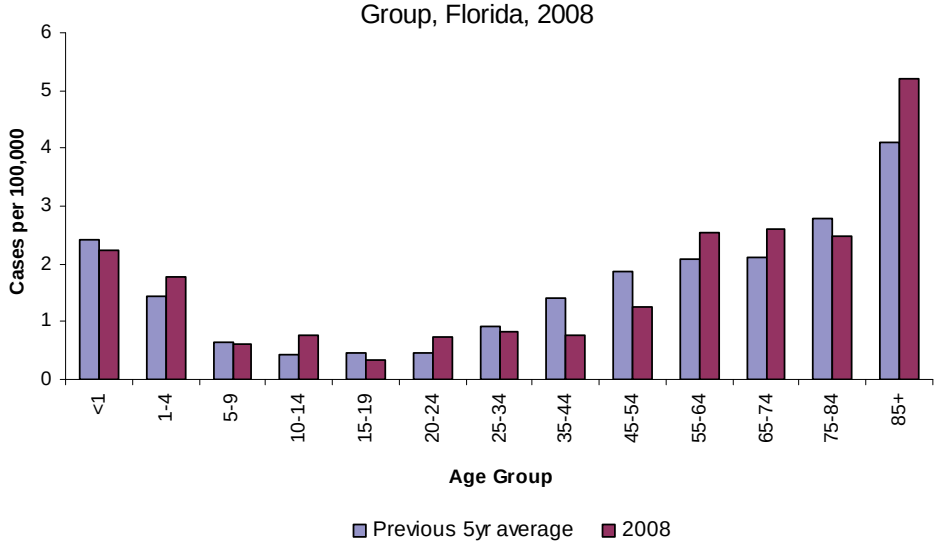
The incidence rate for reported invasive group A streptococcal disease in Florida has gradually increased over the past 10 years, with a more than four-fold cumulative increase since 1997 (Figure 1). In 2008, there was a 1.48% decrease compared to the average incidence for 2003-2007 (Table 1). A total of 275 cases were reported in 2008, of which 100% were classified as confirmed. Cases occur throughout all months of the year with no clear seasonal pattern. Compared to the previous 5-year average, the number of cases reported in 2008 was higher in all months except for February, March, June, and November, with the greatest number occurring in January, October, and December (Figure 2). No cases were reported as outbreak-associated in 2008.

Figure 2.
Streptococcal Disease, Invasive Group A, Cases by Month of Onset, Florida, 2008



The highest incidence rate for 2008 occurred in those 85 and older, which is in line with historical trends (Figure 3). In 2008, incidence increased in about half of the age groups, most notably those over 85. Males continue to have a higher incidence than females (1.70 and 1.22 per 100,000 respectively). In 2007, the incidence rate for white males surpassed that for non-white males.

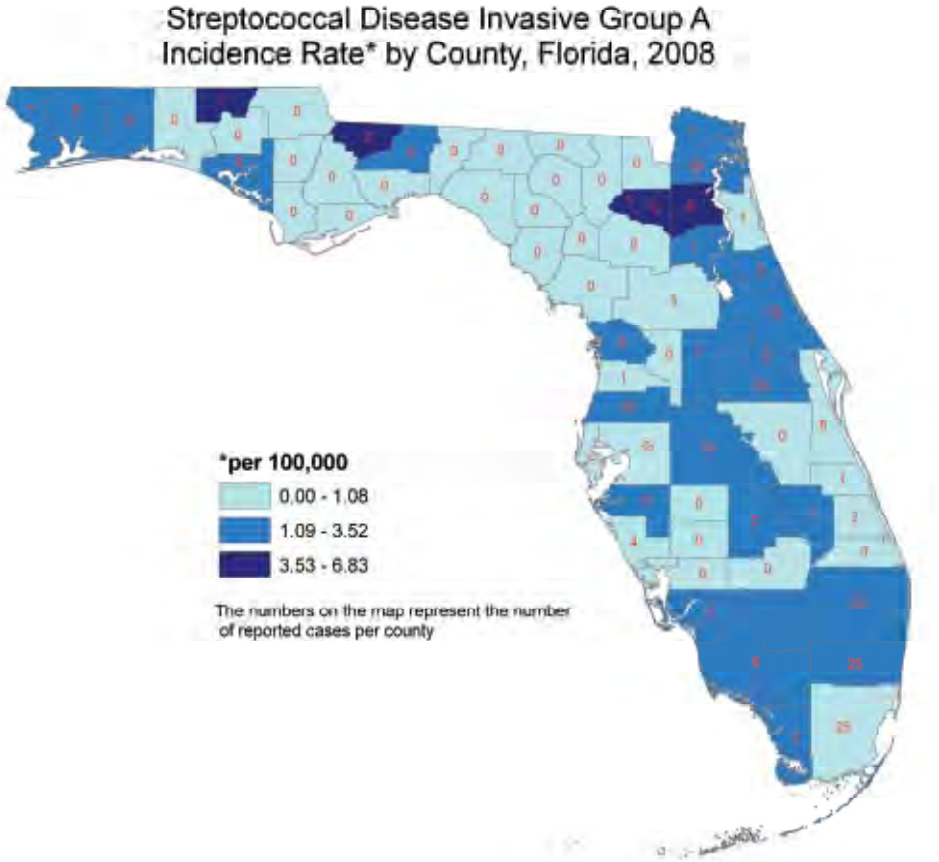
Figure 3.
Streptococcal Disease, Invasive Group A Incidence Rate by Age Group, Florida, 2008



Invasive group A streptococcal disease cases were reported in 41 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. However, the counties with the highest rates of disease were in the northern part of the state.

Prevention

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



References

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

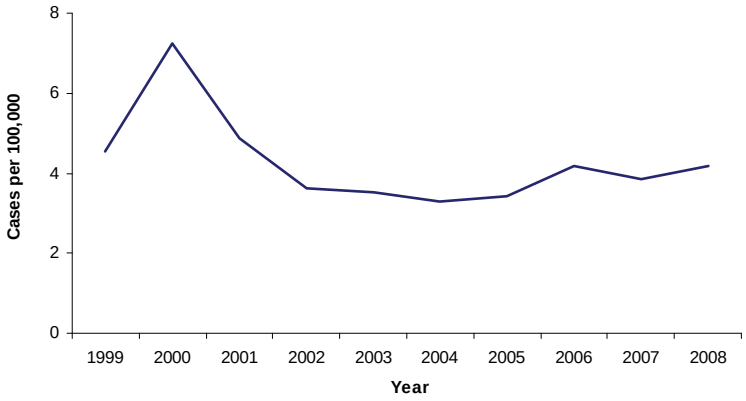
Additional Resources

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, Invasive Disease, Drug-Resistant

***Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant: Crude Data**	
Number of Cases	792
2008 incidence rate per 100,000	4.19
% change from average 5 year (2003-2007) incidence rate	14.27
Age (yrs)	
Mean	45.36
Median	51
Min-Max	<1 - 102

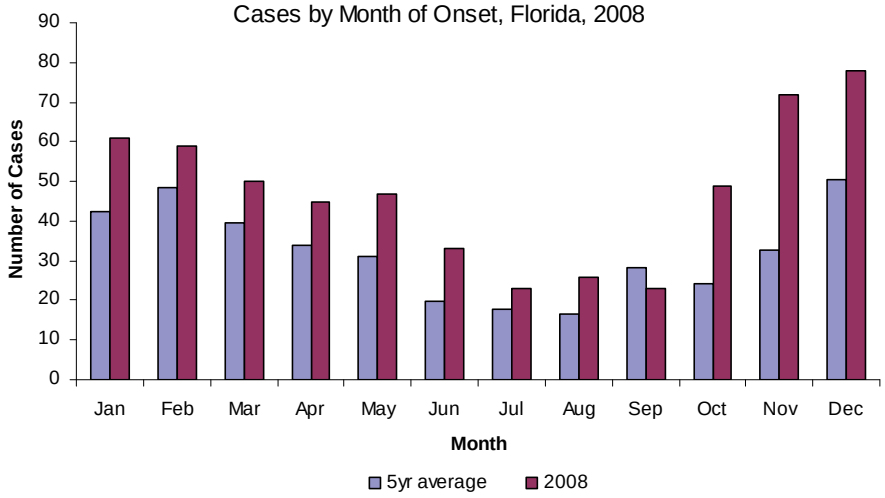
Figure 1.
Streptococcus pneumoniae Invasive Disease, Drug-Resistant
Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

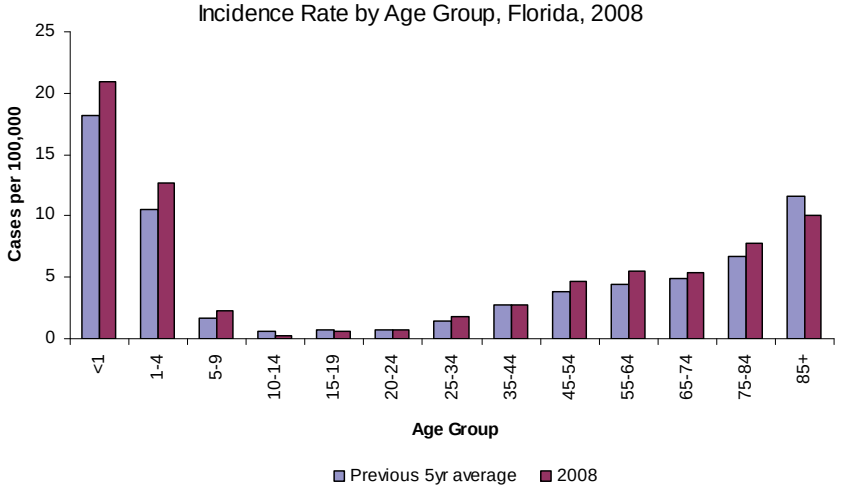
Drug-resistant *S. pneumoniae* (DRSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or CSF, which are either intermediate resistant or fully resistant to one or more commonly used antibiotics. The incidence rate for DRSP peaked in 2000 and gradually declined until 2005 when it started to increase again (Figure 1). There was an increase from 3.86 cases/100,000 in 2007 to 4.19 cases/100,000 in 2008.

Figure 2.
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant
Cases by Month of Onset, Florida, 2008



The highest incidence rates continue to occur among infants <1 year old, children 1-4 years, and those over 85. In 2008, the incidence rates were higher than the previous 5-year average in most age groups, except those over 85 (Figure 3). Males have a slightly higher incidence than females (4.25 per 100,000 and 4.14 per 100,000, respectively). The highest incidence is among non-white males (6.96 per 100,000) and lowest among non-white females (0.52 per 100,000).

Figure 3.
Streptococcus pneumoniae , Invasive Disease, Drug-Resistant
Incidence Rate by Age Group, Florida, 2008



The data from both the drug-resistant and drug-sensitive *S. pneumoniae* isolates reported were used to calculate resistance rates of common antibiotics for 2008 (Figure 4 and Table 1). A total of 1,483 cases had one or more antibiograms, and the earliest pattern for each case was used in these calculations. The sensitivity rate varies by the class of antibiotic. Erythromycin and penicillin had the greatest percentage of intermediate and resistant isolates (47.0% and 40.8% respectively).

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

Figure 4.
***Streptococcus pneumoniae*, Invasive Disease,**
Antibiotic Resistance, Florida, 2008

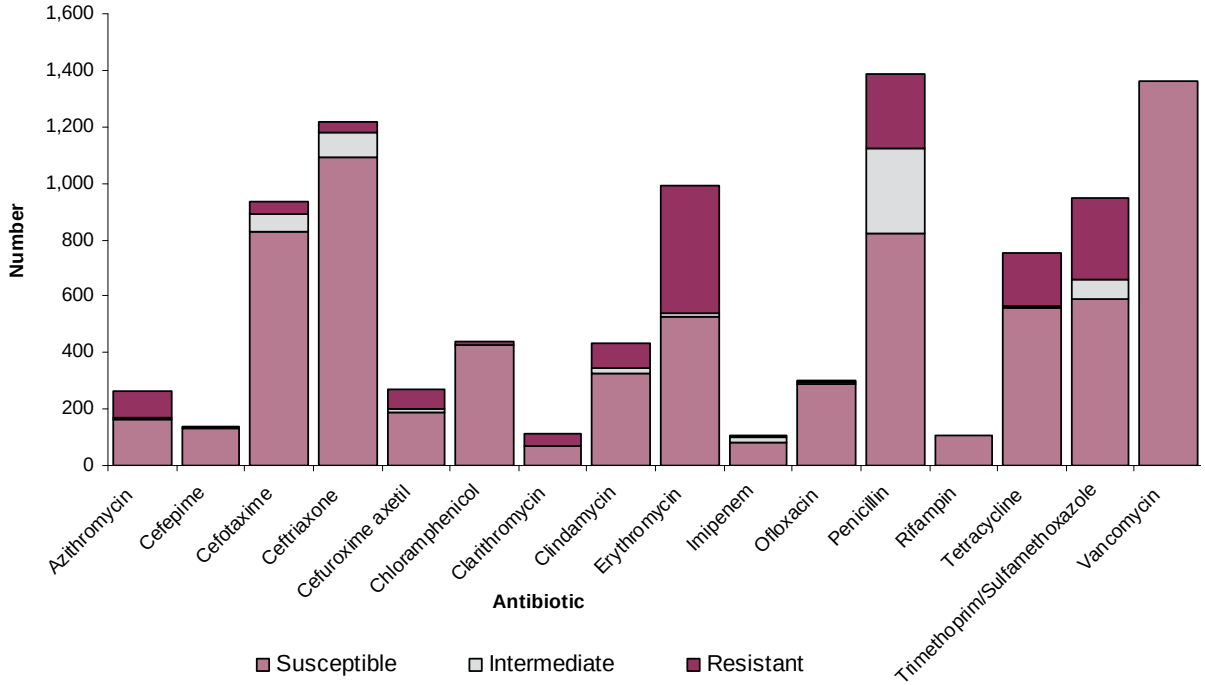
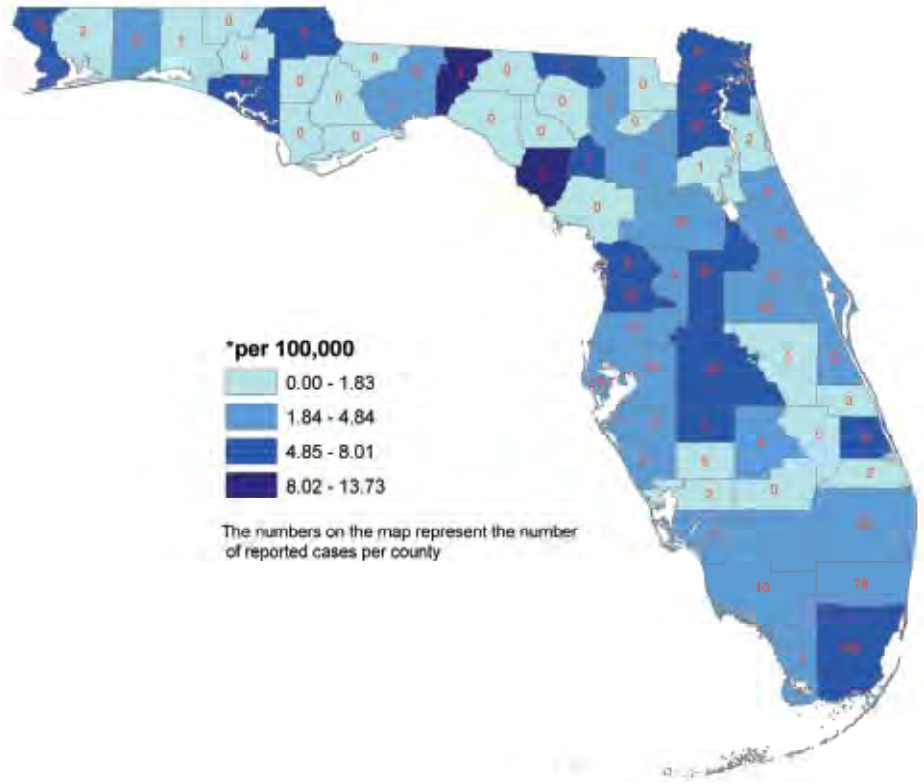


Table1. *Streptococcus pneumoniae*, Invasive Disease, Antibiotic Resistance, Florida 2008

Antibiotic name	Number of Cases Tested	Susceptible	Intermediate	Resistant
Azithromycin	265	61.9%	3.0%	35.1%
Cefepime	140	93.6%	6.4%	0.0%
Cefotaxime	935	88.6%	6.5%	4.9%
Ceftriaxone	1220	89.7%	7.0%	3.3%
Cefuroxime axetil	272	70.2%	4.0%	25.7%
Chloramphenicol	441	96.4%	0.2%	3.4%
Clarithromycin	110	60.9%	4.5%	34.5%
Clindamycin	434	75.1%	3.9%	21.0%
Erythromycin	991	53.0%	1.4%	45.6%
Imipenem	104	78.8%	18.3%	2.9%
Ofloxacin	299	96.3%	2.7%	1.0%
Penicillin	1384	59.2%	22.1%	18.7%
Rifampin	107	99.1%	0.0%	0.9%
Tetracycline	753	74.4%	0.7%	25.0%
Trimethoprim/Sulfamethoxazole	947	62.3%	7.5%	30.1%
Vancomycin	1364	99.9%	0.0%	0.1%

Drug-resistant *S. pneumoniae* was reported in 49 of the 67 counties in Florida.

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant, Incidence Rate* by County, Florida, 2008



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 other pneumococcal polysaccharide vaccine should be administered routinely to all adults over 65 years old. 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, and 1997-1999, Surveillance of *SP* in Central FL, at http://www.doh.state.fl.us/disease_ctrl/epi/topics/popups/anti_res.htm.

Additional Resources

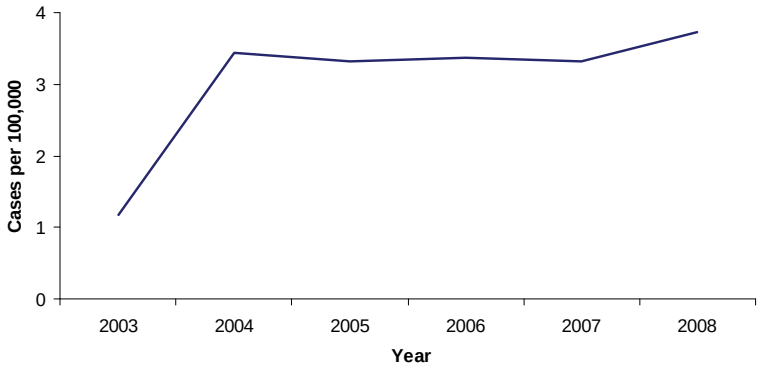
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm.

Centers for Disease Control and Prevention, "Preventing pneumococcal disease among 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, Invasive Disease, Drug-Susceptible

***Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible: Crude Data**	
Number of Cases	704
2008 incidence rate per 100,000	3.73
% change from average 5-year (2003-2007) incidence rate	26.63
Age (yrs)	
Mean	51.32
Median	53.5
Min-Max	<1 - 97

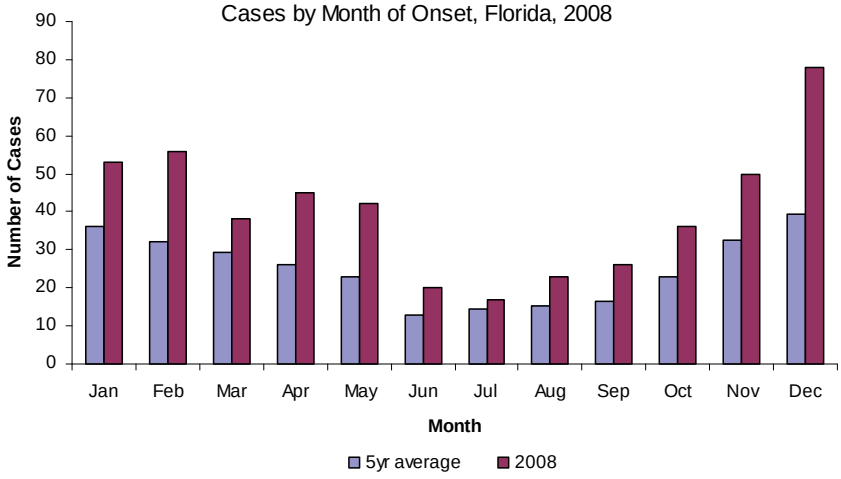
Figure 1.
Streptococcus pneumoniae , Invasive Disease, Drug-Susceptible
Incidence Rate by Year Reported, Florida, 2003-2008



Disease Abstract

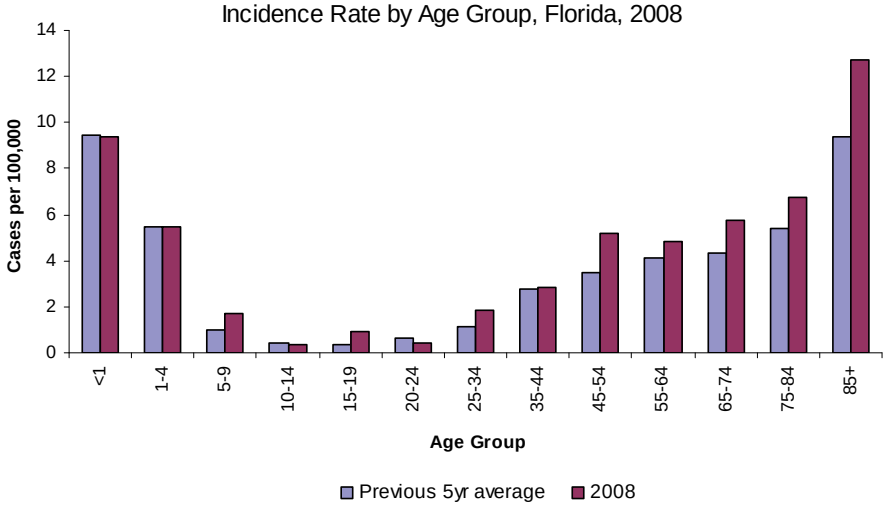
Drug-sensitive *Streptococcus pneumoniae* (DSSP) invasive disease, for reporting purposes, includes cultures obtained from a normally sterile site, such as blood or CSF, that are sensitive to all of the commonly used antibiotics. Data on drug-susceptible *S. pneumoniae* has been available for the last six years. Since the second year of reporting, in 2004, the incidence of DSSP has consistently been about 3.43 per 100,000. A total of 704 cases were reported in 2008. This is the highest reported incidence in the six years that the disease has been reportable. The number of cases reported tends to increase in the winter months. In 2008, the number of cases exceeded the previous 5-year average in all months (Figure 2).

Figure 2.
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible
Cases by Month of Onset, Florida, 2008



The highest incidence rates continue to occur among infants <1, children aged 1-4 years, and those over 85. In 2008, the incidence rates were higher than or the same as the previous 5-year average in all age groups except those 10-14 and 20-24, in which the rates decreased (Figure 3). Males continue to have a slightly higher incidence than females (3.79 and 3.66 per 100,000, respectively). The highest incidence is among non-white males (4.32 per 100,000) and lowest among non-white females (0.47 per 100,000).

Figure 3.
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible
Incidence Rate by Age Group, Florida, 2008

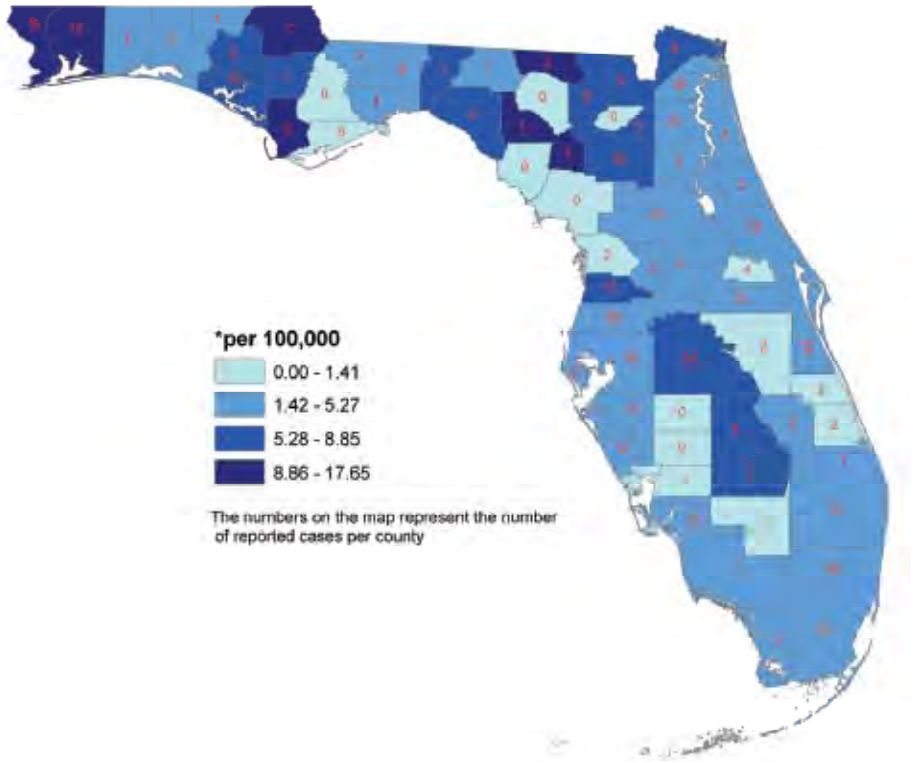


DSSP was reported in 58 of the 67 counties in Florida.

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 other pneumococcal polysaccharide vaccine should be administered routinely to all adults 65+ years. Vaccine is also indicated for persons >2 with a normal immune system with 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,
Incidence Rate* by County, Florida, 2008



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.

Syphilis

Disease Abstract

Of the 4,578 syphilis cases reported in 2008, 50% were diagnosed as primary, secondary, or early latent infection. Early (primary, secondary, and early latent) syphilis includes all cases where initial infection has occurred within the previous 12 months. In 2008, there were 2,290 early syphilis cases reported in Florida; a 10.6% increase from 2007. Infectious syphilis (primary and secondary stages) increased 14% from 2007; whereas early latent cases increased 7.9% in the same period. The incidence rate for early syphilis in 2008 was 12.1 per 100,000 population, compared to 11.1 per 100,000 population in 2007. Of the 2,290 early syphilis cases reported in 2008, nearly 70% were reported from five counties: Miami-Dade (569/2,290), Broward (386/2,290), Hillsborough (327/2,290), Orange (184/2,290), and Palm Beach (139/2,290). Fourteen counties reported no cases of early syphilis (Figure 1).

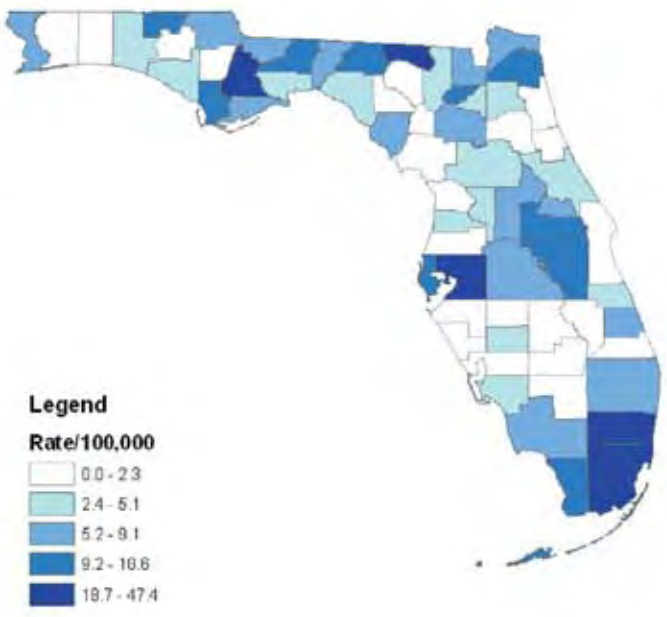
Overall, men accounted for 77% of the early syphilis cases among those over 14 years of age (Table 1). The greatest number of cases among men occurred in the 40 to 44 year old age group, with a second peak among those 20-24. Provisional risk factor data indicate 60% of primary and secondary syphilis cases were reported in men who have sex with men (MSM) populations in 2008. Trends since 1999 support the hypothesis that syphilis cases among MSM are a driving force behind increases in early syphilis, particularly the primary and secondary stages.

The greatest proportion of early syphilis cases for women was reported in the 15-24 age group, which accounted for 43% of cases. Nearly 60% of female cases were under 30 years of age, compared to 35% among males of the same age cohort. Age differences in males and females can be attributed to several factors: health seeking behavior, prenatal recommendations, and partner dynamics which all indicate that females are more likely to be screened and/or tested at an earlier age than males. Secondly, risk behaviors in older MSM populations contribute heavily to the distribution of disease among males.

Table 1. Reported Early Syphilis Cases by Age and Gender, Florida, 2007						
	Total		Males		Females	
Age	**#**	%	**#**	%	**#**	%
15 – 19	190	8.3	95	5.4	95	18.0
20 – 24	404	17.7	274	15.6	130	24.6
25 – 29	326	14.2	240	13.6	86	16.3
30 – 34	288	12.6	234	13.3	54	10.2
35 – 39	287	12.5	228	13.0	59	11.2
40 – 44	335	14.6	289	16.4	46	8.7
45 – 49	225	9.8	196	11.1	29	5.5
50 – 54	113	4.9	100	5.7	13	2.5
55 -59	61	2.7	54	3.1	7	1.3
60+	55	2.4	50	2.8	5	0.9
Total	2,288	100.0	1,760	100.0	528	100.0

In 2008, the number of early syphilis cases increased 10.2% from 2007 among males and 11.5% among females. In 2008, the rate of early syphilis was highest among women in the 20-24 age group (21.8 cases per 100,000 population) and among men between the ages of 40-44 (44.3 cases per 100,000 population). The ratio of male to female rates of early syphilis was 3.3 to 1 overall but differed significantly among racial/ethnic groups. The male to female (M:F) rate ratio among non-Hispanic blacks was 2:1, Hispanics 5:1, and non-hispanic whites 7:1. The varying differences in male to female rate ratios indicate that early syphilis cases in non-Hispanic black populations are more sustained in heterosexual populations and early syphilis among Hispanic and non-Hispanic white populations continue to indicate stronger distribution among MSMs.

Figure 1: Early Syphilis Rates/100,000, 2008



When looking at case counts, persons who self reported as non-Hispanic black accounted for 44.6% of the syphilis cases in 2008. Persons who self reported as non-Hispanic white accounted for 29.4% of the

cases. Persons who self reported as Hispanic (regardless of race) accounted for 18.2% 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 34.3 per 100,000 population. This rate was six times greater than the second highest rate, in non-Hispanic whites (5.9/100,000).

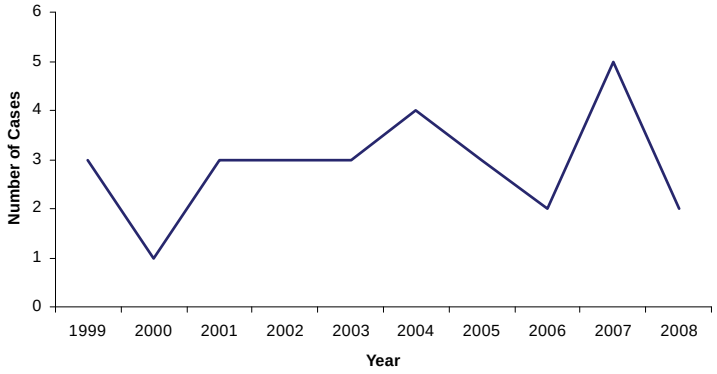
Prevention

Regardless of stage, cases reported in 2008 reflect an upward trend among both male and female populations. Community prevalence and higher risk-taking behaviors associated with certain populations continue to contribute to morbidity. Although syphilis is preventable, and infection can be diagnosed and cured with simple, inexpensive, and widely available tests, syphilis has remained endemic in Florida communities. The sequelae of untreated syphilis can result in neurological damage, paralysis, blindness, increased risk of HIV, and death. Untreated syphilis in pregnancy can lead to stillbirth, spontaneous abortion, and preterm delivery, and cause serious complications for neonates. The American Academy of Pediatrics, American College of Obstetricians and Gynecologists, and the Centers for Disease Control and Prevention recommend that women be screened for syphilis as early as possible in their pregnancies. *F.A.C.* 64D-3.019 and Florida Statute 384.31 requires that all women receive two tests during prenatal care. Syphilis in pregnant women and neonates is considered a notifiable condition of urgent public health importance. Reports should be made to the local county health department immediately.

Tetanus

Tetanus: Crude Data	
Number of Cases	2
2008 incidence rate per 100,000	0.01
% change from average 5-year (2003-2007) reported cases	-43.99
Age (yrs)	
Mean	57.5
Median	57.5
Min-Max	53-62

Figure 1.
Tetanus Cases by Year Reported, Florida, 1999-2008



Disease Abstract

Two confirmed cases of tetanus were reported in Florida for 2008, which is a decrease from the peak of five cases in 2007 (Figure 1). Both cases were hospitalized and survived, but had very different outcomes. One patient, with documented history of vaccine, had a puncture wound from a fish hook and developed symptoms within a week. Treatment was given and the patient recovered quickly. In the other case, the patient developed symptoms weeks after a puncture wound from an animal. This diabetic patient neglected wound treatment and developed paralysis. Recuperation was prolonged and required intubation and tube feeding.

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 toxoid and acellular pertussis vaccine (DTaP) is recommended for all persons, starting at 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. The adult formulation of tetanus and diphtheria toxoids and pertussis (Tdap) is the vaccine of choice for at least one dose. As of school year 2009-2010, Tdap vaccine is required for entry into seventh grade. When protection from pertussis is needed, this dose can be given two years from the last dose of tetanus-containing vaccine.

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*, 4th ed., 2008, Chapter 16.

Additional Resources

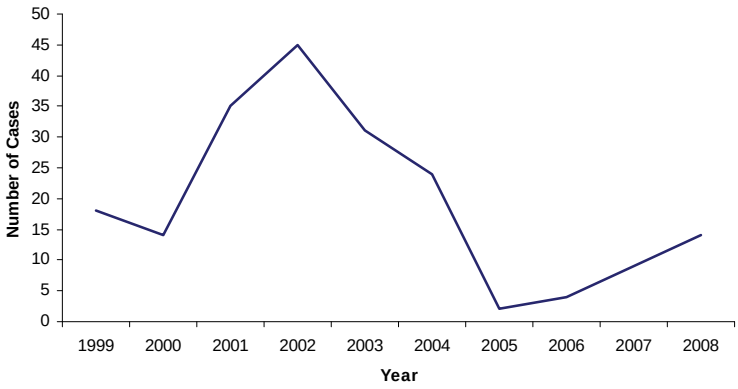
Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/vaccines/vpd-vac/tetanus/default.htm.

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

Toxoplasmosis

Toxoplasmosis: Crude Data	
Number of Cases	14
2008 incidence rate per 100,000	0.07
% change from average 5-year (2003-2007) reported cases	0.00
Age (yrs)	
Mean	42.57
Median	38.5
Min-Max	24 - 67

Figure 1.
Toxoplasmosis Cases by Year Reported, Florida, 1999-2008

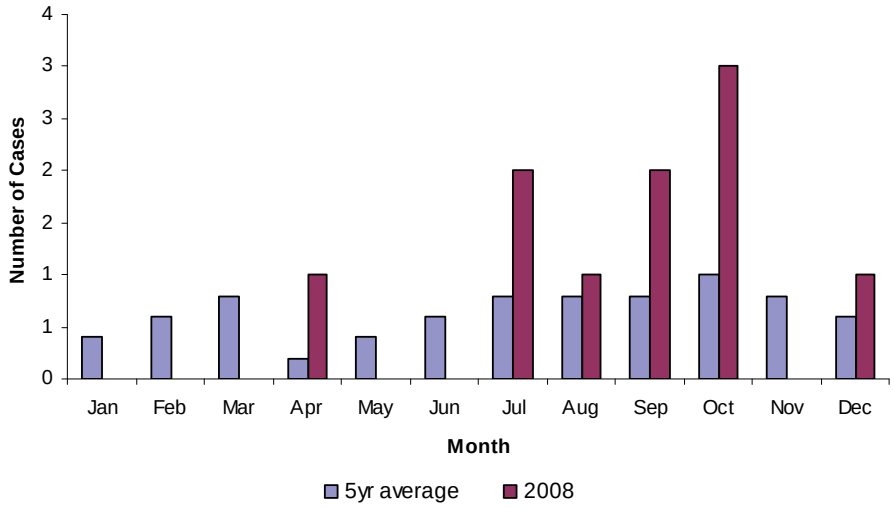


Disease Abstract

The number of cases of Toxoplasmosis increased between 2000 (14) and 2002 (45), declined to two cases in 2005, and has been steadily increasing (Figure 1). Of the cases reported in 2008, 11 were confirmed, and three were probable. No outbreaks of toxoplasmosis have been reported in the past 10 years. Most cases of toxoplasmosis occur in immunocompromised individuals without a recent or specific exposure history. This is also true for all the cases of toxoplasmosis confirmed in Florida during 2008.

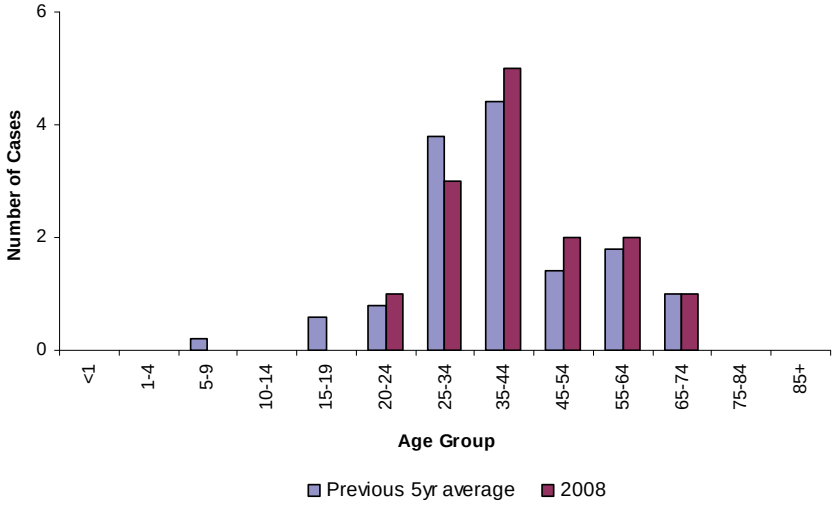
During the past five years, the cases reported were distributed throughout all the months of the year; in 2008, cases clustered in July through October and came from only eight counties (Alachua, Dade, Highlands, Hillsborough, Lee, Palm Beach, Orange and Seminole) (Figure 2).

Figure 2.
Toxoplasmosis Cases by Month of Onset, Florida, 2008



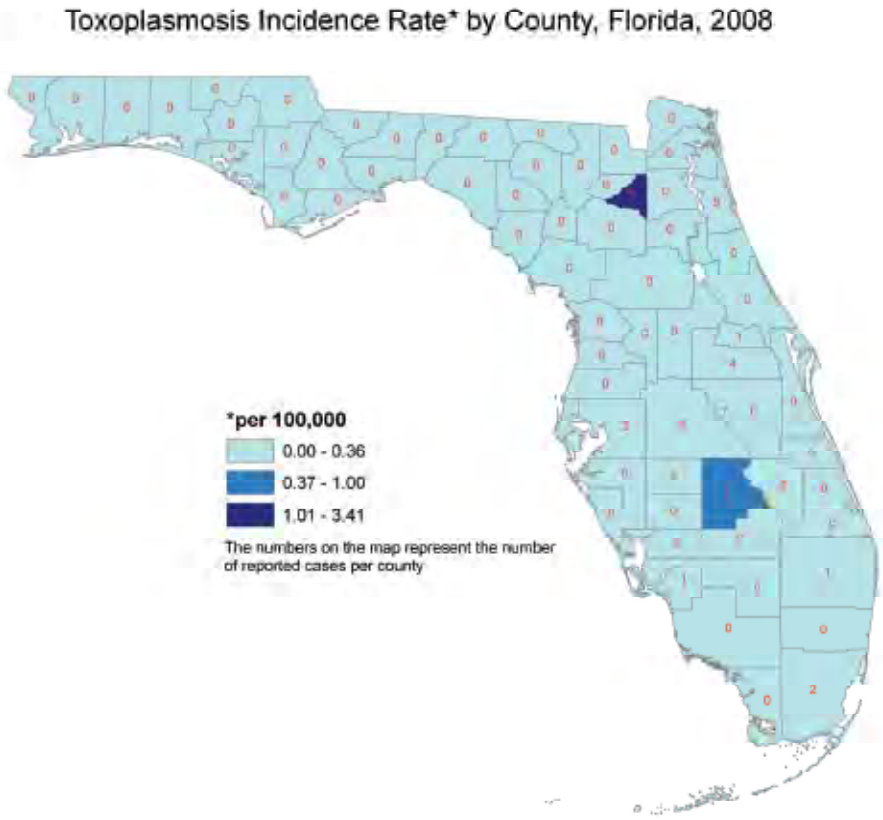
The average number of cases for the past five years was highest in those aged 25-34 years with a bell-shaped distribution surrounding this group. The 2008 data shows a very similar pattern with cases occurring in those 24 to 67 years old (Figure 3). Between 2002 and 2006, females had a higher incidence rate than males (0.16 and 0.08 per 100,000, respectively), but in 2008 there were more cases in males than females.

Figure 3.
Toxoplasmosis Cases by Age Group, Florida, 2008



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.

Tuberculosis

Disease Abstract

Florida reported 953 cases of tuberculosis (TB) for 2008, a four percent decrease from 2007 (Figure 1). Pulmonary cases represented 81% of all cases while 16% were extra-pulmonary, meaning occurring outside of the lungs, and three percent were both. Florida's "Big Six" counties, Miami-Dade (197), Duval (102), Orange (87), Broward (85), Hillsborough (69), and Palm Beach (65) reported 63% of Florida's TB morbidity for 2008. The incidence rate decreased from 5.2 per 100,000 population in 2007 to 5.0 per 100,000 population in 2008, which represents a decrease of 36 cases overall (Figure 2).

Figure 1. TB Morbidity in Florida, 1990-2008

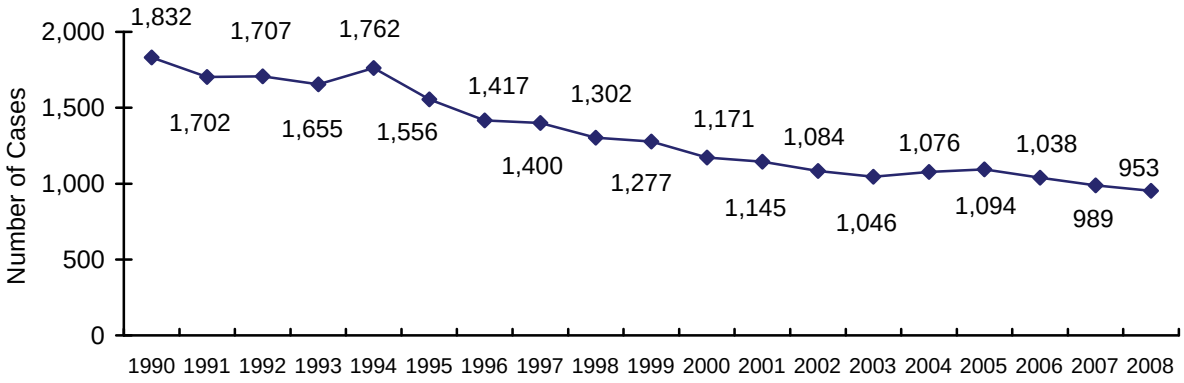
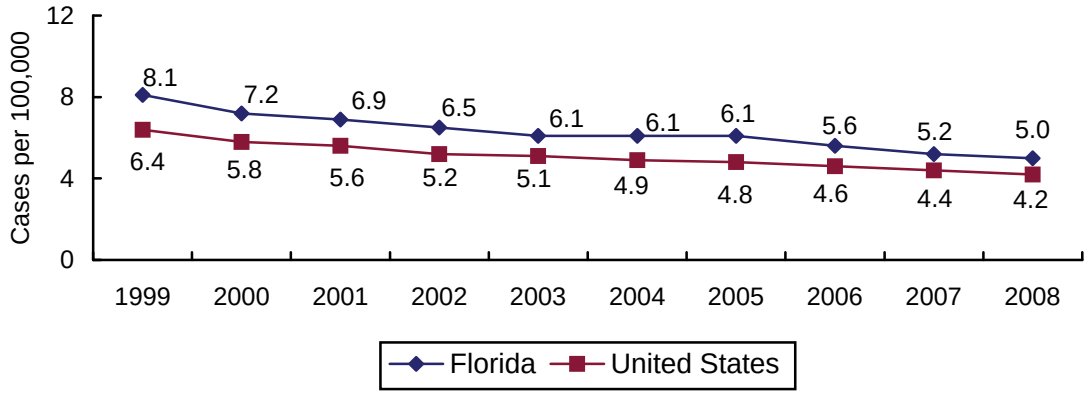


Figure 2. TB Incidence Rates in Florida, 1999-2008



Medically underserved and low-income populations as well as racial and ethnic minorities disproportionately carry the burden of TB in Florida. In 2008, 41% (386/953) of TB cases were among non-Hispanic blacks, 27% (257/953) were Hispanic, and 10% (94/953) were Asian. Non-Hispanic whites represented 22% (208/953) of TB cases. For the state as a whole, non-Hispanic whites comprise 61% of the population, Hispanics comprise 21%, and non-Hispanic blacks comprise 16%. Looking at these racial/ethnic comparisons shows that non-Hispanic blacks make up a small minority of the population in Florida (16%) but bear the highest proportion of the TB cases (41%). Comparing the racial and ethnic breakdown of TB cases by place of birth shows that of foreign-born cases, the majority occur among Hispanics (46%), whereas the majority of U.S.-born cases occur among non-Hispanic blacks (52%) (Table 1).

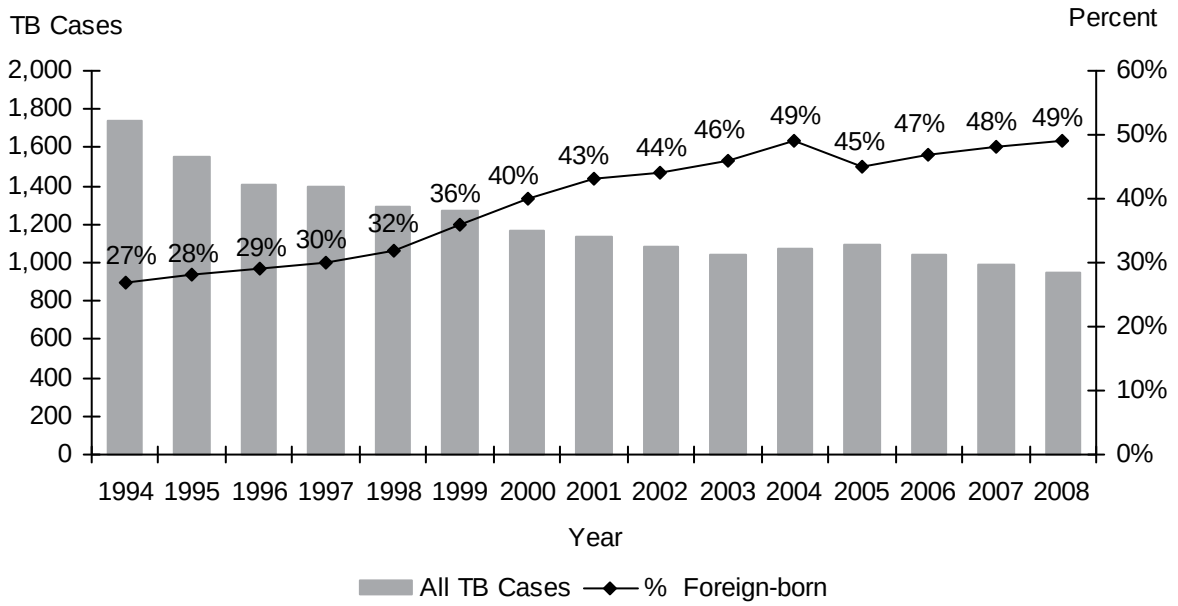
Table 1. Tuberculosis Cases by Race and/or Ethnicity and Place of Birth, Florida, 2008

Race/Ethnicity	U.S. Born	% U.S. Born	Foreign Born	% Foreign Born	Total	Total %
Black, Non-Hispanic	254	52	132	28	386	41
Hispanic (all races)	42	9	215	46	257	27
White, Non-Hispanic	184	38	24	5	208	22
Asian Only	3	1	91	20	94	10
American Indian/ Alaskan Native	1	<1	0	N/A	1	<1
Native Hawaiian/ Pacific Islander	0	N/A	1	<1	1	<1
Multiple Race	2	<1	0	N/A	2	<1
Unknown	2	<1	1	<1	3	<1
Total	**488**		**464**		**952***	

*One Reported case is not included (white race with unknown ethnicity)
Percents have been rounded

In 2004, foreign-born people represented almost 50% (526/1,076) of Florida's TB cases. The proportion decreased to 45% (496/1,094) in 2005, but began to rise again for the next three years. In 2008, foreign-born people once again represented almost 50% (464/953) of Florida's TB morbidity. This shows that while the number of TB cases has been steadily decreasing over the past five years, the proportion of cases that are among foreign-born people has been increasing.

Figure 3. Trends in Foreign-Born TB, Florida 1994-2008



Globally, males represent the largest percentage of TB cases. That same trend is observed in Florida where males were 64% (614/953) of reported TB cases in 2008 and females were 35% (338/953). The TB incidence rate for males was almost twice that of females. Also, males between the ages of 25 and

64 represented 44% (423/953) of cases whereas females of the same age group represented 24% (227/953) of TB cases in 2008. The same level of differences between the genders is not seen when broken down by age group. For children 5-14, the rate among males and females is almost identical, whereas among those 45 to 64 years old, the rate among males is almost two and a half times higher than among females (Table 2). Some available research shows that the gender difference in incidence rates could be due to care-seeking behaviors. Women tend to present to health care providers later in their illness. Additionally, behavioral risk factors for disease including excess alcohol consumption, drug use, homelessness, and incarceration are reported much less frequently in female TB cases.

Table 2. Age and Gender Specific Incidence Rates per 100,000 Population, Florida, 2008

Age Groups	Male	Female	Combined
0-4 years	4.4	2.5	3.5
5-14 years	0.3	0.5	0.39
15-24 years	5.0	2.6	3.8
25-44 years	6.8	4.8	5.8
45-64 years	10.8	4.5	7.6
65 and older	7.2	3.3	5.0

Overall, cases 14 years and younger comprised five percent of TB cases (48/953) and 15 to 24-year-olds were 10% (93/953) of cases. Age group 25 to 44 represented 29% (278/953) and 39% (372/953) were 45 to 64 years of age for 2008. Cases 65 years or older were 17% (162/953) of TB cases (Table 3).

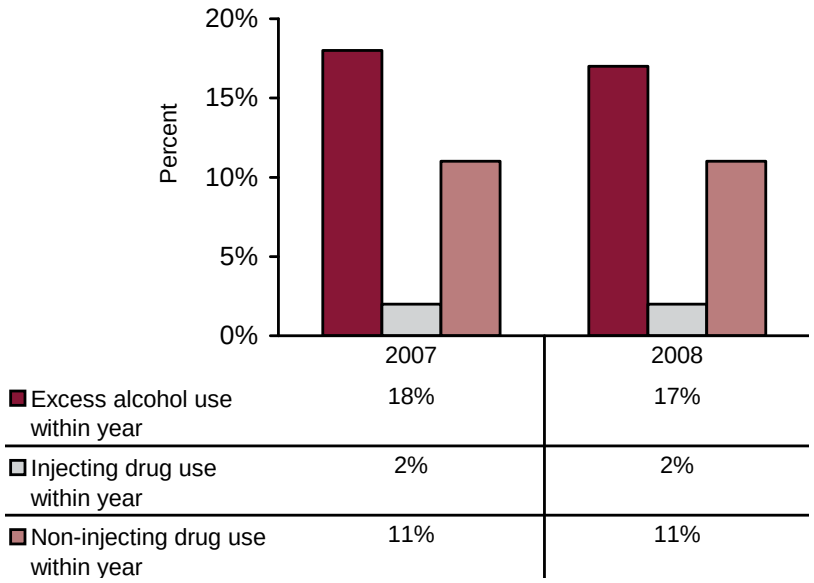
Table 3. Tuberculosis Cases by Age Group, Florida, 2008

Age Groups	2008 Cases	% of TB (n=953)
0-4 years	39	4
5-14 years	9	1
15-24 years	93	10
25-44 years	278	29
45-64 years	372	39
65 and older	162	17

At-risk Populations

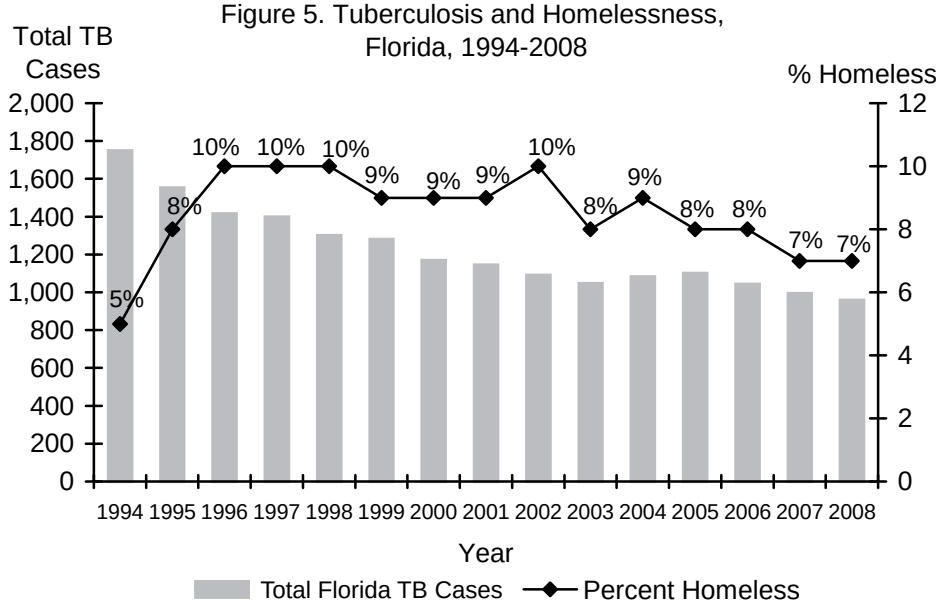
About 31% (308/989) of TB cases in 2007 reported drinking excessive amounts of alcohol, injecting drugs, or using non-injectable drugs within the year of TB diagnosis (Figure 4). In 2008, that number decreased to approximately 29% (280/953) of cases.

Figure 4. Tuberculosis and Substance Abuse During Year of Diagnosis, Florida, 2007 and 2008



The homeless are a marginalized population with issues such as poverty, poor nutrition, and, in some cases, substance abuse. These factors increase the probability of progression from TB infection to disease. Infection may also be more common because of exposure to high-risk settings such as homeless shelters. In 2007, seven percent (70/989) of Florida's TB cases were reported as homeless (Figure 5). The number of homeless TB cases remained seven percent (65/953) in 2008.

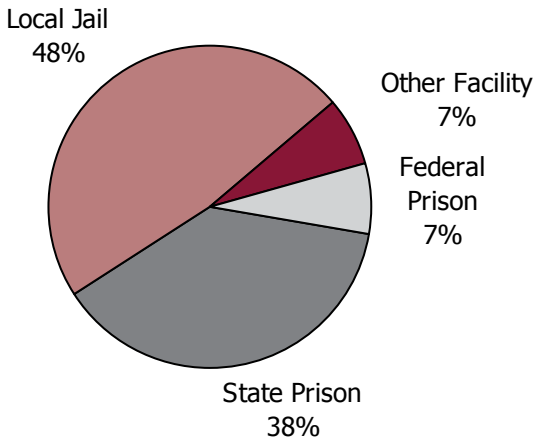
Figure 5. Tuberculosis and Homelessness, Florida, 1994-2008



People who are incarcerated are a potentially at-risk population for TB infection. Failure to diagnose and effectively treat TB in incarcerated populations creates a potential risk of infecting other inmates as well as eventually exposing the general community to possible TB infection. In 2008, three percent (29/953) of Florida's TB cases were incarcerated at the time of diagnosis. Local jails represented 48% (14/29) of

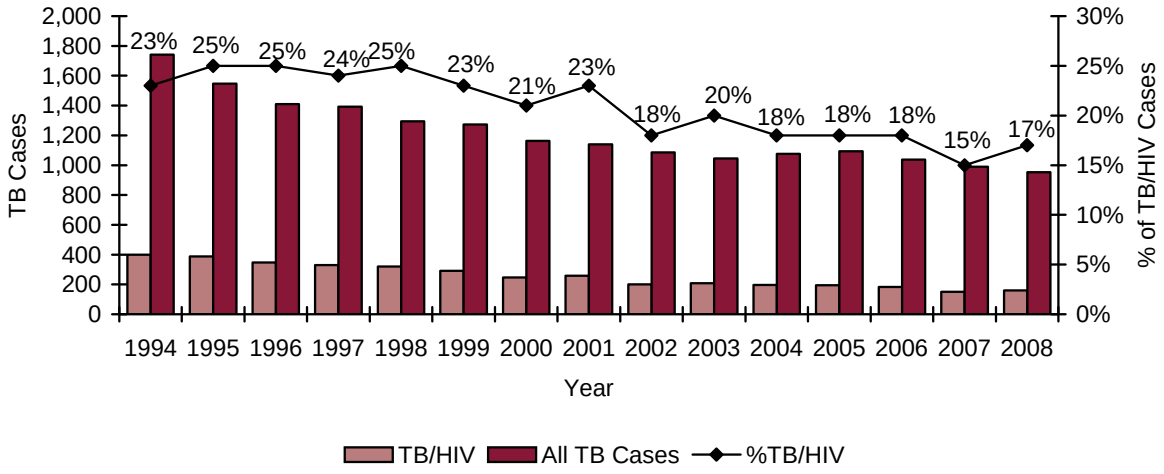
TB cases among those incarcerated (Figure 6). Federal and state prisons housed 45% (13/29) of cases and seven percent (2/29) were housed at Krome Detention Center (a federal facility that houses both criminal and non-criminal aliens). Of the 29 cases diagnosed in correctional facilities, 21% (6/29) were co-infected with HIV.

Figure 6. Tuberculosis in Correctional Facilities, Florida, 2008



In 2008, TB/HIV co-infection increased to 17% (161/953) from 15% (150/989) in 2007. From 1993-2006, 22% of Florida's TB cases were reported to be co-infected with HIV (Figure 7). Fifty-eight percent (94/161) of TB/HIV cases were in U.S.-born people in 2008. Foreign-born people comprised 42% (67/161) of HIV co-infected TB cases.

Figure 7. Trend of TB and HIV, Florida, 1994-2008



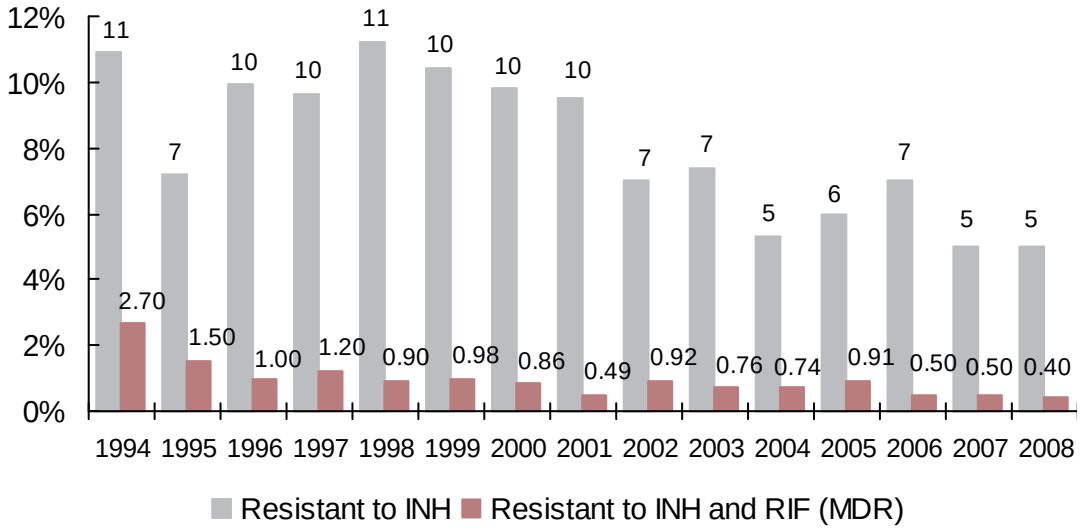
Drug Resistance

Drug resistant TB cases require additional resources including knowledgeable staff to medically manage or provide expert advice to treating staff. Florida's TB program utilizes the services of a network of physicians and A.G. Holley State Hospital, a specialty TB hospital, to provide expert medical consultation in order to assist in the management of drug resistant cases and/or ensure the utilization of appropriate drug regimens. A.G. Holley State Hospital exists to treat the most medically and behaviorally complex

cases of TB: cases that have failed treatment in the community. It is one of only a few hospitals in the nation dedicated to the treatment of TB. The hospital treats and cures an average of 100 patients each year, including those with drug resistant strains of TB.

In 2008, five percent (50/953) of Florida's TB cases were resistant to the first line TB treatment drug Isoniazid (INH) (Figure 8). Less than one percent (4/953) was resistant to both Isoniazid (INH) and Rifampin (RIF) – MDR. Florida did not report any extensively drug resistant (XDR) TB cases in 2008.

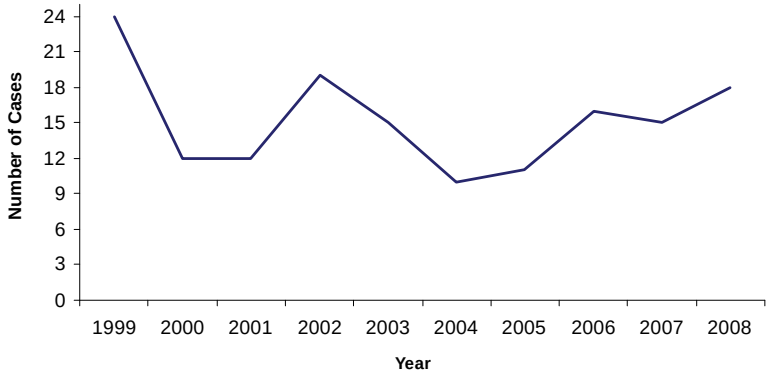
Figure 8. Primary Antibiotic Resistance of TB Isolates, Florida, 1994-2008



Typhoid Fever

Typhoid Fever: Crude Data	
Number of Cases	18
2008 incidence rate per 100,000	0.10
% change from average 5 year (2003-2007) reported cases	34.33
Age (yrs)	
Mean	22.56
Median	16
Min-Max	1 - 68

Figure 1.
Typhoid Fever Cases by Year Reported, Florida, 1999-2008



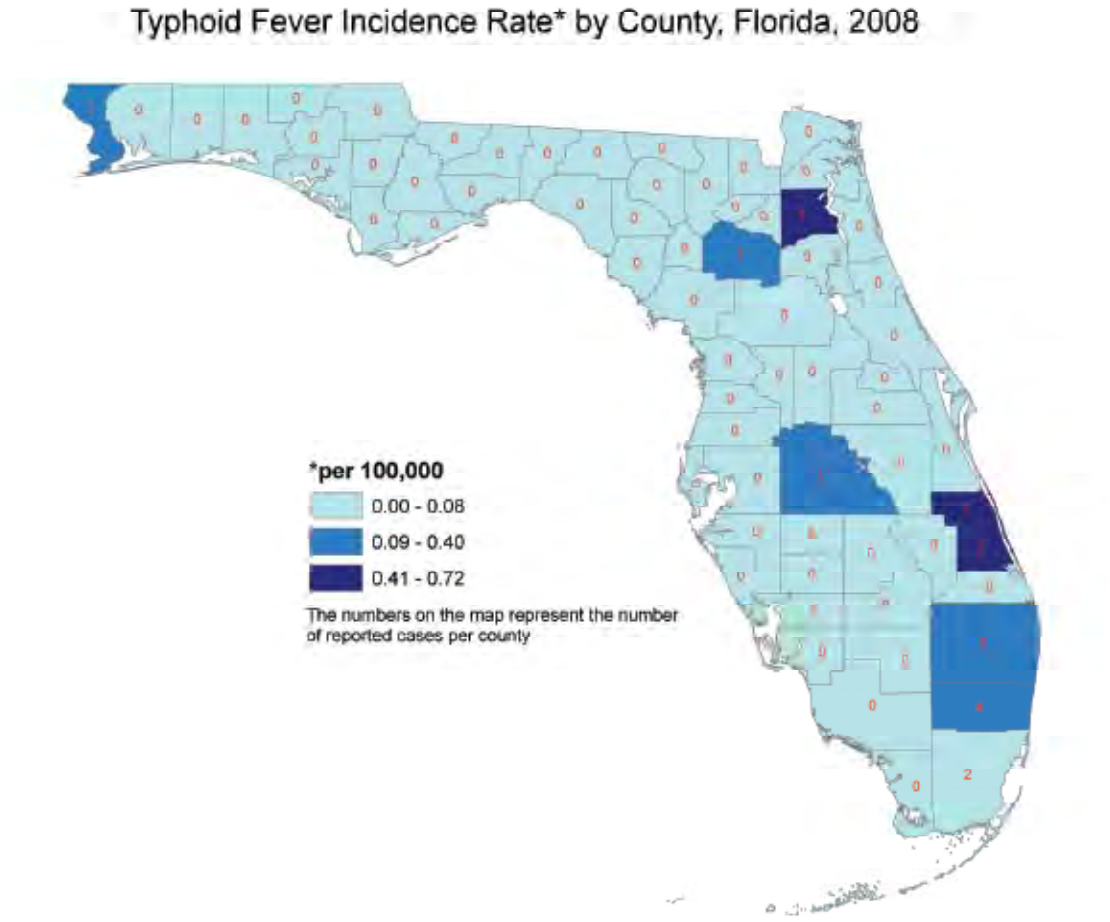
Disease Abstract

The overall number of confirmed cases of typhoid fever for the last 10 years has ranged from 10-24 annually, and in 2008 was 18 cases, representing an incidence rate of 0.10 per 100,000. This was a 34.33% increase from the average number of cases in the previous five years (Figure 1). All of the 2008 cases were classified as confirmed, and the median age was 16. 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 were Broward and Palm Beach. Cases tend to be isolated, rather than clustered. They typically occur more frequently in the summer months, and in 2008, the majority of cases occurred in July-October. Only a single outbreak of typhoid fever (18 cases, 1997) occurred in Florida in the past 12 years. This outbreak was traced to frozen shakes made with imported frozen mamey fruit. Please see the Summary of Notable Outbreaks and Case Investigations for a description of cases imported from Haiti in 2008.

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.

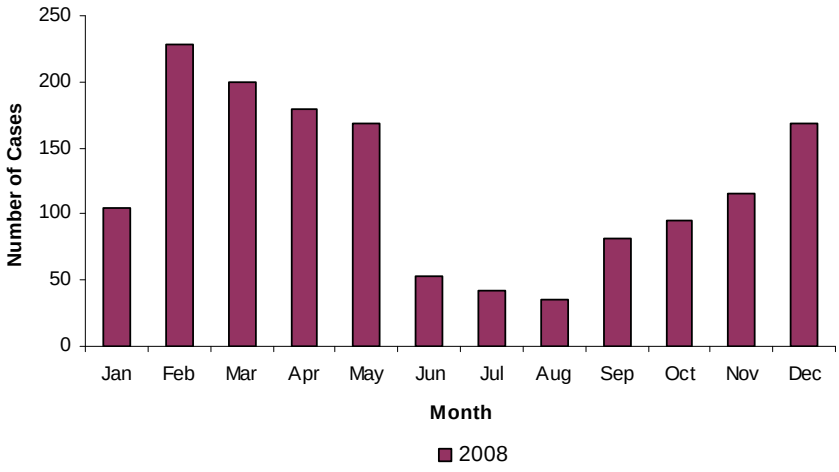
Varicella

Varicella: Crude Data	
Number of Cases	1,735
2008 incidence rate per 100,000	9.18
% change from average 5 year (2003-2007) reported cases	N/A
Age (yrs)	
Mean	13.9
Median	9
Min-Max	0-93

Disease Abstract

Varicella was reported in 51 of the 67 Florida counties. Cases may be under-reported since 2007 was the first full year of case reporting in Florida and 1,321 cases were reported that year. The 1,735 cases reported in 2008 include confirmed and probable cases, as did all previously reported numbers. Of these cases, 1,060 had a history of vaccination. There were 582 outbreak-associated cases. Childcare centers and schools are the most common sites for varicella outbreaks.

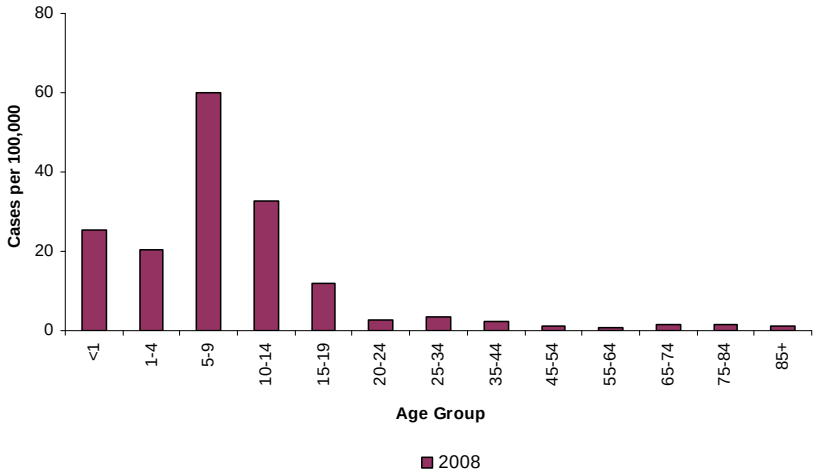
Figure 2.
Varicella Cases by Month of Onset, Florida, 2001-2008



Prevention

The varicella vaccine is recommended at 12–15 months and at 4–6 years of age. Doses given prior to 13 years of age should be separated by at least three months. Doses given after 13 years of age should be separated by at least four weeks. Due to the occurrence of disease after one dose of vaccine, the current recommendation is now for two doses of vaccine. Proof of varicella vaccination or healthcare provider documentation of disease is required for entry and attendance in childcare facilities, family day care homes, and schools for certain grades.

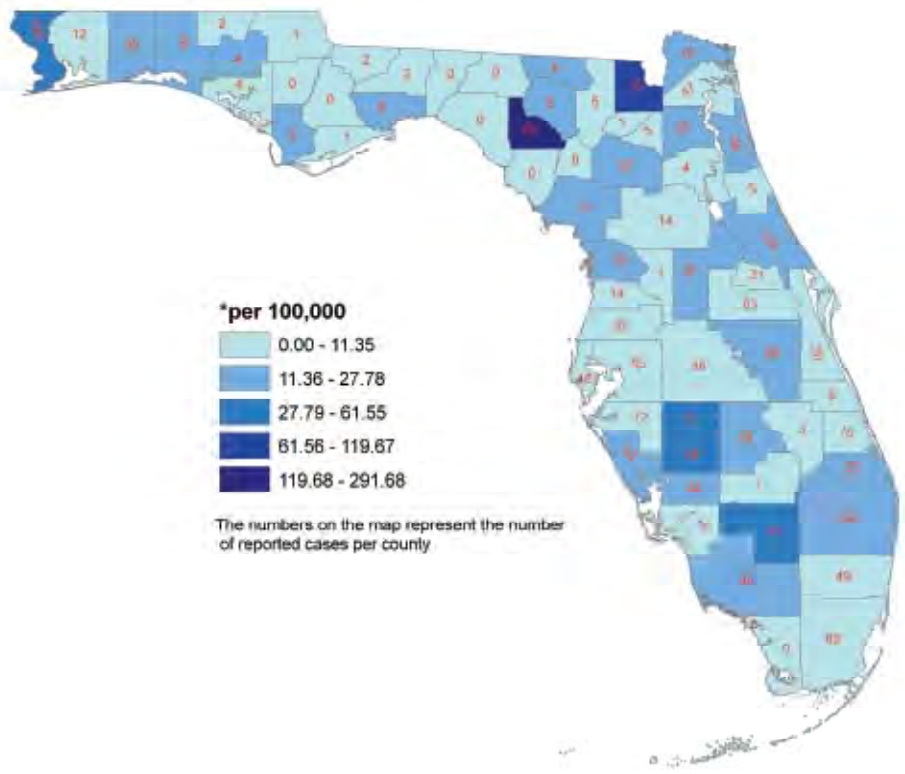
Figure 3.
Varicella Incidence Rate by Age Group, Florida, 2008



The Advisory Committee on Immunization Practices recommends the use of varicella vaccine for susceptible persons following exposure to a case of varicella infection. If administered within 72 hours, and possibly up to 120 hours following varicella exposure, varicella vaccine may prevent or significantly modify disease. Post-exposure vaccine use should be considered following exposures in 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. After the only U.S. licensed manufacturer of VZIG announced it had discontinued production, an investigational (not licensed) product, VariZIG, became available in February 2006 under an investigational new drug application (IND) submitted to the Food and Drug Administration. This new product can be obtained from the distributor (FFF Enterprises, Inc., Temecula, CA) by calling 800-843-7477.

Varicella Incidence Rate* by County, Florida, 2008



References

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

Additional Resources

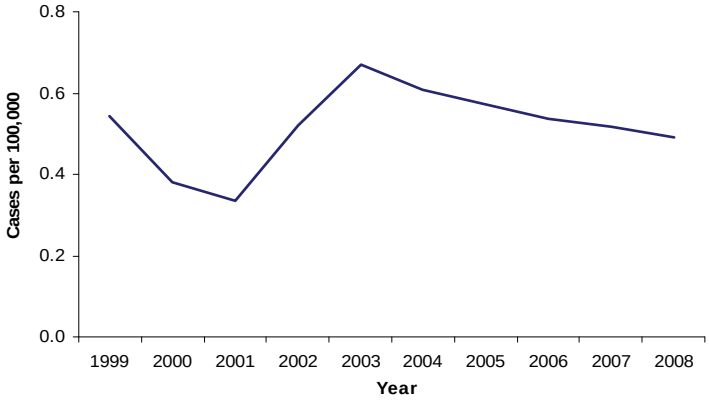
Disease information is available from the Centers for Disease Control and Prevention (CDC) at www.cdc.gov/vaccines/vpd-vac/varicella/default.htm.

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

Vibriosis

***Vibrio* Infections: Crude Data**	
Number of Cases	93
2008 incidence rate per 100,000	0.49
% change from average 5 year (2003-2007) incidence rate	-15.01
Age (yrs)	
Mean	46.86
Median	48
Min-Max	1 - 88

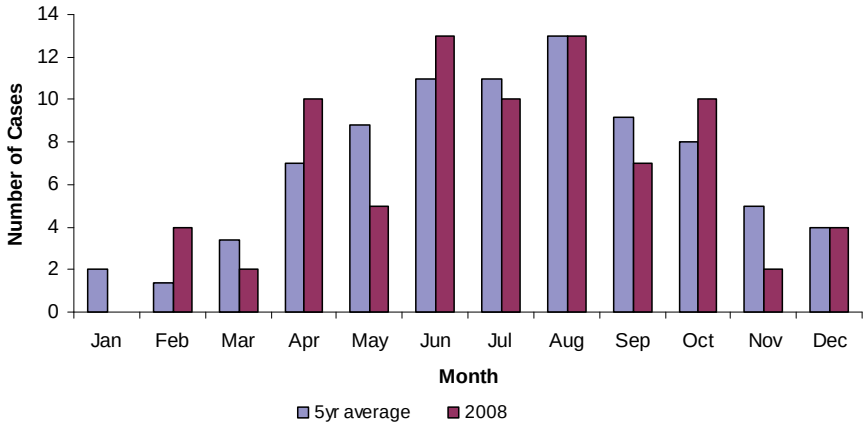
Figure 1.
Vibrio Infections Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

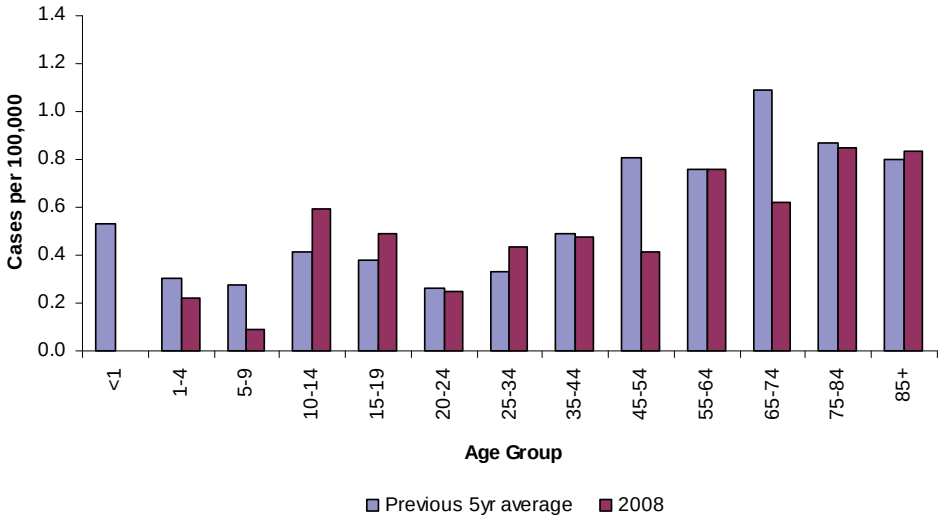
The genus *Vibrio* consists of gram-negative, curved, motile rods, and contains about a dozen species known to cause human illness. Transmission occurs primarily through the foodborne route, and in Florida it is principally from eating raw or undercooked shellfish. Transmission can also occur through 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*. This report combines data on *Vibrio* infections to provide a general measure of disease burden.

Figure 2.
Vibrio Infections Cases by Month of Onset, Florida, 2008



In comparison to the previous average 5-year incidence, the incidence for *Vibrio* infections in 2008 declined (15.01%) (Figure 1). A total of 93 cases were reported in 2008, of which 100% were confirmed. The majority of cases were considered sporadic (93%), not outbreak-associated, and six were of unknown origin. *Vibrio* infections typically increase during the warmer months. In 2008, 85% of the cases occurred from April to October (Figure 2).

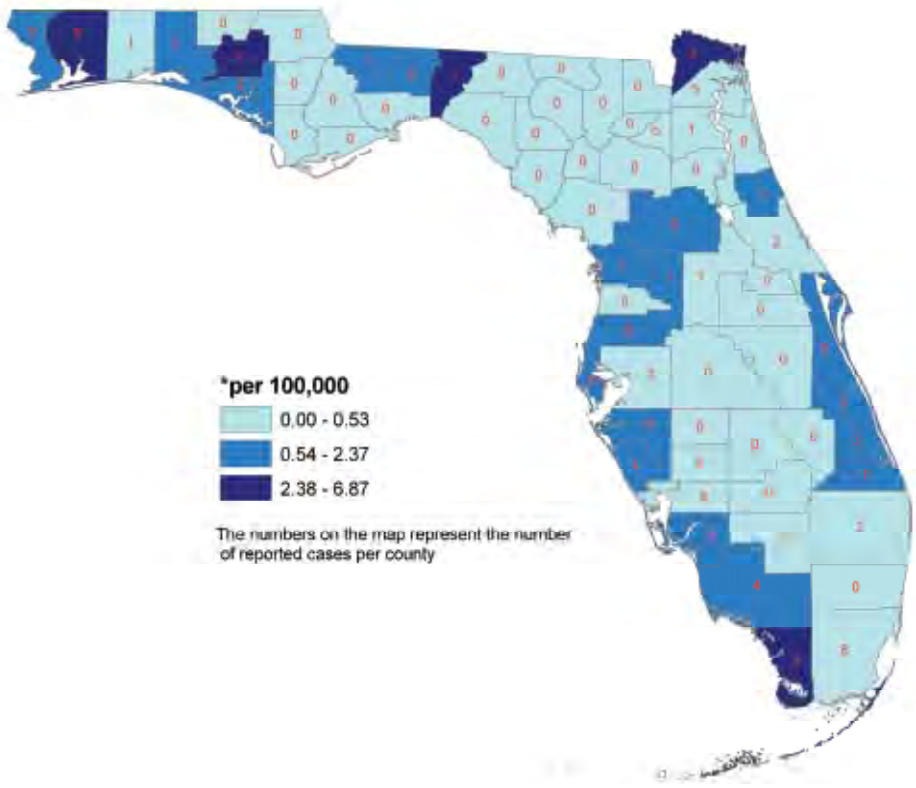
Figure 3.
Vibrio Infections Incidence Rate by Age Group, Florida, 2008



There are consistently high incidence rates among individuals over 45 years old with a historical peak incidence occurring in the 65-74 age group (1.09 per 100,000) (Figure 3). This is a population that is likely to have chronic conditions that predispose them to these infections. However, in 2008, there were relatively high incidence rates among those 10-19 years old. Historically, white males have the highest incidence rate and that continued in 2008 (0.75 per 100,000). The lowest incidence rate for 2008 was among non-white females (0.05 per 100,000).

Vibrio cases were reported in 32 of the 67 counties in Florida in 2008. The higher-incidence counties appear to be along the coasts.

Vibrio Infections Incidence Rate* by County, Florida, 2008



Vibrio vulnificus infections

V. vulnificus typically manifests as septicemia in persons who have chronic liver disease, or chronic alcoholism, or are immunocompromised, and is commonly associated with the consumption of raw oysters. Of the *Vibrio* species reported in 2008, 16 were *Vibrio vulnificus*, an important *Vibrio* infection causing death in 50% of reported cases. Of the 16 reported *Vibrio vulnificus* cases, six were wound infections (one death) and eight were attributed to oyster consumption (five deaths). Exposure was unknown in two of the cases (both fatal).

Vibrio parahaemolyticus infections

V. parahaemolyticus typically manifests as a gastrointestinal disorder with symptoms of diarrhea, abdominal pain, nausea, fever, and headache. It is commonly associated with the consumption of raw oysters and is also associated with the consumption of cross-contaminated crustacean shellfish (crab, shrimp, and lobster). Of the *Vibrio* species reported in 2008, 21 were *Vibrio parahaemolyticus*. Of these 21 cases, nine were wound infections, four were attributed to oyster consumption, one was attributed to crab consumption, and one case had multiple seafood exposures. Exposure was unknown in six of the cases. No deaths from *Vibrio parahaemolyticus* infection were reported.

Vibrio alginolyticus infections

V. alginolyticus infections typically present as self-limited wound infections and ear infections. Septicemia and death have been reported in immunocompromised individuals and burn patients. Infection is commonly associated with exposure to seawater. Of the *Vibrio* species reported in 2008, 28 were *Vibrio alginolyticus*. Of these 28 cases, 22 were wound infections and six were ear infections. No deaths from *Vibrio alginolyticus* were reported.

Table 1. *Vibrio* Infections- Confirmed Cases by Species and Exposure Type, Florida, 2008

		Exposure		
	Total Cases	Seafood*	Wound†	Unknown
Vibrio alginolyticus	28	0	22	0
V. parahaemolyticus	21	6	9	6
V. vulnificus	16	8	6	2
V. fluvialis	9	2	4	3
V. cholerae non-O1	2	0	1	0
V. hollisae	1	1	0	0
V. mimicus	4	3	1	0
Other	13	1	8	1
Total	94	21	51	12

**Includes shellfish (raw oysters and clams)*

†Includes pre-existing and sustained wounds

References

Chien J, Shih J, Hsueh P, Yang P, Luh K, "*Vibrio alginolyticus* as the Cause of Pleural Empyema and Bacteremia in an Immunocompromised Patient," *European Journal of Clinical Microbiology & Infectious Diseases*, 2002, Vol. 21, pp. 401-403.

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

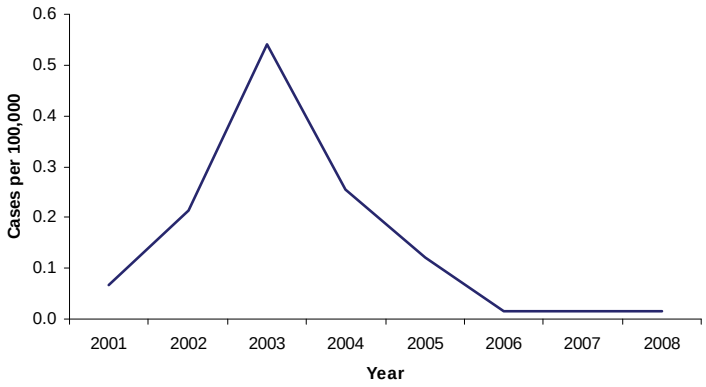
Additional Resources

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

West Nile Virus

West Nile Virus: Crude Data	
Number of Cases	3
2008 incidence rate per 100,000	0.02
% change from average 5-year (2003-2007) reported cases	-91.02
Age (yrs)	
Mean	61.33
Median	70
Min-Max	39 - 75

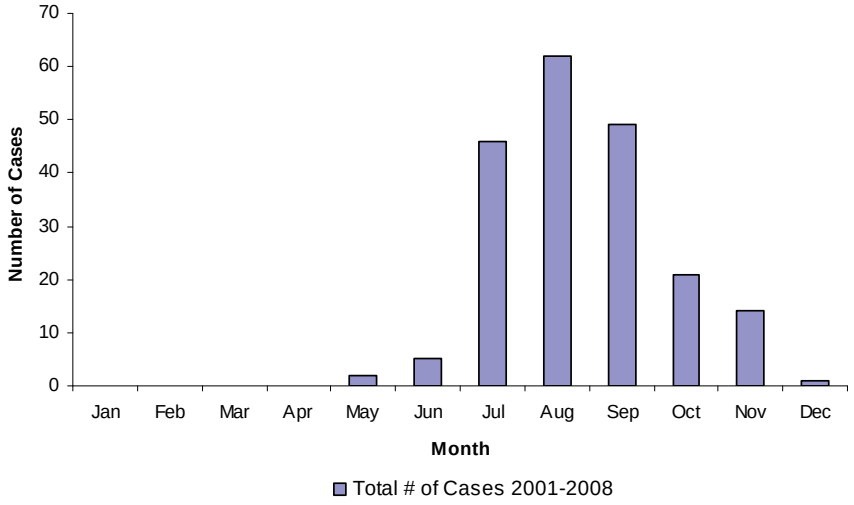
Figure 1.
West Nile Virus Incidence Rate by Year Reported, Florida, 1999-2008



Disease Abstract

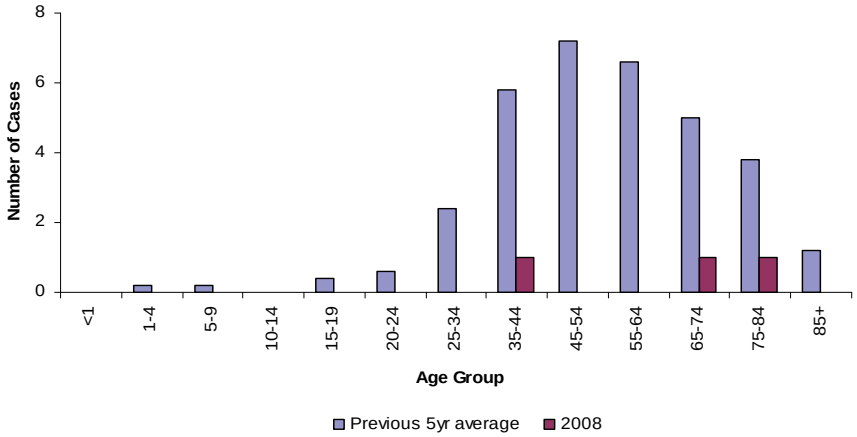
The incidence rate for West Nile virus (WNV) disease, including the neuroinvasive and non-neuroinvasive forms, peaked in Florida in 2003 (Figure 1). In 2008, there were two locally-acquired human cases, and one Floridian became ill after being exposed in another state. All were classified as neuroinvasive disease. The level of virus transmission between bird and mosquito populations is dependent on a number of environmental factors. The low levels of activity reported in 2006-2008 were likely a result of the dry conditions experienced by much of the state. The peak transmission period for WNV in Florida occurs July through September (Figure 2).

Figure 2.
West Nile Virus Disease by Month of Onset, Florida, 2001-2008



The greatest number of cases occur in individuals over the age of 35 (Figure 3), with more cases among males than females. WNV transmission tends to be localized in Florida. In 2001, the epicenter of the WNV outbreak was in the north-central part of the state. The following year, activity was most intense in the northwestern and central counties. The focus in 2003 was the panhandle, while south Florida had the most activity in 2004. In 2005, 86% of the human cases were in Pinellas County. Both locally acquired cases in 2008 were in Escambia County.

Figure 3.
West Nile Virus Cases by Age Group, Florida, 2008



In general, approximately 80% of those infected show no clinical symptoms. Twenty percent have mild symptoms, and less than 1% experience the most severe neuroinvasive form of illness. People over the age of 50 seem to be at increased risk for neuroinvasive disease. The case fatality rate for neuroinvasive disease is approximately 7% in Florida. The average cost of a single death from West Nile Virus was estimated at $225,000 in one study (Zohrabian et al, 2004). Interestingly, activity of a related disease, St. Louis Encephalitis, has decreased dramatically since WNV was first detected in the state in 2001. Research suggests that antibodies for WNV may protect against SLEV.

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 biting. Dress in long sleeves and long pants to protect your skin from mosquitoes. In addition, inspect screens on doors and windows for holes to make sure mosquitoes cannot enter the home. A vaccine is available for horses.

References

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

Fang, Y, Reisen WK. “Previous infection with West Nile or St. Louis encephalitis viruses provides cross protection during reinfection in house finches.” *Am J Trop Med Hyg*. 2006;75 (3): 480-5.

Zohrabian A, Meltzer M, Ratard R, et al. “West Nile Virus Economic Impact, Louisiana, 2002.” *Emerging Infectious Diseases*. 2004 (10):1736-1744.

Additional Resources

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

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