

Disease Control Prevention and Preparedness Epidemiology Annual Report, 2012



The Epidemiology Program conducts disease surveillance and investigates suspected occurrences of infectious diseases and conditions that are reported from physician's offices, hospitals, and laboratories. Surveillance is primarily conducted through passive reporting from the medical community as required by Chapter 381, Florida Statutes. Data is collected and examined to determine the existence of trends. The Epidemiology Program also conducts syndromic and influenza-like-illness surveillance activities. Syndromic surveillance was added to the disease reporting process as an active method of determining activities in the community that could be early indicators of outbreaks and bioterrorism.

Clusters of any illness or outbreaks among any groups with similar signs and symptoms are also reportable, and the program conducts outbreak investigations and provides consultation and guidance for control measures in those situations. Surveillance of reportable diseases involves: 1. **Data collection** - Healthcare providers, laboratories, school health personnel, and other community partners are required to report cases of reportable diseases. Individuals in the community are encouraged to report outbreaks or suspicious illnesses to the health department or their healthcare provider. The Epidemiology Program is responsible for receiving and investigating these cases of reportable diseases or conditions, and for providing prevention information to clients at risk for acquiring or transmitting communicable diseases. 2. **Analysis** - The Epidemiology Program uses the state surveillance system, "Merlin", to track reportable diseases and conduct basic analyses of the data and reports including calculating frequencies, epidemic curves, and rates. Merlin is capable of displaying the data based on selected criteria such as demographics and risk factors. State laboratories and some private laboratories are capable of electronically submitting lab results through Merlin. 3. **Dissemination of resulting information** - The Epidemiology Program provides information that contains cumulative data on reportable disease trends and highlights information from local and statewide outbreak investigations, through postings on our website at www.Charlottechd.com. Our staff ensures that action is taken to prevent infectious disease outbreaks from occurring in the Charlotte County area through constant vigilance, communication, collaboration and networking with our community partners.

Case Investigations In 2012, 487 cases of reportable disease were investigated in Charlotte County. Enteric diseases and chronic hepatitis B and C viruses comprise the majority of cases reported to the CCHD in 2012. The enteric diseases reported include the following: campylobacteriosis, cryptosporidiosis, cyclosporiasis, Escherichia coli shiga toxin producing, giardiasis, salmonellosis, and shigellosis. Enteric diseases accounted for 21% of all reportable disease cases in the county (104/487 cases). The hepatitis viruses reported include the following: hepatitis A, hepatitis B (+HBsAg in pregnant women), acute hepatitis B, chronic hepatitis B, acute hepatitis C and chronic hepatitis C. Chronic hepatitis B and C virus infections combined accounted for over 70% of all reportable disease cases in the county (337/487 cases). The bacterial invasive diseases reported include: *Haemophilus influenzae* (invasive disease), meningitis (bacterial, cryptococcal, and mycotic), Streptococcal disease invasive group A, *Strep pneumoniae* invasive disease drug-resistant and *Strep pneumoniae* invasive disease drug susceptible. Bacterial invasive diseases accounted for 1% of all reportable in the county (8/487 cases). The vaccine- preventable diseases reported include: *Haemophilus influenzae* (invasive disease), acute hepatitis B, pertussis, and varicella. Vaccine-preventable diseases accounted for 3% of all reportable diseases in the county (15/487

cases). Animal bites to humans requiring rabies post exposure prophylaxis accounted for 5% of all reportable diseases in the county (25/487 cases).

Each case requires, at a minimum, contacting the patient for information regarding possible sources of exposure and any family or other close personal contacts who also may be at risk, and if necessary making further contacts with the patient's physician, the hospital, and/or the diagnostic laboratory providing the information. If the patient works for (or attends) a setting where the risk of transmitting certain diseases is high (such as restaurants, hospitals or daycares), the epidemiology staff will also contact the co-workers or fellow attendees to advise them on preventive measures and to offer prophylaxis when appropriate.

Enteric Diseases The enteric diseases reported in Charlotte County in 2012 include the following: campylobacteriosis, cryptosporidiosis, giardiasis, salmonellosis, and shigellosis. In 2012, there were 104 cases of enteric diseases reported in Charlotte County (Figure 1). Enteric diseases accounted for 21% of all reportable diseases in Charlotte County for 2012. Salmonellosis was the most commonly reported enteric disease with 52 cases and an incidence rate of 32.13 cases per 100,000. This marks a 39% increase in the number of cases for salmonellosis from 2011. Charlotte County's enteric disease incidence rate of 63.65 cases per 100,000 population was lower than the overall statewide incidence rate of 69.39 cases per 100,000 population for 2012.

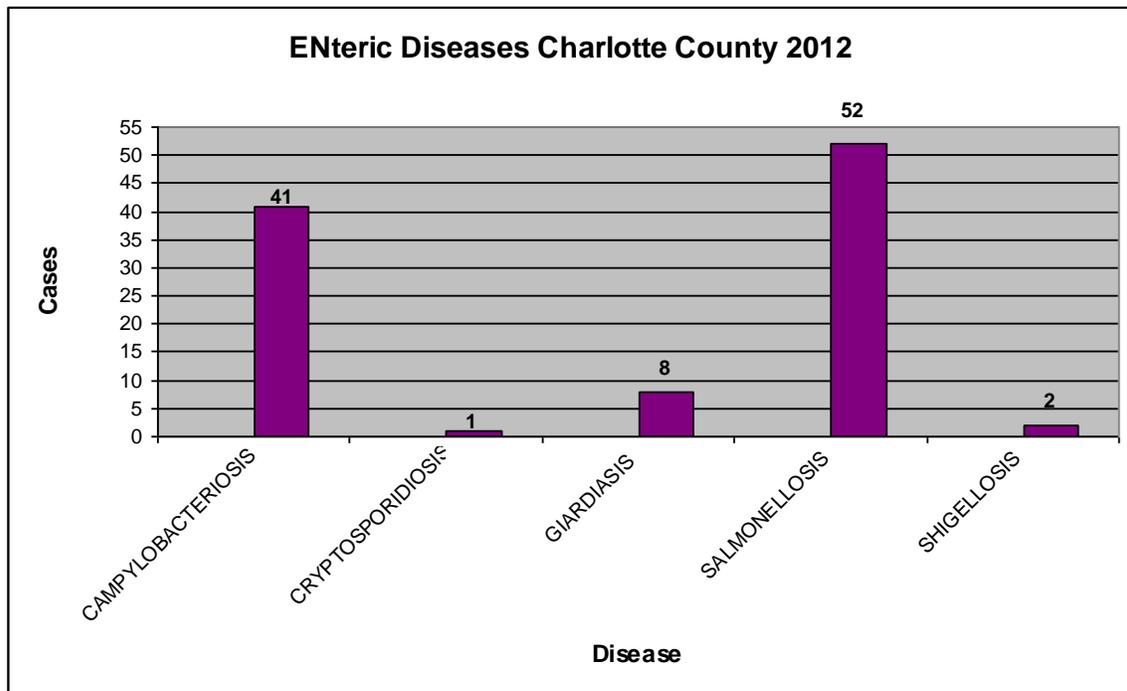


Figure 1

Prevention Some simple food handling practices can help reduce the likelihood of contracting enteric diseases:

- Cook all meats products thoroughly, particularly poultry products which should be cooked to reach a minimum internal temperature of 165 °F.
- Wash hands with soap before, during, and after food preparation.

- Prevent cross-contamination in the kitchen by making sure utensils, counter tops, cutting boards, and sponges are cleaned or do not come in contact with raw meat products.
- Avoid consuming unpasteurized milk and untreated surface water.
- Make sure that persons with diarrhea, especially children, wash their hands carefully and frequently with soap to reduce the risk of spreading the infection.
- Wash hands with soap after contact with any animals or their environment.

A swimmer's likelihood of contracting or spreading cryptosporidiosis in recreational water settings can be reduced by practicing the following healthy swimming practices:

- Avoid swallowing pool water or even getting it in your mouth.
- Shower before swimming and wash your hands after using the toilet or changing diapers.
- When swimming, take children on bathroom breaks or check diapers often. ▫ Change diapers in a bathroom and not at poolside and thoroughly clean the diaper changing area.
- Protect others by not swimming if you are experiencing diarrhea (this is essential for children in diapers) and for at least two weeks after diarrhea stops. Other practices for reducing the likelihood of contracting cryptosporidiosis include the following:
 - Wash hands with soap before, during, and after food preparation
 - Cook all meats products thoroughly.
 - Wash hands with soap before handling or eating food and after diaper changing, during, and after food preparation.
 - Avoid ingesting or swallowing water in recreational settings, such as swimming pools or water parks.

Gastrointestinal Illness Resources

Florida Online Foodborne Illness Complaint Form – Public Use

http://www.doh.state.fl.us/environment/medicine/foodsurveillance/Online_Foodborne_Complaint_Form.html

Florida Food Recall Searchable Database

http://www.doh.state.fl.us/environment/medicine/foodsurveillance/Recalls_Page.htm

Florida Department of Health – Norovirus Outbreak Control Documents

http://www.doh.state.fl.us/Disease_ctrl/epi/Norovirus.htm

Hepatitis Viruses In 2012, there were 400 cases of viral hepatitis reported in Charlotte County. These include the following: hepatitis A, hepatitis B (+HBsAg) in pregnant women, acute and chronic Hepatitis B, acute hepatitis C and chronic hepatitis C. Hepatitis viruses accounted for 70% of all reportable diseases in Charlotte County for 2012. Chronic hepatitis C was most frequently reported, with 304 cases.

Hepatitis A Prevention Currently, the single antigen, two-dose hepatitis A vaccine is recommended as part of the routine immunization schedule for all children, starting at age one. However, this is not a requirement for childcare or school entry in Florida. The doses should be spaced at least six months apart. A combined hepatitis A and hepatitis B vaccine is available for adults aged >18 years, and is administered in three doses.

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

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

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

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

Illness among food-handlers or persons in a childcare setting should be promptly identified and reported to allow prompt action to be taken to prevent further spread of the disease in those settings. In outbreak settings, immune-globulin may be administered to at-risk contacts of infected individuals, particularly children under one year and adults aged >40 years. Recently updated guidelines, based on results from a clinical trial, recommend using vaccine rather than immune globulin for post-exposure prophylaxis in healthy individuals aged between 1 and 40 years. All post-exposure prophylaxis should be administered within two weeks of exposure.

Hepatitis B Prevention among Pregnant women A regimen combining Hepatitis B immune globulin (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. Vaccine for children and adults is also available in combination vaccines.

Hepatitis B, Acute A total of four cases of acute hepatitis B were reported in 2012, all of which were classified as confirmed. The incidence rate for hepatitis B acute has been on a steady decline since 2008. In 2012, there was a 59% increase in comparison to the average incidence rate from the previous 3-year average. All of the hepatitis B acute cases reported in Charlotte County in 2012 were classified as sporadic and non-outbreak-related. When compared with the previous 3-year average, there continue to be no reported cases among people ≤24 years of age. This has been the historical trend which is also underscored by the immunization campaigns following the introduction of an effective vaccine in 1981. The CCHD Hepatitis Program has been very instrumental in raising awareness about the disease as well as administering vaccinations against hepatitis A and B among populations at risk.

Prevention Hepatitis B vaccines are available to protect against hepatitis B virus infection. In addition, in healthcare settings, implement universal precautions for individuals in contact with body fluids. High-risk groups for infection include:

- drug users who share needles,
- healthcare workers who have contact with infected blood,
- MSM (men who have sex with men),

- people who have multiple sexual partners,
- household contacts of infected persons, and
- infants born to mothers who are hepatitis B carriers.

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> ,
<http://www.cdc.gov/NCIDOD/diseases/hepatitis/a/index.htm> and
<http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm>

Bacterial Invasive Diseases In 2012, there were 8 cases of bacterial invasive diseases reported in Charlotte County. The bacterial invasive diseases reported to Charlotte County in 2012 include: *Haemophilus influenzae* (invasive disease), and *Strep pneumoniae* invasive disease drug-susceptible. Bacterial invasive diseases accounted for 1.60% of all reportable diseases in Charlotte County for 2012. *Strep pneumoniae* invasive disease, susceptible was the most commonly reported bacterial invasive diseases with 7 cases and an incidence rate of 4.33 per 100,000.

Prevention Conjugate vaccines against *Haemophilus influenzae* type b (Hib) for infants and children are recommended by the Advisory Committee on Immunization Practices.

Additional Resources

Center 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>

Vaccine-Preventable Diseases In 2012, there were 16 cases of vaccine-preventable diseases in Charlotte County. The vaccine-preventable diseases reported to Charlotte County in 2012 include: *Haemophilus influenzae* (invasive disease), hepatitis B, pertussis, and varicella. Vaccine preventable diseases accounted for 3.29% of all reportable diseases in Charlotte County for 2012. Varicella was the most commonly reported vaccine-preventable disease with 7 cases and an incidence rate of 4.33 per 100,000.

Pertussis Pertussis is a severe respiratory disease caused by *Bordetella pertussis*; it is also known as whooping cough. Four cases were reported in Charlotte County in 2012. The incidence rate for pertussis has varied over the previous ten year period; the 2012 incidence rate is 2.47 per 100,000. Our four cases were classified as confirmed; two cases were sporadic and two were epi-linked (family cluster). Pertussis is most common in young children and infants. In 2012, two cases were female and two were male, all children between the ages of <1 and 2-9. As a result of this investigation, 8 contacts exposed to the one of the cases were offered prophylaxis.

Prevention Currently, only acellular pertussis vaccines combined with diphtheria and tetanus toxoids (DTaP and Tdap) are available in the U.S. The five DTaP doses should be administered to children at two months, four months, six months, 15 to 18 months, and four to six years of age. This vaccine is also available in combination with other childhood vaccines. The increase in disease in the early teenage years indicates that

immunity decreases over time. Vaccine recommendations now include Adolescents 11-18 years of age (preferably at age 11- 12 years) and adults 19 through 64 years of age should receive a single dose of Tdap. For adults 65 and older who have close contact with an infant and have not previously received Tdap, one dose should be received. As of school year 2009-2010, Tdap vaccine is required for children entering seventh grade. Post-exposure antibiotic and vaccine prophylaxis of close contacts of a case are the major outbreak control measures to prevent pertussis transmission.

Additional Resources

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

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

Varicella (Chickenpox) The first full year of varicella case reporting in Florida began in 2007. Since 2007 the incidence rate for varicella has been steady in Charlotte County. Incidence rate in 2009 was 4.38 per 100,000, in 2010 4.37 per 100,000, in 2011 3.74 per 100,000 and in 2012 the incidence rate was 4.33 per 100,000. Seven cases of varicella were reported in 2012. Three varicella cases reported in Charlotte County in 2012 were classified as outbreak-related involving 3 siblings. The other 4 cases were classified as sporadic. The highest incidence occurred among children in the age groups <1, 1-4, and 5-9. Childcare centers and schools are the most common sites for varicella outbreaks.

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

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention at www.cdc.gov/vaccines/vpdvac/varicella/default.htm

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

Rabies Possible Exposure

Electronic reporting was initiated in 2001 of animal encounters (bites, scratches, etc.) for which rabies post-exposure prophylaxis (PEP) is recommended. Rabies PEP is recommended when an individual is bitten, scratched, or has mucous membrane or fresh wound contact with the saliva or nervous tissue of a laboratory-confirmed rabid animal, or a suspected rabid animal that is not available for testing.

The number of cases of Animal Bites that require Rabies PEP has varied over the three year period in Charlotte County (Figure 2). In 2012, there was a 57.5% decrease in comparison to the average reported cases from the previous 3-year average. A total of twenty five cases were reported in 2012.

Rabies is endemic in the raccoon and bat populations of Florida, and frequently spills out from raccoons into other animal species such as foxes and cats. Laboratory testing for animal rabies is only done when animals expose humans or domestic animals, and thus the 90 data do not necessarily correlate with the true prevalence of rabies by animal species in Florida.

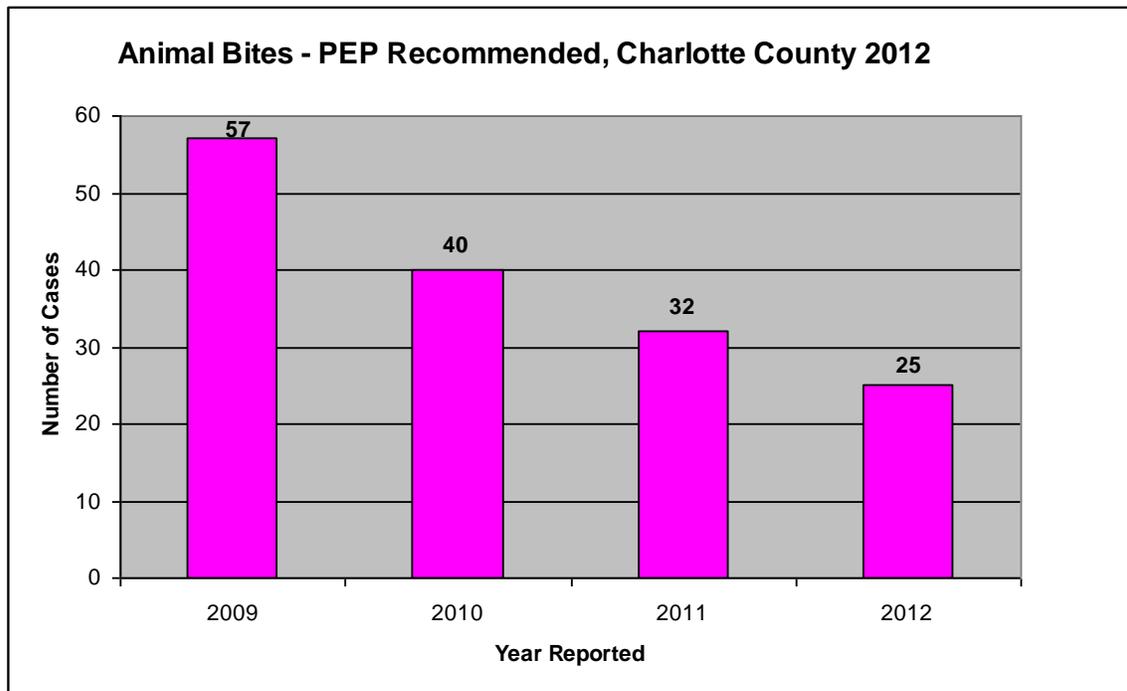


Figure 2

Prevention

Use the following preventive measures that include the following strategies to lower risk:

- Vaccinate pets and at-risk livestock.
- Avoid direct human and domestic animal contact with wild animals.
- Educate the public to reduce contact with stray and feral animals.
- Support animal control in efforts to reduce feral and stray animal populations.
- Bat-proof homes.
- Provide pre-exposure prophylaxis for people in high-risk professions, such as animal control and veterinary personnel, laboratory workers, and those working with wildlife.

Consider pre-exposure prophylaxis for those traveling extensively where rabies is common in domestic animals. Oral bait vaccination programs for wildlife are justified in some situations. These programs can be effective but require careful advance planning and substantial time and financial commitments.

Additional Resources

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

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

Reportable Disease Cases for Charlotte County, Florida, 2009-2012

Disease	Charlotte 2009	Charlotte 2010	Charlotte 2011	Charlotte 2012
Amebic Encephalitis	-*	-*	0	0
Animal Bite, PEP Recommended	57	40	32	25
Animal Rabies	1	1	0	0
Campylobacteriosis	43	25	9	41
Carbon Monoxide Poisoning	-*	-*	0	0
Creutzfeldt-Jakob Disease (CJD)	0	0	0	0
Cryptosporidiosis	1	1	0	1
Cyclosporiasis	0	1	1	0
Dengue Fever	0	0	0	0
Ehrlichiosis/Anaplasmosis, HME, E. chaffeensis	1	0	0	0
E. coli Shiga Toxin Producing	1	0	1	0
Giardiasis	3	10	3	8
H. influenzae (Invasive Disease)	3	2	1	1
Hemolytic Uremic Syndrome	0	0	0	0
Hepatitis A	2	0	0	0
Hepatitis B (+HBsAg in Pregnant Women)	1	0	0	2
Hepatitis B, Acute	4	2	1	4
Hepatitis B, Chronic	20	20	17	26
Hepatitis B, Perinatal	0	0	0	0
Hepatitis C, Acute	0	1	0	1
Hepatitis C, Chronic	268	212	221	304
Hepatitis E	0	0	0	0
Lead Poisoning	2	0	4	0
Legionellosis	1	1	1	0
Leprosy (Hansen's Disease)	0	0	0	0
Listeriosis	0	2	0	0
Lyme Disease	2	2	1	0
Malaria	0	1	0	1
Measles	0	0	0	0
Meningitis, Bacterial, Cryptococcal, Mycotic	0	1	0	0
Meningococcal Disease	0	0	0	0
Mumps	0	0	0	0
Pertussis	1	1	0	4
Salmonellosis	53	49	32	52
Shigellosis	1	9	6	2
S. aureus, Community Associated Mortality	-*	-*	0	0
S. pneumoniae, Invasive Disease, Resistant	3	6	5	0
S. pneumoniae, Invasive Disease, Susceptible	3	3	3	7
Streptococcal Disease Invasive Group A	2	3	1	0
Toxoplasmosis	0	0	0	0
Typhoid Fever	0	0	0	0
Varicella	7	7	6	7
V. alginolyticus	0	0	1	0
V. parahaemolyticus	0	0	2	1
V. vulnificus	1	0	1	0
Total	481	400	349	487

-* Not on the reportable disease list during the years indicated