

# **Epidemiology Program Annual Report 2008-2009**



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## Introduction

The Orange County Health Department (OCHD) 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. The data collected through surveillance does not reflect the total burden of disease in the community. Data is collected in the Merlin surveillance system and examined to determine the existence of trends. Data collection is administered through the Florida Department of Health Bureau of Epidemiology. The Florida reportable disease list can be found at the following link along with contact information to the appropriate OCHD Program: [http://orchd.com/providers/documents/ReportableDiseases\\_2009.pdf](http://orchd.com/providers/documents/ReportableDiseases_2009.pdf)

In cooperation with the Office of Emergency Operations, syndromic and influenza-like-illness surveillance activities are conducted. Syndromic surveillance through ESSENCE (Electronic Surveillance System for the Early Notification of Community-Based Epidemics) was added to the disease reporting process as an active method of determining early indicators of outbreaks and bioterrorism in the community. Additional information on state surveillance systems can be found at the following link: [http://www.doh.state.fl.us/Disease\\_ctrl/epi/Acute/systems.html](http://www.doh.state.fl.us/Disease_ctrl/epi/Acute/systems.html)

The Epidemiology Program staff ensures that action is taken to prevent infectious disease outbreaks from occurring in Orange County communities, including area attractions. Along with many public and private health groups, the Epidemiology Program works for the prevention of chronic and long-term diseases in Central Florida.

For additional information regarding the data presented in this report please contact the Orange County Health Department Epidemiology Program at (407) 858-1420.

## Contributors

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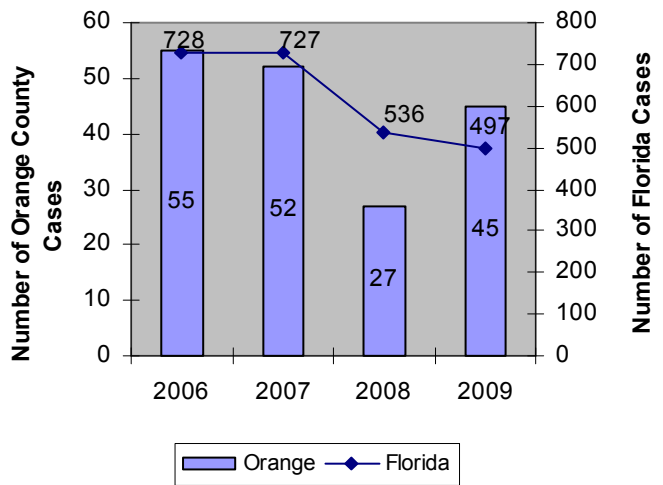
# Cryptosporidium

The number of cryptosporidiosis cases in Orange County and in neighboring and comparably-sized counties is presented in Table 1. Duval County's average case count from 2006 to 2008 was nearly three times Orange County's. Graph 1 depicts cryptosporidiosis cases for 2006-2009, which demonstrated a marked statewide decrease in 2008 and 2009. Orange County experienced a sharp increase in cryptosporidiosis in 2006, which was consistent with the general trend seen in Florida at the time. There were several outbreaks, including one associated with an interactive water fountain in East Orange County in 2006 that likely contributed to the numbers, although the reasons for the statewide trend are unclear.

Table 1. Cryptosporidiosis Cases in Orange County, Neighboring Counties, and Comparably-Sized Counties, 2006-2009

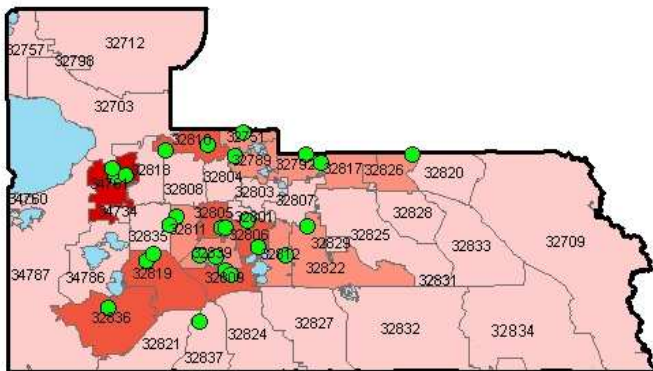
County	2009	2008	2006-2008 Avg.
<b>Neighboring Counties</b>			
Orange	45	27	44.67
Seminole	7	8	12.33
Lake	9	3	4.67
Osceola	7	4	5.00
Polk	13	19	28.33
<b>Comparably-Sized Counties</b>			
Brevard	35	6	7.00
Duval	20	66	117.00
Hillsborough	38	34	36.33
Palm Beach	44	34	34.33
Pinellas	21	15	13.33
<b>Florida</b>	<b>497</b>	<b>536</b>	<b>663.66</b>

Graph 1. Number of Cryptosporidiosis Cases in Orange County, 2006-2009

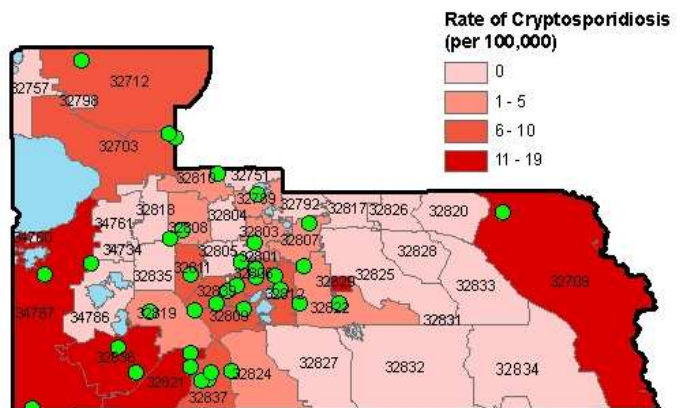


Map 1. Cryptosporidiosis Cases in Orange County by Patient Residence for 2008-2009

Cryptosporidiosis 2008



Cryptosporidiosis 2009



## Imported Vector-borne Diseases

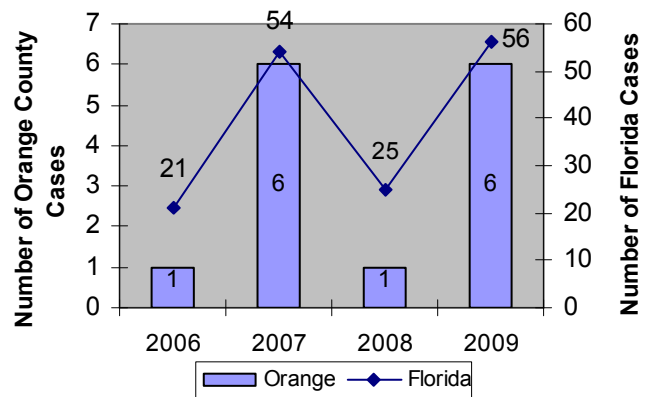
South America, Central America and the Caribbean have experienced increases in dengue fever cases in recent years. Not surprisingly, Orange County also saw a rise with six imported cases in 2009 as opposed to one case in 2008. Of the six Orange County cases, two were imported from the Dominican Republic, one from Puerto Rico, one from India, one from Guatemala, and one from Haiti. The case from 2008 had traveled to Puerto Rico.

It is important to note that in 2009 Key West (Monroe County) reported 22 cases of locally-acquired dengue fever cases for the first time in over 40 years. A joint investigation was conducted with the Centers for Disease Control and Prevention (CDC) after the outbreak was first identified in July 2009. A seroprevalence survey of the affected area was conducted and mosquito control efforts were expanded along with increased education to the public.

**Table 2. Dengue Fever Cases in Orange County, Neighboring Counties, Comparably-Sized Counties, and Florida, 2006-2009**

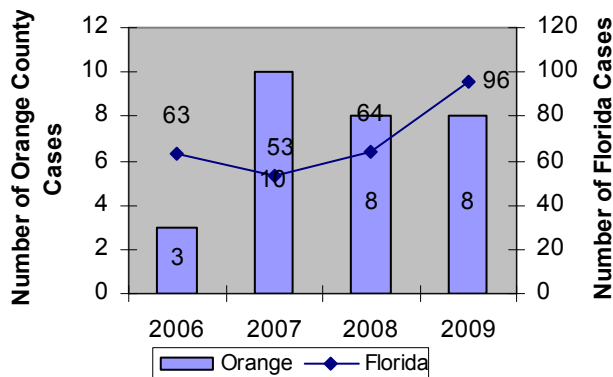
	County	2009	2008	2006-2008 Average
Neighboring Counties	Orange	6	1	2.67
	Seminole	-	-	1.00
	Lake	-	2	0.67
	Osceola	1	-	0.33
	Polk	-	1	0.67
Comparably-Sized Counties	Brevard	3	-	0.67
	Duval	-	-	0.66
	Hillsborough	3	3	2.16
	Palm Beach	1	3	4.00
	Pinellas	-	1	2.00
<b>Florida</b>		<b>56</b>	<b>25</b>	<b>33.33</b>

**Graph 2. Dengue Fever Cases in Orange County and Florida, 2006-2009**



**Table 3. Malaria Cases in Orange County, Neighboring Counties, Comparably-Sized Counties, and Florida, 2006-2009**

**Graph 3. Malaria Cases in Orange County and Florida, 2006-2009**



County	2009	2008	2006-2008 Average
Orange	8	8	7.00
Seminole	3	1	1.00
Lake	-	-	0.67
Osceola	-	-	-
Polk	3	5	2.67
Brevard	-	2	1.00
Duval	5	-	3.33
Hillsborough	2	4	3.33
Palm Beach	11	3	5.00
Pinellas	3	3	2.33
<b>Florida</b>	<b>96</b>	<b>64</b>	<b>60.00</b>

## Enteric Diseases

The number of giardia cases in Orange County for 2008 and 2009 are similar to those in comparably-sized counties, with the exception of Duval and Pinellas Counties. Most counties saw an increase in giardia cases from 2008 to 2009 as is reflected in the Florida statistics.

Salmonellosis cases had a significant increase from 2008 to 2009, particularly in the Central Florida region. Case counts were 54.2% to 115% higher in 2009 than in 2008. Forty-eight percent of the cases reported in Orange County were in children under 5 years old. In 2009 Florida reported more salmonellosis cases than any other state in the nation. The Florida Department of Health Bureau of Epidemiology initiated a case-control study in 2010 for the Central Florida region to identify risk factors associated with salmonella infections in children under 5 years old. The study is expected to complete data collection in 2011.

Shigellosis cases for the state decreased significantly in 2009. Community outbreaks of shigellosis occur periodically. A large community-wide outbreak occurred in Citrus County in 2007.

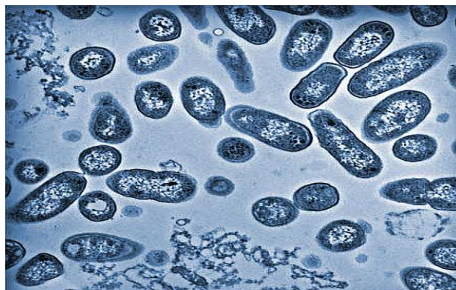
Table 4. Enteric Disease Cases in Orange County, Neighboring Counties, Comparably-Sized Counties, and Florida, 2006-2009

County	Giardiasis			Salmonellosis			Shigellosis		
	2009	2008	2006-2008 Avg	2009	2008	2006-2008 Avg	2009	2008	2006-2008 Avg
Orange	102	96	102.67	405	219	245.33	18	58	117.00
Seminole	30	29	28.33	128	83	87.67	2	10	24.33
Lake	15	21	20.67	194	90	82.67	7	10	21.67
Osceola	11	8	17.67	90	43	52.67	2	9	12.00
Polk	50	30	23.67	234	146	151.33	12	13	99.6
Brevard	27	37	26.66	340	219	227.33	1	16	58.00
Duval	63	57	66.33	458	488	438.66	12	32	216.67
Hillsborough	103	85	82.67	338	243	269.33	21	30	71.33
Palm Beach	119	118	89.33	422	344	347.67	40	70	76.33
Pinellas	33	36	33.00	285	204	201.00	4	11	23.00
<b>Florida</b>	<b>1888</b>	<b>1428</b>	<b>1295.00</b>	<b>6735</b>	<b>5176</b>	<b>5063.00</b>	<b>457</b>	<b>750</b>	<b>1563.67</b>

Neighboring  
Counties

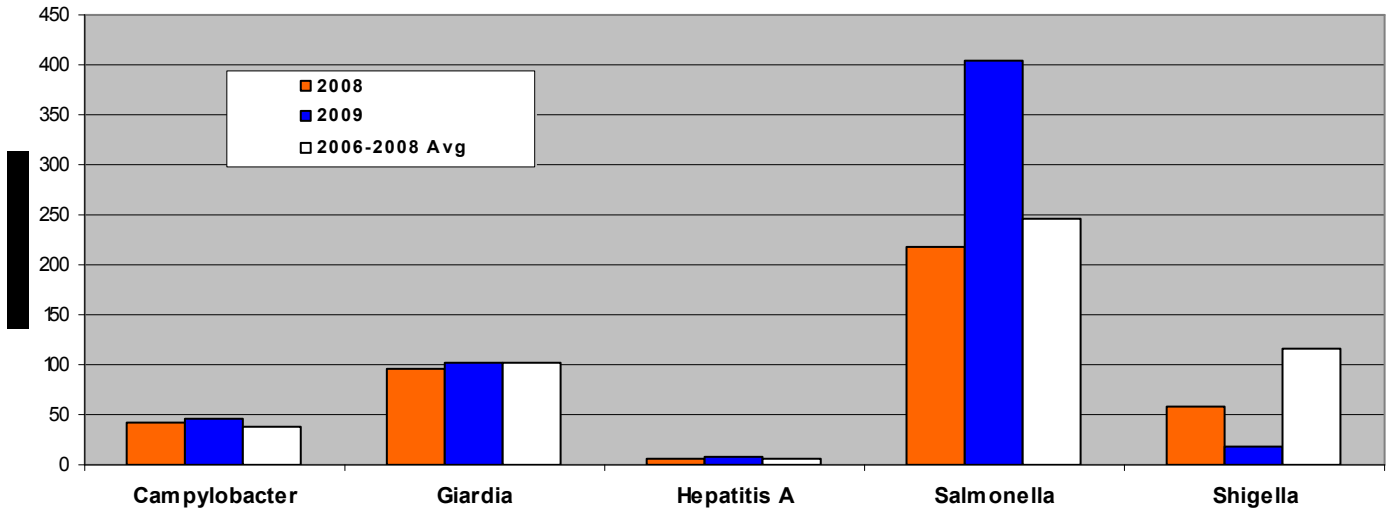
Comparably-  
Sized Counties

Orange, Seminole, Lake, Osceola, Polk, Brevard, Duval, Hillsborough, Palm Beach, Pinellas



A photomicrograph of Salmonella bacteria. Courtesy of Pacific Northwest National Laboratory.

Graph 4. Enteric Disease Cases in Orange County, 2006-2009



The Orange County Health Department (OCHD) Epidemiology Program maintains an Epi Info database of enteric disease risk factors. All enteric disease cases are interviewed using a standardized questionnaire. During 2009 Orange County experienced an increase in reported salmonella cases. This increase occurred from early June until mid-October 2009. Although increases in salmonella and other enteric diseases generally occur in the summer months, Orange County saw a larger increase than usual. Similar increases were seen throughout Florida particularly in the Central Florida area.

Table 5. Age Distribution of Salmonella Cases, Orange County, Florida 2009

Age	Count	Percentage (n=405)
<0	74	18.27%
1-4	123	30.37%
5-9	45	11.11%
10-19	34	8.39%
20-39	44	10.86%
40-59	55	13.58%
>60	32	7.90%

Table 6. Salmonella Cases with Reported Animal Exposure Prior to Onset, Orange County, Florida 2009

Animal Exposure	Count	Percentage (n=366)
Pet	185	52.1%
Dog	164	46.1%
Cat	54	15.2%
Reptile	22	6.2%
Other	39	11.0%
Farm/Zoo	6	1.7%

Table 7. Salmonella Cases with Reported Recreational Water Exposure, Orange County, Florida 2009

Recreational Water Exposure	Count	Percentage (n=366)
Pool	75	22.6%
Spa	6	1.8%
Water Park	4	1.2%
Interactive Fountain	2	0.6%
Ocean	14	4.2%
River /Lake	3	0.9%

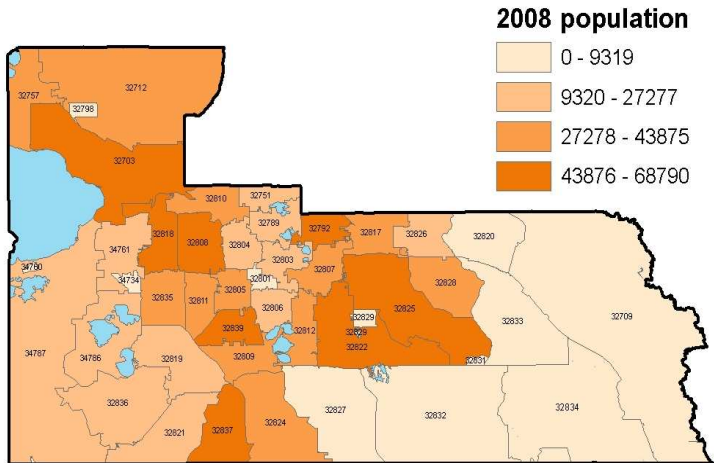
Table 8. Salmonella Cases with Reported Travel History, Orange County, FL 2009

Travel History	Count	Percentage (n=366)
Travel within FL	31	8.47%
Travel within U.S.	10	2.73%
Travel outside U.S.	26	7.10%
<b>Total</b>	<b>67</b>	<b>18.3%</b>

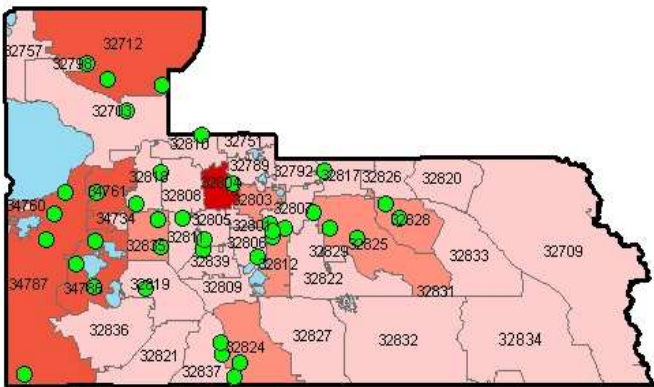
Interviews were achieved with 366 of 407 (90.4%) reported Salmonella cases. Almost half of all cases fell into the 0 to 4 year-old age group. Daycare or school attendance was reported in 109 (30.5%) interviewed cases. No school or daycare outbreaks were identified. Animal exposure was reported in 208 (56.8%) cases. Fifty-two percent of those interviewed had a pet in their household prior to illness onset. Reptile exposure was reported in 6.2% of cases. The reptiles included turtles, bearded dragons, lizards, and snakes. Recreational water exposure was reported in 86 (23.5%) cases. Ocean, river, and lake exposure made up only 5.1% of cases. Sixty-seven (18.3%) of the cases reported travel prior to illness onset. Ten (2.7%) cases reported their drinking water source as well water.

## Enteric Disease Maps

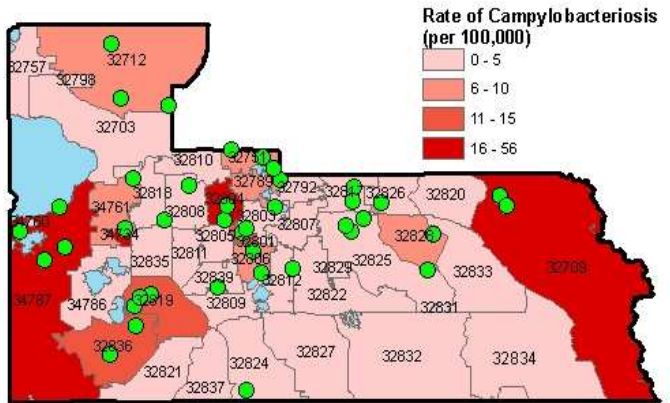
Map 2. 2008 Population Estimates by Zip Code and Enteric Disease Cases in Orange County, Florida by Patient Residence for 2008-2009



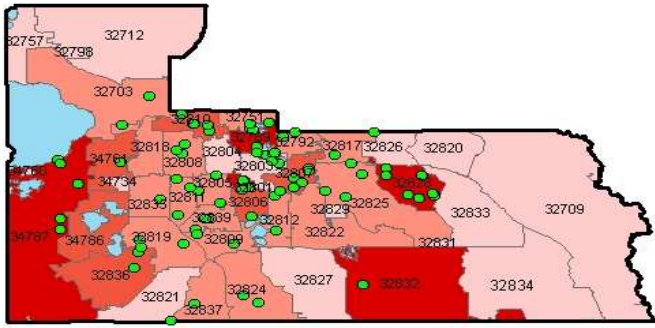
Map 3. Campylobacter 2008



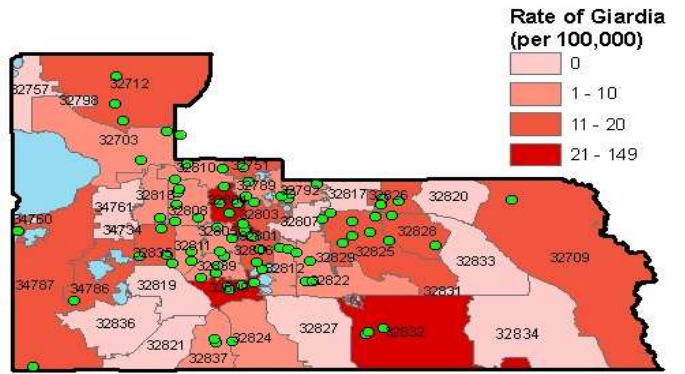
Map 4. Campylobacter 2009



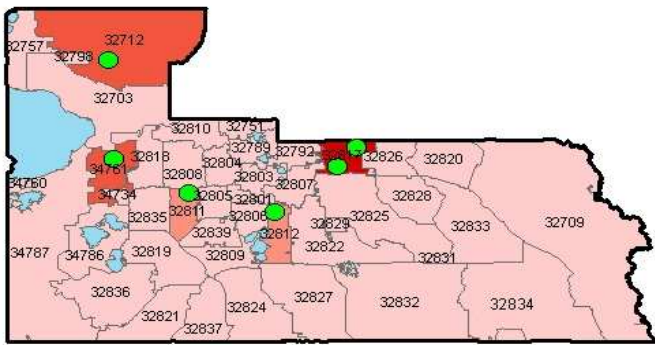
Map 5. Giardia 2008



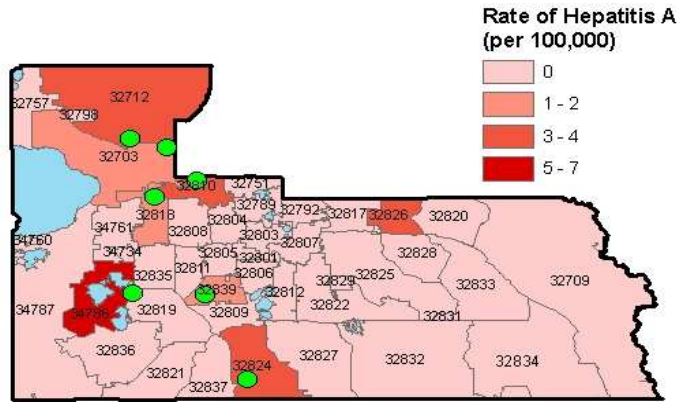
Map 6. Giardia 2009



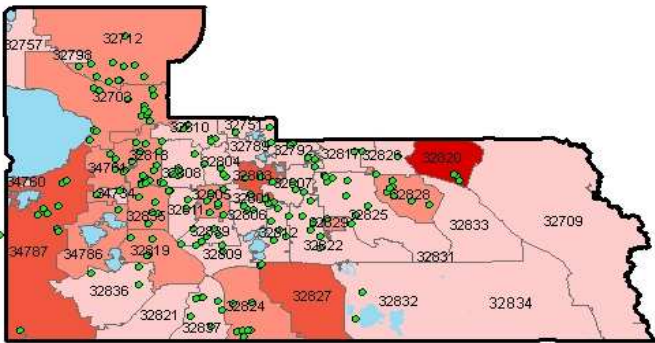
Map 7. Hepatitis A 2008



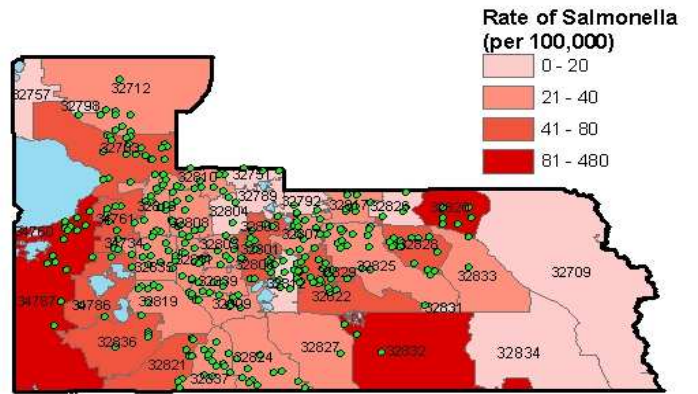
Map 8. Hepatitis A 2009



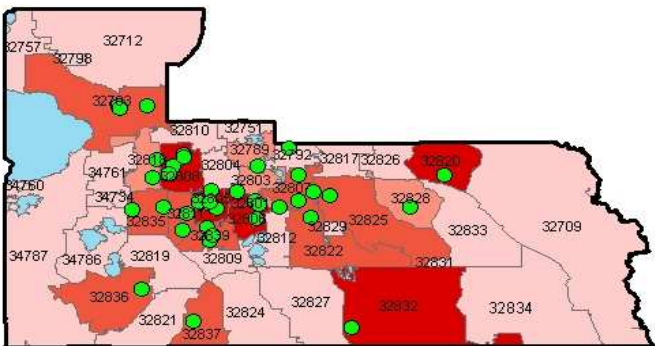
Map 9. Salmonella 2008



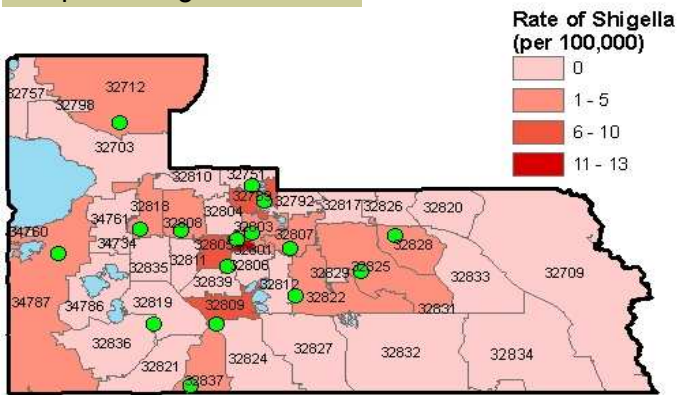
Map 10. Salmonella 2009



Map 11. Shigella 2008



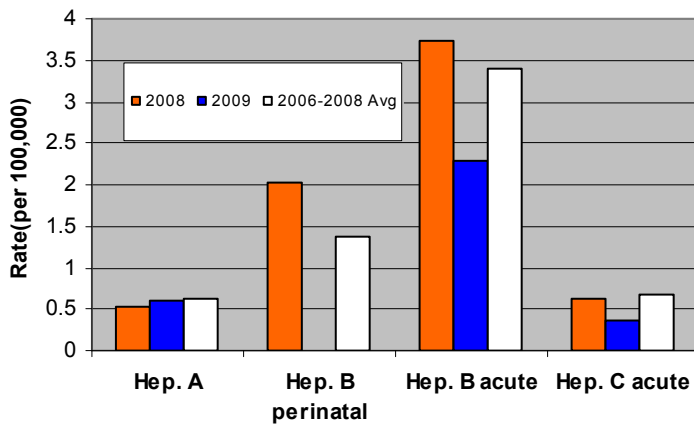
Map 12. Shigella 2009



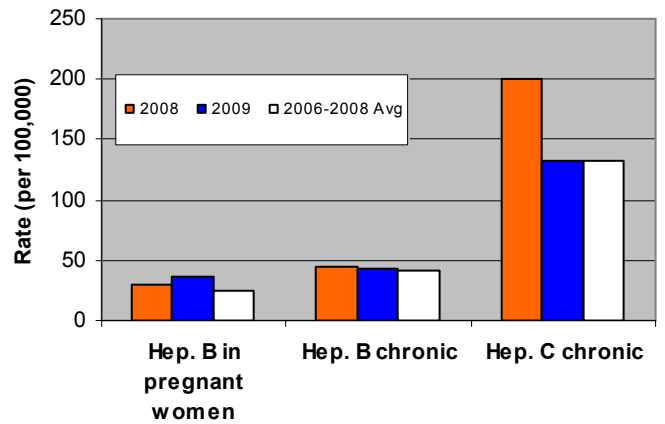
## Hepatitis

There were six cases of hepatitis A in 2008 and eight in 2009, down from an 2004-2006 average of 13.3 cases, which corresponds to a 50% reduction in rate per 100,000 population. Orange County reported one perinatal hepatitis B case in 2008. Acute hepatitis B decreased significantly from 3.7 cases per 100,000 to 2.3 cases per 100,000 population. Acute hepatitis C is uncommon and has remained at low levels. The rate per 100,000 population of chronic hepatitis B cases has held steady for the past few years. Chronic hepatitis C is by far the most common reportable disease in Orange County and Florida, accounting for 47.6% and 42.4% of all reported cases in 2009, respectively. Over 1,700 chronic hepatitis C cases were reported in Orange County in 2009. (*Note: Chronic Hepatitis C data is incomplete due to reporting inconsistencies*).

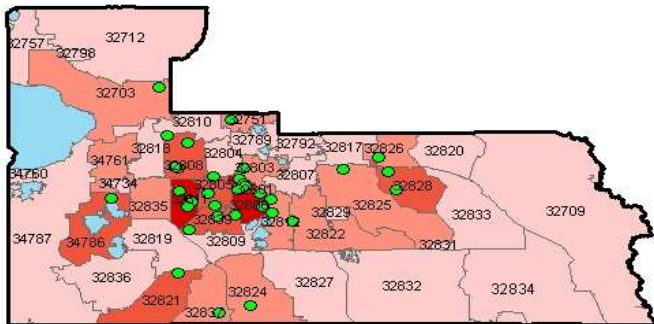
Graph 5. Select Hepatitis Rates, 2006-2009



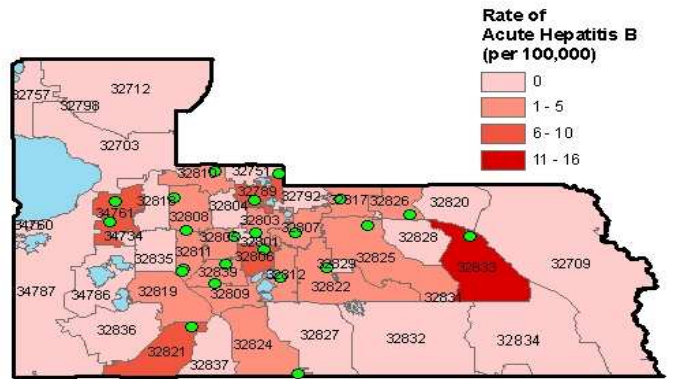
Graph 6. Select Hepatitis Rates, 2006-2009



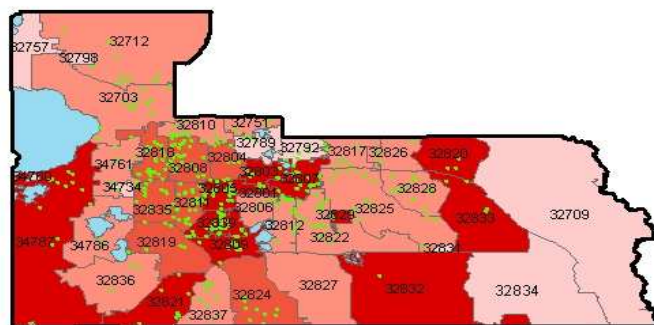
Map 13. Acute Hepatitis B 2008



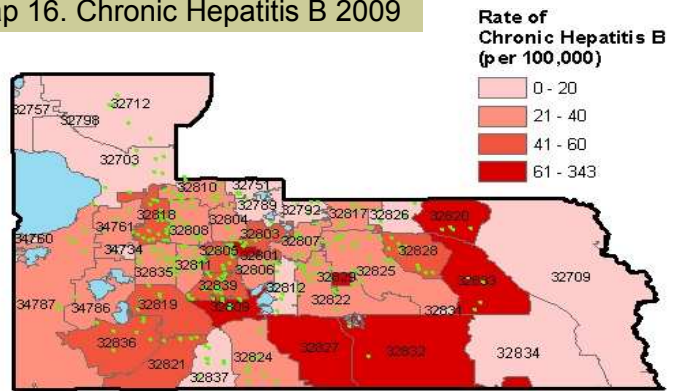
Map 14. Acute Hepatitis B 2009



Map 15. Chronic Hepatitis B 2008



Map 16. Chronic Hepatitis B 2009



## Meningitis

With the exception of Duval and Palm Beach Counties, meningococcal disease rates were down for Orange County and the other comparably-sized counties. Orange County and two of its neighboring counties: Seminole and Osceola, each saw only one meningococcal disease case in 2009.

Graph 7. Meningitis Rates in Orange County and Comparably Sized Counties, 2006-2009

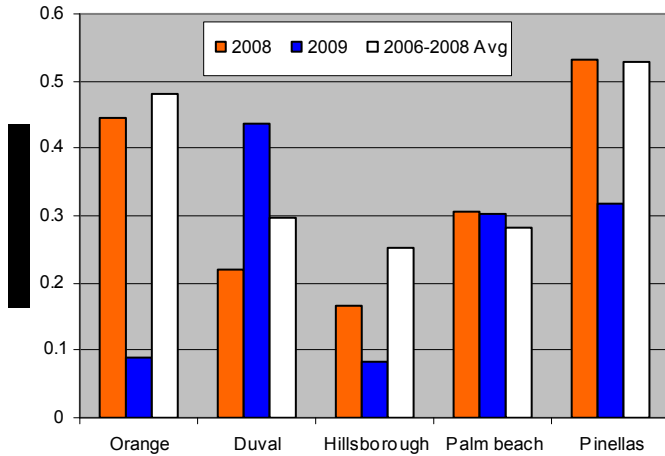


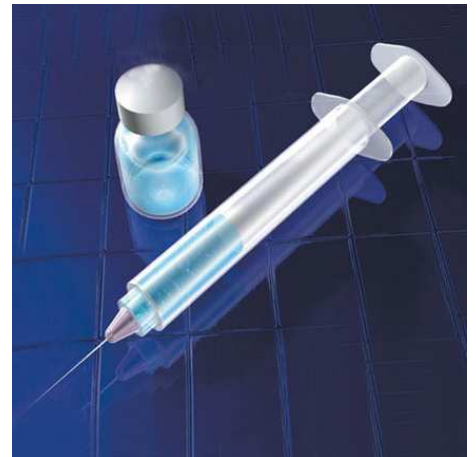
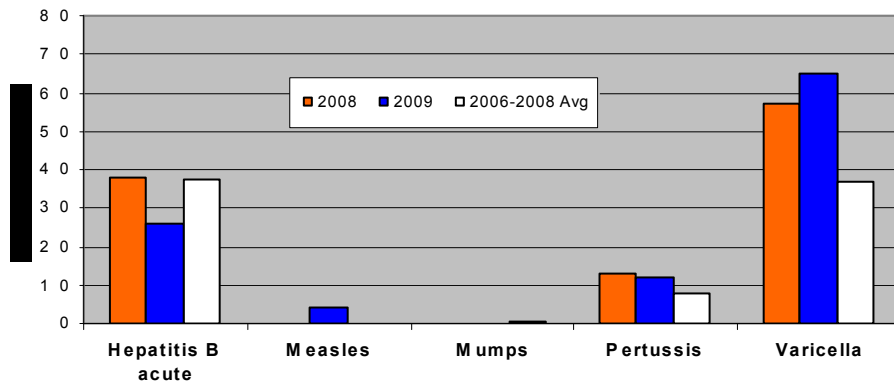
Table 9. Meningococcal Cases in Orange County, Neighboring Counties, Comparably-Sized Counties, and Florida, 2006-2009

County	2009	2008	2006-2008 Average
Orange	1	5	5.33
Seminole	1	-	1.00
Lake	-	1	1.33
Osceola	1	-	1.00
Polk	2	2	1.67
Brevard	2	5	3.67
Duval	4	2	2.67
Hillsborough	1	2	3.00
Palm Beach	4	3	3.67
Pinellas	3	4	5.00
<b>Florida</b>	<b>58</b>	<b>50</b>	<b>66.33</b>

## Vaccine-Preventable Diseases

Varicella (chickenpox) became a reportable disease in the state of Florida in 2007. Acute hepatitis B is the next most common vaccine-preventable disease, though there has been a significant decrease over the last several years. Pertussis, commonly known as whooping cough, is less common than hepatitis B but is still present in the community, likely due to under-diagnosis of cases. Mumps and tetanus are rare in Orange County; the last cases were both reported in 2006. Measles, also a vaccine-preventable disease, is even rarer. In 2009, the first cases in 13 years were reported in a family visiting from Great Britain.

Graph 8. Vaccine-Preventable Disease Cases in Orange County, 2006-2008



## Potential Bioterrorism Agents

Many pathogens that are classified as potential bioterrorism agents occur naturally in Florida. Salmonella, shigella, and E. coli are classified as Category B agents by the CDC because they are food safety threats though they are relatively common in nature. Other diseases classified as potential bioterrorism agents that occur naturally in Florida include brucellosis, cholera, Q fever, psittacosis, viral encephalitis, melioidosis, and botulism.

Table 10. Cases of Potential Bioterrorist Agents Occurring Naturally in Orange County and Florida, 2006-2009

Disease	Orange County			Florida		
	2009	2008	2006-2008 Avg.	2009	2008	2006-2008 Avg.
Salmonellosis	405	219	245.33	6735	5176	5063.00
Shigellosis	18	58	117.0	457	750	1563.67
Cryptosporidiosis	45	27	44.67	497	536	663.66
E. coli Shiga Toxin Producing	6	2	0.67	185	67	17.67
Typhoid Fever	2	-	1.33	20	15	16.00
Brucellosis	-	-	-	14	11	8.33
Vibrio cholerae	-	-	-	5	3	4.00
West Nile Virus	-	-	-	3	3	3.00
Q Fever	-	-	-	-	-	0.33
Psittacosis	-	-	-	-	1	1.00
Eastern Equine Encephalitis	-	-	-	-	1	0.33
Melioidosis	-	-	-	-	-	0.33
Botulism, Foodborne	-	-	-	-	-	0.33
Tularemia	-	-	-	1	-	-

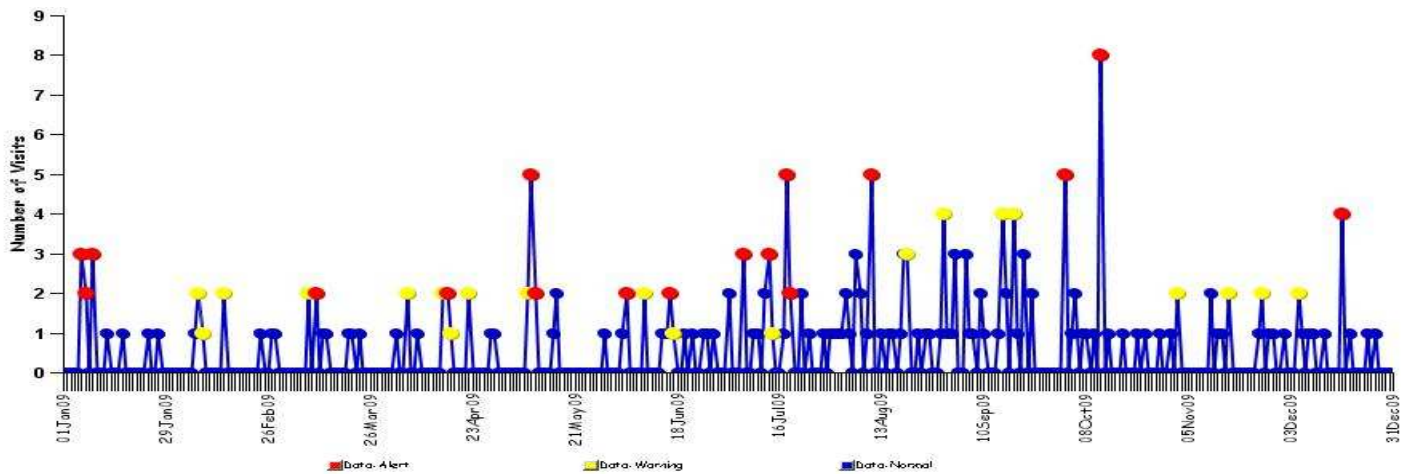


Drive-Thru Influenza Vaccine POD. Courtesy of Tenecia Woods, OCHD

## ESSENCE Syndromic Surveillance System

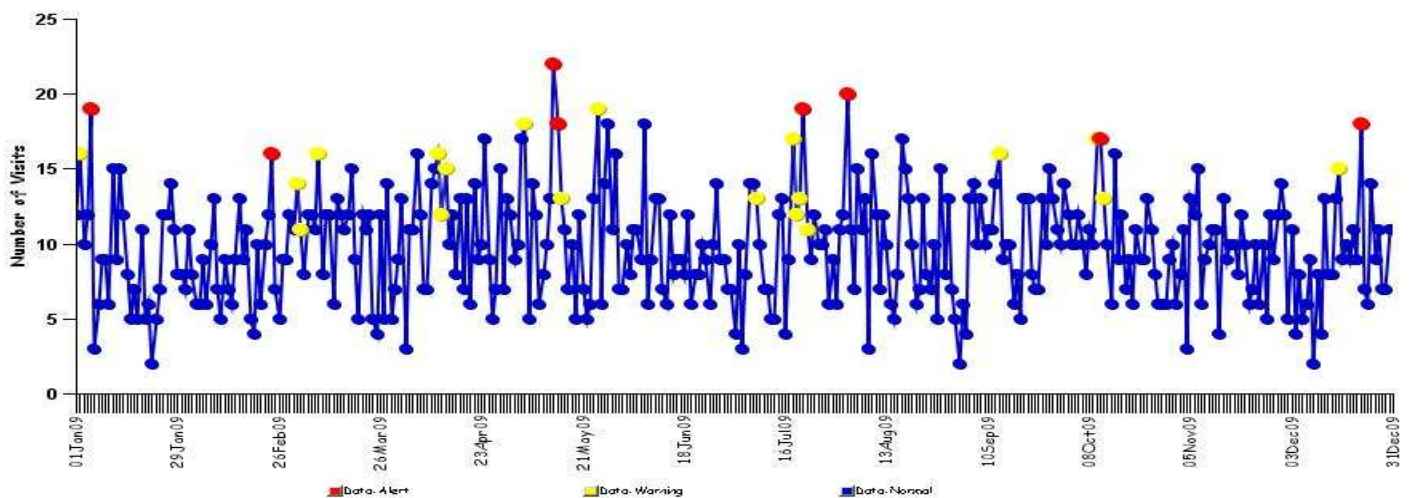
In October 2009, Florida Adventist Hospital became the first hospital system in Orange County to go online with the ESSENCE System. ESSENCE (Electronic Surveillance System for the Early Notification of Community-Based Epidemics) is a secure online system in which chief complaint data from emergency department (ED) visits are uploaded and tracked for early identification of outbreaks or bioterrorism. Data is collected from 135 hospital EDs throughout the state. These data are processed into 11 different syndrome categories based on the patient's chief complaint.

Graph 9. ED Visits with Chief Complaint of Exposure, ESSENCE, 2009



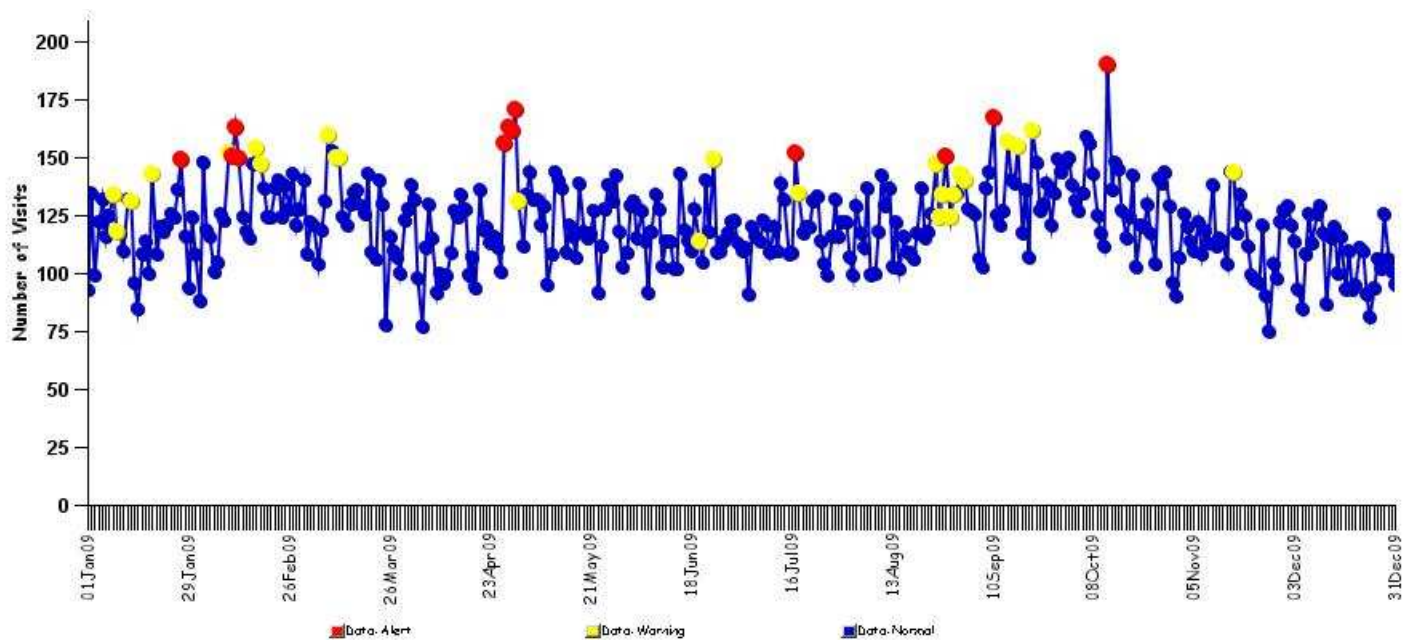
The Exposure query detects patients presenting to the ED with exposure to pathogens and chemicals.

Graph 10. ED Visits with Chief Complaint of Rash, ESSENCE, 2009



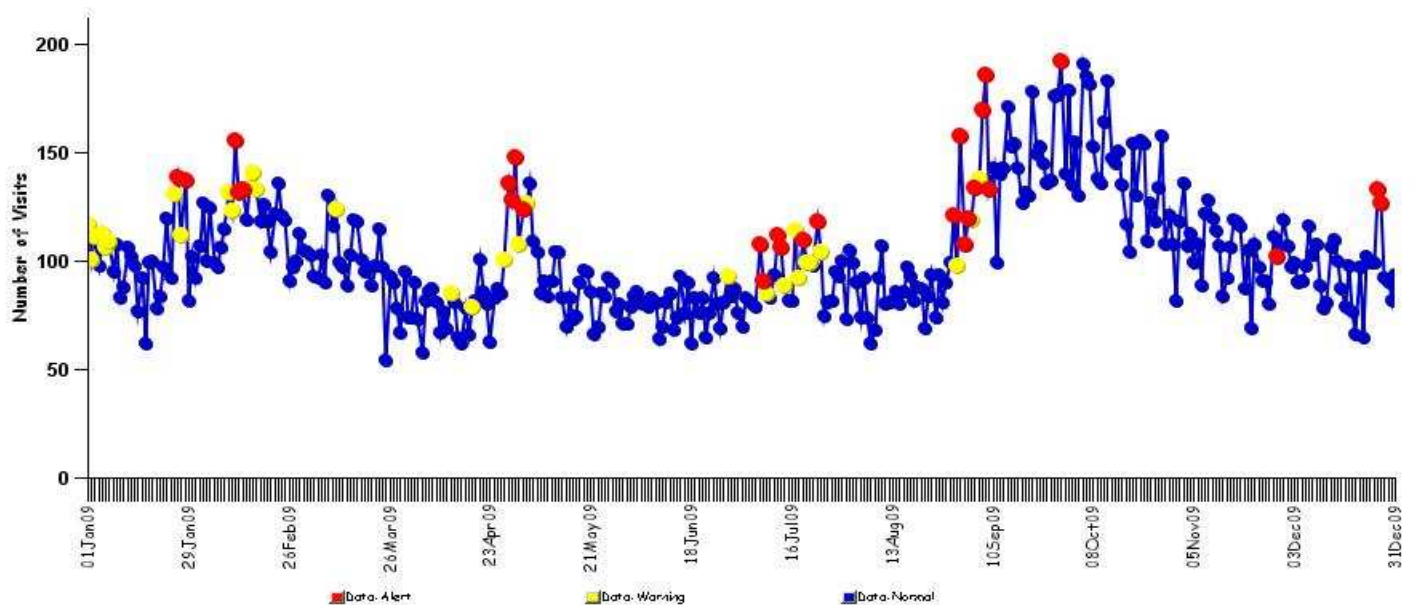
The Rash query is utilized for the detection of mild rash illnesses such as hand, foot and mouth disease; vaccine preventable illnesses such as measles and chicken pox; and potential bioterrorism agents such as smallpox.

Graph 11. ED Visits with Chief Complaint of Gastrointestinal Illness, ESSENCE, 2009



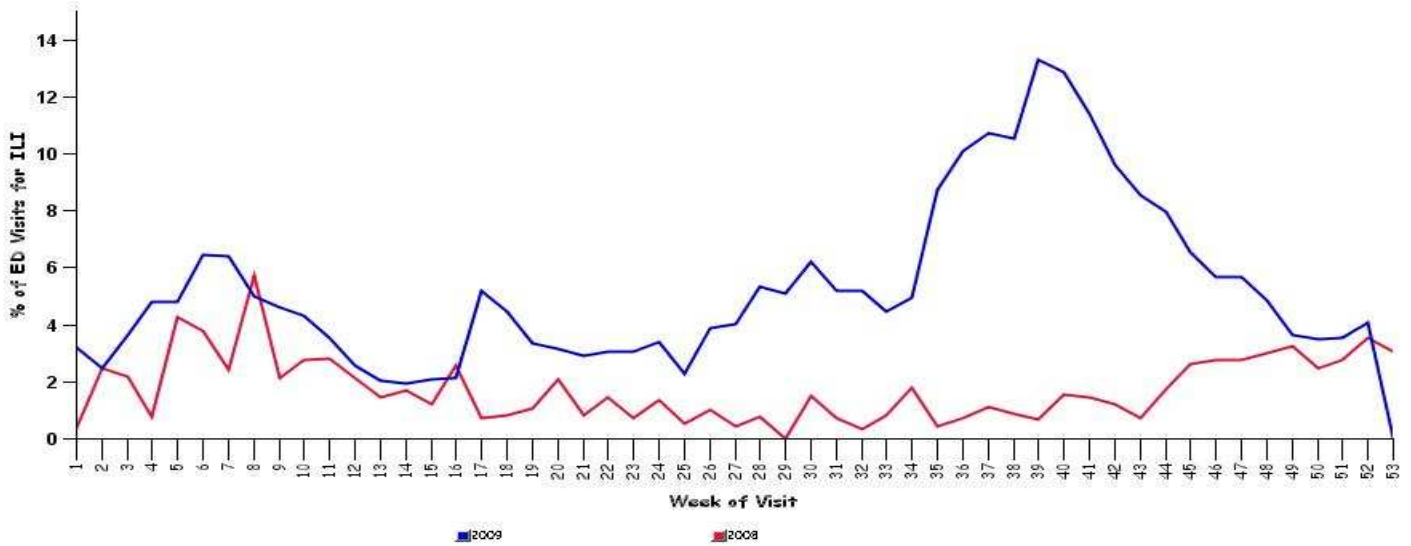
The Gastrointestinal illness query shows ED visits with chief complaints of abdominal pain, bloating, GI bleeding, loss of appetite, nausea, vomiting, and diarrhea.

Graph 12. ED Visits with Chief Complaint of Respiratory Illness, ESSENCE, 2009



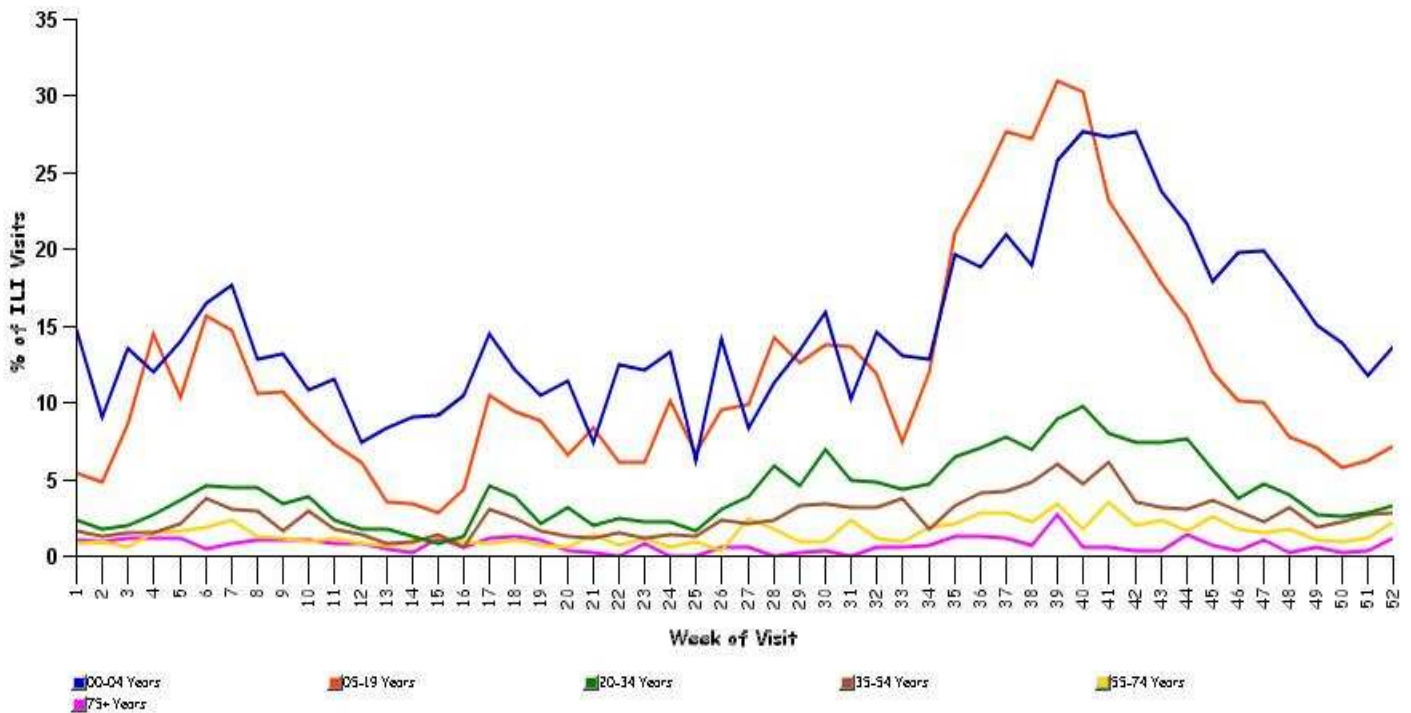
The Respiratory Illness query shows ED visits with chief complaints of acute bronchitis, chest congestion, cough, difficulty breathing, hemoptysis, laryngitis, lower respiratory infection, nasal congestion, otitis media, pneumonia, shortness of breath, sore throat, upper respiratory infection, and wheezing.

Graph 13. Percentage of ED Visits for Influenza-like-illness , ESSENCE, 2008 and 2009



In 2009 an influenza pandemic was declared in response to the emergence of a novel H1N1 influenza strain. The first case was identified in Orange County in late April 2009. Influenza activity increased quickly following the start of the school year and peaked in mid-October 2009.

Graph 14. Influenza-like-illness by Age Group, ESSENCE, 2009



In Orange County the majority of influenza-like-illness related ED visits occurred in the 0-4 and 5-19 age groups. This finding is consistent with state and national statistics.

## Outbreak Investigations

OCHD Epidemiology and Environmental Health Programs work together to track food and waterborne illness complaints and to investigate outbreaks. All food and waterborne illness complaints are referred to the regulatory agency for inspection. A complaint is investigated as an outbreak by OCHD when two or more persons have the same disease, have similar symptoms, or excrete the same pathogens; and there is a time, place, and/or person association between these individuals.

Table 11. Food and Waterborne Illness Outbreaks and Cases by Causative Agent, Orange County, FL, 2008-2009

	Norovirus	Legionella	Cryptosporidium	Shigellosis	Unknown
<b>2008 Outbreaks</b>	4	2	-	-	-
<b>2008 Cases</b>	133	8	-	-	-
<b>2009 Outbreaks</b>	4	-	2	1	1
<b>2009 Cases</b>	54	-	11	13	3

### Legionellosis in Wedding Attendees, Orange and Pinellas Counties, March 2008

In March 2008 the Pinellas County Health Department (PCHD) Epidemiology Program investigated two laboratory-confirmed cases of Legionnaires' disease. Both cases were Canadian residents who had recently attended a wedding in Orlando, Florida and stayed at Hotel A. Further investigation revealed confirmed Legionnaires' disease cases in another wedding guest from Canada and a United Kingdom resident who had both stayed at Hotel A during the same time period. A letter was distributed to all guests staying in the hotel between February 27th and March 15th, which resulted in identifying one probable Legionnaires' disease case. Epidemiologic data indicate that the source of the outbreak was the outdoor hot tub at Hotel A. The only common exposure among the five affected people was staying at this hotel between February 23rd and March 8th, 2008. There was a statistically significant association between spending time in the hotel's hot tub and acquiring Legionnaires' disease (odds ratio = 22.11, 95% confidence interval = 1.22-1569.46, p-value = 0.0162). However, environmental sampling did not yield any positive laboratory results.

### Cluster of Norovirus Illness Associated with Local Restaurant, Orange County, Florida, January 17, 2009

On January 21, 2009 the Orange County Health Department (OCHD) Environmental Health Program received a report of gastrointestinal illness in three members of a group of six who had dined at a local restaurant on January 17. All three of the ill persons reported eating the cheesecake for dessert. No ill food workers were identified during the joint Department of Business and Professional Regulation (DBPR) and OCHD Environmental Health Program inspection. The restaurant had been previously inspected on January 7. That inspection noted improper hand washing, single-use gloves not being changed as needed after changing tasks or when damaged or soiled and bare hand contact with lemons. No major health discrepancies were observed on the January 23 inspection. Samples were submitted by one of the ill and sent to the Florida Bureau of Laboratories Jacksonville branch for testing. The stool sample tested positive for norovirus GII.

## Rabies Prevention Program

The Rabies Program is responsible for the coordinating the treatment of animal bite victims through the administration of rabies vaccine. The OCHD Epidemiology Program works in conjunction with the OCHD Environmental Health Program and Orange County Animal Services to locate the bite animals, follow-up on animal quarantines, and facilitate animal testing when necessary. In 2008, 92 people were provided with rabies post-exposure prophylaxis and 10 rabid animals were identified. In 2009, 95 people were provided with rabies post-exposure prophylaxis and 10 rabid animals were identified.



Table 12. Number of Rabid Animals by Species, Orange County, 2008 and 2009.

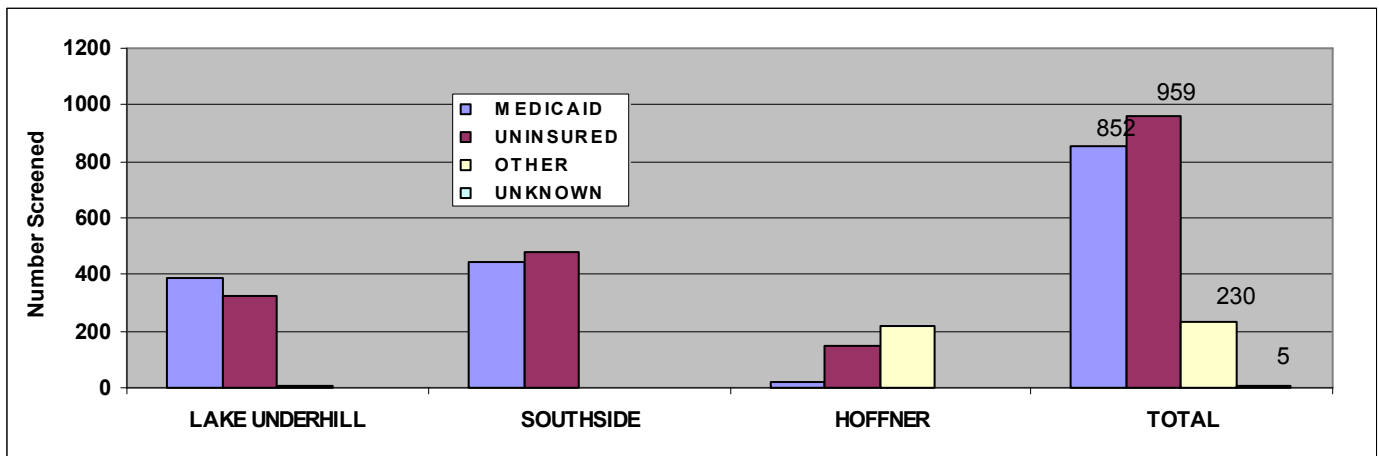
	Dog	Cat	Raccoon	Fox	Bat	Bobcat
2008	-	-	7	1	1	1
2009	1	1	8	-	-	-

## Lead-Poisoning Prevention Program

The mission of the Lead Poisoning Prevention Program, in conjunction with the Screening Pilot Program, is to increase blood lead screening rates of high risk populations and to assure proper medical management of lead poisoned children. The Screening Pilot Program, which was established in 2007, entered into a memorandum of agreement with the Central Florida Family Health Center to increase the number of blood lead screenings for uninsured children in Orange County and to assure proper medical management of lead poisoned children. In 2008, 34 lead poisoned cases were reported. That number decreased to 22 cases in 2009.

The Lead Poisoning Case Manager follows up on reported lead cases through case investigations, education, environmental assessments, and contact with medical providers. The Case Manager's duties include coordinating programmatic activities such as community partnerships, outreach events, and reports following the State of Florida policies and procedures for the Lead Poisoning Prevention Program. Reports of lead poisoning in children require joint investigations with Environmental Health staff for source determination.

Graph 15. Cumulative Number of Blood Lead Screenings Completed at Central Florida Family Health Center Locations, by Insurance Status, Orange County, 2008 and 2009.



## Hepatitis Prevention Program

The goal of the Hepatitis Prevention and Control Program is to reduce hepatitis cases among residents and visitors of Orange County. The program provides free hepatitis vaccines and testing for high risk populations. In addition, it provides education, screening, counseling, and follow-up referrals. Memorandums of Agreement have been arranged with the Orange Blossom Family Health Center, the Hug Me Center, the Center for Drug Free Living, Comprehensive Health Care, and the Orange and Osceola County jails to provide hepatitis vaccines and education. Hepatitis vaccine is also provided at community events, health fairs, drug treatment centers, and homeless shelters throughout the year.

Table 13. Hepatitis Prevention Program Statistics, Orange County, 2008 and 2009.

Hepatitis Prevention Program	Hepatitis Testing	Hepatitis A Shots	Hepatitis B Shots	Hepatitis A/B Combo Shots
2008	469	549	307	1317
2009	1227	549	309	1098

## Perinatal Hepatitis B Prevention Program

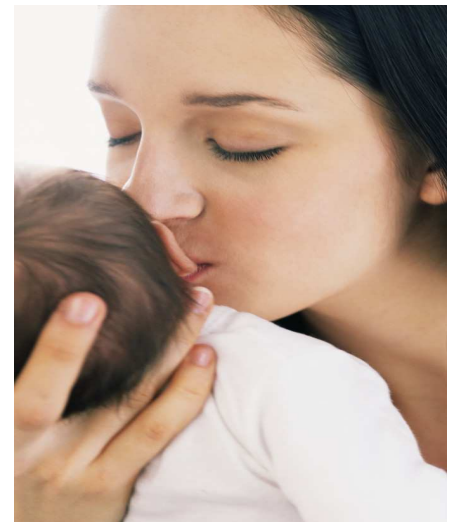
Hepatitis B is a virus that affects the liver. Hepatitis B infection can lead to chronic (life-long) infection, liver cirrhosis, liver cancer and death. Infants born to mothers with hepatitis B have about a 90% chance of becoming chronically infected. Infants who receive the hepatitis B vaccine and hepatitis B immune globulin within 12 hours of birth have a 90-95% chance of not contracting the virus.

The Perinatal Hepatitis B Prevention Program works to identify hepatitis B positive pregnant women. The pregnant women are provided with education on hepatitis B and household contacts are offered vaccination and testing. Once born, the infants are followed to ensure receipt of vaccine on schedule and immunity from the hepatitis B virus. Education is conducted with pediatricians and obstetricians on guidelines for testing and interpretation of laboratory results.

2008 saw an increase in reports of maternal hepatitis B positive cases. No trend or common risk factor was identified. In 2009 efforts were initiated to reach out to the Asian community, which is disproportionately infected with hepatitis B.

Table 14. Perinatal Hepatitis B Prevention Program Statistics, Orange County, 2008 and 2009.

Program Statistics	2008	2009
Number of Hepatitis B Positive Pregnant Women	85	75
Number of Infants Born to Hepatitis B Positive Mothers	79	54
Infants Tested for Immunity to Hepatitis B	23	31
Infants Positive for Hepatitis B	1	0
Household Contacts Tested for Hepatitis B	37	22
Household Contacts Vaccinated Against Hepatitis B	35	3



## Reportable Disease Cases for Orange County and Neighboring Counties, 2009

Disease	Orange	Brevard	Lake	Osceola	Polk	Seminole
Amebic Encephalitis	1	-	-	-	-	-
Animal Bite, PEP Recommended	88	65	44	12	29	25
Animal Rabies	10	1	7	-	3	8
Campylobacteriosis	47	37	10	8	49	14
Carbon Monoxide Poisoning	5	-	3	-	1	1
Creutzfeldt-Jakob Disease (CJD)	-	-	-	-	1	-
Cryptosporidiosis	45	35	9	7	13	7
Cyclosporiasis	2	2	2	-	-	2
Dengue Fever	6	3	-	1	-	-
Ehrlichiosis/Anaplasmosis, HME, E. chaffeensis	1	-	1	1	1	-
E. coli Shiga Toxin Producing	6	1	1	2	1	1
Giardiasis	102	27	15	11	50	30
H. influenzae (Invasive Disease)	8	11	8	1	15	3
Hemolytic Uremic Syndrome	-	-	-	-	2	-
Hepatitis A	7	3	1	5	2	6
Hepatitis B (+HBsAg in Pregnant Women)	59	3	6	7	24	4
Hepatitis B, Acute	26	6	-	4	10	4
Hepatitis B, Chronic	418	103	31	26	83	47
Hepatitis B, Perinatal	-	-	-	-	-	-
Hepatitis C, Acute	4	-	1	3	5	-
Hepatitis C, Chronic	1714	806	277	227	592	226
Influenza A, Novel or Pandemic Strain	383	145	86	95	178	141
Lead Poisoning	22	2	5	2	8	3
Legionellosis	22	8	4	3	8	12
Leprosy (Hansen's Disease)	-	2	-	-	-	-
Listeriosis	2	2	-	-	-	-
Lyme Disease	9	1	-	-	3	5
Malaria	8	-	-	-	3	3
Measles	4	-	-	-	1	-
Meningitis, Bacterial, Cryptococcal, Mycotic	13	2	3	3	12	4
Meningococcal Disease	1	2	-	1	2	1
Mumps	-	-	-	1	-	1
Pertussis	13	1	6	4	18	6
Salmonellosis	405	340	194	90	234	128
Shigellosis	18	1	7	2	12	2
S. aureus, Community Associated Mortality	1	-	-	-	1	-
S. pneumoniae, Invasive Disease, Resistant	44	22	21	6	29	6
S. pneumoniae, Invasive Disease, Susceptible	32	27	11	5	37	8
Streptococcal Disease Invasive Group A	14	8	8	2	21	1
Typhoid Fever	2	-	-	1	-	-
Varicella	57	23	23	2	56	23
V. alginolyticus	-	2	-	-	-	-
V. parahaemolyticus	-	3	1	-	2	-
V. vulnificus	1	-	-	-	-	-
<b>Total</b>	<b>3601</b>	<b>1696</b>	<b>786</b>	<b>543</b>	<b>1508</b>	<b>726</b>

## Reportable Disease Cases for Orange County and Comparably-Sized Counties, 2009

Disease	Orange	Duval	Hillsborough	Palm Beach	Pinellas
Amebic Encephalitis	1	-	1	-	-
Animal Bite, PEP Recommended	88	30	66	105	74
Animal Rabies	10	5	4	4	1
Campylobacteriosis	47	61	69	71	29
Carbon Monoxide Poisoning	5	4	-	4	3
Creutzfeldt-Jakob Disease (CJD)	-	2	1	1	-
Cryptosporidiosis	45	20	38	44	21
Cyclosporiasis	2	1	2	2	1
Dengue Fever	6	-	3	1	-
Ehrlichiosis/Anaplasmosis, HME, E. chaffeensis	1	2	2	-	-
E. coli Shiga Toxin Producing	6	8	12	12	6
Giardiasis	102	63	103	119	33
H. influenzae (Invasive Disease)	8	9	13	20	9
Hemolytic Uremic Syndrome	-	-	1	-	-
Hepatitis A	7	7	13	11	6
Hepatitis B (+HBsAg in Pregnant Women)	59	31	59	63	25
Hepatitis B, Acute	26	19	30	17	26
Hepatitis B, Chronic	418	288	319	302	184
Hepatitis B, Perinatal	-	-	-	-	-
Hepatitis C, Acute	4	-	15	2	3
Hepatitis C, Chronic	1714	1063	1372	1508	1345
Influenza A, Novel or Pandemic Strain	383	177	323	409	253
Lead Poisoning	22	29	75	44	31
Legionellosis	22	11	7	19	10
Leprosy (Hansen's Disease)	-	-	-	-	-
Listeriosis	2	-	2	6	-
Lyme Disease	9	3	9	13	6
Malaria	8	5	2	11	3
Measles	4	-	-	-	-
Meningitis, Bacterial, Cryptococcal, Mycotic	13	14	28	12	5
Meningococcal Disease	1	4	1	4	3
Mumps	-	1	2	1	2
Pertussis	13	35	23	12	5
Salmonellosis	405	458	338	422	285
Shigellosis	18	12	21	40	4
S. aureus, Community Associated Mortality	1	-	1	3	1
S. pneumoniae, Invasive Disease, Resistant	44	43	54	42	34
S. pneumoniae, Invasive Disease, Susceptible	32	46	35	27	29
Streptococcal Disease Invasive Group A	14	23	13	18	13
Typhoid Fever	2	1	-	1	1
Varicella	57	44	27	100	55
V. alginolyticus	-	1	1	4	4
V. parahaemolyticus	-	2	2	1	1
V. vulnificus	1	1	-	3	-
<b>Total</b>	<b>3601</b>	<b>2528</b>	<b>3095</b>	<b>3489</b>	<b>2517</b>

## Reportable Disease Cases for Orange County and Neighboring Counties, 2008

Disease	Orange	Brevard	Lake	Osceola	Polk	Seminole
Animal Bite, PEP Recommended	97	86	33	16	11	22
Animal Rabies	10	2	8	1	6	7
Brucellosis	-	1	1	-	1	-
Campylobacteriosis	43	14	7	11	38	11
Ciguatera	-	1	-	-	-	-
Creutzfeldt-Jakob Disease (CJD)	1	1	-	-	-	-
Cryptosporidiosis	27	6	3	4	19	8
Cyclosporiasis	-	1	1	1	1	2
Dengue Fever	1	-	2	-	1	-
Ehrlichiosis/Anaplasmosis, HME, E. chaffeensis	1	-	1	1	1	1
E. coli Shiga Toxin Producing	2	1	-	-	2	-
Giardiasis	96	37	21	8	30	29
H. influenzae (Invasive Disease)	8	8	1	2	10	1
Hemolytic Uremic Syndrome	-	-	-	-	-	-
Hepatitis A	6	5	3	3	5	2
Hepatitis B (+HBsAg in Pregnant Women)	99	8	3	11	27	14
Hepatitis B, Acute	38	2	1	5	11	9
Hepatitis B, Chronic	555	126	47	29	86	51
Hepatitis B, Perinatal	1	-	-	-	-	-
Hepatitis C, Acute	6	-	1	1	3	-
Hepatitis C, Chronic	2299	785	388	364	652	274
Hepatitis E	-	-	-	-	-	-
Lead Poisoning	27	3	3	1	19	5
Legionellosis	15	6	4	-	6	5
Leprosy (Hansen's Disease)	1	-	-	-	-	-
Listeriosis	1	1	1	-	1	-
Lyme Disease	5	3	-	-	4	-
Malaria	8	2	-	-	5	1
Measles	-	-	-	-	-	-
Meningitis, Bacterial, Cryptococcal, Mycotic	29	5	-	1	5	3
Meningococcal Disease	4	5	1	-	2	-
Mumps	-	-	-	-	-	-
Pertussis	12	4	3	1	39	-
Salmonellosis	219	219	90	43	146	83
Shigellosis	58	16	10	9	13	10
S. aureus, Community Associated Mortality	-	-	-	-	-	-
S. pneumoniae, Invasive Disease, Resistant	42	26	17	5	40	15
S. pneumoniae, Invasive Disease, Susceptible	33	29	10	2	33	3
Streptococcal Disease Invasive Group A	16	7	7	-	18	4
Typhoid Fever	-	-	-	-	1	-
Varicella	65	20	38	65	39	31
V. alginolyticus	-	-	-	-	-	-
V. parahaemolyticus	-	1	-	-	-	-
V. vulnificus	-	1	1	-	-	-
<b>Total</b>	<b>3830</b>	<b>1435</b>	<b>706</b>	<b>586</b>	<b>1280</b>	<b>595</b>

## Reportable Disease Cases for Orange County and Comparably-Sized Counties, 2008

Disease	Orange	Duval	Hillsborough	Palm Beach	Pinellas
Animal Bite, PEP Recommended	97	30	21	99	71
Animal Rabies	10	-	5	3	2
Brucellosis	-	-	-	1	1
Campylobacteriosis	43	68	79	88	34
Ciguatera	-	1	-	11	1
Creutzfeldt-Jakob Disease (CJD)	1	1	-	1	2
Cryptosporidiosis	27	66	34	34	15
Cyclosporiasis	-	3	7	12	7
Dengue Fever	1	-	3	3	1
Ehrlichiosis/Anaplasmosis, HME, E. chaffeensis	1	-	-	1	-
E. coli Shiga Toxin Producing	2	1	1	7	2
Giardiasis	96	57	85	118	36
H. influenzae (Invasive Disease)	8	9	13	11	3
Hemolytic Uremic Syndrome	-	1	-	2	-
Hepatitis A	6	-	15	16	3
Hepatitis B (+HBsAg in Pregnant Women)	99	52	56	62	36
Hepatitis B, Acute	38	25	38	18	20
Hepatitis B, Chronic	555	311	216	301	253
Hepatitis B, Perinatal	1	-	-	-	-
Hepatitis C, Acute	6	-	4	1	7
Hepatitis C, Chronic	2299	1069	1396	1428	1519
Hepatitis E	-	-	-	-	-
Lead Poisoning	27	24	60	38	31
Legionellosis	15	6	10	18	9
Leprosy (Hansen's Disease)	1	-	1	1	2
Listeriosis	1	1	1	9	3
Lyme Disease	5	6	1	8	9
Malaria	8	-	4	3	3
Measles	-	-	-	-	-
Meningitis, Bacterial, Cryptococcal, Mycotic	29	13	18	14	8
Meningococcal Disease	4	2	2	3	4
Mumps	-	3	4	1	-
Pertussis	12	76	33	8	17
Salmonellosis	219	488	243	344	204
Shigellosis	58	32	30	70	11
S. aureus, Community Associated Mortality	-	-	2	-	-
S. pneumoniae, Invasive Disease, Resistant	42	41	56	47	27
S. pneumoniae, Invasive Disease, Susceptible	33	36	28	44	27
Streptococcal Disease Invasive Group A	16	21	11	23	10
Typhoid Fever	-	-	-	5	-
Varicella	65	45	61	159	51
V. alginolyticus	-	2	1	2	-
V. parahaemolyticus	-	1	-	-	4
V. vulnificus	-	-	1	2	-
<b>Total</b>	<b>3830</b>	<b>2494</b>	<b>2549</b>	<b>3038</b>	<b>2440</b>

## Reportable Disease Cases for Orange County and Florida, 2008 and 2009

Disease	Orange 2008	Florida 2008	Orange 2009	Florida 2009
Amebic Encephalitis	-	-	1	3
Animal Bite, PEP Recommended	97	1522	88	1918
Animal Rabies	10	144	10	151
Campylobacteriosis	43	1081	47	1112
Carbon Monoxide Poisoning	-	-	5	44
Creutzfeldt-Jakob Disease (CJD)	1	25	-	10
Cryptosporidiosis	27	536	45	497
Cyclosporiasis	-	62	2	35
Dengue Fever	1	25	6	56
Ehrlichiosis/Anaplasmosis, HME, E. chaffeensis	1	13	1	13
E. coli Shiga Toxin Producing	2	67	6	185
Giardiasis	96	1428	102	1888
H. influenzae (Invasive Disease)	8	151	8	215
Hemolytic Uremic Syndrome	-	5	-	7
Hepatitis A	6	167	7	184
Hepatitis B (+HBsAg in Pregnant Women)	99	624	59	525
Hepatitis B, Acute	38	350	26	307
Hepatitis B, Chronic	555	4132	418	4065
Hepatitis B, Perinatal	1	2	-	-
Hepatitis C, Acute	6	520	4	78
Hepatitis C, Chronic	2299	23394	1714	21384
Influenza A, Novel or Pandemic Strain	-	-	383	5623
Lead Poisoning	27	579	22	545
Legionellosis	15	144	22	200
Leprosy (Hansen's Disease)	1	7	-	2
Listeriosis	1	45	2	27
Lyme Disease	5	107	9	135
Malaria	8	64	8	96
Measles	-	1	4	5
Meningitis, Bacterial, Cryptococcal, Mycotic	29	194	13	203
Meningococcal Disease	4	50	1	58
Mumps	-	26	-	22
Pertussis	12	345	13	479
Salmonellosis	219	5776	405	6735
Shigellosis	58	750	18	457
S. aureus, Community Associated Mortality	-	5	1	16
S. pneumoniae, Invasive Disease, Resistant	42	768	44	777
S. pneumoniae, Invasive Disease, Susceptible	33	673	32	686
Streptococcal Disease Invasive Group A	16	266	14	275
Typhoid Fever	-	15	2	20
Varicella	65	1699	57	1113
V. alginolyticus	-	27	-	32
V. parahaemolyticus	-	19	-	23
V. vulnificus	-	15	1	27
<b>Total</b>	<b>3830</b>	<b>44981</b>	<b>3601</b>	<b>50428</b>