

# **Escambia County Health Department** **Epidemiology Program 2008 Year-end Summary**

## **Introduction**

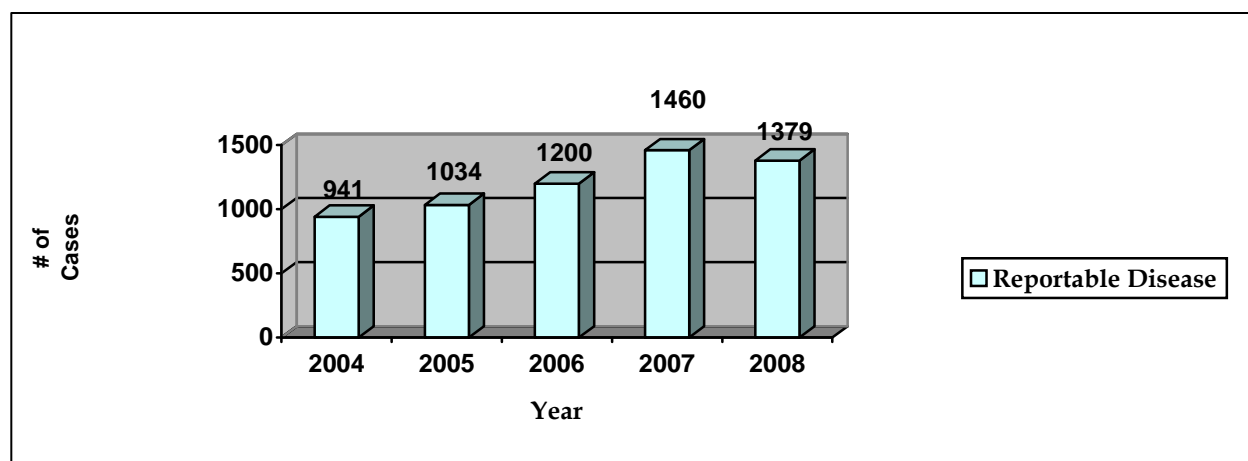
The mission of the Escambia County Health Department (ECHD) is to promote, protect, and improve the health of all people in Florida. The ECHD Director is Dr. John J. Lanza, MD, PhD, MPH, FAAP. The Associate Director is Dr. Susan Turner, MD, MS. The Public Health Nursing Director is Trena Webb, BSN, MS, RN, NCSN. The Executive Community Health Nursing Director is Lamar Dunn RN, BSN. Other staff include: Pat Williams, BSN, MS; Mary Beverly, BS- Biological Scientist IV; Vivian Logsdon, BSN, Senior Community Health Nurse; Megan Dalitsch, MPH, Biological Scientist III; and Amber Watzka, Secretary Specialist.

## **Case Investigations**

The Epidemiology Program is primarily charged with the reporting and control of communicable diseases and conditions that may significantly affect public health as specified in Florida Administrative Code Chapter 64D-3. Epidemiology is directly responsible for investigating over 50 reportable conditions with the exception of HIV/AIDS, tuberculosis, and sexually transmitted diseases (STD). Epidemiology facilitates surveillance and case management efforts with all other surveillance units throughout the ECHD.

The Epidemiology Program investigates reports of communicable diseases, outbreaks, and clusters of symptoms or syndromes. For each report received, an investigation is initiated and a determination is made whether the disease meets the surveillance case definition for reporting to the Florida Department of Health (FDOH) Bureau of Epidemiology (BOE). Since not all investigations result in the reporting of diseases, the number of investigations exceeds the number of reportable diseases. Figure 1 represents the number of cases investigated by the ECHD Epidemiology Program that were reported to the BOE for the 2004-2008 time period (these numbers do not include HIV/AIDS, TB or STD's). Reported diseases have trended up since 2004, attributed, in part, to better surveillance and reporting.

**Figure 1: Case Investigations, Escambia County 2004-2008**



Data Source: FDOH Merlin® Frequency Report, Weeks 1-53 for years 2004-2008

Table 1 identifies the ten most frequently reported illnesses in Escambia County for 2008, based upon number of cases (including HIV/AIDS, TB and STD's). During the investigation of each disease report, the epidemiology staff provided targeted information about disease modes of transmission and prevention measures in order to reduce the spread of the illnesses.

**Table 1: Ten Most Frequently Reported Reportable Diseases in Escambia County 2008**

<i>Disease</i>	<i>Number of Cases</i>
Chlamydia	1715
Gonorrhea	664
Hepatitis C, Chronic	680
Salmonellosis	83
Shigellosis	143
Animal Bite, PEP Recommended	43
Hepatitis B, Chronic	78
HIV	67
AIDS	72
Varicella	192

Data Source: FDOH Merlin® Frequency Report, (confirmed and probable), Weeks 1-53 for years 2008, PRISM, Bureau of HIV/AIDS.

### Enteric Illnesses

Enteric illnesses—campylobacteriosis (24), cryptosporidiosis (3), enterohemorrhagic E. coli 0157:H7 (1), giardiasis (9), salmonellosis (83), shigellosis (143) and typhoid fever (1)—accounted for 43% of all diseases reported by the Epidemiology Program in 2008. Enteric disease rates in Escambia County nearly tripled from 2006 to 2007. Although we experienced a 31% decrease in reported enteric illness between 2007 and 2008, the incidence was still double that of 2006. Enteric disease counts and rates for Escambia County, comparison counties, and the State of Florida are in Table 2 below. The reasons for the significant increase in enteric cases were a single point source, food borne, outbreak at a correctional facility of Salmonella and several localized outbreaks of Shigella at childcare facilities.

**Table 2: Count and Incidence Rate Data for Enteric Infections**

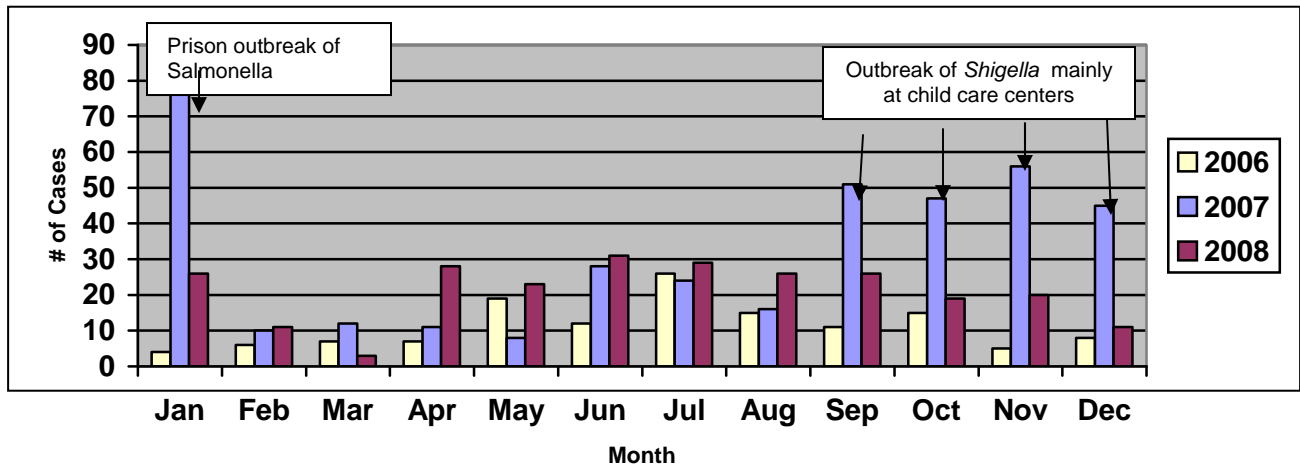
	Escambia		Manatee		Pasco		Sarasota		Statewide	
	Cases	Rates†	Cases	Rates†	Cases	Rates†	Cases	Rates†	Cases	Rates†
2008	264	(84.64)	131	(40.77)	222	(50.32)	126	(32.12)	9541	(50.49)
2007	384	(122.81)	131	(41.24)	205	(46.93)	116	(29.80)	10716	(57.12)
2006	144	(47.43)	144	(45.71)	174	(40.97)	108	(28.51)	9779	(53.08)
3Yr Avg	264.00	(84.96)	135.33	(42.57)	200.33	(46.07)	116.67	(30.14)	10012.00	(53.56)

Data Source: FDOH Merlin® Disease Incidence Report, Weeks 1-53 for years 2006-2008

†Incidence rates are per 100,000 population per year, 3 year average denominator calculated using estimate from the US Census Bureau American Fact Finder [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)

Figure 2 shows the monthly variation of enteric illnesses throughout the years 2006-2008 in Escambia County.

**Figure 2: Enteric Illnesses Reported January 2006-December 2008 in Escambia County, By Month of Event Date (onset date, diagnosis date, lab report date, or date reported to CHD)**



Data Source: FDOH Merlin® Disease Enteric Disease Incidence Report by Month for years 2006-2008 based on all cases (confirmed and probable) entered by county health departments.

## Hepatitis

### Hepatitis B (in pregnant women)

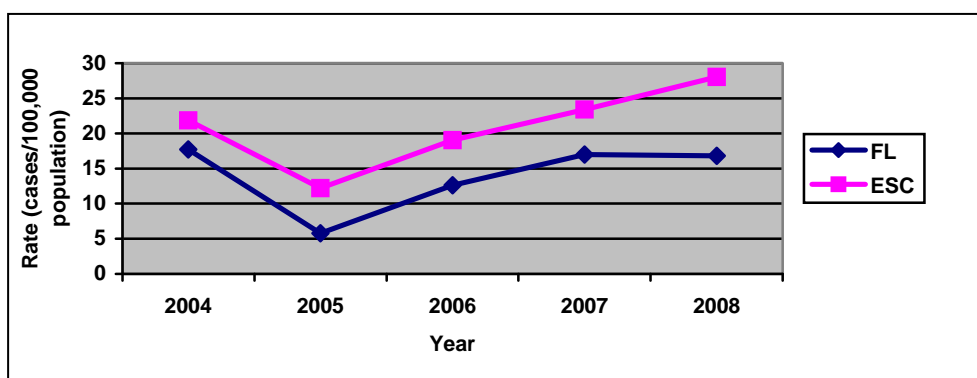
Table 3 and Figure 3 indicate that Escambia County has a higher reported incidence rate of hepatitis B in pregnant women than the state as a whole. After seeing a decrease in incidence rates from 2003-2005, the incidence rate has been increasing, along with the state, since 2005. Prevention efforts for hepatitis B include patient education and recommendation for testing and vaccination of sexual and needle-sharing partners.

**Table 3: Incidence Rates of Reported Hepatitis B in Pregnant Women Cases, per 100,000 Population of women ages 13-44, Florida and Escambia County 2004-2008**

Year	Escambia County	Florida
2004	21.85	17.7
2005	12.18	5.79
2006	19.02	12.63
2007	23.38	16.96
2008	28.06	16.78

Data Source: FDOH Merlin® Disease Hepatitis B-pregnant women Incidence Report for years 2004-2008 based on all cases (confirmed and probable) entered by county health departments.

**Figure 3: Hepatitis B in Pregnant Women Rates, per 100,000 Population of women ages 13-44, Florida and Escambia County, 2004-2008**



Data Source: FDOH Merlin® Disease Hepatitis B-pregnant women Incidence Report for years 2004-2008 based on all cases (confirmed and probable) entered by county health departments..

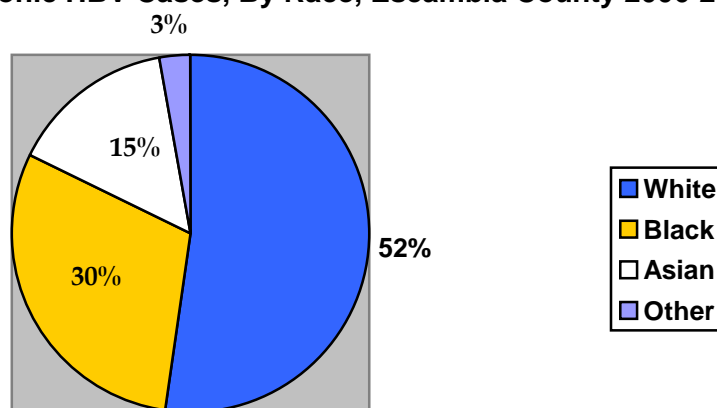
### Hepatitis B and C, Chronic

With the advent of chronic hepatitis B and chronic hepatitis C reporting in October 2002, we have increased the number of disease investigations and reports followed up by the Epidemiology Program. Challenges to data collection of demographics and risk factors have been noted. Below is information on gender, race, ethnicity, and age distribution for the years 2006-2008 combined.

For chronic hepatitis cases in Escambia County, males accounted for 60% and females accounted for 40% for both chronic hepatitis B virus (HBV) infection and chronic hepatitis C virus (HCV) infection cases.

Figure 4 shows the distribution, by race, for chronic HBV cases in which race was known. Whites accounted for 52%, blacks accounted for 30%, and Asian/Pacific Islanders for 15% of the cases, with 3% categorized as other. In 38% of chronic HBV cases, the individuals' race was unknown.

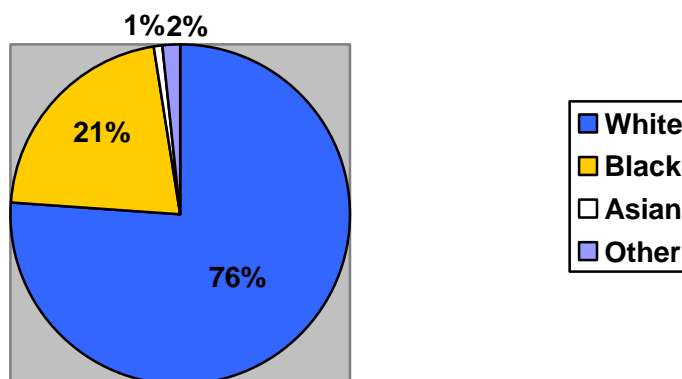
**Figure 4: Percent of Chronic HBV Cases, By Race, Escambia County 2006-2008**



Data Source: FDOH Merlin® Disease Hepatitis B, Chronic Risk Factor Report for years 2006-2008 based on all cases (confirmed and probable) entered by county health departments.

Figure 5 shows the distribution of cases, by race, for chronic hepatitis C cases in which race was known. Whites accounted for 76%; blacks represented 21%, Asian/Pacific Islanders for 1%; and other for 2% of the cases. In 30% of chronic HCV cases race was unknown.

**Figure 5: Percent of Chronic HCV cases, By Race, Escambia County 2006-2008**



Data Source: FDOH Merlin® Disease Hepatitis C, Chronic Risk Factor Report for years 2006-2008 based on all cases (confirmed and probable) entered by county health departments.

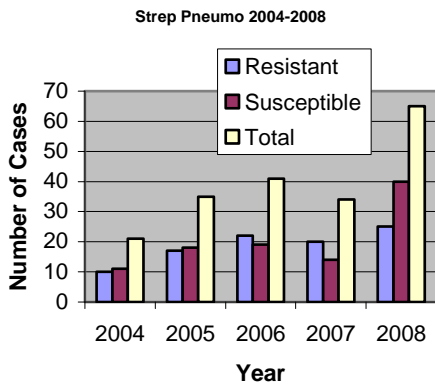
The ethnic distribution for chronic HBV and HCV cases is as follows: Non Hispanic comprised 67.32% of the cases of chronic HBV and 72.10% of chronic HCV. Hispanics accounted for 2.33% of the cases of chronic HBV and 1.37% of chronic HCV. Ethnicity was unknown in 30.35% of the cases of chronic HBV and 26.52% of the cases of chronic HCV.

### **Bacterial Invasive Diseases**

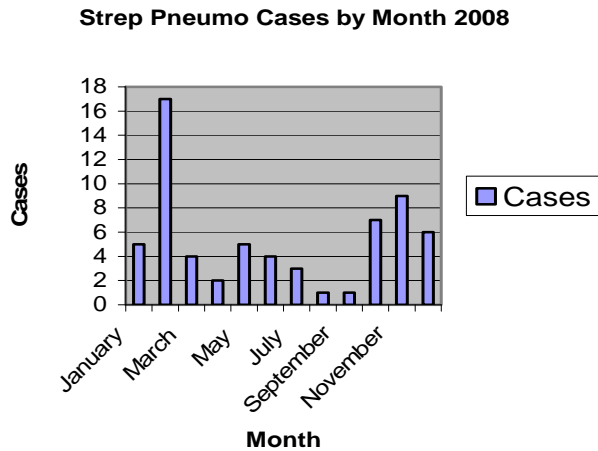
*Streptococcus pneumoniae* can cause a wide range of symptoms including acute otitis media, meningitis, bacteremia, and pneumonia. Both resistant and susceptible strains are reportable in

the State of Florida when collected from a normally sterile site. Although tracking of drug-susceptible *Strep pneumoniae* invasive disease cases did not begin until July 2003, the cases in 2005 doubled from what was reported in 2004 and remain high. The upward trend in cases continued in 2006, but dropped back down to 2005 levels in 2007. In 2008, the number of cases doubled again from 2007. The cooler months are the most active times for *S. pneumoniae* infections with the majority of cases occurring from November to April. *S. pneumoniae* infections occur disproportionately among the very young and very old.

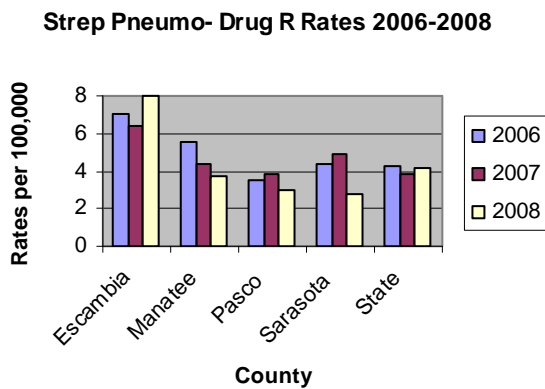
**Figure 6: Number of *Streptococcus pneumoniae* Cases, 2004-2008**



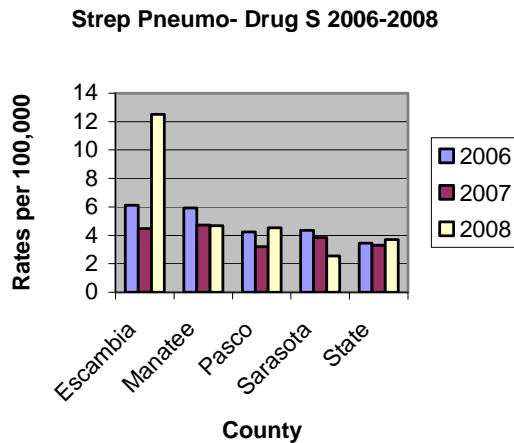
**Figure 7: Number of *Streptococcus pneumoniae* cases by month in 2008**



**Figure 8: Rates of *Streptococcus pneumoniae* Drug-Resistant 2006-2008**



**Figure 9: Rates of *Streptococcus pneumoniae* Drug-Susceptible 2006-2008**



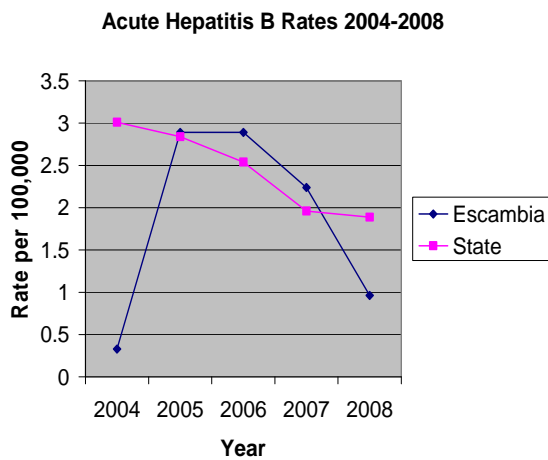
Data Source: FDOH Merlin® Disease *Streptococcus pneumoniae*, Incidence and Risk Factor Reports for years 2006-2008 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

## Vaccine-Preventable Diseases

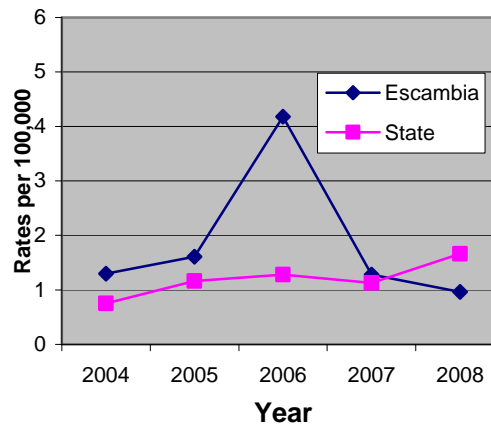
Vaccine-preventable diseases (VPD) include acute hepatitis B, measles, mumps, pertussis, rubella, tetanus and as of November 20, 2006, varicella. The following VPD's have been reported in Escambia County during the past five years: acute hepatitis B, suspect mumps, pertussis and varicella. The rate of acute hepatitis B in Escambia County per 100,000 population has gone from a rate similar to the state of 2.894 in 2005 (state rate was 2.840) to a rate of 0.962 in 2008, which was nearly half the state rate of 1.889.

The incidence of pertussis has been increasing in Escambia County as well as the state since 2004. The cause for this increase may be due to better case finding or changes in the disease itself. The rates reported here are confirmed cases as well as suspect cases (cases that may not be laboratory confirmed, but are epidemiologically linked to a confirmed case). Escambia County experienced lower rates than the state in 2008. With the advent of the new pertussis booster that can be given at an older age and its longer expected efficacy, these rates should start to decline in the future.

**Figure 10: Acute Hepatitis B Rates**



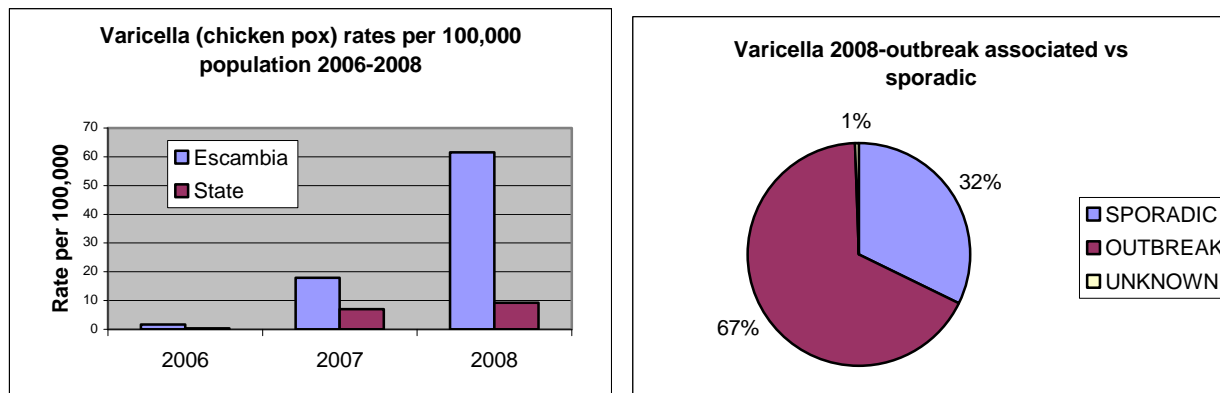
**Figure 11: Pertussis Rates**  
**Pertussis Rates 2004-2008**



Data Source: FDOH Merlin® Disease Incidence VPD Reports for years 2004-2008 based on all cases (confirmed and probable) entered by county health departments.

In 2008, 192 cases of Varicella were reported including several outbreaks mainly occurring in school settings. Figure 12 shows the rates of Varicella that have occurred in Escambia County from January 1, 2006 to December 31, 2008.

**Figure 12: Varicella (chickenpox) rates for years 2006-2008; outbreak associated vs sporadic**



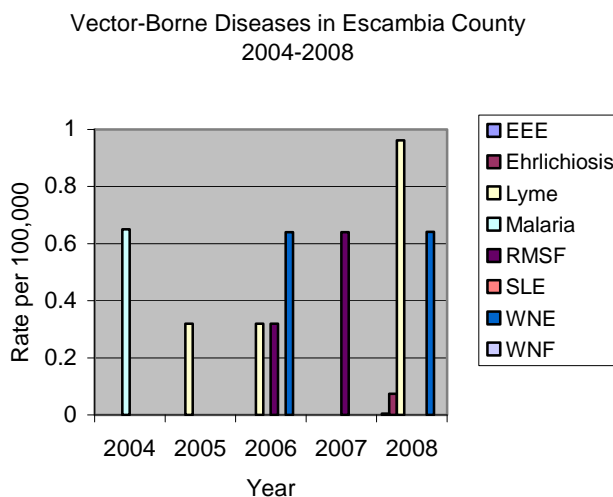
Varicella 2008	NUMBER OF CASES	PERCENTAGE
SPORADIC	62	33%
OUTBREAK	129	67%
UNKNOWN	1	0.5%

Data Source: FDOH Merlin® Disease Incidence VPD Reports for years 2006-2008 based on all cases (confirmed and probable) of Varicella entered by ECHD epi. FDOH Merlin® Export file listed under outbreaks was used to determine percentage of sporadic, outbreak and unknowns.

### Vector-Borne Diseases

Vector-borne diseases that were reviewed for the 2008 report were Eastern Equine Encephalitis (EEE), Saint Louis Encephalitis (SLE), West Nile Virus Encephalitis (WNVE) and West Nile Virus Fever (WNF), Ehrlichiosis, Lyme disease, Malaria and Rocky Mountain Spotted Fever (RMSF).

**Figure 13: Vector-Borne Diseases in Escambia County 2004-2008**



Data Source: FDOH Merlin® Disease Incidence Vector-Borne Disease Selected Independently Reports for Years 2004-2008 based on all cases (confirmed and probable) entered by county health departments.

The vector-borne disease of greatest public health concern in Escambia County in the past five years has been WNV (both encephalitis and fever) and Lyme disease is a close second. In Escambia County, 2 cases of WNV were reported in 2006, none in 2007 and 2 cases were reported in 2008. In addition, 3 cases of Lyme disease were reported in 2008.

### **Surveillance and Outbreak Investigations**

Surveillance activities performed by the Epidemiology Program include outbreak investigations, influenza surveillance, training and education. In 2008, 89 outbreaks were documented in 16 child care centers, 46 schools, 5 nursing homes/ALFs, 3 prison/jail/workcamps, 2 restaurants and 4 community wide outbreaks. Table 4 shows a listing of specific outbreaks investigated by the Epidemiology Program in 2008 and figures 14 and 15 show the distribution of the outbreaks by regulatory facility and type.

**Table 4: Escambia County Outbreaks, by Setting, Illness and Cases 2008**

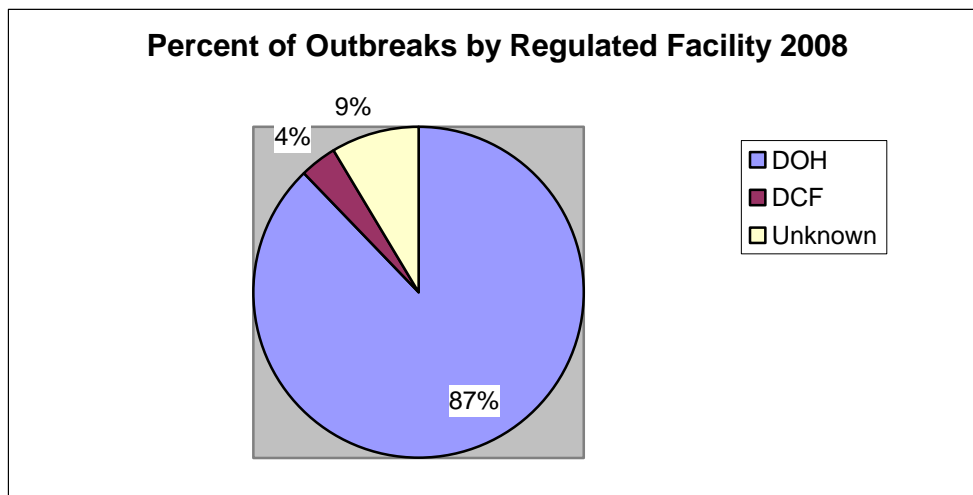
<i>Illness</i>	<i>Outbreak Setting</i>	<i>Number of Cases involved in outbreak (suspect, probable, &amp; confirmed)</i>
<b>Reportables</b>		<b>72</b>
<i>Salmonella</i>	<i>Middle School (1)</i>	14
	<i>Restaurant (1)</i>	4
<i>Shigella</i>	<i>Community (1)</i>	6
	<i>Childcare (3)</i>	53
<i>Varicella</i>	<i>Public Elementary School (9)</i>	40
	<i>Private School (1)</i>	37
	<i>Childcare (1)</i>	2
	<i>Prison Camp (1)</i>	8
<b>Non-Reportables</b>		<b>513</b>
<i>Hand Foot &amp; Mouth</i>	<i>Childcare (4)</i>	21
<i>Conjunctivitis</i>	<i>Childcare (1)</i>	5
	<i>Elementary School (1)</i>	3
<i>Influenza</i>	<i>Childcare (3)</i>	114
	<i>Elementary School (1)</i>	29
	<i>Middle School (1)</i>	45
	<i>Nursing Home (1)</i>	67
<i>Molluscum contagiosum</i>	<i>Private School (1)</i>	6
<i>MRSA</i>	<i>Middle School (1)</i>	2
	<i>Prison (1)</i>	9

<i>Pneumonia</i>	<i>Nursing Home (1)</i>	14
<i>Norovirus</i>	<i>Elementary School (1)</i> <i>Restaurant (1)</i>	140 3
<i>Rotavirus</i>	<i>Elementary School (1)</i>	6
<i>RSV</i>	<i>Childcare (4)</i> <i>Women's Home (1)</i>	25 3
<i>Scabies</i>	<i>ALF (1)</i> <i>Group Home (1)</i> <i>Prison (1)</i>	18 8 6
<i>Staph aureus</i>	<i>Elementary School (1)</i>	2
<i>Strep Throat</i>	<i>Elementary School (1)</i> <i>Childcare (1)</i> <i>Private School (1)</i>	6 4 4
<i>Ring Worm</i>	<i>Childcare (1)</i> <i>Elementary School (1)</i>	5 4
<b>Syndromes</b>		<b>530</b>
<i>GI Syndrome</i>	<i>Childcare (3)</i> <i>Elementary School (10)</i> <i>Middle School (2)</i> <i>Nursing Home (1)</i> <i>Jail (1)</i> <i>Hospital (1)</i>	26 171 29 33 13 11
<i>Influenza like illness</i>	<i>Elementary School (7)</i> <i>Middle School (4)</i> <i>High School (3)</i>	215 69 48
<i>Rash</i>	<i>Nursing Home (1)</i>	4

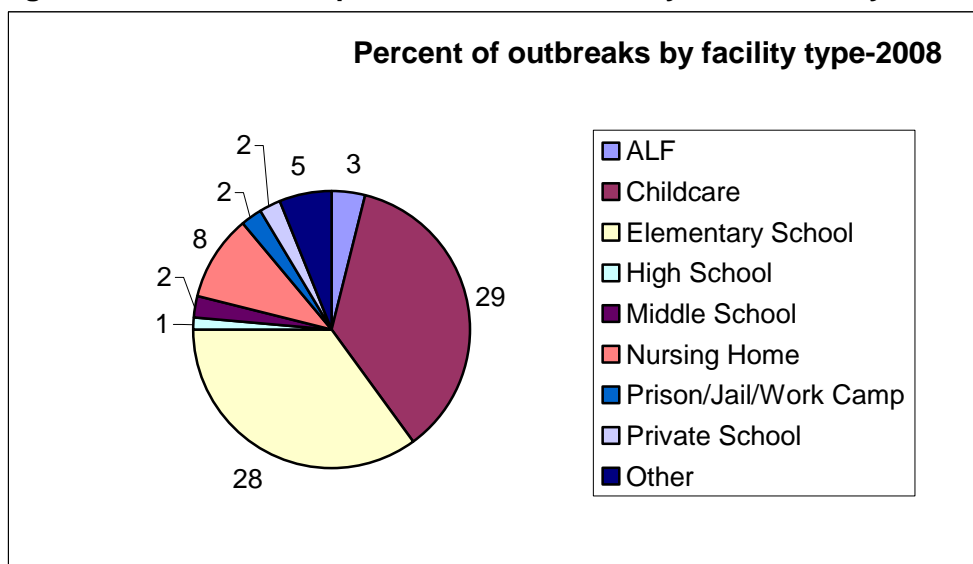
Data Source: ECHD ACCESS Database Reports for Year 2008

**Figure 14: Percent of Reported Escambia County Outbreaks, by Regulatory Authority**

Data Source: ECHD ACCESS Database Reports for Year 2008



**Figure 15: Percent of Reported Escambia County Outbreaks, by Facility Type**



Data Source: ECHD ACCESS Database Reports for Year 2008

Through attendance at seminars, providing education and field visits to facilities, we have enhanced our ability to detect outbreaks. This year's outbreaks were influenced by personal contact between individuals, fomites, hand washing practices and facility infection control practices. Propagation of outbreaks can be minimized through early identification and implementation of infection control measures. Epidemiology works closely with the facilities involved to recommend control measures and conduct surveillance.

Influenza surveillance is accomplished through sentinel physician participation, voluntary reporting of rapid flu tests by all hospitals, school health nurse surveillance and reporting. Components of influenza surveillance include reporting of the percent of patients seen for

influenza-like illness and laboratory results. A total of six sentinel physician sites were enrolled in the system for influenza season 2008-2009 and physicians report cases on a weekly basis. A weekly Respiratory Illness Report has been created and is distributed on a weekly basis to 43 community providers as well as ECHD administration. It describes the sentinel physician activity, hospital respiratory syncytial virus testing results, and hospital influenza testing results, as well as background information on current topics in influenza.

### **Epidemiology Program Activities**

During program year 2008, Epidemiology staff coordinated work with various ECHD programs. Staff actively participated in the ECHD Public Health Preparedness core competency class, weapons of mass destruction/epidemiology 101 course and regional epidemiology training seminars. We supported health promotion and education in the following areas: Community Influenza Education, MRSA education, National Public Health Week, and Public Health Awareness Day. Epidemiology staff facilitated epidemiology training for new ECHD staff and supported the school health program in BMI data analysis.

In addition to disease reporting, surveillance, and ECHD programmatic coordination, we have conducted extensive activities in our community. These activities include 56 community provider communications (blast e-mail/fax), 16 community presentations, 27 nursing students, and semi-annual publications of the newsletter "Epi Express". Epidemiology staff provided forums for more formal communication with hospital laboratorians and hospital ICP staff via meetings and phone conferences to discuss community issues related to disease and infection control, to problem solve and support their needs. Strong community collaboration exists with the University of West Florida (UWF) School of Allied Health and Life Sciences, Northwest Florida Infection Control Practitioners and all area hospitals and laboratories. Geographic Information Systems technology has been incorporated and used for visualization of disease trends.

### **Special Accomplishments**

- Monthly Newsletter contributions for the Early Learning Coalition
- MRSA/Scabies presentations at Nursing Homes and Jail
- Completed Maternal Child Health data analysis project and first stage of the PPOR for Escambia County

---

Questions or comments about the Epidemiology Program may be addressed to staff at 1295 W. Fairfield Dr., Pensacola, Florida 32501  
Phone: 850-595-6683 Fax: 850-595-6268  
E-mail: Patricia\_Williams2@doh.state.fl.us  
or visit our "Disease Control & Prevention" page at <http://www.escambiahealth.com>