

Escambia County Health Department **Epidemiology Program 2007 Year-End Summary**

Introduction

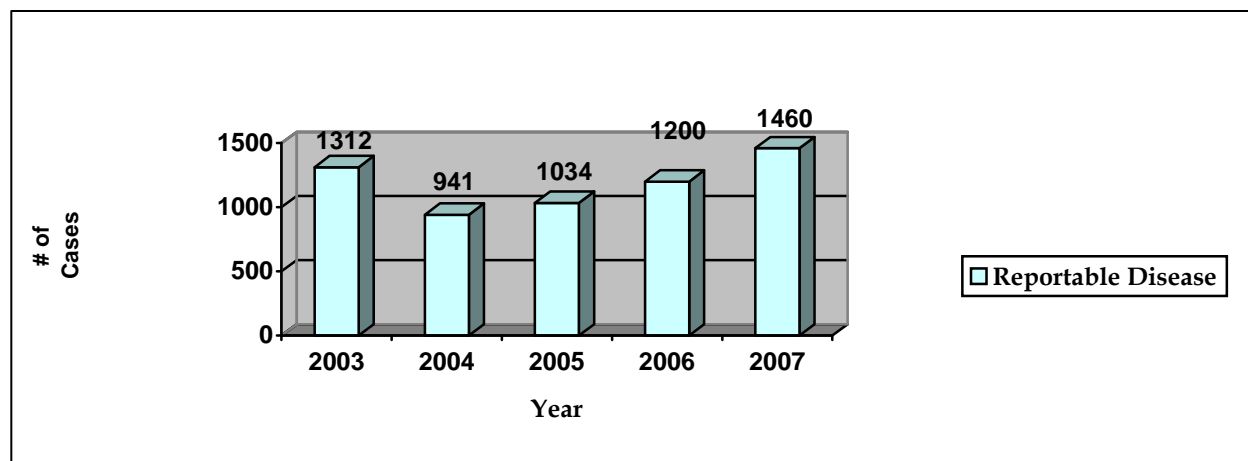
The mission of the Escambia County Health Department (ECHD) is to promote, protect, and improve the health of all people in Florida. The ECHD Director is Dr. John J. Lanza, MD, PhD, MPH, FAAP, the Associate Director is Dr. Susan Turner, MD, MS, the Public Health Nursing Director is Trena Webb, BSN, MS, RN, NCSN, the Executive Community Health Nursing Director is Lamar Dunn RN, BSN, and Pat Williams, BSN, MS, is supervisor of epidemiology. Other staff include: Samantha Rivers, MS, MPH- lead epidemiologist, Epidemiology Biological Scientist III, Leah Green, RN, Epidemiology Nurse Vivian Logsdon, BSN, EIS Officer assigned to ECHD- Anita Lewis, MPH and secretary specialist Amber Watzka.

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 reportable 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 2003-2007 time period (these numbers do not include HIV/AIDS, TB or STD's). Reported diseases have steadily increased since 2004, attributed, in part, to better reporting.

Figure 1: Case Investigations, Escambia County 2003-2007



Data Source: FDOH Merlin® Frequency Report, Weeks 1-53 for years 2003-2007

Data in Merlin® reports are provisional, based on cases entered by county health departments and are not considered official data.

Table 1 identifies the ten most frequently reported illnesses in Escambia County for 2007, 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 Illnesses in Escambia County 2007

Disease	Number of Cases
Chlamydia	1589
Gonorrhea	845
Hepatitis C, Chronic	721
Salmonellosis	189
Shigella	163
Animal Bite, PEP Recommended	94
Hepatitis B, Chronic	88
HIV	69
AIDS	59
Varicella	56

Data Source: FDOH Merlin® Frequency Report, (confirmed and probable), Weeks 1-53 for years 2007, PRISM, Bureau of HIV/AIDS and Merlin® are provisional and are not considered official data.

Enteric Illnesses

Enteric illnesses—campylobacteriosis (17), giardiasis (13), salmonellosis (189) and shigellosis (163)—accounted for 61% of all diseases reported by the Epidemiology Program in 2007. Enteric disease rates in Escambia County significantly increased in 2007 almost tripling what was seen in 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†
2007	382	(125.83)	122	(38.72)	181	(42.62)	106	(27.99)	8913	(53.02)
2006	136	(44.80)	141	(46.43)	158	(39.38)	101	(27.55)	8919	(49.66)
2005	173	(55.62)	114	(37.54)	161	(40.13)	155	(42.28)	8992	(50.07)
3Yr Avg	230.33	(75.17)	125.67	(41.01)	166.67	(54.39)	120.67	(39.38)	8941.33	(48.99)

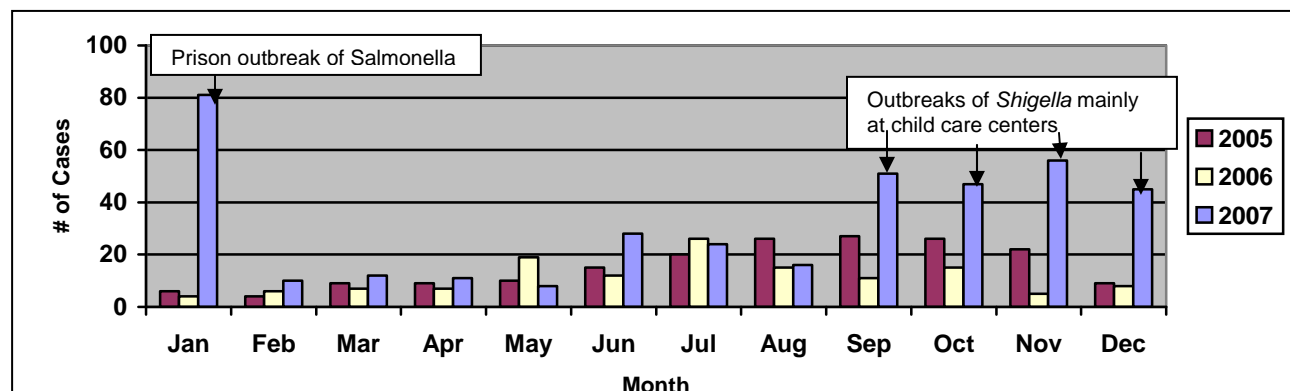
Data Source: FDOH Merlin® Disease Incidence Report, Weeks 1-53 for years 2005-2007

Data in Merlin® reports are provisional, based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

†Incidence rates are per 100,000 population per year, 3 year average denominator calculated using 7/1/07 estimate from the US Census Bureau American Fact Finder http://factfinder.census.gov/home/saff/main.html?_lang=en

Figure 2 shows the monthly variation of enteric illnesses throughout the years 2005-2007 in Escambia County.

Figure 2: Enteric Illnesses Reported January 2005-December 2007 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 2004-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

Hepatitis

Hepatitis B (in pregnant women)

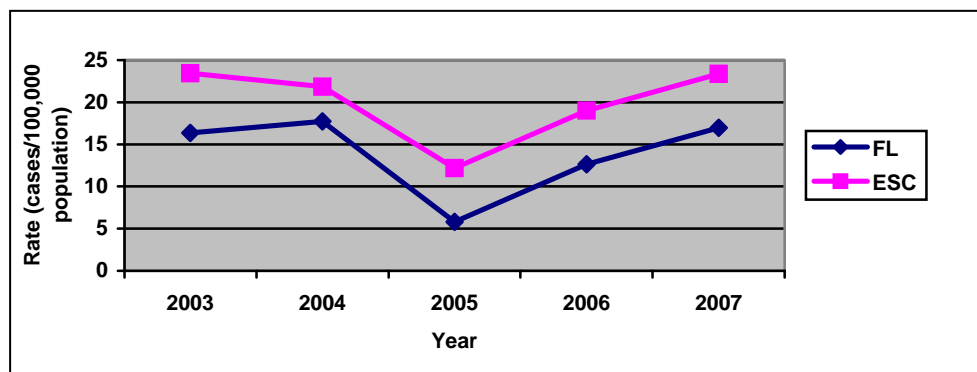
Table 3 and Figure 3 indicate that Escambia County has a higher reported incidence rate of hepatitis B in pregnant women than the state as a whole. After seeing a decrease in incidence rates from 2003-2005, the incidence rate has been increasing, along with the state, since 2005. Prevention efforts for 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 2003-2007

Year	Escambia County	Florida
2003	23.43	16.34
2004	21.85	17.70
2005	12.18	5.79
2006	19.02	12.63
2007	23.38	16.96

Data Source: FDOH Merlin® Disease Hepatitis B-pregnant women Incidence Report for years 2003-2007 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

Figure 3: Hepatitis B in Pregnant Women Rates, per 100,000 Population of women ages 13-44, Florida and Escambia County, 2003-2007



Data Source: FDOH Merlin® Disease Hepatitis B-pregnant women Incidence Report for years 2002-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

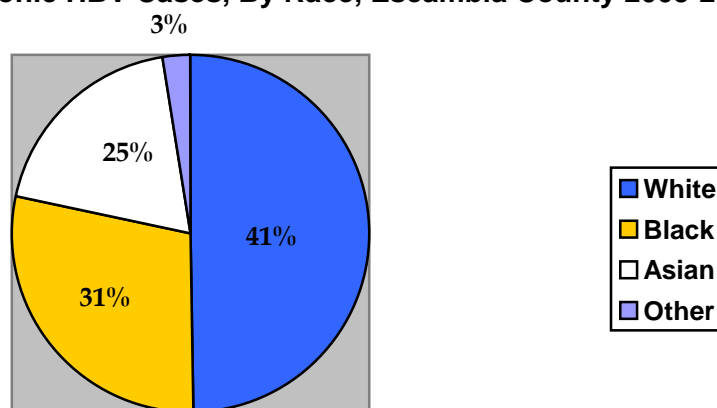
Hepatitis B and C, Chronic

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 2005-2007 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 41%, blacks accounted for 31%, and Asian/Pacific Islanders for 25% of the cases. In 24% of chronic HBV cases, the individuals' race was unknown.

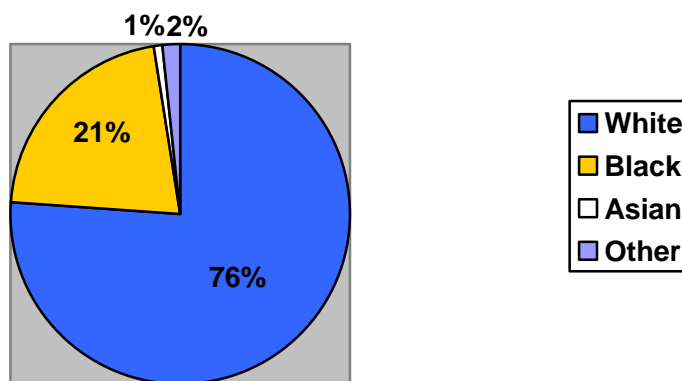
Figure 4: Percent of Chronic HBV Cases, By Race, Escambia County 2005-2007



Data Source: FDOH Merlin® Disease Hepatitis B, Chronic Risk Factor Report for years 2005-2007 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

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 24% of chronic HCV cases race was unknown.

Figure 5: Percent of Chronic HCV cases, By Race, Escambia County 2005-2006



Data Source: FDOH Merlin® Disease Hepatitis C, Chronic Risk Factor Report for years 2005-2007 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

The ethnic distribution for chronic HBV and HCV cases is as follows: Non Hispanic comprised 65.81% of the cases of chronic HBV and 67.85% of chronic HCV. Hispanics accounted for 2.21% of the cases of chronic HBV and 1.41% of chronic HCV. Ethnicity was unknown in 31.99% of the cases of chronic HBV and 30.74% 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. The cooler months are the most active times for *S. pneumoniae* infections with the majority of cases occurring in November-April. *S. pneumoniae* infections occur disproportionately among the very young and very old.

Figure 6: Number of *Streptococcus pneumoniae* Cases, 2002-2006

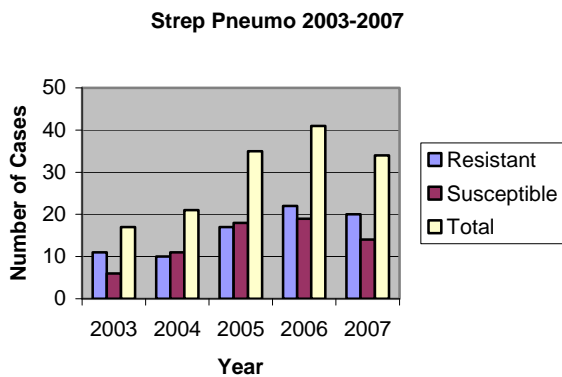


Figure 7: Number of *Streptococcus pneumoniae* cases by month in 2006

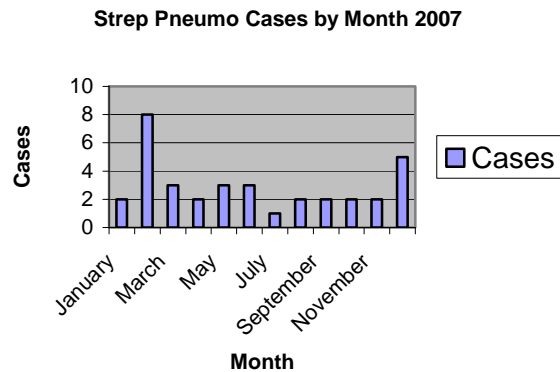


Figure 8: Rates of *Streptococcus pneumoniae* Drug-Resistant 2004-2006

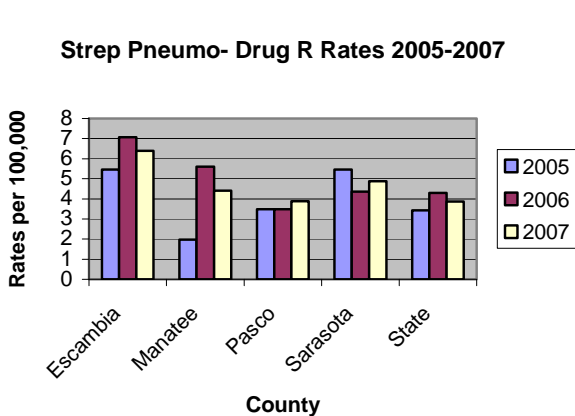
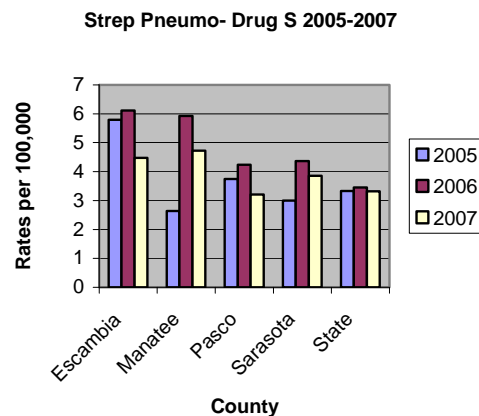


Figure 9: Rates of *Streptococcus pneumoniae* Drug-Susceptible 2004-2006



Data Source: FDOH Merlin® Disease *Streptococcus pneumoniae*, Incidence and Risk Factor Reports for years 2002-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

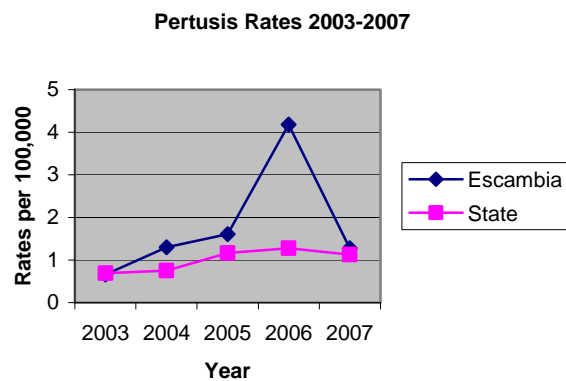
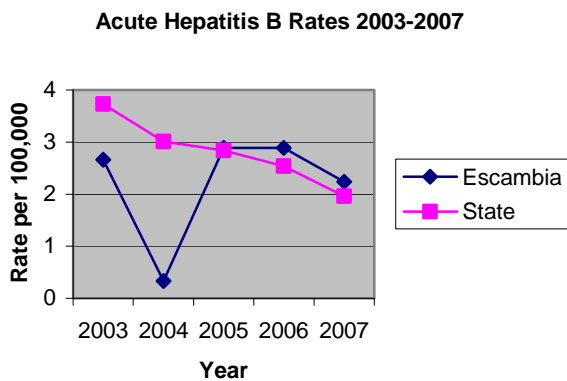
Vaccine-Preventable Diseases

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 has gone from a high of 4.72 per 100,000 in 2001 to a low of 0.33 in 2004 and back to slightly above the state average in 2007 of 2.24. The incidence of pertussis has been increasing in Escambia County as well as the state. 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). 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.

In 2007, 56 cases of varicella were reported including several outbreaks mainly occurring in school settings. Figure 12 shows the epi curve for varicella and the number of outbreak associated cases vs. sporadic cases that have occurred in Escambia County from November 20, 2006 to May 1, 2008.

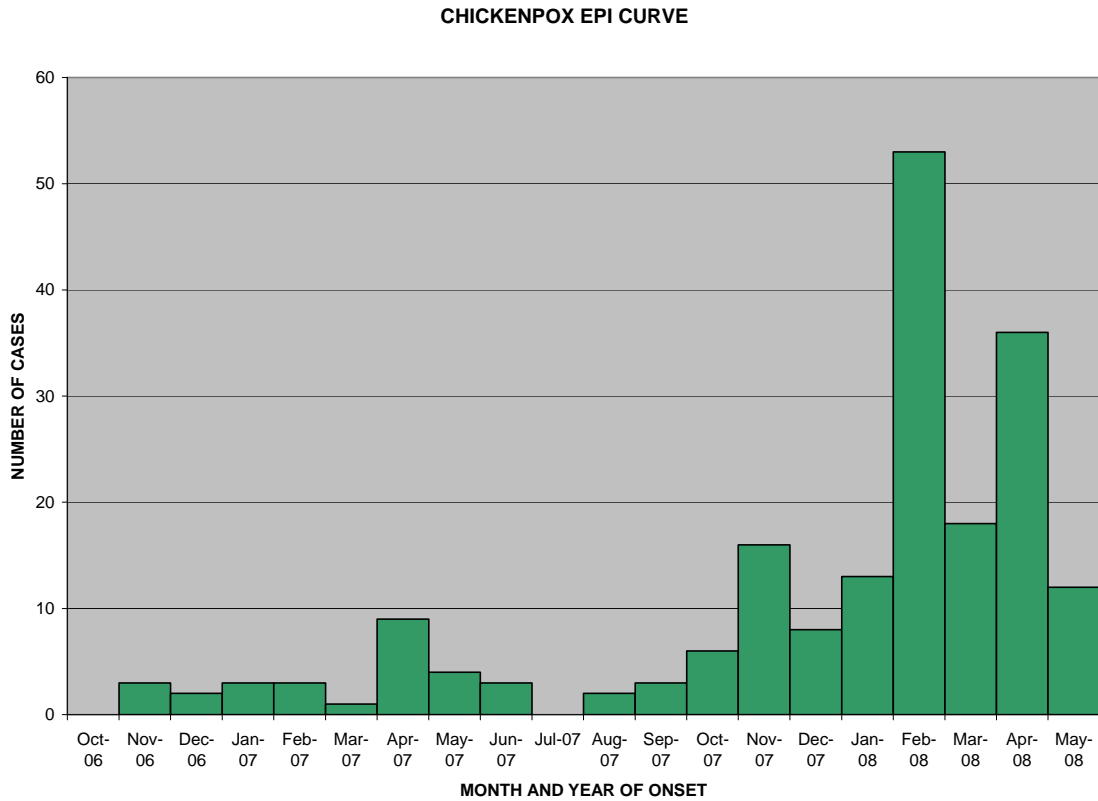
Figure 10: Acute Hepatitis B Rates 2002-2006

Figure 11: Pertussis Rates 2002-2006



Data Source: FDOH Merlin® Disease Incidence VPD Reports for years 2002-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

Figure 12: Chickenpox Epi Curve for years 2006-mid2008

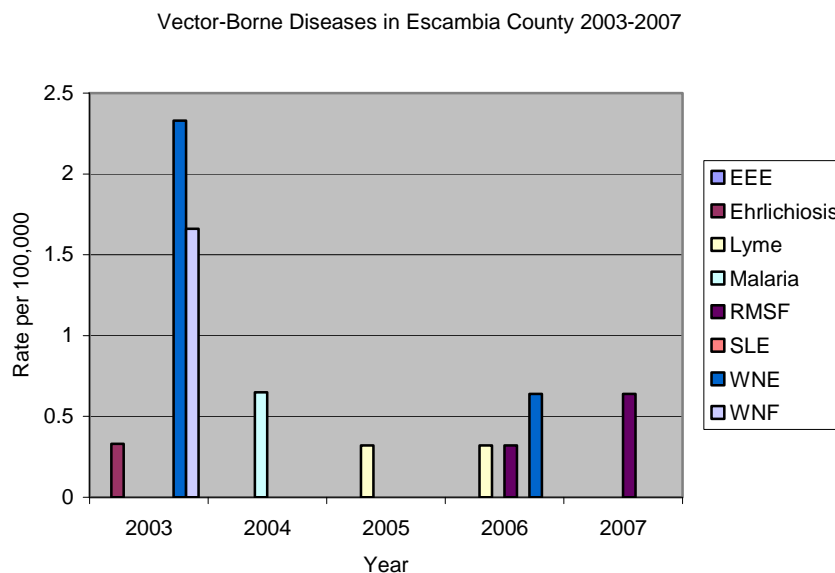


OUTBREAK	NUMBER OF CASES	PERCENTAGE
SPORADIC	78	40%
OUTBREAK	116	59%
UNKNOWN	1	0.5%

Vector-Borne Diseases

Vector-borne diseases that were reviewed for the 2007 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 2003-2007



Data Source: FDOH Merlin® Disease Incidence Vector-Borne Disease Selected Independently Reports for Years 2003-2007 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

The vector-borne disease of greatest public health concern in Escambia County in the past five years has been WNV (both encephalitis and fever). In 2003, Escambia County had the second highest rate per 100,000 population of WNV infection (4 per 100,000) in the State of Florida. West Nile virus infection first occurred in Florida in 2001, peaked in 2003 and has been on the decline ever since. Escambia County had no cases of WNV in 2007 and the 2 cases reported in 2006 were acquired outside of the county.

Surveillance and Outbreak Investigations

Surveillance activities performed by the Epidemiology Program include outbreak investigations, influenza surveillance, training and education. In 2007, 149 outbreaks were documented in 23 child cares, 48 schools, 7 nursing homes, 37 restaurants, 1 jail, 1 healthcare center, and 32 community wide outbreaks. Table 4 shows a listing of specific outbreaks investigated by the Epidemiology Program in 2007 and figures 14 and 15 show the distribution of the outbreaks by regulatory facility and type.

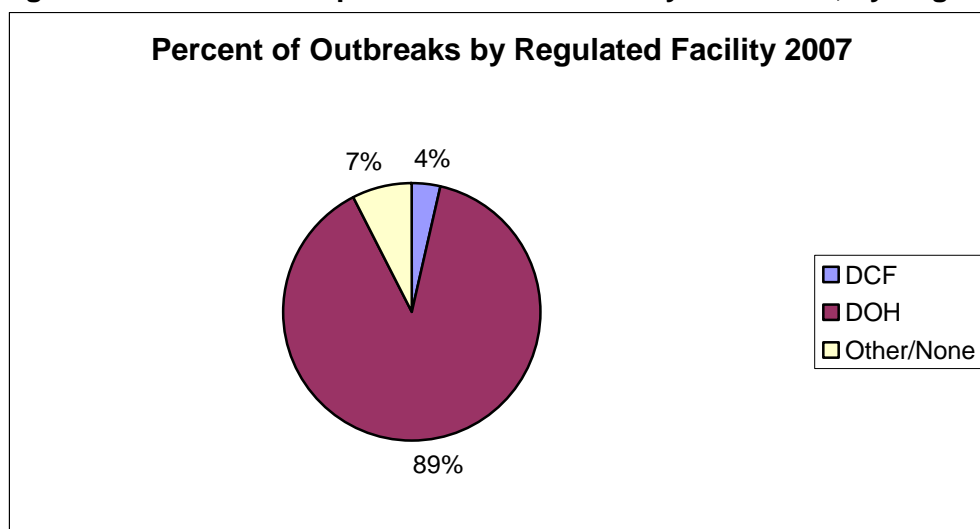
Table 4: Escambia County Outbreaks, by Setting, Illness and Cases

<i>Illness</i>	<i>Outbreak Setting</i>	<i>Number of Cases (suspect, probable, confirmed and contacts prophylaxed)</i>
Reportables		134
Giardia	Childcare	5
Salmonella	Prison	81
Shigella	Childcare (2)	27
	Elementary School (2)	10
Varicella	Private School	11

Non-Reportables		515
CMV	Hospital	5
HandFoot&Mouth	Childcare	6
MRSA/Staph	Community (3)	29
	Jail (1)	34
	Middle School (1)	2
Norovirus	Childcare (6)	76
	Elementary School (1)	4
	Nursing Home/ALF (7)	238
Conjunctivitis	Childcare	5
Pneumonia	Elementary School	10
Ringworm	Community	10
Rotavirus	Childcare (5)	60
RSV	Childcare (4)	15
Strep throat	Elementary (1)	12
	Private School (1)	9
Syndromes		408
Fever	Childcare (1)	28
	Private School (1)	6
GI Syndrome	Childcare (7)	50
	Elementary School (19)	119
	Middle School (1)	11
	Nursing Home/ALF (4)	117
Other	Miscellaneous	73
Rash	Childcare (1)	4

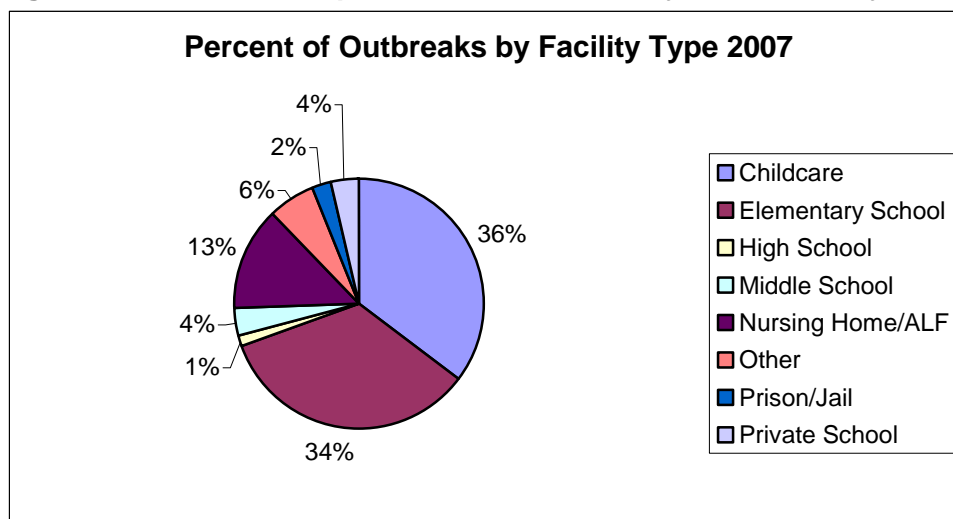
Data Source: ECHD ACCESS Database Reports for Year 2007

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



Data Source: ECHD ACCESS Database Reports for Year 2007

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



Data Source: ECHD ACCESS Database Reports for Year 2007

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 and the monitoring of the National Retail Data Monitor. Components of influenza surveillance include reporting of the percent of patients seen for influenza-like illness and laboratory results. A total of four sentinel physician sites were enrolled in the system for influenza season 2007-08 and physicians report cases on a weekly basis. A weekly influenza report has been created and is distributed on a weekly basis to 43 community providers as well as ECHD administration.

An EIS project was initiated utilizing the maternal and child health linked data set available through the state health office. The research question for this study was: What are the risk factors associated with low birth weight, very low birth weight, preterm births and other adverse birth outcomes? The objective of this study was to assess predictors of significant associations, in particular, the factors associated with LBW, VLBW, and Preterm birth outcomes, in a 2002-2005 birth cohort in Escambia County Florida.

The Epidemiology Program routinely monitors community surveillance data, for example, cancer rates, and is researching additional data sources from which to draw inferences about our community's health.

Epidemiology Program Activities

During program year 2007, 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 10 community provider communications (blast e-mail/fax), 26 community presentations, 2 health fairs, 17 nursing students, 1 resident physician orientations, 1 MPH or graduate student intern, and quarterly publications of the newsletter "Epi Express". Epidemiology staff regularly attended and hosted quarterly and bi-monthly meetings with hospital laboratorians and hospital ICP staff respectively. Strong community collaboration exists with the University of West Florida (UWF) College of Public Health, 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

- One poster presentation and one oral presentation at the 2007 Statewide Epidemiology Seminar
- Davis productivity award for work on the hurricane toolkit

Questions or comments about the Epidemiology Program may be addressed to staff at
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or visit our "Disease Control & Prevention" page at <http://www.escambiahealth.com>.