

# **Escambia County Health Department** **Epidemiology Program 2006 Year-End Summary**

## **Introduction**

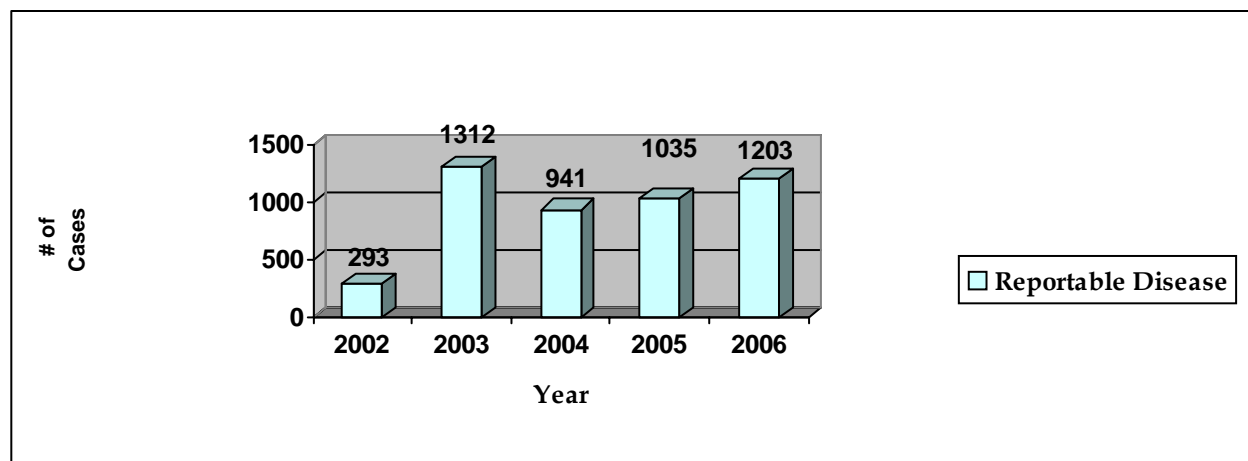
The mission of the Escambia County Health Department (ECHD) is to protect the public's health by partnering with the community to prevent disease, promote wellness and prepare for disasters. The ECHD Director is Dr. John J. Lanza, MD, PhD, MPH, FAAP, the Associate Director is Dr. Susan Turner, MD, MS, the Public Health Nursing Director is Trena Webb, BSN, MS, RN, NCSN, the Executive Community Health Nursing Director is Lamar Dunn RN, BSN, Pat Williams, BSN, MS, is supervisor of epidemiology. Other staff include: Samantha Rivers, MS- lead epidemiologist, Epidemiology Biological Scientist III include Lisa Lavoie, BS and Stephanie Thouvenel-Romans, PhD, Epidemiology nurses include Vivian Logsdon, BSN and Karin Marshall, 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 surveillance units.

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 2002-2006 time period (these numbers do not include HIV/AIDS, TB or STD's). In the last five years, reported diseases have increased over 400%, attributable primarily to chronic hepatitis reporting.

**Figure 1: Case Investigations, Escambia County 2002-2006**



Data Source: FDOH Merlin® Frequency Report, Weeks 1-53 for years 2002-2006

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 2006, 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 2006**

<b>Disease</b>	<b>Number of Cases</b>
Chlamydia	1351
Gonorrhea	944
Hepatitis C, Chronic	627
Salmonellosis	109
Hepatitis B, Chronic	79
Animal Bite, PEP Recommended	68
HIV	67
AIDS	63
Strep. Pneu., Invasive Disease (drug resistant and susceptible)	41
Hepatitis NANB	36

Data Source: FDOH Merlin® Frequency Report, Weeks 1-53 for years 2006, STDMIS and Bureau of HIV/AIDS

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

### Enteric Illnesses

Enteric illnesses—campylobacteriosis (10), giardiasis (12), hepatitis A (0), salmonellosis (109) and shigellosis (7)—accounted for only 11% of all diseases reported by Epidemiology in 2006. Enteric disease rates in Escambia County have been dropping over the last 3 years. Enteric disease counts and rates for Escambia County, comparison counties, and the state of Florida are in Table 2 below.

**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†
2006	136	(43.73)	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)
3 Yr Avg	271	(88.32)	115	(39.28)	165	(43.01)	148	(41.54)	8922	(51.09)

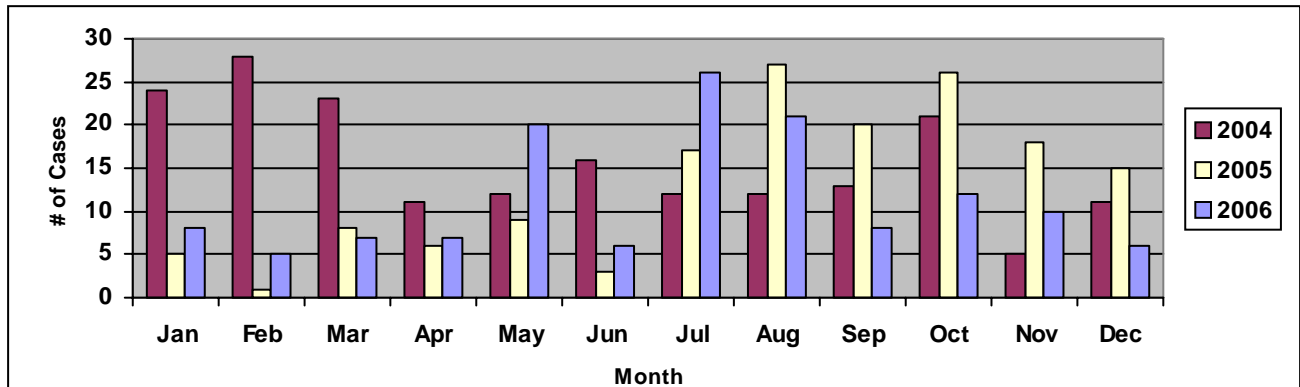
Data Source: FDOH Merlin® Disease Incidence Report, Weeks 1-53 for years 2004-2006

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

Figure 2 shows the monthly variation of enteric illnesses throughout the years 2004-2006 in Escambia County.

**Figure 2: Confirmed Enteric Illnesses Reported January 2004-December 2006 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)

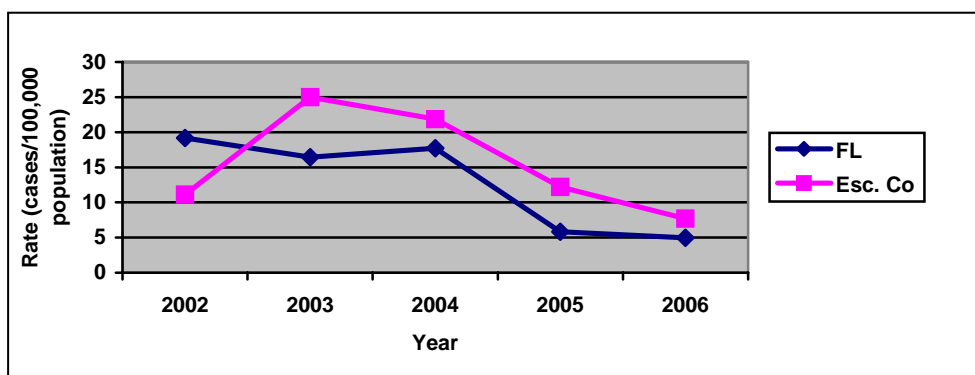
Table 3 and Figure 3 indicate that Escambia County has a higher reported incidence rate of hepatitis B in pregnant women than the state as a whole; however, the incidence rate has been decreasing since 2003. Prevention efforts for hepatitis B include patient education and recommendation for testing and vaccination of sexual and needle-sharing partners.

**Table 3: Incidence Rates of Reported Hepatitis B in Pregnant Women Cases, per 100,000 Population, Florida and Escambia County 2002-2006**

Year	Escambia County	Florida
2002	11.10	19.17
2003	24.99	16.45
2004	21.85	17.70
2005	12.18	5.82
2006	7.69	4.94

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.

**Figure 3: Hepatitis B in Pregnant Women Rates, per 100,000 Population, Florida and Escambia County, 2002-2006**



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.

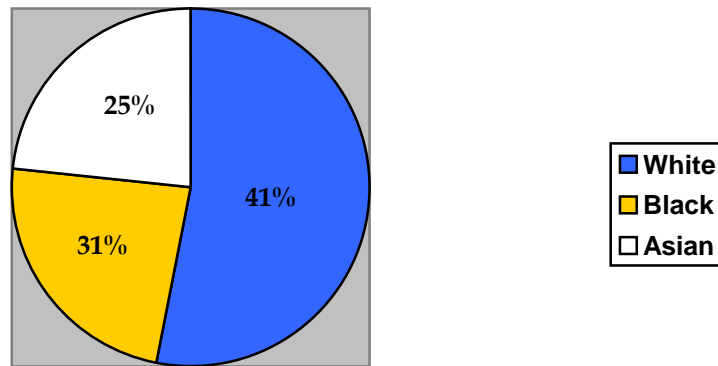
### Hepatitis B and C, Chronic

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 we provide information on gender, race, ethnicity, and age distribution for the years 2005-2006 combined.

For chronic hepatitis cases in Escambia County, males accounted for 58% and females accounted for 42% of 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 23%, and Asian/Pacific Islanders for 23% of the cases. In 29% of 2005 and 26% in 2006 chronic HBV cases, the individuals' race was unknown.

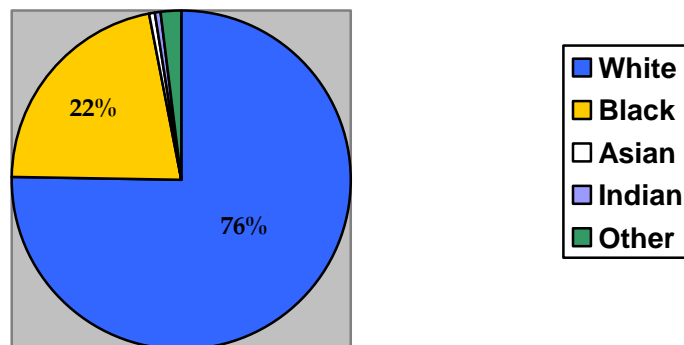
**Figure 4: Percent of Chronic HBV Cases, By Race, Escambia County 2005-2006**



Data Source: FDOH Merlin® Disease Hepatitis B, Chronic Risk Factor Report for years 2005-2006 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 22%, Asian/Pacific Islanders for < 1%; American Indian/Alaskan Native for < 1% and other for 2% of the cases. In 25% of chronic HCV cases race was unknown.

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



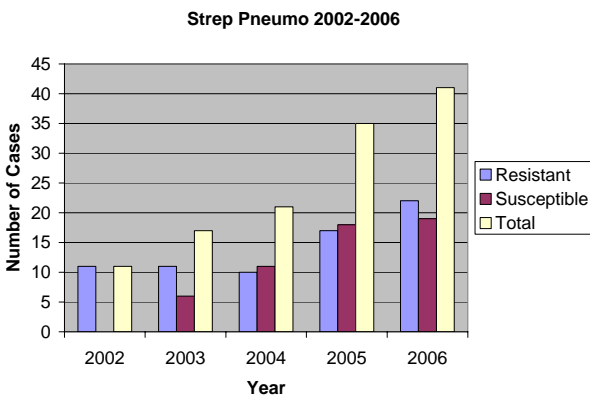
Data Source: FDOH Merlin® Disease Hepatitis C, Chronic Risk Factor Report for years 2005-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

The ethnic distribution for chronic HBV and HCV cases is as follows: Non Hispanic comprised 32.81% of the cases of chronic HBV and 34.87% of chronic HCV. Hispanics accounted for 1.56% of the cases of chronic HBV and 2% of chronic HCV. In 65.62% of the cases of chronic HBV and 63.13% of the cases of chronic HCV ethnicity was unknown.

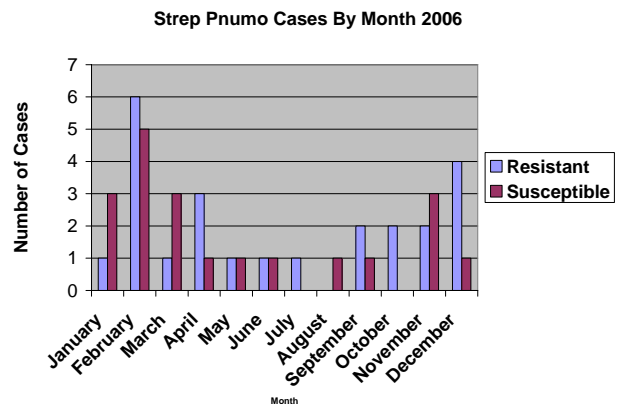
## Bacterial Invasive Diseases

*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. In Escambia County, “*Strep pneumoniae*, invasive disease, drug-resistant” cases are at the highest level since the Merlin database began in 2000. 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. The upward trend in cases continued in 2006, but at a slower rate than the previous year. 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.

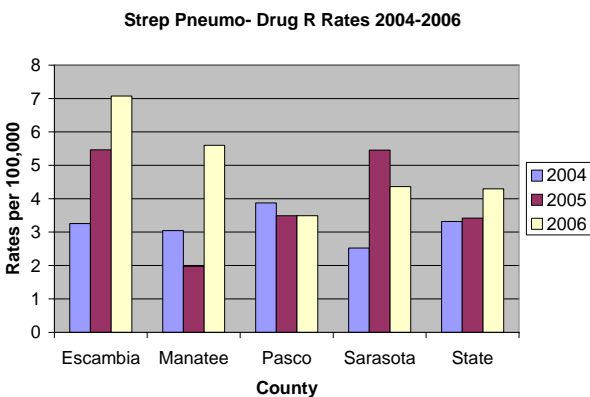
**Figure 6: Number of *Streptococcus pneumoniae* Cases, 2002-2006**



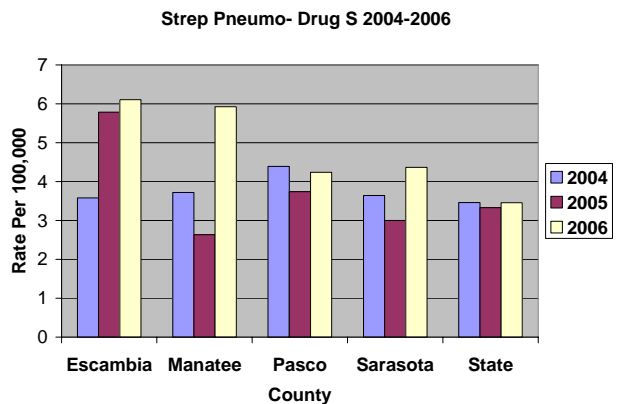
**Figure 7: Number of *Streptococcus pneumoniae* cases by month in 2006**



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



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



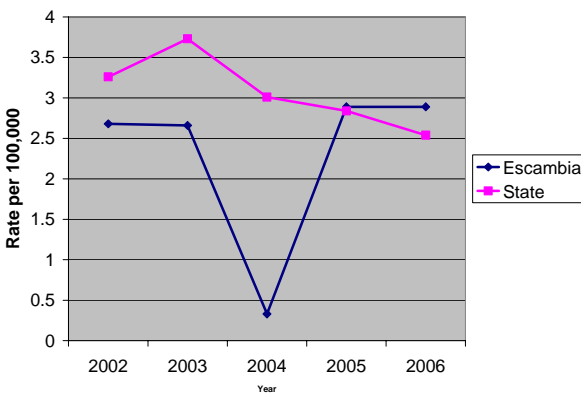
Data Source: FDOH Merlin® Disease *Streptococcus pneumoniae*, Incidence and Risk Factor Reports for years 2002-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

## Vaccine-Preventable Diseases

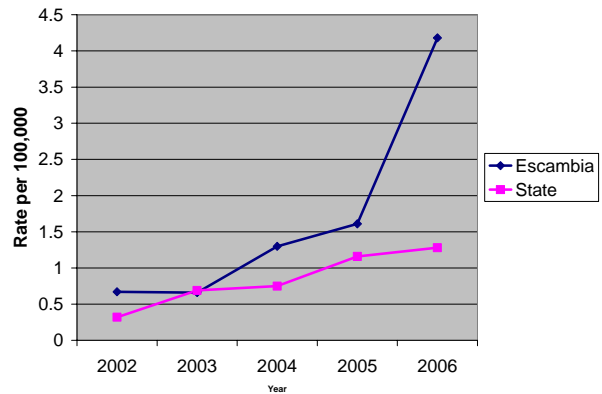
Vaccine-preventable diseases (VPD) include acute hepatitis B, measles, mumps, pertussis, rubella, tetanus and as of November 20, 2006, varicella. The following VPD's have been reported in Escambia County during the past five years: acute hepatitis B, suspect mumps, pertussis and varicella. The rate of acute hepatitis B have 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 2006 of 2.89. 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.

Since the change in the reportable disease list to include varicella, Escambia County has reported 6 cases for a rate of 1.93 compared to the state rate of 0.34.

**Figure 10: Acute Hepatitis B Rates 2002-2006**



**Figure 11: Pertussis Rates 2002-2006**

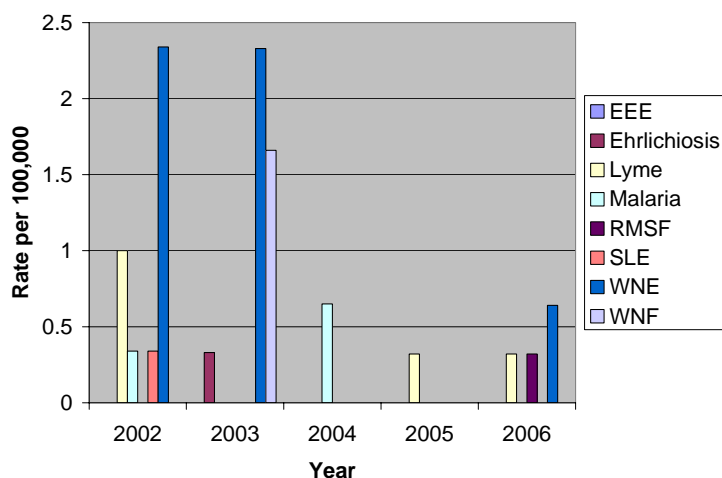


Data Source: FDOH Merlin® Disease Incidence VPD Reports for years 2002-2006 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

## Vector-Borne Diseases

Vector-borne diseases that were reviewed are 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 12: Vector-Borne Diseases in Escambia County 2002-2006**



Data Source: FDOH Merlin® Disease Incidence Vector-Borne Disease Selected Independently Reports for Years 2002-2006 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 2002, Escambia County had the highest rate per 100,000 population of WNV infection (2.3 per 100,000) and in 2003 had the second highest rate (4 per 100,000) of WNV infection 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 2 cases of WNE in 2006, but were determined to be imported cases and infected outside of Escambia County and Florida.

### **Surveillance and Outbreak Investigations**

Surveillance activities performed by the Epidemiology Program include outbreak investigations, influenza surveillance, training and education. In 2006, 149 outbreaks were documented in 23 day 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 Department in 2006.

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

<b><i>Outbreak Setting</i></b>	<b><i>Illness</i></b>	<b><i>Number of Cases (suspect, probable, confirmed and contact prophylaxed)</i></b>
5 Day Cares	GI- Unknown	61
5 Day Cares	Salmonella	23
1 Day Care	Conjunctivitis	2
2 Day Cares	Norovirus	24
1 Day Care	Ringworm	3
2 Day Cares	Varicella	6
2 Day Cares	Strep Throat	10
1 Day Care	Fifth Disease	2
3 Day Cares	RSV	31

1 Day Care	Scabies	4
29 Schools	Influenza	645
2 Schools	Rash-unknown	5
1 School	Ringworm	2
4 Schools	MRSA	22
3 Schools	Strep Throat	23
3 Schools	Varicella	8
1 School	Sore throat w/blisters	4
1 School	Shingles	2
1 School	Pneumonia	9
1 School	Conjunctivitis	3
2 Schools	Vomiting/diarrhea	445
5 Nursing Homes	Scabies	94
1 Nursing Home	Influenza	31
1 Nursing Home	Norovirus G2	33
2 Restaurants	Norovirus G2	5
1 Restaurant	Salmonella	2
1 Restaurant	Ciguatera	6
33 Restaurant	GI- Unknown	123
1 Jail	Norovirus	21
1 Healthcare	<i>C. difficile</i>	4
1 Community	Morgellons	2
1 Community	Neurologic problems	6
2 Community	GI Unknowns	5
1 Community	Building/mold/unknown	7
26 Community	MRSA Deaths	26
1 Community	Mercury Study	4
1 Community	Landfill Study	204
1 Community	Rotavirus	157

Data Source: ECHD ACCESS Database Reports for Year 2006

Through attendance at seminars, provision of presentations and field visits to facilities, we have broadened our ability to detect outbreaks. This year's outbreaks were influenced by personal contact between individuals, fomites, handwashing 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 six sentinel physician sites were enrolled in the system for influenza season 2006-07 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.

A health impact study, an EIS project, was initiated at the Saufley Field Landfill in Escambia County. The ECHD recruited participants whose homes surround the landfill facility and who had expressed odor and/or health concerns. Participant recruitment for the investigation

occurred through the media, community meetings, phone calls and door to door requests. Four residents allowed air sampling monitors to be stationed at their homes. Monitors measured real-time, continuous, ambient air hydrogen sulfide concentrations and the data was collected on a daily basis. All data has been gathered and data cleaning/analysis have begun.

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 2006, 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, SPSS statistical training and regional epidemiology training seminars. We supported Health Promotion and Education in the following areas: Community Influenza Education, MRSA education, Step Up Florida, National Public Health Week, and Public Health Awareness Day. Epidemiology staff facilitated epidemiology training for new ECHD staff. Additionally, the ECHD Epidemiology Program hosted an ATSDR team to investigate the landfill.

In addition to disease reporting, surveillance, and ECHD programmatic coordination, we have conducted extensive activities in our community. These activities include 4 community provider communications (blast e-mail/fax), 16 community presentations, 2 health fairs, 12 nursing students, 3 resident physician orientations, 1 graduate MPH student, 1 UWF undergraduate intern and quarterly publications of the newsletter "Epi Express". Epidemiology staff regularly attended and host 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**

- Three poster presentations at the 2006 Statewide Epidemiology Seminar and one award for best communicable disease poster
- Successful application and match for the 2006 Class of the FDOH Florida Epidemic Intelligence Service
- Presentation at the national CSTE meeting in Anaheim, CA

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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: 850-595-6267  
E-mail: [Samantha.Rivers@doh.state.fl.us](mailto:Samantha.Rivers@doh.state.fl.us)  
or visit our "Disease Control & Prevention" page at <http://www.escambiahealth.com>.