

Santa Rosa County Health Department Epidemiology Program 2009 Year-End Summary

Introduction

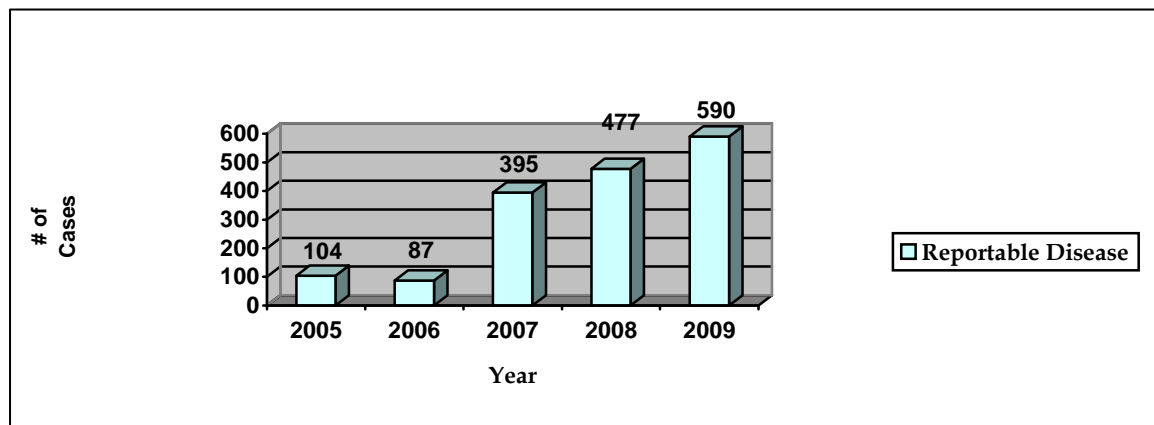
The mission of the Santa Rosa County Health Department (SRCHD) is to protect the public's health by partnering with the community to prevent disease, promote wellness and prepare for disasters. The SRCHD Administrator is Sandra Park, ARNP, Medical Director is Dr. Thomas Riney, Health Services Director is Barb McMillion, Epidemiologist Samantha Rivers, MS, MPH, Epidemiology Nurse Sam Williamson, RN, BSN, TB Nurse Jan Whitney, BSN, EIS Officer Rob Cosgrove, MPH, H1N1 Planner Katie Carpenter, MPA, H1N1 Clerk/Typist Corina Potts, and Administrative Assistant Susan Howell.

Case Investigations

The primary responsibility of the Epidemiology Program at the Santa Rosa County Health Department is to monitor communicable diseases within our community to protect the public's health. Surveillance is a key public health function and includes the collection of data, data analysis, and the provision of opportunities for public health action to prevent and control the spread of disease.

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 SRCHD Epidemiology Program that were reported to the BOE for the 2005-2009 time period (these numbers do not include HIV/AIDS, TB or STD's).

Figure 1: Case Investigations, Santa Rosa County 2005-2009



Data Source: FDOH Merlin Incidence Report Weeks 1-53 for years 2005-2009

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 Santa Rosa County for 2009, 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 the disease, modes of transmission and prevention measures in order to reduce the spread of the illnesses.

Table 1: Ten Most Frequently Reported Illnesses in Santa Rosa County 2009

Disease	Number of Cases
Chlamydia	275
Hepatitis C Chronic	270
Pertussis	88
Gonorrhea	61
Salmonella	54
Hepatitis B Chronic	39
Influenza A: Novel or Pandemic	34
Animal Bite PEP Recommended	22
Varicella	13
Campylobacter	13

Data Source: FDOH Merlin® Frequency Report, Weeks 1-53 for years 2009, STDPRISM and Bureau of HIV/AIDS
Data in Merlin® and STDPRISM reports are provisional, based on cases (confirmed, probable and suspect) entered by county health departments and are not considered official data.

Enteric Illnesses

Enteric illnesses—campylobacteriosis (13), cryptosporidiosis (13), E. coli O157H7 (1), giardiasis (8), hepatitis A (0), salmonellosis (55) and shigellosis (4)—accounted for 16% of all diseases reported by Epidemiology in 2009. Table 2 shows the count and incidence rates for Santa Rosa County as well as three (3) comparison counties and the state.

Table 2: Count and Incidence Rate Data for Enteric Infections

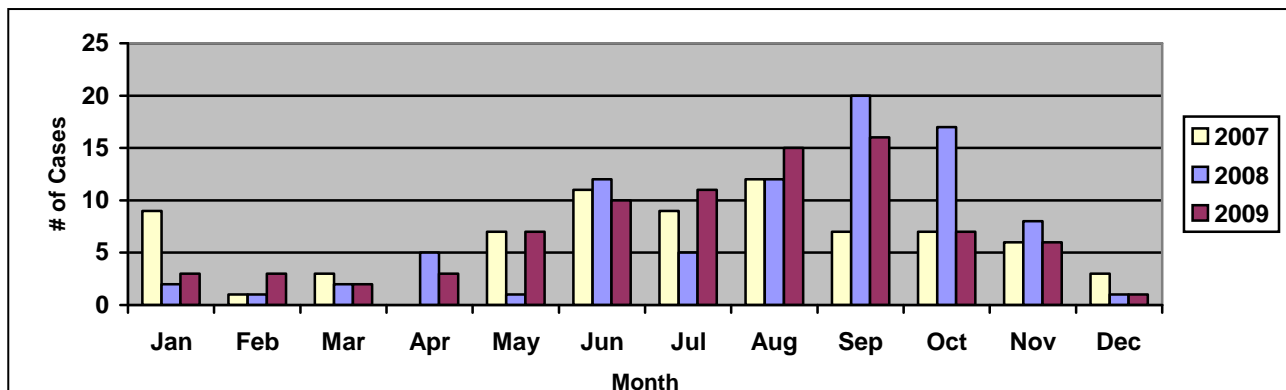
	Santa Rosa		Indian River		Monroe		St. Johns		Statewide	
	Cases	Rates†	Cases	Rates†	Cases	Rates†	Cases	Rates†	Cases	Rates†
2009	94	(64.51)	105	(72.77)	35	(44.66)	138	(75.35)	11,183	(58.50)
2008	78	(54.55)	90	(63.18)	37	(47.34)	137	(76.17)	9541	(50.49)
3 Yr Avg	76	(53.70)	85	(61.34)	31	(39.05)	130	(76.95)	10,012	(53.56)

Data Source: FDOH Merlin® Disease Incidence Report, Weeks 1-53 for years 2007-2009
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 2007-2009 in Santa Rosa County. The majority of cases have historically occurred during the summer to early fall months.

Figure 2: Reported Enteric Illnesses January 2007- December 2009 in Santa Rosa 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 2007-2009 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 Santa Rosa County has a much lower reported incidence rate of hepatitis B in pregnant women than the state as a whole; however, the state incidence rate doubled in 2006 in comparison with 2005 and has remained at a higher rate. Santa Rosa rates have increased in large part due to an influx of women from high-risk countries that reside in the south end of the county. Prevention efforts for hepatitis B include patient education and recommendation for testing and vaccination of sexual and needle-sharing partners.

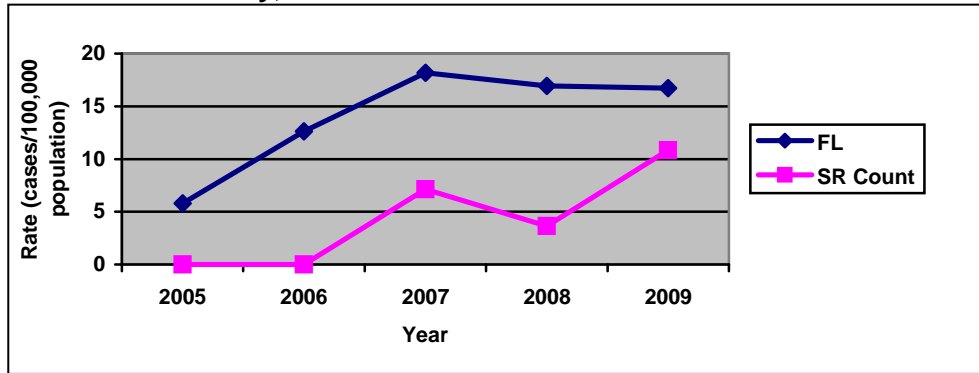
Table 3: Incidence Rates of Reported Hepatitis B in Pregnant Women Cases, per 100,000 Population, Florida and Santa Rosa County 2005-2009

Year	Santa Rosa County Rate	Florida
2005	0.00	5.79
2006	0.00	12.63
2007	6.71	16.93
2008	3.63	16.78
2009	10.84	16.72

Data Source: FDOH Merlin® Disease Hepatitis B-pregnant women Incidence Report for years 2005-2009 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 3: Hepatitis B in Pregnant Women Rates, per 100,000 Population, Florida and Santa Rosa County, 2005-2009

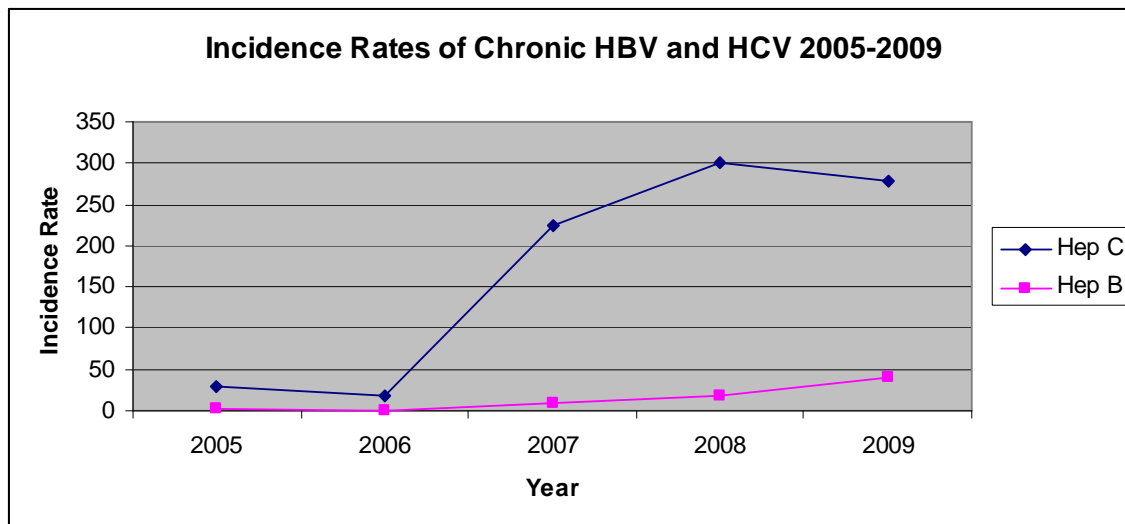


Data Source: FDOH Merlin® Disease Hepatitis B-pregnant women Incidence Report for years 2005-2009 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

Hepatitis B and C, Chronic

Chronic hepatitis B and C are on the rise in Santa Rosa County as can be seen in figure 4. Given the considerable public health problems and disease burden surrounding viral hepatitis, innovative strategies and environments for service provisions need to be examined for a population that does not always interface well with traditional models of health care, including counseling, appropriate testing, and seamless care pathways to specialist assessment and treatments. One way that Santa Rosa County is dealing with this issue is by providing counseling, testing and hepatitis A and B vaccine for high risk patients. For eligible patients, the county's We Care program, offers referrals to specialist for treatment and follow-up care.

Figure 4: Incidence Rate of Chronic HCV and HBV Cases in Santa Rosa County, 2005-2009



Data Source: FDOH Merlin® Disease Hepatitis Incidence Report for years 2005-2009 based on all cases (confirmed, probable and suspect) entered by county health departments and are not considered official data.

*Note: The sharp rise in Hepatitis C cases in 2007 is most likely due to an increased capacity of the epidemiology program and the subsequent ability of the county health department to report chronic cases.

Sexually Transmitted Infections

STDs are hidden epidemics of enormous health and economic consequence. They are hidden because many are reluctant to address sexual health issues in an open way and because of the biologic and social characteristics of these diseases. STDs are public health problems that lack easy solutions because they are rooted in human behavior and fundamental societal problems and there are many obstacles to effective prevention efforts. Despite the barriers, there are existing individual- and community-based interventions that are effective and can be implemented immediately. That is why a multifaceted approach is necessary to both the individual and community levels.

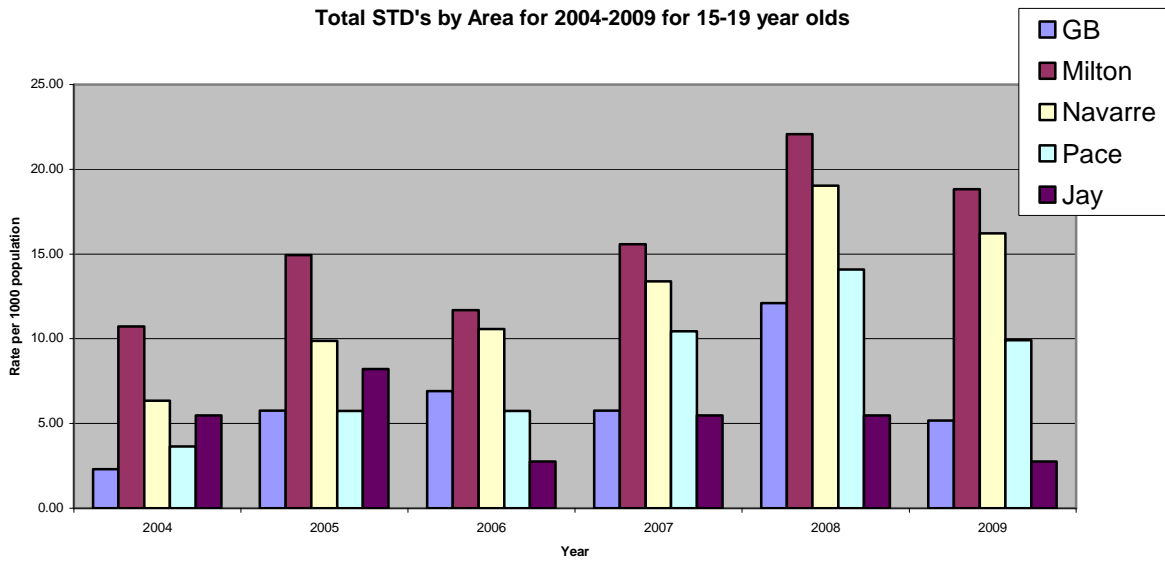
To successfully prevent STDs, many stakeholders need to redefine their mission, refocus their efforts, modify how they deliver services, and accept new responsibilities. In this process, strong leadership, innovative thinking, partnerships, and adequate resources will be required. The additional investment required to effectively prevent STDs may be considerable, but it is negligible when compared with the likely return on the investment. The process of preventing STDs must be a collaborative one. No one agency, organization, or sector can effectively do it alone; all members of the community must do their part.

The burden of STDs in Santa Rosa County lies in the younger age groups (those 15-24 years old). While STDs are prevalent in the older age groups as well, the large increase in reported cases in the 15-19 year olds over the last six years is most concerning. The SRCHD and school district have partnered to initiate peer education in the school system in an attempt to educate and slow the rise of STDs in this population.

Data for STDs are gathered and reported by regional disease intervention specialist (DIS). Our regional DIS office is located in Escambia County. In 2009, 97 cases of Chlamydia and 23 cases of Gonorrhea were reported in Santa Rosa County for ages 15-19. The 120 cases of STDs reported in 2009 correspond to 1,423.5 cases/100,000; 97 of the cases reported in 2009 were Chlamydia (80.8% of the total) which corresponds to 1,150.7 cases/100,000 residents and 23 cases of Gonorrhea were reported which corresponds to 272.83 cases/100,000. Base number for incidence rates are calculated based on the 2000 census population of 15-19 year olds in Santa Rosa County of 8,430.

Figure five and table four show the STD Data for 2004-2009 for ages 15-19. Total reported cases increased by 193.5% from 2004 to 2009 and from 2008-2009 total cases of STDs decreased by 16.1%.

Figure 5: Number of STD cases in Santa Rosa County for 2004-2009 for ages 15-19.



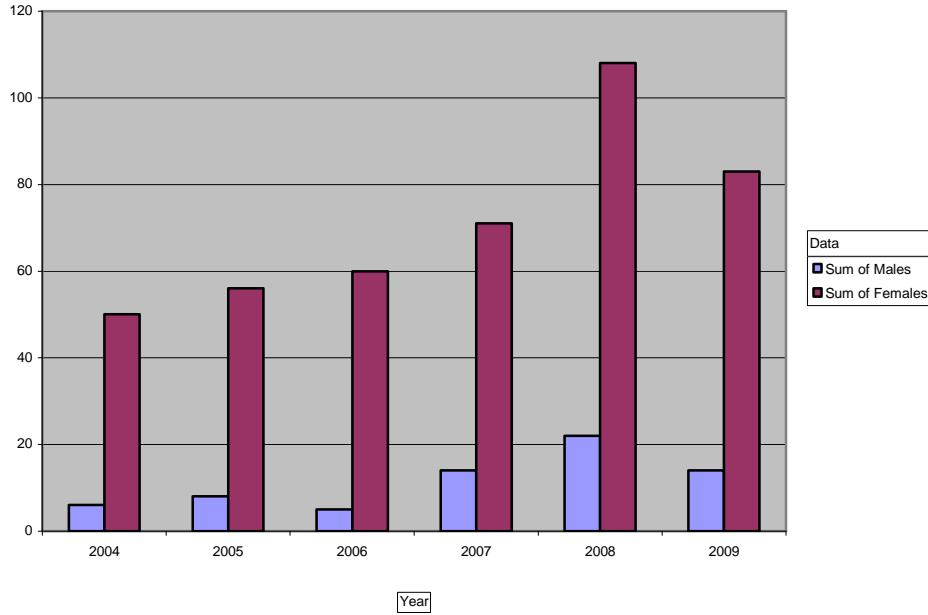
Data Source: FDOH PRISM® Disease Report for years 2004-2009 based on all cases entered by county health departments and are not considered official data.

Table 4: Number of STD cases in Santa Rosa County for 2005-2009 for ages 15-19.

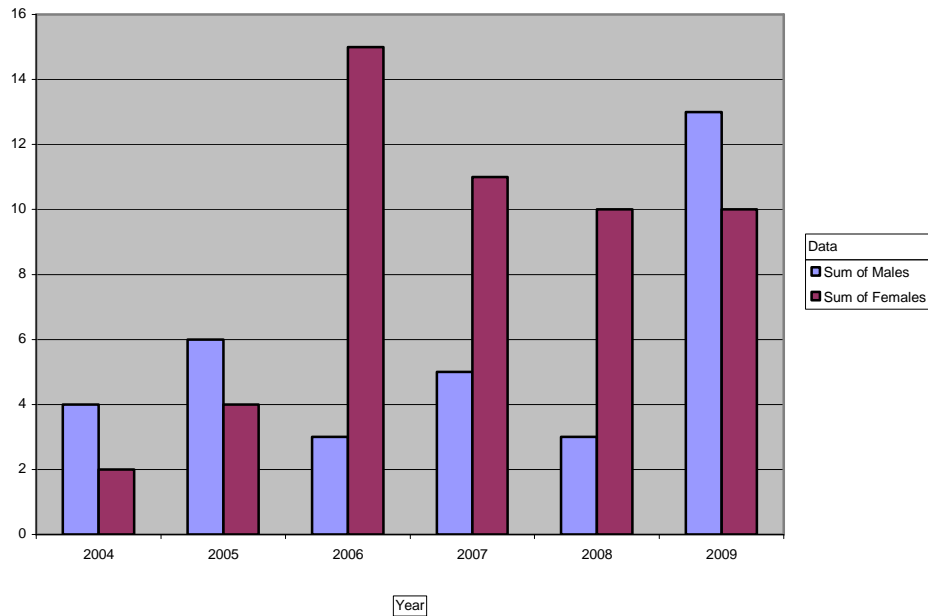
Year	Total	Chlamydia	Gonorrhea	Syphilis
2009	120	97	23	0
2008	143	130	13	0
2007	101	85	16	0
2006	83	65	18	0
2005	74	64	10	0
2004	62	56	6	0

Figure 6: Number of reported Chlamydia cases (top) and Gonorrhea cases (bottom) in Santa Rosa County for 2004-2008 for ages 15-19 by gender.

Number of reported Gonorrhea cases for 2004-2009 ages 15-19 by gender



Number of reported Gonorrhea cases for 2004-2009 ages 15-19 by gender



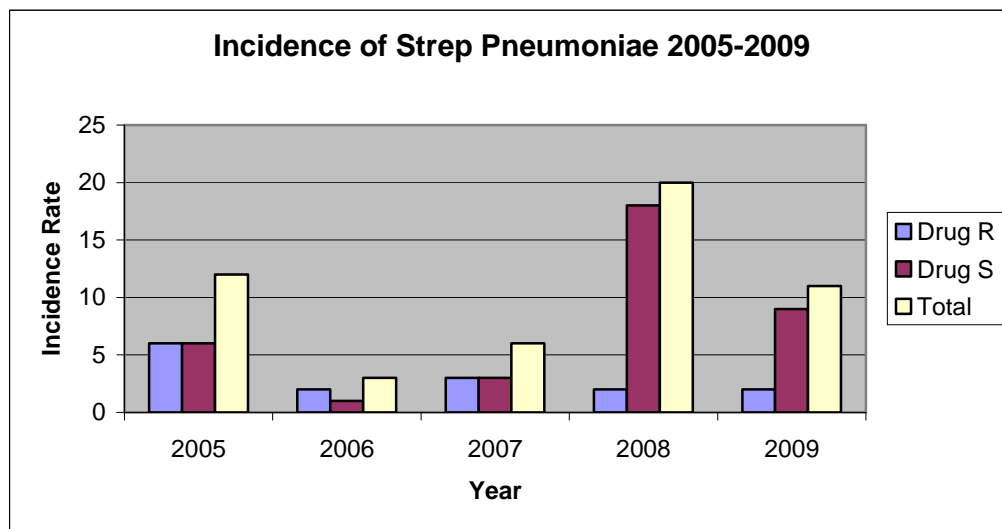
Data Source: FDOH PRISM® Disease Report for years 2004-2009 based on all cases entered by county health departments and are not considered official data.

Many more females than males are diagnosed with STDs especially Chlamydia. This may be due to routine annual exams that females receive more often than males. There was a large rise in males diagnosed with gonorrhea in 2009, which may be due to increased awareness levels of STDs in the community and/or the use of urine testing over the traditional swab testing. Up to 70% of sexually active women with Chlamydia infections are asymptomatic.

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. Tracking of drug-susceptible *Strep pneumoniae* invasive disease cases did not begin until July 2003. The number of drug susceptible cases greatly increased in 2008 doubling the number of total cases from 2005 to 2009 in Santa Rosa County. The latest 2009 data shows a reduction in both drug-susceptible and total cases. 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 7: Number of Streptococcus Pneumoniae Cases, 2005-2009



Data Source: FDOH Merlin® Disease *Streptococcus pneumoniae*, Incidence and Risk Factor Reports for years 2005-2009 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

2009 H1N1 Novel Influenza A Virus

In April 2009 H1N1 Novel Influenza A Virus was first detected in the United States. H1N1 reached pandemic status, as declared by the World Health Organization (WHO), by June 2009. Individual case tracking became overwhelming and the Center for Disease Control (CDC) declared that only cases that were severe enough for hospitalization, infection in pregnant women, and deaths were reportable. Santa Rosa County experienced 2 H1N1 related deaths, 1 pregnant woman hospitalized with confirmed H1N1, and 4 cases with life-threatening illness requiring hospitalization.

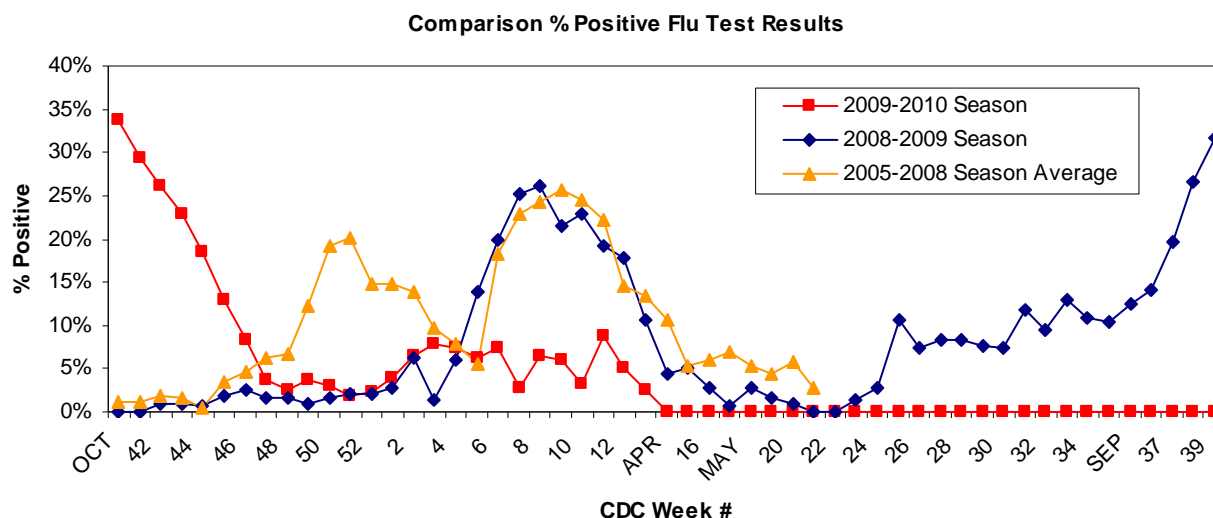
Vaccine for H1N1 first became available for distribution through the SRCHD in late October 2009. Vaccine was distributed according to the CDC's five priority groups first and then to the general public. Efforts to distribute the vaccine included:

- Mass vaccination clinics on site for priority groups
- School vaccination clinics
- Nurse outreach visits to small sites with members of priority groups
- 3 POD Drive-through sites located in Pace, Navarre, and Jay
- Extended clinic hours

The H1N1 Novel Influenza A strain will be included in the 2010-2011 seasonal flu vaccine.

The peak of the H1N1 pandemic in Santa Rosa County occurred in late September – early October 2009 with a percent positive rates as high as 35% (refer to Figure 8). Percent positive test results of rapid antigen and/or PCR lab tests were collected from five hospital laboratories on a weekly basis through EPI surveillance. Percent positive rates significantly dropped throughout the month of October 2009 with a small re-emergence in March 2010. The antiviral medication Tamiflu was provided by the Florida Department of Health to create a stockpile within the SRCHD EPI department. Distribution of antivirals was reported to the Florida Department of Health every Thursday.

Figure 8 – Comparison % Positive Flu Test Results for 2005-2010



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 Santa Rosa County during the past five years: acute hepatitis B, Pertussis (Figure 9), mumps (1 case), and Varicella (Figure 10). Varicella (chickenpox) did not become a reportable disease until November 2006. In the year 2008, Santa Rosa County reported a case rate of 8.39 (12 cases) compared to the state rate of 9.19 and in 2009 a case rate of 9.61 (14

cases) compared to the state rate of 5.85. In the year 2009 there was a substantial outbreak of Pertussis.

Figure 9: Pertussis Rates 2005-2009

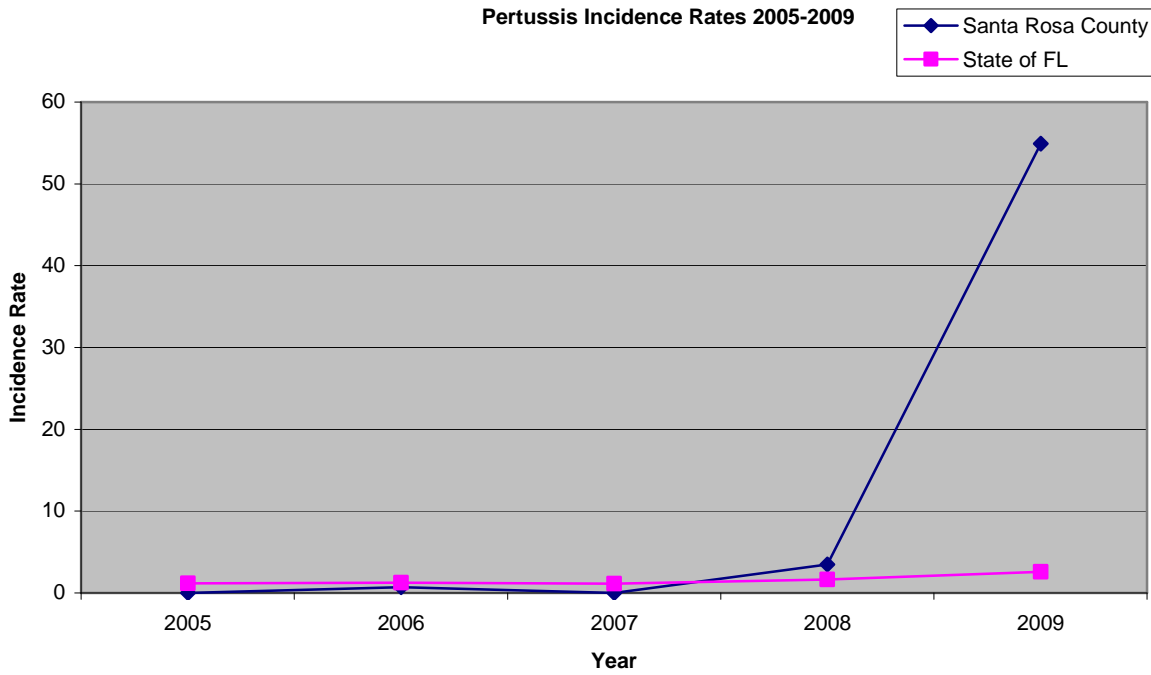
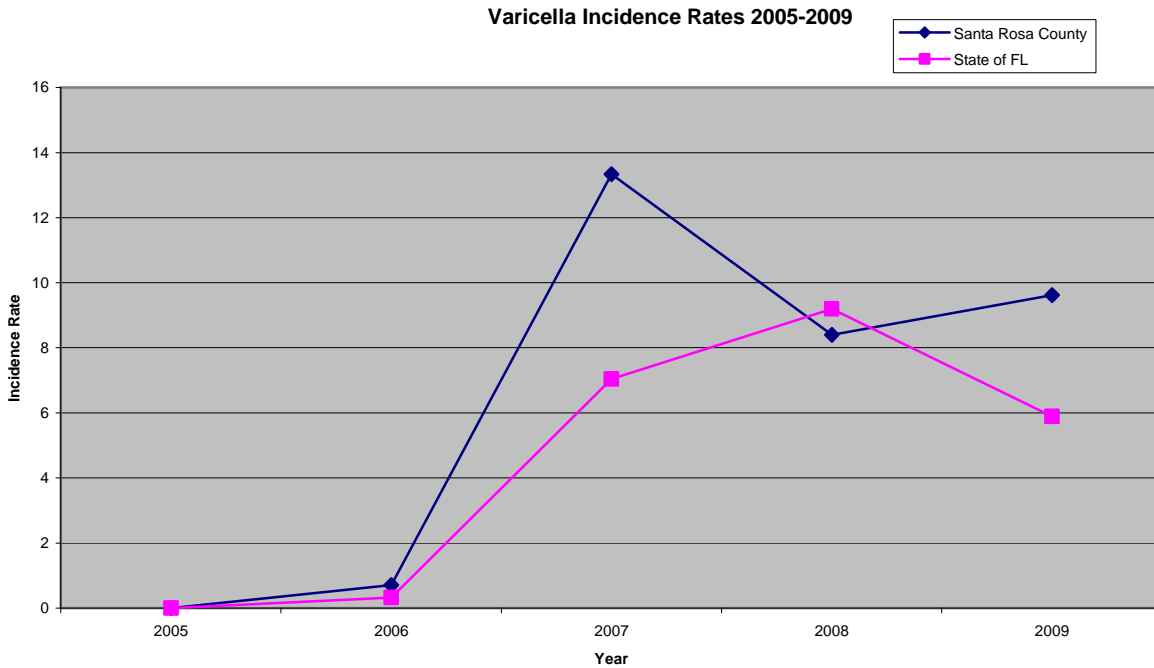


Figure 10: Varicella Rates 2005- 2009

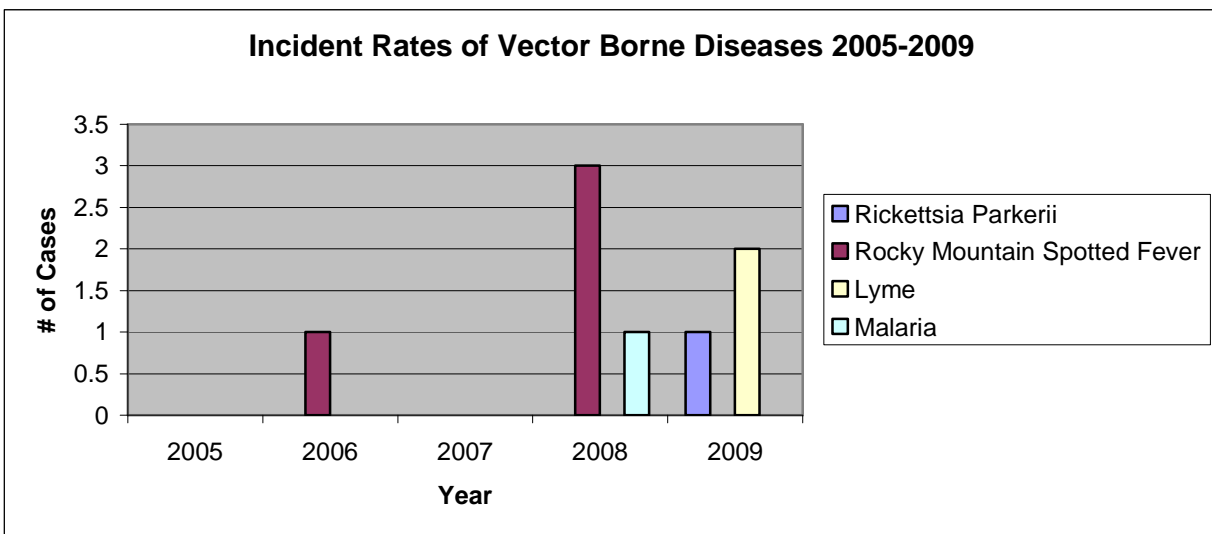


Data Source: FDOH Merlin® Disease Incidence VPD Reports for years 2005-2009 based on all cases (confirmed and probable) entered by county health departments and are not considered official data.

Vector-Borne Diseases

Vector-borne diseases that were reviewed for this report are Eastern Equine Encephalitis (EEE), Rickettsia Parkerii, Saint Louis Encephalitis (SLE), West Nile Virus (both neuro-invasive and non neuro-invasive), Ehrlichiosis, Lyme disease, Malaria and Rocky Mountain Spotted Fever (RMSF).

Figure 11: Vector-Borne Diseases in Santa Rosa 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 and are not considered official data.

The only vector-borne diseases that have been reported in the last five years are RMSF, Lyme disease, and Malaria, which are both often acquired outside the county or country. The vector-borne diseases have been less of a public health concern in Santa Rosa County since the decrease of West Nile cases. In 2003, Santa Rosa County had a rate of 2.34 per 100,000 population of WNV neuro-invasive infection and a rate of 5.47 per 100,000 population of non neuro-invasive infection, but has not seen any cases since 2003. West Nile virus infection first occurred in Florida in 2001, peaked in 2003 and has been on the decline ever since.

Non-Reportable diseases in Santa Rosa County 2009

Surveillance activities performed by the Epidemiology program include outbreak investigations, reportable diseases and non-reportable diseases. Table 5 shows the non-reportable diseases worked by the Epidemiology department in 2009 for a total of 329 cases.

Table 5: Santa Rosa County non-reportable diseases for 2009

<i>Non-Reportable Disease</i>	<i>Number of Cases</i>
Arsenic	2
Hep A, Hep B, Hep C (does not meet case definition)	93
MMR Ab	2
Animal bite w/o PEP	27
Lyme/RMSF/WN (does not meet case definition)	8
Food Poisoning	9
Staphylococcus/MRSA	5
Lead (non reportable)	2
Influenza (not including novel strains)	70
Pertussis (negative/does not meet case definition)	29
Pneumonia	2
Meningitis (viral)	4
Tuberculosis (negative/does not meet case definition)	13
Other (non-reportables with only 1 report each)	28

Epidemiology Program Activities

During program year 2009, Epidemiology staff actively participated in monthly staff trainings, annual PHP training and as active members of the North West Florida Infection Control Practitioners (NWFICP). During 2009, five Epi Com notifications were sent regarding Pertussis (2), H1N1 death, crypto outbreak, and an ALF cluster of Pertussis-like illness. Blast fax and email notifications were sent to providers regarding Pertussis and H1N1 in the community. We participated in health promotion and education in the following areas: Sentinel and H1N1 Influenza Education, School Health Fairs, Immunization clinics (Pertussis & H1N1), MRSA education, and STD analysis and education.

In addition to disease reporting, surveillance, and SRCHD programmatic coordination, we have conducted several activities in our community. In response to the 2009 H1N1 Novel Influenza A pandemic, Epidemiology staff participated in planning and reporting activities for H1N1 including:

- Staffing H1N1 POD Drive-Through vaccination sites
- Survey creation, distribution, and evaluation for vaccine distribution effectiveness
- Weekly surveillance
 - o ILI Reports
 - o Pneumonia/Influenza mortality reports in collaboration with Vital Statistics

- Communicable disease reports received from School Health Staff
- Inventory/storage of H1N1 materials
- Weekly H1N1 SRCHD planning meetings
- Vaccine consent packet collation and distribution
- Creation of email list of community providers for rapid information distribution
- Dissemination of H1N1 information through:
 - H1N1 informational brochures and rack cards distribution to community partners
 - Power point presentations to community groups
 - SRCHD website

Additional activities include three presentations (Epidemiology 101, H1N1, EPI for Clinic Nurses), community health fairs, and quarterly publications of the SRCHD newsletter. Strong community collaboration exists with the University of West Florida (UWF) College of Public Health, NWFICP and all area hospitals and laboratories.

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