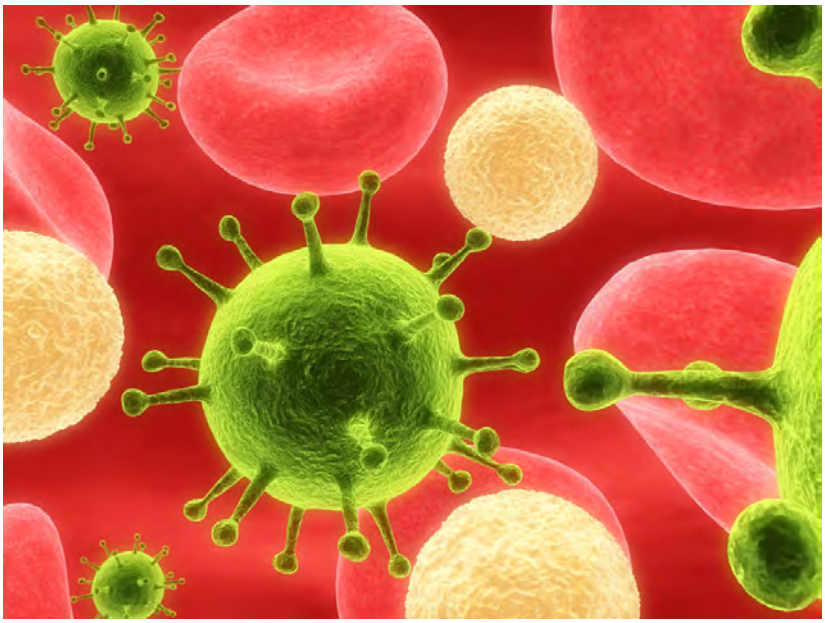
Morbidity



CHRONIC DISEASE

Chronic diseases such as cancer, heart disease and stroke, and diabetes account for the leading causes of death in Forsyth County. There are the most common, costly, and preventable of all health problems. The four health risk behaviors responsible for the development of chronic diseases are:

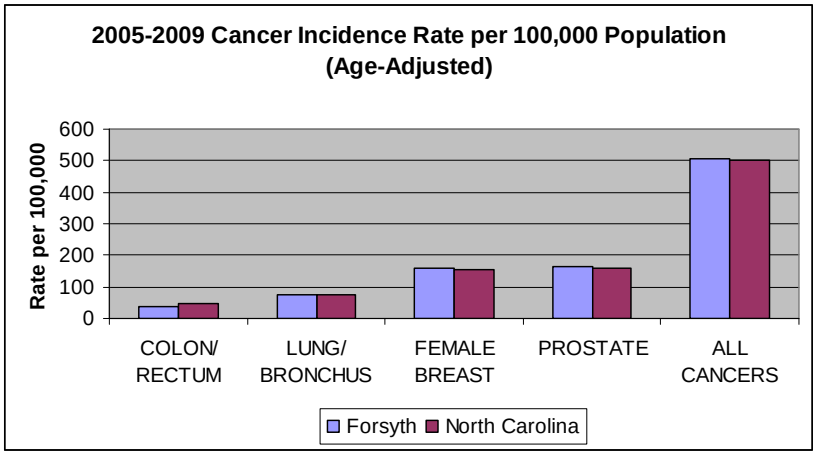
- Lack of physical activity
- Poor nutrition
- Tobacco use
- Excessive alcohol consumption

Cancer

According to the National Cancer Institute, Cancer is a term used for diseases in which abnormal cells divide without control and at times invade other tissues. Cancer cells can spread to other parts of the body. There are more than 100 types of cancers. Nationally the age-adjusted incidence rate from 2005-2009 was 465.2 per 100,000 men and women annually. The highest cancer incidence rates from 2005-2009 in Forsyth County were breast cancer, at a rate of 160.3 females per 100,000 population, and prostate cancer at a rate of 165.6 per 100,000 population. This is higher than the state's rate of 154.5 per 100,000 population for female breast cancer and 158.3 per 100,000 population for prostate cancer although these two cancers had the highest cancer incidence rates in North Carolina. Forsyth County's rate for all cancers was 505.6 per 100,000 persons, while the state's was 500.1 per 100,000 persons. Colon/rectal, lung/bronchus, female breast, and prostate cancer accounted for 1,182 cases of inpatient hospitalization accounting for $42,179,968 in total charges in 2009.

Table 1: 2005-2009 Cancer Incidence Rate per 100,000 Population (Age-Adjusted)

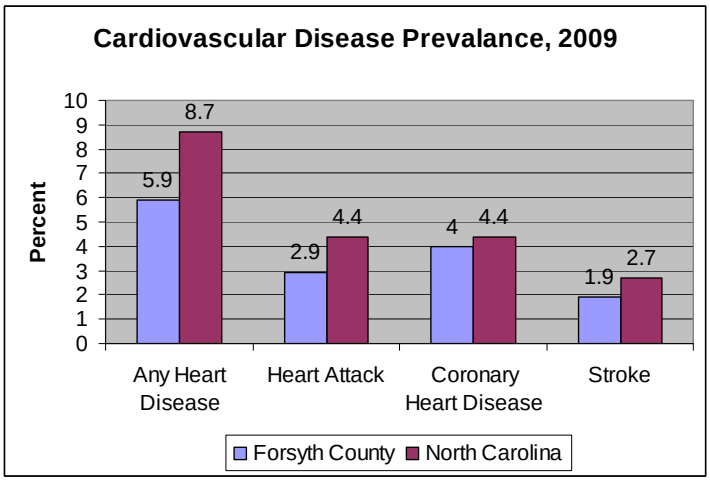
	COLON/ REC-TUM		LUNG/ BRON-CHUS		FEMALE BREAST		PROSTATE		ALL CANCERS	
	Cases	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**
Forsyth County	707	38.4	1,355	74.0	1,626	160.3	1,357	165.6	9,295	505.6
North Carolina	21,383	45.5	35,748	75.9	39,779	154.5	34,120	158.3	236,301	500.1
Source: NC State Center for Health Statistics.										



Source: NC State Center for Health Statistics.

Cardiovascular Disease

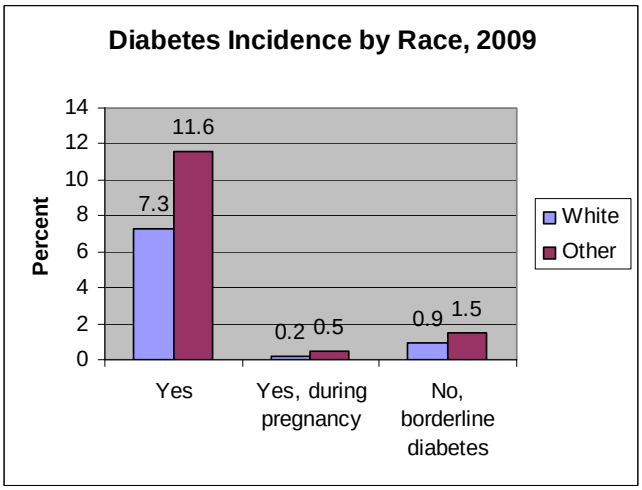
Cardiovascular disease, commonly called heart disease, refers to a group of heart conditions. The most common is coronary artery disease. It also includes heart attacks, anginas, heart failure, stroke and arrhythmias. Heart disease is the leading cause of death in the United States. In the 2009 Behavior Risk Factor Surveillance System (BRFSS) revealed that 5.9% of survey participants had a history of cardiovascular disease. This percent was less than the state percent of 8.7% with a history of any cardiovascular disease. In 2005, 10.8% of the survey participants reported having a history of cardiovascular disease. In 2009, Cardiovascular disease in Forsyth County accounted for 5,585 hospital inpatient visits with an accumulating cost of $155,595,217 in total charges.



Source: NC State Center for Health Statistics.

Diabetes

Diabetes is a group of diseases in which blood glucose levels are high as a result of defected insulin production, insulin action or both. Serious complications and premature death can arise from diabetes, but it can be controlled and the risk of complications can be lowered. Overall in 2009, 8.7% of BRFSS participants in Forsyth County reported being told they had diabetes by a doctor. This was lower than the state's 9.6%. The rate was 0.3% for women diagnosed during pregnancy which is less than half of the state rate of 0.7%. 11.6% of minorities had been diagnosed with diabetes compared to 7.3% of whites. There were 669 hospitalizations due to diabetes resulting in $13,236,733 total charges.



Source: NC State Center for Health Statistics.

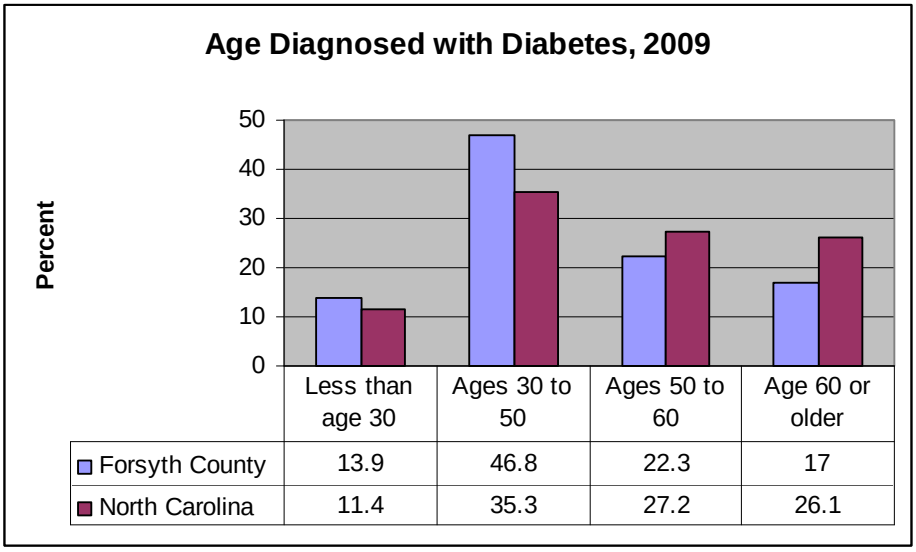
According to the 2009 BRFSS results, 4.7% of participants had been diagnosed with pre-diabetes which was lower than the state's rate of 7.1%.

Table 2: Health Professional Diagnosed Pre-Diabetes

	Yes		White		Male		Female	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Forsyth County	19	4.7	11	3.2	7	4.5	12	4.8
North Carolina	1004.0	7.1	818.0	7.5	320.0	5.5	684.0	8.7

Source: NC State Center for Health Statistics.

About 60% of those diagnosed with diabetes, were diagnosed before the age of 50 years of age in comparison to 47% for North Carolina



Source: NC State Center for Health Statistics

INFECTIOUS DISEASE

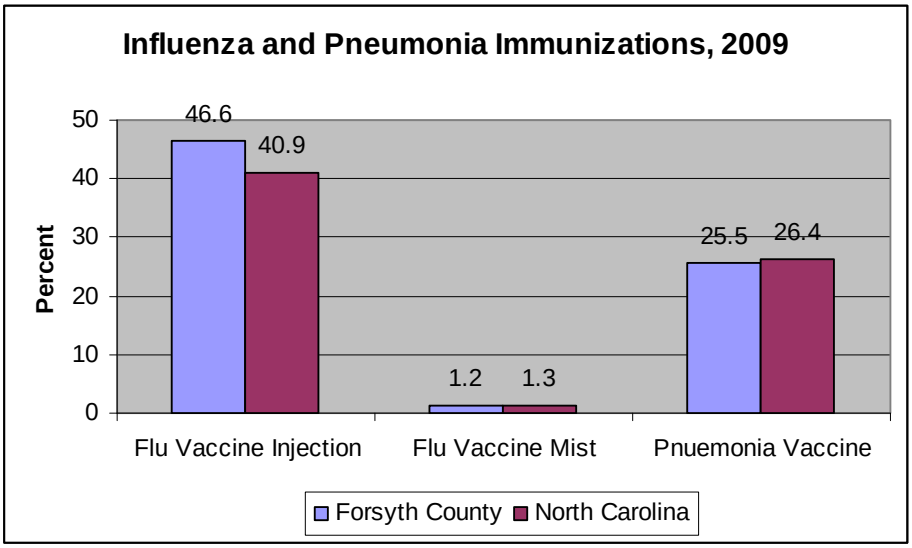
Collectively, influenza and pneumonia, were responsible for 1,160 inpatient hospitalizations resulting in $27,101,138 in total charges in 2009

Influenza

Influenza (flu) is a contagious respiratory illness caused by the influenza virus. The diseases range from mild to severe illness, and can cause death. Older people, young children, and people with certain health conditions have a higher risk for serious complications due to influenza. Influenza can be prevented with flu vaccines According to the Community Health Opinion Survey, 49.4% of Forsyth County residents had received a seasonal flu vaccine, by injection or mist.

Pneumonia

Pneumonia is an infection of the lungs that is usually caused by bacteria or viruses. It is preventable with vaccines and treatable with antibiotics or antiviral drugs. Pneumonia can cause mild to severe Illnesses, with adults age 65 and older and children younger than 5 years of age having a greater risk factor. Cigarette smoking and asthma increases risk for pneumonia



Source: NC State Center for Health Statistics

INJURIES

Injuries are a collection of several fatal and non-fatal occurrences which include:

- Drowning and submersion
- Falls
- Fire and burns
- Firearms
- Motor vehicle crash
- Sports and recreational injury
- Occupational injury
- Bicycle pedestrian safety
- Pedestrian safety
- Poisoning
- Suffocation
- Homicide
- Suicide
- Assault
- Sexual violence
- Child maltreatment
- Violence against North Carolina women and men
- Childhood injury
- Intimate partner violence
- Traumatic Brain Injury
- Disaster related injury and preparedness

Forsyth County Leading Causes of Injury Hospitalization All Ages: 2007 to 2009				Forsyth County Leading Causes of Injury ED Visits All Ages: 2007-2009		
Rank	**Cause**	**Number**		**Rank**	**Cause**	**Num-ber**
1	Fall, Unintentional	3,283		1	Fall, Unintentional	22,680
2	MVT, Unintentional	845		2	MVT, Unintentional	9,746
3	Poisoning, Self-Inflicted	719		3	Struck, Unintentional	9,249
4	Unspecified, Unintentional	619		4	Overexertion, Unintentional	7,565
5	Poisoning, Unintentional	368		5	Unspecified, Unintentional	7,513
	Other	2,054			Other	22,484
	Total	**7,888**			**Total**	**79,237**

Source: NC DPH, Injury and Violence Prevention Branch. Injury and Violence Data, Injury Statistics, Surveillance.

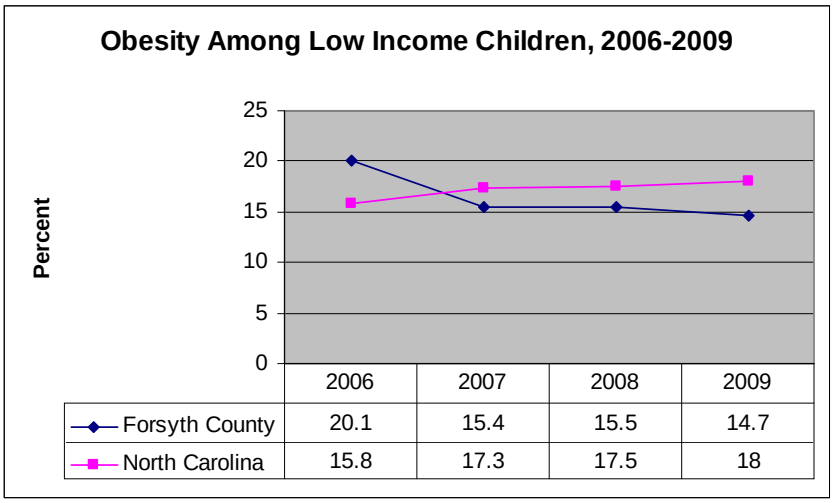
OBESITY

Overweight is defined as having access body weight for a particular height from either fat, muscle, bone, water, or a combination thereof. Obesity is defined as having excess body fat. Both result from a caloric imbalance in which too few calories are expended for the amount of calories consumed. This is affected by genetic, behavioral, and environmental factors

Child Obesity

According to the CDC, childhood obesity has more than tripled in that past 20 years with 20% of children 6-11 years old and 18% of 12-19 year olds considered obese. Obese children have higher risks for risk factors for development of chronic diseases and other health effects.

Since 2006, the percent of obese low income children decreased approximately 27% from 20.1% to 14.7 %. This is below the North Carolina average of 18% of low income obese children in 2009, which was an increase of about 14% from 15.8% in 2006. (Low income children are ages 2-18 that were seen in public health clinics who are considered obese. Obese is defined here as a body mass index equal to or greater than the 95th percentile using federal guidelines. Prior to 2008 this was considered overweight.)

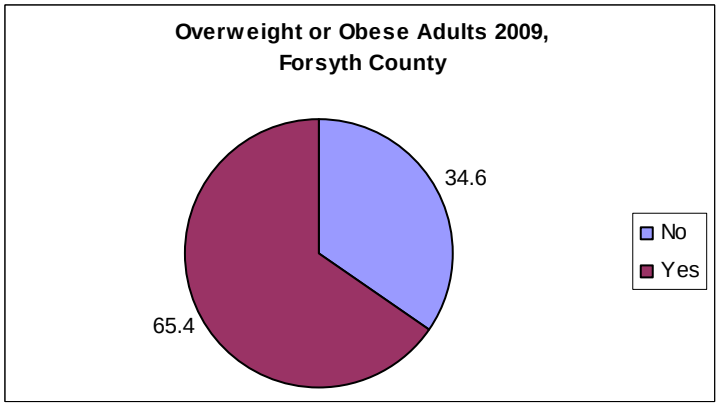


Adult Obesity Source: Annie E. Casey Foundation. Kids County Data Center.

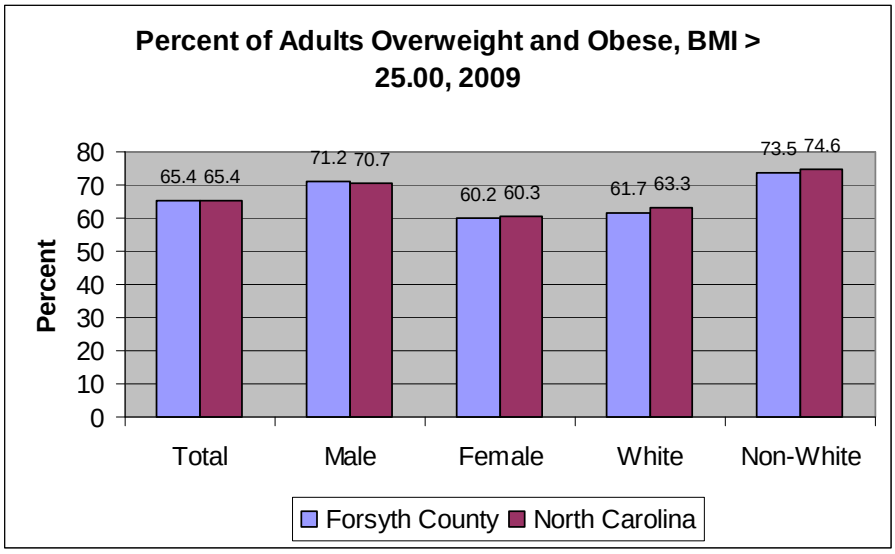
According to the 2009 BRFSS 65.4% of Forsyth County adults surveyed reported being overweight or obese which was the same rate as the state. The BRFSS used the body mass index as an intermediate variable used in defining weight status. It is computed as weight in kilograms divided by height in meters squared:(kg/ m2).

BMI	Weight Classification
Less Than 18.5	Underweight
18.5 to 24.9	Recommended Range
25.0 to 29.9	Overweight
Greater than 30	Obese

Forsyth County had a slightly higher percentage of males who were overweight or obese in comparison to the state, while females, whites and other minorities had slightly lower percentages than that of the state.



Source: NC State Center for Health Statistics



Source: NC State Center for Health Statistics

ORAL HEALTH

Child Oral Health

The Oral Health Section of the NC Division of Public Health provides dental health prevention and education services to children throughout the state. They also perform dental health surveillance activities to collect information on the state's children dental health status.

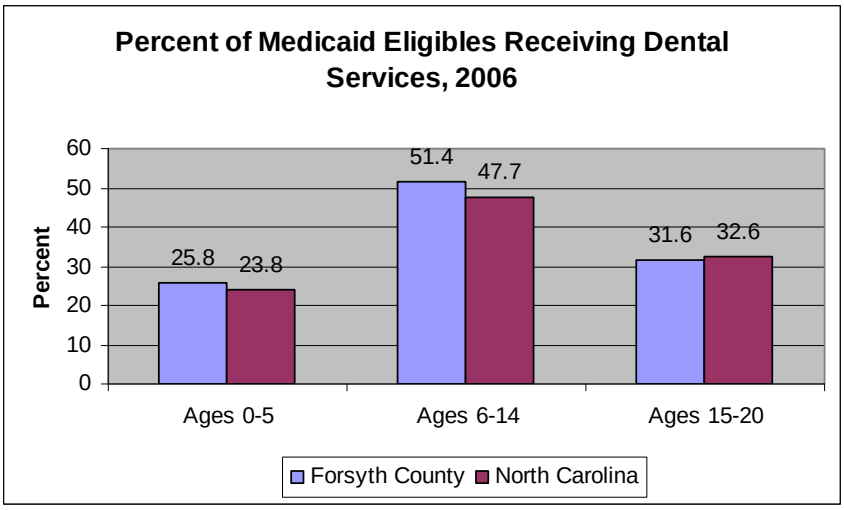
In 2008-2009, 93% of kindergarteners and 92% of 5th grade students were screened, both higher than the state's average percent; which was similar to the 2005-2006 results of 93% for kindergarten students and 91% of 5th grade students. The percent of kindergarten children with untreated tooth decay increased from 21% to 24% from 2005-2006 to 2008-2009. The percent of 5th grade students who had untreated tooth decay was 5% in 2005-2006 compared to 9.0% in 2008-2009.

Table 3: 2008-2009 NC Oral Health Data

	Percent Children Screened		**Percent of Children with Untreated Tooth Decay**		**Children With Sealants**	**Average DFMT/Child**		**Average DT/Child**	
	Kindergarten	5th Grade	Kindergarten	5th Grade	5th Grade	Kindergarten	5th Grade	Kindergarten	5th Grade
Forsyth County	93%	92%	24%	9%	56%	1.82%	0.71%	0.66%	0.14%
North Carolina	83%	77%	17%	4%	44%	1.50%	0.56%	0.47%	0.05%

DFMT: Decayed, Missing, or Filled Teeth; DT: Decayed Teeth.
Source: NC DHHS. NC Oral Health. Measuring Oral Health

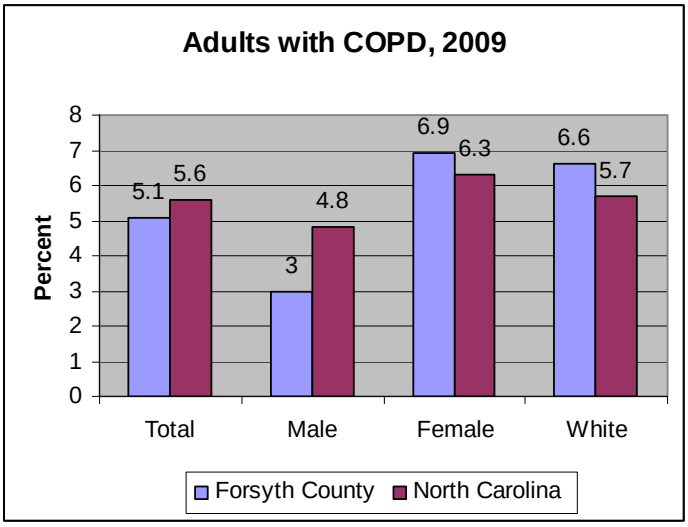
In 2006, approximately one-fourth of Medicaid eligibles received dental services, this amount increased to more than one-half for ages 6-14. Less than one third of Medicaid eligible ages 15-20 received dental services.



Source: Annie E. Casey Foundation.-Kids County Data Center.

Chronic Lower Respiratory Disease (CLRD)

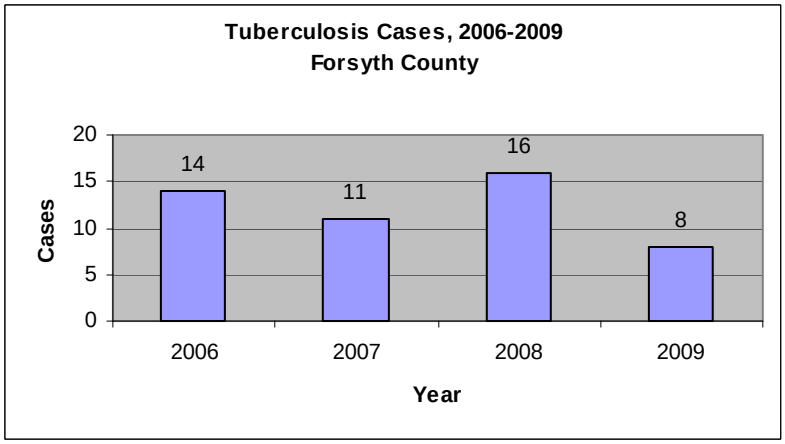
Chronic obstructive pulmonary disease (COPD) is a group of lung diseases in which airflow is limited, the airway is inflamed and lung tissue is destroyed. Forsyth County reported lower percentages of the population having COPD than the state overall although the female and white populations were higher than the state's rate.



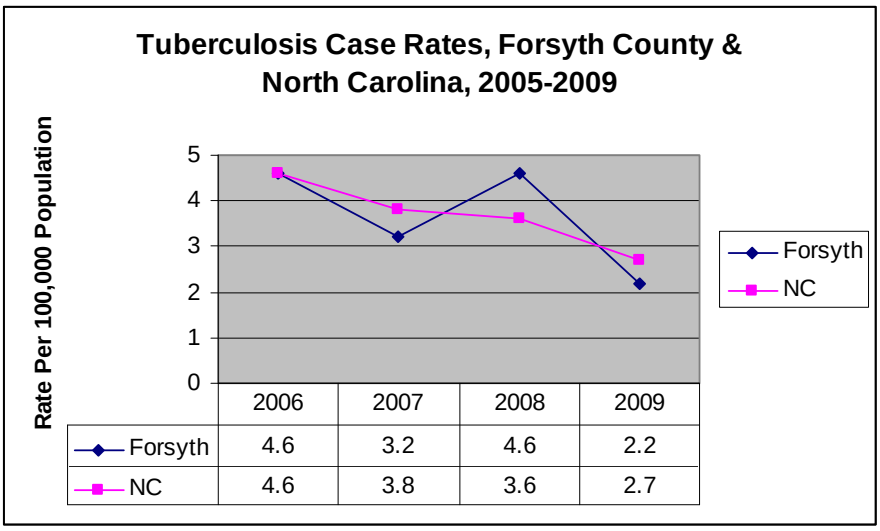
Source: NC State Center for Health Statistics

Tuberculosis

Tuberculosis cases in Forsyth County have fluctuated between 2006 and 2011. Overall the trend is steady in the number cases. Forsyth County saw a rise in case rates from 2007 to 2008 then a sharp decline from 2008 to 2009. Forsyth County declined in tuberculosis case rates from 4.6 in 2006 to 2.2 per 100,000 in 2009.



Source: NC DHHS Tuberculosis Control Program.

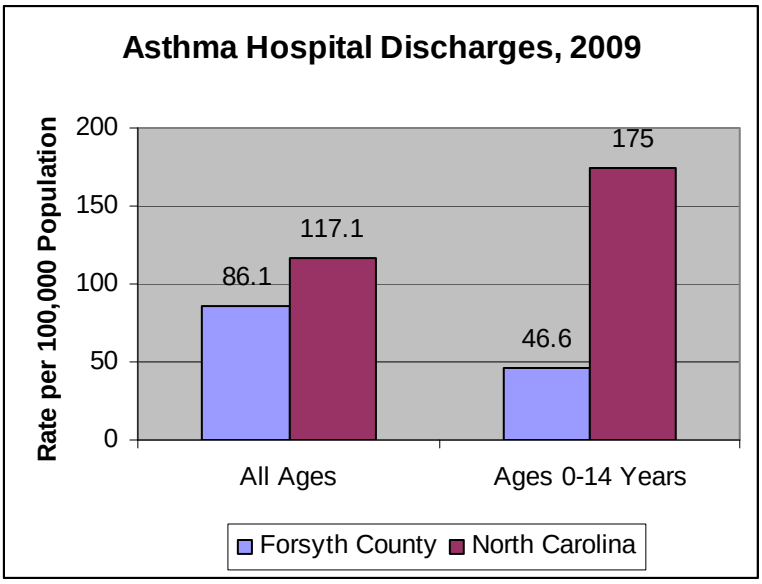


	2006	2007	2008	2009
Forsyth	4.6	3.2	4.6	2.2
NC	4.6	3.8	3.6	2.7

Source: NC DHHS Tuberculosis Control Program.

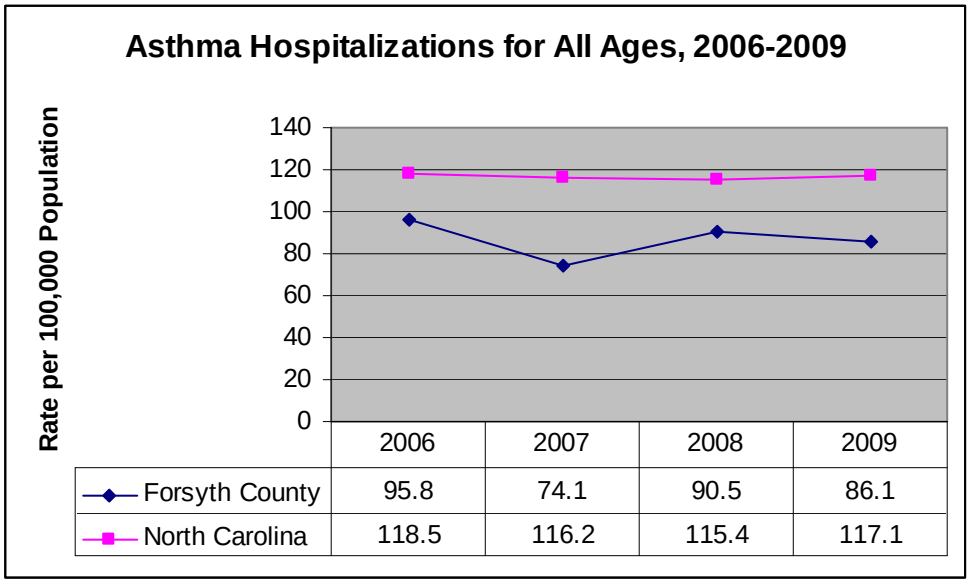
Asthma

Asthma is a disease that affects the lungs causing repeated wheezing, breathlessness, chest tightness, and nighttime or early morning coughing. Asthma is controllable with medication and avoiding triggers that cause an attack Forsyth County had 70% lower rates of asthma hospitalization for all ages than the state rate for children who were between 0 and 14 years old.



Source: NC State Center for Health Statistics

Since 2006, the asthma rate in Forsyth County has fluctuated, but overall there was a decrease of approximately 10% from 2006 to 2009. The state asthma's rate has remained relatively unchanged within that time frame.



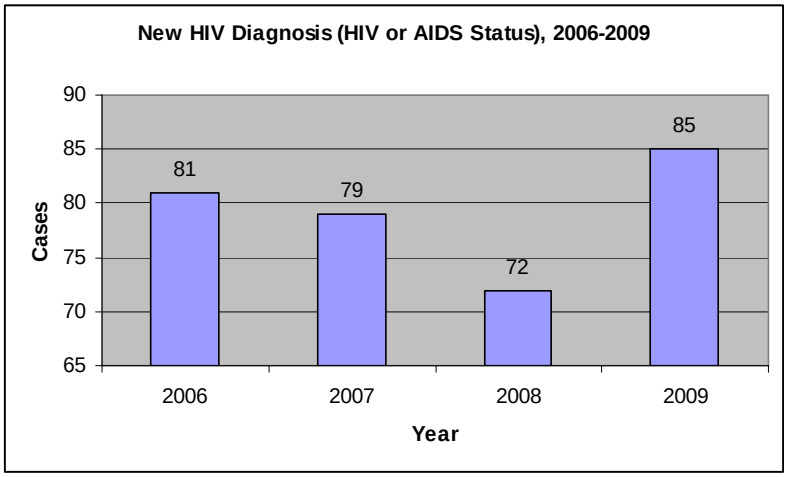
Source: NC State Center for Health Statistics

SEXUALLY TRANSMITTED DISEASES (STDS) AND HIV/AIDS

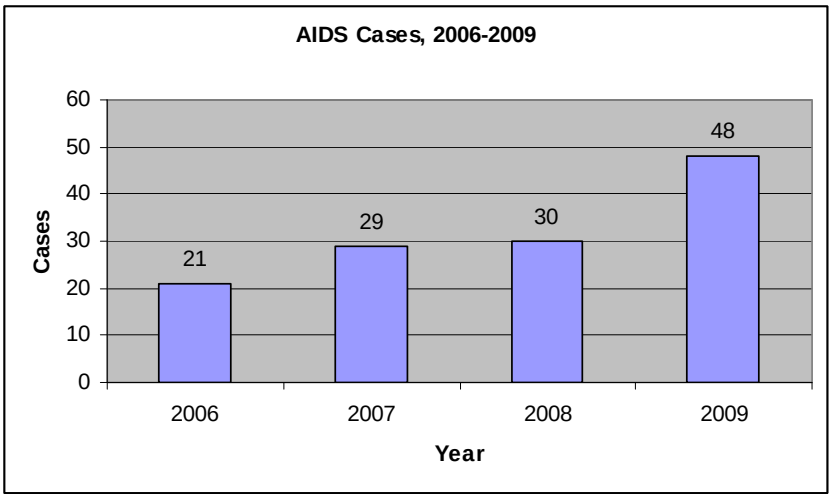
North Carolina requires certain sexually transmitted diseases (STDs), as communicable diseases, to be reported to local health departments who then report to the state. These STDs are human immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDS), Chlamydia, Gonorrhea, and Syphilis. HIV case reports include all new diagnoses with HIV regardless of stage.

HIV & AIDS

Cases are counted as date of first diagnosis for HIV. AIDS case reports only count those with HIV infection who have progressed to a later, more life-threatening stage of HIV. AIDS case report represents persons previously diagnosed with HIV. From 2006-2009, new HIV diagnosis remained consistent in Forsyth County, first declining from 2006 to 2008 and increasing in 2009. The number of AIDS cases has increased continuously, more than doubling from 21 in 2006 to 48 in 2009.



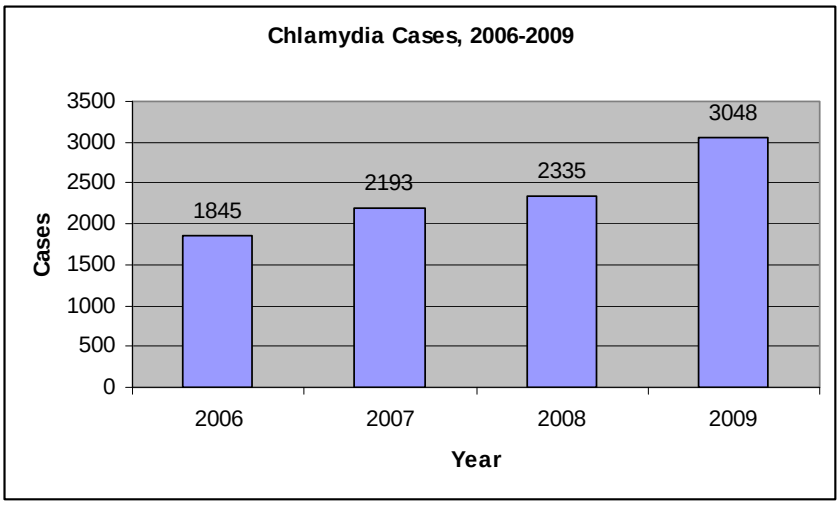
Source: NC DHHS NC 2009 HIV/STD



Source: NC DHHS NC 2009 HIV/STD

Chlamydia

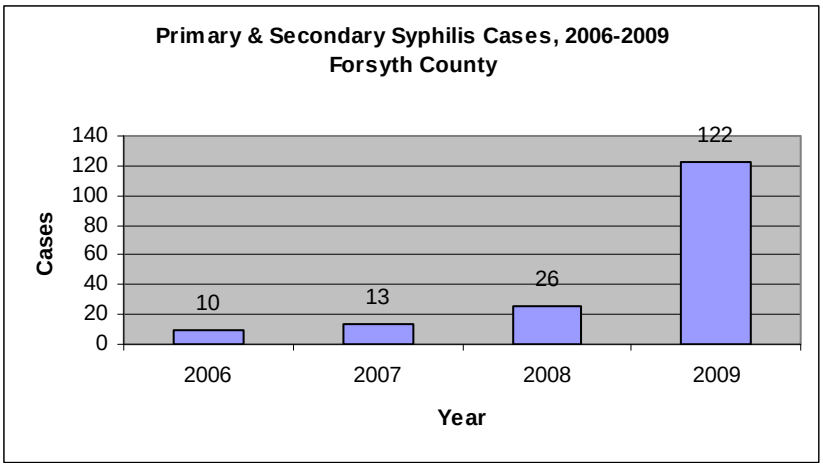
Chlamydia increased more than 1.65 times from 1845 cases in 2006 to 3048 cases in 2009. Chlamydia has seen an upward trend since 2006.



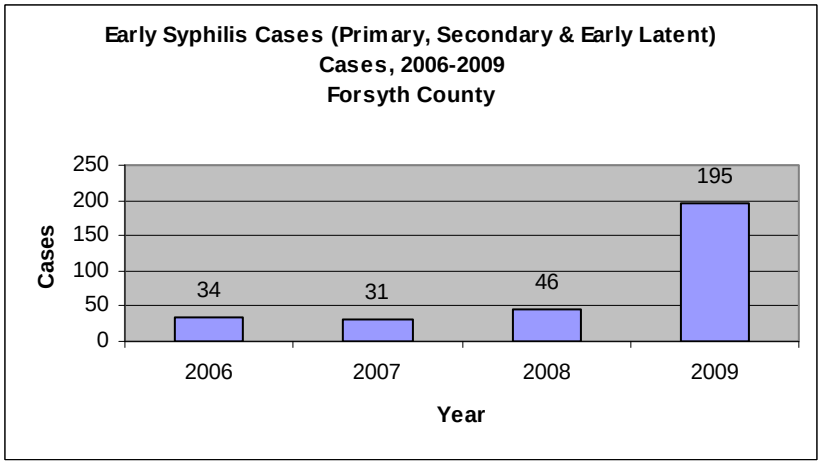
Source: NC DHHS NC 2009 HIV/STD

Syphilis

Primary and Secondary Syphilis increased more than 12 times from a total of 10 cases in 2006 to 122 cases by 2009. When measuring cases of early syphilis, which includes primary, secondary, and latent stages, total cases increased more than 5 times from 34 in 2006 to 195 in 2009. In comparison to the last health assessment the number of syphilis cases was 29 for the county in 2007, with a rate of 1.8. Minorities made up 65.5% of the cases of Primary and Secondary Syphilis with a rate of 4.2.



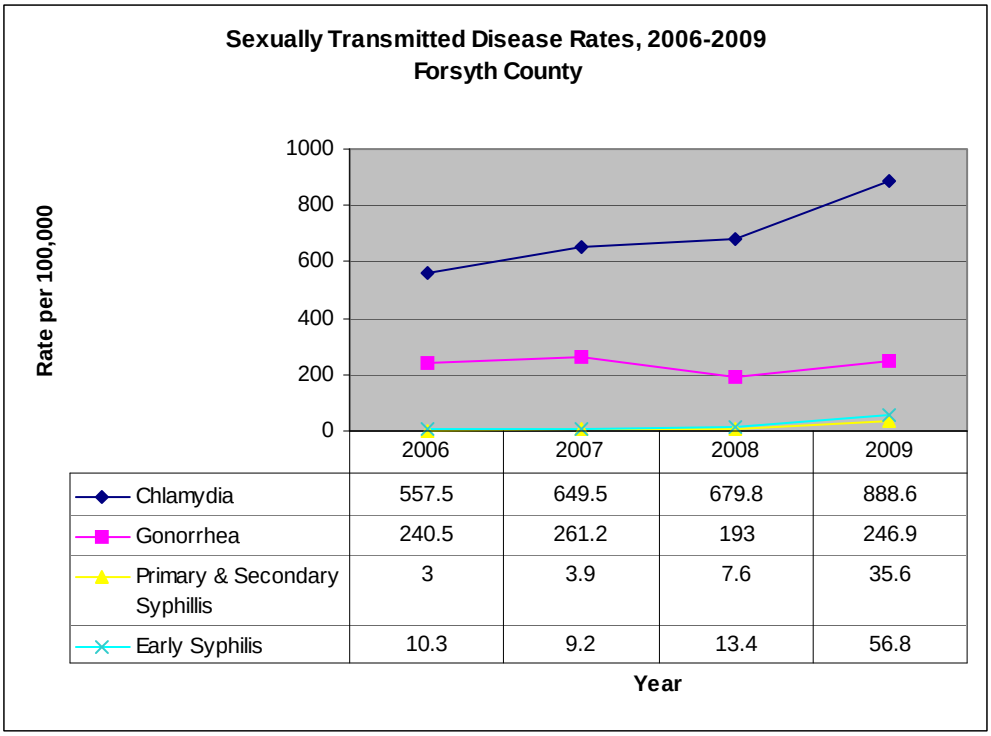
Source: NC DHHS NC 2009 HIV/STD



Source: NC DHHS NC 2009 HIV/STD

STD Rates

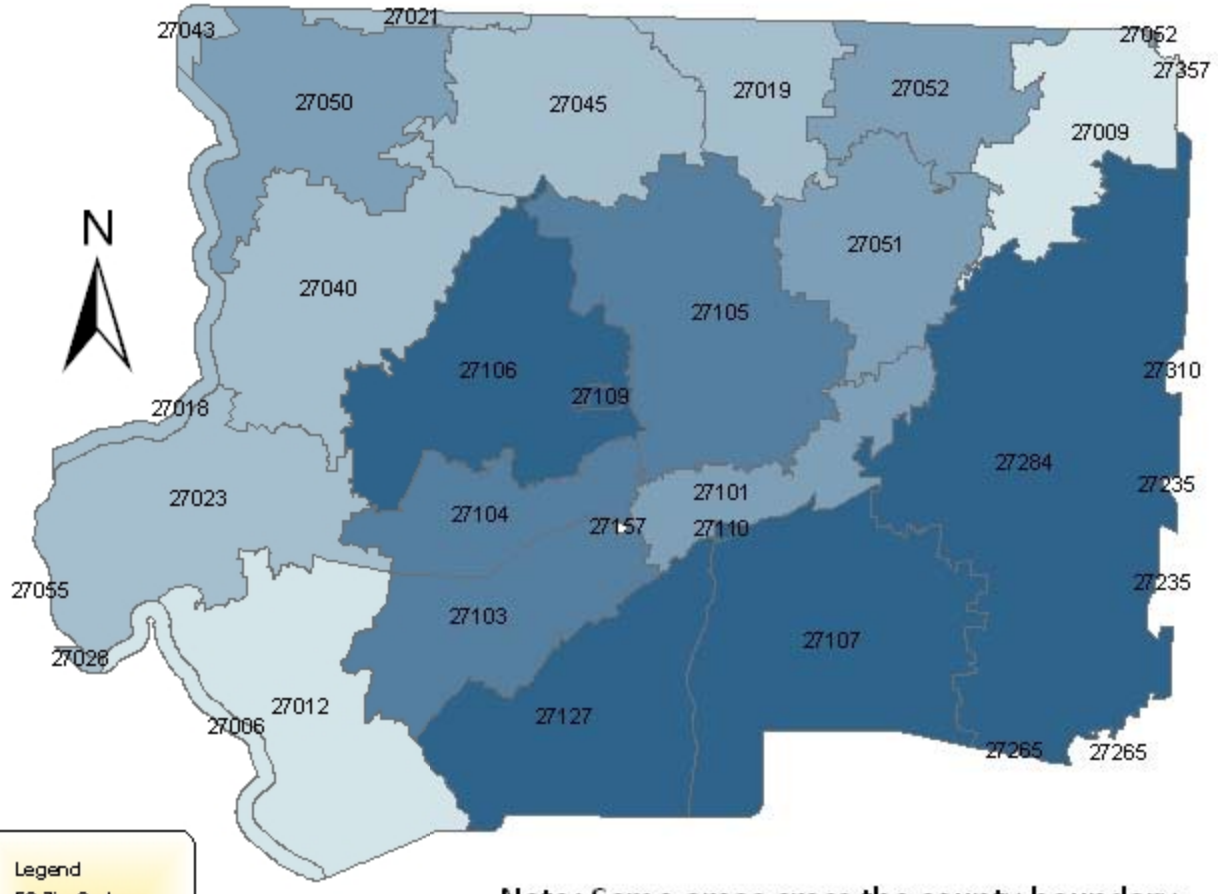
When looking at rates of sexually transmitted diseases, Chlamydia saw the greatest rate change, increasing by more than 200 persons per 100,000 population from 2008 to 2009. Overall there the rate increased from were 557.5 per 100,000 population in 2006 to 888.6 per 100,000 population in 2009. Gonorrhea rates saw little change. Syphilis rates increased more than 11 times for Primary and Secondary Syphilis from 3 per 100,000 population in 2006 to 35.6 per 100,000 population in 2009. Early Syphilis also increased more than 5 times from 10.3 per 100,000 population in 2006 to 56.8 per 100,000 population in 2009.



	2006	2007	2008	2009
Chlamydia	557.5	649.5	679.8	888.6
Gonorrhea	240.5	261.2	193	246.9
Primary & Secondary Syphillis	3	3.9	7.6	35.6
Early Syphilis	10.3	9.2	13.4	56.8

Source: NC DHHS NC 2009 HIV/STD

2006-2010 Chlamydia Incidence by Census Zip Code, Forsyth County



Legend
FC Zip Code
2006-10 Chlamydia
- 0 - 21
- 22 - 322
- 323 - 634
- 635 - 2330
- 2331 - 7468

Note: Some areas cross the county boundary and only a portion of those areas are displayed

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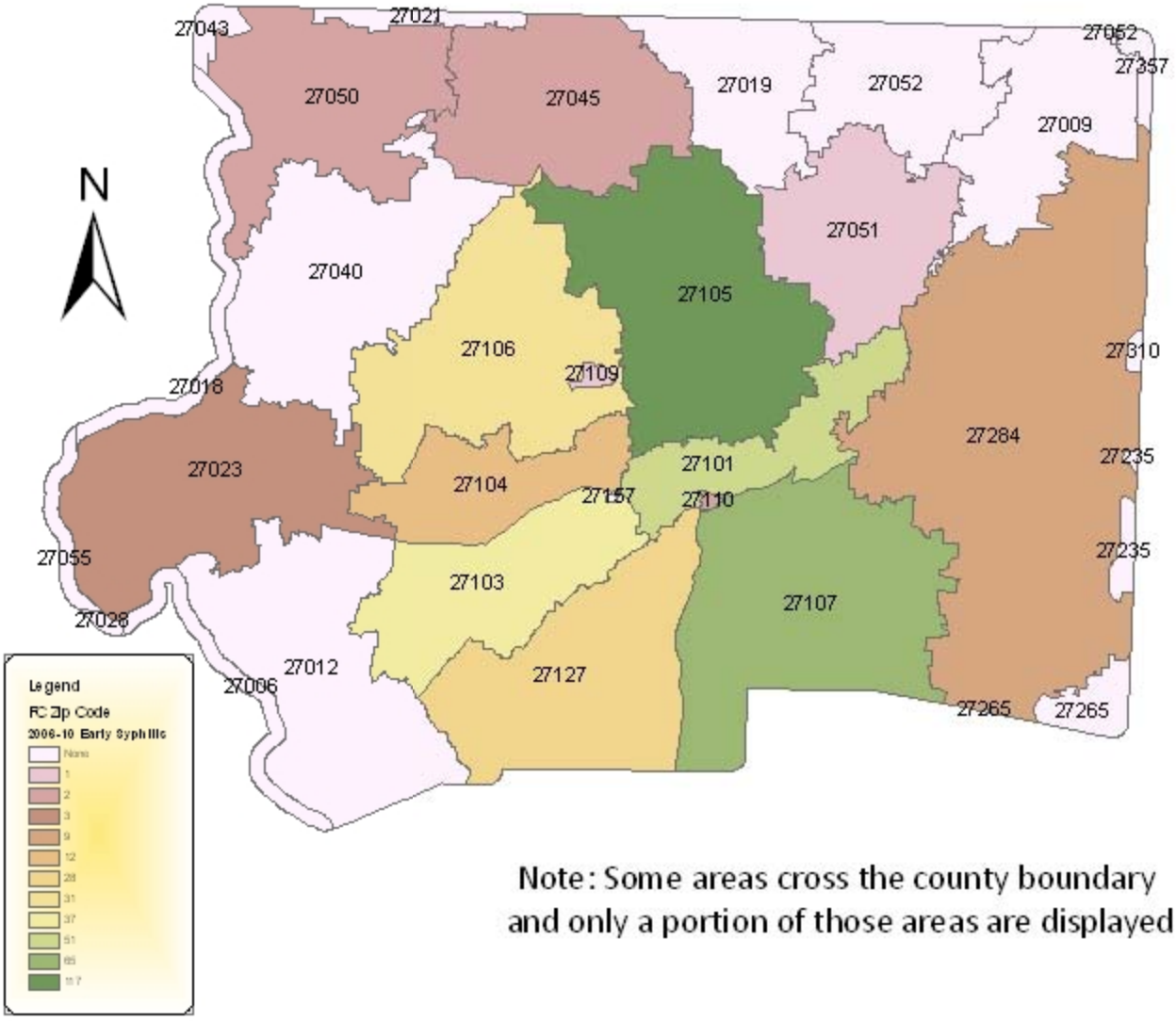
Department of Public Health
Promoting Health, Improving Lives

Prepared by Epidemiology Division, FCDPH July 2012

2006-2010 Early Syphilis Incidence by Census Zip Code, Forsyth County



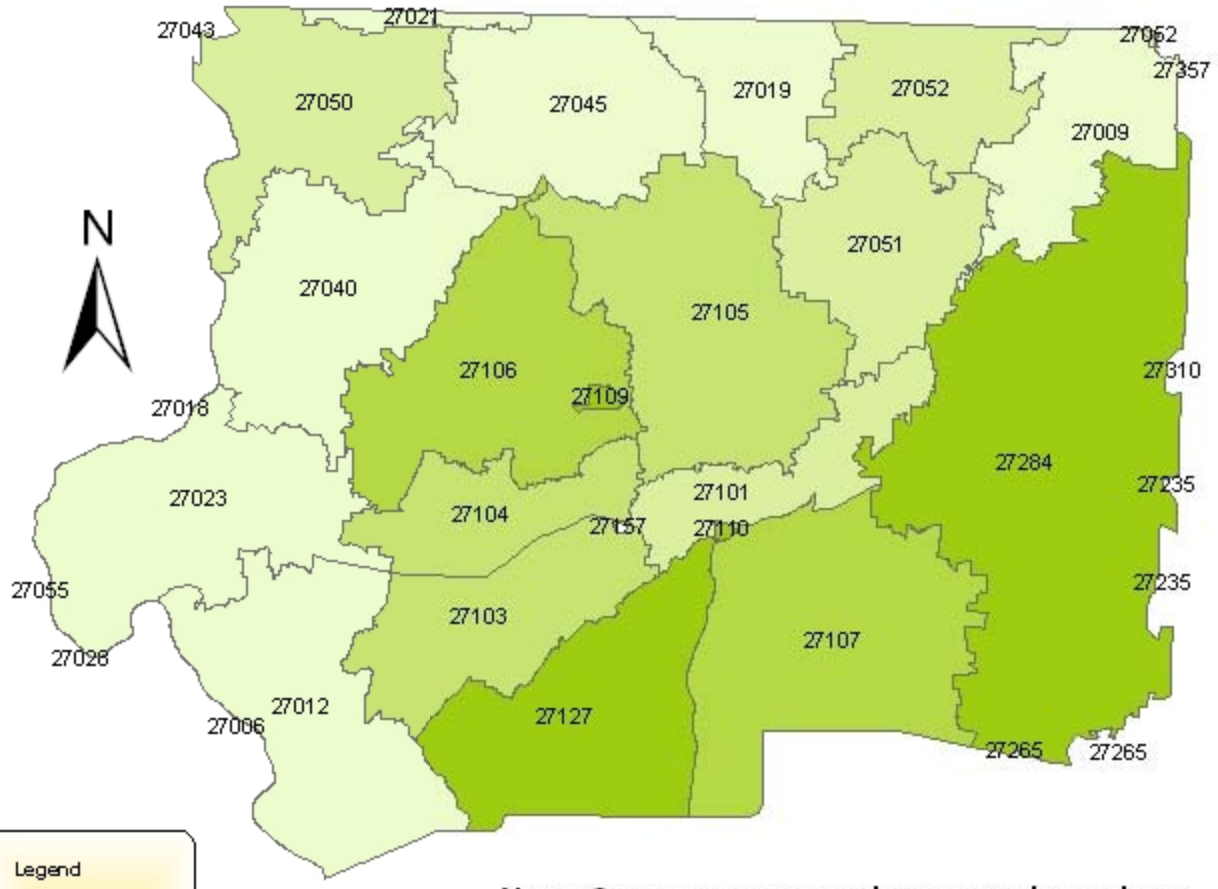
Note: Some areas cross the county boundary and only a portion of those areas are displayed

Forsyth County
Department of Public Health

Promoting Health, Improving Lives

Prepared by Epidemiology Division, FCDPH July 2012

2006-2010 Gonorrhea Incidence by Census Zip Code, Forsyth County



Legend
FC Zip Code
2006-10 Gonorrhea
0 - 85
86 - 156
157 - 735
736 - 1808
1809 - 2979

Note: Some areas cross the county boundary and only a portion of those areas are displayed

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