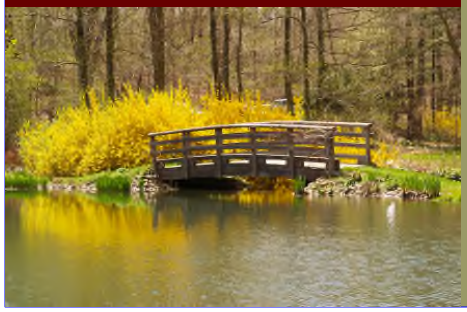
Prevent

Protect

Promote



Forsyth County

2014 Annual Communicable Disease Report

NORTH CAROLINA Accredited Health Department 2014-2018 Local Health Department Accreditation Board

Forsyth County Department of Public Health

Promoting Health, Improving Lives

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Introduction

Forsyth County Department of Public Health (FCDPH) is an accredited health department. Its mission is to prevent disease and promote a healthy community through regulation, education and partnerships. These goals are achieved through its adherence to the core functions of public health and the ten essential services of public health (Figure 1).

Figure 1.The Core Functions of Public Health and the Ten Essentials of Public Health (CDC)

This annual report focuses on the health and safety trends among Forsyth County's residents. It covers the period 2009 to 2013, and is structured to include all reported communicable diseases.

The report is meant to inform the policy-making decisions of government agencies, health care providers, community organizations and other stakeholders. Of equal importance, it partially satisfies the core function of **assessment** through its emphasis on:

- **Essential PH Services I**: Monitor health status to identify community health problems
- **Essential PH Services II**: Diagnose and investigate health problems and health hazards in the community h problems
- **Essential services III**: Inform, educate, and empower people about health issues

Surveillance for Reportable Communicable Diseases in Forsyth County

Communicable diseases are illnesses caused by infectious agents (bacteria, viruses, parasites, fungi or prions) or their toxins. They are transmitted from an infected person, animal, plant or from the environment. Communicable diseases are tracked and the information analyzed (called surveillance) because they can have significant impact on populations. The overall goal of surveillance is the protection of the public's health. Physicians, school administrators, child care operators, medical facilities, and operators of restaurants and other food or drink establishments are required by law to report some communicable diseases to the local public health department (G.S. § 130A-135 through 130A-139). There are more than 70 "reportable" diseases specified in the N.C. Administrative Code rule 10A NCAC 41A .0101. http://epi.publichealth.nc.gov/cd/index.html

An epidemiological case investigation begins following initial notification about a communicable disease event. The initial investigation focuses on the collection of demographic, clinical, and epidemiological information. Following verification that the reported case has met the requirements in the standardized case definitions, it is then reported electronically to the N.C. Division of Public Health via the North Carolina Electronic Disease Surveillance System (NC EDSS), and then to the Centers for Disease Control and Prevention's (CDC) National Notifiable Diseases Surveillance System.

This report focuses on all diseases that have been reported in Forsyth County from 2009 to 2013 by Category. It also includes information about other select communicable diseases that are of public health significance for Forsyth County.

General Communicable Diseases

An average of 4,000 communicable diseases are reported to the Forsyth County Department of Public health. The number of reportable diseases have remained steady over the past five years with slight fluctuation due to outbreak events such as pertussis and primary syphilis. As shown in Table 1 below.

Table 1: Notifiable Communicable Diseases Case Count and Rates*, Forsyth County

	2009		2010		2011		2012		2013	
Disease	Case Count	Rate *	Case Count	Rate*	Case Count	Rate*	Case Count	Rate*	Case Count	Rate *
Brucellosis	0	**	0	**	0	**	1	**	0	**
Campylobacter Infection	29	8.1	33	9.4	22	6.2	25	7.0	27	7.5
Creutzfeldt-Jakob Disease	0	**	0	**	0	**	1	**	0	**
Cryptosporidiosis	10	**	4	**	1	**	3	**	3	**
E Coli ***	2	**	2	**	3	**	5	**	5	**
Encaphalitis Arborviral, WNV	0	**	0	**	0	**	1	**	0	**
Foodborne Other	2	*	0	**	0	**	0	**	1	**
Foodborne Staphylococcal	0	**	0	**	0	**	1	**	1	**
Haemophilus influenzae	2	**	5	**	5	**	7	**	5	**
Hepatitis A	2	**	3	**	1	**	0	**	0	**
Hepatitis C - Acute	0	**	2	**	1	**	2	**	4	**
Hemolytic Uremic Syndrome	0	**	1	**	0	**	0	**	0	**
Influenza death (<18 years old)	4	**	0	**	1	**	3	**	2	**
Influenza, NOVEL virus infection	53	14.7	0	**	0	**	0	**	0	**
Legionellosis	5	**	2	**	15	**	5	**	10	**
Leprosy (Hansen's Disease)	0	**	1	**	0	**	0	**	0	**
Listeriosis	3	**	2	**	0	**	2	**	0	**
Lyme disease	0	**	1	**	0	**	2	**	1	**
Malaria	0	**	0	**	0	**	2	**	1	**
Meningococcal	2	**	0	**	1	**	0	**	1	**
Pneumococcal meningitis	0	**	2	**	1	**	0	**	1	**
Salmonellosis ***	49	13.6	45	12.8	57	16.1	38	10.6	33	9.2
Shigellosis	1	**	9	**	14	**	11	**	10	**
Staphylococcus aureus - VRSA	0	**	0	**	2	**	0	**	0	**
Streptococcal infection Group A, Invasive	6	**	8	**	7	**	8	**	8	**
Toxic Shock Syndrome, strepto-coccal	0	**	0	**	0	**	1	**	0	**
Vibrio Infection, Other	0	**	0	**	0	**	0	**	2	**

***Rate per 100,000 Population. Case counts are based on date cases were closed in system, not disease onset date.**
****Rates based on fewer than 20 cases are unreliable and not displayed**
***** Per CDC cases definition, includes suspect cases. All other diseases are confirmed per case definitions.**
Data source: NC Electronic Disease Surveillance System. Accessed 09/23/2014

Vaccine Preventable Diseases

Pertussis and chronic hepatitis B were the most prevalent reported vaccine preventable diseases during 2009 and 2013. In Forsyth County, the number of confirmed pertussis cases tripled from 6 in 2011 to 22 cases in 2012; and more than quadrupled from 22 cases in 2012 to 139 cases in 2013. In response to the rising pertussis numbers and in alignment with the North Carolina Department of Health and Human Services, the North Carolina Immunization Program is providing Tdap vaccine universally to all persons from age 7 years and up for whom pertussis protection is indicated, specifically, 7 through 9 year olds who have not completed their primary Tdap series and all persons age 10 years and up who have not yet had a Tdap vaccine (which was licensed in 2005). This free Tdap vaccine will be available until supplies are depleted at the Forsyth County Department of Public Health (Clinic 3) during regular clinic hours and is also available through all private providers in North Carolina who utilize state-supplied vaccines (most pediatricians and many family practice offices).

Table 2: Vaccine Preventable Diseases Case Count+ and Rates*, Forsyth County

	2009		2010		2011		2012		2013	
Disease	**Case Count**	**Rate***	**Case Count**	**Rate ***	**Case Count**	**Rate***	**Case Count**	**Rate***	**Case Count**	**Rate***
Hepatitis B - Acute	15	**	7	**	8	**	2	**	5	**
Hepatitis B - Chronic	26	7.2	18	**	25	7.1	26	7.3	15	**
Measles	0	**	0	**	0	**	0	**	1	**
Mumps	1	**	0	**	0	**	0	**	0	**
Pertussis	4	**	6	**	6	**	22	6.1	139	38.8

Vector-borne Diseases

Vector-borne diseases are among the most complex of all infectious diseases to prevent and control. Not only is it difficult to predict the habits of mosquitoes, ticks and fleas, but also most vector-borne viruses or bacteria infect animals as well as humans. The vector-borne diseases that occur often in Forsyth County are caused by ticks.

In late 2013, the first local transmission of Chikungunya virus, a mosquito-borne disease, in the Americas was identified in Caribbean countries and territories. To date more than 1,125 Chikungunya virus disease travel-associated cases have been reported in the United States. The first locally acquired case was report in July 2014 in Florida, a total of 11 to date. It is transmitted to people by two species of mosquitoes, Aedes aegypti and Aedes albopictus. Reservoirs are infected humans and the infection causes Chikungunya fever.

The first Chikungunya case associated with the expanding Caribbean outbreak was reported in Forsyth County in the summer of 2014. As of September 2014, Chikungunya virus, an emerging infectious disease was added to the list of North Carolina Reportable Disease and Conditions.

Table 3: Vector-Borne Diseases Case Count+ and Rates*, Forsyth County

	2009		2010		2011		2012		2013	
Disease	**Case Count**	**Rate***	**Case Count**	**Rate ***	**Case Count**	**Rate***	**Case Count**	**Rate***	**Case Count**	**Rate***
Encephalitis, arboviral, WNV (95)	0	**	0	**	0	**	1	**	0	**
Lyme Disease (51)	0	**	1	**	0	**	2	**	1	**
Rocky Mountain Spotted Fever (35)	9	**	5	**	4	**	7	**	0	**

***Rate per 100,000 Population. Case counts are based on date cases were closed in system, not disease onset date.**
****Rates based on fewer than 20 cases are unreliable and not displayed. All other diseases are confirmed per case definitions.**
Data source: NC Electronic Disease Surveillance System. Accessed 09/23/2014

Influenza

The North Carolina 2013-14 Influenza which began October 5, 2013 and ended on May 17, 2014, peaked during the holiday week in December. The predominant circulating strain was influenza A (H1N1). There were fewer cases compared to the previous flu season but more deaths were reported from influenza complications. One hundred and seven (107) deaths were reported compared to 59 in the previous season. Majority (94%) of the deaths occurred among those over the age of 25.

Figure 2

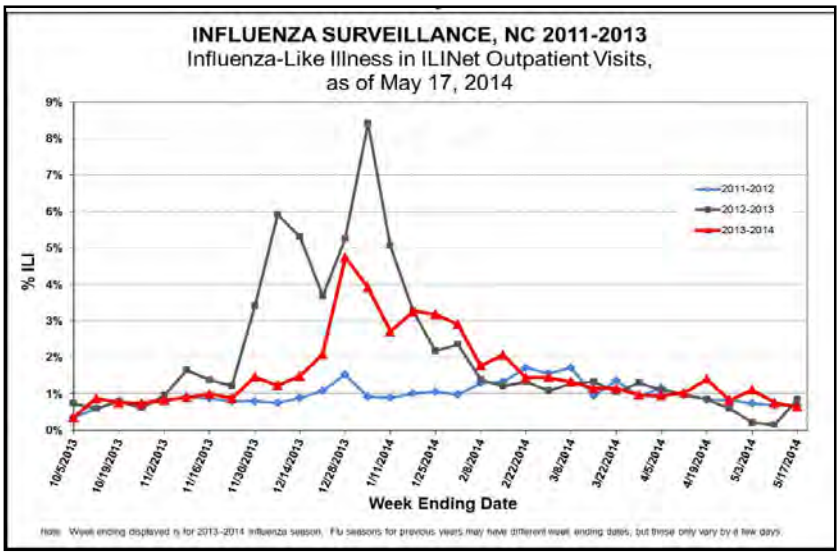
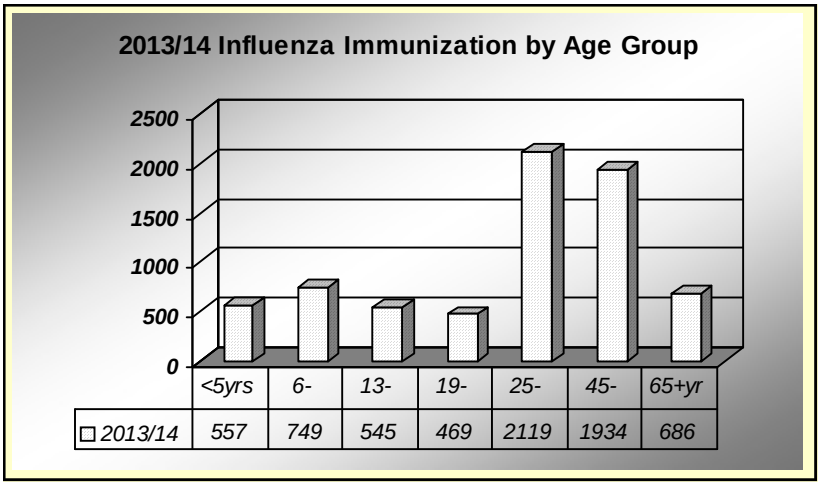


Figure 3 represents the number of flu vaccines provided at the Forsyth County Department of Public Health (FCDPH) by age during the 2013/14 season. A total of 7,050 doses were given to FCDPH clients, with 67% given to persons ages 25 and higher. A total of 7,442 doses were given during the 2012/13 season and 6,830 doses during the 2011/12 season.

Figure 3



Source: North Carolina Immunization Registry (NCIR) 9/2014

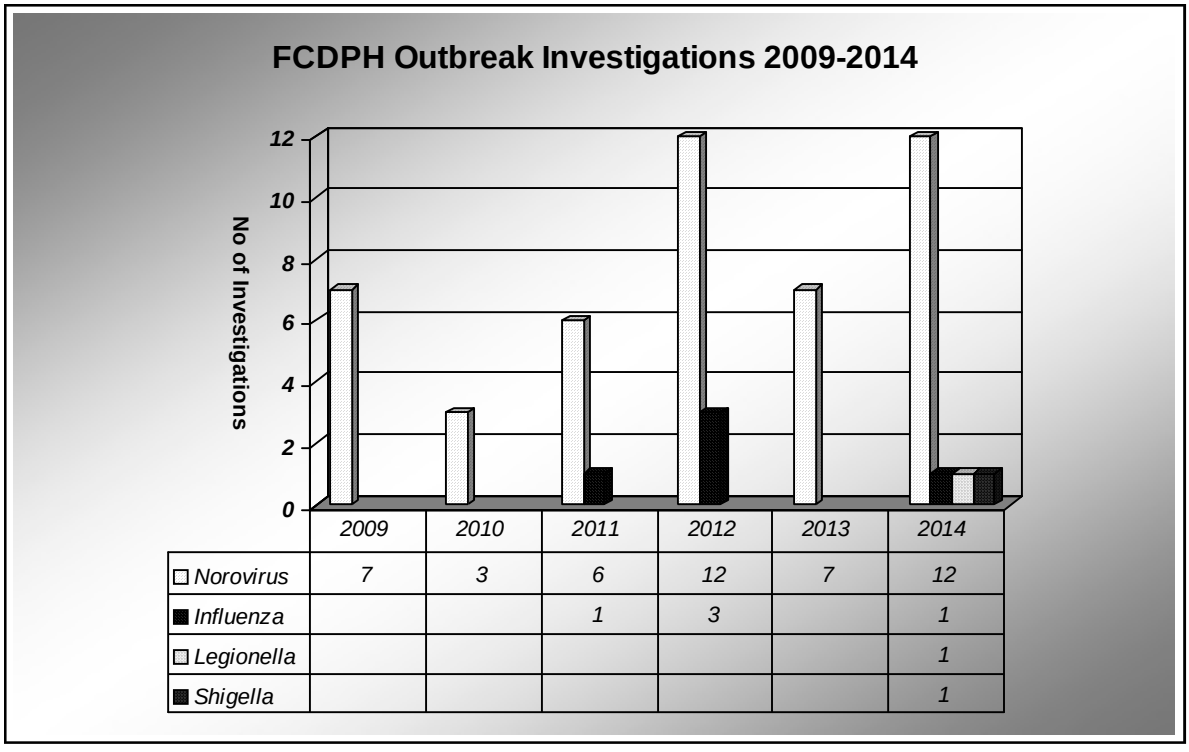
Foodborne Diseases

Roughly one in six (or 48 million) people in the United States get sick from eating contaminated food annually. A foodborne disease outbreak occurs when two or more people get the same illness from the same contaminated food or drink. Though only a small proportion of these illnesses occur in the setting of an outbreak, data collected during outbreak investigations provide valuable insight into the pathogens and foods that cause illness.es. Forsyth County Department of Public Health staff investigate outbreaks to control them, so more people do not get sick in the outbreak, and to learn how to prevent similar outbreaks from happening in the future.

There are more than 250 pathogens and toxins that are known to cause foodborne illness. Nearly all of them can cause an outbreak. Norovirus and *Salmonella* are the top two pathogens responsible for foodborne illnesses and outbreaks.

In Forsyth County, the three prevalent reported food-borne disease between 2009 and 2013 were Salmonella, Campylobacter and Shigella. There were more than 47 Norovirus outbreak investigations from 2009 to date; 44 in long term care facilities and 3 in college, school and camp settings. There were also a Shigella outbreak investigation in a school setting and Legionella outbreak investigation in a long term care facility in 2014. There were 5 influenza outbreak investigations in long term care facilities.

Figure 4



	2009	2010	2011	2012	2013	2014
Norovirus	7	3	6	12	7	12
Influenza			1	3		1
Legionella						1
Shigella						1

Sources: NC Electronic Disease Surveillance System; Centers for Disease Control and Prevention

Sexually Transmitted Diseases

In Forsyth County, ninety-five percent (95%) of all reported diseases are sexually transmitted diseases(STDs). Chlamydia, gonorrhea and non-gonoccoccal remain the prevalent reported STDs.

The chlamydia rate decreased from 847.5 to 700.3 between 2009 and 2013. In 2013, seventy-one percent of the cases were females. The age groups with highest percent were 20-29 year olds (58%), followed by 13-19 year olds (29%).

The gonorrhea rate decreased from 235.5 to 207.2 between 2009 and 2013. Among gonorrhea reports in 2013, the age groups with highest percent were 20-29 year olds (56%), followed by 13-19 year olds (20%) and by 30-39 year olds(15%) and Non-Hispanic African American represented 49 % of total cases.

The early syphilis rate decreased from 52.6 to 14.0 between 2009 and 2013. In 2013, seventy-eight percent (78%) of the cases were males and Non-Hispanic African American represented 84 percent (84%) of total early syphilis cases.

The HIV infection rate decreased from 24.7 to 19.3 between 2009 and 2013. For the newly diagnosed HIV infection cases in 2013, the prevalent mode of transmission was among men who have sex with men (MSM) at 46% of total cases followed by Non-Identified Risk (NIR) at 41%. Non-Hispanic African Americans represented 62% of all cases.

Table 4: Sexually Transmitted Diseases, Forsyth County

		2009	2010	2011	2012	2013
AIDS	Cases	48	26	40	26	34
	Rate*	13.3	7.4	11.3	7.3	9.5
Chlamydia	Cases	3,048	2,503	2,668	2,704	2,508
	Rate*	847.5	712.3	758.3	755.0	700.3
Gonorrhea	Cases	847	774	854	712	742
	Rate*	235.5	220.3	240.9	198.8	207.2
HIV Infection	Cases	89	59	80	54	69
	Rate*	24.7	16.8	22.6	15.1	19.3
Non-Gonococcal Urethritis	Cases	393	400	400	199	392
	Rate*	109.3	113.8	112.8	55.7	109.4
PID	Cases	78	69	42	18	17
	Rate*	21.7	19.6	11.8	**	**
Early Syphilis	Cases	189	89	37	40	50
	Rate*	52.6	25.3	10.4	11.2	14.0

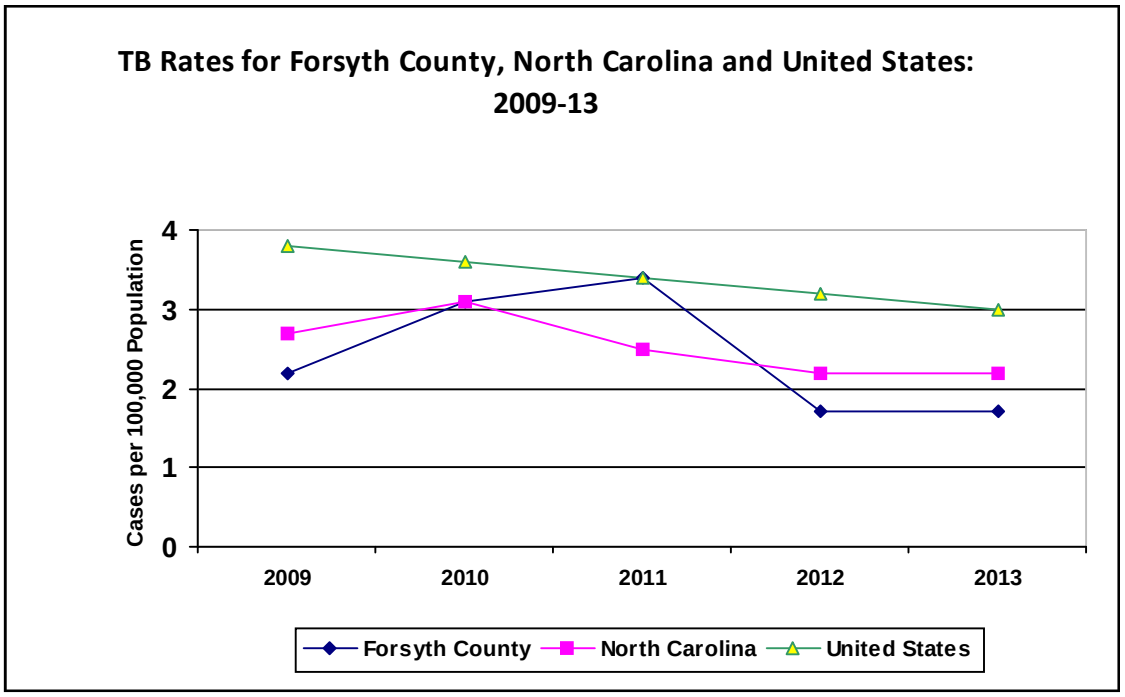
***Rate per 100,000 Population. Case counts are based on date cases were closed in system, not disease onset date.**
******Rates based on fewer than 20 cases are unreliable and not displayed
Sources: NC Electronic Disease Surveillance System; Forsyth County, North Carolina 2013 HIV/STD Surveillance Report, September 2014

Tuberculosis

In Forsyth County, there were 43 clients diagnosed with tuberculosis (TB) between 2009 and 2013. Majority of the clients were White (47%) followed by African American (30%) and Asian (19%). There was no significant difference among gender with male (53%) and females (47%). The percentage of foreign born clients was 65% compared to 35% US-born clients. Sixty-seven percent of the clients were in the 45+ year age group.

The tuberculosis rate decreased from 2.2 to 1.7 per 100,000 between 2009 and 2013 in Forsyth County. The number of cases, (6)remained the same in 2012 and 2013. The North Carolina rate has gradually decreased from 2.7 to 2.2 between 2009 and 2013 and United States rate from 3.8 to 3.0

Figure 5



Sources: NC Electronic Disease Surveillance System; 2012 Tuberculosis Statistics for North Carolina, Tuberculosis Control Program, NC Division of Public Health July 2013

All Reportable Communicable Diseases and Conditions 2009-2013, Forsyth County

General Communicable Diseases	Year to Date 2009	Year to Date 2010	Year to Date 2011	Year to Date 2012	Year to Date 2013
Brucellosis	0	0	0	1	0
Campylobacter Infection	29	33	22	25	27
Creutzfeldt-Jakob Disease	0	0	0	1	0
Cryptosporidiosis	10	4	1	3	3
E Coli***	2	2	3	5	5
Encaphalitis Arborviral, WNV	0	0	0	1	0
Foodborne Other	2	0	0	0	1
Foodborne Staphylococcal	0	0	0	1	1
Haemophilus influenzae	2	5	5	7	5
Hepatitis A	2	3	1	0	0
Hepatitis C - Acute	0	2	1	2	4
Hemolytic Uremic Syndrome	0	1	0	0	0
Influenza death (<18 years old)	4	0	1	3	2
Influenza, NOVEL virus infection	53	0	0	0	0
Legionellosis	5	2	15	5	10
Leprosy (Hansen's Disease)	0	1	0	0	0
Listeriosis	3	2	0	2	0
Lyme disease	0	1	0	2	1
Malaria	0	0	0	2	1
Meningococcal	2	0	1	0	1
Pneumococcal meningitis	0	2	1	0	1
Salmonellosis***	49	45	57	38	33
Shigellosis	1	9	14	11	10
Staphylococcus aureus - VRSA	0	0	2	0	0
Streptococcal infection Group A, Inva-	6	8	7	8	8
Toxic Shock Syndrome, streptococcal	0	0	0	1	0
Tuberculosis	8	11	12	6	6
Vibrio Infection, Other	0	0	0	0	2

*** Per CDC cases definition, includes suspect cases. All other diseases are confirmed per case definitions.
Data source: NC Electronic Disease Surveillance System. Accessed 09/23/2014

All Reportable Communicable Diseases and Conditions 2009-2013, Forsyth County

Vector-borne Diseases	Year to Date 2009	Year to Date 2010	Year to Date 2011	Year to Date 2012	Year to Date 2013
Encephalitis, arboviral, WNV (95)	0	0	0	1	0
Lyme Disease (51)	0	1	0	2	1
Vaccine Preventable Diseases					
Hepatitis B - Acute	15	7	8	2	5
Hepatitis B - Chronic	26	18	25	26	15
Measles	0	0	0	0	1
Mumps	1	0	0	0	0
Pertussis	4	6	6	22	139
Sexually Transmitted Diseases					
AIDS	48	26	40	26	34
Chlamydia	3,048	2,503	2,668	2,704	2,508
Gonorrhea	847	774	854	712	742
HIV Infection	89	59	80	54	69
Non-Gonococcal Urethritis	393	400	400	199	392
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