

Forsyth County, North Carolina 2010 HIV/STD Surveillance Report





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Technical Notes*

*as provided by the NC DHHS Communicable Disease Surveillance Unit with additional comments by the Forsyth County Department of Public Health Division of Epidemiology and Surveillance

Readers should note that fluctuations in the number of disease reports per year may be influenced by reporting issues. These issues may vary by disease. Readers should also be aware that HIV and AIDS data are presented differently than in previous years. HIV and AIDS data are presented by date of diagnosis rather than date of report. Please see the individual surveillance disease notes below for more information.

About the Communicable Disease Surveillance Unit

North Carolina law requires that diagnoses of certain communicable diseases, including sexually transmitted diseases (STDs), be reported to local health departments that in turn report the information to the state. The Communicable Disease Surveillance Unit (CDSU) is the designated recipient for STD morbidity reports at the state level and is responsible for aggregating these reports and providing statewide information about these diseases to others, including the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. The CDSU is part of the Communicable Disease Branch within the North Carolina Division of Public Health.

About the content of this report

The Forsyth County 2010 HIV/STD Surveillance Report includes summary tables of surveillance reports and other information for HIV disease, AIDS, chlamydia, gonorrhea, and syphilis for Forsyth County cases that were reported from January 1, 2010 through December 31, 2010. Information about all North Carolina counties for the time period can be found in the North Carolina 2010 HIV/STD Surveillance Report http://www.epi.state.nc.us/epi/hiv/pdf/std10rpt.pdf In some instances, total numbers of reports may not agree between separate cross-tabulations due to missing values for some variables.

This report is intended to be used as a reference document for program managers, health planners, researchers, and others who are concerned with the public health implications of these diseases. The information presented is meant to be brief and provided limited data. This report and other annual publications are available at http://www.forsyth.cc/Publichealth/publications.aspx.

Rates are expressed as cases per 100.0,000 population. Rate denominators were calculated using the available bridged race population estimates from the National Center for Health Statistics. Because bridged race population estimates were unavailable for 2010, 2009 estimates were used as denominators in rate calculation for 2010. Thus, the 2010 rates should be considered preliminary rates. More information about bridged race categories is available at the website, http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge/popbridge.htm.

Rates that are based on small numbers of cases (generally fewer than 20) should be viewed with caution and are considered unreliable because these rates have large standard errors and confidence intervals that can be wider than the rates themselves. For a more complete discussion of rates based on small numbers, please see the North Carolina Center for Health Statistics' publication, Statistical Primer No.12 "Problems with Rates Based on Small Numbers" by Paul Buescher. This publication is available at the website, http://www.schs.state.nc.us/SCHS/.

AIDS and HIV disease surveillance data

HIV disease case reports represent persons who have a confirmed diagnosis with human immunodeficiency virus (HIV). This category represents all new diagnoses with HIV regardless of the stage of the disease and is sometimes referred to as simply "HIV infection." Cases are counted by the date of diagnosis for the initial HIV diagnosis. *AIDS* (acquired immunodeficiency syndrome) *case reports*, by contrast, represent only persons with HIV infection who have progressed to this later, more life threatening, stage of disease. AIDS cases are counted by the date of AIDS diagnosis. Most AIDS case reports represent persons who were diagnosed with HIV infection in earlier years. However, in North Carolina, about one-fourth to one-third of the new HIV disease reports represent persons who are initially diagnosed with HIV infection and AIDS at or very near the same time (concurrent). HIV disease reports and AIDS case reports should be considered separately. The two categories should never be combined to estimate an infected population, as the broad category of HIV disease includes AIDS cases that are counted by the initial diagnosis of HIV infection.

County of residence

Geographically, cases are counted by the patient's county of residence at diagnosis. Patients who are residents of a long-term facility such as prisons or other institutions are counted by the address of the facility. This causes the case counts for

counties with large institutions to be higher than otherwise expected. People with HIV disease in the prisons play different roles in the epidemic from other residents in the county. In this annual report, persons diagnosed in long-term prison setting are excluded from county and regional case totals and rates. These cases are, however, included in state totals.

Year of diagnosis

HIV disease is unlike most communicable diseases in that it is chronic in nature. Failure of providers to initially report cases and change in residence after initial diagnosis can complicate case counting. Therefore enhanced surveillance activities may artificially result in fluctuations in the number of case reports counted by date of report. Tables in this report now display cases by date of diagnosis rather than date of report.

Tabulating case totals by date of diagnosis does delay the reporting of disease information. It takes at least six months from diagnosis for most cases reports to be verified and fully recorded in surveillance databases. Therefore, HIV morbidity data for 2010 was not available until July 1, 2011. This six month delay in the presentation of HIV morbidity data for analysis will be an ongoing issue.

Chlamydia surveillance data

Chlamydia case reports represent persons who have a laboratory-confirmed chlamydial infection. It is important to note that chlamydial infection is often asymptomatic in both males and females, and most cases are detected through screening. Changes in the number of reported cases may be due to changes in screening practices. The disease can cause serious complications in females, and a number of screening programs are in place to detect infection in young women. There are no comparable screening programs for young men. For this reason, Chlamydia case reports are always highly biased with respect to gender. The North Carolina STD Surveillance data system underwent extensive changes in 2008 as North Carolina implements North Carolina Electronic Disease Surveillance System (NC EDSS). During this transition, Chlamydia morbidity counts for some counties may have been affected. Report totals for 2009 and 2010 should be considered with this in mind. Reports are summarized by the date received at the Communicable Disease Surveillance Unit rather than by date of diagnosis.

Gonorrhea surveillance data

Gonorrhea case reports represent persons who have a laboratory-confirmed gonorrhea infection. Gonorrhea is often symptomatic in males and slightly less so in females. Many cases are detected when patients seek medical care. Others are detected through screening but to a far lesser degree than chlamydia cases. Gonorrhea can cause serious complications for females and a number of screening programs exist targeting this population. There is less screening of males because they are more likely to have symptoms that would bring them to the STD clinic; therefore, gender bias in gonorrhea reporting is not likely to be large. Public clinics and health departments may do a better job of conducting such screening programs and reporting cases, causing the reported cases to be biased toward those attending public clinics. During the transition to NC EDSS, gonorrhea morbidity counts for some counties may have been affected. Report totals for 2009 and 2010 should be considered with this in mind. Reports are summarized by the date received at the Communicable Disease Surveillance Unit rather than by date of diagnosis.

Syphilis surveillance data

Syphilis cases are reported by stage of infection, which is determined through a combination of laboratory testing and patient interviews. Primary and secondary syphilis have very specific symptoms associated with them, so misclassification of these stages is highly unlikely. Early latent syphilis is asymptomatic but can be staged with confirmation that the infection is less than a year old. Together these three stages that occur within the first year of infection are called "early syphilis." This report includes only early syphilis cases, though other later stages are reported to the Communicable Disease Surveillance Unit. Because North Carolina performs patient interviews, partner notification, and contact tracing on all early syphilis cases, the quality of the early latent case data is also quite good. Screening programs are more likely to detect asymptomatic cases, which may introduce some bias in the early latent case reports toward screened populations (pregnant women, jail inmates, others). However, thorough contact tracing further aids in case detection and reduces these biases. Reports are summarized by the date received at the Communicable Disease Surveillance Unit rather than by date of diagnosis.

For more information:

For a more detailed discussion of the content, strengths, and weaknesses of STD and HIV surveillance data, please see Appendix B of the most recent *HIV/STD Prevention & Community Planning Epidemiologic Profile for North Carolina*. Recent trend information can also be found on the fact sheets available at the web site, <u>http://www.epi.state.nc.us/epi/hiv/surveillance.html</u>.

Summary of 2009 Reports for Forsyth County

Below are graphs of 2009 Sexually-transmitted diseases (STD) Reports by sex, age group, and race/ethnicity. These graphs can be used as a reference when viewing the current year data. Please note that HIV Disease includes HIV and AIDS Reports.







Chlamydia

Chlamydia is the most commonly reported bacterial STD. Approximately 50% of men and 75% of women who have Chlamydia experience no symptoms. Untreated infections can lead to serious consequences for reproductive and overall health. In women these infections often result in pelvic inflammatory disease (PID), which can cause infertility, ectopic pregnancy, and chronic pelvic pain. In addition, pregnant women infected with Chlamydia can infect their babies during delivery. Recent research data have shown that women infected with Chlamydia have a 3- to5-fold increased risk of acquiring HIV if exposed.

In 2010, a total of 42,167 cases of Chlamydia were reported in North Carolina. **Forsyth County reported 2,503 cases of Chlamydia. The rate of infection was 696.0 cases per 100.0,000 population, which ranked first among the state's five urban counties. This was a 17.9% decrease from 847.5 cases per 100.0,000 population in 2009.** Durham, Mecklenburg, Wake and Guilford counties ranked second, third, fourth, and fifth, respectively, in highest rate of infection among the urban counties. Mecklenburg County reported the highest number of cases, totaling 4,627. Durham County reported the fewest cases, totaling 1,642.

2010 Chlamydia Reports in Forsyth County										
	1st Q	uarter	2nd Q	uarter	3rd Qu	uarter	4th Qu	arter	Total	
Sex	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Male	239	31.1	187	31.1	222	34.4	147	30.2	795	31.8
Female	530	68.9	415	68.9	422	65.4	340	69.8	1,707	68.2
Unknown	0	0.0	0	0.0	1	0.2	0	0.0	1	0.0
Total	769	100.0	602	100.0	645	100.0	487	100.0	2,503	100.0
Age Group	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
0-12 yr	0	0.0	1	0.2	1	0.2	0	0.0	2	0.1
13-19 yr	259	33.7	185	30.7	209	32.4	152	31.2	805	32.2
20-29 yr	399	51.9	344	57.1	355	55.0	272	55.9	1,370	54.7
30-39 yr	81	10.5	58	9.6	65	10.1	48	9.9	252	10.1
40-49 yr	22	2.9	8	1.3	13	2.0	6	1.2	49	2.0
50+ yr	8	1.0	4	0.7	2	0.3	9	1.8	23	0.9
Unknown	0	0.0	2	0.3	0	0.0	0	0.0	2	0.1
Total	769	100.0	602	100.0	645	100.0	487	100.0	2,503	100.0
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
White*	43	5.6	37	6.1	38	5.9	27	5.5	145	5.8
Black*	342	44.5	282	46.8	222	34.4	167	34.3	1,015	40.5
Hispanic	55	7.2	45	7.5	49	7.6	33	6.8	182	7.3
Other/Unknown	329	42.8	238	39.5	336	52.1	260	53.4	1,163	46.5
Total	769	100.0	602	100.0	645	100.0	487	100.0	2,503	100.0

Gonorrhea

Gonorrhea is a STD caused by *Neisseria gonorrhoeae*. It is the second most common bacterial STD in the US, after Chlamydia. About 30% to 60% of people who have gonorrhea do not experience symptoms. If left untreated, gonorrhea can cause of pelvic inflammatory disease, tubal infertility, ectopic pregnancy, and chronic pelvic pain. Studies also indicate that gonococcal infections facilitate HIV transmission. The reporting of gonorrhea cases is likely biased towards reporting of infections in racial and ethnic minorities that attend public STD clinics.

In 2010, 14,153 cases of gonorrhea were reported in North Carolina. Forsyth County reported 774 cases of gonorrhea. The rate of infection was 215.2 cases per 100.0,000 population, which ranked second among the five urban counties in North Carolina. This was a 8.6% decrease from its rate of 235.5 cases per 100.0,000 populations in 2009. Durham, Guilford, Mecklenburg and Wake counties ranked first, third, fourth, and fifth, respectively, in highest rate of infection among the urban counties. Mecklenburg County reported the most cases, totaling 1,516 cases, and Durham County reported the least cases, totaling 680 cases.

2010 Gonorrhea Reports in Forsyth County										
	1st Quarter 2nd Quarter 3rd Qua		arter	4th Qu	arter	Total				
Sex	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Male	96	44.4	92	48.7	96	45.9	74	46.3	358	46.3
Female	120	55.6	97	51.3	112	53.6	85	53.1	414	53.5
Unknown	0	0.0	0	0.0	1	0.5	1	0.6	2	0.3
Total	216	100.0	189	100.0	209	100.0	160	100.0	774	100.0
Age Group	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
0-12yr	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13-19 yr	58	26.9	52	27.5	47	22.5	34	21.3	191	24.7
20-29 yr	115	53.2	111	58.7	107	51.2	101	63.1	434	56.1
30-39 yr	29	13.4	22	11.6	40	19.1	16	10.0	107	13.8
40-49 yr	9	4.2	4	2.1	13	6.2	5	3.1	31	4.0
50+ yr	5	2.3	0	0.0	2	1.0	4	2.5	11	1.4
Total	216	100.0	189	100.0	209	100.0	160	100.0	774	100.0
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
White*	13	6.0	10	5.3	17	8.1	10	6.3	50	6.5
Black*	135	62.5	115	60.8	91	43.5	73	45.6	414	53.5
Hispanic	5	2.3	10	5.3	3	1.4	6	3.8	24	3.1
Other/Unknown	63	29.2	54	28.6	98	46.9	71	44.4	286	37.0
Total	216	100.0	189	100.0	209	100.0	160	100.0	774	100.0

Non-Hispanic

Source: Fox KK, Whittington W, Levine WC, Moran JS, ZaidiAA, Nakashima AN. Gonorrhea in the United States, 1981-1996: demographic and geographic trends, Sex Transm Dis 1998; 25(7): 386-393

Syphilis

Syphilis is a bacterial STD caused by *Treponema pallidum*. It has often been called the great imitator because many symptoms are indistinguishable from those of other diseases. Depending on the stage of the infection, many people experience no symptoms at all. Untreated syphilis that progresses to later stages can lead to organ damage and death. In addition, sores caused by make contracting and passing HIV infection easier. There is a 2- to 5-fold greater risk of HIV infection when a person is already infected with syphilis.

In 2010, 724 cases of early syphilis were reported in North Carolina. Forsyth County reported 103 cases of early syphilis. The rate of infection was 28.6 cases per 100.0,000 population, which ranked first among the five urban counties in North Carolina. This was a 47.2% decrease from the rate in 2009 of 54.2 cases per 100.0,000 populations. Mecklenburg, Guilford, Wake and Durham counties ranked second, third, fourth, and fifth, respectively, in highest rate of infection among the urban counties. Forsyth County reported the highest number of cases. Durham County reported the fewest cases, totaling 23.

2010 Primary, Secondary, & Early Latent Syphilis Reports in Forsyth County										
	1st Q	uarter	2nd Qu	uarter	3rd Quarter		4th Quarter		Total	
Sex	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Male	26	51.0	18	72.0	7	70.0	15	88.2	66	64.1
Female	25	49.0	7	28.0	3	30.0	2	11.8	37	35.9
Total	51	100.0	25	100.0	10	100.0	17	100.0	103	100.0
Age Group	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
0-12yr	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13-19 yr	8	15.7	2	8.0	1	10.0	1	5.9	12	11.7
20-29 yr	18	35.3	14	56.0	5	50.0	8	47.1	45	43.7
30-39 yr	12	23.5	4	16.0	2	20.0	2	11.8	20	19.4
40-49 yr	8	15.7	4	16.0	2	20.0	4	23.5	18	17.5
50+ yr	5	9.8	1	4.0	0	0.0	2	11.8	8	7.8
Total	51	100.0	25	100.0	10	100.0	17	100.0	103	100.0
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
White*	7	13.7	3	12.0	0	0.0	3	17.6	13	12.6
Black*	41	80.4	22	88.0	10	100.0	14	82.4	87	84.5
Hispanic	2	3.9	0	0.0	0	0.0	0	0.0	2	1.9
Other/Unknown	1	2.0	0	0.0	0	0.0	0	0.0	1	1.0
Total	51	100.0	25	100.0	10	100.0	17	100.0	103	100.0

HIV Disease

Infection with human immunodeficiency virus (HIV) generally causes progressive damage to the immune and organ systems, including the central nervous system, and leads to a more severe life-threatening clinical condition called AIDS (acquired immunodeficiency syndrome). For more information about how HIV cases are counted and reported, see Technical Notes (pages 3-4).

In 2010, a total of 1,487 diagnoses of HIV disease were reported in North Carolina. Forsyth County reported 59 cases of HIV disease. The rate of infection was 16.4 per 100.0,000 population, which ranked fifth among the state's urban counties. This is a 31.4% decrease from 23.9 cases per 100.0,000 population in 2009. Durham, Mecklenburg, Guilford and Wake counties ranked first, second, third, and fourth, respectively, in highest rate of infection among the urban counties. Mecklenburg County reported the highest number of cases, totaling 312. Forsyth County reported the lowest number of cases.

	se in Forsyth	County				
	Total					
Sex	Cases	%				
Male	44	74.6				
Female	15	25.4				
Total	59	100.0				
		•				
Age Group	Cases	%				
0-12yr	2	3.4				
13-19 yr	2	3.4				
20-29 yr	17	28.8				
30-39 yr	7	11.9				
40-49 yr	16	27.1				
50+yr	15	25.4				
Total	59	100.0				
Race/Ethnicity	Cases	%				
White*	8	13.6				
Black*	43	72.9				
Hispanic	6	10.2				
Other/Unknown	2	3.4				
Total	59	100.0				
Mode of Exposure	Cases	%				
Men who had sex with men (MSM)	21	35.6				
Intravenous Drug Use (IDU)	2	3.4				
Heterosexual (all)	18	30.5				
NIR	17	28.8				
Pediatric	1	1.7				
Total	59	100.0				

AIDS

Acquired immunodeficiency syndrome (AIDS) is a life-threatening clinical condition caused by the progression of HIV disease. In recent years, the number of AIDS cases has decreased. This is most likely because of the availability of new highly effective antiretroviral treatments for persons with HIV disease. For more information about how AIDS cases are counted and reported, see Technical Notes (pages 3-4).

In 2010, a total of 796 diagnoses of AIDS were reported in North Carolina. Forsyth County reported 24 cases. The rate of infection was 6.7 per 100.0,000 population, which ranked fifth among the state's urban counties. This is a 49.6% decrease from 13.3 cases per 100.0,000 population in 2009. Durham, Mecklenburg, Guilford and Wake counties ranked first, second, third and fourth, respectively, in highest rate of infection among the urban counties. Mecklenburg County reported the highest number of cases, totaling 124. Forsyth County reported the lowest number of cases.

2010 AIDS Diagnoses in Forsyth County								
	Total							
Sex	Cases	%						
Male	17	70.8						
Female	7	29.2						
Total	24	100.0						
Age Group	Cases	%						
0-12yr	1	4.2						
13-19 yr	0	0.0						
20-29 yr	0	0.0						
30-39 yr	5	20.8						
40-49 yr	7	29.2						
50+yr	11	45.8						
Total	24	100.0						
		•						
Race/Ethnicity	Cases	%						
White*	7	29.2						
Black*	15	62.5						
Hispanic	2	8.3						
Total	24	100.0						
Mode of Exposure	Cases	%						
Men who had sex with men (MSM)	2	8.3						
Intravenous Drug Use (IDU)	2	8.3						
MSM/IDU	2	8.3						
Heterosexual (all)	10	41.7						
NIR	6	25.0						
Pediatric	2	8.3						
Total	24	100.0						

Trend for Chlamydia, Gonorrhea & Syphilis** Incidences for the Five Urban Counties & North Carolina, 2006-2010

Chlamydia Cases & Rates for the Five Urban Counties & NC at Year of Report										
County of		Year of Report								
Residence		2006	2007	2008	2009	2010				
Durham	Cases	1,331	1,218	1,460	1,471	1642				
	Rate*	534.0	476.2	555.0	545.4	608.8				
Forsyth	Cases	1,845	2,193	2,332	3,048	2,503				
	Rate*	542.7	630.2	656.6	847.5	696.0				
Guilford	Cases	1,877	2,282	2,333	2,994	2,398				
	Rate*	412.1	490.8	492.1	623.3	499.2				
Mecklenburg	Cases	2,836	1,740	4,018	5,840	4,627				
	Rate*	340.8	201.0	450.2	639.2	506.4				
Wake	Cases	3,942	2,777	3,121	3,590	4,530				
	Rate*	497.1	333.9	359.5	400.1	504.9				
North Carolina (all counties)	Cases	33,615	30,612	37,885	43,734	42,167				
	Rate*	379.1	337.7	409.7	466.2	449.5				

Gonorrhea Cases & Rates for the Five Urban Counties & NC at Year of Report									
County of	Year of Report								
Residence		2006	2007	2008	2009	2010			
Durham	Cases	769	810	728	561	680			
	Rate*	308.5	316.7	276.8	208.0	252.1			
Forsyth	Cases	796	882	662	847	774			
	Rate*	234.1	253.5	186.4	235.5	215.2			
Guilford	Cases	1,083	1,702	1,034	1,100	871			
	Rate*	237.8	366.1	218.1	229.0	181.3			
Mecklenburg	Cases	2,079	1,181	1,872	2,035	1,516			
	Rate*	249.3	136.4	209.8	222.7	165.9			
Wake	Cases	1,615	1,192	1,030	1,010	1,249			
	Rate*	203.7	143.3	118.7	112.6	139.2			
North Carolina	Cases	17,311	16,666	15,012	14,811	14,153			
(all counties)	Rate*	195.2	183.9	162.3	157.9	150.9			

Early Syphilis** Cases & Rates for the Five Urban Counties & NC at Year of Report Year of Report County of Residence 2006 2007 2008 2009 2010 Durham Cases 33 47 39 40 23 14.8 Rate* 13.2 18.4 14.8 8.5 Forsyth Cases 34 31 46 195 103 Rate* 10.0 8.9 13.0 54.2 28.6 Guilford 45 68 Cases 74 50 75 Rate* 16.2 9.7 10.5 14.2 15.6 174 Mecklenburg 141 Cases 188 91 167 22.5 16.3 10.2 19.0 18.3 Rate* Wake Cases 115 60 39 37 83 Rate* 7.6 4.7 4.3 12.8 9.3 North Carolina Cases 602 569 509 937 724 (all counties) 5.5 10.0 7.7 Rate* 6.8 6.3

* Per 100.0,000 population. **Includes Primary, Secondary, and Early Latent Syphilis

Trend for HIV Disease and AIDS Incidences for the Five Urban Counties and North Carolina, 2006-2010

HIV Disease Cases & Rates by County of First Diagnosis, 2006-2010									
County of	Year of Report								
Residence		2006	2007	2008	2009	2010			
Durham	Cases	90	68	96	81	93			
	Rate*	36.1	26.6	36.5	30.0	34.5			
Forsyth	Cases	79	77	70	86	59			
	Rate*	23.2	22.1	19.7	23.9	16.4			
Guilford	Cases	143	157	148	128	118			
	Rate*	31.7	33.8	31.2	26.6	24.6			
Mecklenburg	Cases	306	390	389	333	312			
	Rate*	36.7	45.1	43.6	36.4	34.1			
Wake	Cases	188	205	203	184	172			
	Rate*	23.7	24.6	23.4	20.5	19.2			
North Carolina	Cases	1,642	1,798	1,812	1,628	1,487			
(all counties)	Rate*	18.5	19.8	19.6	17.4	15.9			

* Per 100.0,000 population.

AIDS Cases & Rates by County of AIDS Diagnosis, 2006-2010								
County of	of Year of Report							
Residence		2006	2007	2008	2009	2010		
Durham	Cases	30	31	42	33	38		
	Rate*	12.0	12.1	16.0	12.2	14.1		
Forsyth	Cases	21	30	30	48	24		
	Rate*	6.2	8.6	8.4	13.3	6.7		
Guilford	Cases	44	52	68	60	47		
	Rate*	9.7	11.2	14.3	12.5	9.8		
Mecklenburg	Cases	160	152	154	164	124		
	Rate*	19.2	17.6	17.3	18.0	13.6		
Wake	Cases	122	117	119	108	85		
	Rate*	15.4	14.1	13.7	12.0	9.5		
North Carolina	Cases	889	851	934	938	796		
(all counties)	Rate*	10.0	9.4	10.1	10.0	8.5		

• Per 100.0,000 population.