2010 Tuberculosis Statistics For North Carolina

State of North Carolina
Department of Health and Human Services
Division of Public Health
Communicable Disease Branch
Tuberculosis Control Program

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State of North Carolina • Beverly Eaves Perdue, Governor
Department of Health and Human Services •Lanier Cansler, Secretary
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HIGHLIGHTS

While tuberculosis in the United States decreased from 3.8 to 3.6 per 100,000 between 2009 and 2010, the North Carolina rate went from 2.7 to 3.1. The 2009 rate per 100,000 was a 25 percent drop from 2008. After such a sharp one-year decrease, it was anticipated that the case rate for 2010 would be higher than 2009. One of the factors that contributed to the 2010 increase was a large number of pediatric cases under the age of 5. Seven percent of the 2010 cases were under the age of 5. Thirteen of these 20 cases were either foreign-born or had a parent born in another country.

Demographics:

- North Carolina is ranked as the 19th highest state for TB case rates in the United States in 2010. This can be viewed as significant progress -- in 1980, North Carolina was ranked as the 3rd highest state for case rate.

- The number of TB cases in 2010 was 296. Since 1980, TB cases in North Carolina have decreased by almost 4 percent per year. As a result, the total number of cases in 2010 was only 27 percent of the total number of cases for 1980 (that is 296 cases compared to 1066 cases).

- In 2010, 52 percent of all cases were located in seven counties: Mecklenburg (40), Wake (37), Guilford (31), Durham (14), Robeson (12), Forsyth (11), and Henderson (10). The case rate was higher than the state rate in all but one of these counties (Forsyth) and it was the same as the state rate in Forsyth. There were 39 counties with no TB cases in 2010.

- While the number of Asians with TB only decreased by 3.5 percent between 2006 and 2010, the case rate for Asians decreased from 38.8 to 28.2 per 100,000 population.

- The number of African-Americans with TB decreased by 32 percent from 2006 to 2010. The rate for African-Americans decreased from 9.4 to 5.5 per 100,000 population.

- The number of Hispanics with TB decreased from 75 cases in a year to 56 between 2006 and 2010; the rate during this same time period decreased from 14.1 to 7.0 per 100,000 population. Of the 367 total Hispanic cases between 2006 and 2010, 188 (51%) were located in six counties: Wake (58), Mecklenburg (49), Forsyth (31), Buncombe (18), Duplin (16), and Guilford (16).

- With the exception of ages 0 - 4, the number of cases decreased for every age group with the greatest percentage decrease being in ages 5 – 14 (50 percent decrease between 2006 and 2010). Rates for males declined much more (35%) than for females (21%).

Risk Factors:

- Most (65%) 2010 TB cases in North Carolina have at least one of these risk factors: being born in a country with a higher TB incidence than the U.S. (“foreign born”); homeless within past year; resident of a long-term care or correctional facility; HIV co-infected; excessive alcohol user; or non-injecting or injecting drug user. Ten percent have two or more of these risk factors

- The percent of cases that are foreign-born increased from 36 percent to 41 percent between 2006 and 2010. Fifty-five percent of all foreign born cases of TB in 2010 came from four countries: Mexico (26%); Vietnam (12%), India (10%) and the Philippines (8%). For the five year period from 2006 to 2010, there were a total of 612 foreign-born cases. Of these, 322 cases came from three countries:

Mexico (203), Vietnam (60), and India (59). Of the total, 374 cases were located in five counties: Wake (120), Mecklenburg (102), Guilford (80), Forsyth (39), and Durham (32). For pediatric cases (0 - 14), 12.5 percent were foreign-born in 2010.

- TB cases with excessive alcohol use reported decreased from 17 percent in 2006 to 11 percent in 2010. Most of the people who reported excessive alcohol use are non-Hispanic U.S. born.

- Homeless cases remained fairly stable -- 5 percent in 2006 and 4 percent in 2010.

- HIV reporting for TB cases has increased significantly from 1999 to 2010. Since November 2007, the standard of care has been to offer HIV testing as part of routine screening. Patients are informed that HIV testing is part of the screening and may decide to "opt-out" of that test. Before this standard of care was official, N.C. TB nurse consultants spent a lot of time training in local health departments to encourage HIV testing for TB suspects/cases. Consequently, the number of cases where HIV status is unknown has decreased greatly. In 1999, there were 149 persons for whom HIV testing was not offered, not known, or refused by the patient. In 2010, there were five persons who refused HIV testing and one person (who died two days into treatment) that was not offered HIV testing.

Clinical data:

- Mortality of tuberculosis cases during treatment greatly decreased from 2002 to 2009. The number of cases where death occurred during treatment was 44 in 2002 and 15 by 2009. Additionally, there were 15 people dead at diagnosis in 2002 and 6 in 2009.

- Previous diagnosis of tuberculosis decreased from 24 in 2003 to 16 in 2010.

- The major site of disease for TB cases in 2010 was predominately pulmonary (219), followed by lymphatic: cervical (12) and pleural (11).

- While the number of cases resistant to INH in North Carolina was 15 in 2010 and 16 in 2006, the percentage of cases was the same (5%). Between 2006 and 2010, the number of MDR cases has ranged from 1 to 2 cases per year.

- In 2009, 95.6 percent of all cases were either totally directly observed or directly observed for at least 26 weeks. The percentage of 2009 cases that completed therapy in one year (when expected to complete therapy in one year) was 92 percent with another 5.4 percent completing after one year. Only 2.6 percent have not completed treatment – one was lost to follow-up, three left the country without communicating with the local health departments, one was uncooperative/refused and two are still on therapy (slow response).

DEMOGRAPHICS

DEMOGRAPHIC CHARACTERISTICS

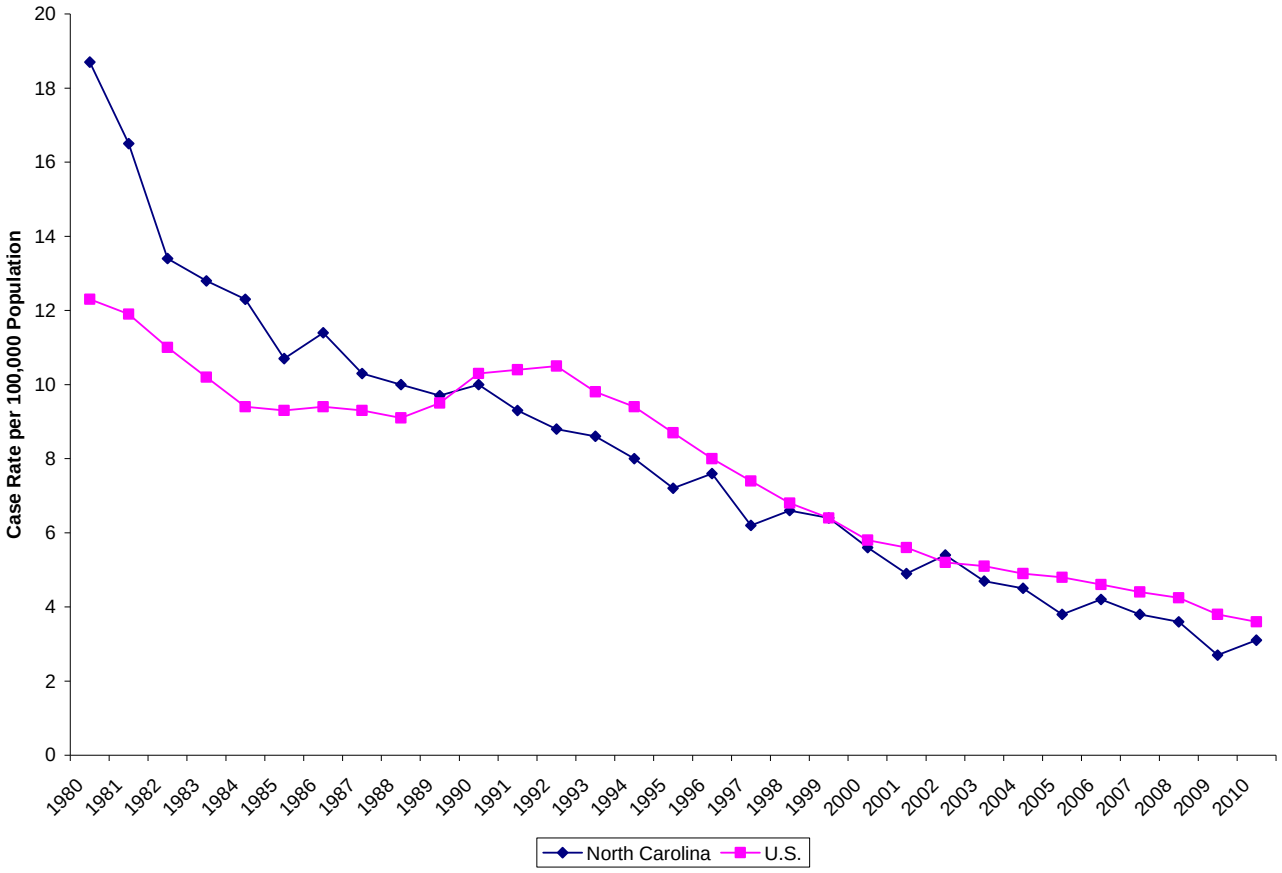
Figure 1. Reported TB Cases in N.C.: 1980 - 2010

DATA SOURCE: CaroTIMS and NC Electronic Data Surveillance System (NC EDSS)

As can be seen from Figure 1, the total number of cases in North Carolina for 2010 is only 27 percent of the total number of cases in 1980 (that is 296 cases compared to 1066). On average, the numbers have declined by almost four percent per year. TB incidence in North Carolina decreased 21 percent between 2006 and 2010, down from 374 cases to 296 cases. The number of cases reported in North Carolina increased from 250 to 296 between reporting years 2009 and 2010 – thus the total number of cases in 2010 was 18 percent higher than the total number of cases in 2009.

Both U.S. and N.C. TB Case Rates have dropped significantly since 1980. [Figure 2] With the exception of two years, the N.C. case rate has been lower than the U.S. case rate since 1990. Although the number of cases has declined in North Carolina in the past five years, the state is ranked as 19th highest for case rates in 2010. [Table 1] North Carolina has the eighth largest number of cases among the 50 states.

Figure 2. TB Case Rates for N.C. and the U.S.: 1980 - 2010



DATA SOURCE: Annual surveillance reports published by CDC.

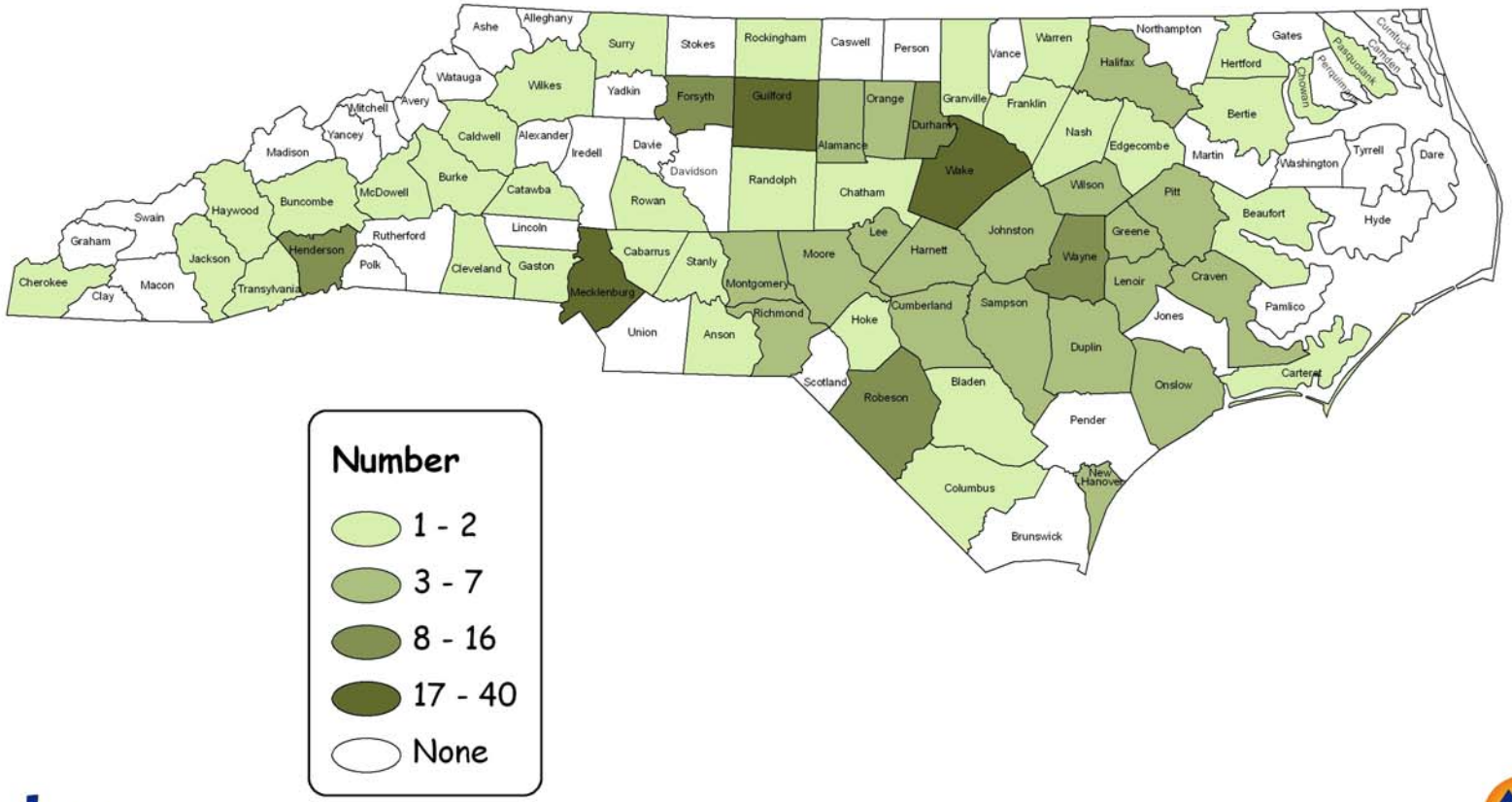
Table 1: N.C. and U.S. Case Rate and N.C. Ranking in U.S. by Case Rate 2006-2010

Table 1	Case Rate and Rank by Case Rate 2006-2010*		
	Rates		
Year	USA	North Carolina	Rank
2006	4.6	4.2	18
2007	4.4	3.8	22
2008	4.2	3.6	20
2009	3.8	2.7	26
2010	3.6	3.1	19

DATA SOURCE: Annual surveillance reports published by CDC.

Figure 3 on the following page is a map of 2010 cases in N.C. by county of residence.

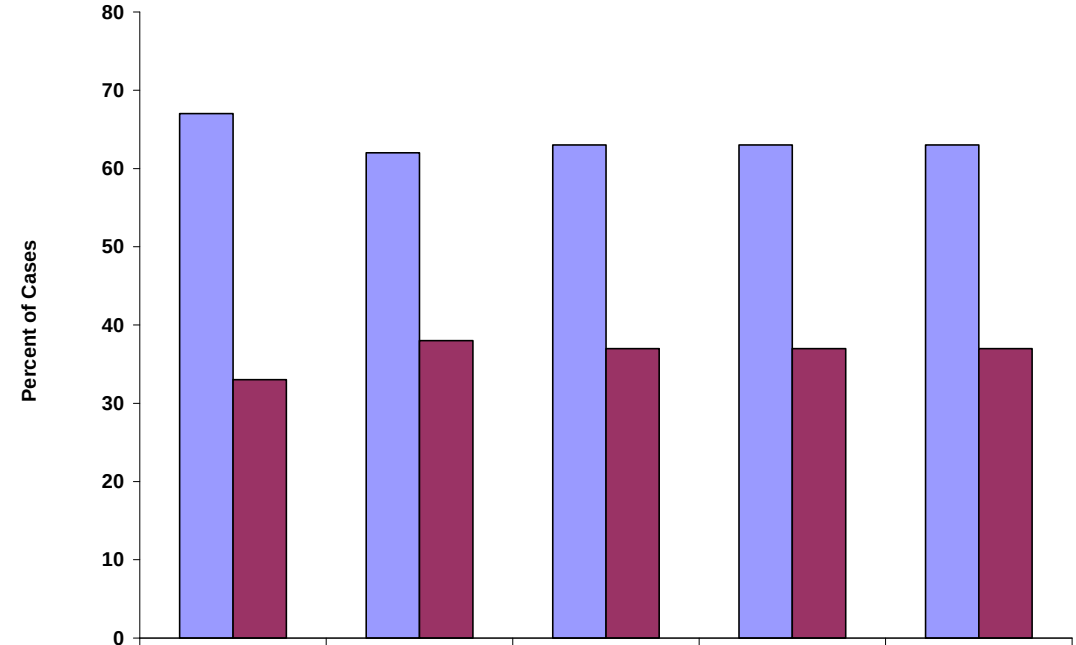
Figure 3. North Carolina 2010 Tuberculosis Cases



sehs
State Center for Health Statistics

NCPH
North Carolina Public Health

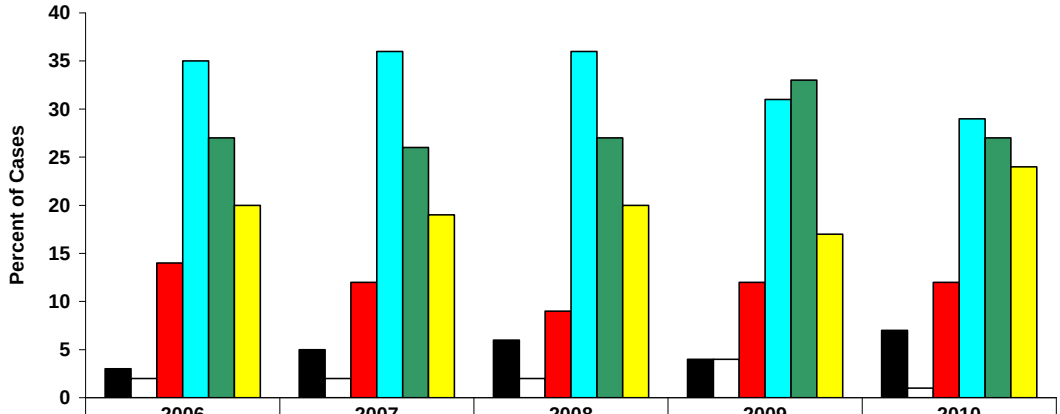
Figure 4. N.C. TB Cases by Gender: 2006 – 2010



	2006	2007	2008	2009	2010
Male (%)	67	62	63	63	63
Female (%)	33	38	37	37	37

DATA SOURCE: North Carolina Electronic Disease Surveillance System (NC EDSS)

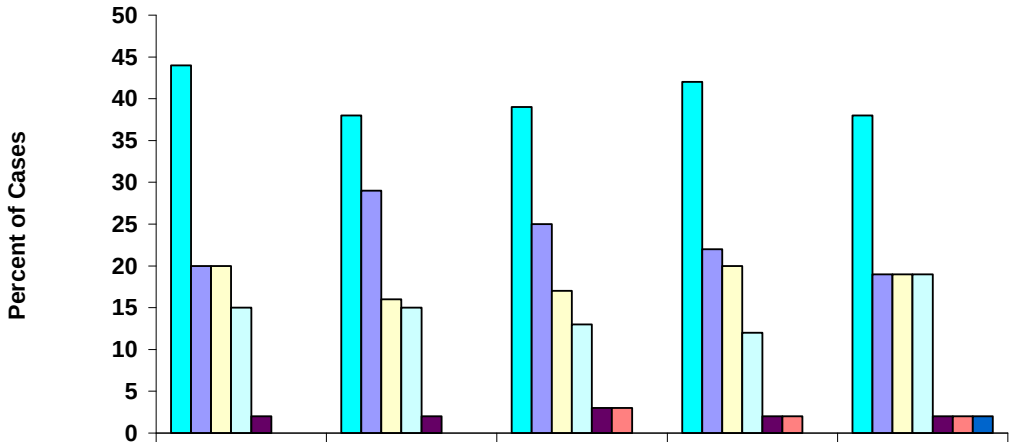
Figure 5. N.C. TB Cases by Age Group: 2006 – 2010



	2006	2007	2008	2009	2010
0- 4	3	5	6	4	7
5-14	2	2	2	4	1
15-24	14	12	9	12	12
25-44	35	36	36	31	29
45-64	27	26	27	33	27
>65	20	19	20	17	24

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Figure 6. N.C. TB Cases by Race and Ethnicity: 2006 – 2010



	2006	2007	2008	2009	2010
Black/African-American*	44	38	39	42	38
Hispanic	20	29	25	22	19
White*	20	16	17	20	19
Asian*	15	15	13	12	19
American Indian/Alaska Native*	2	2	3	2	2
Multi-Racial*	0	0	3	2	2
Hawaiian/Other Pacific Islander*	0	0	0	0	2

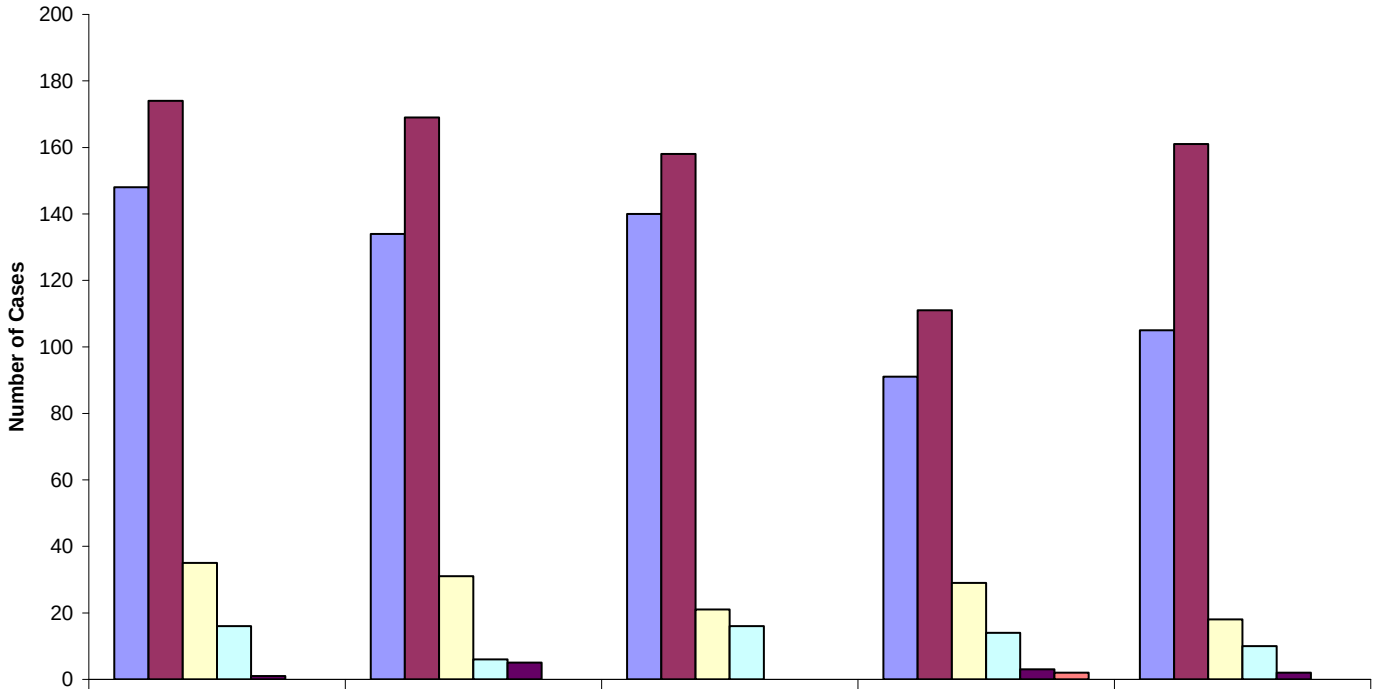
*** Does not include Hispanics**
DATA SOURCE: North Carolina Electronic Disease Surveillance System (NC EDSS)

RISK FACTORS

RISK FACTORS FOR TB

There are several risk factors commonly associated with increased incidence of TB. These include: being foreign-born; excessive alcohol use; non-injecting and/or injecting drug use; being homeless; being a resident of a long-term care facility or a correctional facility; being co-infected with HIV; and being a health-care worker. This section describes N.C. TB cases regarding these factors. As can be seen from Figure 7, about 65 percent of the 2010 cases have at least one risk factor. In 2010, approximately 10 percent of the cases have two or more risk factors.

Figure 7. N.C. TB Cases by Number of Risk Factors: 2006 – 2010

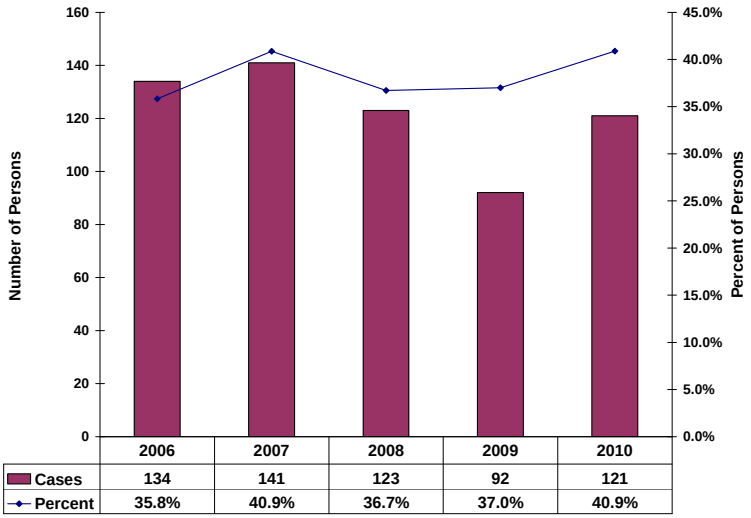


	2006	2007	2008	2009	2010
0	148	134	140	91	105
1	174	169	158	111	161
2	35	31	21	29	18
3	16	6	16	14	10
4	1	5	0	3	2
5	0	0	0	2	0

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Foreign Born: The number of foreign-born cases in 2010 was 31.5 percent higher than the number in 2009 (121 cases in 2010 and 92 in 2009). [See Figure 8.] North Carolina has a lower percentage of foreign-born in comparison to the U.S. average. The largest percentage of foreign-born cases in 2010 were from Mexico (26%), Vietnam (12%), India (10%), and Philippines (8%) . [See Figure 9.]

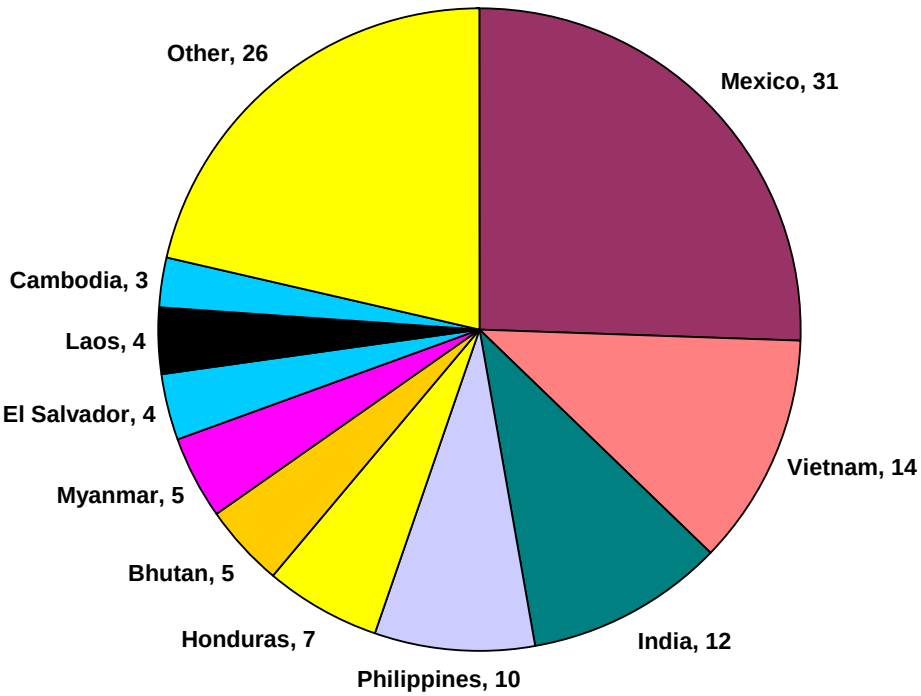
Figure 8. N.C. Foreign-Born TB Cases: 2006 – 2010



	2006	2007	2008	2009	2010
Cases	134	141	123	92	121
Percent	35.8%	40.9%	36.7%	37.0%	40.9%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Figure 9. Countries of Origin for 2010 Foreign-born TB Cases in N.C.



DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Pediatric Cases by Foreign-Born Status: An examination of 2010 pediatric cases by country of origin indicates that 12.5 percent are foreign born. This is about the same as 2009 cases. However, of those who were U.S. born, 12 of those under 5 had one or both parents foreign born (referred to in the table below as foreign-born associated) for a total of 65 percent either foreign-born or with foreign-born parents. Of those 5-14 years old, 100 percent were either foreign-born or had parents that were foreign-born.

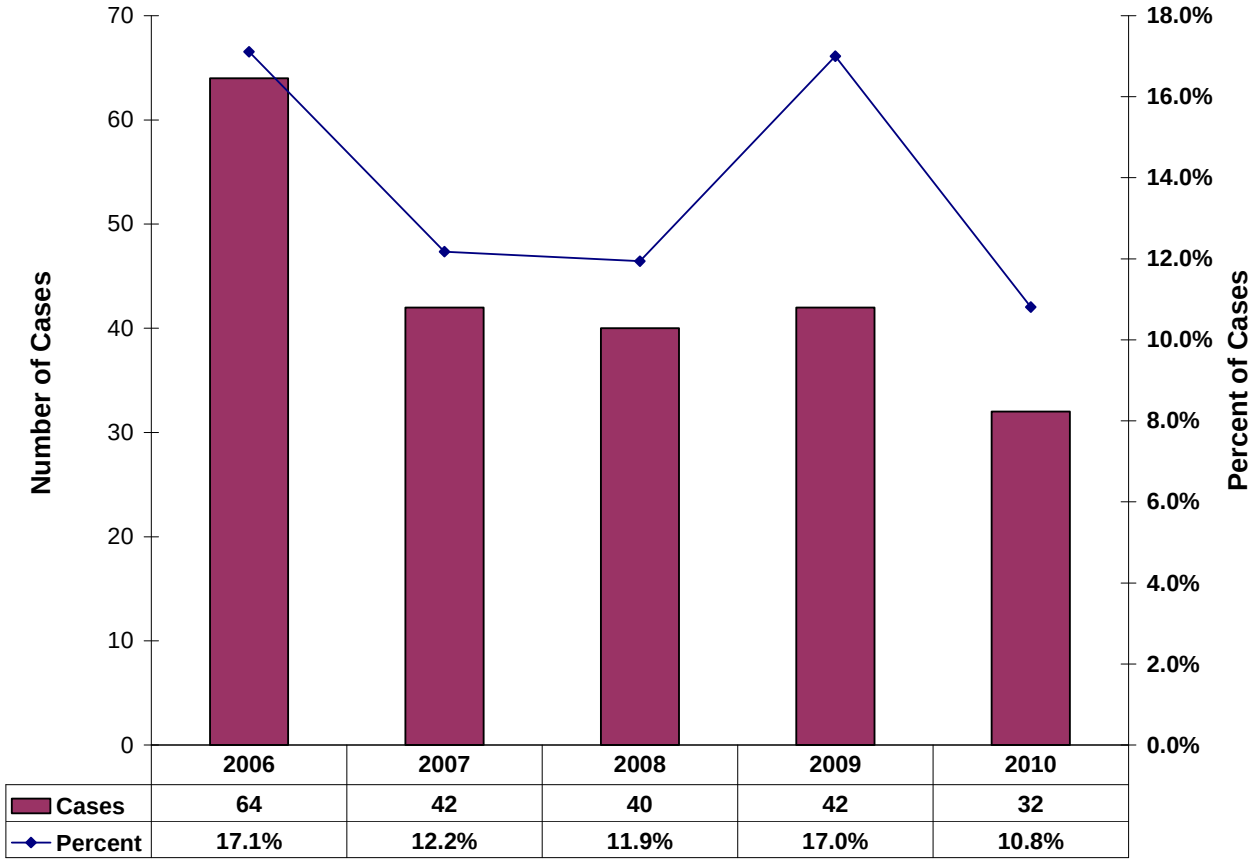
Table 3: Pediatric Cases by Foreign-Born Status

TABLE 3	2009			2010		
	U.S.	FOREIGN BORN ASSOCIATED	FOREIGN BORN	U.S.	FOREIGN BORN ASSOCIATED	FOREIGN BORN
0 – 4 YEARS	7	2	0	7	12	1
5 – 14 YEARS	4	3	2	0	2	2
TOTAL	11	5	2	7	14	3

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Excessive Alcohol Use: The number of TB cases with reported excessive alcohol use between 2006 and 2010 decreased by 50 percent. [See Figure 10.] In 2010, 84 percent of this group were U.S. born (or children of US citizens), 12 percent were foreign-born Hispanics, and 3 percent were foreign-born non-Hispanics. [See Table 4.]

Figure 10. N.C. TB Cases with Excess Alcohol Use: 2006 - 2010



DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

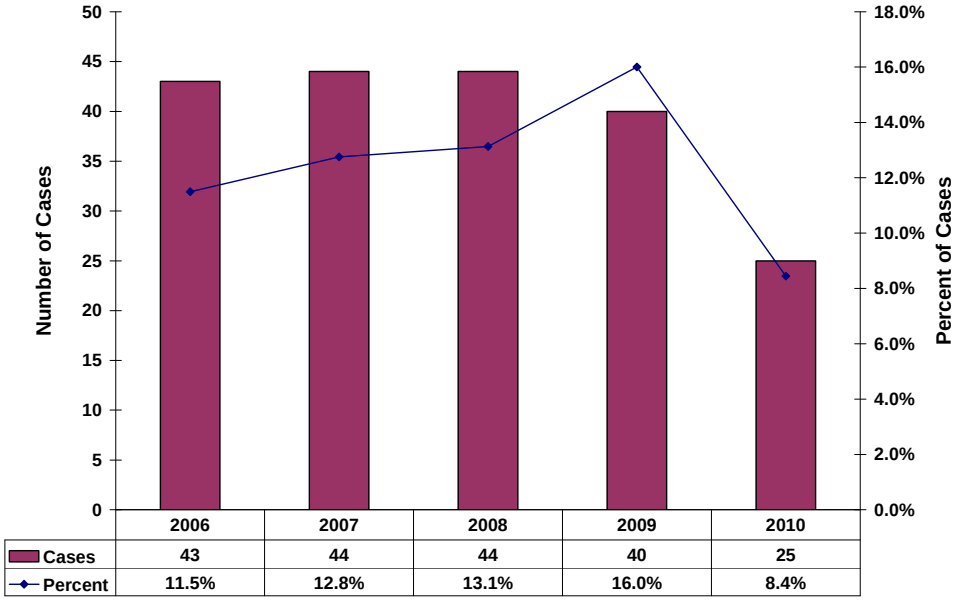
Table 4: Alcohol Use by Ethnicity and Foreign Born Status 2006-2010

Year	2006		2007		2008		2009		2010	
	Foreign Born	US Born	Foreign Born	US Born	Foreign Born	US Born	Foreign Born	US Born	Foreign Born	US Born
Hispanic	7	2	6	2	7	3	3	2	4	0
Not Hispanic	0	54	2	29	0	30	5	32	1	27
Ethnicity Unknown	0	1	0	3	0	0	0	0	0	0
TOTAL	64		42		40		42		32	

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Non-Injecting Drug Use: Non-injecting drug use has been reported for approximately 12 – 14 percent of N.C. TB patients for several years. That percentage decreased to eight in 2010. [See Figure 11.]

Figure 11. N.C. TB Cases with Known Non-Injecting Drug Use: 2006 – 2010

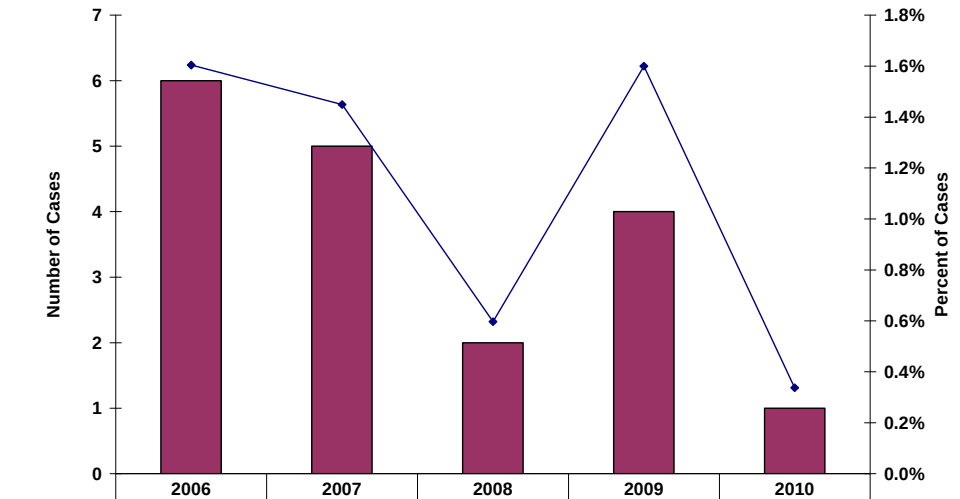


	2006	2007	2008	2009	2010
Cases	43	44	44	40	25
Percent	11.5%	12.8%	13.1%	16.0%	8.4%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Injecting Drug Use: IDU is not a significant problem for TB cases in North Carolina. It has been reported in only 0 – 2 percent of TB cases during any reporting year. [See Figure 12.]

Figure 12. N.C. TB Cases with Known Injecting Drug Use: 2006 – 2010

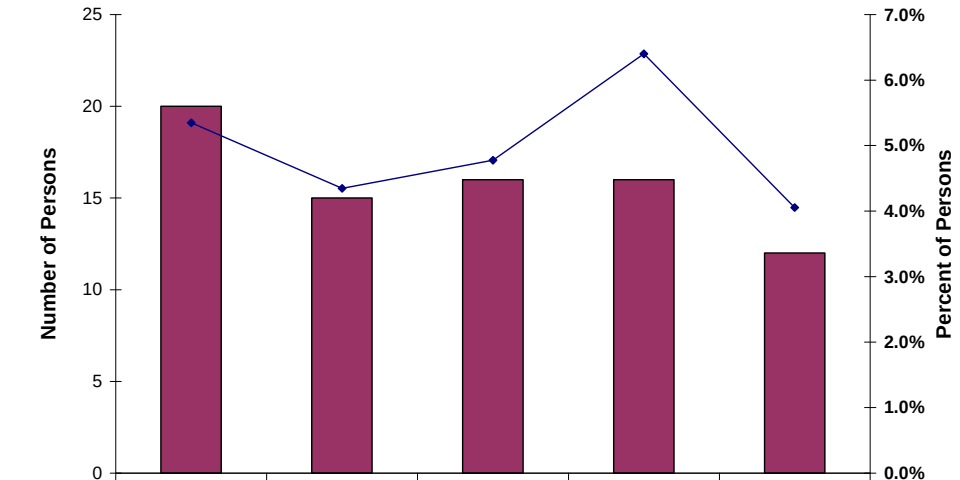


	2006	2007	2008	2009	2010
Cases	6	5	2	4	1
Percent	1.6%	1.4%	0.6%	1.6%	0.3%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Homeless: The number of reported homeless TB cases decreased from 2009 to 2010. The percentage is generally between 4 and 6 percent. [See Figure 13.]

Figure 13. N.C. TB Cases Homeless in Year Prior to Diagnosis: 2006 - 2010

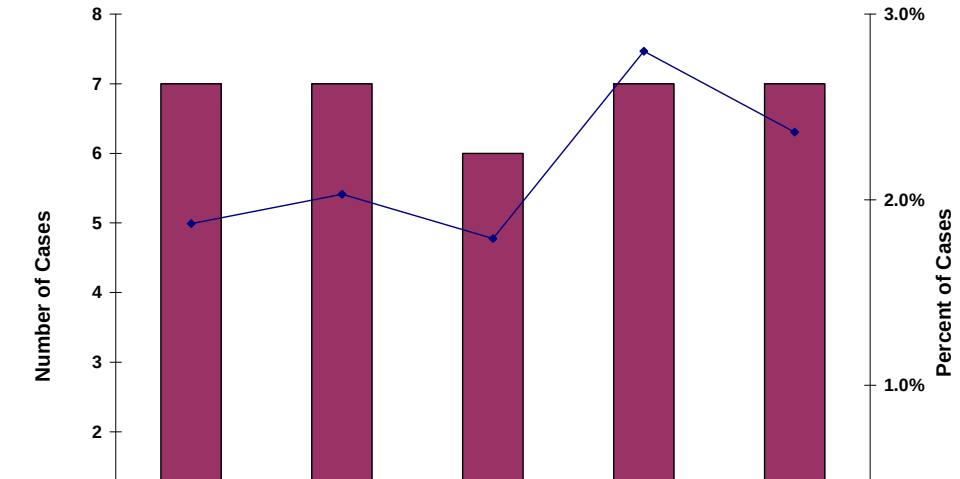


	2006	2007	2008	2009	2010
Cases	20	15	16	16	12
Percent	5.3%	4.3%	4.8%	6.4%	4.1%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Long Term Care Facilities: The number of TB cases diagnosed in Long Term Care Facilities from 2006 to 2010 remained fairly constant. [See Figure 14.]

Figure 14. N.C. TB Cases That Were Residents of a Long-Term Care Facility at Time of Diagnosis: 2006 – 2010

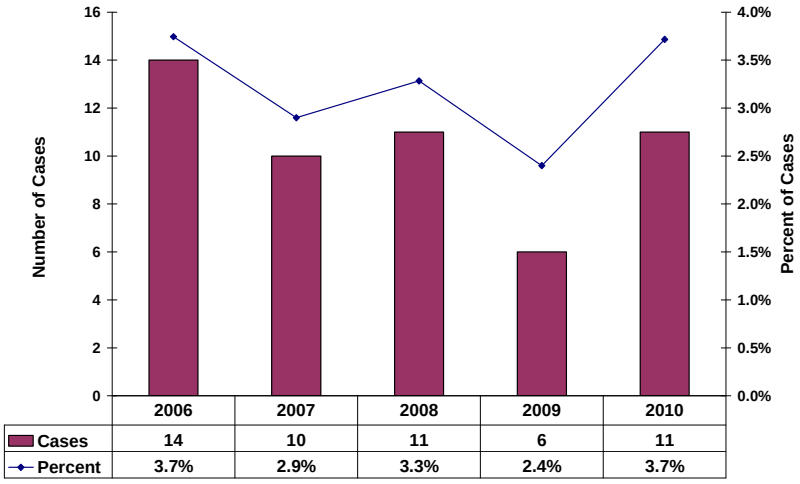


	2006	2007	2008	2009	2010
Cases	7	7	6	7	7
Percent	1.9%	2.0%	1.8%	2.8%	2.4%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Correctional Facilities: The percentage of cases diagnosed in correctional facilities is usually around 2 to 4 percent of the total cases. [See Figure 15.]

Figure 15. N.C. TB Cases Residing in Correctional Facility at Time of Diagnosis: 2006 - 2010

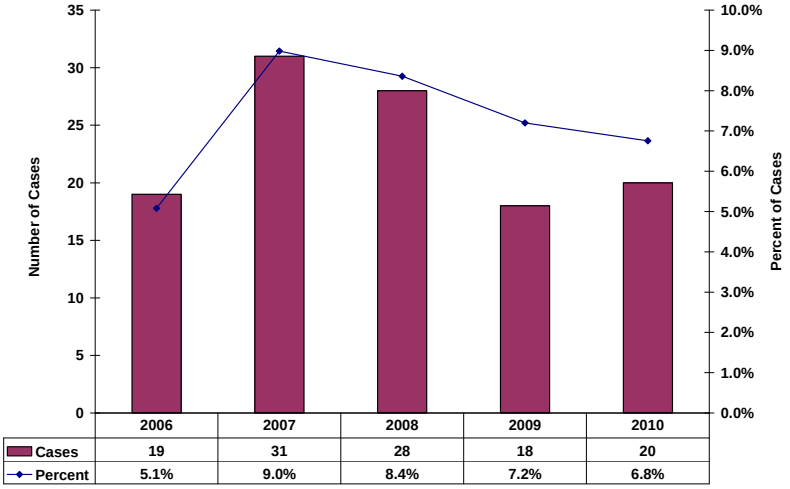


	2006	2007	2008	2009	2010
Cases	14	10	11	6	11
Percent	3.7%	2.9%	3.3%	2.4%	3.7%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS);**

HIV Status: Worldwide, co-morbidity of HIV and TB is the single largest contributor to mortality where TB disease is a factor. Figure 16 shows the number and percentage of cases that had HIV infection. Table 5 presents the distribution of HIV and TB co-morbidity by age. In 2010, all co-infected cases were 25 and older.

Figure 16. N.C. TB Cases with HIV Infection: 2006 – 2010



	2006	2007	2008	2009	2010
Cases	19	31	28	18	20
Percent	5.1%	9.0%	8.4%	7.2%	6.8%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Table 5: TB Cases with HIV Infection by Age Group 2006 - 2010

Table 5	TB Cases with HIV Infection by Age Group 2006 - 2010*				
Age Group	**2006**	**2007**	**2008**	**2009**	**2010**
0-4	**0**	**0**	**0**	**0**	**0**
5-14	**0**	**0**	**1**	**0**	**0**
15-24	**1**	**1**	**2**	**0**	**0**
25-44	**14**	**14**	**17**	**8**	**12**
45-64	**2**	**15**	**7**	**10**	**7**
≥65	**2**	**1**	**1**	**0**	**1**

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Table 6 and Figure 17 show the progress that has been made in North Carolina with respect to standard of care and HIV status—namely, very few cases are not offered HIV testing, and an increasing number of TB cases are accepting the offered HIV test. Since November 2007, the standard of care has been to offer HIV testing as part of routine screening. Patients are informed that HIV testing is part of the screening and may decide to "opt-out" of that test. Before this practice went into effect, N.C. TB nurse consultants spent a lot of time training in local health departments to encourage HIV testing. Consequently, the number of cases where HIV status is unknown has decreased greatly over the past 10 years. Fewer patients refuse testing (down from 15.4 percent in 1999 to less than 1 percent in 2010) and there are fewer patients who are not being offered testing (down from 12.5 percent in 1999 to only 1 percent in 2010). The patient not offered testing in 2010 died two days into treatment and there was not an opportunity to offer HIV testing.

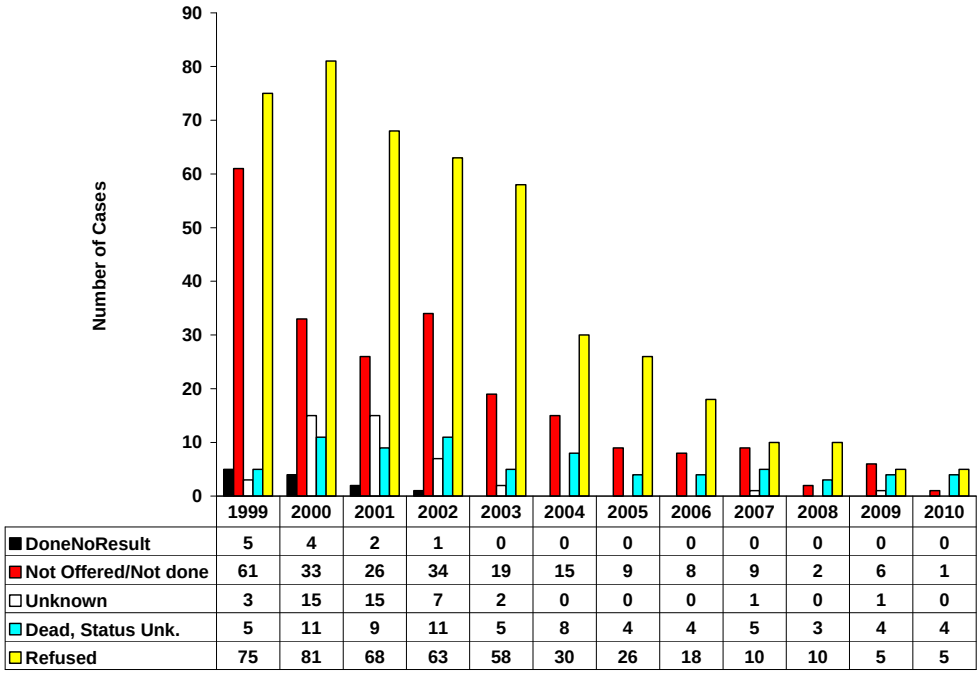
Table 6: Reported HIV Results 2006 – 2010

Table 6	Reported HIV Results 2006 – 2010				
Status	**2006**	**2007**	**2008**	**2009**	**2010**
Negative	**324**	**289**	**290**	**217**	**266**
Positive	**19**	**31**	**28**	**18**	**20**
Refused	**17**	**10**	**11**	**5**	**5**
Not Offered	**8**	**10**	**3**	**6**	**1***
Tested No Result	**1**	**0**	**0**	**0**	**0**
Unknown	**1**	**0**	**0**	**1**	**0**
Dead and Status Unknown	**4**	**5**	**3**	**4**	**4**

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

- **This patient died two days into treatment and there was not an opportunity to offer HIV testing.**

Figure 17: N.C. TB Cases with Unknown HIV Status: 1999 - 2010

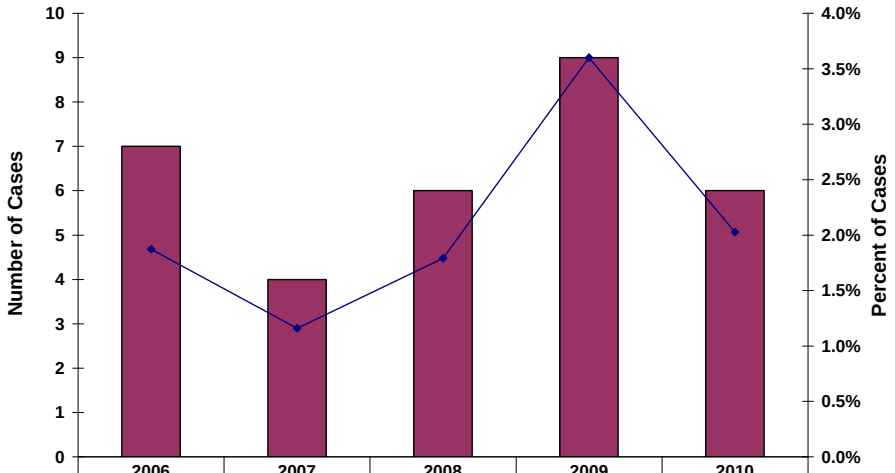


	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
DoneNoResult	5	4	2	1	0	0	0	0	0	0	0	0
Not Offered/Not done	61	33	26	34	19	15	9	8	9	2	6	1
Unknown	3	15	15	7	2	0	0	0	1	0	1	0
Dead, Status Unk.	5	11	9	11	5	8	4	4	5	3	4	4
Refused	75	81	68	63	58	30	26	18	10	10	5	5

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Occupation: The occurrence of TB in persons identified as healthcare workers remains an area that receives close scrutiny and intensive investigation. Figure 18 does NOT indicate TB exposure in health care settings, but rather provides an indication of cases among those who could expose others or be exposed to TB. The percent of cases is generally around 2 percent.

Figure 18. N.C. Health Care Workers with TB Disease: 2006 - 2010



	2006	2007	2008	2009	2010
Cases	7	4	6	9	6
Percent	1.9%	1.2%	1.8%	3.6%	2.0%

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

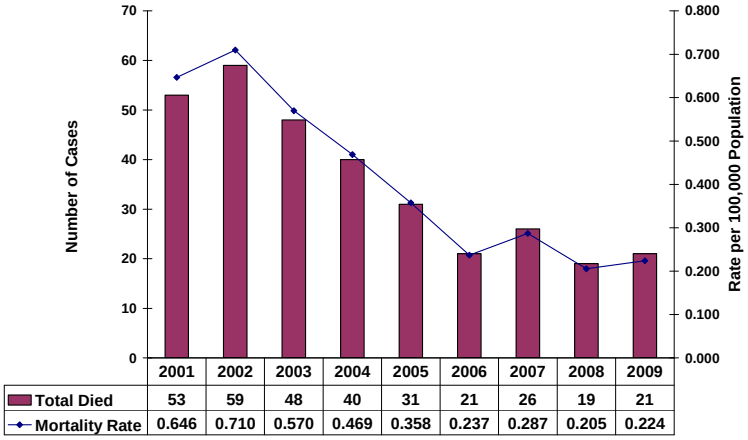
CLINICAL DATA

CLINICAL DATA FOR NORTH CAOLINA

Mortality of TB Cases in NC

As can be seen from Figures 19 and 20, mortality of TB cases from diagnosis to treatment completion has decreased over the past several years. In 2002, there were 59 deaths (15 dead at diagnosis and 44 who died before completion of treatment); by 2009, there were 21 deaths (six dead at diagnosis and 15 who died before completion of treatment). Prompt diagnosis and treatment is the key to reducing the "dead at diagnosis" category, and close coordination with primary care physicians to address co-morbidities may decrease the number who die before the end of treatment, though more research is needed to better understand the characteristics of those in the two categories. Both categories have decreased over time although the percentage of these persons dying during treatment is lower in 2009 than in 2001.

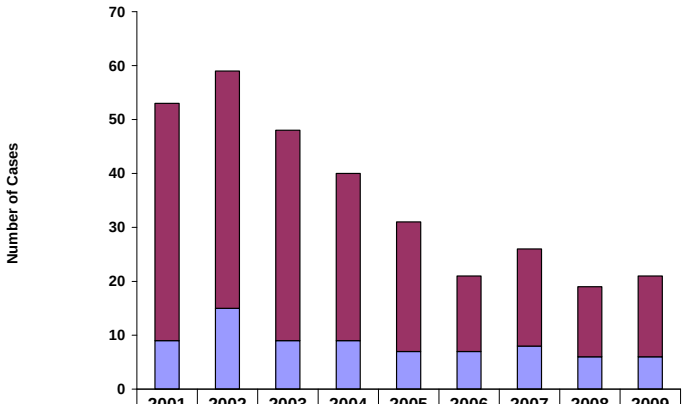
Figure 19. N.C. TB Case Mortality and Rates: 2001 – 2009



	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total Died	53	59	48	40	31	21	26	19	21
Mortality Rate	0.646	0.710	0.570	0.469	0.358	0.237	0.287	0.205	0.224

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Figure20. Timing of Death among TB Cases in N.C.: 2001 – 2009

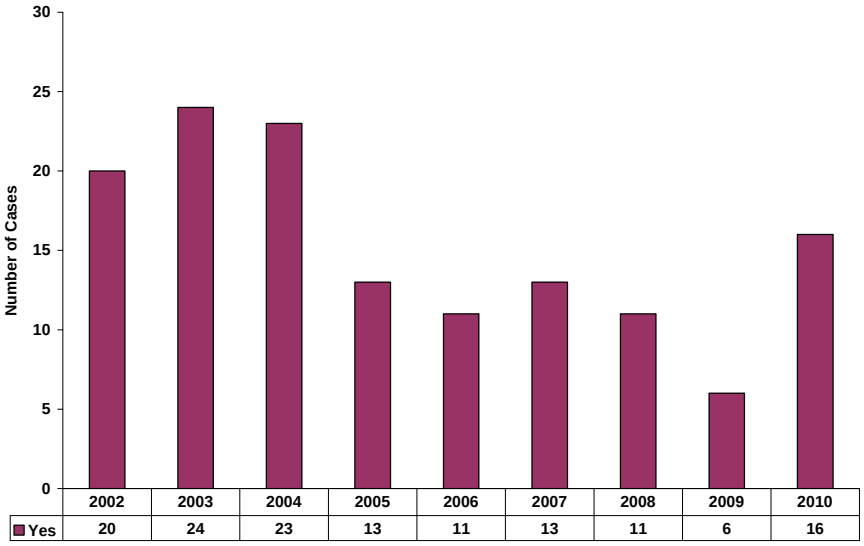


	2001	2002	2003	2004	2005	2006	2007	2008	2009
Died Before Tx Completion	44	44	39	31	24	14	18	13	15
Dead at Diagnosis	9	15	9	9	7	7	8	6	6

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Previous Diagnosis of TB: Sixteen TB patients in 2010 had a previous diagnosis of TB. The number is down from 23 cases in 2004 that had a previous diagnosis of TB. While this number is down, it is higher than any year since 2004.

Figure 21. Previous Diagnosis of TB for TB Patients in N.C.: 2002 - 2010

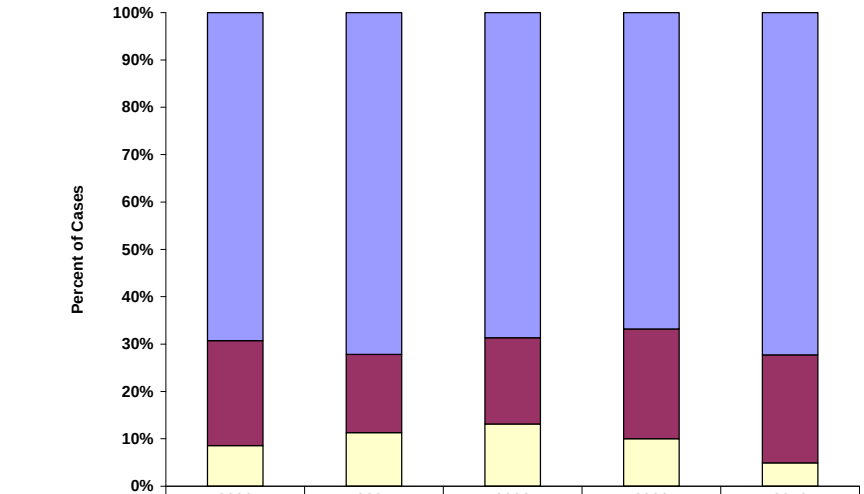


	2002	2003	2004	2005	2006	2007	2008	2009	2010
Yes	20	24	23	13	11	13	11	6	16

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Site of TB Disease: Figure 22 shows the number and percentage of Pulmonary, Extra-pulmonary and combinations of both Pulmonary and Extra-pulmonary sites of TB disease for years 2006 – 2010. There was been no significant change from the numbers and percentages reported for years 2009 and 2010. Table 7 provides a more detailed breakout for the major disease sites.

Figure 22. Major Site of Disease for TB Patients in N.C.: 2006 -2010



	2006	2007	2008	2009	2010
Pulmonary	259	249	230	167	219
Extra-Pulmonary	83	57	61	58	69
Both	32	39	44	25	15

DATA SOURCE: North Carolina Electronic Disease Surveillance System (NC EDSS)

Table 7. Site of Disease for N.C. TB Patients: 2006 - 2010

Site	2006	2007	2008	2009	2010
Bone/Joint	10	7	13	4	10
Genitourinary	4	2	2	5	2
Lymphatic: Cervical	18	10	15	14	12
Lymphatic: Intrathoracic	4	4	2	0	0
Lymphatic: Intrathoracic, Other	N/A	N/A	N/A	0	1
Lymphatic: Other	8	5	7	2	11
Lymphatic: Other, Peritoneal	N/A	N/A	N/A	1	0
Meningeal	4	5	5	2	5
Meningeal, Other	N/A	N/A	N/A	0	1
Miliary	13	17	11	N/A	N/A
Other	7	4	11	7	11
Peritoneal	4	1	1	3	2
Pleural	25	19	13	13	11
Pleural, Bone and/or joint	N/A	N/A	N/A	0	1
Pleural, Lymphatic: cervical	N/A	N/A	N/A	0	1
Pleural, Other	N/A	N/A	N/A	2	1
Pleural, Peritoneal	N/A	N/A	N/A	1	0
Pulmonary	277	271	255	178	212
Pulmonary, Bone and/or Joint	N/A	N/A	N/A	3	0
Pulmonary, Bone and/or Joint, Meningeal, Other	N/A	N/A	N/A	1	0
Pulmonary, Genitourinary	N/A	N/A	N/A	1	1
Pulmonary, Lymphatic: cervical	N/A	N/A	N/A	4	2
Pulmonary, Lymphatic: cervical, Bone and/or joint	N/A	N/A	N/A	0	1
Pulmonary, Lymphatic: cervical, Genitourinary, Other	N/A	N/A	N/A	0	1
Pulmonary, Lymphatic: intrathoracic	N/A	N/A	N/A	0	1
Pulmonary, Lymphatic: other	N/A	N/A	N/A	1	1
Pulmonary, Meningeal	N/A	N/A	N/A	1	2
Pulmonary, Other	N/A	N/A	N/A	4	1
Pulmonary, Peritoneal	N/A	N/A	N/A	1	1
Pulmonary, Pleural	N/A	N/A	N/A	2	4

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS). Due to a change in data collection methods, the 2009 and 2010 data are more detailed than the 2006 – 2008 data. The 2006 – 2008 data include only one site and the 2009 – 2010 data include multiple sites.**

TB Drug Susceptibility/Resistance Testing: Drug susceptibility testing is routinely performed on newly reported, culture-positive TB cases. In any given year, only 0 – 3 cases are reported without associated susceptibility testing. In 2010, all 216 culture-proven cases of TB have drug susceptibility results or pending results. Drug resistance to INH in North Carolina decreased from 16 cases (5%) in 2006 to 15 cases (5%) in 2010. Between 2006 and 2010 the number of MDR cases has ranged from 1 to 2 cases per year. In 2009, there were 113 cases (1.0%) in the U.S. The U.S. and North Carolina have similar case percentages for both INH and MDR resistance although N.C. percentages are generally lower.

Table 8. First-Line Primary TB Drug Resistance in N.C. Patients: 2006-2010

Table 8	First-Line Primary TB Drug Resistance Over Time 2006-2010*									
Year	2006		2007		2008		2009		2010	
	#	%	#	%	#	%	#	%	#	%
INH[1]	16	5	7	2	13	5	12	6	15	5
MDR (I NH & RIF)[3]	1	0	2	1	2	1	1	0	1	0
**Total Positive Cultures	302		274		249		197		216	

DATA SOURCE: CaroTIMS and NC EDSS.
****Total positive cultures with susceptibility results known.**
[1]**Includes INH and any other drugs except RIF. Resistance may have been found at either initial or final testing.**
[2]**Includes INH, RIF and any other drugs. Resistance may have been found at either initial or final testing.**

A closer look at the drug resistance by foreign-born status reveals that there are differences in the two groups. While over the period 2006-2010 the percentage of foreign-born persons with drug resistance is higher overall than for U.S. citizens (12.8% v. 9.8%), the difference in rates of MDR in North Carolina is even greater, twice as high in foreign born cases as compared with U.S. born persons or children born to U.S. citizens (0.8 v. 0.4).

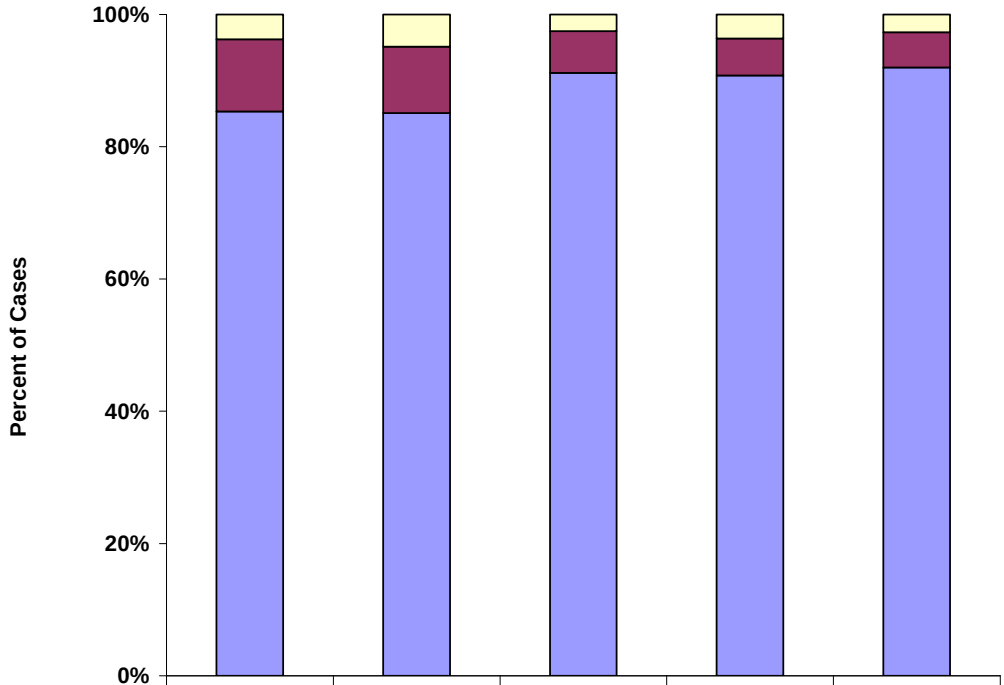
Table 9. Comparison of Drug Resistance in US and Foreign Born Patients: 2006 – 2010 (Years Combined)

Table 8a	Drug Resistance by US and Foreign-born – 2006 – 2010 (years combined)			
	Foreign born		US	
	#	%	#	%
INH[1]	26	5.6	33	4.3
INH & SM[2]	7	1.5	8	1.0
MDR (I NH & RIF)[3]	4	0.8	3	0.4
Any Other Drug Resistance	23	4.9	31	4.0
Total Drug Resistance	*60*	*12.8*	*75*	*9.8*
No Drug Resistance	408	87.2	693	90.2

***Data source: CaroTIMS.**
[1]**Includes INH and any other drugs except SM or RIF. Resistance may have been found at either initial or final testing.**
[2]**Includes INH, SM and any other drugs except RIF. Resistance may have been found at either initial or final testing.**
[3]**Includes INH, RIF and any other drugs including SM. Resistance may have been found at either initial or final testing.**

Completion of Therapy: Completion of therapy within one year remained between 90 and 92 percent between 2002 and 2004; however, in 2005 and 2006, there was a drop to 85 percent. In 2006, North Carolina passed legislation requiring all TB cases be placed on DOT. This was expected to increase the percentage of cases completing therapy within one year. Although some of our cases are not total DOT, they were on DOT for more than 26 weeks and would be considered to meet the criteria for having total DOT. If the numbers on DOT plus the numbers on DOT 26 weeks or more are added together and divided by the total cases (minus any that were dead at diagnosis, died before completion of 26 weeks of DOT treatment, or that are currently on treatment), the percentage on DOT was 95.6 in 2009. The percentage of 2009 cases that completed therapy in one year was 92 percent, with another 5.4 percent completing after one year. In 2009, for cases taking longer than 12 months to complete, one or more of the following reasons were provided: Non-adherent, doses added to regimen (4); RIF or Rifabutin not tolerated (3); cavitary disease (2); other hepatotoxicity issues (2); other intolerance (2); treatment deviation (2); culture converted after two months (2); lost to follow-up (2); slow response (1); bone or joint disease (1); PZA not tolerated other than hepatotoxicity (1). Only 2.6 percent have not completed treatment – one is lost to follow-up, two left the country without communicating with the local health departments, one was uncooperative/refused and two are still on therapy (slow response).

Figure 23. Patients Completing Therapy in N.C.: 2005 – 2009



	2005	2006	2007	2008	2009
Did Not Complete Therapy	11	17	8	11	6
Completed Therapy in >1 Year	32	35	20	17	12
Completed Therapy in <1 Year	250	297	289	275	206

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

This includes all patients alive at diagnosis and who did not die during treatment. Patients with any rifampin-resistant TB or meningeal TB, and children aged 14 or younger with disseminated TB are excluded.

SUPPLEMENTAL TABLES

Table 10: TB Cases and Case Rates by County 2006-2010*

	2006		2007		2008		2009		2010	
COUNTY	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
Alamance	3	2.3	3	2.1	4	2.7	5	3.3	5	3.3
Alexander	0	0	0	0	0	0	0	0	0	0
Alleghany	0	0	0	0	0	0	0	0	0	0
Anson	1	3.9	2	7.7	3	11.6	0	0	1	3.9
Ashe	0	0	0	0	0	0	0	0	0	0
Avery	0	0	0	0	0	0	0	0	0	0
Beaufort	6	13.3	2	4.2	2	4.3	0	0	1	2.1
Bertie	0	0	3	15.4	0	0	0	0	2	10.0
Bladen	1	3.1	0	0	1	3	1	3.1	2	6.0
Brunswick	1	1.4	2	2.1	3	3	5	4.7	0	0
Buncombe	2	1	13	5.7	7	3	6	2.6	2	0.8
Burke	2	2.2	0	0	0	0	2	2.2	1	1.1
Cabarrus	4	3	1	0.6	4	2.4	1	0.6	1	0.6
Caldwell	1	1.3	6	7.3	2	2.5	2	2.5	2	2.4
Camden	0	0	0	0	0	0	0	0	0	0
Carteret	2	3.4	1	1.5	3	4.6	1	1.6	1	1.5
Caswell	0	0	2	8.3	1	4.2	1	4.3	0	0
Catawba	1	0.7	4	2.5	1	0.6	4	2.5	2	1.3
Chatham	2	4	0	0	2	3.3	2	3.1	1	1.5
Cherokee	1	4.1	0	0	0	0	0	0	1	3.7
Chowan	2	14.1	0	0	0	0	0	0	1	6.6
Clay		0	0	0	0	0	0	0	0	0
Cleveland	4	4.1	3	3	1	1	1	1.0	1	1.0
Columbus	2	3.7	5	8.9	0	0	2	3.7	1	1.8
Craven	1	1.1	6	6.2	4	4.1	5	5.1	3	3.0
Cumberland	9	3	7	2.3	8	2.5	9	2.9	6	1.9
Currituck	0	0	0	0	0	0	0	0	0	0
Dare	0	0	1	2.9	0	0	1	2.9	0	0
Davidson	6	4.1	8	5	3	1.9	3	1.9	0	0
Davie	0	0	0	0	0	0	0	0	0	0
Duplin	5	10.2	6	11.1	4	7.4	4	7.5	6	11.0
Durham	12	5.3	8	3.2	15	5.8	12	4.4	14	5.2
Edgecombe	4	7.2	3	5.4	6	11.4	2	3.9	2	3.7
Forsyth	14	4.6	11	3.2	16	4.6	8	2.2	11	3.1
Franklin	0	0	2	3.5	0	0	1	1.7	2	3.2
Gaston	2	1	4	2	4	2	1	0.5	2	1.0
Gates	0	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	1	12	0	0	0	0
Granville	1	2	1	1.8	1	1.8	0	0	1	1.7
Greene	0	0	0	0	4	18.6	2	9.7	6	28.2
Guilford	38	9	27	5.8	21	4.5	21	4.4	31	6.3
Halifax	5	8.7	3	5.3	4	7.1	2	3.7	5	8.9
Harnett	4	4.4	3	2.8	4	3.7	3	2.6	5	4.2
Haywood	1	1.8	2	3.5	0	0	1	1.8	1	1.7

Henderson	**2**	**2.2**	**0**	**0**	**4**	**3.8**	**3**	**2.9**	**10**	**9.4**
Hertford	**2**	**8.7**	**1**	**4.1**	**1**	**4.1**	**1**	**4.3**	**2**	**8.3**
Hoke	**4**	**11.8**	**1**	**2.3**	**2**	**4.6**	**3**	**6.6**	**1**	**2.2**
Hyde	**1**	**17.1**	**0**	**0**	**1**	**18**	**1**	**19.2**	**0**	**0**
Iredell	**2**	**1.6**	**3**	**2**	**2**	**1.3**	**1**	**0.6**	**0**	**0**
Jackson	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5.4**	**1**	**2.6**
Johnston	**4**	**3.2**	**8**	**5.1**	**10**	**6.2**	**7**	**4.2**	**5**	**3.0**
Jones	**1**	**9.6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Lee	**1**	**2**	**3**	**5.2**	**0**	**0**	**1**	**1.7**	**4**	**6.4**
Lenoir	**7**	**11.8**	**4**	**6.8**	**4**	**6.8**	**2**	**3.5**	**6**	**10.3**
Lincoln	**1**	**1.6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Macon	**0**	**0**	**0**	**0**	**1**	**2.9**	**1**	**3.0**	**0**	**0**
Madison	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Martin	**2**	**7.8**	**1**	**4.8**	**2**	**8.2**	**1**	**4.3**	**0**	**0**
McDowell	**0**	**0**	**0**	**0**	**1**	**2.2**	**0**	**0**	**1**	**2.2**
Mecklenburg	**55**	**7.9**	**34**	**4**	**44**	**5**	**33**	**3.6**	**40**	**4.3**
Mitchell	**0**	**0**	**1**	**6.2**	**0**	**0**	**0**	**0**	**0**	**0**
Montgomery	**16**	**59.6**	**4**	**14.1**	**3**	**10.7**	**1**	**3.6**	**3**	**10.5**
Moore	**1**	**1.3**	**1**	**1.2**	**0**	**0**	**2**	**2.3**	**3**	**3.3**
Nash	**6**	**6.9**	**4**	**4.2**	**3**	**3.2**	**0**	**0**	**1**	**1.0**
New Hanover	**10**	**6.2**	**6**	**3.2**	**4**	**2.1**	**3**	**1.5**	**4**	**2.0**
Northampton	**1**	**4.5**	**2**	**9.2**	**1**	**4.6**	**0**	**0**	**0**	**0**
Onslow	**3**	**2**	**3**	**1.9**	**3**	**1.7**	**4**	**2.3**	**3**	**1.7**
Orange	**2**	**1.7**	**9**	**7.3**	**7**	**5.4**	**1**	**0.8**	**3**	**2.3**
Pamlico	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Pasquotank	**1**	**2.9**	**1**	**2.5**	**1**	**2.4**	**0**	**0**	**1**	**2.3**
Pender	**1**	**2.4**	**3**	**6**	**0**	**0**	**2**	**3.8**	**0**	**0**
Perquimans	**1**	**8.8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Person	**3**	**8.4**	**0**	**0**	**2**	**5.2**	**1**	**2.7**	**0**	**0**
Pitt	**5**	**3.7**	**11**	**7.4**	**6**	**3.9**	**6**	**3.8**	**6**	**3.6**
Polk	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**10.4**	**0**	**0**
Randolph	**1**	**0.8**	**1**	**0.7**	**0**	**0**	**0**	**0**	**1**	**0.7**
Richmond	**1**	**2.1**	**0**	**0**	**3**	**6.3**	**1**	**2.2**	**3**	**6.3**
Robeson	**14**	**11.3**	**17**	**12.9**	**20**	**15.1**	**16**	**12.3**	**12**	**9.0**
Rockingham	**3**	**3.3**	**3**	**3.2**	**3**	**3.2**	**1**	**1.1**	**2**	**2.1**
Rowan	**5**	**3.8**	**2**	**1.4**	**3**	**2.2**	**3**	**2.1**	**2**	**1.4**
Rutherford	**0**	**0**	**0**	**0**	**1**	**1.6**	**1**	**1.6**	**0**	**0**
Sampson	**2**	**3.3**	**1**	**1.5**	**7**	**10.6**	**5**	**7.8**	**6**	**9.1**
Scotland	**3**	**8.3**	**5**	**13.2**	**4**	**10.6**	**0**	**0**	**0**	**0**
Stanly	**2**	**3.4**	**1**	**1.6**	**0**	**0**	**1**	**1.7**	**2**	**3.2**
Stokes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Surry	**0**	**0**	**0**	**0**	**2**	**2.7**	**0**	**0**	**1**	**1.3**
Swain	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transylvania	**0**	**0**	**1**	**3.3**	**1**	**3.2**	**0**	**0**	**1**	**3.2**
Tyrrell	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Union	**0**	**0**	**3**	**1.7**	**7**	**3.8**	**1**	**0.5**	**0**	**0**
Vance	**0**	**0**	**2**	**4.5**	**0**	**0**	**0**	**0**	**0**	**0**
Wake	**52**	**8.2**	**54**	**6.7**	**40**	**4.7**	**22**	**2.5**	**37**	**4.1**

Warren	**0**	**0**	**2**	**10**	**0**	**0**	**0**	**0**	**1**	**5.0**
Washington	**4**	**29.2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Watauga	**0**	**0**	**0**	**0**	**1**	**2.2**	**1**	**2.2**	**0**	**0**
Wayne	**8**	**7.1**	**9**	**7.7**	**3**	**2.6**	**8**	**7.0**	**8**	**6.8**
Wilkes	**2**	**3**	**1**	**1.5**	**2**	**2.9**	**1**	**1.5**	**1**	**1.5**
Wilson	**7**	**9.5**	**4**	**5.1**	**7**	**8.8**	**3**	**3.8**	**5**	**6.2**
Yadkin	**1**	**2.7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Yancey	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
North Carolina	**374**	**4.6**	**345**	**3.8**	**335**	**3.6**	**250**	**2.7**	**296**	**3.1**

†Denominators for computing rates for the state were obtained from the Annual Estimates of the Population for the United States and Puerto Rico. Source: U.S. Census Bureau, American Community Survey and US Census 2010. 2010 Rates were calculated based on the 2010 Census for larger counties and the 2009 American Community Survey for smaller counties.

***Data source: NC Electronic Disease Surveillance System (NC EDSS) TB Surveillance - Demographic Data Report. Rates are per 100,000.**

Table 11: Foreign-Born TB Cases by County 2006-2010

Foreign-Born TB Cases by County 2006-2010						
County	2006	2007	2008	2009	2010	Total Cases 2006 - 2010
Alamance	0	1	1	2	1	5
Alexander	0	0	0	0	0	0
Alleghany	0	0	0	0	0	0
Anson	0	0	0	0	0	0
Ashe	0	0	0	0	0	0
Avery	0	0	0	0	0	0
Beaufort	1	1	0	0	0	2
Bertie	0	0	0	0	1	1
Bladen	1	0	0	1	0	2
Brunswick	0	1	0	2	0	3
Buncombe	1	6	3	2	1	13
Burke	1	0	0	0	1	2
Cabarrus	1	1	3	0	0	5
Caldwell	0	0	0	1	0	1
Camden	0	0	0	0	0	0
Carteret	0	0	0	1	0	1
Caswell	0	0	0	0	0	0
Catawba	1	3	1	0	2	7
Chatham	1	0	2	1	0	4
Cherokee	1	0	0	0	0	1
Chowan	2	0	0	0	0	2
Clay	0	0	0	0	0	0
Cleveland	0	0	1	0	0	1
Columbus	0	1	0	0	0	1
Craven	0	2	0	2	1	5
Cumberland	1	0	1	0	2	4
Currituck	0	0	0	0	0	0
Dare	0	0	0	1	0	1
Davidson	4	6	2	2	0	14
Davie	0	0	0	0	0	0
Duplin	0	5	2	2	3	12
Durham	5	3	10	7	7	32
Edgecombe	0	0	1	0	0	1
Forsyth	8	8	9	7	7	39
Franklin	0	2	0	0	0	2
Gaston	0	2	3	0	1	6
Gates	0	0	0	0	0	0
Graham	0	0	0	0	0	0

Granville	**1**	**0**	**0**	**0**	**1**	**2**
Greene	**0**	**0**	**0**	**0**	**0**	**0**
Guilford	**22**	**14**	**11**	**15**	**18**	**80**
Halifax	**0**	**0**	**0**	**0**	**1**	**1**
Harnett	**1**	**1**	**1**	**1**	**1**	**5**
Haywood	**0**	**0**	**0**	**0**	**0**	**0**
Henderson	**1**	**0**	**0**	**0**	**4**	**5**
Hertford	**0**	**0**	**0**	**0**	**0**	**0**
Hoke	**1**	**0**	**0**	**0**	**0**	**1**
Hyde	**0**	**0**	**0**	**1**	**0**	**1**
Iredell	**1**	**1**	**1**	**0**	**0**	**3**
Jackson	**0**	**0**	**0**	**1**	**1**	**2**
Johnston	**1**	**2**	**3**	**2**	**2**	**10**
Jones	**0**	**0**	**0**	**0**	**0**	**0**
Lee	**1**	**2**	**0**	**1**	**3**	**7**
Lenoir	**1**	**0**	**1**	**0**	**0**	**2**
Lincoln	**1**	**0**	**0**	**0**	**0**	**1**
Macon	**0**	**0**	**1**	**0**	**0**	**1**
Madison	**0**	**0**	**0**	**0**	**0**	**0**
Martin	**0**	**0**	**0**	**0**	**0**	**0**
McDowell	**0**	**0**	**0**	**0**	**1**	**1**
Mecklenburg	**27**	**21**	**15**	**14**	**26**	**103**
Mitchell	**0**	**0**	**0**	**0**	**0**	**0**
Montgomery	**0**	**1**	**0**	**0**	**1**	**2**
Moore	**0**	**1**	**0**	**1**	**0**	**2**
Nash	**2**	**0**	**0**	**0**	**1**	**3**
New Hanover	**5**	**1**	**3**	**0**	**0**	**9**
Northampton	**0**	**0**	**0**	**0**	**0**	**0**
Onslow	**1**	**2**	**2**	**1**	**3**	**9**
Orange	**0**	**6**	**5**	**1**	**2**	**14**
Pamlico	**0**	**0**	**0**	**0**	**0**	**0**
Pasquotank	**0**	**1**	**0**	**0**	**0**	**1**
Pender	**1**	**1**	**0**	**1**	**0**	**3**
Perquimans	**0**	**0**	**0**	**0**	**0**	**0**
Person	**3**	**0**	**2**	**0**	**0**	**5**
Pitt	**1**	**1**	**0**	**1**	**3**	**6**
Polk	**0**	**0**	**0**	**1**	**0**	**1**
Randolph	**0**	**0**	**0**	**0**	**1**	**1**
Richmond	**1**	**0**	**0**	**0**	**1**	**2**
Robeson	**0**	**1**	**2**	**1**	**2**	**6**
Rockingham	**0**	**2**	**1**	**0**	**1**	**4**
Rowan	**1**	**1**	**2**	**1**	**1**	**6**
Rutherford	**0**	**0**	**1**	**0**	**0**	**1**
Sampson	**2**	**0**	**4**	**1**	**1**	**8**

Scotland	**0**	**0**	**0**	**0**	**0**	**0**
Stanly	**0**	**0**	**0**	**0**	**0**	**0**
Stokes	**0**	**0**	**0**	**0**	**0**	**0**
Surry	**0**	**0**	**1**	**0**	**0**	**1**
Swain	**0**	**0**	**0**	**0**	**0**	**0**
Transylvania	**0**	**1**	**0**	**0**	**0**	**1**
Tyrrell	**0**	**0**	**0**	**0**	**0**	**0**
Union	**0**	**2**	**3**	**0**	**0**	**5**
Vance	**0**	**0**	**0**	**0**	**0**	**0**
Wake	**31**	**35**	**22**	**15**	**17**	**120**
Warren	**0**	**0**	**0**	**0**	**0**	**0**
Washington	**1**	**0**	**0**	**1**	**0**	**2**
Watauga	**0**	**0**	**0**	**0**	**0**	**0**
Wayne	**0**	**2**	**0**	**0**	**0**	**2**
Wilkes	**1**	**1**	**0**	**0**	**0**	**2**
Wilson	**1**	**0**	**3**	**1**	**2**	**7**
Yadkin	**0**	**0**	**0**	**0**	**0**	**0**
Yancey	**0**	**0**	**0**	**0**	**0**	**0**
North Carolina	**137**	**142**	**123**	**92**	121	**615**

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Table 12: Foreign-Born Cases by Country of Origin 2006-2010

Foreign-Born Cases by Country of Origin 2006-2010

Year	2006	2007	2008	2009	2010	Total Cases 2006 – 2010
Albania	1	1	0	0	0	2
Algeria	1	0	0	0	0	1
Argentina	0	0	1	0	0	1
Bhutan	0	0	1	0	5	6
Bosnia & Herzegovina	0	0	0	0	1	1
Brazil	1	0	0	0	0	1
British Virgin Islands	0	1	0	0	0	1
Cambodia	9	4	1	3	3	20
China	3	4	2	1	1	11
Colombia	2	1	0	1	2	6
Congo	1	0	1	0	0	2
Costa Rica	0	0	1	0	0	1
Cuba	1	0	0	0	0	1
Denmark	0	0	0	0	1	1
Dominican Republic	1	0	0	0	0	1
Ecuador	1	2	0	0	0	3
El Salvador	3	6	4	2	4	19
Ethiopia	5	3	3	1	2	14
Ghana	0	1	2	1	0	4
Grendad	0	0	0	0	1	1
Guatemala	3	3	3	7	1	17
Guinea	0	0	0	0	1	1
Haiti	0	1	2	1	1	5
Honduras	6	8	11	2	7	34
Hong Kong (China)	0	0	0	0	1	1
India	14	16	11	6	12	59
Indonesia	1	3	1	0	0	5
Iran	0	0	0	1	0	1
Ivory Coast	1	0	0	0	0	1
Jamaica	0	0	0	0	1	1
Jordan	0	0	0	1	0	1
Kazakhstan	1	0	0	0	0	1
Kenya	2	3	3	2	1	11
Korea Democratic Peoples Rep.	1	1	0	0	0	2
Korea Republic of	0	2	3	1	2	8
Kuwait	0	0	0	1	0	1
Laos	1	4	0	2	4	11

Liberia	**2**	**2**	**0**	**0**	**1**	**5**
Malaysia	**0**	**1**	**0**	**1**	**0**	**2**
Mexico	**44**	**54**	**41**	**33**	**31**	**203**
Micronesia, Federated States of	**0**	**0**	**0**	**0**	**2**	**2**
Morocco	**0**	**2**	**0**	**1**	**0**	**3**
Myanmar	**1**	**1**	**2**	**0**	**5**	**9**
Nepal	**2**	**1**	**0**	**0**	**1**	**4**
Netherlands	**0**	**0**	**0**	**1**	**0**	**1**
Niger	**1**	**0**	**0**	**0**	**1**	**2**
Nigeria	**0**	**0**	**0**	**3**	**0**	**3**
Pakistan	**2**	**0**	**2**	**1**	**0**	**5**
Peru	**1**	**1**	**1**	**1**	**0**	**4**
Philippines	**3**	**6**	**7**	**4**	**10**	**30**
Puerto Rico	**0**	**0**	**0**	**1**	**0**	**1**
Romania	**1**	**0**	**0**	**0**	**0**	**1**
Senegal	**0**	**0**	**1**	**1**	**1**	**3**
Somalia	**1**	**0**	**1**	**0**	**2**	**4**
Spain	**0**	**0**	**0**	**0**	**1**	**1**
Sudan	**0**	**0**	**1**	**1**	**0**	**2**
Taiwan	**0**	**0**	**1**	**0**	**0**	**1**
Thailand	**1**	**0**	**1**	**0**	**1**	**3**
Turkey	**1**	**0**	**0**	**0**	**0**	**1**
Turkmenistan	**0**	**0**	**1**	**0**	**0**	**1**
Ukraine	**0**	**0**	**2**	**0**	**0**	**2**
Uruguay	**1**	**0**	**0**	**0**	**0**	**1**
Vietnam	**16**	**9**	**11**	**10**	**14**	**60**
Zimbabwe	**0**	**0**	**0**	**1**	**0**	**1**
Total	**136**	**141**	**122**	**92**	**121**	**612**

***Does not include persons born in US territories.**

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**

Table 13: Hispanic TB Cases by County 2006-2010

Hispanic TB Cases by County 2006-2010						
County	2006	2007	2008	2009	2010	Total Cases 2006 - 2010
Alamance	1	2	3	2	2	10
Alexander	0	0	0	0	0	0
Alleghany	0	0	0	0	0	0
Anson	0	0	0	0	0	0
Ashe	0	0	0	0	0	0
Avery	0	0	0	0	0	0
Beaufort	0	1	0	0	0	1
Bertie	0	0	0	0	1	1
Bladen	1	0	0	1	0	2
Brunswick	0	0	0	2	0	2
Buncombe	1	13	2	2	0	18
Burke	1	0	0	0	0	1
Cabarrus	1	0	3	0	0	4
Caldwell	0	0	0	2	0	2
Camden	0	0	0	0	0	0
Carteret	0	0	0	0	0	0
Caswell	0	0	0	0	0	0
Catawba	1	2	1	0	1	5
Chatham	1	0	1	1	0	3
Cherokee	1	0	0	0	0	1
Chowan	2	0	0	0	0	2
Clay	0	0	0	0	0	0
Cleveland	0	0	0	0	0	0
Columbus	0	2	0	0	0	2
Craven	0	2	0	1	0	3
Cumberland	1	0	1	1	0	3
Currituck	0	0	0	0	0	0
Dare	0	0	0	0	0	0
Davidson	3	3	1	2	0	9
Davie	0	0	0	0	0	0
Duplin	1	6	2	3	4	16
Durham	2	2	4	2	3	13
Edgecombe	0	0	1	0	0	1
Forsyth	8	5	9	4	5	31
Franklin	0	2	0	0	0	2

Gaston	**0**	**1**	**1**	**0**	**0**	**2**
Gates	**0**	**0**	**0**	**0**	**0**	**0**
Graham	**0**	**0**	**0**	**0**	**0**	**0**
Granville	**0**	**0**	**0**	**0**	**1**	**1**
Greene	**0**	**0**	**0**	**0**	**0**	**0**
Guilford	**5**	**5**	**1**	**3**	**2**	**16**
Halifax	**0**	**0**	**0**	**0**	**0**	**0**
Harnett	**0**	**1**	**2**	**1**	**0**	**4**
Haywood	**0**	**0**	**0**	**0**	**0**	**0**
Henderson	**0**	**0**	**0**	**0**	**2**	**2**
Hertford	**0**	**0**	**0**	**0**	**0**	**0**
Hoke	**1**	**0**	**0**	**0**	**0**	**1**
Hyde	**1**	**0**	**0**	**1**	**0**	**2**
Iredell	**0**	**1**	**1**	**0**	**0**	**2**
Jackson	**0**	**0**	**0**	**1**	**1**	**2**
Johnston	**1**	**3**	**4**	**1**	**1**	**10**
Jones	**0**	**0**	**0**	**0**	**0**	**0**
Lee	**1**	**2**	**0**	**1**	**2**	**6**
Lenoir	**1**	**0**	**1**	**0**	**0**	**2**
Lincoln	**1**	**0**	**0**	**0**	**0**	**1**
Macon	**0**	**0**	**1**	**0**	**0**	**1**
Madison	**0**	**0**	**0**	**0**	**0**	**0**
Martin	**0**	**0**	**0**	**0**	**0**	**0**
McDowell	**0**	**0**	**1**	**0**	**0**	**1**
Mecklenburg	**10**	**12**	**12**	**5**	**11**	**50**
Mitchell	**0**	**0**	**0**	**0**	**0**	**0**
Montgomery	**1**	**1**	**0**	**0**	**1**	**3**
Moore	**0**	**0**	**0**	**1**	**0**	**1**
Nash	**2**	**0**	**0**	**0**	**0**	**2**
New Hanover	**5**	**1**	**2**	**1**	**0**	**9**
Northampton	**0**	**0**	**0**	**0**	**0**	**0**
Onslow	**1**	**0**	**1**	**0**	**0**	**2**
Orange	**1**	**5**	**4**	**0**	**0**	**10**
Pamlico	**0**	**0**	**0**	**0**	**0**	**0**
Pasquotank	**0**	**0**	**0**	**0**	**0**	**0**
Pender	**1**	**2**	**0**	**1**	**0**	**4**
Perquimans	**0**	**0**	**0**	**0**	**0**	**0**
Person	**3**	**0**	**2**	**0**	**0**	**5**
Pitt	**0**	**1**	**0**	**1**	**2**	**4**
Polk	**0**	**0**	**0**	**1**	**0**	**1**
Randolph	**0**	**0**	**0**	**0**	**0**	**0**

Richmond	**1**	**0**	**0**	**0**	**0**	**1**
Robeson	**0**	**1**	**0**	**1**	**2**	**4**
Rockingham	**0**	**1**	**0**	**0**	**1**	**2**
Rowan	**1**	**0**	**2**	**1**	**1**	**5**
Rutherford	**0**	**0**	**0**	**0**	**0**	**0**
Sampson	**2**	**0**	**4**	**1**	**0**	**7**
Scotland	**0**	**0**	**0**	**0**	**0**	**0**
Stanly	**1**	**0**	**0**	**0**	**0**	**1**
Stokes	**0**	**0**	**0**	**0**	**0**	**0**
Surry	**0**	**0**	**0**	**0**	**0**	**0**
Swain	**0**	**0**	**0**	**0**	**0**	**0**
Transylvania	**0**	**1**	**0**	**0**	**0**	**1**
Tyrrell	**0**	**0**	**0**	**0**	**0**	**0**
Union	**0**	**2**	**1**	**0**	**0**	**3**
Vance	**0**	**0**	**0**	**0**	**0**	**0**
Wake	**8**	**18**	**14**	**8**	**11**	**59**
Warren	**0**	**0**	**0**	**0**	**0**	**0**
Washington	**1**	**0**	**0**	**1**	**0**	**2**
Watauga	**0**	**0**	**0**	**0**	**0**	**0**
Wayne	**0**	**3**	**0**	**0**	**0**	**3**
Wilkes	**1**	**0**	**0**	**0**	**0**	**1**
Wilson	**1**	**0**	**3**	**1**	**2**	**7**
Yadkin	**0**	**0**	**0**	**0**	**0**	**0**
Yancey	**0**	**0**	**0**	**0**	**0**	**0**
North Carolina	**75**	**101**	**85**	**54**	**56**	**371**

DATA SOURCE: **North Carolina Electronic Disease Surveillance System (NC EDSS)**