



Community Health Assessment

Wayne County

Calendar Year 2005

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Acknowledgments

Many thanks go out to all the individuals whom assisted with the compiling of data for this years' Community Health Assessment.

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Wayne County Partnership for Children,
Wayne Initiative for School Health (WISH),
Wayne Action Teams for Community Health (WATCH),
Wayne Action Group for Economic Solvency (WAGES),
NC Oral Health Section,
Communities in Schools
North Carolina Cooperative Extension
Wayne Memorial Hospital*

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Introduction

Introduction

A Community Health Assessment is a process involving many agencies to determine where public health needs exist. The assessment determines the health status of the community, identifies resources needed to address health and social problems, and provides a plan to improve the health status of the community. The Community Health Assessment examines data from many sources and involves stakeholders in the community to identify and offer solutions concerning issues that affect health. Community Health Assessments are mandated by the state, and is a joint project supported by the State Center for Health Statistics and the Office of the Healthy Carolinians/Health Education. Most of the information in this report is provided through the State Center for Health Statistics, and can be accessed at the following website: <http://www.schs.state.nc.us/SCHS>. Other data sources that were used in this report can be found in the Reference Section, located towards the end of the document.

A Note on Portraying Health Data by Race

Throughout the Community Assessment, Minorities are compared to Whites on a variety of health measures. For most measures, Minorities have lower health status than Whites, on average. This statistical pattern will, of course, not be true for many individual persons. The advantages of showing the data by race are obvious for targeting resources and interventions toward populations most in need; but hazards exist in interpreting the data. Race in and of itself does not cause poor health status. We do not have a complete understanding of why race is associated with health problems, but it is very likely that factors such as socioeconomic status, stress, and racism are among the underlying causes of the lower health status of Blacks (on average) compared to Whites. These differences in health status have been termed “health disparities”. One example of a health disparity is: African Americans die from heart disease at a rate 30% higher on average than whites. There is no doubt that health care resources are not allocated equally among individuals in our nation but by ones ability to pay. Addressing the striking differences in health status between whites and minorities must be a priority public health issue. A detailed discussion of this issue can be found at: <http://www.schs.state.nc.us/SCHS/pdf/RaceEthnicRpt.pdf>

Many factors that contribute to a person’s health status, such as socio-economic condition and education, are difficult to measure. However, demographic information is readily available. Thus, race (in addition to age and sex) often serves as a surrogate measure for a variety of other related factors.

A Note on Interpreting Data

When interpreting rates of mortality and morbidity, many factors must be taken in to consideration. Rates based on fewer than 10 to 20 events in the numerator, or number of occurrences, may be subject to serious error, and as such, should be interpreted with extreme caution and reservation. A difference in only a few events, especially in a small population, can make a large difference in the rate. This is a problem with measures, such as infant mortality, in which there are usually only a few events per year. A single event, such as a traffic accident, in which two infants are killed could double or triple the infant mortality rate. Thus, caution should be used in interpreting rates based on small numbers of events.

One way to address this problem is to use five-year rates in which all events over the five-year period are used and averaged over the population, or denominator, during that time period. However, even over a period of five years, there may only be a few events and therefore the reported rates may still be unreliable. In this report, where practical, the actual numbers of people affected for mortality and morbidity statistics are given to assist with determining the actual effect of events.

Death rates may be presented as “crude” death rates, which indicate the number of deaths divided by the population at risk or age adjusted death rates. Age adjusted death rates adjust the comparison of populations so that age of a population does not skew the results. This helps when comparing death rates of county “a” that may have a younger population than county “b”.

Births and deaths are based on place of residence. College and military personnel are considered residents of the county in which they reside.

In this report, two broad categories of race are used; white and minority. Minority is predominately African-American. For births and fetal deaths, the child is considered to be the same race as the mother.



Demographics

Wayne County Demographics

The graph and table below represents projected population data for Wayne County as of 2003. This information, in addition to providing a snapshot of the population, can be used to make predictions concerning public demand for services. Examples would be: estimating the number of children that could be expected to enroll in kindergarten, or estimating the number of Medicare recipients ten years from now in the county.

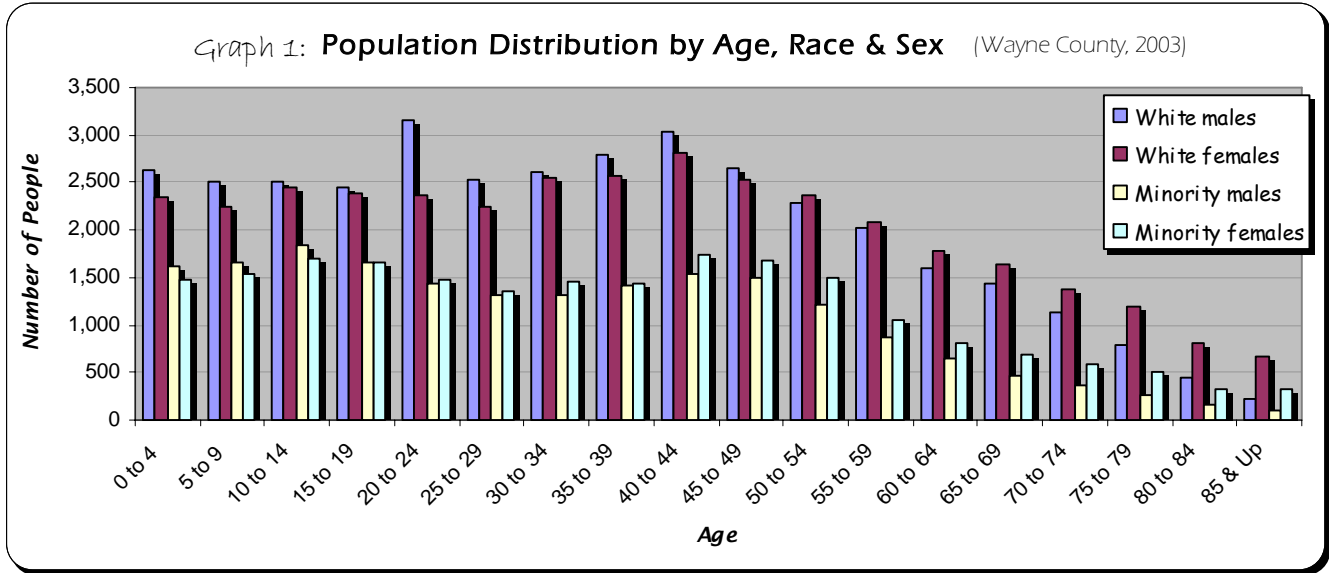


Table 1:
Population (projected) Distribution
by Age, Race and Sex
 (Wayne County 2003)

<i>Age</i>	WHITE		MINORITY		TOTAL
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	
0 to 4	2,628	2,353	1,618	1,478	8,077
5 to 9	2,508	2,251	1,657	1,545	7,961
10 to 14	2,509	2,441	1,835	1,708	8,493
15 to 19	2,443	2,389	1,669	1,659	8,160
20 to 24	3,148	2,377	1,442	1,485	8,452
25 to 29	2,532	2,241	1,316	1,361	7,450
30 to 34	2,602	2,547	1,323	1,460	7,932
35 to 39	2,786	2,575	1,415	1,440	8,216
40 to 44	3,030	2,821	1,536	1,746	9,133
45 to 49	2,648	2,536	1,504	1,680	8,368
50 to 54	2,277	2,369	1,220	1,489	7,355
55 to 59	2,014	2,079	873	1,051	6,017
60 to 64	1,600	1,775	655	804	4,834
65 to 69	1,428	1,635	468	693	4,224
70 to 74	1,134	1,382	370	592	3,478
75 to 79	788	1,198	270	515	2,271
80 to 84	436	813	169	331	1,749
85 & up	222	659	110	327	1,318

Source: North Carolina State Center for Health Statistics

Observations:

- The 2004 total projected population of Wayne County is 115,110.
- School age (ages 5-19) population is approximately 24,614 (for pop year 2003). (**Note:** Actual public school enrollment is 19,306 for the 2004-05 school year. Wayne County Public Schools are ranked 19th largest school system in the state of 115.)
- White males, in the age range 20-24, outnumber white females, most likely due to the location of the Air Force base in Wayne County.
- 4,399 active duty military personnel, 5,866 military dependents, and 57 active duty reserve personnel are stationed at Seymour Johnson Air Force Base. 3,056 non-active duty (retired military and dependents) also utilize services at Seymour Johnson Air Force Base.
- In the age range 0-19, whites comprise 60% of the population and minorities 40%. At the other end of the age spectrum, ages 55 and up, whites account for approximately 70% of the population and minorities 30%.
- White females make up 44% of the total population over age 65.
- There are 13,040 people over the age of 65 representing 12% of the total population.

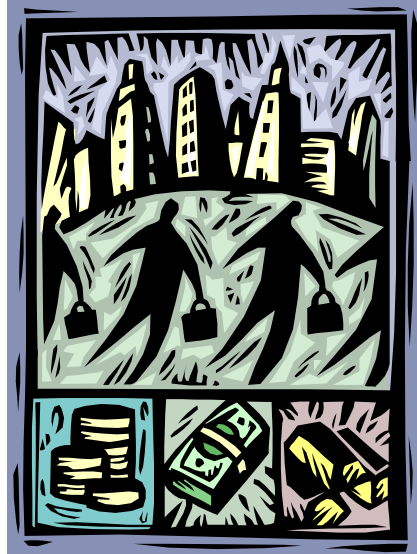
Table 2: Wayne County Births and Deaths 2000-2004

YEAR	BIRTHS			DEATHS		
	White	Minority	Total	White	Minority	Total
2000	1,104	659	1,763	691	406	1,097
2001	1,119	619	1,738	651	378	1,029
2002	1,048	612	1,660	641	391	1,032
2003	1,102	605	1,707	724	322	1,046
2004	1,154	606	1,760	721	382	1,103

Source: North Carolina State Center for Health Statistics

Observations:

- The number of births has remained relatively consistent over the five-year period, as shown in table 2, with the exception of a decrease of 78 total births between 2001 and 2002 largely due to 71 fewer white births.
- The average number of births over the five-year period has been 1,726 per year, from 2000-2004.
- White births outnumber minority births in the ratio of 1.8 to 1.
- Resident deaths have averaged 1,061 per year from 2000-2004.



Socioeconomic Information

Table 3: Socioeconomic Information for Wayne County: Selected Indicators, Health Insurance and Medicaid

Indicator		2000	2001	2002	2003	2004
Unemployment Rate (%)	Wayne	4.0	5.7	6.5	6.3	5.4
	NC	3.8	5.6	6.7	6.5	5.5
Per Capita Income (\$)	Wayne	22,093	22,564	23,139	23,584	n/a
	NC	27,071	27,493	27,640	28,071	n/a
Average Annual Wage (\$) (per worker)	Wayne	24,549	25,364	25,792	26,312	27,456
	NC	31,072	32,026	32,708	33,540	34,788
Divorce Rate (per 1,000 population)	Wayne	4.7	4.7	5.3	4.8	4.7
	NC	4.6	4.6	4.4	4.2	4.2
Persons Receiving Food Stamps (per 1,000 pop.)	Wayne	195.4	210.1	209.4	n/a	n/a
	NC	151.8	165.1	167.0	n/a	n/a
Rate of Substantiated Child Abuse / Neglect (per 1,000 population)	Wayne	15.4	18.9	17.2	20.4	19.9
	NC	16.2	16.6	16.1	14.5	11.7
Violent Crime Rate (per 100,000 population)	Wayne	595.8	443.4	460.8	516.5	497.4
	NC	501.0	503.8	475.3	454.7	446.9

Sources: The Employment Security Commission of NC (Labor Market Information)
 North Carolina State Center for Health Statistics
 Log Into North Carolina (LINC)
 NC SBI Division of Criminal Information (NC Crime Statistics)
 CLICKS: Community-Level Information on Kids (The Annie E. Casey Foundation)

Table 4: Poverty Rates Wayne County

		1990	2000	2004
Poverty Rate	Wayne	15.2%	13.8%	n/a
	NC	13.0%	12.3%	n/a
Poverty Rate of children (≤ 18 yrs.)	Wayne	20.4%	18.6%	18.9%
	NC	16.9%	15.7%	16.1%

Source: Log Into North Carolina (LINC)

Observations:

- During the years 2000 through 2004, the average annual wage in NC and in Wayne County has grown by 11%. The average annual wage in Wayne County is 21% lower than the state average.
- The rate of people receiving food stamps has remained constant in Wayne County over the period; but the difference between the average NC rate and the average Wayne County rate is not significantly different.

Observations *(continued)*:

- The unemployment rate In Wayne County, over the 2000 – 2004 year period, has remained consistent, and is not significantly different than the state average, in the same time period.
- The latest unemployment rate for Wayne County as of July 2005 is 6.5%.
- The percent of people living at or below the poverty rate in Wayne County has decreased over the last decade, but remains slightly above the state average.
- The poverty rate in Wayne has decreased 9.2% overall during the last decade, while the state has decreased 5.3%.
- An average of 10,323 individuals received food stamps for the year 2003, 11,465 in 2004, and 12,699 individuals in 2005.
- The number of substantiated abuse and neglect cases in Wayne County has increased 29% during the 5 year trend (years 2000-2004), but North Carolina has had a 28% decrease of substantiated abuse and neglect cases in the same time period.
- DSS reports (2004) that substance abuse is increasing as a factor for abuse and neglect cases, and approximately 75% of cases involve substance abuse.

Discussion:

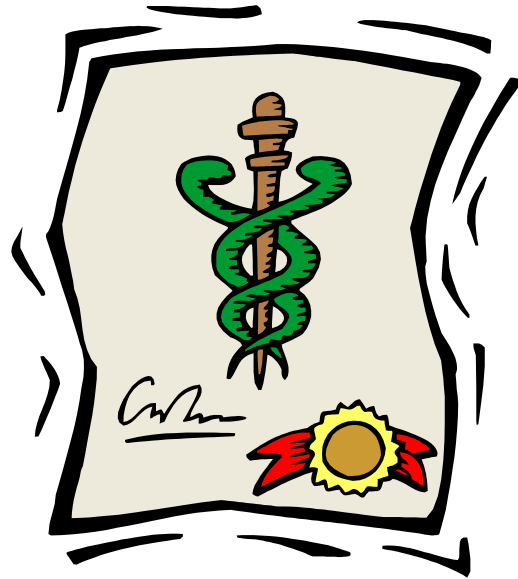
There is a strong association between socioeconomic status and health status. Poverty accounts for many of the health disparities observed in this assessment. Adults living at or below the poverty level most likely will be uninsured and not have access to a regular source of medical care. The threshold for measuring poverty level for a family of four during 2004 is a yearly income of \$ 18,850. A positive influence on the economy of Wayne County is WAGES (Wayne Action Group for Economic Solvency). This agency assists the community with a variety of programs designed to promote self-sufficiency. WAGES programs span administration of the Head Start program to offering a pharmacy assistance program for senior citizens.

Seymour Johnson Air Force base also has a strong economic impact on Wayne County. The base contributes almost \$2 million daily to the local economy. During 2005, final commentary was made by the BRAC (Base Realignment and Closure) commissions to increase or decrease the number of personnel on United States military bases. Seymour Johnson Air Force Base will gain approximately 362 additional military personnel, beginning in 2006. In relation to BRAC's decision of gaining employment at Seymour Johnson Air Force Base, Wayne County's economic impact should also have a positive impact (gain).

The following comments are from Joanna Thompson, Economic Development Director for Wayne County: "Our efforts at the EDC are very focused on recruiting industries that will pay at or above the average manufacturing wage (about \$ 12/hour). The last several years we have done that. We want to get real living wages...not just jobs. As far as future employment opportunities, the best chances lay with existing industry that will grow and expand...that's where 80% of new jobs come from. At this time I am not aware of any potential plant closings for 2006. Wayne County industries produced over 190 new jobs for Wayne County citizens in 2005. Also in 2005, two companies announced a new location in Wayne County which will create a total of just over 600 new jobs. Our prospects for 2006 look strong, as well.

Wayne County ranks fourth in the state in regards to agriculture cash receipts. Agriculture alone has a significant impact on our local economy, totaling over \$320 million annually from direct farm income. (Cash receipts in 2004 totaled \$320,722,487). Wayne County ranks 5th in the state in

livestock and poultry, 12th in crops. Individual crops include: 3rd in wheat, 4th in soybeans, 10th in cotton, and 9th in tobacco. In the livestock and poultry category, Wayne County ranks 4th in the state for swine and 3rd in the state for turkeys.



Health Insurance

Public & Private

Table 5: Number and Percent of Population (ages 0-64) Without Health Insurance
(Wayne County and North Carolina)

YEAR	BELOW AGE 18		AGES 18-64		TOTAL (<65 YRS)		STATE (TOTAL <65 YRS)
	Number	%	Number	%	Number	%	%
1999	3,339	11.8	16,768	22.71	20,107	19.7	17.3
2000	n/a	n/a	n/a	n/a	n/a	n/a	14.6
2001	3,160	10.7	16,183	23.0	19,344	19.4	16.3
2002	4,057	13.1	16,518	24.0	20,575	20.6	19.0
2003	3,519	11.9	16,358	23.7	19,877	20.1	19.4
2004	3,605	12.1	14,922	21.1	18,527	18.4	17.5

Source: UNC-Chapel Hill Sheps Center

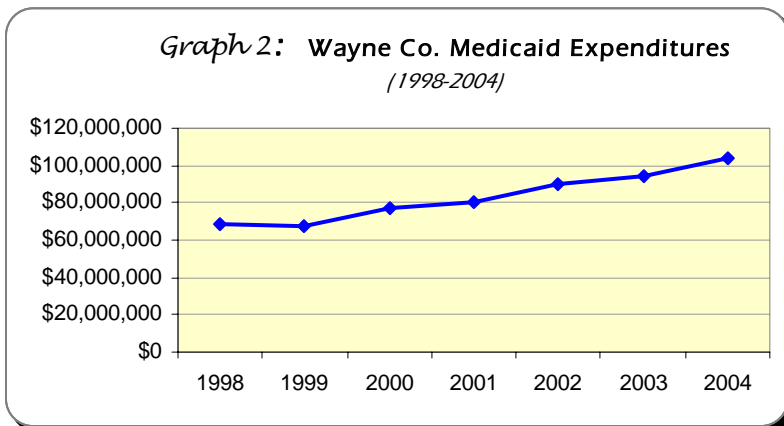
Table 5 shows the estimated number and percent of the total of uninsured people in Wayne County for the years 1999-2004. Out of 100 counties in North Carolina, Wayne County currently ranks 32nd out of 100 in the state for percent population without health insurance. This is an improvement from year 2003, where Wayne County was ranked 38th in the state.

In most cases access to health insurance is either a privilege through employment, or a right as a result of qualifying for public insurance such as Medicaid, Health Choice or Medicare. Unless indigent adults are over age 64, they most likely will not have health insurance. The lack of health insurance further contributes to health disparities, and certainly is a factor in an individual's health.

Table 6: Medicaid Stats for Wayne Co.

Year	Number of Eligibles	Eligibles 0-19 yrs	Total Expend.	Expend per Eligible	% Mcaid Eligibles	Number of Mcaid Births	Hlth Choice Enrollment
1998	21,561	n/a	\$68,586,223	\$3,181	18.87%	808	62
1999	21,528	n/a	\$67,526,223	\$3,137	19.00%	904	232
2000	22,142	12,649	\$77,046,045	\$3,480	19.60%	1,073	1,630
2001	23,849	13,285	\$79,995,632	\$3,354	21.04%	1,116	1,747
2002	23,839	13,399	\$89,885,496	\$3,771	21.06%	1,071	1,993
2003	24,544	13,916	\$94,369,663	\$3,845	21.56%	1,038	2,499
2004	24,986	14,162	\$104,202,946	\$4,170	21.92%	1,126	2,907

Source: NC Division of Medical Assistance
Log into North Carolina (LINC)



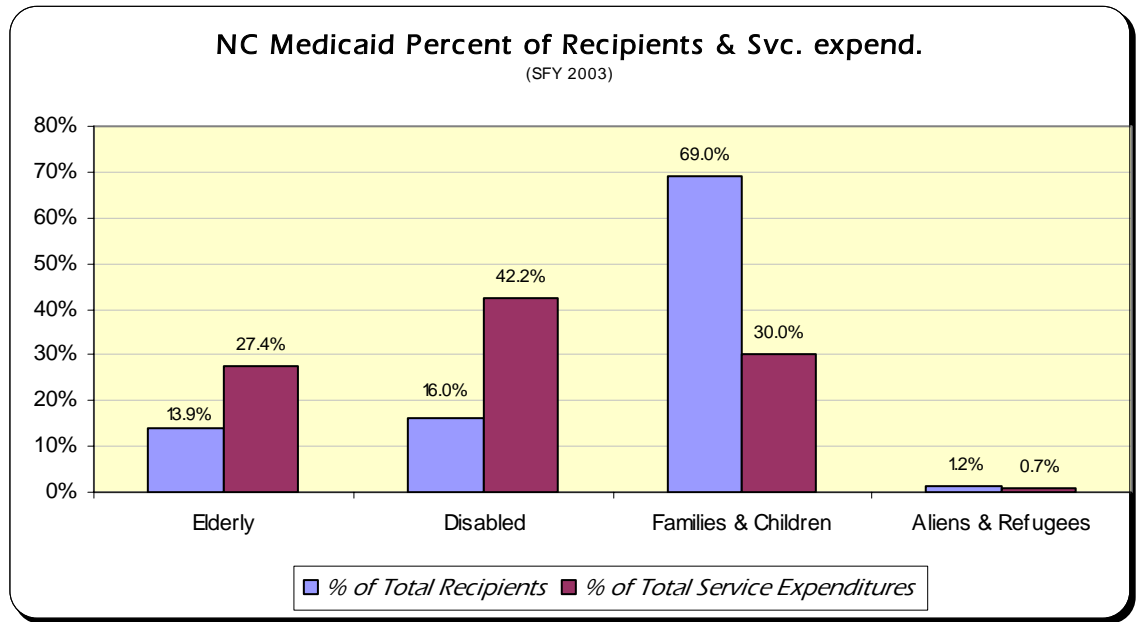
Source: NC Division of Medical Assistance

Table 7: Medicaid Stats for Wayne County

Medicaid Matching Rates	
<i>Federal</i>	65.51%
<i>State</i>	29.32%
<i>County</i>	5.17%

Table 7 shows to what percentage Medicaid funds are matched in Wayne County; according to funding sources. The majority of Medicaid funds come from a Federal expenditure (65.5%). Note: North Carolina is the only state to require a County match for Medicaid.

Graph 3: Medicaid Stats for NC



Source: NC Division of Medical Assistance

Observations:

- Medicaid spending in Wayne County has increased by 53% over the seven-year period 1998-2004.
- The Elderly and Disabled population account for 29% of the Medicaid recipients and 69% of the expenditures. Families and Children make up 69% of the Medicaid population, but only 30% of the expenditures.
- Wayne County Government has over \$6.7 million budgeted for Medicaid expenditures for Fiscal Year (FY) 2005-2006.
- The number of total people eligible for Medicaid has increased by 16%, for the years 1998 – 2004.
- The state total (not shown) for percent Medicaid eligible is 17.97% for the year 2004. This is a 5.5% increase from the years 2002-2003.
- Medicaid births account for at least 64% of births during the year 2004.
- Health Choice enrollment dropped in 2001 due to a freeze in enrollment, but current numbers are above “pre-freeze” levels.
- Without Medicaid and Health Choice many residents of Wayne County would be uninsured.

Discussion:

Over the last decade, Medicaid spending has grown by approximately 160% in North Carolina. Bearing the costs of Medicaid can be a curse and a blessing to local government. Medicaid provides public medical insurance primarily to children, pregnant women, the disabled and the elderly; but local and state government must contribute to the costs of providing the insurance in the ratio of 5% county and 29% state. The federal government chips in the remaining approximate 66%.

Medically, Medicaid is vitally important in reducing infant mortality, reducing out of wedlock births, reducing hospitalizations and ensuring a high standard of health among children. Economically, Medicaid brings in two federal dollars for every state dollar spent. Businesses and individuals who earn Medicaid dollars impact local economies by spending these dollars locally. A pregnant woman, in a family of four, qualifies for Medicaid if the monthly household income is \$2,984 or less.

In North Carolina, elderly and disabled individuals account for 69% of expenditures (fiscal year 2003), with women and children accounting for the remaining expenditures. Stated another way, pregnant women and children comprise two-thirds of recipients, but less than 27% of total costs. Statewide, approximately \$7 billion was spent for more than 1.3 million people.

Medicaid Expenditures

In Table 8, seen below, statewide Medicaid expenditures for each type of service are shown. Inpatient hospitalization and other non-long term services are the biggest Medicaid expenses, but has had small increases in spending for the time period shown. Prescription drug usage is also considered one of the biggest Medicaid expenses, and has had an increase in spending of 22% during the 2004 fiscal year.

Table 8: Statewide (North Carolina) Medicaid Expenditures and Category of Expenditures
(State Fiscal Year – 2003 vs. 2004)

Type of service	2004 Expenditures	Amt. of Change <i>(since yr. 2003)</i>	% Change
<i>Prescription Drugs</i>	\$ 1,470,328,522	\$ 266,697,609	22.2%
<i>Inpatient Hospital</i>	927,059,649	83,922,231	10.0%
<i>Physician</i>	696,397,203	124,858,467	21.8%
<i>Mental Health Clinics</i>	476,670,180	82,328,144	20.9%
<i>Outpatient Hospital – general</i>	335,345,994	(4,431,298)	-1.3%
<i>Medicare Part B Premiums</i>	190,394,800	21,488,262	12.7%
<i>Dental</i>	179,180,156	50,090,772	38.8%
<i>Other Non-Long Term</i>	729,060,584	37,677,011	5.3%
TOTAL NON-LONG TERM	\$ 5,004,437,088	\$ 662,631,198	15.2%
TOTAL LONG TERM	\$ 2,368,274,354	\$ 121,012,410	5.4%

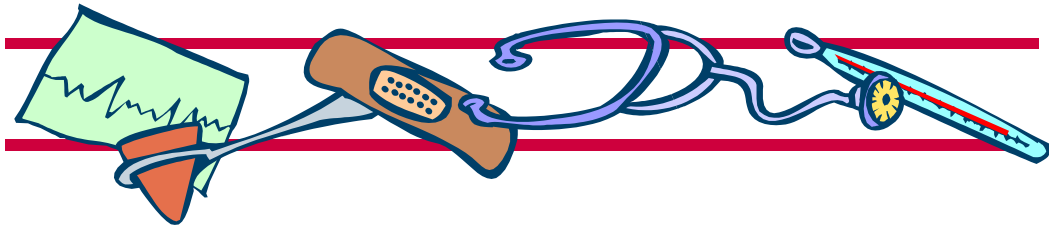
Source: NC Division of Medical Assistance

Table 9: Annual Change in National Health Care Spending, 1995-2002

YEAR	INCREASE (%)
1995	2.2
1996	2.0
1997	3.3
1998	5.3
1999	7.1
2000	7.8
2001	10.0
2002	9.6
2003	7.4
2004	8.2

Health care spending per privately insured American increased 8.2% in 2004; growing nearly four times faster than the overall economy. The rate of growth has slowed slightly from 2001 when spending increased by 10%. Strategies such as higher co-pays and using generic drugs may slow the rate of growth, but Americans demand the best health care and the best technology; both of which drive the price of health care upwards.

Source: <http://www.hschange.org/>



Health Care Environment

Wayne County Health Care Environment

Table 10: Health Professionals in Wayne County, (2004)

Source: UNC Sheps Center, 2005

The table to the right shows the number of persons credentialed in several health professions residing in Wayne County. There are a total of 183 active non-federal physicians and 1,296 nurses. There are 7.3 primary care physicians per 10,000 population, compared to the state average of 8.6 primary care physicians per 10,000. Wayne County has approximately 3.7 dentists per 10,000 population, compared to the state average of 4.2 dentists per 10,000 population.

Provider Type	No.
Primary Care MDs	84
FP	29
GP	5
Internal Med	27
OBGYN	9
Pediatrics	14
Other Specialties	99
Dentists	43
Dental Hygienists	72
Registered Nurses	979
Nurse Practitioners	23
Certified Nurse Midwives	0
Licensed Practical Nurses	294
Chiropractors	12
Optometrists	12
Pharmacists	92
Physical Therapists	27
Physician Assistants	25
Podiatrists	2
Practicing Psychologists	13
Respiratory Therapists	40

Wayne Initiative for School Health (WISH) program:

Encounter Description	Number	Encounter Description	Number
Vaccinations	297	Mental Health	977
Audio Screen	218	Spirometry	35
Health Education	821	Vision Screening	449
Visit to RN or FNP	10,121	Diet/Nutrition	670

Table 11: WISH Encounter Information

August 2004 to May 2005

Table 11 shows encounter information for the WISH program. (Information presented in the above table is based on information from the four middle school WISH centers.) WISH is a school based health clinic started in 1997 to address five specific health problems; asthma, mental health, lack of well care/ dental care, teen pregnancy and attention deficit disorders. WISH is beneficial in terms of providing easy access for children to a medical provider. WISH centers are based in four middle schools: Goldsboro Middle, Mt. Olive Middle, Brogden Middle, Dillard Middle, and one high school: Goldsboro High. As of August 2005 an additional WISH Health Center, located at Southern Wayne High School, has been established. The rate of emergency room visits and the number of school suspensions have declined in the schools housing WISH centers. Each center has a part time mid-level provider (PA or FNP) and a full time RN. The Health Department contributes registered dietitians and health educators. Mental health services are provided in kind by Wellsprings, P.A., and Linda Newsome & Associates. The goal of the WISH Health Centers is to help students succeed in school by promoting healthy lifestyles and providing comprehensive health care services.

Wayne County School Health Program:

Table 12: School Health Program

YEAR	# of Students w/ Chronic Health Problems	# of Students Requiring Invasive Procedures at School	# of Students Requiring Medications at School
2003-2004	3,297 (17%), NC: 12%	210	1,347 (7%), NC: 7%
2004-2005	3,345 (18%), NC: 15%	218	1,390 (7%), NC: 6%

Sources: School Health End of Year Report for Wayne County
 North Carolina Annual School Health Services Report for Public Schools: 2004-2005
 NCDHHS Division of Public Health (Women's & Children's Health Section).

Wayne County Public Schools employs school nurses through Wayne Memorial Hospital. There are a total of 9 full-time school nurses and 1 part-time school nurse. One of these school nurses serves Edgewood Developmental School full time. Each school has a nurse that is available to provide services to students 1 to 2 days per week. The school nurses will assess any student for any reason free of charge without an appointment. The Wayne County School Health Program's main purpose is to ensure that students with health problems are able to attend school and that teachers are able to manage their care. School nurses provide a variety of trainings for employees including *Medication, Blood-borne Pathogen, CPR/First Aid, and Diabetes* trainings. Asthma is the most frequent health problem of students; however, the number of students with diabetes and other chronic health conditions requiring invasive procedures (ex. epi-pens, tube feedings, catheterizations, injections) at school has increased each school year.

- The percentage of students with chronic health conditions has increased across the state.
- The percentage of students with chronic health conditions is higher in Wayne County in comparison with the state of NC.

Wayne Action Teams for Community Health Program:

Table 13: WATCH (Wayne Action Teams for Community Health)

Yearly Totals	# of sites visited	# hours seeing patients	# volunteer hours	# of new patients	Cumulative registered patients	Patient visits
2000-2001 (Year 1)	183	1,057.50	647.75	1,127	1,127	2,051
2001-2002 (Year 2)	217	1,261	1,239	1,550	2,677	4,788
2002-2003 (Year 3)	241	1,511	1,917.50	1,660	4,337	6,633
2003-2004 (Year 4)	246	1,501	1,791	1,161	5,498	7,026
2004-2005 (Year 5)	254	1,540	1,168	1,070	6,568	7,677
2005-2006 (Year 6)	132	782	698	499	7,067	4,081
TOTALS	1,273	7,652.50	7,461.25	7,067	7,067	32,256

Table 13 shown on the previous page, shows encounter totals for Wayne Action Teams for Community Health (WATCH), a mobile free clinic. This valuable initiative provides acute and basic healthcare to the uninsured in Wayne county and free medications (if patient qualifies) for chronic diseases. Some health education is provided to chronically ill patients. Staff consists of volunteer physicians, an FNP, a part time Health Educator, 2 Pharmacy Agents and an Administrative Assistant. WATCH is the main source of medical care for the indigent population in Wayne County, and is funded by Wayne Memorial Hospital and grants from The Duke Endowment, Kate B. Reynolds – Charitable Trust Funds, and other various funding sources. WATCH provides the **Choices for Success** Teen Pregnancy Prevention Program in seven Wayne County Schools: five middle schools and two high schools. The WATCH mobile unit medical program has just completed its fifth year of operations. The statistics that are shown in table 13 reflect data through January 2006.

Corporate Health Nursing Services (Wayne County):

Occupational Health Nurses (OHNs) coordinate and deliver quality occupational health environmental and safety services. OHNs strive to balance the best interests for both the employee and the employer. Serving as the health care manager onsite (*Donna Edmundson, RN, BS, COHN-S*), the OHNs role includes case management, wellness programs, and establishing collaborative efforts with community resources.

OHNs work in very diverse settings. For some customer's, a medical clinic is present onsite. For others, a conference room is the setting for education, and for screenings only.

Corporate Health services in Wayne County are provided by seven (7) registered nurses employed by Wayne Memorial Hospital. The scope of this outreach is negotiated in a contractual agreement with each individual business/ industry client. Comprehensive services that impact cost savings such as increased productivity, reduced insurance claims, lowered absenteeism, and decreased injuries are primary goals.

The employer's primary asset is its employee population. The onsite nurse strives to maintain a healthier and safer workforce to protect this population. In addition, understanding state and federal regulations, such as OSHA, DOT, and FMLA allows the OHN to play an integral role in the management team. Other areas that involve the nurses are:

- Ergonomics
- Hazard reduction
- Health promotion
- Injury & illness management
- Health and safety
- Community referrals & follow-up
- Return to work strategies
- Case management
- Disability management
- Medical & health surveillance

In Wayne County, occupational health services have been offered for over 21 years. The Occupational Health Nurses serve in many leadership roles, in business and the community. For the fiscal year October 1, 2004 to September 30, 2005, *Table 14* serves as quick summary of the number of occupational services provided in Wayne County.

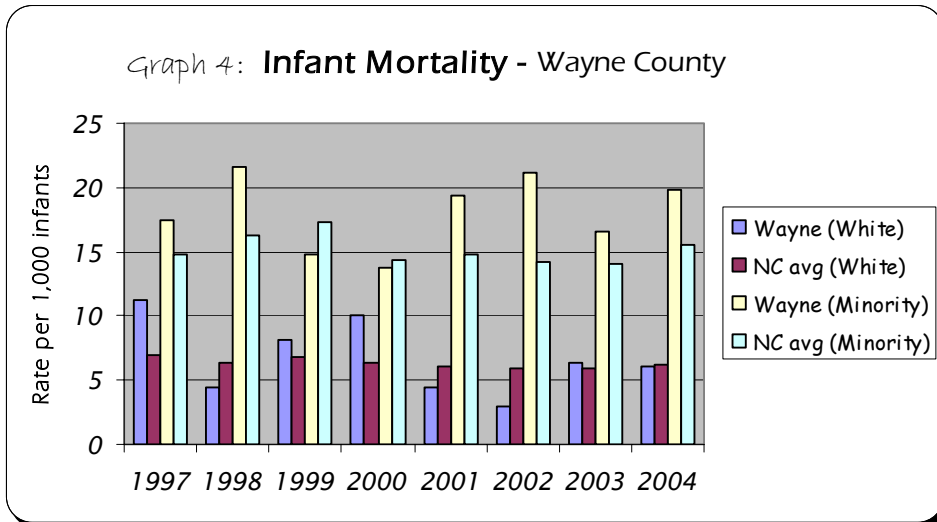
Table 14: Corporate Health Nursing Services, 2004-2005

<u>TYPE</u>	<u># SERVED</u>
<i>Corporate Clients Served:</i>	164
<i>Employee Contacts:</i>	22,153
<i>Employee Referrals:</i>	588
<i>Bloodborne Pathogens/ First Aid/ CPR Training:</i>	578
<i>OSHA Cases:</i>	117
<i>Worker's Compensation Cases:</i>	191
<i>Benefits/ EAP/ Return to Work:</i>	256



Infant Mortality
&
Maternal Health

Infant Mortality and Maternal Health Indicators (Wayne County)



★ **Note:** Infant death is defined as the death of a live-born child less than one year of age.

Table 15: Infant Mortality 1997-2004, Wayne County

YEAR	WHITE			MINORITY			TOTAL # OF DEATHS
	# of Deaths	Wayne Rate	NC Avg. Rate	# of Deaths	Wayne Rate	NC Avg. Rate	
1997	12	11.2	6.9	10	17.4	14.8	22
1998	5	4.5	6.4	13	21.6	16.3	18
1999	9	8.1	6.8	11	14.8	17.3	20
2000	11	10.0	6.3	9	13.7	14.4	20
2001	5	4.5	6.1	12	19.4	14.8	17
2002	3	2.9	5.9	13	21.2	14.2	16
2003	7	6.4	5.9	10	16.5	14.0	17
2004	7	6.1	6.2	12	19.8	15.6	19

★ **Note:** Rates are per 1,000 births

Source: NC State Center for Health Statistics

Observations:

- As stated earlier, any results based on less than 10-20 events must be interpreted with caution. For this reason, an eight-year period is examined for infant mortality.
- Over the eight-year period, in Wayne County, 59 white babies died compared to 90 minority babies. It is noted that minorities account for 34% of births, but 63% of infant mortalities.
- The infant mortality rate for white women has decreased from 11.2 per 1,000 births in 1997 to 6.1 per 1,000 births in 2004. However, the infant mortality rate for minority women has experienced little change over the past eight years: 17.4 per 1,000 births in 1997 to 19.8 per 1,000 births in 2004, and with a temporary drop in 2000 (13.7 per 1,000 births). It is significant that 81% of the infant deaths in 2002 (13 out of 16) were minority infants, and slightly less for the year 2004 (63%).

Discussion:

Infant death rates are prone to fluctuation because of the small number of events as mentioned earlier. (Rates based on small numbers (fewer than 20 cases) are unstable and should be interpreted with caution). It appears that minorities are affected by a higher rate of infant mortality than whites; also the number of minority infant deaths has remained relatively the same over the 8-year period (1997-2004). Infant mortality within the White population seems to be decreasing slightly, during the same time period.

Maternal Health:

Table 16: **Maternal Health Indicators: Wayne County & State Averages**

Indicator	Wayne Co. (Rate)			State (Rate)			Wayne (# of cases)	State (# of cases)
	<i>yr. 2002</i>	<i>yr. 2003</i>	<i>yr. 2004</i>	<i>yr. 2002</i>	<i>yr. 2003</i>	<i>yr. 2004</i>	<i>yr. 2004</i>	<i>yr. 2004</i>
Percent of High Parity Births (4 or more)	11.0	11.2	9.6	8.1	8.1	8.3	169	9,950
Age of Mother < 30 yrs.								
Percent of High Parity Births (4 or more)	6.9	9.8	8.5	8.9	9.4	9.3	150	11,188
Age of Mother > 30 yrs.								
Percent Receiving Care - 1 st Trimester (Total)	73.4	72.9	72.6	83.7	83.7	83.3	1,278	99,822
Percent Receiving Care - 1 st Trimester (Minority)	65.2	64.8	65.2	75.8	77.0	76.8	395	24,979
Percent Low Birth Weight Births (Total)	8.4	6.4	7.7	7.1	7.2	7.1	136	8,555
Percent Low Birth Weight Births (Minority)	13.6	9.9	10.1	10.0	10.3	10.0	61	3,263
Percent of Very Low Birth Weight Births (Total)	2.0	1.9	2.1	1.9	1.8	1.9	37	2,291
Percent of Very Low Birth Weight Births (Minority)	3.4	2.5	3.3	3.4	3.1	3.4	20	1,092
Weight Gain of Mother < 20 lbs. (Total)	22.7	22.0	20.1	18.0	17.5	17.9	354	21,484
Weight Gain of Mother < 20 lbs. (Minority)	28.3	26.6	23.6	23.1	22.4	23.0	143	7,478

★ **Note:** The above rates are reported as percentages (%). **Source:** NC State Center for Health Statistics

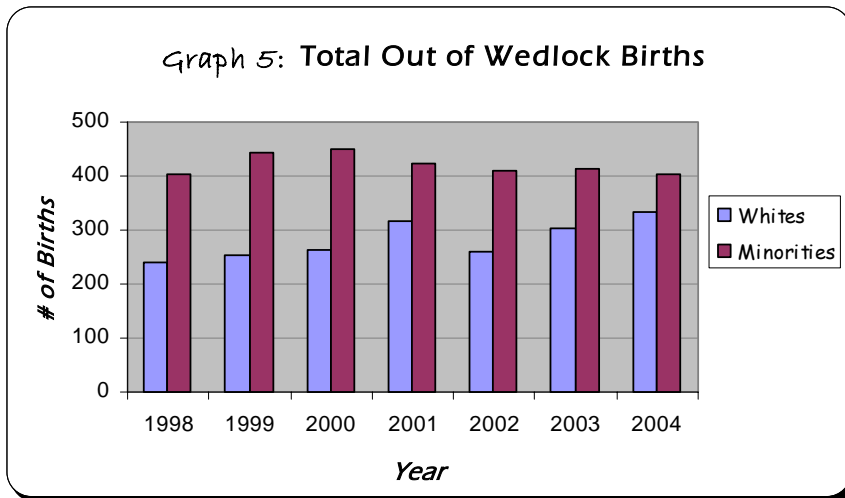
Observation:

- Women in Wayne County enter into pre-natal care at a later stage than the state average.

Discussion:

Table 16 (located on previous page) compares maternal health indicators for Wayne County with the state average. This data can help identify factors leading to poor birth outcomes. Wayne County appears to have a low percentage of pregnant women receiving adequate prenatal care during the first trimester. Most of the indicators shown for Wayne County seem to mirror the state average. Overall, the maternal health indicators listed have remained consistent across the time period listed. Outreach efforts to minorities may ensure that women are receiving support services such as Medicaid, prenatal care, and WIC to reduce infant mortality among minorities.

Out-of-Wedlock Births:



Observations:

- Out-of-wedlock births account for 42 % of total births (1,760) in Wayne County compared to the state average of 37%.
- The number and rate of white out-of-wedlock births has increased, from the years 1998 to 2004.
- The total number of out-of-wedlock births in Wayne County was 4,907 for the period 1998 to 2004.
- The minority rate of out-of-wedlock births in Wayne County are almost 2½ times greater than that of the white rate.

Table 17: Number/Rate Out-of-Wedlock Births (by Race)

Year	WHITE		MINORITY	
	Number	Rate	Number	Rate
1998	240	21.6	402	66.7
1999	254	22.9	433	68.0
2000	264	23.9	450	68.3
2001	317	28.3	424	68.5
2002	260	24.8	411	67.2
2003	303	27.5	412	68.1
2004	333	28.9	404	66.7

★ **Note:** Rates are per 1,000 births
 Source: NC State Center for Health Statistics

Discussion:

The high number of out-of-wedlock births may indicate the need for enhanced marketing and promotion of family planning services to sexually active women. It would be interesting to know the number of out of wedlock births that were the result of an unintended pregnancy.

SELECTED HEALTH INDICATORS:

Table 18: Selected Health Indicators for Women, Hispanic/Latinas, Whites & African Americans, in North Carolina, (year 2001-2004)

Selected Health Indicators for Women			
	<u>Hispanic/ Latina</u>	<u>White</u>	<u>African American</u>
% Low Birth Weight	6.2	7.4	14.1
% Smoked During Pregnancy	1.4	13.9	11.0
Prenatal Care Began After 1 st Trimester	28.5	12.3	21.9
Infant Deaths (per 1,000 births)	6.0	6.0	15.0
Number of Live Births	62,953	343,811	110,542

★ **Note:** Infant Death Rates reported (above) are for years 2001-2003.

Source: NC State Center for Health Statistics

Table 19: 2004 Reported Pregnancies (per 1,000 NC Females)

North Carolina Reported Pregnancies			
<u>AGE</u>	<u>Latina Rate</u>	<u>White Rate</u>	<u>African American Rate</u>
15-17	104.0	29.4	54.9
18-19	288.8	99.5	144.8
20-44	169.5	78.9	87.2

Source: NC State Center for Health Statistics

Observations:

- Hispanic women seem to have excellent birth outcomes even though this group routinely has late entry into prenatal care and a high teen pregnancy rate. Many of these women are living at or below the poverty level.
- Once a Hispanic woman gives birth in the United States, her child is a US citizen, which may account for the high pregnancy rate among Hispanic teens.
- Outreach opportunities to the Latina population may improve entry into prenatal care.

Discussion:

This section is presented because of the growing Hispanic population in North Carolina and their impact on health service delivery. Hispanics in Wayne County number 5,604, and make up approximately 5% of the population. They currently account for 16 % of births in Wayne County, and the number of Hispanics in Wayne County has increased by 313% since 1990. Over the past decade, the North Carolina Latino population has grown by almost 400% (from the 2000 Census). Latinos are more likely to live in poverty (estimated at 27% in North Carolina, by the US Census) and have difficulty gaining access to health care. It is interesting to note (as stated above) that even though several indicators would predict poor postpartum outcomes, Latinos have good birth outcomes. Approximately 70% of the Hispanics living in North Carolina are from Mexico.



Child and Adolescent Health

Dental:

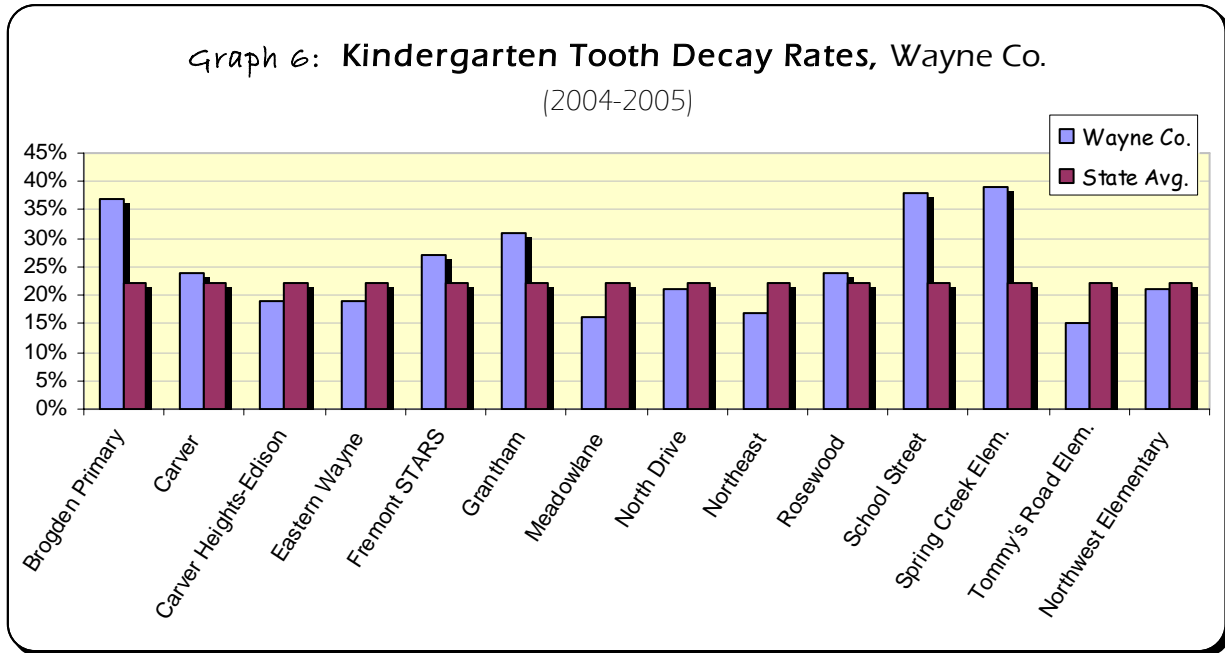


Table 20: Kindergarten Tooth Decay Rates, Wayne County

SCHOOL	Children With Untreated Decay				Fifth Graders with Sealants (%)	State Average
	Kindergarten	State Avg.	Fifth Grade	State Avg.		
<i>Brogden Primary</i>	37%	22%	0%	5%	0%	43%
<i>Brogden Middle</i>	0%	22%	8%	5%	52%	43%
<i>Carver Elementary</i>	24%	22%	3%	5%	64%	43%
<i>Carver Heights-Edison</i>	19%	22%	1%	5%	44%	43%
<i>Eastern Wayne Elem.</i>	19%	22%	4%	5%	57%	43%
<i>Fremont STARS</i>	27%	22%	2%	5%	50%	43%
<i>Grantham School</i>	31%	22%	3%	5%	52%	43%
<i>Greenwood Middle</i>	0%	22%	2%	5%	55%	43%
<i>Meadowlane Elem.</i>	16%	22%	0%	5%	0%	43%
<i>North Drive</i>	21%	22%	5%	5%	35%	43%
<i>Northeast Elementary</i>	17%	22%	1%	5%	54%	43%
<i>Rosewood Elementary</i>	24%	22%	4%	5%	48%	43%
<i>School Street</i>	38%	22%	7%	5%	41%	43%
<i>Spring Creek Elem.</i>	39%	22%	3%	5%	59%	43%
<i>Tommy's Road Elem.</i>	15%	22%	2%	5%	45%	43%
<i>Northwest Elementary</i>	21%	22%	1%	5%	49%	43%

Source: NC Oral Health Section

Observations:

- Brogden Primary, Grantham, School Street, and Spring Creek Elementary appear to be schools with kindergarten populations where pediatric dental education and treatment may be of value.
- The average rate of dental decay among kindergarten children in Wayne County is slightly higher than the state average of 22%.
- Spring Creek has a high rate of decay most likely due to the number of Latino children enrolled in this school.
- Rates of decay for fifth graders are much less because these rates are for permanent teeth only, which mean baby teeth that are decayed, are not counted.
- The number of Wayne County children with sealants in the 5th grade is approximately 51%, significantly higher than the state average (43%).

Discussion:

The data for dental assessments is collected every year throughout schools in North Carolina by the state dental hygienists. This data is the result of examining each child in kindergarten and the fifth grade and counting the number of decayed, missing and filled teeth. Decay rates are expected to come down since fluoride varnish is now routinely applied to Medicaid children with erupted teeth up to 36 months of age. Dental sealants prevent decay by forming an impervious surface on teeth resistant to decay. The decision to seal a child's teeth is a financial issue with parents as sealants cost approximately \$35.00 per tooth. The rate of children with sealants may be higher than stated as clear sealants are not readily detected during the assessment.

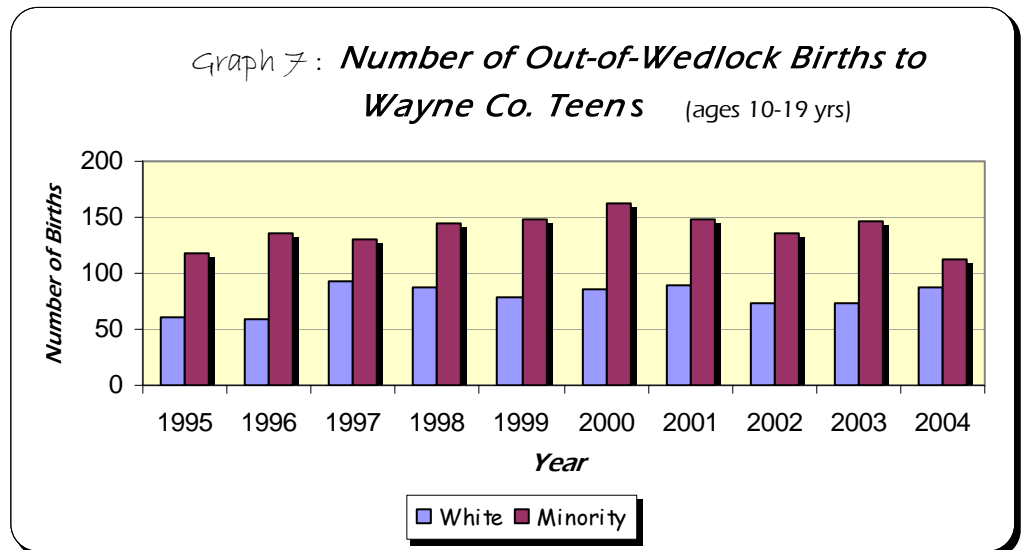
Follow-up with high risk children and children in high risk schools is done through education, referral and parent contact.

Teen Births and Pregnancies:

Year	WHITE		MINORITY	
	Number	% Out of Wed	Number	% Out of Wed
1995	61	54%	118	94%
1996	59	47%	135	92%
1997	93	67%	131	96%
1998	87	66%	144	97%
1999	78	64%	148	97%
2000	85	65%	162	95%
2001	90	63%	148	93%
2002	74	73%	135	94%
2003	74	60%	147	94%
2004	87	66%	112	93%

Table 21: No. of Births to Unwed Teenage Mothers, Wayne County, (ages 10-19 yrs.)

Source: NC State Center for Health Statistics



Observations:

- The data presented here shows that minority teen women are affected disproportionately by out-of-wedlock births when compared to white teen women. Out-of-wedlock births to teen mothers (ages 10-19 years) account for 11% of total births (1,760) in Wayne County during 2004, compared to the state average of 9%.
- For the year 2004, minority teen women, ages 10-19, represent 41% of the at-risk population but account for 56% of the out-of-wedlock teen births.
- From 2000 to 2004 there have been 1,114 out of wedlock births to teens.
- From 1995 to 2004 there does not seem to be any definable trends with teen out-of-wedlock births.
- Across the 10-year period, the percentage of out of wedlock births to white teens seems to be on a slightly increasing trend (34% in 1995 compared to 44% in 2004).
- Out of wedlock teen births percentage for minorities has relatively stayed the same across the 10-year trend (yrs. 1995-2004).

Discussion:

Many studies have shown negative social, health and economic consequences to communities as a result of births to teenage women. Teen parents are more likely to drop out of school, thus decreasing their chances of gainful employment as well as adequate wages. Many will live in poverty. Children born to teen parents are more at risk for abuse due to the immaturity of most teens and the lack of adequate parenting skills. Abusive parents often produce children who become abusive parents. Teens and their children are more likely to become dependents of the state welfare system. Unfortunately this cycle seems to continuously repeat itself, as children of teen parents are more at risk for becoming teen parents themselves. Economically, this becomes very expensive for the community and the taxpayer.

Year	RATES				NUMBER OF PREGNANCIES		
	Total	White	Non-White	State Rate (Total)	Total	White	Non-White
1995	88.7	74.8	105.2	88.4	319	153	163
1996	92.7	73.8	117.8	87.2	340	156	183
1997	93.7	82.0	106.1	82.9	346	176	164
1998	97.6	79.3	122.3	83.2	370	175	194
1999	90.8	66.6	123.3	77.4	355	153	199
2000	102.8	75.1	140.0	76.1	375	158	216
2001	90.5	72.3	114.5	69.3	366	170	194
2002	72.7	52.8	99.3	64.1	295	125	168
2003	77.1	59.9	101.0	61.0	312	143	168
2004	79.1	65.2	92.1	62.4	325	158	155

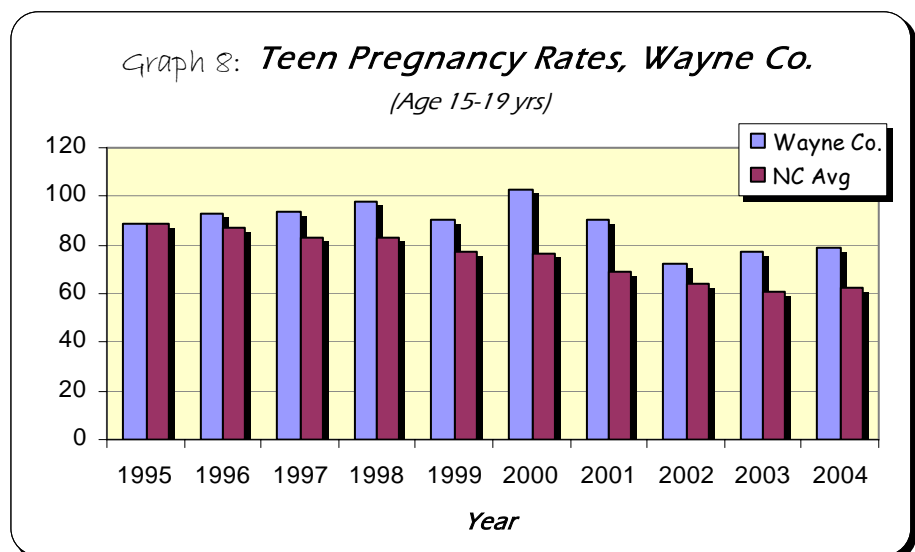
Table 22: Teen Pregnancy Rates, Wayne County, (ages 15-19 yrs.)

Source: NC State Center for Health Statistics

★ **Note:** Rates are per 1,000 females

Observations:

- Since the year 2000, teen pregnancy rates have been on a downward trend, with a slight increase in years 2003 and 2004.
- Note: Teen pregnancy rates for the 10-14 year age range for Wayne County are no longer being calculated by the State Center for Health Statistics, due to the low numbers being reported. ☺
- Historically, Wayne County has experienced teen pregnancy rates above the state average. Overall, the teen pregnancy rate in Wayne County has decreased by 11%, while the State's rate has decreased by 29% over the 10-year period shown.



Teen Abortions:

Year	Rates				Number of Abortions		
	Total	White	Non-White	State Rate (Total)	Total	White	Non-White
2000	20.5	12.2	31.3	17.0	85	29	56
2001	17.1	12.3	22.6	16.4	68	29	39
2002	12.6	9.3	16.0	14.6	49	22	27
2003	8.9	7.5	10.2	14.4	36	18	17
2004	18.0	11.6	20.2	15.4	74	28	34

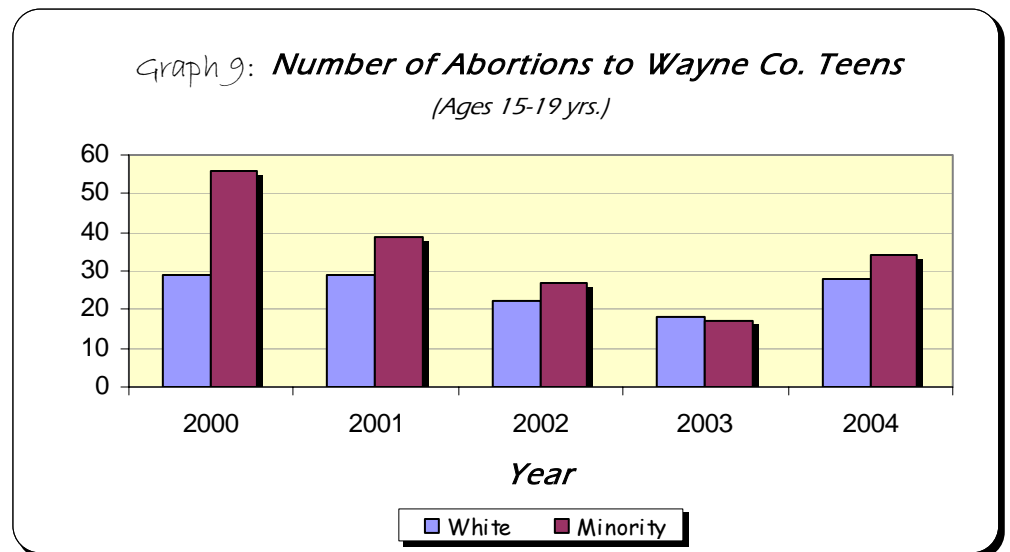
Table 23: Teen Abortion Rates & Numbers, Wayne County, (Ages 15-19 yrs.)

★ **Note:** Rates are per 1,000 females

Source: NC State Center for Health Statistics

Observations:

- Across the 5-year trend shown, the number of teens receiving abortions in Wayne County has decreased 13% for ages 15-19 years.
- Historically, Wayne County has experienced higher teen pregnancy rates than the state; therefore the number of pregnant teens receiving abortions in Wayne County also tends to be higher than the state.
- For the year 2000, there were 162 births to minority teens and 56 abortions received by minority teens.
- Overall, Wayne County seems to mirror the state in a slight downward trend in the rate of teens choosing abortion.



Discussion:

Pregnancy rates for 10-14 yr. olds (not shown) in Wayne County have decreased 67% between 1992 and 2003. In 1990, 20 teen girls ages 10-14 became pregnant, compared to eight in 2004. Teen pregnancy prevention in most areas of the United States is a vexing and politically charged issue. It is interesting to note that in 1972 the nationwide rate was 9.5 pregnancies per 100 teens, which increased to a high of 11.7 per 100 teens in 1990 and in 2000 decreased to 8.4 pregnancies per 100 teens. Obviously the problem is being addressed with positive results. (Source: <http://www.teenpregnancy.org/resources/data/prates.asp>)

Several initiatives have been developed in Wayne County to prevent teen pregnancy. The Wayne County Health Department, the Wayne County School System, and WATCH each contribute health educators who provide outreach in the schools for pregnancy prevention based on abstinence and access to health care. Five school based health centers (WISH) provide education and clinical services for teens in four Middle Schools and one High School. (As of August 2005 there is six; four Middle School health centers and two high school health centers). None of the school based health centers provide family planning services. Communities in Schools, an initiative started in 1994, receives funding from the United Way and the Juvenile Crime Prevention Council for teen pregnancy prevention and to keep kids in school. These initiatives appear to be working as pregnancy rates are falling in Wayne County and nation-wide. The Wayne County Health Department has seen a small increase of teenage women enrolling in the family planning clinic (8%) between 1999 and 2003.

Table 24 Teen Pregnancy Rates Worldwide, 1995

<i>COUNTRY</i>	<i>RATE</i>
Australia	43.7
Belgium	14.1
Canada	45.4
England	46.9
Germany	16.1
Italy	12.0
Norway	32.3
Russia	101.7
USA	83.6

Compared to other industrialized nations, the USA has higher teen pregnancy rates. A good discussion can be found at this site: www.umm.edu/pediatrics/pregnancy.html, which compares pregnancy prevention practices between the USA and other countries. The study found that children in the USA have similar rates of sexual activity compared to their peers in other countries, but children outside of the USA are better informed concerning prevention and have access to birth control. An article at this website: <http://www.advocatesforyouth.org/european.htm> discusses policies that have helped address the issue of adolescent health in Europe.

★ **Note:** Country rates are per 1,000 females
 Source: http://www.guttmacher.org/pubs/fb_teens.html

Sexually Transmitted Diseases in Teens:

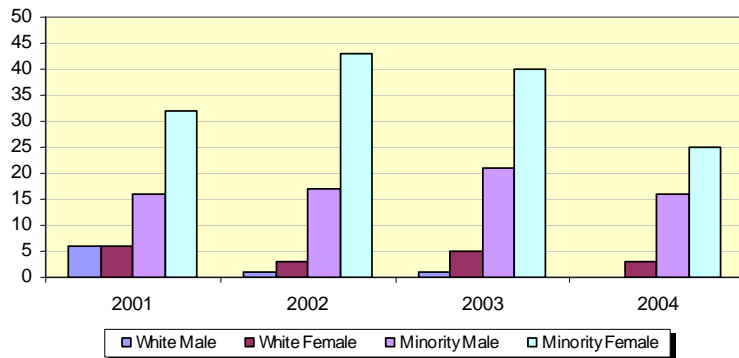
Table 25 No. & Rates of Gonorrhea Infection, Wayne Co.

Gonorrhea Cases & Rates, Wayne County Teens

Year	Age	White				Minority			
		Male		Female		Male		Female	
		# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate
2001	≤ 14 yrs	1	13.1	0	0	1	19.5	4	83.5
	15-19 yrs	6	244.8	6	255.3	16	955.8	32	1887.9
2002	≤ 14 yrs	0	0	0	0	0	0	2	42.0
	15-19 yrs	1	40.4	3	126.7	17	2029.6	43	2541.4
2003	≤ 14 yrs	0	0	1	14.2	1	19.6	2	42.3
	15-19 yrs	1	40.9	5	209.3	21	1258.2	40	2411.1
2004	≤ 14 yrs	0	0	1	14.2	0	0	9	190.6
	15-19 yrs	0	0	3	123.8	16	949.6	25	1485.4

Source: NC HIV/STD Prevention & Care Branch

Graph 10: Number of Cases of Gonorrhea, Wayne Teens (age 15-19 yrs)



Observations:

- Minority women are affected disproportionately by Gonorrhea infection, when compared to white women.
- Minority teens accounted for 89% of the total Gonorrheal infections, for the years shown (2001-2004).

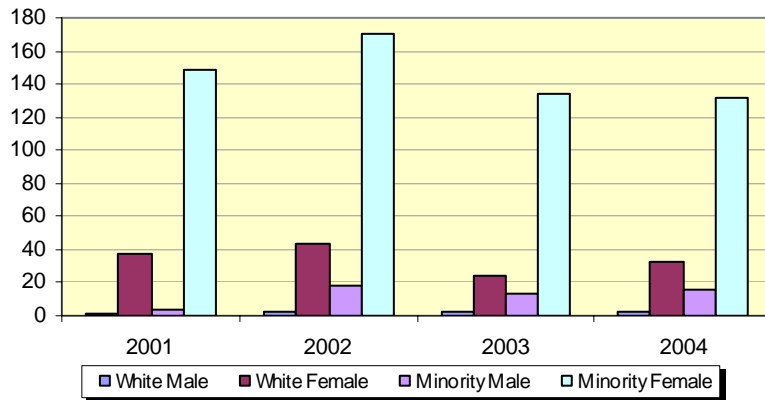
- Minority teen females account for 61% of all Gonorrhea infections, for the 4-year trend shown.
- White teens (male and female) account for 11% of the total Gonorrheal infections, during the years 2001-2004.

Table 26 Number & Rates of Chlamydia Infection in Wayne County Teens

Year	Age	White				Minority			
		Male		Female		Male		Female	
		# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate
2001	≤ 14 yrs	1	13.1	1	14.1	3	58.5	4	83.5
	15-19 yrs	1	40.8	38	1617.0	4	239.0	149	8791.0
2002	≤ 14 yrs	0	0	1	14.1	2	39.0	14	294.0
	15-19 yrs	2	81.0	44	1858.0	18	1079.0	170	10,047.0
2003	≤ 14 yrs	0	0	1	14.2	0	0.0	12	254.0
	15-19 yrs	2	82.0	24	1004.0	13	779.0	134	8077.0
2004	≤ 14 yrs	0	0	1	14.2	0	0.0	9	191.0
	15-19 yrs	3	120.0	33	1361.0	16	950.0	132	7843.0

Table 26 No. & Rates of Chlamydia Infection, Wayne Co. (ages 15-19 yrs.)

Graph 11: *Number of Cases of Chlamydia*
Wayne Teens (age 15-19 yrs)



Observations:

- The data presented here shows that minority teen females are affected disproportionately by Chlamydia infection, when compared to white teen females.

- Overall, females tend to account for the majority of the Chlamydia infections, when compared to teen male Chlamydia infections.
- Minority females account for 75% of all Chlamydia infections.

Discussion:

It may be that Sexually Transmitted Diseases (STDs) go un-reported if seen by private physicians. Women are tested for STDs much more frequently because of Family Planning services, prenatal care, and regular OB-GYN visits.

Current research literature, states minority male and females tend to have an increased risk for early sexual involvement; based on this information, teens who engage in early sexual relationships, have an increased risk to have an overall higher number of sexual partners. This in turn, increases their risk of contracting sexually transmitted diseases. (Source: *National Youth Risk Behavior Surveillance Survey (YRBSS)*).

Due to the trend of youth engaging in early sexual involvement, there is a pressing need to understand and explore the protective and risk factors leading to early and risky sexual behavior and contraceptive use amongst youth (not only in Wayne County, or North Carolina, but nationwide).

Selected Child Health Indicators:

Table 27: Child Fatalities, Wayne County

CAUSE	1995-1999	2000-2004
<i>Birth Defects</i>	29	15
<i>Perinatal Cond.</i>	37	50
<i>SIDS</i>	9	8
<i>Illnesses</i>	30	29
<i>Motor vehicle</i>	16	13
<i>Bicycle</i>	2	0
<i>Fire</i>	3	2
<i>Drowning</i>	4	2
<i>Other Injuries</i>	4	3
<i>Homicide</i>	10	6
<i>Suicide</i>	1	1
<i>All Other</i>	3	6
Total	148	135
By Age Group		
<i>Under 1</i>	79	89
<i>Ages 1-4</i>	20	11
<i>Ages 5-9</i>	13	7
<i>Ages 10-14</i>	15	13
<i>Ages 15-17</i>	21	15

Source: NC State Center for Health Statistics

- There was a 29% decrease in the number of deaths in the age group 15-17.
- The 13% increase in the number of deaths among children under age 1, negatively affects infant mortality rates.

Table 27 shows the number of deaths and causes of death among children in Wayne County, comparing two five-year periods. Table 27 also includes a breakdown of the number of deaths of children in certain age groups. (Children are defined as between the age of 0-17 years).

Observations:

- Death from perinatal conditions has increased by 13 deaths or 35%.
- Total number of deaths has decreased by 13 or about 9%.
- Deaths from motor vehicle accidents, fire, drowning and homicide have decreased by a total of 10 over the periods shown.
- 12.7% more children under one year of age died during 2000-2004 compared to the years 1996-1999.

Trends in Child Well Being:

Table 28: Selected Trends in Child Well-Being, Wayne County

Trend	Trend Period		Base Year		Recent Year		State Avg. (Recent Yr.)
	Base Year	Recent Year	Number	Rate	Number	Rate	
ECONOMIC							
TANF Children	1998	2002	2,366	8.4%	1,024	3.4%	3.6%
Children on Food Stamps	1998	2002	4,283	15.2%	4,568	15.4%	14.3%
Children in Subsidized Child Care	1994	2003	797	31.7%	1,791	43.0%	46.0%
Children Enrolled in Medicaid	1997	2003	12,099	39.1%	13,243	42.3%	34.4%
EDUCATION							
Children in Child Care	1994	2003	2,510	11.4%	4,166	18.0%	14.3%
EOG 3rd Grade Proficiency	1997-98	2002-03	877	58.9%	1,132	78.7%	79.4%
EOG 8th Grade Proficiency	1997-98	2002-03	940	68.8%	1,138	78.6%	79.8%
Four Year High School Completion Rate	1989-90	2001-02	1,100	72.1%	1,002	56.0%	58.5%
SOCIAL							
Abuse/Neglect Reports Investigated	1996-97	2002-03	1,204	41.3	1,856	62.3	51.8
Children in Foster Care	1996-97	2002-03	82	2.8	97	3.7	4.8
Youth (10-17yrs) in Juvenile Justice	1996-97	2002-03	572	44.5	819	60.8	34.1
Children in Single Parent Households	1990	2000	6,308	23.0%	8,353	28.2%	24.3

★ **Note:** Rates are per 1,000 children, unless followed by a % sign.

Source: <http://www.ncchild.org/data.htm#1>

Observations:

- The rate of children who are in families receiving TANF (Temporary Assistance for Needy Families) in Wayne County has decreased by 57% from 1998 to 2002 as a result of Work First policy changes.
- Over the nine-year period of 1994 to 2003, the number of children in subsidized day care has increased two-fold.
- End-of-Grade proficiency testing for 3rd and 8th graders in Wayne County is close to the state average.
- The four-year high school completion rate has declined by 16% during the twelve-year time period, 1990 to 2002.
- 317 Wayne County children dropped out of school during the 2003-04 school year. During the same time period, 20,035 students across North Carolina dropped out of school.
- The drop out rate of Wayne County students (not shown), for grades 9-12, is slightly higher than the state rate. (Wayne Co.: 5.36; NC: 4.86). (Source: <http://www.ncpublicschools.org/fbs/stats/>)

INDICATOR	WAYNE	STATE	YEAR
Medicaid Participation Ratio (Health Check)	83.5%	68.8%	2003-2004
% Children Ages 1-2 yrs. Screened For Lead	76.4%	39.1%	2004
% Children With Elevated Blood Lead	1.3%	1.3%	2004
Diagnosed Asthma ~ ages 0-14 yrs (per 100,000 population)	183.7	180.2	2004
Children Ages 0-17 Fatality Rate (per 100,000 population)	97.9	77.7	2004
Total Infant Mortality Rate (per 1,000 births)	10.3	8.4	2004

Table 29:
Health Indicators for Children, Wayne Co.

Sources: NC State Center for Health Statistics,
NC Child Fatality Task Force

Observations:

Medicaid participation ratios (Health Check utilization) measure the rate of age appropriate health screenings that Medicaid children receive during the year. Wayne County is doing well in that almost 90% of Medicaid children received an age appropriate screening for the year and 76% of children were screened for lead. Elevated blood lead can impair the mental development of children. The child fatality rate and infant mortality rates in Wayne County are above the state average and are a public health concern.

Table 30: SAT Scores for Wayne County & State (Average)

Year	% of students who took SAT		Math SAT score		Verbal SAT score		Total SAT score	
	Wayne	N.C.	Wayne	N.C.	Wayne	N.C.	Wayne	N.C.
2001	49.4	65.0	477	499	473	493	950	992
2002	52.6	67.0	480	505	471	493	951	998
2003	49.9	68.0	479	506	472	495	951	1001
2004	49.4	70.0	494	507	477	499	971	1006
2005	50.5	74.0	494	511	474	499	968	1010

Source: Public Schools of North Carolina

Observations:

- Average SAT scores for the State and for Wayne County have remained relatively constant through the years of 2001-2005.
- The Wayne County average for SAT scores is slightly below the average for the state.



Mortality & Other Health Indicators

Mortality Indicators:

Table 31: Life Expectancies around the World (yrs. 1999 & 2005)

Country	Rank		Life Expectancy (Yrs.)		Infant Mortality Rate		GDP/ Capita	
	(1999)	(2005)	(1999)	(2005)	(1999)	(2005)	(1999)	(2005)
Andorra	10	1	72.3	83.5	4.1	4.1	\$18,000	\$26,800
Macau	N/A	2	81.9	82.0	4.2	4.4	\$16,000	\$19,400
Singapore	30	3	69.3	81.6	3.8	N/A	\$26,300	\$27,800
San Marino	11	3	72.3	81.6	5.4	5.7	\$20,000	\$34,600
Hong Kong	N/A	4	78.9	81.4	5.2	3.0	\$25,100	\$34,200
Japan	1	5	74.5	81.2	4.1	3.3	\$23,100	\$29,400
Sweden	4	6	73.0	80.4	3.9	2.8	\$19,700	\$28,400
Australia	2	7	73.2	80.4	5.1	4.7	\$21,200	\$30,700
Switzerland	8	7	72.5	80.4	4.9	4.4	\$26,400	\$33,800
Guernsey	N/A	8	78.7	80.3	8.4	4.7	N/A	\$40,000
Iceland	19	9	70.8	80.2	5.2	3.3	\$22,400	\$31,900
Canada	12	10	72.0	80.1	5.5	4.8	\$22,400	\$31,500
France	3	14	73.1	79.6	5.6	4.3	\$22,600	\$28,700
Spain	5	17	72.8	79.5	6.4	4.4	\$16,500	\$23,300
Germany	22	32	70.4	78.7	5.1	4.2	\$22,100	\$28,700
United Kingdom	14	36	71.7	78.4	5.8	5.2	\$21,200	\$29,600
USA	24	44	70.0	77.7	6.3	6.5	\$31,500	\$40,100
Mexico	55	72	65.0	75.2	24.6	20.9	\$8,300	\$9,600
China	82	100	62.3	72.3	43.3	24.2	\$3,600	\$5,600

★ **Note:** Infant Mortality rates are per 1,000 population
Life Expectancy rates are calculated ages from birth.

Source: www.geographic.org

Observations:

- The United States continues to rank first in GDP per capita, but has dropped ranking for life expectancy, from 24th to 44th.
- The majority of the countries in Table 31 have had decreases in 2005 infant mortality rates. Mexico and China have extremely high infant mortality rates (approximately 3½ times higher than infant mortality rates in the United States).
- For the year 2005, infant mortality in the United States is twice that of Japan. Sweden has the lowest reported infant mortality rates (based on table 31 above).
- All the countries shown above had increases in life expectancy years, from previous year shown.
- The difference between the country with the highest life expectancy in 2005 (Andorra) and the lowest (China) is a little over 11 years.

Discussion:

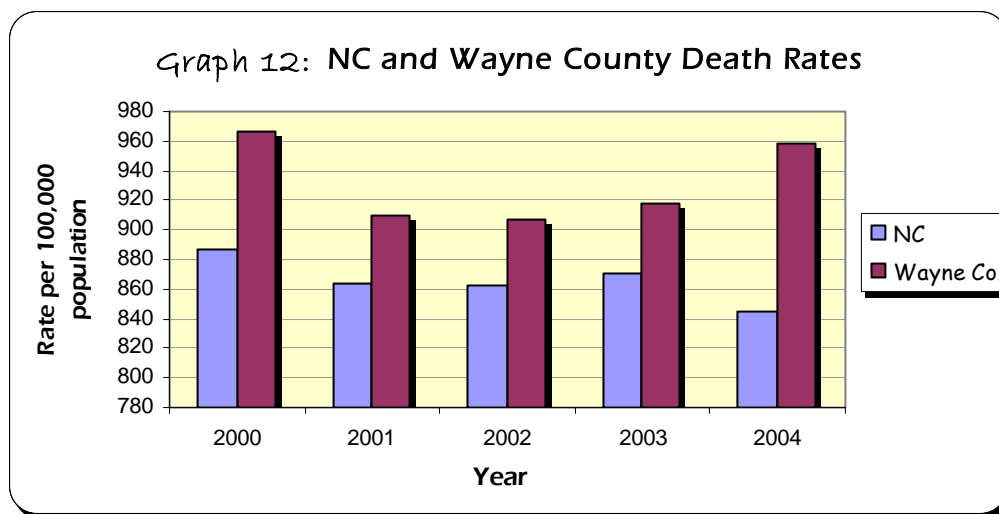
Life expectancies vary around the world according to socioeconomic conditions, absence or presence of war, absence or presence of communicable diseases, and the availability of food. Life expectancy in the United States at the turn of the century was around 46 years of age. The same factors which contributed to a short life in the United States in 1900 affect most third world countries today; lack of clean water, malnutrition, communicable disease and death from injury.

In the United States today, some groups, such as Native Americans, rural African Americans and the inner city poor, have extremely poor health, more characteristic of a poor developing country rather than a rich industrialized one. The HIV epidemic causes a higher proportion of death and disability to U.S. young and middle-aged than in most other advanced countries.

According to the World Health Organization:

- The U.S. is one of the leading countries for cancers relating to tobacco, especially lung cancer.
- The death rate from heart disease in the U.S has dropped in recent years, but remains high relative to other countries.
- Death rates from violence, especially of homicides, remain high in the U.S. when compared to other industrialized countries.
- Contributing factors to Americans' high mortality rate include: consumption of food high in fat and sedentary lifestyles.

Comparison of Death Rates:



Graph 12: Death rates comparing NC & Wayne Co. (2000-2005)

★ **Note:** Death rates are per 100,000 population

Source: NC State Center for Health Statistics

Observations:

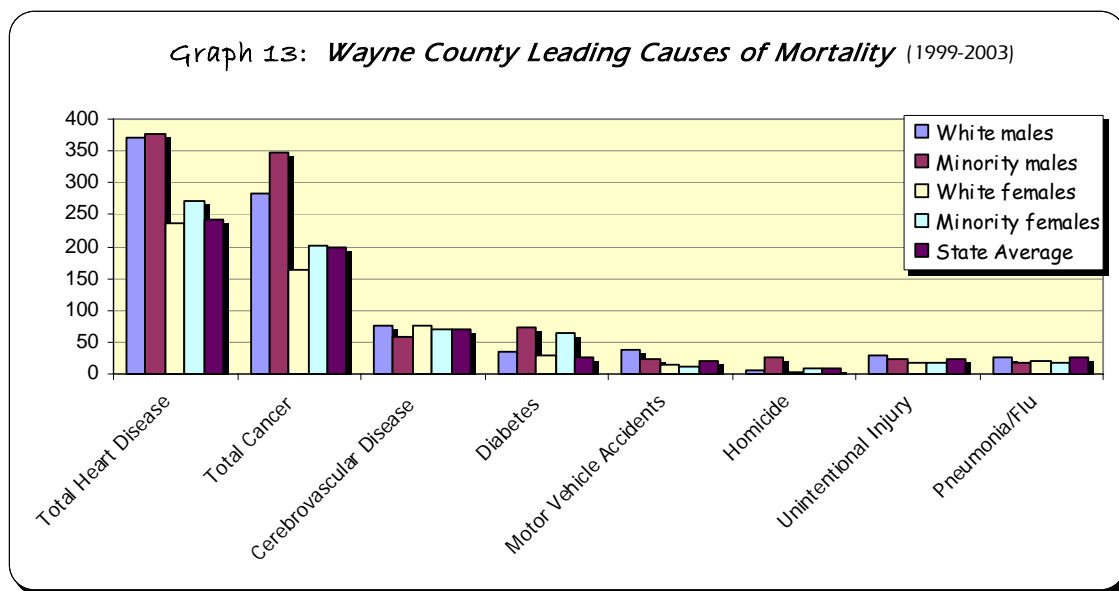
- Graph 12 shows declining death rates for the state, but Wayne County has also had a decrease, but only for the years 2000-2002, then experienced an increasing trend for the remaining years shown in the above graph.
- The death rate for Wayne County has averaged higher than the state average.
- Over the period shown, NC has seen a decline of 4.7% in the total death rate, while Wayne County has seen only a minimal decline (0.8%).

Discussion:

Death rates statewide are declining for two significant reasons: advances in medical science, and a better understanding by our population of lifestyle changes that lead to good health. An individual's decision to not smoke, exercise, eat a reasonable diet, avoid drug use and moderate to no alcohol consumption, are lifestyle decisions that dramatically affect health.

Among the leading causes of preventable death of North Carolinians were tobacco use, unhealthy diet/physical inactivity, alcohol misuse, firearms, sexual behavior, motor vehicles, and illicit drug use. The two most pervasive factors that contribute to mortality in North Carolina are cigarette smoking and high blood pressure. Source: North Carolina Leading Causes of Death, SCHS).

Approximately 30% of all cancer deaths are attributable to cigarettes. High blood pressure is associated with death from all cardiovascular diseases, diabetes, renal failure and stroke. Both of these factors are controllable either through abstinence from tobacco or controlling hypertension with lifestyle changes or drugs.



★ **Note:** Death rates are per 100,000 population

Table 32: Comparison of Death Rates for Wayne County vs. North Carolina

NC and Wayne County Death Rates , (years 1999-2003)										
Cause	White Males		Minority Males		White Females		Minority Female		NC Avg.	Total Events (Wayne)
	Wayne	NC	Wayne	NC	Wayne	NC	Wayne	NC		
Total Heart Disease	369.9	297.8	376.6	342.8	236.3	187.5	272.7	230.0	243.2	1,479
Total Cancer	282.9	245.9	347.7	322.6	164.9	158.8	202.9	170.8	199.7	1184
Cerebrovascular Disease	77.2	66.1	59.6	97.6	74.5	65.0	71.4	83.0	70.7	350
Diabetes	35.2	24.4	72.2	53.3	29.3	19.4	65.3	51.8	27.5	223
Motor Vehicle Accidents	38.5	27.2	23.4	31.7	15.6	12.0	11.1	11.3	19.5	129
Homicide	5.0	6.6	25.8	26.3	2.9	2.5	9.3	5.9	7.5	50
Unintentional Injury	28.6	32.7	23.3	33.1	17.0	16.8	17.5	13.0	23.7	109
Pneumonia/Flu	26.1	29.1	16.2	31.8	21.8	22.7	18.2	18.8	24.9	106
Cancer By Site										
Trachea/Lung Cancer	94.8	85.6	119.3	98.3	43.3	42.4	34.1	30.6	59.9	357
Prostate Cancer	28.2	25.7	77.6	68.6	0	0	0	0	32.7	75
Breast Cancer	0.5	0.3	0	0.5	28.7	23.5	35.9	31.5	25.6	96

★ **Note:** Death Rates are per 100,000 population (and adjusted for age).

Source: NC State Center for Health Statistics

Table 33: 2004 Death Rates comparing Wayne Co. & NC

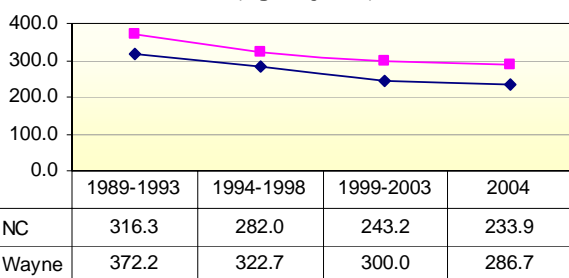
Cause	Wayne	NC
Total Heart Disease	286.7	233.9
Total Cancer	218.9	197.4
Cerebrovascular Disease	76.1	67.4
Diabetes	43.5	27.5
Motor Vehicle Accidents	21.6	19.6
Homicide	9.0	7.3
Unintentional Injury	20.5	24.8
Pneumonia/Flu	20.3	23.8
Cancer By Site		
Trachea/Lung Cancer	67.3	59.6
Prostate Cancer	44.8	31.6
Breast Cancer	30.1	25.4

Source: NC State Center for Health Statistics

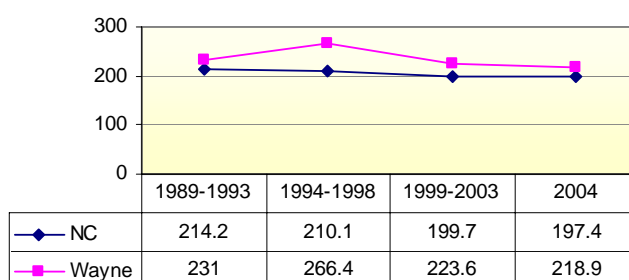
Observations:

- The death rate in Wayne County attributed to heart disease for all races and sexes, significantly exceeds the state average.
- White females who died from heart disease in Wayne County is less than the state average.
- An unexpected finding: the death rate for diabetes among Wayne County minority males is almost 3 times higher than the state average. The death rate for Wayne County minority women is also higher (almost 2.5 times) than the state average.
- In Table 32, (located on previous page) the death rate for total cancer in Wayne County appears to be higher than for the rest of the state.
- The three leading causes of death in Wayne County are: Heart Disease (total heart disease), Cancer (total cancer deaths) and Trachea/Lung Cancer respectively. Heart Disease, Total Cancer and Trachea/Lung Cancer have been Wayne County's leading causes for some time.
- The death rate for diabetes among minorities is more than twice the rate for Whites.

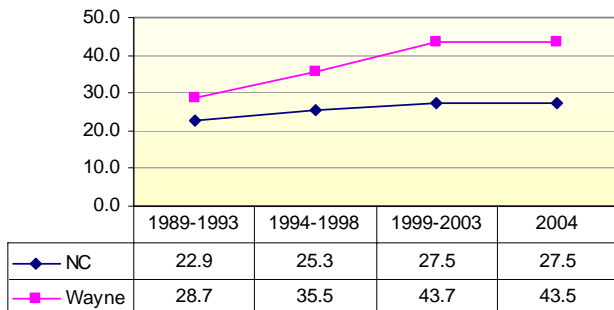
Graph 14: Heart Disease Death Rates (Age Adjusted)



Graph 15: Total Cancer Death Rates (Age Adjusted)



Graph 16: Diabetes Death Rates (Age Adjusted)



Discussion:

Historically, death rates from heart disease, diabetes, and cancer in Wayne County have been higher than the state average, as shown in the tables above. The fact that death rates in Wayne County exceed the state average, and that the gap between the state average and Wayne County is increasing, is a public health concern. Wayne County has not enjoyed the same decreases in death rates as the state has for these three causes of death. Heart disease, diabetes, and cancer are to a large extent, controllable through lifestyle modifications. Other factors that may contribute to these diseases are: heredity, and delays in diagnoses and treatment. It appears that educational interventions could have a significant impact on death rates from these three causes in Wayne County.

Blood Alcohol Levels & Causes of Death:

Table 34: shows the percentages of individual blood alcohol levels (BAL) at time of death, for non-natural causes.

Blood Alcohol Levels at Time of Death, North Carolina, (years 1997 – 2001)				
Motor Vehicle/ Unintentional Injuries	% BAL 0.0	% BAL .01-.07	% BAL .08-.15	% BAL > .16
Latino	57.3	6.5	12.6	23.6
White	79.7	4.1	5.9	10.4
African-American	72.0	6.1	7.3	14.6

Homicide				
Latino	47.3	13.8	16.4	22.5
White	65.3	9.1	12.3	13.3
African American	65.1	12.4	12.4	10.1

Suicide				
Latino	54.9	11.0*	15.4*	18.7*
White	75.0	6.2	8.4	10.4
African American	77.4	9.8	6.1	6.7

★ **Note:** Percentage is based on less than 20 events in the numerator.
Source: NC State Center for Health Statistics

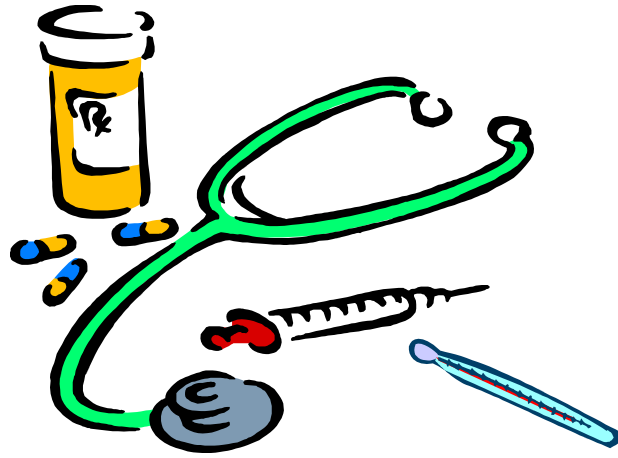
Observations:

- At the time of death for the three causes shown in Table 34, a greater percentage of Hispanics had elevated blood alcohol levels than Whites and African American.
- More than 36% of Hispanics killed in motor vehicle or from unintentional injuries had a blood alcohol level of .08% or higher.
- 39% of Hispanics who died from homicide and 34% who committed suicide during 1997-2001 had a blood alcohol level of .08% or higher.
- Alcohol abuse prevention may be an important public health intervention among Hispanics.

Discussion:

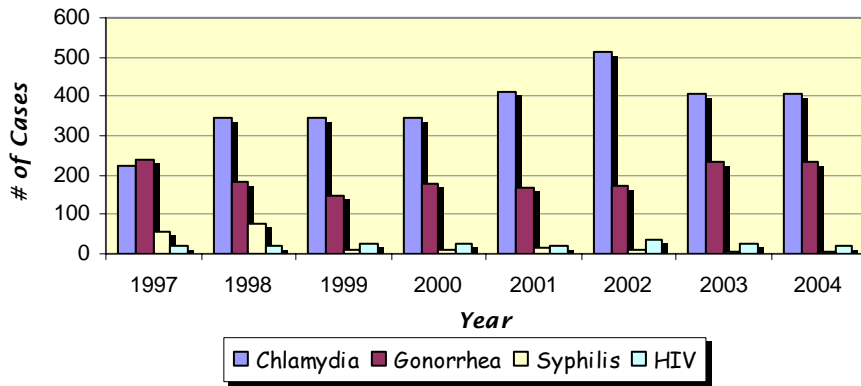
Table 34 shows the percentage of decedents with various levels of blood alcohol and causes of death. It is obvious that alcohol is an important contributing factor in the accidental and intentional death of Hispanics in North Carolina. It is important to note that the leading cause of

death among Hispanics in North Carolina is motor vehicle accidents. The age adjusted death rates for Hispanics in North Carolina are much lower than that for whites and blacks in North Carolina (*NC Medical J., May-June 2003*). This finding is consistent with a population that is relatively young and has recently immigrated into the country.



Sexually Transmitted Diseases
&
Other Communicable Diseases

Graph 17: Wayne County STD Data



Graph 17: Number of STD Cases in Wayne County for selected infections, for years 1997-2004

Table 35: Number of STD Cases, Wayne County, 1997-2004

Year	Chlamydia	Gonorrhea	Syphilis	HIV Disease
1997	222	240	55	22
1998	346	184	75	22
1999	345	150	10	27
2000	346	180	12	27
2001	411	166	13	22
2002	513	173	11	37
2003	409	234	3	23
2004	409	234	3	21

Source: HIV/STD Prevention & Care Branch (NCDHHS)

Observations:

- The number of Chlamydia cases has increased by 84% over the eight-year period of 1997-2004.
- The number of Gonorrhea cases has not changed in response to the increasing number of Chlamydia cases.
- The number of Syphilis cases has dramatically decreased.
- The number of people infected with the HIV virus continues to stay relatively the same.

Discussion:

Chlamydia (*Chlamydia trachomatis*) infections are the most prevalent of all sexually transmitted diseases. In women, these infections often result in pelvic inflammatory disease (PID), which can cause infertility, an ectopic pregnancy, and chronic pelvic pain. The State's Chlamydia rate (per 100,000 population), for the year 2004, is approximately 2 ½ times higher in African Americans versus White population. There is not a significant difference between the overall Chlamydia rate in Wayne County and the overall Chlamydia rate for the state during in the year 2004.

Gonorrhea (*Nesseria gonorrhoea*) also causes pelvic inflammatory disease (PID), tubal infertility and ectopic pregnancy. Infection with Gonorrhea facilitates HIV transmission. In 2000, the rate of infection for Gonorrhea in North Carolina ranked the state 6th in the nation; in 2002 North Carolina was ranked 9th, and in the year 2004, North Carolina increased it's ranking back to 6th in the nation.

Discussion (continued):

Syphilis (*Treponema pallidum*) is an acute and chronic disease that can facilitate HIV transmission 2 to 5 fold. Syphilis can cause many complications ranging from stillborn births to nerve damage and death in adults. In 2000, North Carolina ranked 2nd in the nation for primary and secondary syphilis infection, in 2002 was ranked 7th, and in the year 2004, North Carolina continued to decrease and ranked 15th in the nation.

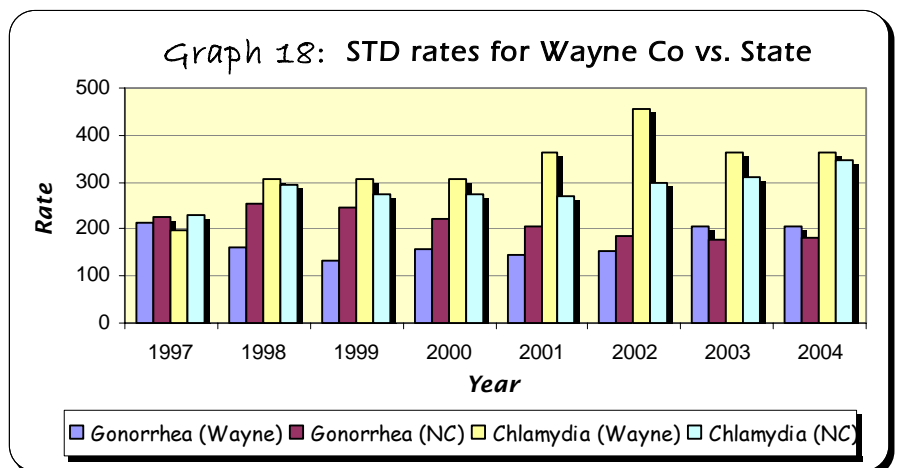
Infection with the human immunodeficiency virus (HIV) generally causes progressive damage to the immune and organ systems, including the central nervous system, and leads to a more severe, life-threatening clinical condition called AIDS. The State’s HIV rate (per 100,000 population), for the year 2002, is almost 10 times higher in African Americans versus White population (*data not shown*). In 2004, there were 1,641 reports of HIV disease in North Carolina. Since 1983, there have been 400 cases of HIV infection in Wayne County. Currently (as of December 2004), there are 241 known individuals who are HIV+ in Wayne County.

The state of North Carolina is currently experiencing an epidemic of HIV infection among college students. Between January of 2000 to December 2003, 84 college students in North Carolina were diagnosed with HIV infection. 60% of these cases were identified as men who have sex with men and 40% were among men who have sex with men and women. To this day, North Carolina college students continue to represent an at-risk, assessable population, which deserves further HIV prevention interventions.

Sexually Transmitted Disease Rates								
Year	Syphilis		Gonorrhea		Chlamydia		HIV Disease	
	Wayne	State	Wayne	State	Wayne	State	Wayne	State
1997	48.6	21.8	212.0	227.3	196.1	230.2	19.4	22.4
1998	66.2	20.8	162.4	254.7	305.1	294.1	19.4	19.7
1999	8.8	15.1	132.5	244.4	304.8	274.4	23.9	19.3
2000	10.6	13.6	158.8	222.8	305.3	274.6	23.8	17.2
2001	11.5	11.5	146.8	204.2	363.5	270.6	19.5	18.7
2002	9.7	7.4	153.1	184.8	454.1	297.8	32.7	20.6
2003	2.7	4.7	206.9	179.4	361.6	310.0	20.3	25.0
2004	2.7	5.4	206.9	180.8	361.6	344.9	18.6	19.5

Table 36: Rates of Sexually Transmitted Disease (STDs). Wayne County, (1997-2004)

★ **Note:** STD rates are per 100,000 population.



Observations:

- In Table 36 and Graph 18, shown above, Wayne County’s Gonorrhea rates are lower than the state average, for years 1997-2003, (but climbed above the state average for years 2003-2004). Chlamydia, in Wayne County, is on the rise, and trends show this rate is higher than the state average.

Table 37: Communicable Diseases in Wayne County, for the years 1996-2004, by the number of cases reported.

<u>Disease</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
<i>Campylobacter</i>	3	1	1	1	1	4	0	0	0
<i>Hepatitis A</i>	3	1	0	0	4	1	0	0	0
<i>Hepatitis B</i>	8	4	3	8	4	3	0	0	0
<i>Rocky Mtn. Spotted Fever</i>	2	1	0	0	0	1	0	0	0
<i>Salmonella</i>	16	41	12	7	13	8	0	0	0
<i>Shigellosis</i>	4	4	16	2	1	1	0	0	0
<i>Tuberculosis</i>	21	6	4	13	7	9	8	5	9
<i>Whooping Cough (pertussis)</i>	n/a	n/a	n/a	n/a	0	4	0	0	0

Source: NC Communicable Disease Control -Information

Observations:

- The incidence of Campylobacter, Shigellosis and Salmonella has fluctuated in Wayne County, possibly due to outbreaks involving people from a common source.
- Since 2002, the incidence of Hepatitis A and B has stayed relatively constant.
- The number of cases of tuberculosis appears to be on a decreasing trend.
- In 2001, there was a rise in the number of Pertussis infections, possibly due to some children/ individuals not becoming vaccinated against this disease, prior to coming into contact with the bacteria infection.

Discussion:

Campylobacter, Shigellosis, and Salmonella are bacteria that cause infection in humans and animals. Symptoms of infection may include diarrhea, abdominal pain, fever, nausea and vomiting. Transmission can be through eating the living bacteria in food; the most common route is ingestion of food or water that has been contaminated with human or animal feces. These diseases, along with Hepatitis A, are termed “fecal-oral” because transmission frequently is from the ingestion of minute amounts of feces through food, or from hand to mouth contact. There has been no significant outbreak of Campylobacter in Wayne County between the years of 1996-2004.

A Shigellosis outbreak occurred in a daycare center in 1998, in Wayne County; and an outbreak of Salmonella, from the consumption of undercooked eggs, occurred at a Fire Station dinner in 1997.

Hepatitis A is a viral infection of the liver. Symptoms usually include an abrupt onset of fever, anorexia, nausea, diarrhea, yellowing of the skin and whites of the eyes and dark urine. Transmission is primarily fecal-oral. An outbreak of hepatitis A in Johnston County during the year 2000, affected Wayne County residents.

Hepatitis B is a viral infection of the liver, transmitted by direct contact with blood or body fluids from an infected person, while having sex or sharing needles.

Tuberculosis is a potentially life threatening disease, if untreated. Tuberculosis (TB) is spread through person-to-person contact. Tuberculosis can affect all organs of the body, but is most prevalent in the lungs. The influx of foreign-born individuals from TB endemic countries has contributed to the cases of TB disease in Wayne County and N.C. The increase of TB, shown above in Table 37 for 1996, was due to residents living together with a high-risk lifestyle (excess alcohol consumption). The 1999 increase was due to an entire family contracting the disease. Influx of recent immigrants in Wayne County appears to have caused increased incidence rates in our county.



Resources

- **Advocates for Youth**
<http://www.advocatesforyouth.org>
- **Cecil G. Sheps Center for Health Services Research** – University of North Carolina, Chapel Hill
<http://www.shepscenter.unc.edu/Data.html>
<http://www.shepscenter.unc.edu/hp/prof04.htm>
- **Center for Disease Control & Prevention - STD Surveillance 2004**
<http://www.cdc.gov/std/stats/toc2004.htm>
- **CLIKS: Community-Level Information on Kids**
<http://www.aecf.org/cgi-bin/cliiks.cgi>
- **Employment Security Commission of North Carolina** – Labor & Wage Unit, Labor Market Information Division
<http://eslmi23.esc.state.nc.us/ew/>
- **Geographic.org**
<http://www.geographic.org>
- **Guttmacher Institute**
http://www.guttmacher.org/pubs/fb_teens.html
- **Log into North Carolina (LINC)**
http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show
- **North Carolina Child Advocacy Institute**
<http://www.ncchild.org>
- **North Carolina Child Fatality Task Force**
www.preventchildabusenc.org/publications/press_releases/cftf
- **North Carolina Communicable Disease Control**
<http://www.epi.state.nc.us/epi/gcdc.html>
- **North Carolina Crime Statistics**
<http://sbi2.jus.state.nc.us/crp/public/Default.htm>

- **North Carolina Department of Health & Human Services – Division of Medical Assistance**

<http://www.dhhs.state.nc.us/dma/>
- **North Carolina Department of Health & Human Services – HIV/STD Prevention & Care Branch**

<http://www.epi.state.nc.us/epi/hiv/surveillance.html>
- **North Carolina Division of Public Health – Oral Health Section**

<http://www.communityhealth.dhhs.state.nc.us/dental/>
- **North Carolina Division of Public Health – Women’s & Children’s Health Section**

<http://wch.dhhs.state.nc.us/>
- **North Carolina State Center for Health Statistics (NC-SCHS)**

<http://www.schs.state.nc.us/SCHS/index.html>
- **Public Schools of North Carolina**

<http://www.ncpublicschools.org/accountability/reporting/sat/2005>
- **Strunk, B.C., & Ginsburg, P.B. (2003 June 11). *MARKET WATCH- Tracking Health Care Costs: Trends Stabilize But Remain High in 2002*. Health Tracking. Available [on-line]: <http://www.healthaffairs.org/>**