# The Health of North Carolinians: A Profile

**N.C. Department of Health and Human Resources**
**Division of Public Health**
State Center for Health Statistics
1908 Mail Service Center
Raleigh, North Carolina 27699-1908
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# EXECUTIVE SUMMARY

North Carolina has a diverse population. More than 22 percent of its 8.2 million people are African-American, 5 percent are Latino, and 1 percent are American Indian. This diversity is represented in the health status of its citizens. North Carolina lags behind the nation in many key health indicators, including infant mortality, deaths from stroke and incidence of diabetes. Minorities almost always have worse health status indicators than whites. In this report we examine selected health indicators offering a profile of health in North Carolina. Two overarching goals of the Department of Health and Human Services are to increase quality years of life and eliminate health disparities.

## CHRONIC DISEASES

- ✓ In 2001, almost one million citizens were 65 years or older. The population in North Carolina is growing older, increasing health care and related costs. Since 1980, life expectancy increased by more than 2 years, to 75.6 years. People who died lost an average of 8.4 years of expected life. Heart disease, cancer, and stroke accounted for more than 55 percent of all deaths in the state. The prevalence of diabetes increased in the population from 4.5 percent in 1995 to 6.7 percent in 2001. Hospital treatment for diabetic patients cost more than $2 billion in 2001. By 2001, osteoporosis had also become more prevalent with 6,409 hospital admissions having a primary diagnosis of hip fracture.

## INFANT, CHILD, AND ADOLESCENT HEALTH

- ✓ The rate of child deaths has decreased 33 percent since 1987. Infant mortality has decreased 41 percent since 1980. Teen pregnancy has declined more than 30 percent in the last decade. On the other hand, the percentage of children with asthma has increased with 17 percent now diagnosed with the disease.

- ✓ In 2001, 7.5 percent of North Carolina children had no health insurance. Medicaid and Health Choice provide insurance coverage for many lower income children. NC Health Choice has offered health insurance to low-income children since 1998. Over 94,000 children were enrolled in NC Health Choice in January 2003.

- ✓ Child immunization rates are high in North Carolina with 80 percent of children having appropriate immunizations in 2001 as contrasted with a national rate of 74 percent. Overweight has become a serious health problem among children in North Carolina. One-fourth of children ages 12-18 are overweight. Thirty-six percent of high school students reported no regular, vigorous physical activity each week and only 18 percent reported eating fruits and vegetables on a regular basis.

## MENTAL HEALTH

- ✓ Twenty-six percent of North Carolina adults responded in a random telephone survey that there were one or more days during the past month when their mental health was not good (due to stress, depression, or emotional problems).

- ✓ In 2001, 17,160 people were admitted to State Psychiatric Hospitals and 323,718 were served in Area Mental Health Centers. More than $300 million was spent on admissions to general hospitals for patients with mental illness or substance abuse as a primary diagnosis.

## INJURY/VIOLENCE

- ✓ In 2001, 5,071 North Carolinians died from injury or violence with 1,606 deaths resulting from motor vehicle injuries, 985 from suicide, and 584 from homicide. All minority groups were more likely to die from homicide. American Indians and Hispanics were more likely to die from motor vehicle injuries, compared to whites. North Carolina survey data indicate that 2.8 percent of males and 10.4 percent of women had ever been sexually assaulted. Almost 10 percent of new mothers reported being physically abused around the time of pregnancy.

## HIV/SEXUALLY-TRANSMITTED DISEASE & COMMUNICABLE DISEASES

- ✓ The rate of syphilis has declined almost 65 percent since 1990. Still, North Carolina's rate is higher than the national rate (3.3 versus 2.2 per 100,000 population). The HIV death rate in North Carolina has declined 60 percent since 1995. Of 1,014 new AIDS cases in 2002, 69 percent were African Americans. These 1,014 new AIDS cases represent a 16 percent increase from 2001, when 871 cases were reported.

## MINORITY HEALTH

- ✓ Minority males have the lowest life expectancy of any group, 68.0 years at birth. In spite of declines in infant mortality for all racial groups, African-American infants are still more than twice as likely to die at birth as white infants. African Americans are also more likely to suffer from a variety of illnesses, accounting for higher mortality than whites.

- ✓ Between 1990 and 2000, North Carolina experienced the greatest percentage growth in Latino population of any state in the U.S. As a result of the young age of many Hispanics in North Carolina, about 50 percent of all Hispanic deaths are due to fatal injuries, with 22 percent of all Hispanic deaths caused by injuries sustained in motor vehicle crashes.

- ✓ Native Americans also suffer from higher death rates than whites and have a very high percentage of persons with no health insurance (25%).

## HEALTH BEHAVIOR

- ✓ In North Carolina, about 53 percent of deaths are preventable each year. Medical costs associated with tobacco use, physical inactivity, and poor nutrition are estimated to cost more than $6 billion per year. The obesity rate in North Carolina has increased 77 percent since 1990.

- ✓ Poor health is highly associated with living in poverty. African Americans are 2.7 times as likely to live in poverty as whites.

## HEALTH CARE ACCESS

- ✓ North Carolina has about the same percentage of people with no health insurance as the nation (14.2% versus 14.5%). Minorities are twice as likely as whites (26% versus 13%) to have no health insurance.

- ✓ Medicaid has become a significant provider of health care for poor people in North Carolina. In 2001, the average monthly enrollment in Medicaid was about 920,000, almost three times the number in 1989.

- ✓ About 33 percent of all North Carolinians live in rural areas, compared with 20 percent nationally. There is an unequal distribution of health professionals in North Carolina. In 2001, 14 counties did not have any physicians attending births. North Carolina ranks 43rd in the nation in the number of Medicaid participation by dentists.

## SUMMARY

The health status of North Carolinians is varied and complex. The state has made progress in key areas but lags behind the nation in many other important aspects of health status and health care, including an enduring gap in health indicators when controlled by race or ethnicity.

# THE HEALTH OF NORTH CAROLINIANS: A PROFILE

Since 1914, when deaths were first centrally recorded in North Carolina by the state Vital Records program, data obtained from birth and death certificates has been used to classify and determine the root causes behind public health threats such as birth defects, heart disease, SIDS, and cancer. Similarly, information regarding illness and injuries collected from hospital discharge data, registries, and health surveys can give us a more thorough idea of the prevalence and scope of public health problems such as asthma, osteoporosis, and mental illness. Through a combination of natality, mortality and morbidity data, a portrait of the overall health of North Carolinians can emerge.

The main objective of this report is to help policy makers, health, community, and business leaders identify trends in death, illness, and injury, as well as the factors that may lead to these events. In a rapidly changing health care environment, this information should facilitate the targeting of health programs to improve the health status of North Carolinians.

In 2001, there were nearly 8,200,000 residents of North Carolina. More than 980,000 of these people were age 65 or older, or 12 percent. This is an increase from 602,000, or 10 percent, of our population in this older age group in 1980. North Carolina's popularity as a retirement mecca and the aging of North Carolina's population have resulted in an increase in some health problems, particularly chronic diseases, and there has been an associated rise in deaths and medical care costs for these problems. North Carolina has a slightly higher unadjusted mortality rate than the rest of the country. In 2000 (the latest year of national data), 887 people died in North Carolina per 100,000 population compared to 873 nationally. North Carolina's overall age-adjusted death rate of 964 per 100,000 was significantly higher than the national rate of 872 per 100,000 population.

***Life Expectancy & Years of Life Lost*** **–** The life expectancy at birth for North Carolinians is 75.6 years. This translates into about one year more than the life expectancy at birth in 1990 and two years more than the life expectancy in 1980. Due to the higher overall death rates in North Carolina compared to the nation, residents of our state live approximately one year less than the U.S. average. Premature mortality not only affects individuals and their families; it also impacts on the state's productivity. **Table 1** shows the total years of life lost and the average years of life lost for the leading causes of death. In 2001, North Carolinians who died lost an average of 8.4 years of life due to early death and a total of 592,326 total years of life. Motor vehicle injuries – which disproportionately involve younger people – had the highest average number of years of life lost per death (32.8 years).

**Table 1: 2001 NC Ten Leading Causes of Death: Total Deaths and Years of Life Lost**

| Rank | Cause | Total Deaths | Average Years of Life Lost | Total Years of Life Lost |
|---|---|---|---|---|
| 1 | Heart disease | 18,729 | 4.8 | 90,162 |
| 2 | Cancer | 16,047 | 7.9 | 126,494 |
| 3 | Stroke | 5,396 | 3.5 | 18,65 |
| 4 | Chronic lung disease | 3,511 | 4.4 | 15,421 |
| 5 | Diabetes | 2,180 | 6.5 | 14,125 |
| 6 | Alzheimer's disease | 1,785 | 0.7 | 1,221 |
| 7 | Pneumonia & influenza | 1,775 | 3.1 | 5,537 |
| | Other unintentional injuries | 1,775 | 19.3 | 34,211 |
| 9 | Motor vehicle injuries | 1,606 | 32.8 | 52,659 |
| 10 | Nephritis, nephrotic syndrome, nephrosis | 1,327 | 4.5 | 5,987 |
| **Total Deaths – All Causes** | | **70,738** | **8.4** | **592,326** |

Chronic diseases are responsible for 65 percent of all deaths in North Carolina – resulting in approximately 45,000 deaths each year. While death itself is unavoidable, it may often be postponed if chronic health conditions and risky behaviors are prevented or controlled. Many of the leading causes of death for North Carolinians – including heart disease and diabetes can be prevented.

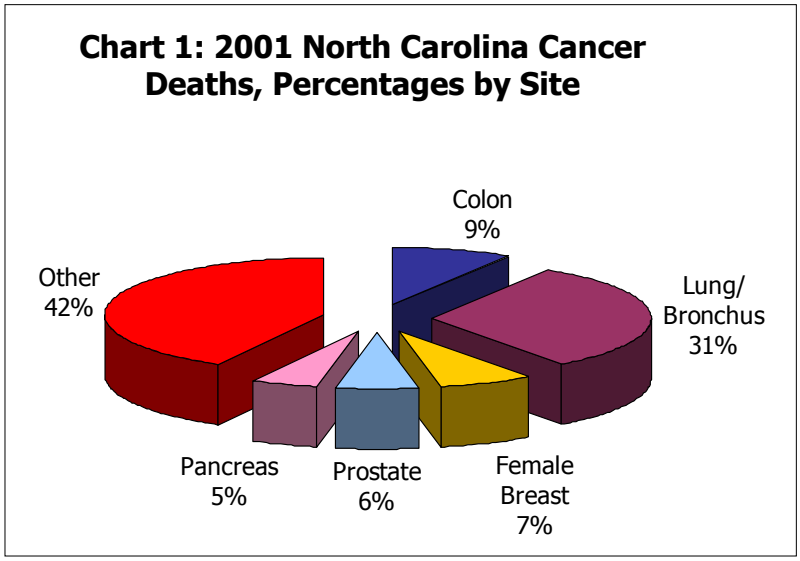
## Chronic Diseases

***Cardiovascular Disease*** **–** In 2001, cardiovascular diseases (heart disease, stroke, and atherosclerosis) accounted for 35 percent of all deaths in the state. Over 24,000 North Carolina residents died of cardiovascular diseases in 2001. As shown in **Table 1**, heart disease was the leading cause of death in North Carolina in 2001, with almost 19,000 resident deaths (or approximately 1 in 4 deaths in the state). North Carolina's 2001 age-adjusted heart disease rate of 246 deaths per 100,000 population was below the national rate of 258 per 100,000 in 2000. However, the state's 2001 age-adjusted stroke death rate of 72.3 was higher than the national rate of 60.8. Cardiovascular diseases were also the leading cause of hospitalization in North Carolina in 2001, accounting for more than 174,000 hospitalizations and almost $3 billion in hospital charges.

A 2003 report from the Centers for Disease Control and Prevention (CDC) reveals that North Carolina has the nation's fourth-highest rate of stroke deaths among men and women ages 35 and older. Only South Carolina, Arkansas and Tennessee had higher stroke death rates than North Carolina. North Carolina is part of what is known as the "Stroke Belt", an area in the Southeastern part of the U.S. with the highest stroke rates. Within the Stroke Belt, North Carolina is one of three states (known as the "Stroke Buckle") with death rates two times higher than the rest of the nation.

According to the 2001 North Carolina Behavioral Risk Factor Surveillance System (BRFSS), 15 percent of North Carolinians between the ages of 55-64 report having been diagnosed with cardiovascular disease, and 25 percent of persons ages 65 and over. Among persons 18 and older, males were more likely (10.4%) to report being diagnosed with cardiovascular disease, heart attack, or stroke than females (7%). Those who reported having less than a high school education were almost five times as likely to have a history of cardiovascular diseases (19.4%) as college graduates (4.1%).

***Cancer*** **–** The second leading cause of death in North Carolina is cancer, which resulted in more than 16,000 deaths in 2001 (see **Table 1**). The state's age-adjusted death rate for cancer of 207 was close to the national rate of 201 per 100,000 population in 2000. An estimated 40 percent of North Carolinians will develop cancer during their lifetime. More than 39,000 North Carolinians were projected to receive a cancer diagnosis in 2002. The leading causes of cancer death are lung cancer (4,900 deaths in 2001), cancer of the colon and rectum (1,537 deaths), breast cancer (1,171 deaths), prostate cancer (913 deaths), and cancer of the pancreas (857 deaths). 2001 cancer deaths by site are presented in **Chart 1**.



Deaths from many cancers can be reduced if the cancer is diagnosed at an early stage. Breast, cervical, and colon/rectum cancer deaths in particular could be reduced with regular screening. With the exception of colorectal screening, a larger percentage of North Carolinians receive cancer screenings than the national average. Colon/rectum cancer is 90 percent curable if detected early. However, according to the NC BRFSS survey, only about half of North Carolina adults over age 50 report ever having a colonoscopy. In contrast, the percentage of North Carolina women age 40 and older who reported having had a mammogram within the past two years was 78 percent, roughly similar to the U.S. rate of 76 percent.

***Chronic Lung Diseases*** – Chronic lung diseases are the fourth leading cause of death in North Carolina, accounting for approximately 3,500 deaths each year (see **Table 1**). North Carolina's age-adjusted death rate due to chronic lung diseases during 1997-2001 was similar to that for the nation – 45.4 per 100,000 population compared with a rate of 44.3 nationally in 2000. 1997-2001 age-adjusted chronic lung disease death rates were highest among North Carolina's white (48.5) and American Indian (44.2) populations. African Americans, Asian-Americans, and Hispanics all had lower death rates from chronic lung diseases. During 1999-2001, North Carolina males had a much higher age-adjusted death rate from lung diseases (63.5 per 100,000 population) compared with females (37.0).

***Diabetes*** – Diabetes is a major cause of death and disability in North Carolina and the nation. With a greater prevalence of obesity and an increasing number of older people, diabetes is increasing at epidemic proportions in North Carolina. The prevalence of diagnosed diabetes in North Carolina increased from 4.5 percent of the population in 1995 to 6.7 percent in 2001, an increase of 48 percent. The actual prevalence may be twice as high given that it is estimated that there is one undiagnosed case of diabetes for every case that is diagnosed.

In 2001, diabetes was the primary cause of nearly 2,200 deaths in North Carolina (**Table 1**), which represents a 30 percent increase in the number of deaths since 1994. North Carolina's age-adjusted diabetes death rate of 27.6 per 100,000 population is slightly higher than the rate of 25.2 found nationally. Diabetes also significantly contributes to other causes of death, such as heart disease, stroke, and kidney failure. In 2001, nearly 5,500 additional North Carolinians died with diabetes mentioned on the death certificate as a contributing condition.

Diabetes is the leading cause of non-traumatic lower limb amputation, kidney disease, and blindness in the state. In addition, people with diabetes are two to four times more likely to have cardiovascular disease. As presented in **Table 2**, in 2001 diabetes was directly responsible for more than 14,000 hospitalizations in North Carolina, and contributed to or complicated another 145,000. Diabetes was mentioned as a contributing condition in approximately 17 percent of all hospitalizations in 2001. The total cost in 2001 for hospitalizations involving diabetes was more than $2 billion. In addition, 2001 North Carolina hospital discharge data reveals that diabetes was associated with 8,830 hospitalizations involving renal dialysis or transplant, and more than 3,000 discharges involving amputations.

**Table 2: 2001 NC Resident Hospital Discharges Related to Diabetes**

| | Total Discharges | Total Charges | Average Charge | Average Length of Stay |
|---|---|---|---|---|
| Principal Diagnosis of Diabetes | 14,144 | $143,155,833 | $10,121 | 5.3 |
| Any Diagnosis of Diabetes | 159,127 | $2,025,599,733 | $12,729 | 5.5 |
| Lower Limb Amputation | 3,006 | $70,227,513 | $23,362 | 11.2 |
| Cardiovascular disease and diabetes | 45,842 | $704,622,856 | $15,371 | 5.1 |
| Renal dialysis/transplant and diabetes | 8,830 | $147,164,709 | $16,666 | 7.1 |

***Osteoporosis* –** Osteoporosis is a condition characterized by thin, weak bones which can lead to fractures of the spine, wrist, hip, or other bones. Eighty percent of all cases occur among women. The debilitating effects of osteoporosis include hip, wrist, and vertebral fracture. National studies suggest that the consequences of hip fractures include long-term convalescent care, immobility, and, in 10-20 percent of cases, death. A recent report states that 1.27 million people in North Carolina had osteoporosis or low bone mass in 2002. As the population continues to grow older, it is likely that osteoporotic fractures will increase. The prevalence of osteoporosis is projected to grow 53 percent by the year 2020. The total medical costs for treatment of osteoporosis are estimated at $455 million per year. In 2001, there were 6,409 hospital admissions of North Carolinians age 65 and older with a primary diagnosis of hip fracture. Of those hospitalized with hip fractures, more than half were discharged to a long-term care facility.

Unfortunately, most people with osteoporosis have not been properly diagnosed and do not receive treatment, including high-risk patients who have already suffered fractures. Some people consider osteoporosis an inevitable consequence of aging and do not know that it can be prevented. Regular exercise and increasing intake of calcium (which builds up bone mass) are some ways to prevent osteoporosis. According to the 2001 NC BRFSS, among North Carolinians ages 45 and older, the majority (65%) indicated that their doctor had never spoken with them about preventing osteoporosis through lifestyle changes such as diet or exercise. Only 63 percent of North Carolina women ages 45 and older and 30 percent of men indicated that they are taking vitamin supplements that contain calcium to prevent or treat osteoporosis.

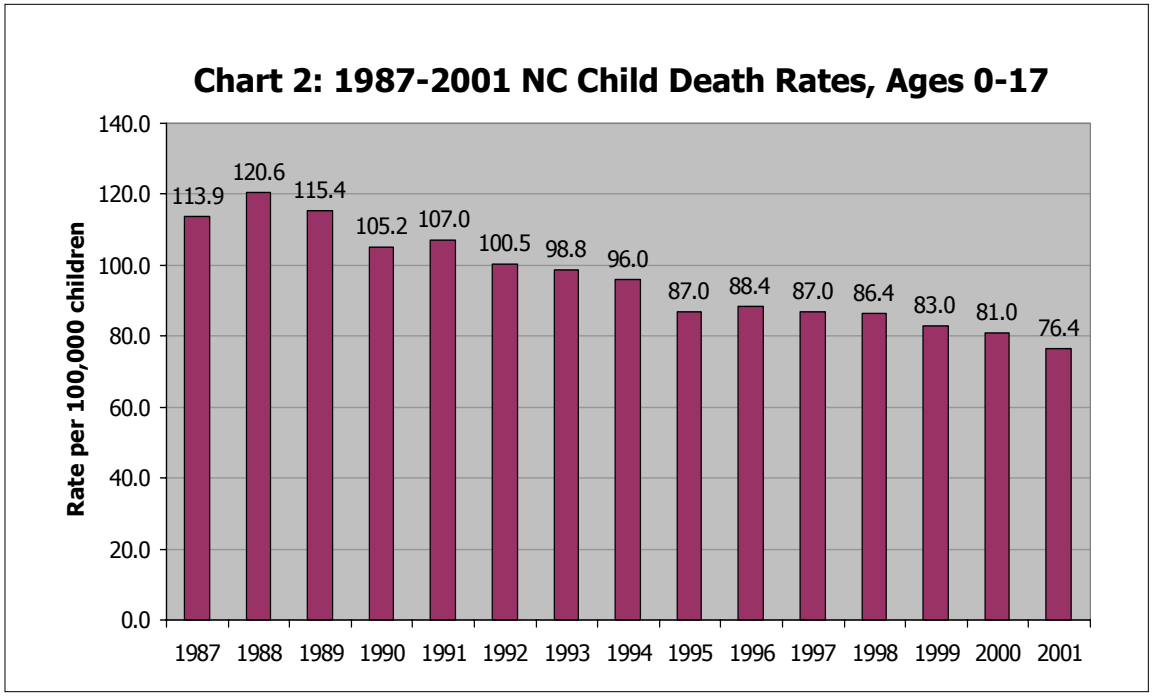
***Arthritis/Chronic Joint Problems* –** Arthritis and chronic joint problems are among the most common chronic diseases and are the leading cause of disability in North Carolina and the United States. According to the 2002 BRFSS, more than a quarter (28.8%) of North Carolinians reported being told by a doctor that they had some form of arthritis or other chronic joint problems. The problem is more prevalent among the North Carolina's elderly population, with more than half (55%) of those ages 55 and older reporting diagnosed arthritis/joint problems. Of those with arthritis, 28 percent reported that arthritis adversely affected their usual activities and/or the nature and amount of work that they perform.

## Infant, Child, and Adolescent Health

***Child and Infant Mortality* –** As presented in **Chart 2**, the rate of child deaths (ages 0-17 years) has decreased significantly since 1987. Much of this can be attributed to a substantial decrease in infant mortality. The infant mortality rate in North Carolina has declined from 14.4 infant deaths per 1,000 live births in 1980 to 8.5 in 2001 – a reduction of 41 percent. Yet, despite this progress, North Carolina's infant mortality rate remains one of the five highest rates in the country. For the period 1998-2000, North Carolina had the fifth highest infant mortality rate in the country, with 9.0 deaths per 1,000 live births compared to 7.0 nationally. However, prenatal care appears to be improving. During 1987-91, the percentage of women receiving late or no prenatal care was 24 percent. By the 1997-2001 period, this percentage was down to 15 percent. Similarly, the number of women who reported smoking during pregnancy has also declined. During 1988-91, approximately 1 in 5 births (20%) involved a mother who had smoked during pregnancy, compared with 14 percent during 1997-2001.

***Identifying Infants with Special Health Care Needs* -** Infants with special health care needs who are diagnosed early and have early treatment have markedly better outcomes than children who are diagnosed later in infancy or childhood. The state has three programs for identifying infants with special needs: newborn metabolic screening, newborn hearing screening, and birth defects monitoring.

North Carolina has been a pioneer in the screening of newborns. Every day, the State Laboratory for Public Health collects blood specimens from all newborns and screens them for up to 30 metabolic disorders – genetic defects that impair the way foods are digested or absorbed. Symptoms of metabolic




abnormalities are often subtle, but without proper diagnosis the disorders can result in mental retardation or even death. If an abnormality is found, the lab notifies the hospital and the hospital can then direct the parents to the appropriate doctors for treatment. With appropriate treatment these children can grow and live a long and healthy life. Since the program was first adopted in North Carolina in 1997, no babies have died as a result of metabolic disorders.

All 94 of the North Carolina's birthing facilities are now participating in Universal Newborn Hearing Screening. As a result, 99 percent of all newborns born in North Carolina hospitals are screened before discharge. Infants who do not receive hearing screening prior to discharge, who are not born in birthing facilities, or who require additional screening are identified so that screening services can be provided within 30 days of birth. As of April 1, 2003, the Newborn Hearing Screening Program identified 121 infants born in Year 2002 with hearing loss.

In 1995 the North Carolina General Assembly passed legislation creating the Birth Defects Monitoring Program (NCBDMP). With funds from the state, the March of Dimes, and the Centers for Disease Control and Prevention (CDC), this legislation allowed trained NCBDMP staff to access and review hospital medical records and discharge reports to ensure more complete, accurate, and timely information for active birth defects surveillance. The staff investigates all cases of North Carolina residents born with birth defects such as neural tube defects (approximately 200 cases a year), cleft lip and palate (130 cases per year), cardiovascular defects (1,000 cases per year), and chromosomal defects (180 infants per year). Some of these birth defects can be detected through prenatal testing, ultrasound, amniocentesis, and genetic testing. The NCBDMP has found that the risk of birth defects may be reduced through avoiding smoking, illicit drugs, and alcohol while pregnant; taking a multi-vitamin with folic acid prior to and during pregnancy; eating a healthy diet; and limiting exposure to environmental hazards.

***Early Intervention*** – Early intervention is a system of services designed to support children ages birth through 5 who have or are at risk for disabilities. The Infant-Toddler Program is for children from birth to 3 years of age and their families. In Fiscal Year 2001-02, 9,841 children (2.9% of the population) were served in the program, which represents a 56 percent increase since Fiscal Year 1997-98. The Preschool Program addresses the needs of 3- to 5-year-olds that are not old enough for kindergarten. It served 19,010 children in the 2001-2002 school year.

The Development Evaluation Center (DEC) network serves young children with suspected or confirmed multiple and/or severe health problems and evaluates children for Early Intervention Services. During the 2001-2002 fiscal year, the network served a total of 23,774 children and delivered 61,175 evaluation services, 42,632 treatment services, and 79,713 other services. These services include tracking, provisional assessments, parent conferences, and consultation. The Child Service Coordination (CSC) Program, which works with families to obtain necessary preventive, specialized, and support services, served 51,458 children under the age of five years during Fiscal Year 2001-02 (9.2% of the population).

***Asthma*** – While asthma does not cause many deaths among children in North Carolina, it is one of the most prevalent chronic diseases in our state, particularly among children. Approximately 7 percent of North Carolinians have asthma. An estimated 10 percent to 17 percent of children under age 18 have diagnosed asthma. The North Carolina School Asthma Survey suggests that another 17 percent of children may have undiagnosed asthma. Children with asthma are 37 times as likely to miss school as children without asthma symptoms.

***School Health*** – A growing number of North Carolina students who have chronic illnesses and special health care needs, such as asthma and diabetes, attend public school. Students with chronic health conditions and disabilities often require special health care assistance during the school day. It is estimated that approximately 10 percent of all North Carolina students have at least one chronic health condition. For the 2001-02 school year, more than 2,300 children received insulin, 1,200 students required nebulizer treatments for asthma, and more than 3,300 students had epinephrine available for emergency injection due to severe allergies. More than 84,000 students (7%) received some medication at school and more than 35,000 (3%) required prescription medication at school on a daily basis.

***Health Insurance*** – According to the Current Population Survey of the U.S. Census Bureau, 11 percent of North Carolina children ages 0-18 did not have health insurance during 2000-2001. For children at or below the poverty level during 1999-2001, 7.9 percent were without health insurance. Medicaid coverage is available to children in some families in poverty. According to the Division of Medical Assistance, in state fiscal year 2000-2001, more than half (56%) of all Medicaid recipients in the state were ages 0-20.

Beginning in October 1998, families who made too much money to qualify for Medicaid but too little to afford rising health insurance premiums were able to get free or reduced price comprehensive health care for their children (ages 0-18) through the "NC Health Choice for Children" program. While many states were unsuccessful in enrolling children, North Carolina was one of only 13 states to exceed its projected enrollment goals during its first years of operation. In fact, North Carolina surpassed its original projection by 64 percent. As a result, Health Choice was forced to freeze enrollments in 2001 due to inadequate funding to meet the unanticipated need. As of March 2003, there were almost 94,000 children enrolled in North Carolina's Health Choice program. Despite funding issues, a study by the University of North Carolina shows that the program has been successful in improving access to health care for low-income children. Parents of younger children said they had 25 percent fewer absences from work because their children were sick less often, and there was a 38 percent decrease in absenteeism for children in childcare.

***Immunizations*** – North Carolina has made a concerted effort to ensure that all children receive age-appropriate immunizations. These efforts have paid off, with North Carolina recently recognized as having one of the top five highest percentages of immunized two-year-olds in the country. In 2001, 80 percent of North Carolina children ages 19-35 months were receiving the appropriate series of immunizations, compared to 74 percent nationally.

***Overweight*** – In many ways, children mirror the behaviors of their parents. Like adults, a high percentage of North Carolina children are overweight. According to the North Carolina Nutrition and Physical Activity Surveillance System, 1 in 8 children ages 2-4, 1 in 5 children ages 5-11, and 1 in 4 children ages 12-18 are overweight based on their Body Mass Index. High rates of overweight can largely be attributed to physical inactivity and poor nutritional habits among North Carolina youth. According to the 2001 Youth Risk Behavior Survey, 36 percent of North Carolina high school students and 25 percent of middle

school students reported no regular, vigorous physical activity each week. Only 23 percent of North Carolina middle school students and 18 percent of high school students reported eating fruits and vegetables on a regular basis.

***Child Abuse and Neglect*** **–** According to the North Carolina Department of Social Services, in state fiscal year 2001-2002, 107,218 children were assessed for child abuse and neglect, an increase of 5,060 children from the previous year. Of those cases, 32,883 children were found to be abused or neglected, an increase of 302 children from fiscal year 2000-2001.

***Teen Pregnancy*** **–** North Carolina's teen pregnancy rates have declined significantly (34%) in the last decade. In 1990, 105.4 per 1,000 girls ages 15-19 became pregnant. In 2001, the teen pregnancy rate was 69 per 1,000 girls ages 15-19. While teen pregnancy rates are down for both minorities and whites, racial disparities in teen pregnancy rates still persist. During 1997-2001, the minority teen pregnancy rate was 104.5 per 1,000 compared with a rate of 65 per 1,000 for white teenage girls. Of the more than 19,000 reported North Carolina resident teen pregnancies in 2001, 75 percent resulted in live births and 24 percent resulted in abortions.

## Mental Health and Substance Abuse

The problems that North Carolina faces with regard to mental health are difficult to document due to inadequate data on the prevalence of mental disorders in the state. In 2001, 1,563 North Carolinians who died had a mental health or substance abuse diagnosis listed as the underlying cause of death. These figures included 1,131 deaths attributed to unspecified dementia (not including Alzheimer's, which is classified as a disease of the nervous system) and 288 deaths attributed to the use of alcohol (not including accidental alcohol overdose). This is just the tip of the iceberg. We currently have no way to document the prevalence of major mental diseases in the general population of North Carolina. According to one estimate, 10-12 percent of North Carolina's nine to 17 year-olds (170,000-208,000) have serious emotional disturbances. Nationally, about 40 million (22%) of non-elderly adults are estimated to have a diagnosed mental health disorder.

The North Carolina Behavioral Risk Factor Surveillance System (BRFSS) telephone survey asks a general question related to mental health. In 2001, 26 percent of adults who responded to this survey reported that there were one or more days during the past month when their mental health was not good (due to stress, depression, or emotional problems.) More women than men reported mental health disturbances, with 19 percent of males reporting that their mental health was not good, compared to 32 percent of females. In 2001, 18 percent of adults in the state reported having a physical or mental health problem that prevented them from doing their usual activities for one or more of the last 30 days.

The Division of Mental Health, Developmental Disabilities, and Substance Abuse Services has information on patients who receive mental health services in state-operated facilities. The Division reports that 17,160 people were served in Psychiatric Hospitals in the state during state fiscal year 2000-2001. Another 3,813 people were served in North Carolina Alcohol & Drug Treatment Centers and 323,718 people were treated in Area Mental Health Programs. Unfortunately, we cannot document the number of people receiving mental health treatment in the private sector, except for inpatient hospitalizations in non-federal hospitals. During 2001, there were more than 50,000 general inpatient hospitalizations in North Carolina with mental illness or substance abuse as the primary diagnosis, resulting in more than $330 million in hospital charges. Among NC BRFSS survey respondents, 5 percent reported having ever received treatment for an alcohol or substance abuse problem.

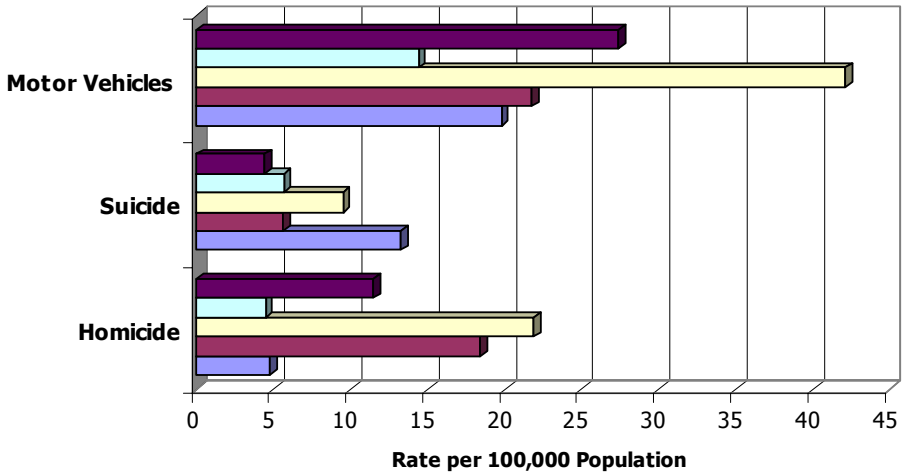
Alcohol also contributes significantly to premature deaths in North Carolina. The North Carolina Medical Examiners office measures blood alcohol levels for most deaths in the state due to injury and violence. Among the 12,612 suicide, homicide, motor vehicle, and other injury deaths occurring during 1996-1998, nearly one-third of the decedents (32.5%) tested positive for blood alcohol.

Illicit drug use is also a problem in North Carolina, especially among the young. According to the 1999-2000 National Household Survey on Drug Use, 10 percent of North Carolinians ages 12-17, 17 percent of 18-25 year olds, and 5 percent of those age 26 and older reported illicit drug use in the past month.

## Injury and Violence

In 2001, 5,071 North Carolinians died from injury or violence, including 1,606 deaths from motor vehicle injuries, 1,775 deaths from other unintentional injuries, 985 deaths from suicide, and 584 deaths from homicide. In 2001, there were more than 71,000 hospitalizations with an injury (intentional or unintentional) listed as the primary diagnosis, resulting in $1,175,000,000 in hospital charges. **Chart 3** presents 1997-2001 age-adjusted death rates for three injury and violence categories by race and ethnicity.

**Chart 3: 1997-2001 North Carolina Resident Age-Adjusted Death Rates for Injury and Violence by Race/Ethnicity**




| | Homicide | Suicide | Motor Vehicles |
|---|---|---|---|
| Latino/Hispanic | 11.5 | 4.4 | 27.4 |
| Asian/Pacific Islander | 4.5 | 5.7 | 14.4 |
| American Indian | 21.9 | 9.5 | 42.1 |
| African-American | 18.4 | 5.6 | 21.8 |
| White | 4.8 | 13.3 | 19.8 |

***Motor Vehicle –*** In 2001, for every motor vehicle injury death that occurred, there was a loss of approximately 32.8 years of life (see **Table 1**). This is the highest average years of life lost of any of the major causes of death. Motor vehicle injuries were the fifth leading cause of death for North Carolina males in 2001 (based on the number of deaths), but not one of the ten leading causes of death for females. American Indians have the highest age-adjusted rate of motor vehicle deaths – 42.1 per 100,000 population in 1997-2001. The American Indian motor vehicle death rate was double the rate for whites during this period (see **Chart 3**).

***Homicide –*** In 2001, there were 584 homicides in North Carolina, which represents less than 1 percent of all deaths in the state. However, North Carolina's age-adjusted mortality rate for homicide is higher than the national rate. While homicide is not a leading cause of death in general, it was the second leading cause of death among persons ages 15-24 years in 2001 (163 deaths). North Carolina's African American and American Indian populations have higher age-adjusted homicide rates than other racial and ethnic groups.

***Suicide*** **–** In 2001, suicide accounted for 1.4 percent of all deaths in North Carolina (985 deaths). Suicide was the 3rd leading cause of death to NC residents ages 15-24 years (134 deaths), and the 5th leading cause of death to residents ages 25-44 years (367 deaths). As shown in **Chart 3**, whites have the highest age-adjusted suicide death rate (13.3). North Carolina's age-adjusted suicide rate was significantly higher than the U.S. suicide rate in 2000. Data on suicide attempts is not available. However, information regarding the percentage of North Carolina youth experiencing suicidal thoughts or feelings is available. According to the 2001 Youth Risk Behavior Survey, 21 percent of North Carolina middle-school students and 18 percent of high school students have seriously considered attempting suicide.

***Sexual/Physical Assault*** **–** According to the 2001 North Carolina BRFSS telephone survey, 6.8 percent of adult respondents reported that they had ever been sexually assaulted, 2.8 percent of males and 10.4 percent of females. 20.2 percent reported that they had ever been physically assaulted, defined as being pushed, hit, slapped, kicked, or physically hurt in any other way. In the majority of cases, the sexual or physical assault was perpetrated by an intimate partner or someone else known by the person who was assaulted. During 1997-1999, nearly 6 percent of new mothers responded to a North Carolina survey that they had been physically abused during their recent pregnancy.

## Communicable Diseases

***Sexually Transmitted Diseases*** **–** North Carolinians experience a much higher rate of sexually transmitted diseases compared with the rest of the country. North Carolinians have higher rates of congenital syphilis, primary and secondary syphilis, gonorrhea, chlamydia, and HIV/AIDS.

The syphilis rate in North Carolina has been steadily declining over the last few years. Since 1998, the syphilis rate has decreased 65 percent, from 9.3 per 100,000 population in 1998 to a rate of 3.3 in 2002. The number of syphilis cases has been cut in half for all race and ethnic groups in the state. However, North Carolina's syphilis rate was still higher than the national rate of 2.2 per 100,000 in 2001. Consistent with rates across the South, North Carolina's gonorrhea rate has been on the decline since 1998, with a rate of 246.5 in 1998 and 184.3 in 2002. Even with these declines, North Carolina's gonorrhea rate was still higher than the national average of 128.5 per 100,000 population in 2001. In contrast, after years of decline, chlamydia rates began to rise in the state in 2002 – from a rate of 270.8 in 2001 to 296.7 in 2002. The North Carolina rate was significantly higher than the national chlamydia rate of 278.3 in 2001. National chlamydia rates have also been rising recently. Both males and females, as well as nearly all racial/ethnic groups have seen an increase in chlamydia rates.

***AIDS/HIV*** – For several years the number of new AIDS cases in North Carolina was on the decline. However, in 2002 1,014 new cases were reported. This represents an increase of 16 percent from 2001, when 871 new cases were reported. This increase in new AIDS cases reflects a regional trend in which seven of the ten states with the highest AIDS case rates in the nation are in the South. While the South represents a little more than 33 percent of the U.S. population, it now accounts for about 40 percent of the estimated people living with AIDS and 46 percent of the new AIDS cases. Estimates are that currently at least 21,000 North Carolina residents are living with HIV/AIDS. Approximately 44 percent of new HIV cases were among African American males, 24.5 percent among African American females, and 19.5 percent were white, Non-Hispanic males. While many cases are reported without a transmission mode, about a third of all new cases indicate heterosexual transmission.

North Carolina's HIV death rates have been steadily declining since 1996. In 1995, the HIV death rate was 14.1 per 100,000 population compared with a rate of 5.6 today. This mirrors national trends and is likely due to the use of improved drug treatments. HIV death rates are higher among African Americans, Hispanics, and American Indians in North Carolina. During the 1997-2001 period, the age-adjusted rate of HIV deaths was 21.2 for North Carolina's African Americans, 3.3 for American Indians, 4.1 for Hispanics, and 1.6 for whites.

***Other Communicable Diseases*** – North Carolina also faces health threats related to other emerging and re-emerging communicable diseases. Some of these diseases have posed dangers for centuries, while others have surfaced only recently. North Carolina tuberculosis (TB) cases and rates have been declining for many years, although the disease has not been eliminated. In 1950, North Carolina had 89.9 cases of TB for every 100,000 people. By 2001, 398 cases of tuberculosis were reported to the state (the fewest number of cases ever reported) — resulting in an overall rate of 4.8 per 100,000 population. Cases of drug-resistant TB have also declined. Tuberculosis is more common among North Carolina's African-American population compared with whites. However, TB cases for African-Americans have declined 41.7% since 1994, compared with a decrease of only 11.4% for whites. Other emergent communicable diseases such as Severe Acute Respiratory Syndrome (SARS) and West Nile virus are being closely monitored by the North Carolina Department of Health and Human Services and the CDC in an effort to safeguard the public against infection from these viruses.

***Food-borne Illness*** – Food-borne illness impacts the health of thousands of North Carolinians each year. It is well recognized that food-borne illness is vastly under-reported. Yet, during the 5-year period 1997-2001 there were more than 10,000 cases of food-borne illness and 60 outbreaks reported. For the year 2002 alone there were 3,023 cases and 15 outbreaks reported. The cost of a food-borne illness can be large because not only are there medical costs, but there can also be loss of work, hospitalization, or death. North Carolina must also be concerned about food security. The North Carolina Food Security and Safety Coalition was formed due to heightened concerns about bioterrorist attacks on food sources.

## Minority Health & Health Disparities

One-quarter of North Carolinians reported in the 2000 Census that they were a minority race. This is approximately double the proportion for the United States as a whole. With many health status measures being worse for minority populations compared to whites, both in North Carolina and nationally, the higher proportion of minorities in North Carolina partly accounts for the relatively low national ranking of North Carolina on many health measures. A 2002 report based on mortality and NC BRFSS survey data indicates that while the life expectancy at birth for North Carolina's white population is 76.8 years, the life expectancy for minorities is only 72.1 years. Minority males fare even worse. Life expectancy is only 68.0 years for minority males, compared to 75.8 years for minority females.

***African Americans*** – The 2000 Census reports that 22 percent of all North Carolinians are African American/Black. This compares with only 12 percent of the population nationally. North Carolina's African Americans are more likely to live in poverty (22.9%) and more likely to have no health insurance (20%) than whites. Poverty and a lack of access to health care are two main reasons why North Carolina's African Americans are generally in poorer health than whites based on mortality and disease incidence patterns. African Americans, for example, have a much higher infant mortality rate than do whites (15.1 deaths per 1,000 live births for African Americans compared to 6.4 for whites in 1997-2001). African Americans also have higher death rates from heart disease, cancer, AIDS, diabetes, homicide, and stroke, and a higher incidence of cancer, compared to whites. North Carolina's African American population also had the highest age-adjusted rates of HIV, gonorrhea, and chlamydia during 1997-2001. According to the NC BRFSS, North Carolina's African Americans are less likely to smoke and binge drink than most other racial/ethnic groups, but are more likely to be obese, have high blood pressure, and have inadequate fruit and vegetable consumption.

***Hispanics*** – According to the 2000 Census, 4.7 percent of North Carolina residents are Hispanic. North Carolina's Hispanic population grew by almost 400 percent from 1990 to 2000, compared with an average national rate of growth for the Hispanic population of 58 percent. Moreover, because North Carolina's Hispanic population is disproportionately young and most of the female Hispanic newcomers are in their peak childbearing years, the potential for continued growth of the state's Hispanic population is great. Seventy-nine percent of North Carolina's Hispanic population is age 35 or younger whereas only 52 percent of the state's total population are in this age range. Given the younger age distribution of the Hispanic population, there are unique health issues for this group.

The leading causes of death among North Carolina Hispanics are consistent with the young age of the population. Approximately half of all North Carolina's 522 Hispanic deaths in 2001 were due to fatal injuries – either intentional or unintentional. Motor vehicle injuries topped the list of leading causes of death in 2001, representing 22 percent (115 deaths) of all Hispanic deaths. Homicide (67 deaths) and other unintentional injuries (53 deaths) were the 2nd and 3rd leading causes of death respectively and comprised another 23 percent of all Hispanic deaths in 2001. Suicide was the 7th leading cause of death among Hispanics in 2001 (23 deaths).

Despite relatively low socio-economic status and delayed prenatal care services, Latina women – especially first generation Latinas from Mexico – have birth outcomes as good as or better than non-Hispanic whites. A recent report by a statewide task force reveals that between 1996-2000, the rate of infant deaths per 1,000 live births to Mexican-born women was 6.1, compared to 6.6 for Whites and 15.0 for African Americans.

***American Indians*** **–** North Carolina has one of the largest American Indian populations in the country. In 2000, American Indians numbered more than 95,000, or a little over 1 percent of the population in the state. As with other minority populations, North Carolina's American Indian population is generally in poorer health than Whites. North Carolina's American Indian population has higher death rates from diabetes, motor vehicle injuries, and homicide, as well as a substantially higher infant death rate. The rates for HIV, syphilis, and gonorrhea, and chlamydia are also high among the American Indian population in North Carolina. During 1997-2001, American Indians had higher percentages of women who smoked during pregnancy and women with late or no prenatal care. Much of the poor health outcomes for this population are likely related to the fact that they have one of the highest percentages of families living below the poverty level (21%) and one of the highest rates of adults ages 18-64 with no health insurance (25%). According to the NC BRFSS survey, American Indians have the highest percentage of adults who report being in fair or poor health (25.8%), compared with other racial/ethnic minorities.

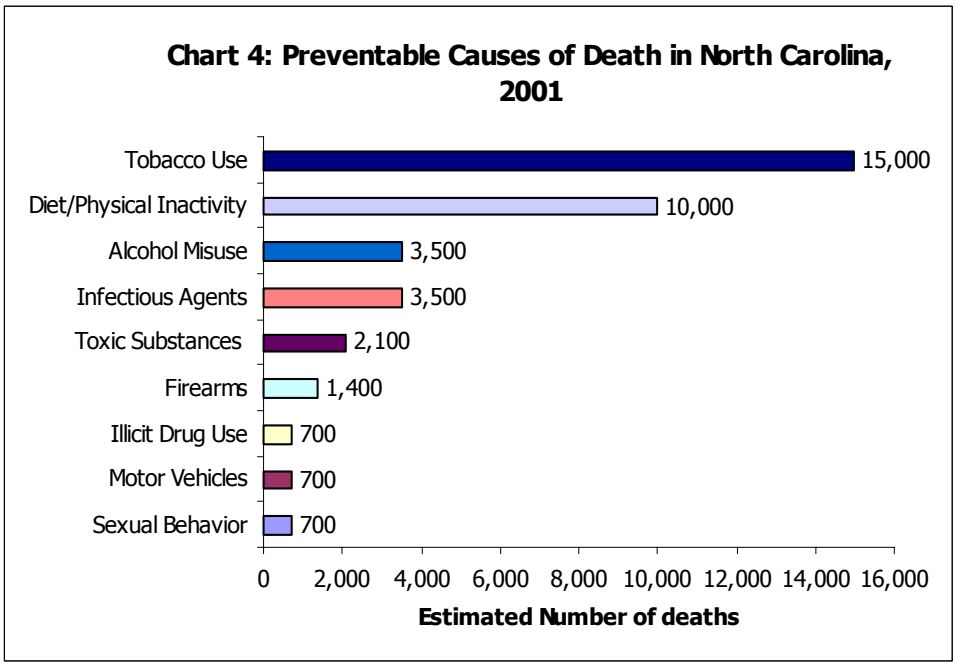
**Table 3: NC Minority Mortality Rates and Risk Factor Percentages by Race and Ethnicity**

| | White | African American/ Black | American Indian | Asian/ Pacific Islander | Latino/ Hispanic | TOTAL |
|---|---|---|---|---|---|---|
| **Mortality Rates[1] 1997-2001:** | | | | | | |
| Infant deaths per 1,000 live births | 6.4 | 15.1 | 11.9 | 6.1 | 5.8 | 8.6 |
| Heart disease | 249.6 | 308.7 | 312.3 | 83.1 | 78.5 | 257.8 |
| Cerebrovascular disease | 70.1 | 98.9 | 74.6 | 42.2 | 31.4 | 74.5 |
| Diabetes | 78.1 | 169.5 | 154.6 | 41.6 | 41.2 | 93.0 |
| Chronic obstructive lung disease | 48.5 | 31.8 | 44.2 | 8.6 | 7.7 | 45.4 |
| AIDS | 1.6 | 21.2 | 3.3 | 0.7 | 4.1 | 5.6 |
| Prostate cancer | 28.2 | 79.6 | 52.0 | 11.0 | 7.6 | 35.7 |
| Lung cancer | 61.3 | 62.1 | 47.5 | 24.5 | 14.0 | 60.7 |
| Colorectal cancer | 18.6 | 27.0 | 16.1 | 8.0 | 9.3 | 19.8 |
| Breast cancer | 24.4 | 35.5 | 24.0 | 6.7 | 10.4 | 26.2 |
| Homicide | 4.8 | 18.4 | 21.9 | 4.5 | 11.5 | 7.8 |
| Suicide | 13.3 | 5.6 | 9.5 | 5.7 | 4.4 | 11.2 |
| Motor vehicle injury | 19.8 | 21.8 | 42.1 | 14.4 | 27.4 | 19.6 |
| **Behavioral Risk Factors[2] (percentages):** | | | | | | |
| Adults with high blood pressure | 23.5 | 32.2 | 20.9 | 8.4 | 17.7 | 24.9 |
| Adults who smoke | 25.8 | 23.3 | 35.3 | 13.3 | 31.9 | 25.5 |
| Adults who are overweight or obese | 54.7 | 66.9 | 59.3 | 38.6 | 58.1 | 57.0 |
| Adults w/ no leisure time physical acitivity | 25.8 | 35.4 | 43.0 | 34.5 | 37.1 | 28.2 |
| Inadequate daily fruit and vegetable intake | 76.2 | 81.7 | 86.4 | 71.0 | 82.4 | 77.5 |
| Percent of adults in fair/poor health | 15.7 | 21.0 | 25.8 | 10.2 | 11.6 | 16.7 |

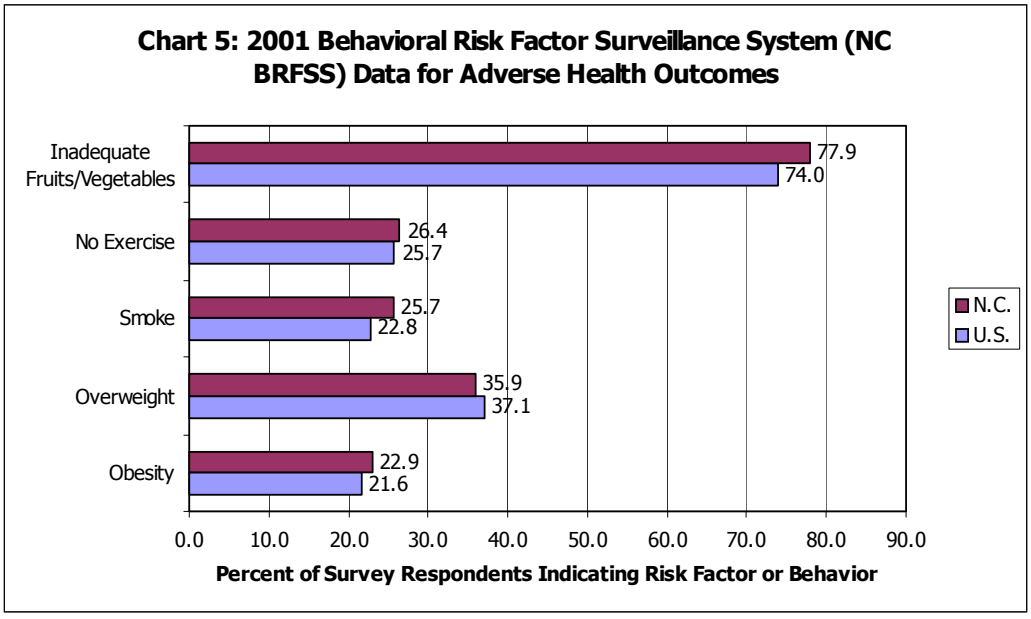
[1] Except for the infant death rate, mortality rates are age-adjusted and expressed per 100,000 population.
[2]Most of these data are for the period 1997-2001.

# Health Behavior

According to a recent study, more than half (53%) of all deaths of North Carolinians in 2001 were preventable. Most of the leading causes of preventable deaths in North Carolina involved risky behavior or lifestyle choices. Among the leading causes of preventable death were tobacco use, unhealthy diet/ physical inactivity, alcohol misuse, firearms, sexual behavior, motor vehicles, and illicit drug use. The direct medical costs to North Carolina related to tobacco use, physical inactivity, and poor nutrition alone are estimated to be at least $6 billion per year. This does not include indirect costs such as lost productivity due to time off work or increased recruitment and hiring costs. **Chart 4** presents information on preventable deaths in 2001.

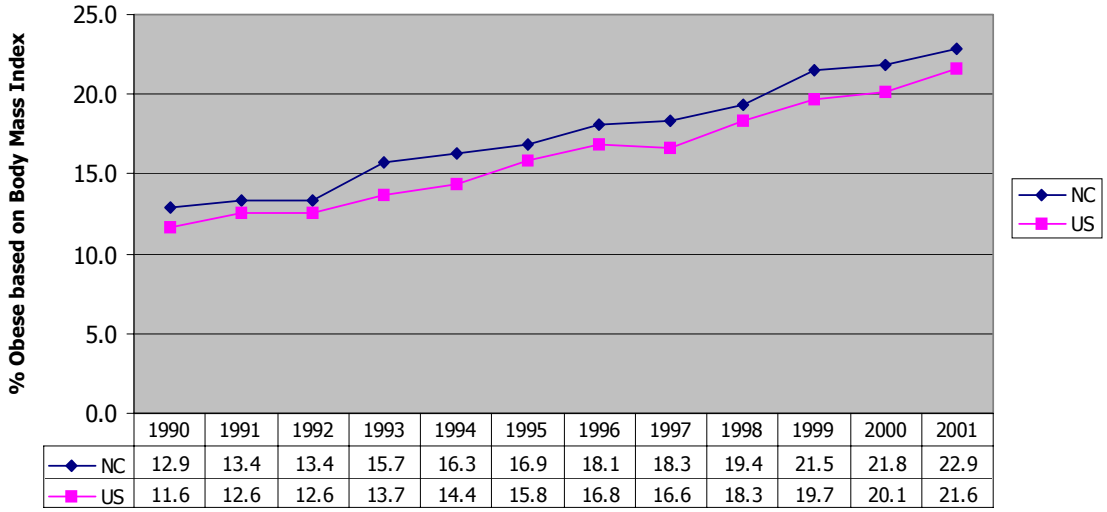



As shown below in **Chart 5**, North Carolina adults are more likely to smoke, lead sedentary lifestyles, be obese, and are less likely to eat healthy food than the national average. North Carolina adults are slightly more likely to be obese, but slightly less likely to be overweight than the U.S. averages. In all, approximately 6 in 10 NC BRFSS survey respondents (59%) indicated that they were overweight or obese based on their body mass index.



Since 1990, the obesity percentage in North Carolina has almost doubled, remaining slightly higher than the national average. **Chart 6** presents obesity percentages from 1990-2001 for North Carolina and the U.S.

**Chart 6:**
**1990-2001 Prevalence of Obesity, North Carolina and U.S.**



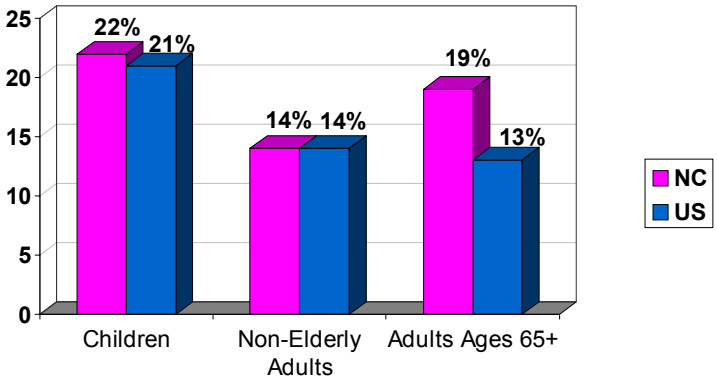

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NC | 12.9 | 13.4 | 13.4 | 15.7 | 16.3 | 16.9 | 18.1 | 18.3 | 19.4 | 21.5 | 21.8 | 22.9 |
| US | 11.6 | 12.6 | 12.6 | 13.7 | 14.4 | 15.8 | 16.8 | 16.6 | 18.3 | 19.7 | 20.1 | 21.6 |

*Source: 1990-2001 Behavioral Risk Factor Surveillance System (BRFSS)*

## Health Care Access

***Poverty*** – An individual's socioeconomic status has a strong link to overall health status. Poorer people have higher death rates and more health problems than individuals with higher socioeconomic status. As shown in **Chart 7**, North Carolina poverty rates were higher than the national average for all age groups in 2001. Based on the 2000 census, the poverty rate for North Carolina Blacks (22.9%) was more than twice that for whites (8.5%).

**Chart 7: Percentage of Population Living Below Poverty by Age, 2001-2002**

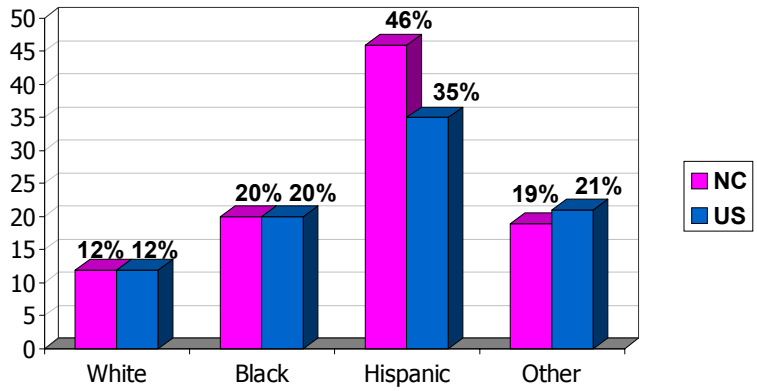



Source: Urban Institute and Kaiser Commission on Medicaid and the Uninsured based on pooled 2000 & 2001 Current Population Survey data.

***Health Insurance Coverage*** – North Carolinians living in poverty and without health insurance experience greater difficulty gaining access to effective primary and specialized health care. When they do get treatment, they are typically in a later and more dangerous stage of their illness. It is not surprising, then, that we see more serious levels of chronic disease and illness among North Carolina's uninsured population. According to a recent study using NC BRFSS survey data, North Carolinians with chronic health conditions were more likely to report having limited access to health care.

More than 1 million (1,125,480) NC residents were without health insurance during 2000-2001. The percentage of North Carolinians without health insurance has been similar to the national average for at least two decades. According to the U.S. Census Bureau's Current Population Survey, the 1999-2001 percentage of North Carolinians without health insurance coverage for an entire year was 14.2 percent compared to 14.5 percent for the U.S. for this same time period. Persons of a minority race in North Carolina were much more likely to be uninsured in 2000-2001. As shown in **Chart 8**, while 12 percent of whites were without health insurance during 2000-2001, 1 in 5 Blacks (20%) and nearly half of all Hispanics (46%) lacked health insurance during this same time period. The percentage of uninsured children is 11 percent in North Carolina compared to 12 percent for children nationally. North Carolina may have a smaller percentage of uninsured children than many states because of its successful implementation of the State Child Health Insurance Program (SCHIP). This program is called "Health Choice" in North Carolina.

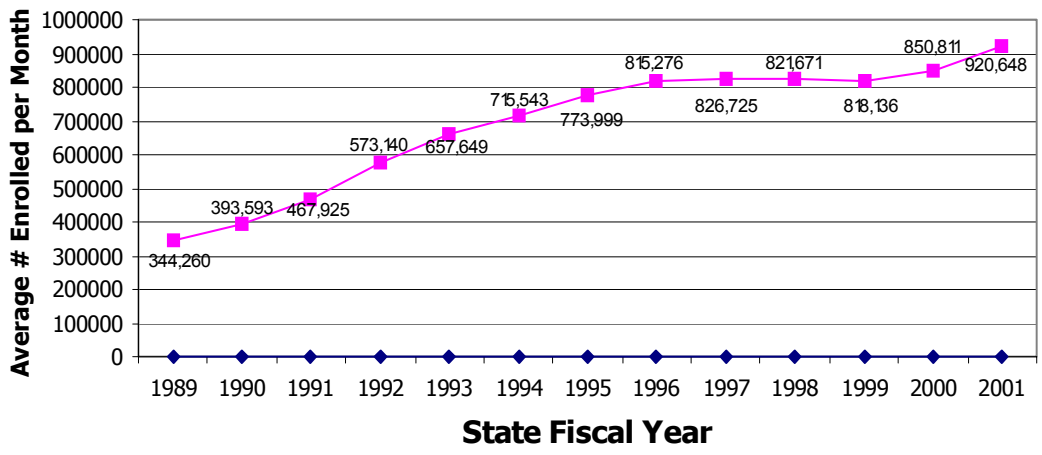
**Chart 8: 2000-2001 Percentage of People Uninsured, U.S. and N.C.**




Source: Urban Institute and Kaiser Commission on Medicaid and the Uninsured based on pooled 2000 & 2001 Current Population Survey data.

North Carolina was one of the last states to initiate a Medicaid program, in 1970. Largely as a result of the Medicaid eligibility expansions for children and pregnant women adopted in the late 1980s, there has been a large increase in the number of Medicaid enrollees. As shown in **Chart 9**, between state fiscal year 1988-1989 (the first year of major expansions) and state fiscal year 2000-2001, the average monthly Medicaid enrollment climbed from 344,260 to 920,648 – an annual growth rate of 8.8 percent. The Division of Medical Assistance estimates that an average of 1 in 8 North Carolinians were enrolled in the state's Medicaid program in each month in state fiscal year 2000-2001.

**Chart 9: Average Monthly Medicaid Enrollees in North Carolina, 1989-2001**




*Source: SFY2001 NC/DHHS Division of Medical Assistance Annual Report*

***Rural Health –*** Approximately 33 percent of North Carolina's population lives in rural areas, compared with 20 percent nationwide. Populations living in North Carolina's rural areas face more barriers to accessing health care due in part to a lack of health care providers in close proximity to their home.

North Carolinians living in rural areas are also more likely to be living in poverty, and thereby less likely to have access to transportation. This is particularly true for rural racial minority and Hispanic populations. The geographic availability of physicians and the distance to hospitals pose unique problems for North Carolina's rural residents. More than half of the state's population lives in a county with just one hospital, and there are 14 North Carolina counties without any hospital. Lack of access to obstetrical care in rural areas is also a growing problem. According to a study published by UNC's Sheps Center for Health Services Research in 1998, 14 North Carolina counties did not have a single physician who reported attending births.

***Oral Health*** – According to the 2001 NC BRFSS survey, approximately 30 percent of North Carolina adults reported not having visited a dentist within the last year. The lack of dental care is especially acute among North Carolina's poor. Among those making less than $15,000 a year almost half reported not having an annual dental check-up, compared with less than 20 percent of those making more than $50,000 a year. Recent data for Medicaid recipients ages 5-14 show that only 34 percent had any dental services during the year. Younger children were the least likely to use dental services. One explanation for this is the low number of dentists who participate in the Medicaid program due to low reimbursement rates – an average of only 62 percent of their customary charges. Only six states have lower rates of dentist Medicaid participation.

The U.S. Surgeon General maintains that water fluoridation continues to be the most safe, effective, and inexpensive way to prevent tooth decay in a community. Fluoridation benefits North Carolinians of all ages and socioeconomic status. According to the Centers for Disease Control and Prevention, 83 percent of all North Carolina populations on public water systems were receiving optimally fluoridated water in 2000, compared to a 66 percent nationwide average.

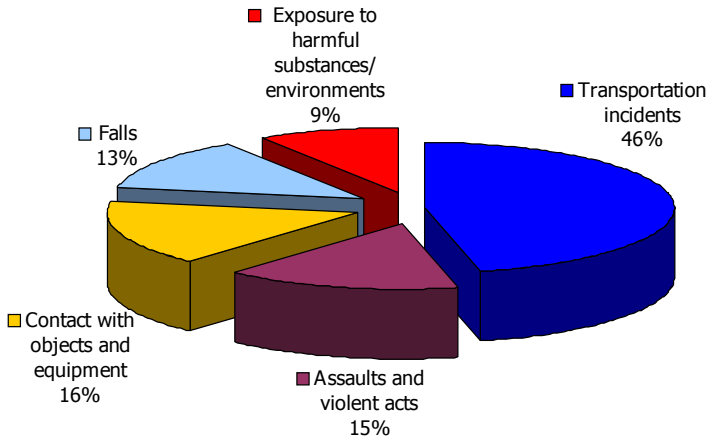
# Occupational and Environmental Health

Environmental health concerns are gaining more attention in North Carolina and the nation. Baseline data are still being collected for most indicators such as air quality, water quality, and soil quality. According to the NC Department of Environment and Natural Resources, ozone levels have risen in recent years due to increased traffic, industry, and warmer weather. The state's air and water quality has also received increased attention due to concerns resulting from the fact that North Carolina is the second largest hog producing state in the nation. However, North Carolina data on adverse health effects associated with poor air and water quality are difficult to obtain.

A preliminary study from the North Carolina Division of Air Quality estimated that fine airborne particulate matter resulted in 2,400 premature deaths in North Carolina in 2000, including more than 1,700 deaths due to cardio-pulmonary causes and 335 deaths due to lung cancer. Achievement of the U.S. Environmental Protection Agency's standards for particulate matter could substantially reduce the number of premature deaths from these causes.

Occupational exposures and hazards also pose health threats to North Carolinians. Occupational health threats include traumatic injuries as well as exposure to toxic substances such as silica, asbestos, and lead. According to the U.S. Bureau of Labor Statistics, there were 203 fatal occupational injuries in North Carolina in 2001. As shown in **Chart 10**, almost half (46%) of these deaths were attributable to transportation accidents. Assaults, falls, exposure to harmful chemicals/environments, and fires account for the rest of these deaths. Interestingly, assault/violence in the workplace accounted for 15 percent of all occupational deaths in 2001. A recent study of 43,900 North Carolina death records revealed that construction workers face increased risks of falls, transportation injuries, respiratory tuberculosis, and electrocutions.

**Chart 10: Fatal Occupational Injuries in North Carolina, 2001**




*Source: Bureau of Labor Statistics, U.S. Department of Labor Census of Fatal Occupational Injuries, 2001*

# Conclusion

North Carolina faces a myriad of health challenges. The health of North Carolinians is compromised by poverty, poor lifestyle choices, environmental problems, and insufficient access to adequate health care. There is very limited data in some areas, such as mental health and environmental health. Ensuring that its citizens have an equal opportunity to be healthy is a difficult, but attainable goal.

In 1988, North Carolina had the worst infant death rate in the nation. Since then, the state has reduced the infant death rate by one-third. In spite of this improvement, North Carolina still has the fifth highest infant mortality rate in the nation. North Carolina has also been tremendously successful in expanding insurance coverage to uninsured children with the implementation of NC Health Choice. While there is room for improvement, the success in these areas should reaffirm that with collaborative efforts we can work to tackle even our most complex health problems. Despite limited state resources, a strong commitment to the health improvement programs will result in better health for the citizens of our state.