

Highlights

Eastern North Carolina's Mortality Summary

In general, the health status of the region's population appears to be poor. Cancer and heart disease continue to be serious health problems for North Carolinians. Together these two diseases account for nearly 53% (1995) of all deaths in the state. Heart disease remains the number one cause of mortality. In addition, mortality from stroke, motor vehicle crashes and other injuries, and diabetes are disproportionately high in Eastern North Carolina. Mortality rates for homicide and cirrhosis and liver disease are also high in the region when compared with rates in the state and the nation.

Eastern North Carolina's mortality rates (deaths per 100,000) for the leading causes of death provide a picture of the health of the region's people. The ten leading causes of death in descending order are: heart disease, cancer, stroke, motor vehicle crashes and other injuries, chronic obstructive pulmonary disease (COPD), pneumonia and influenza, diabetes, homicide, suicide, and liver disease and cirrhosis. These account for 81% of all deaths. With regard to total deaths, Hyde County and Onslow County have the highest and lowest mortality rates, respectively, for North Carolina and the region. [Tables and graphs are provided to compare the death rates for the leading causes of mortality for Eastern North Carolina, North Carolina, and the United States.] The highest and lowest death rates in Eastern North Carolina are identified by county. Overall, the northeastern counties exhibit higher total mortality rates when compared to the rest of the region.

Crude mortality rates for heart disease and suicide in Eastern North Carolina are similar to the rates for the state. In the case of lung disease and pneumonia and influenza, mortality rates in the region and the state are not as dismal as the overall rates for the nation. Cancer mortality for the 41 county region is similar to the rate for the state, but if the 29 county region is considered separately, it is considerably worse than both the state and national rate. Nevertheless, these diseases continue to threaten the health status of Eastern North Carolinians. Particular kinds of cancer have high mortality rates in the region, and these will be discussed in detail in the section pertaining to cancer.

In this mortality analysis, leading causes of death are explored with regard to risk factors and geographic areas of concern. Each leading cause is handled in a separate section. The sections are broken down into text that provides background information followed by tables and maps. The county is the unit of analysis. In addition, references to goals set forth in *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*, the blueprint for the nation's efforts to prevent and control serious health conditions and disease, will be included. To compare the region's health status to the state's health status goals, references are also made to the primary goals and special targets established in *Healthy Carolinians 2000: The Report of the Governor's Task Force on Health Objectives for the Year 2000*, an outline of health objectives to be used by communities and individuals to improve the health status of North Carolinians and to prevent premature death and disability of North Carolinians.

The interpretation of mortality rates includes both crude and age-adjusted rates by race and gender. The race-gender specific, age-adjusted mortality rates take into account the age of

the county's population and allow one to examine the variation in mortality patterns in the white male, white female, nonwhite male, and nonwhite female populations. Adjusted rates allow for a more accurate comparison among the populations, whereas crude rates illustrate the overall mortality burden. Rates adjusted for age, race, and gender may be more appropriate for specific county-to-county comparisons. Also, race-gender specific rates provide valuable information when planning interventions, which are most effective when they target specific population groups.

OVERVIEW OF MORTALITY

Healthy Carolinians 2000/Chronic Diseases Primary Goal Objective:

To reduce by 25% the death rates from heart disease, stroke, and lung disease.

Healthy Carolinians 2000/Chronic Diseases Special Target Populations:

Disadvantaged persons and others with barriers to preventive examination and treatment.

The nation's health improved remarkably in the 1980s as indicated by declines in the death rates for heart disease, stroke, and unintentional injuries. Inasmuch as mortality rates for these indicators are significantly influenced by human biology, lifestyle, and environmental factors, it is not surprising that the 40% and 50% declines in heart disease and stroke, respectively, are directly related to a reduction in cigarette smoking; an increased awareness of cholesterol and dietary fats; and an increase in high blood pressure prevention, detection, and control.

Mortality statistics are one measure of a population's health status, but the numbers do not provide an explanation of what actually influences the major causes of mortality. The health field concept strives to explain the causes of poor health and is broken down into four fields: human biology, lifestyle, environment, and health care organization. The first three fields are direct causes of poor health, while health care organization takes into account how the existing health care delivery system responds to poor health and either positively or negatively affects health status. Human biology, lifestyle, environment, and health care organization all significantly impact health status, although to differing degrees for each disease or cause of mortality. Therefore, when assessing the health status of a region or population, one should identify and focus on the health fields exerting the greatest impact on mortality. In that way, dollars earmarked for health planning can be targeted to areas that will have the greatest impact on the population's health.

Biological Factors:

Biological factors include genetics, age, sex, and race. The various causes of mortality do not strike all individuals equally, as data on populations show. For instance, older people suffer more chronic illness, whereas younger people experience higher morbidity and mortality due to unintentional injuries. Besides the effects of age, race, and sex, many diseases and health conditions also are affected by a person's heredity. For example, studies show that some individuals are genetically predisposed toward developing heart disease.

Lifestyle Factors:

Personal health and lifestyle behaviors, usually established in adolescence and continuing through adulthood, significantly impact our health status, particularly with regard to the nation's top five killers: heart disease, cancer, stroke, injury, and chronic liver disease. For instance, tobacco smoking, alcohol abuse, and substance abuse, are precursors to poor health and to a number of diseases, which may arise immediately or evolve slowly over time. It is imperative to make the public aware of the potential dangers of smoking, alcohol abuse, and drug abuse, and of the fact that many health problems can be prevented by avoiding these habits. Lifestyle is a choice and the responsibility of individuals, but it can be influenced at the population level via health education, health promotion, and economic incentives.

Poor nutrition, another lifestyle factor, also puts individuals at higher risk for poor health. Consumption of high-fat foods raises the risk for heart disease, stroke, and cancer. In addition, a high-fat diet can lead to obesity--a serious health problem in the U.S. as 25 percent of American adults are overweight. Overweight people are more likely to develop high blood pressure and elevated blood cholesterol, diabetes, heart disease, stroke and some cancers. More women than men are overweight, 27% versus 24%. Low socioeconomic status is also a predictor of obesity; especially among minority populations. Interventions that can help improve a population's nutritional habits include: useful and informative nutrition labeling on food products; restaurants and grocery stores that offer low-fat, low-calorie, low-cholesterol food choices; school lunch and breakfast services consistent with good nutrition principles; work site nutrition education; and weight management. While there is scant data on nutritional status or obesity in Eastern North Carolina, the following national objectives should be noted.

Healthy People 2000/Health Risk Reduction Objective 2.5:

Reduce dietary fat intake to an average of 30 percent of calories or less and average saturated fat intake to less than 10 percent of calories among people aged 2 and older. (Baseline: 36 percent of calories from total fat and 13 percent from saturated fat for people aged 20 through 74 in 1976-80; 36 percent and 13 percent for women age 19 through 50 in 1985)

Healthy People 2000/Health Status Objective 1.2:

Reduce overweight to a prevalence of no more than 20 percent among people aged 20 and older and to no more than 15 percent among adolescents aged 12 through 19. (Baseline: 26 percent for people aged 20 through 74 in 1976-80, 24 percent for men and 27 percent for women; 15 percent for adolescents 12 through 19 in 1986-80)

Physical activity and fitness are also important lifestyle factors that can help prevent and manage coronary heart disease, hypertension, diabetes, obesity, and mental health problems (e.g. depression and anxiety). Community activities to promote physical fitness include: school physical education, employer-sponsored physical activity and fitness programs, and access to public fitness facilities (e.g. hiking, biking, and fitness trails, swimming pools, and

parks).

Healthy People 2000/Health Status Objective 1.2:

Increase to at least 30 percent the proportion of people aged 6 and older who engage regularly, preferably daily, in light to moderate physical activity for at least 30 minutes per day. (Baseline: 22 percent of people aged 18 and older were active for at least 30 minutes 5 or more times per week and 12 percent were active 7 or more times per week in 1985)

Cigarette smoking, although it has dramatically declined since the 1960s, is a lifestyle factor that is responsible for 17% of deaths in the U.S. still today and is a primary risk factor for heart disease, stroke, and cancer. More men than women smoke; however, this gender gap is narrowing as more women have taken up the habit. In general, high smoking rates are observed among blacks, Hispanics, blue-collar workers and people with fewer years of education. Today adolescents initiate smoking at early ages, often during junior high school. Approximately three-fourths of teenage smokers began smoking in 9th grade. According to Healthy People 2000, if tobacco use in this country stopped entirely today, an estimated 390,000 fewer Americans would die prematurely each year.¹ The following are possible strategies for decreasing the number of smokers or decreasing the frequency of smoking: clean indoor air policies, formal worksite policies prohibiting smoking, enforcement of legal age limits to purchase cigarettes, and deglamorized cigarette advertisements.

Healthy People 2000/Health Risk Reduction Objective 3.4:

Reduce cigarette smoking to a prevalence of no more than 15 percent among people aged 20 and older. (Baseline: 29 percent in 1987, 32 percent for men and 27 percent for women)

Healthy Carolinians 2000/Substance Abuse Primary Goal Objective:

To reduce the use of tobacco and the inappropriate use of alcohol and other drugs.

Healthy Carolinians 2000/Substance Abuse Special Target Objective:

Reduce by 15% the number of people ages 15-20 that smoke regularly. Reduce the percent of persons in grades 11-12 who smoke daily to no more than 9%. (Baseline: 10% of the population in grades 11-12 were daily smokers in 1990)

Alcohol abuse is a behavior that may lead to immediate problems or cause severe health problems later in life. Consumption of alcohol, which is an addictive substance, is associated with increased risk of motor vehicle crashes and unintentional injuries, homicides, suicides, cirrhosis of the liver, and cancer. In addition, alcohol is the leading, preventable cause of birth defects. According to Healthy People 2000, if alcohol were never carelessly used in our society, about 100,000 fewer people per year would die unnecessarily from illness and injury.² Alcohol consumption is most prevalent among

youth of ages 18 to 24; therefore, targeting interventions at this age group may prove most effective.

Healthy People 2000/Health Status Objective 4.1:

Reduce deaths caused by alcohol-related motor vehicle crashes to no more than 8.5 per 100,000 people. (Age-adjusted baseline: 9.8 per 100,000 in 1987)

Healthy People 2000/Health Risk Reduction Objective 4.8:

Reduce alcohol consumption by people aged 14 and older to an annual average of no more than 2 gallons of ethanol per person. (Baseline: 2.54 gallons of ethanol in 1987)

*Healthy Carolinians 2000/Substance Abuse Primary Goal Objective:**

To reduce the use of tobacco and the inappropriate use of alcohol and other drugs.

Healthy Carolinians 2000/Substance Abuse Special Target Objectives:

Reduce by 50% the proportion of people below the age of 21 who have consumed alcohol within the past month. Reduce the percent of persons grades 11-12 who have drunk beer in the last 30 days to no more than 17%. (Baseline: 35% of persons grades 11-12 had drunk beer within the last 30 days in 1990)

Reduce by 80% the number of people over age 20 who have consumed more than five drinks on the same day during the past month. Reduce the percent of people over age 20 who have consumed more than five drinks on the same day during the past month to no more than 2%. (Baseline: 9% of people over age 20 had consumed more than five drinks on the same day during the past month in 1990)

Low socioeconomic status poses a unique risk factor for chronic disease. As previously mentioned, higher rates of obesity and high blood pressure (a related disorder) are seen in low-income populations. These health problems raise the risk of heart disease and stroke, which are also more prevalent in low-income populations. The poor, the near poor, and the “working poor” clearly experience an inordinate share of the burden of morbidity and mortality.

Environmental Factors:

Environmental factors, both natural and man-made, impact our region’s health. Pollution of air, water, and food deserve serious attention in our region. For example, hazardous waste can pollute the air you breathe, the water you drink, and the food you eat. Pesticides, particularly those used in agriculture, often contaminate food and water and are a possible cause of cancers. In addition, exposure to chemicals at work or at home may contribute to disease and premature death. Occupational safety and hazards are a constant threat, especially to blue collar and agricultural workers. Children are also vulnerable, particularly

to the effects of lead, which still exists in old house paint. Children who are regularly exposed to lead show reduced intellectual development and learning disabilities. The environment clearly has an impact on health, and intervention efforts to create a safer, cleaner, healthier environment should be implemented at all levels of society (i.e. individual, family, organization, community).

Health Care Organization Factors:

The Health care organization is the health field concept that considers the response and treatment capabilities of the health care system. Morbidity and mortality are influenced by the ability of health care organizations to handle a person's medical situation. For example, if a person who had a motorcycle accident is rushed to the emergency room only to find no medical personnel available to treat him or her appropriately, then the patient suffers and the failure of the system contributes to his or her morbidity or mortality. To understand how the health care organization responds to health problems, it is essential to consider the components--health facilities, services, and manpower--and how they interact.

Health facilities encompass all sites where health care is delivered, including rural and community health centers, hospitals, nursing homes, and health departments. Attaining a distribution of rural and community health centers and hospitals that can adequately serve communities is an ongoing struggle in Eastern North Carolina. Eastern North Carolina has thirty rural and community health centers, which provide vital primary care services. These centers are located in 21 of the 41 counties. To provide acute care, or "sick care," there are 36 hospitals in Eastern North Carolina located in 29 of the 41 counties, with bed capacities ranging from 16 to 711 beds. Given the growing number of people over age 65, nursing homes are also becoming an important and integral part of the health care system. There are 94 nursing homes in the region with the largest number of facilities located in Cumberland County, where all but one of the county's eight nursing homes are located in Fayetteville, NC. Camden and Tyrrell Counties are the only counties without nursing homes. To safeguard the public's health against infection and disease, each county in the region has a local health department.

Health services may be available, but not truly accessible to all members of the population. Barriers to receiving care include: financial, social and cultural (e.g., language), supply, diversity, and distribution of providers, transportation (especially in rural areas), and consumer/patient knowledge. With 56 percent of the region rural, a significant number of communities are agricultural and contain a large population of migrant workers. The current access problems specific to rural communities include: lack of providers and capital for infrastructure; poor economic conditions; a heterogeneous population made up of diverse ethnic and socioeconomic groups, each with special needs; and large numbers of patients with Medicare, Medicaid, no insurance, and not enough insurance. Residents of rural areas also have difficulty getting to the site of care since there is no public transit system to pick up residents in more remote areas. In addition, much of the population of Eastern North Carolina faces economic barriers. Nearly half of the 11.6% of poor families in North Carolina are located in this region. For the indigent population, local health departments and emergency rooms serve as the main sources of primary care. Moreover, the limited hours of operation of health departments force many people to use the

emergency room for care. Utilizing healthcare resources in this manner is inefficient and drains the system.

Health manpower includes all types of health workers: physicians (primary care doctors and specialists), nurses, health educators, physician assistants, certified nurse midwives, social workers, nurse practitioners, etc. The physician mix in the region is comprised of 59% specialists and 41% primary care physicians (family practitioners/general practitioners, internal medicine physicians, obstetricians/gynecologists, and pediatricians). Although specialists make up the greatest proportion of the total physician population, the largest single group of active physicians in the region are family practitioners/general practitioners (26% of total), and given the health care needs of the population, primary care physicians are a treasured resource.

[For additional information regarding Health Professional Shortage Areas (HPSAs), hospitals, local health departments, and/or primary care physicians refer to the Physician Workforce section in the Atlas.]

Healthiest people in Eastern North Carolina:

Onslow County, home of Camp Lejeune Marine Base, has the healthiest population in Eastern North Carolina. Onslow County has the lowest death rates in the eastern region of the state for six of the ten leading causes of mortality: heart disease, cancer, stroke, injuries, lung disease, and pneumonia and influenza. Its crude death rate, 4.7 per 1,000 population, is the lowest in the state of North Carolina. For 1990, the years of potential life lost (720 years per 10,000 people under 75 in 1990) were the sixth lowest in the state and the lowest for the region.

Onslow County's good health can be explained by its demography. Largely because of the marine base, the county has a very young population, with 35 percent of residents 20 years old and under. At the same time, people 65 years old and over account for only 4.4% of the population, the lowest percentage of older people in the region. Because Onslow County's population is young and because heart disease, cancer, stroke, lung disease, pneumonia and influenza, and diabetes primarily affect older people, it is not surprising that mortality rates here are low.

Onslow County is home to a rural and community health center, a hospital with a licensed bed capacity of 133 beds, and two nursing home facilities. The county's physician supply for 1997 is made up of 38 primary care physicians and 89 specialists.

Unhealthiest People in Eastern North Carolina:

Hyde County, a small coastal county of approximately 5,211 people, has the poorest health status in both the region and the state. Hyde County's population is relatively old, with its elderly accounting for 16.6% of the population. Like Onslow County, this county is racially heterogeneous, with 28.5% of the population nonwhite. The county is plagued by high mortality rates of stroke, heart disease, cancer, injury, and diabetes.

Hyde County's heart disease mortality rate is the highest in the region and, along with

Tyrrell County, is significantly higher than the regional, state, and national rates. When comparing the highest and lowest heart disease mortality rates in the region, Hyde County's crude rate is 4.0 times the rate of Onslow County. Hyde County ranks highest in mortality rates for other injury and diabetes and has the third highest mortality rates for stroke. Hyde County possesses the highest crude mortality rate in the region and ranks 96th in the state for years of potential life lost (1,291 years per 10,000 under 75 in 1990).

Although Hyde County's mortality rates are the highest in a few selected categories for the 1989-93 period, Tyrrell and Pamlico counties possess the highest mortality rates for certain types of cancer. Duplin County has the highest mortality rate for stroke. Gates County ranks highest in the region for mortality due to lung disease and motor vehicle injuries. The greatest amount of years of potential life lost is found in Halifax County at 1,428 years lost per 10,000 people under 75 (1990)—nearly twice the figure for Onslow County. Between the two periods of Atlas coverage, 1987-91 and 1989-93, Hyde County has become less distinctive with respect to high mortality rates

Hyde County is home to a rural and community health center and a nursing home. Since there is no hospital and there are only two practicing physicians in the area, the county residents must rely on surrounding counties for the majority of their health care needs. Travel distance and transportation barriers create significant obstacles to receiving care, particularly for elderly residents.

¹ Healthy People 2000: National Health Promotion and Disease Prevention Objectives uses adjusted rates; whereas, Healthy Carolinians 2000: The Report of the Governor's Task Force on Health Objectives for the Year 2000 uses crude rates.

^{1,2} Healthy People 2000: National Health Promotion and Disease Prevention Objectives.

YEARS OF POTENTIAL LIFE LOST UNDER THE AGE OF 75

Socio-economic, demographic, and health related factors, diet, and high-risk behaviors influence longevity. Ages of death or an aggregate age of deaths for a population can be compared to an expected age (the potential) of death. This comparison yields an index of life lost as a summary measure of health outcomes (see appendix for method of calculation). Regions with greater aggregates of life lost are a reflection of those factors that influence longevity. The Coastal Plain South and the Lower Mississippi are examples of regions where the greatest amount of potential life is lost. Favorable areas for longevity can be found in the Midwest and Utah.

North Carolina ranks 38th (956 years of potential life lost per 10,000 people) among the contiguous United States including Washington D.C. (49th with 1,972 years). The lowest amount of potential life lost is can be found in Utah at 615 years. The national figure is 875 years. Eastern North Carolina, a constituent of the Coastal Plain South, is at 1052 years where the figure for the remaining fifty-one counties of the state is 912 years. Health Service Area VI with its 29 counties ranks 5th (1045 years) among the six state service areas. Eastern North Carolina does not compare favorably within a state that is already low ranking with respect to this measure of health outcomes.

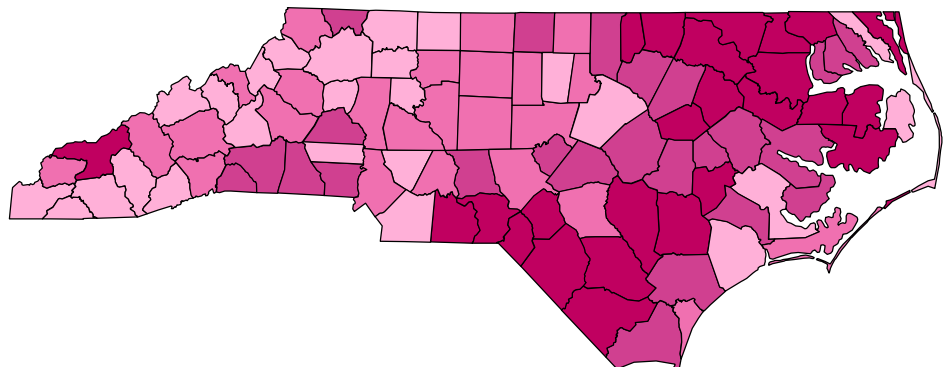
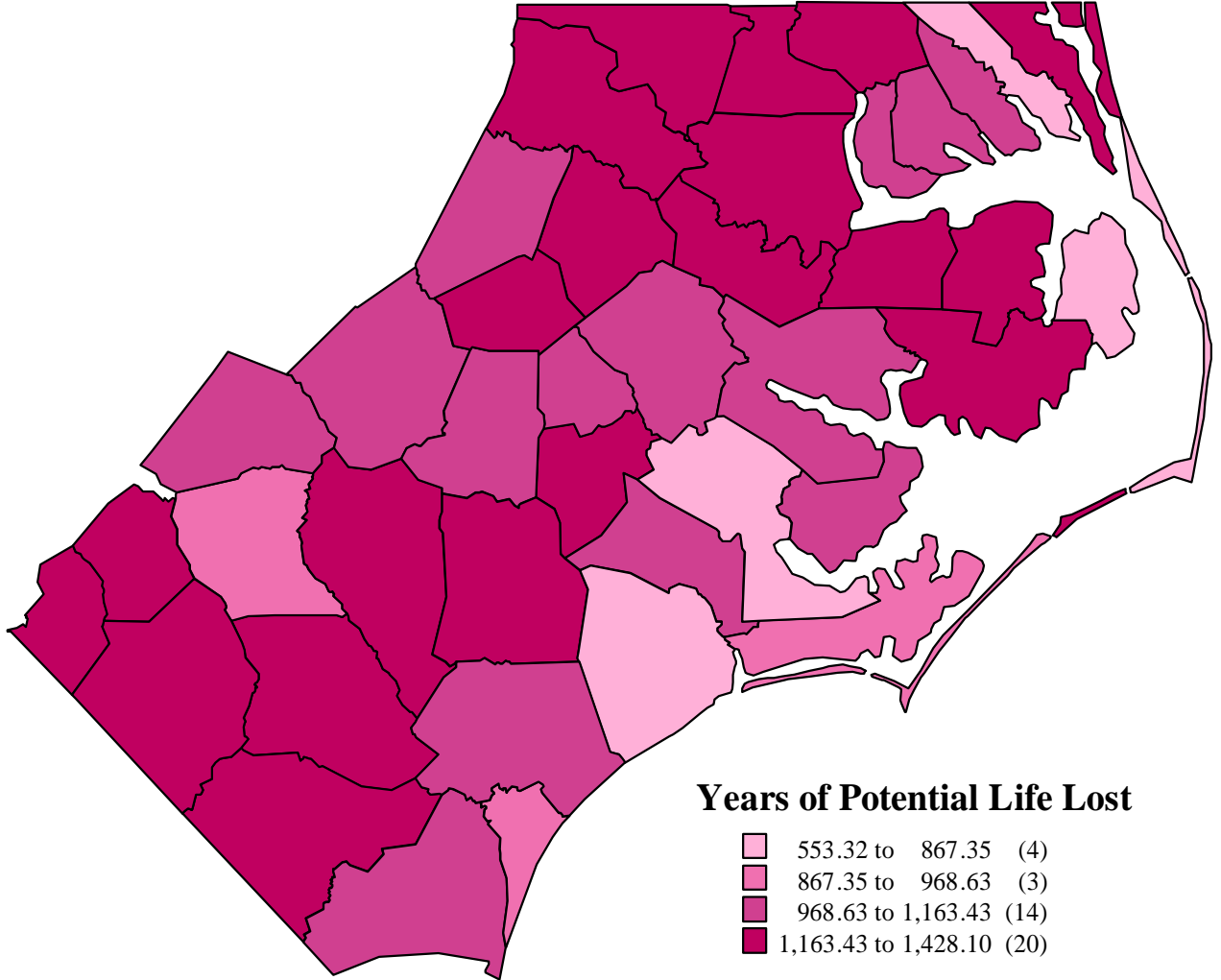
Within Eastern North Carolina, the range of years of potential life lost is from 720 years (Onslow County) to 1,428 years (Halifax County). Onslow County ranks sixth in the state and is the healthiest county in the Eastern region in terms of major causes of death. Because of a large, transitory, and young military population in the county there is less aging in place. Other counties with years of potential life lost less than the national figure include Dare (779 years), Camden (813 years), and Craven (864 years). Eastern North Carolina has seven out of 10 of the highest ranking counties in the state with respect to years of life lost. Bertie County (1,324) ranks 99th and is followed by Martin (1,296), Hyde (1,291), Hertford (1,276), Tyrrell (1,276), and Lenoir (1,269) counties. Geographically, these counties are found in the north-northeast of the eastern region. This is a section of the region marked by more aging in place and poverty.

Factors strongly associated with years of potential life lost are largely related to the demographic and socio-economic conditions of a region or county. These include the percentage of people 65 years and older (aging in place), racial composition, per capita income, and to a major extent the percentage of female headed households. Health care resources, as measured by number of hospital beds and physician types, are not as strongly associated with this measure as demographic and socio-economic factors. These associations will also vary by degree according to the type of county (e.g., urban, rural, and metropolitan).

Years of Potential Life lost Before Age 75
Per 10,000 People
Eastern North Carolina, 1990

County	Years of Potential Life Lost	
	Years of Life Lost	North Carolina Rank
Beaufort	1,054	62
Bertie	1,324	99
Bladen	1,258	89
Brunswick	1,093	67
Camden	813	14
Carteret	889	32
Chowan	1,110	70
Columbus	1,254	88
Craven	864	25
Cumberland	951	45
Currituck	1,167	77
Dare	779	8
Duplin	1,163	76
Edgecombe	1,264	90
Gates	1,179	78
Greene	969	51
Halifax	1,428	100
Harnett	1,052	61
Hertford	1,276	94
Hoke	1,212	83
Hyde	1,291	96
Johnston	1,045	60
Jones	1,122	72
Lenoir	1,269	91
Martin	1,296	97
Nash	1,080	65
New Hanover	939	43
Northampton	1,231	86
Onslow	720	6
Pamlico	1,023	58
Pasquotank	1,045	59
Pender	1,001	56
Perquimans	985	53
Pitt	1,092	66
Robeson	1,224	85
Sampson	1,200	80
Scotland	1,214	84
Tyrrell	1,276	93
Washington	1,204	81
Wayne	1,000	55
Wilson	1,192	79
29 County Region	1,045	
41 County Region	1,052	
North Carolina	956	
United States	875	

Years of Potential Life Lost 1990 Before Age 75 per 10,000 People under 75



SUMMARY RATE COMPARISONS

The table opposite compares rates between the two editions of the Atlas—1987-91 and 1989-93. It summarizes the difference between two five-year averages of crude mortality rates for selected diseases. Using averages is a way of stabilizing annual rates, which may fluctuate. A change of 5% or more either way in the rates is therefore considered meaningful. A “+” is indicated if a county’s mortality rate improved more than 5% from the 1987-91 period. A “-” is indicated if a county’s rate worsened greater than 5% from the baseline period. Blank spaces mean that any change was within the 5% range and is interpreted as not meaningful. There are two ways to interpret the table: 1) individually, counting the number of meaningful improvements (or declines) a county has across each disease category; and 2) regionally, counting how many counties within the region have improved (or worsened) meaningfully for each disease category.

Individually, Wayne, Tyrrell, and Northampton Counties have the most number of improvements (7) between the 1987-91 and 1989-93 time periods. Hertford (7), Hoke (6), Dare (5), and Pasquotank (5) had the greatest number of worsening rates between the two time periods. Halifax and Robeson Counties have the greatest number (6) of no meaningful changes across the disease categories.

Regionally, heart disease, cerebrovascular disease (stroke), and unintentional injuries showed the most improvement with slightly more than half of the counties showing changes in a positive direction. The region has worsened between the two time periods with respect to lung disease (COPD) and homicide with more than half of the counties showing change in the negative direction. Twenty-eight counties show no meaningful changes made in the all cancer sites category. Only five counties show improved rates for all cancer sites while eight counties show rates moving in a negative direction.

Summary Rate Comparisons Between 1st and 2nd edition of Atlas

County	Heart Disease	All Cancers	Cerebrovascular Disease	Unintentional Injuries	COPD	Pneumonia and Influenza	Homicide	Suicide	Liver Disease
Beaufort	+		+	-	+	-	-	+	-
Bertie	+			+				-	-
Bladen		-		+	-	-	-	-	-
Brunswick	+	+	+		-	-	+	-	+
Camden			+	+	+	+	+	+	-
Carteret	+			+		+	+	+	
Chowan	-	+		+	-	-	+	+	-
Columbus		-	+		-	+	-	-	-
Craven	+		+	+	-	-	+	-	-
Cumberland	+		+	+	-		-	-	+
Currituck	+	+	+	-	-	-		+	+
Dare	-		+		-	-	-	+	-
Duplin	+	-		+	+	-	-	-	+
Edgecombe				+	-	-	-	-	
Gates	-		-	+	-		+	-	+
Greene	+		-	-	+	+	+	+	+
Halifax					-			-	+
Harnett	+		+	+		-	-		+
Hertford		-	-	-	-	-	-		-
Hoke		-	-	-	-		-	+	-
Hyde	+	-	+		+	-	-	+	-
Johnston	+				+	+		+	
Jones	-	+		+	+	+	-	+	+
Lenoir	+	-	-	+	-	-	-	-	+
Martin	+		+	+			-	+	
Nash	+			+	-			-	
New Hanover	+		+				-	-	
Northampton	+		+	+	-	+	+	+	+
Onslow			+		-	+	-	-	-
Pamlico	+		+	+	-	-	-	+	+
Pasquotank	+			-	-	-	-	+	-
Pender	-		+	+		+	+	-	-
Perquimans			+		+	+	-	+	
Pitt	+		+				-	-	
Robeson				+	+		-		
Sampson				+	-	-		+	+
Scotland	+	-	+			-			-
Tyrrell		+	+	+	-	+	+	+	+
Washington			-	+	+	-	-	+	+
Wayne	+		+	+	+	+		+	+
Wilson	+		+				-		+

+ greater than 5% improvement in rate
Blank between -5% and 5% = no meaningful change
- greater than 5% decline in rate

General Mortality Eastern North Carolina

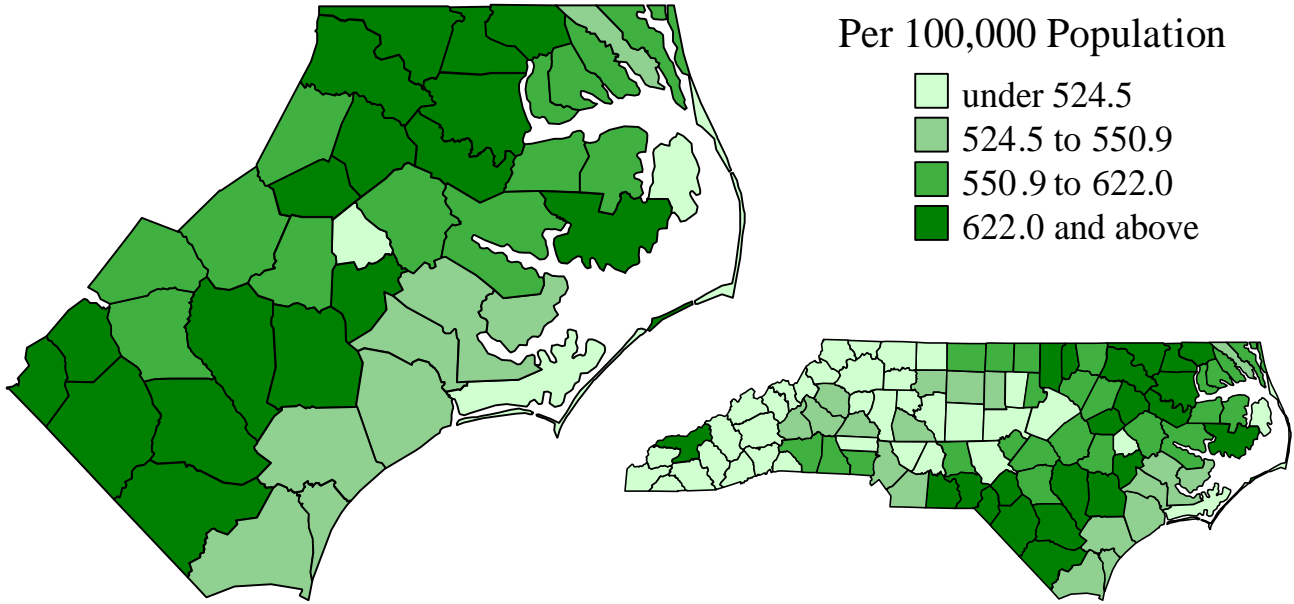
County	Population		Age-Race-Sex Adjusted		
			Total		Percent Reduction
	1989-93	1987-91	1989-93	1987-91	
Beaufort	42,752	42,319	621.8	633.7	-1.9
Bertie	20,492	20,733	672.6	701.8	-4.2
Bladen	29,000	30,037	685.8	678.4	1.1
Brunswick	55,054	51,310	534.3	545.4	-2.0
Camden	6,021	6,022	550.6	527.9	4.3
Carteret	54,830	51,787	519.7	537.6	-3.3
Chowan	13,872	13,610	587.1	568.3	3.3
Columbus	50,072	51,271	685.8	672.5	2.0
Craven	83,544	81,541	530.6	543.0	-2.3
Cumberland	285,586	268,034	607.7	642.3	-5.4
Currituck	14,444	13,919	597.9	652.7	-8.4
Dare	23,707	22,108	483.2	447.8	7.9
Duplin	41,186	41,138	639.0	650.3	-1.7
Edgecombe	56,800	58,784	721.2	686.3	5.1
Gates	9,532	9,640	627.2	596.2	5.2
Greene	15,833	15,976	522.1	533.4	-2.1
Halifax	56,444	56,209	688.4	688.2	0.0
Harnett	71,182	66,719	582.6	613.7	-5.1
Hertford	22,571	23,193	670.5	625.5	7.2
Hoke	24,127	23,703	659.1	600.5	9.8
Hyde	5,379	5,632	647.2	655.4	-1.3
Johnston	86,457	81,137	592.7	606.8	-2.3
Jones	9,485	9,642	548.0	589.1	-7.0
Lenoir	58,234	59,340	662.4	658.2	0.6
Martin	25,523	25,892	643.4	668.7	-3.8
Nash	79,408	74,612	620.6	638.4	-2.8
New Hanover	127,816	119,535	539.0	556.3	-3.1
Northampton	20,624	21,590	635.1	681.2	-6.8
Onslow	149,366	136,780	542.2	528.2	2.7
Pamlico	11,571	11,179	536.7	569.0	-5.7
Pasquotank	32,175	30,941	586.5	576.7	1.7
Pender	31,234	28,196	549.8	551.0	-0.2
Perquimans	10,433	10,783	556.3	571.8	-2.7
Pitt	112,025	105,012	614.0	631.5	-2.8
Robeson	106,979	106,615	685.2	676.0	1.4
Sampson	48,685	49,283	622.5	618.1	0.7
Scotland	34,409	34,108	691.9	683.7	1.2
Tyrrell	3,846	4,018	576.9	611.3	-5.6
Washington	13,924	14,364	598.9	621.6	-3.7
Wayne	107,082	102,000	619.3	663.9	-6.7
Wilson	66,611	65,600	668.3	675.4	-1.1
29 County Region					
	1,149,197	1,134,363	606.6	615.6	-1.5
41 County Region					
	2,118,314	2,044,310	607.9	619.1	-1.8
North Carolina					
	6,821,295	6,753,752	550.4	557.6	-1.3
United States					
	257,795,000 ¹	252,106,000 ¹	513.3 ²	513.7 ²	-0.1

¹ U.S. Census Bureau Population Estimates, July 1, 1991 and 1993

² Health, United States, 1995

General Mortality Eastern North Carolina

Age-Race-Sex Adjusted: 1989-1993



Age-Race-Sex Adjusted: 1987-1991

