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THE HEALTH OF YOUNG CHILDREN IN NORTH CAROLINA: RECENT TRENDS AND PATTERNS

by

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ABSTRACT

A recently published report focuses on the health of North Carolina's adolescents (ages 10-19) while this report examines the health of young children (ages 0-9). Together, the two reports should prove useful to those involved in a variety of health initiatives currently under way in North Carolina.

Recent data reflect few positive trends. The state's infant death rate dropped to a record low in 1992, but only seven states had a higher rate. The rate then rose in 1993. Childhood mortality from unintentional injuries has decreased, especially motor vehicle deaths among whites and other injury deaths among minorities. But injury continues to be a major cause of death among young children. These deaths include some very young victims of child abuse homicide.

The number of children reported as abused rose 82 percent over the last four years; substantiated cases involving drugs more than doubled. Mothers, followed by mothers' boyfriends, were the most frequent suspects in 23 child abuse homicides during 1992.

Incomplete immunizations, elevated blood lead levels, developmental disabilities, untreated dental problems, and poor physical fitness also are common among North Carolina's children; and above-average prevalences of overweight and growth retardation and a low prevalence of breastfeeding are found among low-income children. Meanwhile, some children (the number is unknown) lack health insurance coverage, and at least some of those are eligible for Medicaid but not enrolled. The state must devise some way to estimate those vulnerable populations and ensure that public assistance programs reach those who are eligible.

This report reveals wide disparities in the health of minority children versus whites. Those disparities must be a prime consideration in the formulation of prevention strategies.

Many child health programs and initiatives are presently in place and working to improve the health of North Carolina's children. The present bleak picture should only increase our resolve to get the job done.



This study was largely inspired by two grants to the State Center, one from The Robert Wood Johnson Foundation (RWJ) and the second a cooperative agreement with the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention. The long-term goal of the RWJ grant is to increase the use of data in decisions about health policy, especially in the areas of child health and long-term care. The NCHS agreement seeks to improve state and local capacity to assess progress toward Healthy People 2000 objectives for the nation and to use assessment information for policy making and program management.

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INTRODUCTION

Due to North Carolina's unfavorable ranking among states on a number of child health indicators, the State Center has been fairly diligent in tracking, analyzing, and reporting those indicators over many years. In 1994, five special studies dealt with some aspect of child health.¹⁻⁵ In 1995, a new study examines the entire spectrum of adolescent health (ages 10-19).⁶ Results reveal some positive trends – increased adolescent use of early prenatal care and nonmedical prenatal services, reduced fetal and infant mortality among adolescent mothers, and reduced adolescent mortality from motor vehicle and other unintentional injuries. At the same time, the report reveals rising levels of adolescent pregnancy, unmarried childbearing, sexually transmitted diseases, homicide, suicide, and crime as well as high prevalences of behaviors that often underlie those events. Accordingly, many county health departments now rank adolescent health issues among their top priorities.⁷

Given the above recent analysis for the state's older youth, the present report focuses on children under 10 years. Together, the two reports should prove useful to those involved in a variety of child health initiatives currently under way in North Carolina. For younger children, these include several new initiatives of the State Center:

- Development of a statewide immunization registry and online notification system;

- Computerization of the Kindergarten Health Assessment form on a pilot basis;
- Conducting an interview survey to collect in 1995 information pertinent to child health; and
- Planning of a child health database to follow children from birth to school age.

The last two initiatives are directly funded by a 4-year grant from The Robert Wood Johnson Foundation.

The proposed annual health interview survey, called *North Carolina Health Profile (NCHP)* and first undertaken in 1995, is a telephone survey of a random sample of about 1,500 North Carolina households. The purpose is to collect information needed to assess and monitor the state's health care system, based on policy principles formulated by the state's Health Planning Commission. Each annual survey is intended to include a core module, to be used each year, and a special module to vary as data needs require.

In 1995, the NCHP's special module will collect information about the health care needs of children under six years of age. This focus will be useful to those involved in the state's Smart Start Program as well as other children's initiatives of the state. Results of the Fall 1995 NCHP are expected to be available next spring.

Both a national initiative, **Healthy People 2000**, and a corresponding state initiative, **Healthy Carolinians 2000**, focus on some of the problems of children through the formulation of health objectives targeting young age groups. The present report provides data for a number of those objectives and attempts to examine the entire spectrum of child health from birth through nine years of age. Meanwhile, the State Center recommends reading of its report on adolescent health,⁶ a report that clearly provokes concern about a wide range of health and social problems among the state's older youth.

A final introductory word: In 1995, the national KIDS COUNT ranking of states places North Carolina 42nd. That means, based on a composite score for 10 key indicators of the well-being of young children and adolescents, North Carolina is the 9th worst state in the nation.⁸

TECHNICAL NOTES

For the population-based rates of this report, the population bases are estimates derived from the decennial censuses and provided by the Office of State Planning. The census figures used for this purpose are from the 100-percent tabulations whereas other census results cited may represent sample tabulations.

In the section on infant mortality, live births for 1990-1993 use the definition of a newborn's race as that of the mother. Prior to 1990 for North Carolina (1989 for the U.S.), the darker of the mother's and father's race (if different) was ascribed to the newborn at birth. Therefore, there is some (slight) discrepancy in the race-specific birth counts before and since 1990.

For infant and other childhood deaths, race designation is that determined at the time of death. The numerator of a death rate is the number of deaths occurring during the period of study.

Due to the statistical problem of small numbers, this report includes little county-level data. Where those data are presented, users should be aware that many of the counties' rates or percentages may be unstable due to random fluctuation associated with small numbers of events.

Throughout this report, reference is made to those Year 2000 national health objectives that are specific for children.⁹ A complete listing of the objectives is provided in the Appendix.

All data in this report are for residents of the state or county. Definitions and formulas for the terms and rates of this report are found in the Glossary, beginning on page 30.

POPULATION CHARACTERISTICS

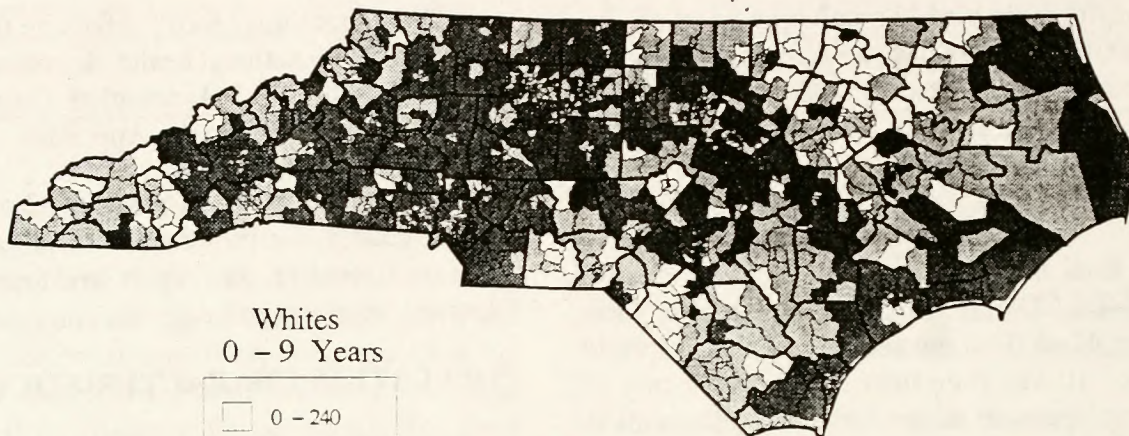
In 1990, young children (ages 0-9) comprised nearly 14 percent of the state's population – 13 percent of whites and 17 percent of minorities. Those figures are almost identical to the 1990 percentages for adolescents (ages 10-19).

Table 1 shows, for race and Hispanic population groups, the 1990 numbers of children by age and the corresponding percent changes since 1980. Despite the very large increase in children of Hispanic origin, the Hispanic counts of Table 1 are thought to reflect undercounts.¹⁰ Meanwhile, the declining numbers of whites and blacks aged 5-9 years reflect decreasing birth rates during the early 1980s.

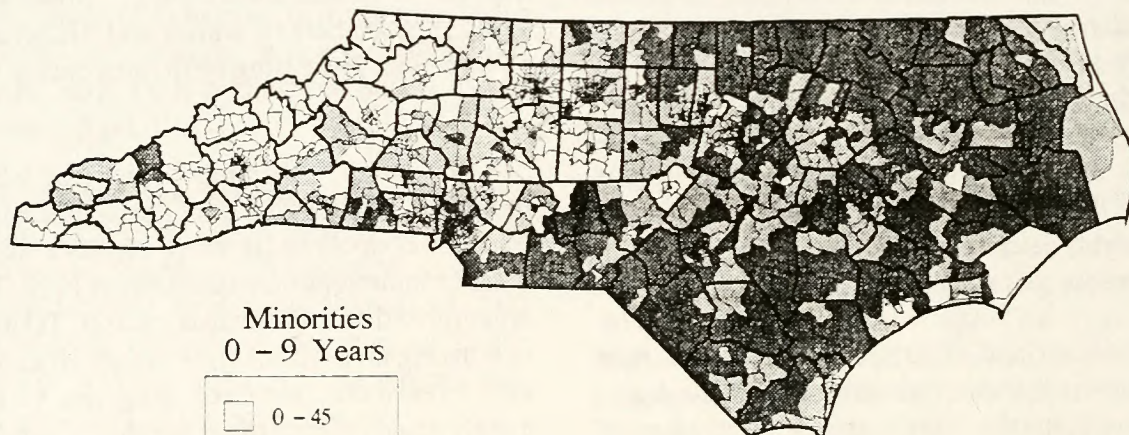
In Figure 1, shadings depict (for whites and minorities) the number of children living in census tracts (metropolitan counties) or block numbering areas (nonmetropolitan counties) in 1990. The state is comprised of 1,492 census tracts (CTs) and block numbering areas (BNAs), as described in the Glossary. In each map, the three categories are approximately equal in terms of the number of subdivisions (CTs and BNAs) represented. The reader will note the higher concentration in the eastern part of the state of minority children compared to whites.

Figure 1
Young Children by Census Tract and Block Numbering Area, 1990

Whites



Minorities



Other 1990 census data for North Carolina children are provided in Table 2. The following findings and available comparisons to 1980 seem notable:

- Between 1980 and 1990, the percentage of young minority children living in rural areas decreased 20 percent, further increasing the racial difference in urban-rural distribution. In 1990, the percentages of young white and minority children living in rural areas were 56 and 36 respectively.
- Among children under 6 and 6-11 years old, 19 and 17 percent respectively were below poverty in 1989. The percentages for minority children were nearly four times those for white children.
- Among families with children under five years, 17.2 percent were below poverty in 1989. This compares to 17.7 percent in 1979, so virtually no progress was made during the 1980s.
- In 1989, about 10.6 percent of the household population 0-14 received some form of public assistance income.
- Among mothers with children under the age of six, two-thirds were in the labor force in 1990. This was one of the highest percentages in the nation and represents an increase of 15 percent since 1980.
- Among children under six in 1990, more than one in four lived in a single-parent household. The percentage for minority children was nearly four times that for white children.
- Among children under six, the percentage living in female-headed families (no spouse present) rose 87 percent between 1980 and 1990; the percentage living in male-headed families (no spouse present) rose 147 percent. The overall increase in the percentage of children under six living in single-parent households was 96 percent.

Using data from the Census Bureau's Current Population Survey, the 1995 KIDS COUNT national ranking of states places North Carolina 28th in the percentage of children's families that are headed by a single parent and the percent of children in poverty. This means, 22 of the 50 states have higher percentages than North Carolina.⁸

Table 3 provides, for the state and counties, population estimates for young children as of July 1, 1993 (latest available). These figures may be used to compute population-based rates or to estimate the actual numbers of children in need of certain services. For more detail by age, the user should contact the Office of State Planning.

Finally, Table 4 provides two indicators of the economic well-being of each county's young children. These are the percentage of newborn hospital stays paid for by Medicaid and the percentage of elementary school children receiving free or reduced-price lunches. For counties that have not completed a comprehensive assessment of the health of their children, these data may prove very useful. Other county-level indicators of the economic well-being of young children are provided in the State Center publication, **North Carolina Health Statistics Pocket Guide**, Table 8. These are the percentages of live births to health department mothers and WIC mothers. The 1994 version (1993 data) has just recently been released.

As is well known, low income is probably the most important risk factor for a number of adverse health conditions and premature death. To a large extent, minority excesses in mortality and morbidity reflect a lack of money and its associated problems.

LIVE BIRTHS

During 1993, North Carolina resident live births numbered 101,333 for a rate of 14.6 live births per 1,000 population. Both the number and rate were lower than in 1992 with whites and minorities experiencing similar percentage declines.

Following years of general decline, both the number of births and the birth rate rose steadily from 1984 to 1990 as shown in Table 5. The number and rate for minorities actually peaked in 1989 with the rate decreasing each year since. Birth rate trends by race are depicted in Figure 2.

An interesting recent change in live births is that the percentage attended by a physician in a hospital peaked in 1987, decreasing 2.7 percent by 1993 to 95.5. The percentage attended by a certified nurse midwife simultaneously rose, more than doubling for whites and quadrupling for minorities to 4.2 and 3.7 percent respectively. Correspondingly, the number of nurse midwives licensed in the state rose from 33 to 93 between 1990 and 1994. The midwives largely attend births in hospitals that have granted them admitting privileges.¹¹

One of the main causes of infant mortality is low birthweight, and for both whites and minorities, that rate remains high (Figure 3). In fact, following recent increases, the low-birthweight

rate for both white and minority infants was higher in 1993 than at any time since 1975. In 1992, only seven states had a higher low-birthweight rate than North Carolina.⁸ The rate for minorities is twice that for whites, and the rate for adolescent mothers exceeds that for older mothers, especially among whites.⁶ The map of Figure 4 also reveals wide variation among counties. The Year 2000 national objective is to reduce low birthweight to an incidence of no more than 5 percent overall, 9 percent among blacks.⁹ In 1993, the state's low birthweight percentages were 6.6 and 13.0 for whites and minorities respectively and 8.7 overall.

The most dramatic change in live births over the long-term is the rising percentage occurring out of wedlock (Figure 5). In 1993, nearly one-third of mothers were unwed – 17 percent of white mothers and 65 percent of minorities. The percentages for adolescent mothers are much higher.⁶ As shown in Figure 6, counties vary widely in this indicator of the well-being of young children.

Figure 2
LIVE BIRTH RATES BY RACE
North Carolina, 1970-1993

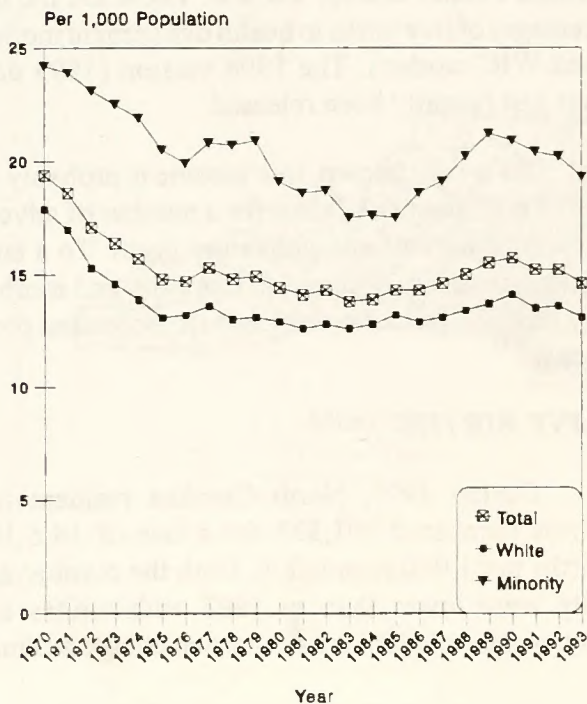


Figure 3
PERCENT LOW-WEIGHT BIRTHS
BY RACE
North Carolina, 1970-1993

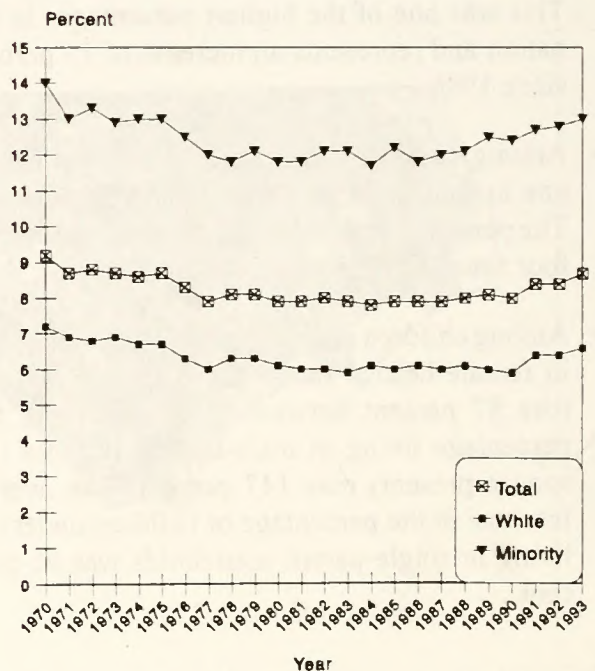


Figure 4
Low Birthweight Rates

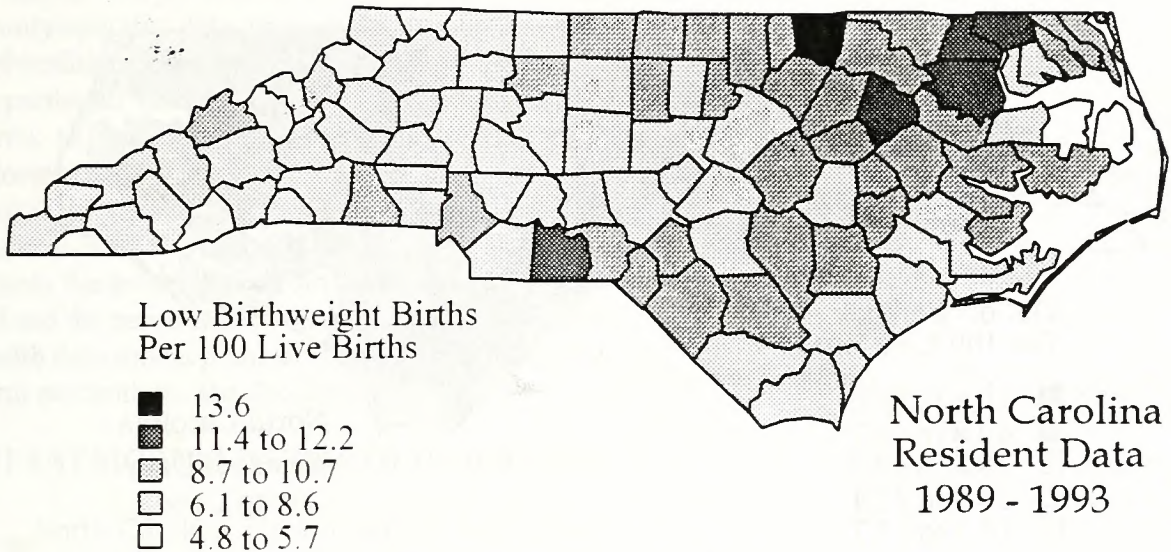
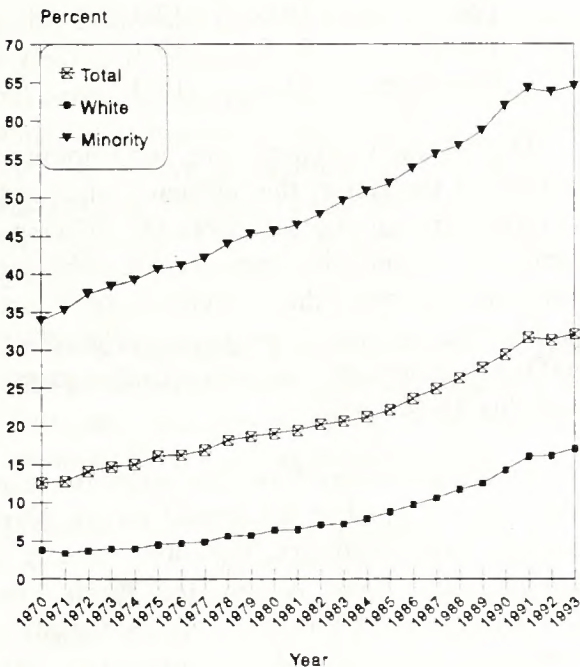


Figure 5
**PERCENT OUT-OF-WEDLOCK
BIRTHS BY RACE**
North Carolina, 1970-1993



In its 1995 ranking of states, KIDS COUNT uses the birth rate for unmarried females aged 15-19 as one of its key measures of children's well-being. In 1992, 11 states had a higher percentage than North Carolina.⁸

Figure 7 shows race-specific trends in the percentage of mothers having late or no prenatal care. The high percentages during 1988-1991 correspond to high birth rates during those years, a July 1989 substantial cut in the State Abortion Fund,¹² and rising unemployment in 1990 and 1991.¹³

The Year 2000 national objective for prenatal care is that at least 90 percent of all women receive care in the first trimester. In 1993, the percentages for North Carolina whites and minorities were 87 and 67 respectively.

In 1988, information on smoking during pregnancy was added to the North Carolina birth certificate. Annual results indicate a downward trend, as also observed in the nation. However, compared to U.S. mothers, North Carolina mothers appear about 15 percent more likely to smoke during pregnancy.

Figure 6
Out-of-Wedlock Birth Rates

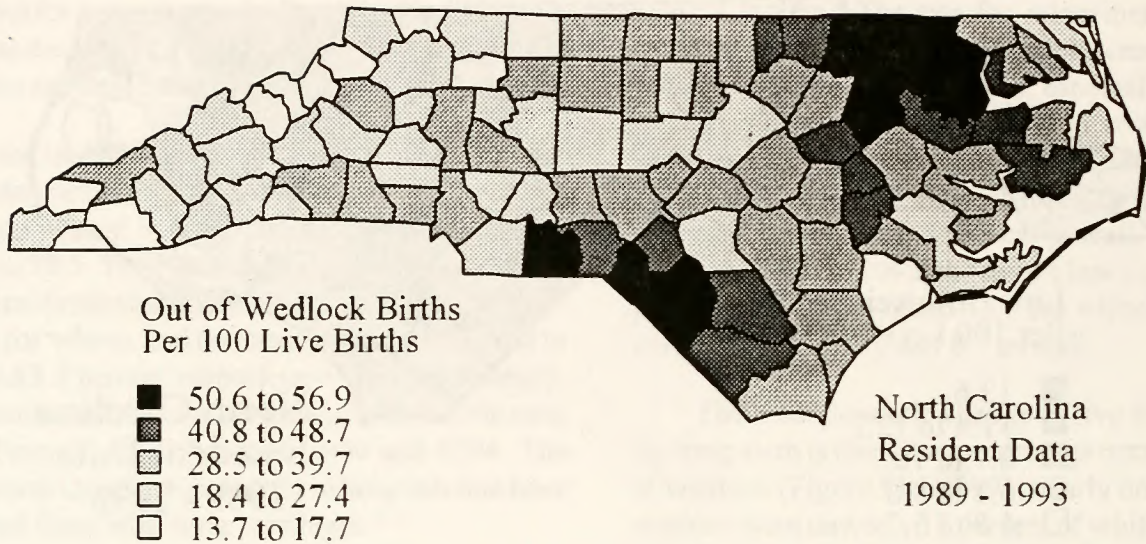
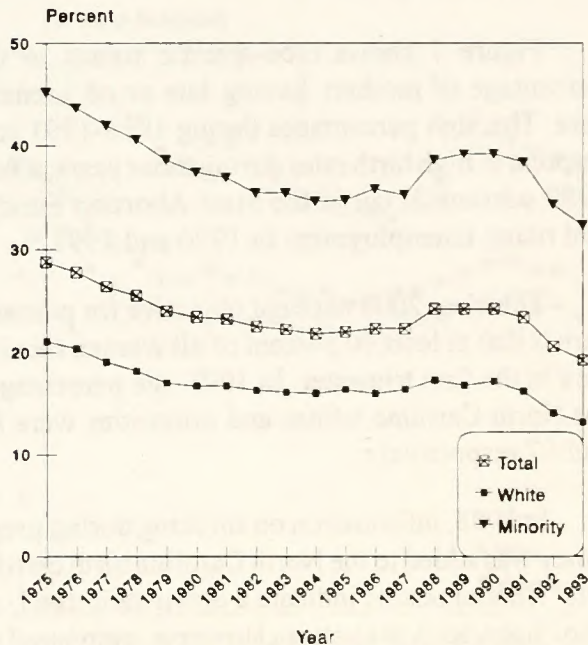


Figure 7
PERCENT OF BIRTHS
WITH LATE/NO PRENATAL CARE* BY RACE
North Carolina, 1975-1993



The state and U.S. percentages in 1991 (latest available for U.S.) were:

	<u>N.C.</u> ³	<u>U.S.</u> ¹⁴
Total	19.6	17.1
Whites	21.5	18.1
Minorities	15.7	13.4

Marital status, prenatal care, and smoking are but three of the factors that influence birthweight and infant survival. A previously cited 1994 report³ examines those and other demographic, behavioral, and medical factors of the mother that are known to influence the outcome of pregnancy. The effect of smoking on pregnancy outcome is further assessed in another 1994 report.¹

Additional county-level data pertaining to live births are contained in the annual report, **North Carolina Vital Statistics, Volume 1**, and in the county-specific **Basic Automated Birth Yearbook**. Referred to as **The BABY Book**, the latter is produced on microfiche. Both reports are available

*No prenatal care, or care beginning after the first trimester

in county health departments or by request to the State Center. The biennial **North Carolina Health Statistics Pocket Guide** also provides state and county-specific data relative to live births. The 1994 edition (1993 data) has recently been released. A particular item of interest is the percentage of births to mothers who participate in WIC (see Glossary). Prenatal WIC participation has been shown to reduce low birthweight and newborn medical costs.¹⁵ The Pocket Guide also shows by county the percentage of births paid for by Medicaid and the percentage of births to mothers who had health department prenatal care. Selected other live birth percentages are also shown.

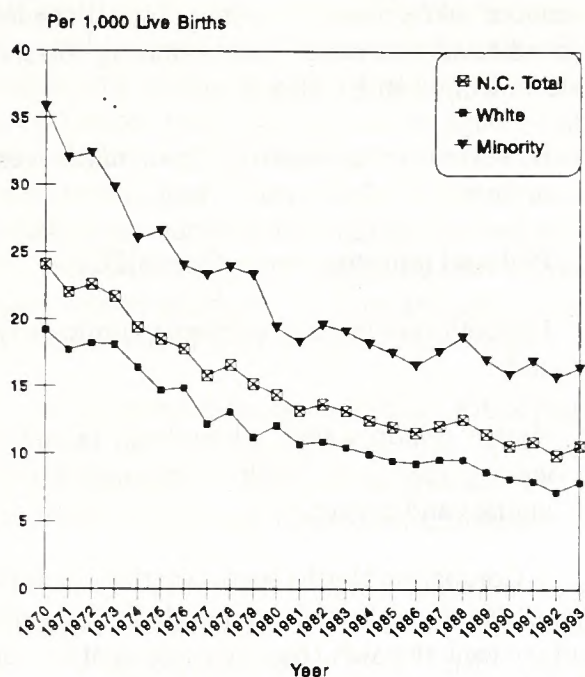
INFANT MORTALITY (BIRTH TO AGE ONE)

North Carolina has a history of high infant mortality. In response to that general trend and to the state's particularly high rate in 1988, Governor James G. Martin created the Governor's Commission on Reduction of Infant Mortality on December 13, 1989. The legislature followed with sizable appropriations to combat the problem.

The state's infant mortality rate dropped in 1992 to 9.9, the lowest in the state's history. Still, more than 1,000 babies died during their first year of life. Following that low point, the rate then rose in 1993 to 10.6 deaths per 1,000 live births. While that seven percent increase is disappointing, some random fluctuation in the single-year rate does occur, as shown in Figure 8. Nevertheless, it is reasonable to ask what factors were involved in the 1993 increase. These facts are immediately observed:

- Among whites, the increase occurred largely in the postneonatal period (28 days to one year of age) and was due primarily to an increase in sudden infant death syndrome (SIDS).
- Among minorities, the increase occurred entirely in the neonatal period (birth to 28 days of age) and was due primarily to an increase in deaths related to pregnancy complications, such

Figure 8
INFANT DEATH RATES BY RACE
North Carolina, 1970-1993



Note: 1993 U.S. data are provisional.

as cervical incompetence and premature rupture of membranes – complications that often result in extremely preterm delivery.

Analysis of the birthweight and maternal factors associated with the above increases, which requires files of infant deaths matched to the corresponding birth certificates, is beyond the scope of this report. However, these general changes in the 1993 birth population are noted:

- An increased percentage of white infants weighed 500-1,499 grams while an increased percentage of minority infants weighed less than 500 grams.
- Among mothers of both race groups, increased percentages were young (under age 20), older (35 and above), and unmarried. But more received early prenatal care and fewer smoked during pregnancy.

Table 6 shows recent changes in infant death rates by race and by cause. Results show a greater decrease in the death rate of whites (18%) than minorities (8%). This difference is due largely to reduced white mortality from perinatal conditions (conditions that occur before, during, or shortly after birth). Table 6 also shows:

- Increased white mortality from motor vehicle injuries;
- Reduced minority deaths from SIDS;
- For both race groups, increased homicide rates; and
- Higher minority than white death rates for all leading causes of death except motor vehicle injuries and cancer.

Comparing North Carolina to the U.S. for data year 1992 (latest final data for the U.S.),¹⁶ the state's infant death rate was 16 percent higher at 9.9 versus 8.5 deaths per 1,000 live births; only seven states had a higher rate. By race, North Carolina's white

and minority infant death rates were higher than those of the U.S. by four and nine percent respectively. Thus, it is a difference in racial distribution (proportionately more minority births in N.C. than in U.S.) that accounts for a substantial part of the state's overall excess in infant mortality.

In a recent study of changes in the state's infant mortality rate between 1987-88 and 1991-92,⁵ Meyer et al. found that the substantial decline was attributable to improvements in birthweight-specific survival rather than changes in the birthweight distribution. Improved survival of low-birthweight infants accounted for about 60 percent of the death rate decrease over the period of study; improvements among normal birthweight infants accounted for about 40 percent of the decline. The study also found that the minority infant's higher risk of mortality was particularly pronounced for causes of death associated with extreme prematurity. The authors conclude that "efforts directed at preventing the three leading causes of infant death – birth defects, low birthweight, and SIDS – hold the greatest potential for achieving further significant reductions in infant mortality."

Figure 9
Infant Death Rates

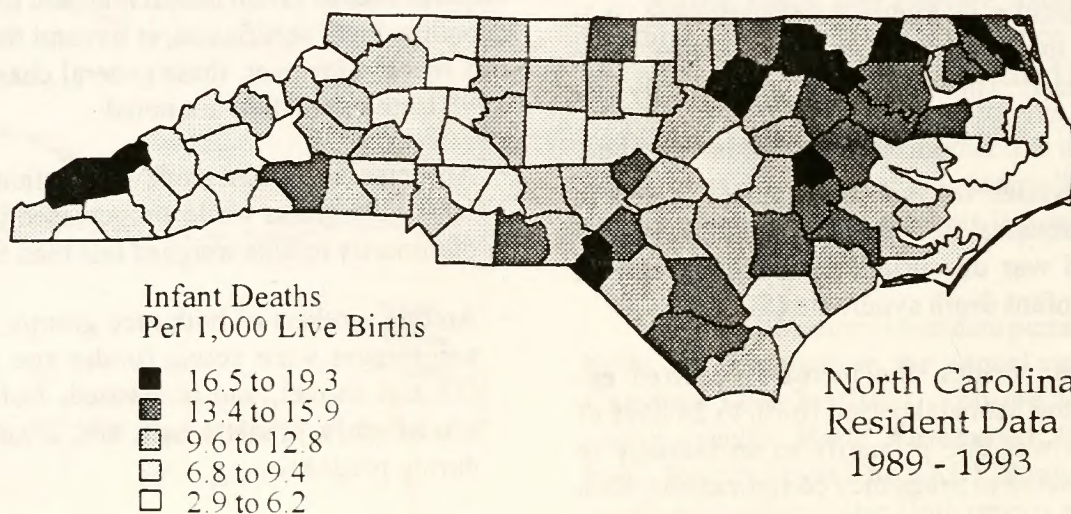
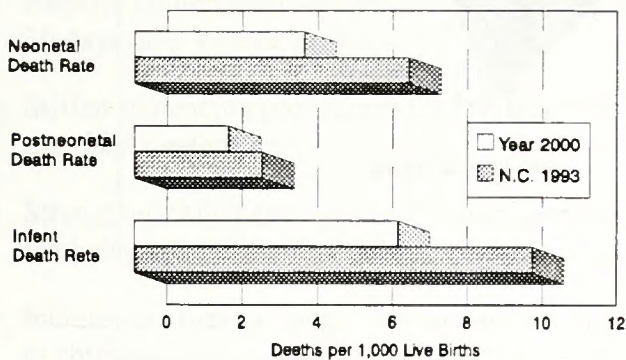


Figure 9 depicts the 1989-93 infant death rates for North Carolina counties. For county-specific details on the causes of infant death, the reader is referred to the annual report, **Detailed Mortality Statistics**, available on microfiche in county health departments or by request to the State Center.

Finally, Figure 10 compares the state's 1993 neonatal, postneonatal, and infant death rates to national targets for the Year 2000. Clearly, North Carolina has a long way to go, especially in the area of neonatal death. The reader should consult the Appendix, Objective 14.1, concerning objectives for minority populations.

Figure 10
Infant Mortality Objectives
"Year 2000" versus North Carolina 1993



CHILDHOOD MORTALITY (AGES 1-9)

Using published rates for 1983-87,¹⁷ Table 7 examines recent changes in the state's death rates for children 1-4 and 5-9 years of age by cause and by race. Results show, at the younger ages (1-4), greater white than minority decreases in motor vehicle and heart disease death rates; however, whites had a substantial increase in homicide.

At older ages (5-9), comparisons by race also reveal that whites had a greater reduction in motor vehicle fatalities while minorities had a greater reduction in death from non-motor-vehicle injuries. Minorities had a reduction in homicide, while

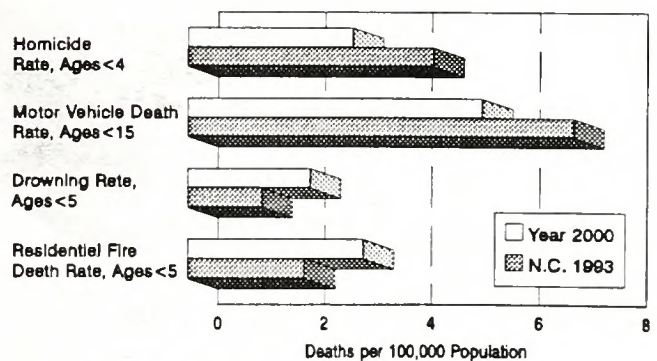
both race groups had decreases in death from birth defects.

Again comparing the state and the nation for data year 1992,¹⁶ white and minority North Carolinians aged 1-4 had higher death rates than their U.S. counterparts with excesses of about 10 and 18 percent respectively. N.C. minorities aged 5-9 also had a slightly higher rate (6 percent). The state's excess among ages 1-4 involved a 30 percent excess in death from unintentional injuries. Among the 81 N.C. unintentional injury deaths, 26 resulted from motor vehicle accidents, 25 from accidents by fire and flame, and 12 from accidental drowning.

In its national rankings, KIDS COUNT uses the death rate for ages 1-14 as one of 10 key indicators of the well-being of children. In 1992, 10 states had a higher rate than North Carolina.⁸

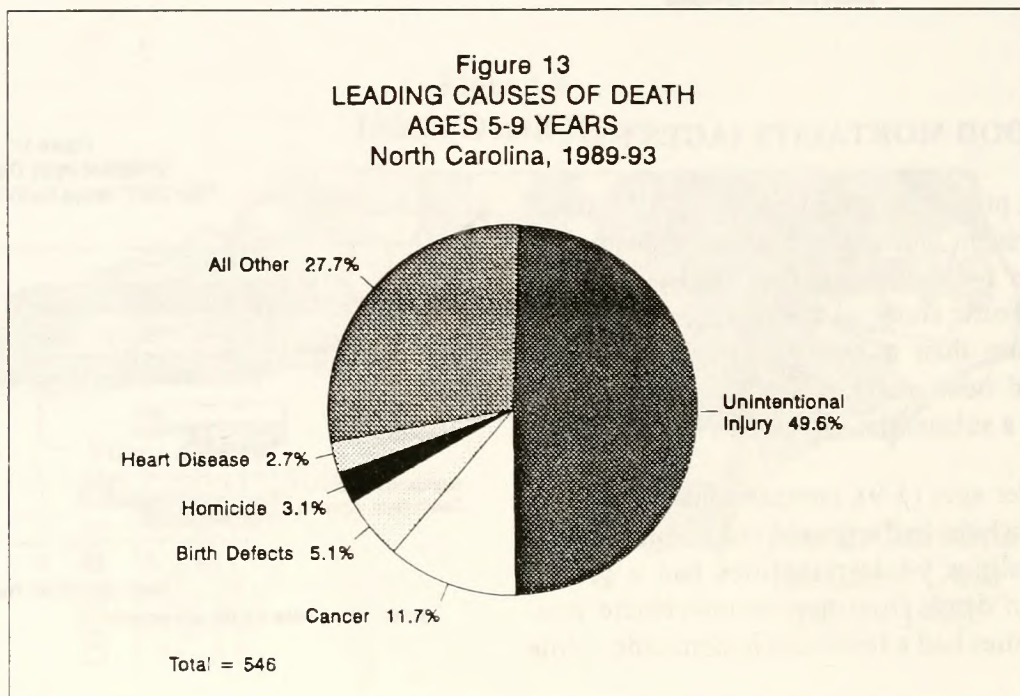
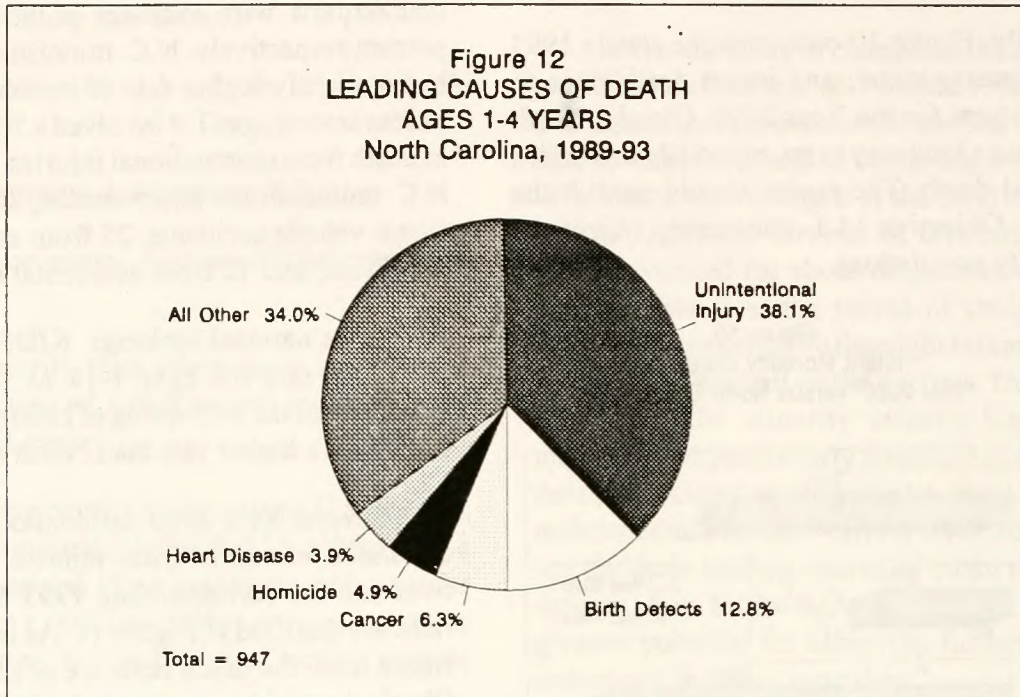
Several Year 2000 national objectives target childhood mortality from injuries. Those objectives and the corresponding 1993 North Carolina rates are depicted in Figure 11. As indicated by the figure note, the death rates are not age-adjusted.¹⁸ Clearly, homicide and motor vehicle fatalities among the young are major concerns in North Carolina.

Figure 11
Childhood Injury Objectives
"Year 2000" versus North Carolina 1993



Note: These rates are not age-adjusted.

Finally, Figures 12 and 13 depict for ages 1-4 and 5-9 the 1989-93 percentages of North Carolina deaths due to the five leading causes. For both age groups, unintentional injuries are the major cause of death, and homicide still ranks among the leading causes. These childhood deaths should challenge the state's public health community to join forces with law enforcement, social services, educators, and others to combat the problems of childhood injury and its underlying causes.



Recent efforts in that direction include the creation of the North Carolina Child Fatality Task Force in 1991, the state Child Fatality Prevention Team (CFPT) in 1992, and local CFPTs in each county by July 1995. Together, these three components form the North Carolina Child Fatality Prevention System. The purposes of the system are to assess records of all deaths of children in North Carolina from birth to age 18, understand the causes of childhood deaths, identify deficiencies in the delivery of services to children and their families, and make and implement recommendations for changes to laws, rules, and policies to prevent future child deaths.¹⁹

In 1993 and 1994, the Child Fatality Task Force successfully recommended statutes that:

- Require kindergarten health assessments within 30 days after school begins;
- Stiffen sentencing procedures for DWIs involving child passengers;
- Strengthen child passenger safety laws regarding seatbelts and child safety seats;
- Increase charges for illegal handgun distribution to children; and
- Improve services to abused and neglected children.¹⁹

CHILD ABUSE AND NEGLECT

In FY 1994, the state's Division of Social Services received 59,907 reports of abuse and neglect involving a total of 95,811 children. More than half (53%) were under age 7 and 30 percent were 7-12 years old. More than half (55%) were white; 39 percent were black. About half (51%) were female.

Table 8 shows selected statistics for FY 1994 with the corresponding percent changes since FY 1990. The number of reports of abused children has risen 82 percent over the last four years with the

largest increases occurring among younger children, blacks, and American Indians. The following numbers have at least doubled in four years: reports received from a parent; substantiated cases in which drug problems were a primary contributory factor; and substantiated cases perpetrated by a foster parent, grandparent, or other nonparent relative/caretaker.

The state Child Fatality Prevention Team describes the 23 children who died from physical abuse by caretakers during 1992 . . .²⁰

- The 23 deaths represent three-quarters of the homicides of North Carolinians aged 0-9 in 1992. The proportion is even higher for very young children. All but one of the 12 homicides of infants (under one year) were attributed to child abuse.
- Head trauma caused 61 percent of the deaths.
- Mothers, followed by mothers' boyfriends, were the most frequent suspected perpetrators.
- Child Protective Services in the Department of Social Services knew of only five of the 23 cases prior to the child's death.

Reflecting the increasing number of child abuse/neglect cases, the number of children in out-of-home placement has increased. However, with passage of the 1991 Family Preservation Act, the state now attempts to provide intensive in-home services to avoid unnecessary out-of-home placement. In 1993, the Division of Social Services also began two new initiatives in the area of child services: 1) a mandated biennial review of every county's child protective services system and 2) a child welfare reform plan.²¹

For statistics on reports and substantiated cases of child abuse and neglect at the county level, contact the Child Protective Services Section in the Division of Social Services, Department of Human Resources.

Because of the difficulties involved in obtaining valid and reliable measures of child maltreatment, Healthy People 2000 targets the reversal of the rising incidence of abuse/neglect rather than a specific percentage reduction (Objective 7.4 of the Appendix). In North Carolina in FY 1994, the number of substantiated cases per 1,000 persons 0-17 was about 1.8 for abuse, 16.1 for neglect, 0.2 for dependency, and 18.1 overall. The 0-17 population estimate for 1993 was used to estimate these rates. First categorized in FY 1994, "dependency" refers to a juvenile in need of assistance or placement.

BIRTH DEFECTS

As observed in Table 6, birth defects (congenital anomalies) are a major cause of infant mortality. Among all North Carolina infant deaths during 1989-93, the proportions attributed to birth defects were 23 percent for whites and 13 percent for minorities. Overall, more than 200 North Carolina infants die each year from birth defects while another 2,800 survive beyond their first year of life with some degree of physical or developmental impairment due to birth defects.

The North Carolina Birth Defects Registry combines data from several separate sources to provide an estimate of how many birth defects occur in the state. Sources are birth and infant death records, newborn Medicaid claims, newborn hospital discharge records, neonatal intensive care unit records, and Children's Special Health Services (CSHS) records. The CSHS program serves poverty-level children with various developmental disabilities who are treated through local public health departments.

As shown in Table 9 and Figure 14, the state's 1989-91 rates of birth defects were higher for minorities and males than for whites and females. Minority rates were particularly high for central nervous system, cardiovascular, and musculoskeletal defects while male rates were high for respiratory and genitourinary defects. The latter result is

due largely to hypospadias, an anomaly in which the urethra opens on the underside of the penis or on the perineum (region between the scrotum and anus).

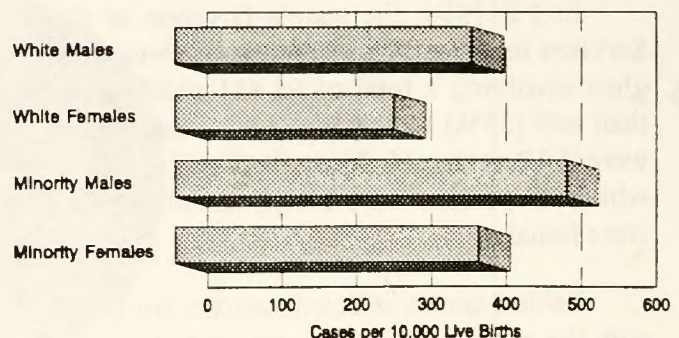
With more than 3,000 babies born each year with major structural birth defects, the challenge is that many types of defects are currently preventable, for example, fetal alcohol syndrome and neural tube defects.

Note: Due to the way data are collected in the birth defects registry, the figures presented here reflect primarily congenital defects that are detectable in the newborn period.

DEVELOPMENTAL DISABILITIES

A number of North Carolina early intervention programs identify children with or at risk for developmental delay (see Glossary). These programs are the Child Service Coordination (CSC) Program, Children's Special Health Services, Developmental Day, Early Childhood Intervention, and Developmental Evaluation Centers.

Figure 14
Birth Defects Incidence Rates* by Race-Sex
N.C. Birth Defects Registry 1989-91



*Minor malformations excluded.

Based on FY 1992 data from these several programs, rates per 1,000 population aged 0-3 indicate that females are somewhat more likely than males to be classified as having or being at risk for developmental delay. Minority children appear more than twice as likely as white children to be so classified. The extent to which the difference by race reflects differential use of public versus private providers is unknown.

Altogether, 20,024 children were classified as having or being at risk for developmental delay during FY 1992. Among those, 28 percent were definitively diagnosed. The percentage diagnosed was higher for males and whites than for females and minorities.

Among 5,269 children diagnosed in a Developmental Evaluation Center during FY 1992, "specific delays in development" was the leading principal or primary diagnosis. Other frequent diagnoses were: disorders relating to short gestation and low birthweight; cerebral palsy; congenital anomalies of the nervous system; chromosomal anomalies; and symptoms concerning nutrition, metabolism, and development.

In a 1994 study of children (ages 0-3) active in the state's CSC program,⁴ Herrick found basic living services, such as food and transportation, to be especially needed by Medicaid-eligible youth while assessment services, such as vision or hearing evaluations, were especially needed by non-Medicaid participants. The study also found that the proportion of needed services met within a 6-month interval was greater among Medicaid-eligible blacks than among non-Medicaid blacks. No such difference was found among white children. The author concludes that "Medicaid may be an important determinant in the delivery of early intervention services for minorities."

LEAD POISONING

Although it is entirely preventable, lead poisoning is a major pediatric health problem. Lead affects virtually every organ system and is particularly harmful to the developing brain and nervous system of fetuses and young children. Sources of exposure for children include lead-based paint, lead-contaminated soil, lead-soldered cans, house dust and drinking water, parental occupations and hobbies, industrial emissions, lead-glazed ceramics, and some traditional medicines and cosmetics. Ingestion is the primary route of exposure for children.²²

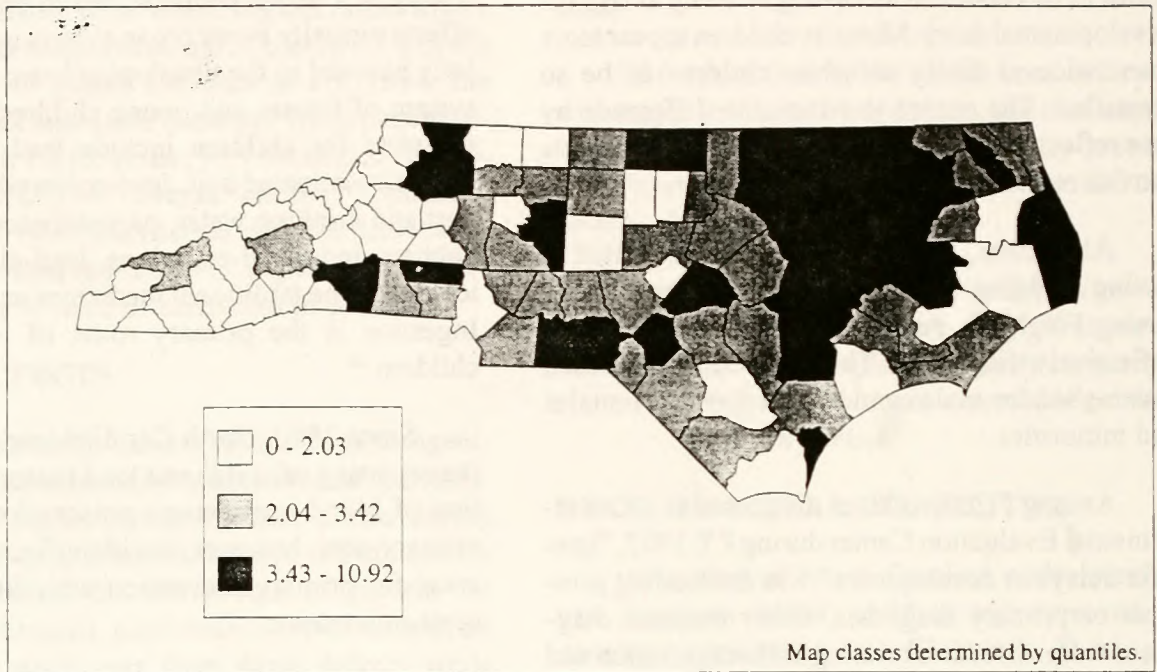
Since 1990, North Carolina law has required the reporting of childhood lead poisoning. Reduction of blood lead among poisoned children is a primary goal; however, the identification of target areas for primary prevention activities is also of great importance.

Childhood lead screening is required for all Medicaid-eligible children and children receiving well-child care through local health departments. North Carolina is the first state to offer, for all young children at no cost, blood lead analysis through the state laboratory.

Between October 1, 1992 and September 30, 1994, 114,034 individual children were screened. Those results are displayed in Table 10, where it is shown that elevated blood lead levels (≥ 10 $\mu\text{g}/\text{dL}$) are most prevalent among children aged 1-3, blacks, males, and rural residents.

For the two-year period ending September 30, 1994, Figure 15 shows for North Carolina counties the percentages of screened children who had blood lead levels ≥ 15 $\mu\text{g}/\text{dL}$. Readers will note the very large pocket of high-rate counties in the east.

Figure 15
Percent of Children Screened with Blood Lead Level $\geq 15 \mu\text{g/dL}$
October 1, 1992 - September 30, 1994



In a published study of 20,720 North Carolina children tested through routine screening programs,²³ it was found that children living in rural areas were at significantly higher risk of lead exposure than were urban children. As a result, a 12-county region in the northeastern portion of the state has been targeted for special intervention services.

Local health department staff receive periodic surveillance reports and are contacted by telephone when confirmed elevated blood leads require environmental intervention (blood leads $\geq 20 \mu\text{g/dL}$). Environmental intervention involves a comprehensive investigation to determine and eliminate the sources of the child's lead exposure. In 1993, environmental intervention was required for 318 children. In the first nine months of 1994, 261 additional children were identified.

HEALTH PROBLEMS IN PUBLIC SCHOOLS

Between 1985 and 1993, the number of impaired children aged 5-9 who were served in public schools increased about 35 percent (Table 11). The percentage increase was especially large for autism and for "other health impaired." More stringent academic requirements in regular education have resulted in increased referrals for special education. Note that "other" now includes attention deficit disorder; see note 5 of Table 11.

In 1993, speech impairments accounted for one-half of the impaired school population aged 5-9. Learning disabled and mentally handicapped children were also prevalent among the impaired population.

The terms used in Table 11 are defined in the Glossary, which begins on page 30.

INFECTIOUS DISEASES

Past progress notwithstanding, infectious diseases remain important causes of illness and death in the United States, and the very young are at excess risk for some diseases.

Table 12 shows, for selected reportable diseases, the age-race-specific numbers reported for ages 0-9 during 1993. Attention is immediately drawn to the cases of vaccine-preventable disease: 10 cases of *Haemophilus Influenzae b*, 35 cases of mumps, and 139 cases of whooping cough (pertussis). Better immunization coverage may be indicated; however, with at least three doses of pertussis vaccine considered necessary for protection, infants are not adequately protected against pertussis prior to six months of age.⁹

A Year 2000 health objective for the U.S. is to reduce indigenous cases of vaccine-preventable diseases. A major step in that direction is an effort to develop a safer pertussis vaccine, which should lead to increased use among the young.⁹

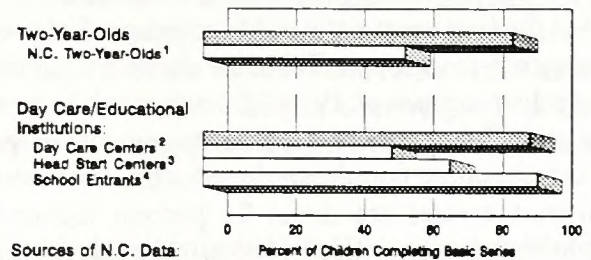
Also of note in Table 12 are the race-specific numbers for certain diseases. For example, all or nearly all of AIDS, malaria, congenital syphilis, and gonorrhea cases involved minorities while very high percentages of hepatitis A and Rocky Mountain spotted fever cases involved whites. In considering these results, the reader should keep in mind that infectious disease counts are subject to testing and reporting biases which tend to underrepresent persons tested in the private sector.

IMMUNIZATION LEVELS

For young children entering North Carolina schools (grades K-1) in 1993, immunization levels appear reasonably good with 97 percent having completed the required basic series (Table 13). Among children enrolled in day care and head start centers, however, many had not completed the required basic series due to absence of the *Haemophilus Influenzae b* (Hib) vaccine, which was first required in North Carolina in 1991. Hepatitis B vaccine is also now required for children born after July 1, 1994.²⁴

The Year 2000 national immunization objectives for youth are to achieve basic immunizations among at least 90 percent of children under age 2 and at least 95 percent of children in licensed child care facilities and kindergarten through post-secondary education institutions (see Appendix, Objective 20.11). The objective for 2-year-olds may not include the Hib vaccine as part of the required series since it is not yet required in all states. The national objectives and available North Carolina percentages are depicted in Figure 16.

Figure 16
Immunization Objectives
"Year 2000" versus North Carolina 1993/1994



Sources of N.C. Data:

- 1 Retrospective study of children in first grade in 1994.
- 2 Licensed Day Care Centers, Fiscal Year 1993. Includes Hib.
- 3 Head Start Centers, Fiscal Year 1993. Includes Hib.
- 4 Kindergarten and first grade entrants, September 1993.

■ Year 2000 □ NC 1993/1994

In a 1994 retrospective study of North Carolina first graders,²⁵ it was found that only 59 percent had been appropriately immunized by the age of two, and this did not include the more recently required Hib and hepatitis B vaccines.

In a Spring 1994 study designed to assess the health and human service needs of pregnant women and young children, counties were asked to provide data on the immunization levels of their 2-year-olds. Among 58 reporting counties, 41 (71%) reported up-to-date immunizations for 70 percent or less. Immunization levels were higher among public-clinic 2-year-olds than others.²⁶

Using federal money, a statewide immunization campaign was launched in April 1993. Federal and state funds now provide childhood vaccines free of charge, and a statewide immunization registry and notification system are in the final stages of development prior to testing in several counties.

CANCER INCIDENCE

The North Carolina Central Cancer Registry (CCR), located within the State Center, collects information on all new cases of cancer diagnosed in the state. The resulting data are used to monitor cancer cases, support cancer research, and support cancer program planning, development, and evaluation efforts.

The CCR began operating in 1987, but 1990 was the first year of statewide coverage. For young age-race-sex groups, Table 14 shows the percentage distributions of 1990-92 new cases by site and stage. The numbers are too sparse to compute corresponding population-based rates; but for total sites, the rates are about 25 percent higher for whites than minorities and about 65 percent higher at younger ages (0-4) than older (5-9).

As shown in Table 14, lymphoid leukemia and cancer of the brain/central nervous system are the leading cancer diagnoses for children. Nationally, the five-year survival rate for lymphoid leukemia was 77 percent in 1983-89 compared to only four percent in 1960-63.^{27,28}

HOSPITALIZATIONS

Data on hospital inpatient services are routinely collected by the Medical Database Commission. Age-specific data are not routinely available, however.

For selected leading primary diagnoses, Table 15 provides by age and sex the numbers and rates for young children (ages 0-9) discharged from North Carolina hospitals during 1992, the latest year for which data were accessible. These data do **not** include 91,902 normal live births.

Compared to their female counterparts, young males appear at excess risk of hospitalization for pulmonary conditions, especially at younger ages; mental disorders at older ages; congenital anomalies; otitis media (inflammation of middle ear); and injury and poisoning. Young females, on the other hand, have higher hospital morbidity due to genitourinary diagnoses.

In addition to the leading primary diagnoses of Table 15, hospitalizations due to a number of less-frequent childhood conditions are of interest. These include, in decreasing order of the number of discharges (aged 0-9): meningitis due to enterovirus (153), chronic disease of tonsils/adenoids (152), lymphoid leukemia (99), chicken pox (95), cystic fibrosis (94), herpes simplex (77), infantile cerebral palsy (59), cancer of the brain (55), myeloid leukemia (31), infectious mononucleosis (29), whooping cough (29), and rubella (9). Most of the vaccine-preventable diseases involved younger children.

As a result of changes in the Uniform Claim Form regulations for health insurance companies, hospital discharge reporting began in 1995 to include patient's race (but not ethnicity) and will include the external causes of injury beginning in October 1995. These data are needed to document the racial and cause-of-injury factors associated with hospital morbidity among North Carolinians of all ages.

MENTAL HEALTH

As shown in Table 16, the number of young children served in Area Mental Health Centers (AMHCs) more than doubled over the last decade to 24,439 in FY 1994. The **percentage** increases were particularly large for developmental diagnoses among very young children (ages 0-4) and minorities; but increases in mental illness diagnoses were also substantial, especially for older children (ages 5-9) and minorities.

In terms of **actual numbers**, increases in AMHC services have largely involved developmental problems at ages 0-4 and mental illness at

ages 5-9. The numerical increases have been slightly greater for whites than minorities and substantially greater for males than for females.

A long-term trend away from institutionalization does not account for the AMHC growth of the past decade. Children aged 0-9 who were served in state psychiatric hospitals and mental retardation centers numbered only 100 in 1984, dropping to 52 in 1994, according to data from the Division of Mental Health, Developmental Disabilities, and Substance Abuse Services. It is probable that federal and state early childhood intervention legislation accounts for much of the AMHC growth since 1987.

ORAL HEALTH

A stratified cluster sample of North Carolina public school classrooms in school year 1986-87 resulted in 3,018 oral examinations of students aged 6-11 years.²⁹ Results showed a substantial decrease in decayed, missing, and filled teeth (DMFT) compared to a decade earlier. For whites, the DMFT score decreased from 1.4 in 1976 to 0.6 in 1986. For minorities, the corresponding decline was 1.2 to 0.6, identical to the 1986 score for whites.

In 1986, young minority children had dental sealants half as often as whites and had a strikingly higher prevalence of tartar above and below the gum line. Among older youth (ages 12-17), the prevalence of receding gums was also higher among minorities than whites.

In a previously cited 1994 study,²⁶ 71 counties reported on the dental status of children entering kindergarten in 1993. Among those 56,162 children, about 15 percent had untreated dental problems.

As specified in the Appendix, Year 2000 health objectives for the nation's younger children include two related to oral health. They call for the reduction of dental caries and untreated dental caries (in permanent or primary teeth) to less than 35 percent and 20 percent respectively of children aged 6-8.

See Objectives 13.1 and 13.2, noting that minority groups are specifically targeted. Also, Objective 13.8 calls for increasing to 50 percent the proportion of children who have received protective sealants on the occlusal (chewing) surfaces of permanent molar teeth.⁹

NUTRITION

Overweight

Overweight acquired during childhood or adolescence may persist into adulthood and increase the risk for some chronic diseases later in life. Overweight children may also experience psychological stress.⁹

Although standard values for defining overweight in childhood have not been determined,³⁰ Table 17 uses the same criteria for ages 5-9 as was used in the earlier study of overweight in adolescence.⁶ Comparable reference data were not available for children under age 5.

Body Mass Index (BMI) is calculated by dividing weight in kilograms by the square of height in meters. The cutpoints used to define overweight are the age-sex-specific 85th percentile values for the combined samples of U.S. children examined in the first two National Health and Nutrition Examination Surveys (NHANES I and NHANES II, 1971-1980).³¹ By that definition, 15 percent of children are expected to be above the 85th percentile.

Using 1988-91 data from the state's Child Health Program, Table 17 shows, for each age and sex, the numbers and percentages of total, white, and black children above the NHANES 85th percentile. The numbers of cases were insufficient to examine the data separately for other race groups and Hispanics.

The percentages of Table 17 will be used as baselines against which to compare future prevalences of overweight among children seen in health departments. Compared to 26.9 percent in

1988-91, the overall prevalences of overweight among Child Health Program participants aged 5-9 were 28.6 and 28.3 percent in 1992 and 1993 respectively.

In the absence of BMI reference data for children under age 5, weight-for-height reference data³² have been used to examine overweight among children aged 2-4 who participated in the WIC Program in 1992 and 1993. For each year, one record per child was used – the latest visit on which height and weight were recorded. Overweight is defined here as weight-for-height above the 85th percentile of children in the CDC/WHO International Growth Reference.³² By that definition, 15 percent of children are expected to be above the 85th percentile of weight for height.

The upper portion of Table 18 examines the 1992 results by race and sex. Those percentages will be used as baselines against which to compare future prevalences of overweight among WIC children aged 2-4. Compared to 19.0 percent in 1992, the overall prevalence was higher at 21.4 percent in 1993. Details of the 1993 data may be obtained from the WIC Program.

Growth Retardation

Year 2000 health objective 2.4 calls for the reduction of growth retardation among low-income children aged 5 and younger to less than 10 percent (growth retardation being defined as height-for-age below the 5th percentile of children in the reference population, see Appendix). Given that definition, five percent of children are expected to be below the 5th percentile of height for age. A prevalence of more than five percent suggests that the prevalence of growth retardation is excessive in the population observed.⁹

Using children aged 2-4 who participated in the WIC Program in 1992, the lower portion of Table 18 shows by race and sex the numbers and percentages of children below the 5th percentile of height for age. These prevalences will serve as baselines against which to assess future changes in

the linear growth status of WIC children. The overall prevalence of “apparent” growth retardation was 7.3 percent in 1993 compared to 7.7 percent in 1992. Details of the 1993 data may be obtained from the WIC Program.

Breastfeeding

Breastfeeding is the optimal way of nurturing full-term infants. Human milk contains the ideal balance of nutrients, enzymes, immunoglobulin, anti-infective and anti-inflammatory substances, hormones, and growth factors.⁹

Using data from the North Carolina WIC Program and from Ross Laboratories Mothers’ Survey,³³ Table 19 shows the percentages of N.C. and U.S. WIC infants and total U.S. infants who breastfed during 1991-1993. The lower breastfeeding rates for WIC infants are consistent with low breastfeeding rates among low-income mothers. The particularly low rates for North Carolina WIC infants are consistent with low breastfeeding rates among blacks and in the southeastern United States.³³ Also, North Carolina mothers of young children are particularly likely to work outside the home, which may contribute to the low percentages for N.C. WIC infants.

Although the percentages for North Carolina WIC infants are low, the 1991-1993 increases are encouraging. During that 2-year interval, the percentage of newborns breastfeeding at 5-6 months of age more than doubled; and the percentage of newborn breastfeeders who **still** breastfed at 5-6 months rose 69 percent to 36.4. That percentage (36.4) exceeds the U.S. WIC percentage by 30 percent.

The Year 2000 objective for breastfeeding (Objective 14.9) is to increase to 75 percent the proportion of newborns who breastfeed and to 50 percent the proportion of newborns who breastfeed until 5-6 months.⁹ The corresponding percentages for N.C. WIC infants were 28.4 and 10.3 respectively in 1993 (Table 19). Percentages for the total state are not available.

PHYSICAL FITNESS

Conducted in 1992, the North Carolina Children and Youth Fitness Study (NCCYFS)³⁴ was designed to measure the physical fitness and physical activity patterns of children in grades 1, 3, 6, and 9. Comparing those results to corresponding information from national surveys reveals that North Carolina children have lower scores on most fitness measures, especially body composition, cardiorespiratory, and flexibility tests.

The NCCYFS also revealed that North Carolina parents seldom exercise with their children and that schools offer physical education only one day per week on average. The study showed that a child's fitness assessments were correlated with his television viewing time and his parents' activity levels.

There are four Year 2000 fitness goals for children; see Objectives 1.3-1.6 of the Appendix. The NCCYFS results should provide the necessary impetus for improving the quantity and quality of physical education in North Carolina schools.

UNINSURED CHILDREN

The Southern Institute on Children and Families in Columbia, S.C., reports that an estimated 189,000 North Carolina children aged 0-10 years had no health insurance in 1990 (based on March 1991 U.S. Current Population Survey). This number represents about 19 percent of the state's 1990 estimated population aged 0-10. Additionally, an estimated 89,000 North Carolina youths aged 11-17 (14%) had no health insurance.³⁵ Together, these 278,000 youth represent about 17 percent of the state's 0-17 population in 1990.

For children aged five and younger, North Carolina's 1990 percentage uninsured (19.3) was higher than the nation's (17.8). Among those estimated 106,000 uninsured N.C. children aged 0-5, about 63 percent lived in families with incomes below 200 percent of the federal poverty level.³⁵

Other estimates of the uninsured child population,^{36,37} which are also based on the U.S. Current Population Survey (CPS), appear at variance with the Southern Institute estimates, as shown in Table 20. For ages 0-5, the 1992 estimates³⁷ appear especially low. However, as described below, the state's Medicaid program expanded broadly after 1990; thus, the number of uninsured children may be fewer now than formerly. The 1992 estimates of Table 20 are the most recent available.

MEDICAID

Medicaid is the major public program for providing health coverage for poor and low-income children. The federal government mandates that states provide Medicaid coverage for infants and children aged 0-9 at certain income levels.

Children eligible for Aid to Families with Dependent Children (AFDC) (see Glossary) are automatically eligible for Medicaid, with the AFDC income eligibility level established by each state. Among 17 southern states ranked in July 1992, North Carolina's AFDC income eligibility level for a family of three was the most liberal at 56.4 percent of the federal poverty level.³⁵

For children aged 0-5 years, Table 21 depicts substantial growth in the state's Medicaid program after new income eligibility levels were established in October 1990 (see table notes) and during increased levels of unemployment in 1991 and 1992.¹³ Much of this growth occurred in federal fiscal year (FFY) 1991 with the increases tapering off thereafter. All told, the number of Medicaid-authorized children aged 1-5 more than doubled between FFY 1990 and FFY 1994.

In considering the counts of Table 21, it is important to know that these are unduplicated counts of children authorized for Medicaid at any time during each fiscal year. At any given point in time, the numbers authorized are substantially lower, as shown in Table 22, which is discussed in the next section.

Concerning Medicaid use, a recent study found that about 38 percent of the state population aged 0-5 were authorized for Medicaid in October 1993. Of those, 61 percent actually received Medicaid during October 1993.²⁶ The referenced study also found that many health practitioners and programs do not accept Medicaid clients. For example, in 89 reporting counties in 1994, 38 percent of family physicians/general practitioners did not accept Medicaid children aged 0-4.²⁶

Effective July 1, 1994, Medicaid was expanded to cover children aged 10-18 whose family incomes are under 100 percent of poverty. The state's Health Planning Commission has recommended that Medicaid benefits be further expanded to cover: a) children aged 1-5 whose family incomes are 134-185 percent of poverty and b) children aged 6-18 whose family incomes are 101-133 percent of poverty, provided such children are not insured or otherwise eligible for Medicaid.³⁸

MEDICAID COVERAGE

Health coverage for poor and low-income children is of such critical importance that it is imperative to know and to track the extent to which Medicaid-eligible children are covered by the program.

Data from the state's Division of Medical Assistance (DMA) suggest that the Medicaid coverage of North Carolina children is very good; in fact, for ages 1-5, DMA's recent count of Medicaid authorizations exceeds the estimated population eligible by 20 percent, as shown in Table 22. Clearly, there is a problem with the estimate of the population eligible, since it is known that some eligible people never apply for benefits and public assistance programs sometimes deny coverage to eligible people. The latter point is illustrated below.

AID TO FAMILIES WITH DEPENDENT CHILDREN

The AFDC program provides cash assistance for poor families with children (see Glossary). Families eligible for AFDC are automatically eligible for Medicaid.

In a recent report by Sarah Shuptrine and Associates,³⁹ it is shown that the AFDC program has a high rate of application denials due to procedural reasons. In the nation in federal fiscal year 1991, over three million individuals, mostly children, were denied AFDC assistance. Of those, 60 percent were for procedural reasons rather than reasons related to income or resource criteria. The failure of families to obtain required wage and income verification is the major area of difficulty. It is not surprising, then, that Shuptrine has described the AFDC application process as "user unfriendly" and a "you go get it and bring it to me" system.

Quoting from an earlier work, Shuptrine asserts that the responsibility for verification documents cannot lie totally with the applicant who often has no control over employers and absent parents. The referenced report³⁹ sets forth specific recommendations and describes research and outreach efforts which demonstrate that most procedural denials are denials of persons who are in fact eligible for assistance.

Fortunately, AFDC applicants in North Carolina appear better off than those nationwide, with only 24 percent of FFY 1991 AFDC denials attributed to procedural reasons. Still, those reasons may have caused the denial of AFDC assistance to nearly 14,000 North Carolinians, mostly children, in 1991.³⁹ According to the state's Division of Social Services, that percentage has consistently declined since 1991, to only six percent in FFY 1994.

CHILDREN'S HEALTH PROGRAMS AND SELECTED INITIATIVES

Child health services are available in health departments in all 100 counties of North Carolina. Each of the following programs is available in at least 96 counties: Baby Love, Health Check/EPSTD, Maternity Care Coordination, WIC, Well-Child, Immunizations, and Child Service Coordination. A majority of county health departments also offer nutrition counseling, childbirth classes, adolescent pregnancy prevention projects, and psychological counseling; and there are 18 Developmental Evaluation Centers across the state that diagnose and treat children with developmental disability or delay. In nearly all counties, community mental health centers offer a variety of mental health services for children.²⁶

Despite these services as well as Medicaid for the medically indigent child, many children have untreated medical problems. For example, among children who entered kindergarten in 76 reporting counties in 1993, about four percent had untreated vision problems. For reporting counties, the corresponding percentages for untreated hearing, speech, and dental problems were about 3, 7, and 15 respectively.²⁶

Two recent public-private initiatives that attempt to improve the health status of children are the Healthy Start Foundation and the Partnership for Children initiative. The former is dedicated to reducing infant mortality and morbidity in North Carolina and is now in its fourth year of a 5-year grant from Glaxo, Inc. The Foundation supports and staffs the North Carolina Governor's Commission on Reduction of Infant Mortality, among other activities. More than 60 counties now have infant mortality coalitions.

The North Carolina Partnership for Children is a nonprofit public-private partnership established by the new Smart Start initiative to ensure that children are "healthy and ready to learn." Local

partnerships will bring together, outside the framework of government, public and private leaders to initiate ways to serve children and families. Initially, 12 local partnerships (11 counties and one region comprised of seven counties) have been chosen to serve as demonstration projects. Addition of the remaining counties is planned to occur over the next few years. Largely through a collaboration of existing resources, the local partnerships will seek to improve early childhood education, health care, and other crucial services.

Finally, since 1983, the private nonprofit North Carolina Child Advocacy Institute promotes the well-being of children and families by identifying needs and mobilizing public and private resources to meet those needs. The Institute published in 1994 its seventh annual *Children's Index*, the first report of its kind in the nation. Unfortunately, the index paints "a disturbing portrait of life for children and families in our state. There is more bad news than good."²¹

HEALTHY CAROLINIANS 2000

In August 1991, Governor James G. Martin established the Governor's Task Force on Health Objectives for the Year 2000. The deliberations of this 25-member body resulted in the November 1992 publication of North Carolina objectives addressing 11 broad areas of concern. For young children, specific improvement targets were established for infant mortality, low birthweight, immunization (2-year-olds, day care, and kindergarten), dental decay and sealants, physical fitness, nutrition (obesity), child abuse/maltreatment, child sexual abuse, mental health services, and screening/treatment for lead poisoning.⁴⁰

The report of the Task Force emphasizes community-based intervention strategies. To date, leaders in 56 of the state's 100 counties have plans to develop responsive health improvement plans for their communities; 21 counties already have active task forces.

SUMMARY

Information from the 1990 census indicates that poverty and single-parent homes are highly prevalent among North Carolina's youth, especially minorities. Against that backdrop are the following findings about our children's health:

Live Births

- Following recent increases, the percentage of live births that were low birthweight (5.5 pounds or less) was higher in 1993 (8.7) than at any time since 1975. The percentage for minorities is twice that for whites.
- A dramatic change in live births over the long term is the rising percentage occurring out of wedlock. In 1993, nearly one-third of new mothers were unwed – 17 percent of white mothers and 65 percent of minorities.
- Compared to a Year 2000 national objective of 90 percent, only 67 percent of minority mothers received early prenatal care in 1993.
- Compared to U.S. mothers, North Carolina mothers appear about 15 percent more likely to smoke during pregnancy. Smoking is more prevalent among pregnant whites than minorities.

Mortality

- The state's infant mortality rate dropped to 9.9 in 1992, the lowest in the state's history. Still, more than 1,000 babies died during their first year of life. Following that low rate, the rate rose to 10.6 infant deaths per 1,000 live births in 1993.
- In 1992, only seven states had a higher infant death rate than North Carolina. However, the state's white and minority infant death rates were only moderately high. Thus, it is racial distribution (proportionately more minority births in N.C.) that accounts for a large part of the state's overall excess in infant mortality.

- Both whites and minorities have recently experienced substantial increases in infant homicide.
- For youth aged 1-14 in 1991, only six states had a higher death rate than North Carolina.
- Compared to national goals for fatal childhood injuries, homicide and motor vehicle fatalities are major concerns in North Carolina.
- At least 23 children aged 0-9 died of child abuse homicide in 1992. Eleven of the children were less than a year old, and only five of the 23 were known to Child Protective Services prior to their death.

Morbidity

- The number of children reported as abused rose 82 percent over the last four years to 95,811 in FY 1994. Substantiated cases involving drugs more than doubled.
- More than 200 North Carolina infants die each year from birth defects while another 2,800 with birth defects survive their first year of life with some degree of physical or developmental impairment.
- Childhood cancer rates are higher for whites than minorities and higher for younger than older children. Lymphoid leukemia and cancer of the brain/central nervous system are the leading diagnoses.
- Immunization of preschool children is still far from complete, and cases of vaccine-preventable disease continue to occur among the young.
- Among children aged 0-5 screened in 1993-94, 21 percent had elevated blood lead levels (≥ 10 $\mu\text{g/dL}$). Percentages were higher among ages 1-3, blacks, males, and rural residents.

- Compared to a reference population, children participating in the state's Child Health and WIC programs are more likely to be overweight. The prevalence of growth retardation also appears above average among WIC children aged 2-4 years.
- Breastfeeding rates among N.C. WIC infants are low. However, recent increases are encouraging. In 1993, N.C. WIC infants were especially likely to **still** be breastfeeding at 5-6 months of age.
- Compared to other U.S. children, North Carolina children tested poorly on physical fitness measures in 1992.
- Minority children appear to have dental sealants much less often and tartar above and below the gum line much more often than whites.
- An unknown number of North Carolina children have no health insurance coverage. At least some of those children are eligible for but not enrolled in Medicaid.

DISCUSSION

In 1983 and again in 1990, State Center studies demonstrated the role of poverty in child and adolescent mortality. Those studies compared the death rate for youth receiving Aid to Families with Dependent Children (AFDC) to the death rate for other youth. Results reported in 1990 showed that AFDC children aged 28 days to 17 years experienced much higher mortality than their non-AFDC counterparts. For example, AFDC recipients were:

- Six times as likely to die from fire;
- Five times as likely to die from homicide;
- Four times as likely to die from pneumonia/influenza;
- Three times as likely to die from heart disease and birth defects; and

- Twice as likely to die from drowning and cancer.

The overall death rate for AFDC recipients was nearly three times the rate for other youth. **Further**, AFDC white mortality compared to AFDC nonwhite mortality revealed **no disparity** between the races.¹⁷

Together, the 1990 findings strongly implicate poverty and not race as a major risk factor in childhood mortality. It should be noted, too, that the true role of poverty is probably **even greater** than indicated above since non-AFDC recipients include poor children **not receiving AFDC benefits** and the attendant Medicaid benefits.

Although considerable data were available for the present report, some significant data gaps exist. The current lack of hospitalization data by race and external cause of injury has been noted along with the fact that collection of those items will commence in 1995. Also currently absent are data on hospital outpatient and nonhospital health services. The state's Medical Database Commission (MDC) is working to acquire those data; eventually, the MDC hopes to establish a statewide medical claims clearinghouse to collect data on all types of health services. Meanwhile, it is hoped that the 1995 statewide health interview survey (NCHP) and its future updates will provide some answers concerning the health status and health care of our children.

A particularly severe data gap is the lack of estimates of the uninsured population and estimates of the population eligible for public assistance programs including Medicaid, AFDC, and WIC. It seems incumbent upon the state to find some means of estimating those populations in order to accurately measure program coverage.

One mechanism would be enlargement of the U.S. Current Population Survey to provide each state with a reliable annual database to estimate those populations. Another would be to use the annual statewide health interview survey (NCHP)

for that purpose. Oversampling of minority populations would be desirable to ensure reliability and to provide race-specific estimates.

The state must then work hard to increase health coverage. Although health insurance does not assure access to health care, it has been documented that children who have health coverage through private means or through Medicaid see a physician more frequently than children without the coverage.⁴¹

No doubt, children's lives are being saved by prevention efforts in the area of motor vehicle safety. For example, laws have been enacted to require the use of car seats and seat belts and to reduce the number of people driving drunk. Among white children, motor vehicle fatalities have dropped substantially during the recent past. Still, North Carolina has a way to go to reach the Year 2000 objective for fatal childhood injuries by motor vehicle (Figure 11).

Among the results reported here, perhaps the most disturbing is the rise in child abuse/neglect and infant homicide. Those and other potentially preventable childhood problems, such as unintentional injuries and lead poisoning, must be addressed.

Other more subtle problems are the high level of overweight and low level of physical fitness found among North Carolina's children. As they

persist into adolescence and then adulthood, these related risk factors will surely contribute to disease, including heart disease, diabetes, and stroke.

Improving the health of children requires a wide range of social and economic interventions, not the least of which are age-appropriate health education curricula in schools and preschool centers. In his foreword to *Healthy People 2000*, Health and Human Services Secretary Louis W. Sullivan spoke of building in our most vulnerable populations what he called a "culture of character," which meant, he said, a way of thinking and being that actively promotes responsible behavior and the adoption of lifestyles that are most conducive to good health.⁹ Clearly, we must start with the children.

The GOALS 2000 Educate America Act, signed by President Clinton in March 1994, establishes education goals for the nation. A first step is to ensure that all children arrive at school ready to learn. Going a step further and acknowledging that health and education are linked in fundamental ways, Donna E. Shalala, now Secretary of Health and Human Services, and Richard W. Riley, Secretary of Education, have issued a "Joint Statement on School Health" in support of comprehensive school health programs.⁴²

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GLOSSARY

Adolescent - In CHES reports, a person aged 10 through 19 years, unless otherwise specified.

Age-Specific Death Rate - Deaths in the age group per 100,000 population in the age group.

Aid to Families with Dependent Children (AFDC) - A public assistance program that provides cash assistance for poor families with children. In order to qualify for AFDC assistance, a family must be financially eligible and the children must be deprived of the economic support of a parent. Deprivation is considered to be the loss of support from a parent due to the parent's death, continued absence or disability. Under very restrictive circumstances, benefits are available to recently unemployed two-parent families where the primary wage earner is actively seeking employment.

Autistic - A developmental disability that significantly affects verbal and nonverbal communication and social interaction, generally evident before age three, and adversely affects educational performance. Characteristics of autism include: irregularities and impairments in communication, engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term does not include children with characteristics of the disability behaviorally/emotionally handicapped.

Behaviorally/Emotionally Handicapped - School-age students who, after receiving specially designed educational support services and intervention strategies in the regular educational setting, still exhibit patterns of situationally inappropriate interpersonal or intrapersonal behavior of such frequency, duration, and intensity to disrupt the student's own learning process. Frequency, duration, and intensity are long-standing patterns of behavior which occur regularly and often enough to interfere consistently with the student's own learning process. A behavioral/emotional handicap is evidenced by one or more of the following characteristics which cannot be attributed primarily to physical, sensory, or intellectual deficits:

- (a) inability to achieve adequate academic progress (not due to a learning disability);
- (b) inability to maintain satisfactory interpersonal and/or intrapersonal relationships;
- (c) inappropriate or immature types of behavior or feelings under normal conditions;
- (d) a general pervasive mood of unhappiness or depression;
- (e) a tendency to develop physical symptoms, pains or fears associated with personal or school problems.

The term does not include the socially maladjusted student unless it is determined that he/she is also behaviorally/emotionally handicapped.

Birth Defect - Any abnormal condition present at birth, not including injuries caused by the delivery. These are ICD-9 codes 740-759.

Birth Rate - The number of live births per 1,000 population.

Block Numbering Area (BNA) - Small statistical subdivisions of a county for grouping and numbering blocks in nonmetropolitan counties where local census statistical areas committees have not established census tracts. State agencies and the Census Bureau delineated BNAs for the 1990 census, using guidelines similar to those for the delineation of census tracts (see definition). BNAs do not cross county boundaries.

Causes of Death - All diseases, morbid conditions, or injuries that either resulted in or contributed to death and in the case of injuries, the circumstances of the injury or violence. In this report, deaths are tabulated by underlying cause of death (see definition).

Cancer Site (Primary) - The anatomical location where the cancer began. It can be any organ or tissue in the body.

Cancer Stage at Diagnosis - Broad categories describing how far the disease has spread from the site of origin:

Localized - The tumor is confined to its tissue of origin (i.e., no extension beyond the outer limits of the tissue and no evidence of metastases elsewhere in the body).

Regional - The tumor has (a) spread by direct extension from the tissue of origin to surrounding organs or tissues, (b) spread into regional lymph nodes, or (c) both. There must be no evidence of distant metastases.

Distant - The tumor has extended beyond the immediately adjacent organs or tissues to distant organs, tissues and/or lymph nodes. Includes systemic and diffuse disease categories.

Census Tract - Small, relatively permanent statistical subdivisions of a county. They are delineated for all metropolitan areas and other densely populated counties by local census statistical areas committees following Census Bureau guidelines.

Census tracts usually have between 2,500 and 8,000 persons and, when first delineated, are designed to be homogeneous with respect to population characteristics, economic status, and living conditions. Census tracts do not cross county boundaries. The spatial size of census tracts varies widely depending on the density of settlement. Census tract boundaries are delineated with the intention of being maintained over a long time so that statistical comparisons can be made from census to census. However, physical changes in street patterns caused by highway construction, new development, etc., may require occasional revisions; census tracts occasionally are split due to large population growth, or combined as a result of substantial population decline.

Note: Figure 1 of this report depicts by race the number of young children (ages 0-9) living in census tracts (metropolitan counties) and block numbering areas (nonmetropolitan counties). Data are from the U.S. Census 1990.

Congenital Anomaly - See Birth Defect.

Deaf/Blind - Concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind children.

Death - The permanent disappearance of any evidence of life at any time after live birth. N.C. law (G.S. 90-322) also defines criteria for certifying "brain death."

Developmental Delay - The condition of a child being with or at risk for a developmental disability. Children with an established, clinical diagnosis of a physical or psychological nature that is known to be associated with developmental disability, such as Down's syndrome or pervasive developmental disorder, are classified as developmentally delayed. There may also be circumstances wherein biological and/or environmental insults place a child at risk for subsequent delay. These latter conditions are associated with poor birth outcomes, e.g., low birthweight or, for otherwise normal births, the presence of parent/family risk factors, e.g., maternal age less than 15. Definitions for all three categories of risk (established, biological and environmental) are composed of multiple risk items, and a child may have risk indicators from more than one risk category. As the number of risk factors increases, so does the probability of developmental delay.

DWI - Driving While Impaired.

Educable Mentally Handicapped - See Mentally Handicapped.

FFY - Federal fiscal year, covering the 12 months October through September.

Hearing Impaired - Children with hearing losses that are handicapping educationally and developmentally and who, with or without amplification, may require various instructional modifications and related services in order to make full use of their learning opportunities. Hearing impaired is a generic term which includes all hearing losses ranging from mild to profound.

ICD: International Classification of Diseases - A numerical system used worldwide for classifying all causes of death. The Ninth Revision was first applied to 1979 deaths.

Infant Death - Death of a liveborn child under one year of age. Infant deaths are the sum of neonatal and postneonatal deaths (see definitions).

Infant Death Rate - The number of infant deaths per 1,000 live births.

Late or No Prenatal Care - No care during the first trimester (three months) of pregnancy.

Learning Disabled - An inclusive term used to denote various processing disorders presumed to be intrinsic to an individual (e.g., acquisition, organization, retrieval, or expression of information; effective problem-solving behaviors). For the purpose of special education services, school-age students classified as learning disabled are those who, after receiving instructional intervention in the regular education setting, have a substantial discrepancy between ability and achievement. The disability is manifested by substantial difficulties in the acquisition and use of skills in listening comprehension, oral expression, written expression, reading, and/or mathematics. A learning disability may occur

concomitantly with, but is not the primary result of, other handicapping conditions and/or environmental, cultural, and/or economic influences.

Live Birth - The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or any definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached (definition adopted by World Health Organization in 1950).

Low Birthweight - 2500 grams (5 pounds, 8 ounces) or less at birth, regardless of the period of gestation (World Health Organization 1950).

Maternity Care Coordination - A formal case management process with a primary focus on the organization of services and resources to respond to the health care needs of a pregnant woman who has been determined to be eligible for Medicaid.

Medicaid - A public assistance program that pays for the medical care of people who are eligible for cash assistance payments or who have medical needs greater than their resources. The largest share of Medicaid costs is paid by the federal government.

Mentally Handicapped - Significantly subaverage general cognitive functioning and a reduced rate of learning. This condition exists concurrently with deficits in adaptive behavior, is manifested during the developmental period, and adversely affects the student's educational performance. The intelligence quotient (IQ) for **educable** mentally handicapped is approximately 50-69 and for **trainable** mentally handicapped is approximately 30-49.

Minority - See Race.

Multihandicapped - A pervasive primary handicap that is cognitive and/or behavioral in combination with one or more other handicaps (such as mentally handicapped, behaviorally/emotionally handicapped, blind, etc.), the combination of which causes such developmental and educational problems that the children cannot be accommodated in special programs that primarily serve one area of handicapping condition.

Neonatal Death - Death of a liveborn child under 28 days of age.

Neonatal Death Rate - Neonatal deaths per 1,000 live births.

Orthopedically Impaired - A severe orthopedic impairment which adversely affects educational performance. The term includes impairments caused by congenital abnormalities and impairments from other causes. Preschool children who are orthopedically impaired have an orthopedic impairment which adversely affects physical and motor development and which interferes with the acquisition of skills. The term includes impairments caused by congenital abnormalities and impairments from other causes.

Other Health Impaired - Other health impaired students have chronic or acute health problems which cause limited strength, vitality or alertness to such an extent that special educational services are necessary. The health problems may include heart conditions, chronic lung disease, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, diabetes, genetic

impairments or some other illness which may cause a student to have limited strength, vitality or alertness, adversely affecting educational performance or developmental progress.

Postneonatal Death - Death of an infant 28 days and over but less than one year of age.

Postneonatal Death Rate - Postneonatal deaths per 1,000 neonatal survivors (live births minus neonatal deaths).

Preschool Developmentally Delayed - Children ages three and four or those 5-year-olds who are ineligible for kindergarten and whose development and/or behavior is so significantly delayed or atypical that special education and related services are required.

Race - As used by the Census Bureau, race reflects self-identification; it does not denote any clear-cut biological definition.

White--Includes persons who indicate their race as white (Caucasian) or report entries such as Canadian, German, Italian, Lebanese, Near Easterner, Arab, or Polish.

Nonwhite or Minority--Race other than white. Blacks account for about 90 percent of the state's nonwhite or minority population.

Residence - The place (county, state, etc.) in which a person resides at the time of an event. For births, residence is that of the newborn's mother.

Speech Impaired - A disorder in articulation, language, voice, and/or fluency. A speech-language impairment may range in severity from mild to severe. It may be developmental or acquired, and pupils may demonstrate one or any combination of the four parameters listed above. A speech-language impairment may result in a primary handicapping condition or it may be secondary to other handicapping conditions.

A communicative difference/dialect is a variation of a symbol system used by a group of individuals which reflects and is determined by shared regional, social or cultural/ethnic factors and should not be considered a disorder of speech or language.

Trainable Mentally Handicapped - See Mentally Handicapped.

Traumatic Brain Injury - An acquired open or closed head injury caused by an external physical force that impairs a student's cognitive, communicative, perceptual, behavioral, social-emotional, and/or physical abilities to the extent that the student requires special education. Congenital, degenerative, or brain injuries induced by birth trauma are not included in this definition.

Underlying Cause of Death - (a) The disease or injury that initiated the chain of morbid events leading to death, or (b) the circumstances of the injury or violence that produced the fatal injury.

Unmarried (Unwed) Mother - At time of giving birth, woman has never been legally married or has been widowed or legally divorced from her husband in excess of 280 days.

Visually Impaired -

- (a) functionally blind school-age children are those who have so little remaining vision that they must use Braille as their reading medium. Preschool children who are functionally blind use predominantly tactile or auditory mediums in order to learn. In children for whom formal vision measures are not appropriate, sufficient documentation for low vision will include diagnosed pathology and functional assessment that describes visual deficits significant enough to interfere with learning;
- (b) partially seeing school-age children are those who have a loss of vision but are able to use regular or large type as their reading medium. These will generally be children who have a visual acuity between 20/70 and 20/200 in the better eye after correction. Preschool children with low vision are those who have a loss of vision but are able to use the visual medium as their predominant means of learning. These generally will be children who have an actual or estimated visual acuity between 20/70 and 20/200 in the better eye after correction or whose visual impairment impedes the acquisition of developmental milestones;
- (c) children who are legally blind are those who have a visual acuity of 20/200 or less in the better eye after correction or a peripheral field so contracted that the widest diameter subtends an arc no greater than 20 degrees.

WIC - The Special Supplemental Nutrition Program for Women, Infants, and Children. This nationwide program, funded by the U.S. Department of Agriculture, provides nutrition education and vouchers for the purchase of specific supplemental nutritious foods and infant formula. Eligible persons include pregnant/breast-feeding/postpartum women, infants, and children up to age 5 who are at medical or nutritional risk and live in households at or below 185 percent of the federal poverty level.

Foundation of Carolina State University
1959-1960
1961-1962
1963-1964
1965-1966
1967-1968
1969-1970
1971-1972
1973-1974
1975-1976
1977-1978
1979-1980

TABLES

Table 1

Population of Children Aged 0-9 Years by Age, Race, and Hispanic Origin
 With Percent Changes Since 1980
 North Carolina 1990

Age	<u>Total</u>	<u>Whites</u>	<u>Blacks</u>	<u>American Indians*</u>	<u>Hispanic Origin**</u>
0-4 Years	469,176	325,725	131,444	7,236	9,091
1980-1990 Percent Change	16.1	16.8	15.4	9.8	67.0
5-9 Years	437,930	305,854	120,561	7,146	6,816
1980-1990 Percent Change	-2.2	-2.1	-3.1	-0.04	38.9

*Includes a small number of Eskimos and Aleuts.

**Persons of Hispanic origin may be of any race.

Source: Census Bureau – 1990 modified age-race-sex file, 1980 published census data.

Table 2

Sociodemographic Indicators for Young Children by Race
North Carolina 1990

Indicator	<u>Total</u>	<u>Whites</u>	<u>Minorities</u>
<u>Demographic</u>			
Children 0-9:			
Percent males	51.0	51.2	50.6
Percent rural	49.5	55.6	35.9
<u>Economic</u>			
Children under 6 years:			
Percent below poverty 1989	19.1	10.2	39.4
Children 6-11 years:			
Percent below poverty 1989	17.2	9.4	34.5
Families with children under 5 years:			
Percent below poverty 1989	17.2	9.6	35.4
Children 0-14 in households:			
Percent with public assistance income	10.6	NA	NA
<u>Employment</u>			
Females 16+ with own children under 6 years:			
Percent employed	61.5	NA	NA
Percent in labor force	66.8	NA	NA
<u>Family Structure</u>			
Own children under 6 years:			
Percent in married-couple family	72.8	85.2	43.6
Percent in male-householder family (no spouse present)	4.2	3.4	6.1
Percent in female-householder family (no spouse present)	23.0	11.4	50.4

Source: Census reports and computer files.

NA - Not available.

Table 3
Population Counts of Young Children by Race, Age, and Sex
North Carolina and Counties 1993

RESIDENCE	WHITES				MINORITIES			
	0-4		5-9		0-4		5-9	
	Males	Females	Males	Females	Males	Females	Males	Females
North Carolina	178,026	169,764	166,735	158,163	81,682	80,281	71,258	69,748
Alamance	2,748	2,720	2,693	2,573	1,007	1,059	896	930
Alexander	849	816	886	877	85	99	74	76
Alleghany	251	278	230	249	1	4	4	3
Anson	340	335	348	309	541	549	471	496
Ashe	599	567	584	564	4	7	5	3
Avery	470	404	464	412	0	1	4	2
Beaufort	881	851	871	831	657	614	590	546
Bertie	206	209	226	199	563	547	581	568
Bladen	528	500	470	484	508	543	460	534
Brunswick	1,409	1,308	1,448	1,312	448	477	401	437
Buncombe	5,272	4,980	5,090	4,873	790	788	684	657
Burke	2,474	2,204	2,328	2,039	304	297	274	266
Cabarrus	3,146	3,121	2,998	2,877	669	646	666	579
Caldwell	2,370	2,273	2,164	2,055	222	197	187	155
Camden	155	144	146	139	38	51	43	53
Carteret	1,496	1,436	1,569	1,455	213	184	240	223
Caswell	431	417	397	412	260	261	268	278
Catawba	3,647	3,604	3,503	3,276	721	709	552	511
Chatham	1,112	1,016	1,048	892	375	372	367	339
Cherokee	584	570	601	608	35	24	29	22
Chowan	260	265	281	285	207	264	223	249
Clay	176	172	214	206	1	2	2	2
Cleveland	2,342	2,119	2,120	1,932	1,085	968	792	781
Columbus	1,008	914	1,069	1,015	809	794	800	757
Craven	2,344	2,400	2,107	2,175	1,151	1,132	1,003	980
Cumberland	8,133	7,638	6,985	6,580	5,810	5,737	4,855	4,798
Currituck	488	440	489	445	53	50	51	71
Dare	770	733	791	739	39	34	40	39
Davidson	4,013	3,784	3,848	3,663	687	619	567	556
Davie	823	795	773	762	116	104	121	83
Duplin	961	902	912	874	624	609	595	586
Durham	3,867	3,633	3,356	3,212	3,635	3,593	2,933	2,817
Edgecombe	707	724	703	678	1,561	1,615	1,477	1,450
Forsyth	6,546	6,266	6,179	5,793	3,593	3,428	2,946	2,806
Franklin	832	882	806	804	545	551	542	524
Gaston	5,557	5,277	5,118	4,873	1,346	1,372	1,159	1,155
Gates	193	166	200	175	153	177	151	184
Graham	208	183	207	179	26	31	24	28
Granville	854	848	819	835	545	564	559	529
Greene	302	257	298	246	276	247	265	258
Guilford	7,969	7,690	7,526	7,069	4,905	4,880	3,965	3,926
Halifax	810	779	744	739	1,501	1,441	1,395	1,314
Harnett	2,066	1,953	1,880	1,768	910	972	742	814
Haywood	1,386	1,336	1,387	1,337	36	47	27	36
Henderson	1,956	1,858	1,937	1,884	136	121	166	135
Hertford	222	206	259	231	599	635	562	611
Hoke	416	368	361	326	715	722	654	634
Hyde	117	110	118	111	87	72	67	63
Iredell	2,868	2,816	2,575	2,469	826	825	723	709

Table 3 (continued)
Population Counts of Young Children by Race, Age, and Sex
North Carolina and Counties 1993

RESIDENCE COUNTY	WHITES				MINORITIES			
	0-4		5-9		0-4		5-9	
	Males	Females	Males	Females	Males	Females	Males	Females
Jackson	570	613	603	579	175	155	144	121
Johnston	2,711	2,498	2,350	2,208	828	817	667	695
Jones	200	225	211	206	181	161	146	123
Lee	1,142	1,076	1,081	1,068	530	555	505	507
Lenoir	1,084	1,032	1,045	1,000	1,064	1,053	998	927
Lincoln	1,738	1,680	1,621	1,543	254	240	228	214
McDowell	1,091	1,065	1,057	994	93	77	75	63
Macon	655	621	659	652	13	17	12	20
Madison	530	454	528	447	2	3	4	1
Martin	433	402	441	411	567	480	499	472
Mecklenburg	14,260	13,620	12,742	11,992	8,167	7,886	7,000	6,682
Mitchell	406	396	452	422	5	2	1	0
Montgomery	641	580	569	499	308	266	262	227
Moore	1,407	1,392	1,399	1,423	570	520	573	504
Nash	1,802	1,657	1,717	1,613	1,262	1,212	1,105	1,081
New Hanover	3,108	2,991	2,881	2,811	1,269	1,356	1,141	1,184
Northampton	212	212	225	212	478	473	494	451
Onslow	5,032	4,741	4,098	4,005	1,809	1,826	1,489	1,484
Orange	2,350	2,111	2,254	2,112	738	709	686	636
Pamlico	273	226	291	234	101	88	108	108
Pasquotank	703	772	730	749	608	552	580	527
Pender	794	785	694	634	439	434	393	419
Perquimans	182	172	205	206	148	140	158	136
Person	733	663	658	636	447	407	385	356
Pitt	2,459	2,270	2,227	2,105	2,037	1,903	1,733	1,730
Polk	380	426	333	378	45	42	38	28
Randolph	3,831	3,501	3,647	3,397	349	340	328	326
Richmond	1,035	1,007	958	918	697	709	586	596
Robeson	1,247	1,218	1,154	1,084	3,550	3,453	3,272	3,227
Rockingham	2,162	2,147	2,177	2,095	766	781	660	666
Rowan	3,215	2,981	3,139	2,924	908	959	779	886
Rutherford	1,698	1,672	1,638	1,546	359	342	319	275
Sampson	1,036	1,013	1,021	920	756	731	667	680
Scotland	620	606	624	617	778	771	691	669
Stanly	1,629	1,565	1,561	1,484	380	418	299	320
Stokes	1,254	1,142	1,295	1,118	77	78	70	67
Surry	1,989	1,890	1,778	1,673	135	155	109	135
Swain	235	188	223	173	195	157	188	150
Transylvania	722	717	744	702	56	68	65	49
Tyrrell	68	47	76	64	63	51	80	68
Union	3,094	2,855	2,825	2,535	837	827	722	704
Vance	753	659	676	599	979	879	821	775
Wake	13,085	12,634	11,873	11,450	5,447	5,410	4,373	4,327
Warren	169	164	174	169	429	399	444	376
Washington	233	214	204	225	293	305	258	289
Watauga	822	828	893	916	14	24	14	19
Wayne	2,639	2,434	2,385	2,300	1,704	1,638	1,617	1,552
Wilkes	1,772	1,725	1,844	1,726	115	125	97	131
Wilson	1,187	1,175	1,225	1,167	1,184	1,185	1,108	1,140
Yadkin	984	954	962	941	54	63	56	46
Yancey	489	481	442	440	1	4	9	6

Table 4

**Percentage of Births Paid by Medicaid (1993) and Percentage
of Elementary School Children Receiving Free or Reduced-Priced Lunches (1994)
North Carolina and Counties**

<u>Residence</u>	<u>Percent Newborns on Medicaid¹</u>	<u>Percent Free/ Reduced Price Lunches²</u>	<u>Residence</u>	<u>Percent Newborns on Medicaid¹</u>	<u>Percent Free/ Reduced Price Lunches²</u>
North Carolina	45.3	44.4	Jackson	64.2	**
Alamance	44.4	40.6	Johnston	45.9	41.4
Alexander	38.9	28.0	Jones	59.2	75.1
Alleghany	60.3	**	Lee	59.2	46.1
Anson	62.8	70.5	Lenoir	63.5	56.8
Ashe	55.8	54.9	Lincoln	45.7	33.9
Avery	59.9	54.9	McDowell	54.2	37.5
Beaufort	66.4	55.5	Macon	56.2	53.0
Bertie	80.1	81.0	Madison	60.4	57.5
Bladen	68.4	66.3	Martin	65.9	56.6
Brunswick	61.6	51.4	Mecklenburg	34.0	39.3
Buncombe	49.4	37.1	Mitchell	54.2	48.2
Burke	46.1	37.7	Montgomery	71.4	56.9
Cabarrus	38.8	31.9	Moore	54.6	51.3
Caldwell	48.8	38.9	Nash	50.2	56.1
Camden	38.6	42.3	New Hanover	49.2	41.8
Carteret	39.4	44.1	Northampton	72.4	83.0
Caswell	42.5	48.4	Onslow	19.0	50.3
Catawba	45.5	29.9	Orange	31.6	27.3
Chatham	41.9	37.2	Pamlico	74.1	59.5
Cherokee	50.0	58.2	Pasquotank	49.9	60.7
Chowan	64.4	60.9	Pender	62.8	59.4
Clay	28.4	50.0	Perquimans	64.6	64.3
Cleveland	57.3	41.4	Person	48.1	47.2
Columbus	61.4	80.8	Pitt	55.2	48.6
Craven	40.9	51.1	Polk	42.1	37.1
Cumberland	31.2	53.1	Randolph	40.6	31.0
Currituck	26.3	36.2	Richmond	63.6	61.0
Dare	28.7	29.2	Robeson	69.1	78.3
Davidson	48.4	34.4	Rockingham	51.5	41.9
Davie	45.6	23.4	Rowan	48.3	38.6
Duplin	60.3	68.4	Rutherford	56.7	51.6
Durham	38.3	42.9	Sampson	63.6	63.9
Edgecombe	72.3	62.9	Scotland	74.0	63.4
Forsyth	44.4	38.0	Stanly	49.8	40.9
Franklin	46.9	59.5	Stokes	39.4	30.8
Gaston	46.6	37.7	Surry	48.1	36.2
Gates	49.5	55.8	Swain	77.8	64.0
Graham	60.5	**	Transylvania	55.8	38.1
Granville	46.6	48.5	Tyrrell	56.6	76.0
Greene	58.0	67.4	Union	40.5	33.6
Guilford	42.6	38.2	Vance	59.0	71.4
Halifax	72.3	76.2	Wake	28.4	26.1
Harnett	45.8	52.2	Warren	61.4	77.0
Haywood	59.2	40.0	Washington	67.8	75.6
Henderson	53.9	37.1	Watauga	43.5	**
Hertford	75.6	80.6	Wayne	45.4	55.2
Hoke	61.4	73.8	Wilkes	54.4	40.6
Hyde	61.5	70.0	Wilson	62.9	60.9
Iredell	45.3	33.7	Yadkin	41.3	**
			Yancey	62.7	49.6

¹ Medicaid paid for hospital stay of newborn.

² Free or reduced-price lunch applications as a percentage of average daily membership. Schools included are those in which elementary grades are dominant, for example K-6 schools are included but K-12 schools are not.

**No schools in which elementary grades are dominant.

Source: N. C. Department of Public Instruction

Table 5

**Live Births and Birth Rates by Race
North Carolina 1983-1993**

Year	Total		Whites		Minorities	
	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>
1983	83,854	13.8	57,446	12.6	26,408	17.5
1984	85,986	13.9	59,399	12.8	26,587	17.6
1985	89,391	14.3	61,766	13.2	27,625	17.5
1986	90,228	14.3	61,746	12.9	28,482	18.6
1987	93,481	14.6	63,876	13.1	29,605	19.1
1988	97,560	15.0	65,937	13.4	31,623	20.2
1989	102,091	15.5	68,455	13.7	33,636	21.2
1990	104,439	15.7	71,095	14.1	33,344	20.9
1991	102,309	15.2	69,233	13.5	33,076	20.4
1992	103,925	15.2	70,687	13.6	33,238	20.2
1993	101,333	14.6	68,960	13.1	32,373	19.3

*Live births per 1,000 population.

Table 6

**Infant Deaths and Death Rates for Leading Causes by Race
With Percent Changes in Rates Since 1983-87
North Carolina 1989-93**

Underlying Cause ¹	Total			Whites			Minorities		
	<u>Number</u>	<u>Rate</u> ²	<u>Percent Change in Rate</u> ³	<u>Number</u>	<u>Rate</u> ²	<u>Percent Change in Rate</u> ³	<u>Number</u>	<u>Rate</u> ²	<u>Percent Change in Rate</u> ³
Total Deaths	5,503	1,070.4	-12.8	2,790	800.7	-18.1	2,713	1,637.6	-7.9
Perinatal Conditions ⁴	2,863	556.9	-9.9	1,246	357.6	-20.7	1,617	976.1	-0.9
Birth Defects ⁵	1,010	196.5	-20.0	653	187.4	-23.1	357	215.5	-13.9
Sudden Infant Death Syndrome ⁶	736	143.2	-9.5	426	122.3	-2.6	310	187.1	-18.7
Unintentional Injuries	142	27.6	-6.8	76	21.8	3.8	66	39.8	-17.6
Motor Vehicle ⁷	41	8.0	3.9	29	8.3	40.7	12	7.2	-37.4
Other ⁸	101	19.6	-10.5	47	13.5	-10.6	54	32.6	-11.4
Heart Disease ⁹	99	19.3	-23.7	50	14.4	-25.8	49	29.6	-22.5
Pneumonia and Influenza ¹⁰	73	14.2	-16.0	36	10.3	21.2	37	22.3	-36.8
Homicide ¹¹	59	11.5	64.3	24	6.9	40.8	35	21.1	83.5
Cancer ¹²	11	2.1	-44.7	8	2.3	-36.1	3	1.8	-58.1*

¹Ninth Revision International Classification of Diseases (ICD) categories; footnotes 4-12 give the ICD codes.

²Deaths per 100,000 live births.

³1983-87 death rates were taken from reference 17, Table 4.

⁴760-779.

⁵740-759.

⁶798.0.

⁷810-825.

⁸800-807, 826-949.

⁹390-398, 402, 404-429.

¹⁰480-487.

¹¹960-978.

¹²140-208.

*Based on fewer than 10 deaths in both 1983-87 and 1989-93.

Table 7

**Deaths and Death Rates for Leading Causes by Race and Age (1-9 years)
With Percent Changes in Rates Since 1983-87
North Carolina 1989-93**

Underlying Cause ¹	Total			Whites			Minorities		
	<u>Number</u>	<u>Rate²</u>	<u>Percent Change in Rate³</u>	<u>Number</u>	<u>Rate²</u>	<u>Percent Change in Rate³</u>	<u>Number</u>	<u>Rate²</u>	<u>Percent Change in Rate³</u>
Ages 1-4									
Total Deaths	947	49.2	-12.3	535	40.2	-14.1	412	69.1	-11.1
Unintentional Injuries	361	18.7	-20.8	198	14.9	-22.8	163	27.3	-19.0
Motor Vehicle ⁴	136	7.1	-22.8	68	5.1	-38.6	68	11.4	0.0
Other ⁵	225	11.7	-18.8	130	9.8	-10.9	95	15.9	-28.7
Birth Defects ⁶	121	6.3	-4.5	77	5.8	-9.4	44	7.4	4.2
Cancer ⁷	60	3.1	10.7	40	3.0	3.4	20	3.4	21.4
Homicide ⁸	45	2.3	9.5	23	1.7	54.5	22	3.7	-14.0
Heart Disease ⁹	37	1.9	-24.0	19	1.4	-33.3	18	3.0	-18.9
Pneumonia and Influenza ¹⁰	27	1.4	-12.5	13	1.0	0.0	14	2.3	-23.3
Ages 5-9									
Total Deaths	546	24.2	-10.0	319	20.3	-11.7	227	33.2	-6.7
Unintentional Injuries	271	12.0	-13.0	158	10.1	-12.2	113	16.5	-12.2
Motor Vehicle ⁴	159	7.1	-13.4	89	5.7	-24.0	70	10.2	3.0
Other ⁵	112	5.0	-10.7	69	4.4	7.3	43	6.3	-29.2
Cancer ⁷	64	2.8	-6.7	43	2.7	-15.6	21	3.1	14.8
Birth Defects ⁶	28	1.2	-33.3	16	1.0	-33.3	12	1.8	-25.0
Homicide ⁸	17	0.8	-27.3	8	0.5	0.0*	9	1.3	-45.8*
Heart Disease ⁹	15	0.7	-22.2	4	0.3	-57.1*	11	1.6	33.3*
Pneumonia and Influenza ¹⁰	12	0.5	66.7*	5	0.3	200.0*	7	1.0	66.7*

¹Ninth Revision International Classification of Diseases (ICD) categories; footnotes 4-10 give the ICD codes.

²Deaths per 100,000 population.

³1983-87 rates were taken from reference 17, Table 4.

⁴810-825.

⁵800-807, 826-949.

⁶740-759.

⁷140-208.

⁸960-978.

⁹390-398, 402, 404-429.

¹⁰480-487.

*Based on fewer than 10 deaths in 1983-87 and/or 1989-93.

Table 8

Selected Child Abuse, Neglect, and Dependency Statistics
With Percent Changes Since FY 1990
North Carolina FY 1994

Selected Statistics	Cases FY 1994	Percent Change Since FY 1990
• Total Reports Received	59,907	65.4
Source: Non-Relative, not elsewhere classified	9,401	54.6
Educational Personnel	9,371	46.2
Relative (Except Parent)	8,544	54.4
Human Service	7,956	87.1
Anonymous	7,886	76.8
Parent	5,146	104.0
Medical Personnel	4,927	60.1
Law Enforcement/Courts	4,761	79.2
• Number of Children Reported*	95,811	82.0
Age: 0-6	51,197	132.2
7-12	29,146	59.1
13 and above	15,468	26.2
Race/Hispanic Origin:		
White	52,971	69.5
Black	37,572	93.4
American Indian	2,273	126.6
Asian**	328	NA
Other Race	1,281	34.8
Hispanic**	1,386	NA
Gender:		
Male	46,915	85.3
Female	48,896	79.0
• Number of Children Substantiated*	30,386	81.7
Abuse 2,979	21.0	
Percent Substantiated	9.8	-33.4
Neglect	27,017	89.4
Percent Substantiated	88.9	4.2
Dependency†	390	NA
Percent Substantiated	1.3	NA
• Leading Primary Contributory Factors in Substantiated Cases*		
Lack of Child Development Knowledge	3,960	57.3
Alcohol Problem	2,565	65.5
Mental/Emotional Problems	2,033	41.5
Drug Problem	1,999	140.6
Disruption in Family Structure	1,484	62.4
• Relationship of Perpetrator to Victim in Substantiated Cases††		
Biological Parent	29,740	47.9
Adoptive Parent	232	49.7
Step Parent	1,869	47.2
Foster Parent	120	200.0
Grandparent/Step Grandparent	793	104.9
Other Relative/Caretaker	2,077	119.8

*Numbers are not unduplicated counts.

**Added in FY 1994.

†First categorized in FY 1994. "dependency" refers to a juvenile in need of assistance or placement.

††Victim may have more than one perpetrator, and perpetrator may have more than one victim.

Source: N.C. Department of Human Resources, Division of Social Services.

Table 9

Numbers and Rates of Birth Defects by Race-Sex
North Carolina Birth Defects Registry 1989-91

<u>Type of Defect</u>	<u>White Males</u>		<u>White Females</u>		<u>Minority Males</u>		<u>Minority Females</u>	
	<u>Number</u>	<u>Rate¹</u>	<u>Number</u>	<u>Rate¹</u>	<u>Number</u>	<u>Rate¹</u>	<u>Number</u>	<u>Rate¹</u>
Total ²	4,257	397.0	2,984	293.8	2,660	523.8	1,999	405.7
Central Nervous System ³	166	15.5	181	17.8	115	22.6	103	20.9
Cardiovascular ⁴	731	68.2	583	57.4	395	77.8	390	79.2
Respiratory ⁵	163	15.2	123	12.1	83	16.3	71	14.4
Cleft Lip/Palate ⁶	158	14.7	99	9.7	39	7.7	40	8.1
Digestive ⁷	195	18.2	162	16.0	86	16.9	113	22.9
Genitourinary ⁸	1,368	127.6	164	16.1	674	132.7	98	19.9
Musculoskeletal ⁹	1,433	133.6	1,526	150.3	1,077	212.1	966	196.1
Chromosomal ¹⁰	138	12.9	148	14.6	49	9.6	51	10.4

¹Cases per 10,000 live births.

²ICD-9 codes 740-759 excluding minor malformations, i.e., codes 743.8, 744.1, 744.5, 747.5, 750.0, 751.0, 755.0, 756.2, 757.2, 757.3, 757.6.

³ICD-9 codes 740.0-742.9.

⁴ICD-9 codes 745.0-747.4, except 747.0 if birthweight under 2500 grams.

⁵ICD-9 codes 748.0-748.9, except 748.5 if birthweight under 2500 grams.

⁶ICD-9 codes 749.0-749.2.

⁷ICD-9 codes 750.1-750.9, 751.1-751.9.

⁸ICD-9 codes 752.0-753.9.

⁹ICD-9 codes 754.0-754.8, 755.1-756.1, 756.3-756.9.

¹⁰ICD-9 codes 758.0-758.9.

Table 10

Percentage of Screened Children Having Elevated Blood Lead Levels
North Carolina, October 1, 1992 - September 30, 1994

Variable		Number <u>Screened</u>	Percent Having Blood Lead Level ($\mu\text{g/dL}$)		
			≥ 10	≥ 15	≥ 20
TOTAL		114,034	20.9	3.2	1.2
Age	6-12 months	5,608	16.1	2.1	0.8
	1 year	33,759	22.5	3.4	1.2
	2 years	18,594	24.9	4.2	1.6
	3 years	15,271	22.6	3.8	1.3
	4 years	19,773	19.3	2.8	1.0
	5 years	21,029	16.3	2.2	0.8
Race*	Black	50,153	27.0	4.6	1.6
	White	52,373	15.1	1.8	0.7
	Other	7,500	21.4	3.4	1.3
Sex*	Male	57,247	21.8	3.4	1.3
	Female	55,604	19.9	3.0	1.0
Residence	Rural county	81,113	22.3	3.5	1.3
	Urban county	32,921	17.4	2.4	0.8

*There are some missing values for this variable.

Table 11

**Number of Health-Impaired Children Aged 5-9
Served in Public Schools with Percent Changes
North Carolina December 1985 and December 1993**

<u>Impairment</u>	<u>Head Count in December</u>		<u>Percent Change</u>
	<u>1985</u>	<u>1993¹</u>	
Total	38,791	52,208	34.6
Autistic	161	505	213.7
Preschool Developmental Delay ²	—	648	—
Behaviorally/Emotionally Handicapped ²	1,563	2,058	31.7
Learning Disabled ²	8,247	13,292	61.2
Educable Mentally Handicapped ²	3,617	5,622	55.4
Trainable Mentally Handicapped ²	819	758	-7.4
Orthopedically Impaired ³	407	459	12.8
Deaf/Blind	1	3	200.0
Hearing Impaired	485	628	29.5
Visually Impaired	187	216	15.5
Speech Impaired	22,549	26,253	16.4
Traumatic Brain Injured ⁴	—	20	—
Multihandicapped	382	484	26.7
Other Health Impaired ⁵	373	1,262	238.3

¹Includes over 1,100 children in institutional programs of the Department of Human Resources, e.g., schools for the blind and deaf. These children were not included in the 1985 counts.

²New in 1992, the category "preschool developmental delay" includes children formerly classified as behaviorally/emotionally handicapped, learning disabled, or educable mentally handicapped (see Glossary).

³Called "physically handicapped" in 1985.

⁴New category in 1991. These children were previously classified under "other."

⁵By 1992 federal directive, "other health impaired" now includes attention deficit disorder if diagnosed by child's physician and child determined to be in need of special education.

Source: N.C. Department of Public Instruction.

Table 12

Reported Cases of Selected Infectious Diseases by Race and Age (Ages 0-9)
North Carolina 1993

Selected Disease	Total	Whites			Minorities		
		<1 Year	1-4 Years	5-9 Years	<1 Year	1-4 Years	5-9 Years
AIDS	7	0	0	0	4	2	1
Encephalitis	8	1	1	1	0	4	0
Hepatitis A	19	0	8	9	1	0	0
Malaria	41	1	0	0	5	26	9
Hemophilus Influenzae	10	1	3	1	3	2	0
Meningitis, Pneumococcal	23	9	4	2	6	1	1
Viral Meningitis	85	29	11	18	12	5	10
Meningococcal Disease	31	12	7	0	4	2	6
Mumps	35	0	6	12	0	4	13
Rocky Mountain Spotted Fever	26	1	9	12	0	3	1
Salmonellosis	537	98	156	51	110	86	19
Shigellosis	1,599	39	582	345	27	404	160
Whooping Cough	139	55	37	15	22	4	3
Campylobacter Infection	160	19	60	34	11	20	6
Hepatitis B Carrier	28	1	5	2	4	5	11
Congenital Syphilis	52	3	0	0	48	0	1
Gonorrhea*	30	0	0	0	8	10	12
Chlamydia	36	13	2	1	12	3	5
Tuberculosis	32	1	8	2	5	8	8

*Includes gonococcal pelvic inflammatory disease.

Table 13

**Immunization Levels of Children in Day Care Centers,
Head Start Centers and School Grades K-1
With Survey Parameters
North Carolina 1993 .**

Selected Statistics	Day Care Centers <u>FY 1993</u>	Head Start Centers <u>FY 1993</u>	School Entry Grades K-1 <u>September 1993</u>
Number of Centers/Schools	2,010	163	2,849
Number of Enrollees Surveyed	107,441	7,021	198,061
Number (Percent) of Enrollees Without Immunization Records	366 (0.34%)	1 (0.01%)	1,297 (0.65%)
Number (Percent) of Enrollees With Exemption for 1+ Vaccines	275 (0.26%)	5 (0.07%)	1,100 (0.56%)
Percent of Enrollees Immunized			
Polio (3+ Doses) (P)	93.7	96.3	98.6
DTP/DT/Td (3+ Doses) (D)	95.0	98.8	98.4
Measles (M)	95.3	98.0	99.9
Rubella (R)	95.0	97.9	99.8
Mumps (Mps)	95.0	97.8	99.8
Haemophilus b (Hib) (1+ Doses ≥ 1st Birthday)	64.4	74.8	NA
Basic Series:			
P(3+), D(3+), M, R, Mps	88.0	93.1	97.2
P(3+), D(3+), M, R, Mps, Hib* (*1+ Doses ≥ 1st Birthday)	55.0	71.9	NA

NA - Not applicable, not currently required for school entry.

Source: Immunization Section, Division of Maternal and Child Health.

Table 14

Numbers and Percentage Distributions of New Cancer Cases Among Children Aged 0-9 by Site and Stage for Age-Race Groups North Carolina 1990-92

<u>Age, Site, and Stage at Diagnosis</u>	<u>Whites</u>		<u>Minorities</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Ages 0-4				
Total	173	100.0	61	100.0
<u>Cancer Site</u>				
Soft Tissue	9	5.2	5	8.2
Kidney	15	8.7	6	9.8
Brain/Central Nervous System	37	21.4	13	21.3
Lymphoma	4	2.3	4	6.6
Lymphoid Leukemia	57	32.9	13	21.3
Myeloid Leukemia	8	4.6	5	8.2
Other Leukemia	3	1.7	1	1.6
Other Site	40	23.1	14	23.0
<u>Stage at Diagnosis</u>				
Localized	59	34.1	21	34.4
Regional	13	7.5	7	11.5
Distant	63	36.4	25	41.0
Unstaged	38	22.0	8	13.1
Ages 5-9				
Total	98	100.0	34	100.0
<u>Cancer Site</u>				
Soft Tissue	4	4.1	0	0.0
Kidney	1	1.0	1	2.9
Brain/Central Nervous System	34	34.7	8	23.5
Lymphoma	11	11.2	7	20.6
Lymphoid Leukemia	28	28.6	16	47.1
Myeloid Leukemia	8	8.2	0	0.0
Other Leukemia	0	0.0	0	0.0
Other Site	12	12.2	2	5.9
<u>Stage at Diagnosis</u>				
Localized	32	32.7	8	23.5
Regional	14	14.3	2	5.9
Distant	27	27.6	20	58.8
Unstaged	25	25.5	4	11.8

Table 15

Hospital Discharges and Rates for Young Age-Sex Groups by Selected Primary Diagnosis
 North Carolina 1992
 (Excludes Normal Live Births)

Primary Diagnosis	Ages 0-9		Ages 0-4				Ages 5-9			
	Males and Females		Males		Females					
	Number	Rate ¹	Number	Rate ¹	Number	Rate ¹	Number	Rate ¹		
Total Discharges	42,088	439.4	19,402	767.8	14,515	597.0	4,628	196.4	3,542	156.4
Diseases of Heart ²	212	2.2	87	3.4	82	3.4	24	1.0	19	0.8
Cancer ³	288	3.0	83	3.3	103	4.2	63	2.7	39	1.7
Diabetes Mellitus ⁴	169	1.8	35	1.4	33	1.4	55	2.3	46	2.0
Chronic Obstructive Pulmonary Diseases ⁵	3,709	38.7	1,724	68.2	991	40.8	628	26.6	366	16.2
Acute Respiratory Infections ⁶	4,208	43.9	2,440	96.6	1,527	62.8	125	5.3	115	5.1
Pneumonia/Influenza ⁷	4,350	45.4	2,148	85.0	1,551	63.8	348	14.8	303	13.4
Diseases of Genitourinary System ⁸	1,045	10.9	237	9.4	470	19.3	103	4.4	235	10.4
Volume Depletion ⁹ (Dehydration)	1,151	12.0	499	19.7	486	20.0	69	2.9	97	4.3
Birth Defects ¹⁰	2,238	23.4	1,205	47.7	796	32.7	132	5.6	105	4.6
Appendicitis ¹¹	371	3.9	36	1.4	30	1.2	183	7.8	122	5.4
Epilepsy ¹²	340	3.5	135	5.3	99	4.1	61	2.6	45	2.0
Sickle-Cell Anemia ¹³ (minorities only)	187	6.3	52	6.6	49	6.4	44	6.2	42	6.0
Otitis Media ¹⁴	568	5.9	324	12.8	229	9.4	10	0.4	5	0.2
Mental Disorders ¹⁵	302	3.2	17	0.7	22	0.9	202	8.6	61	2.7
Injury and Poisoning ¹⁶	2,768	28.9	954	37.8	672	27.6	735	31.2	407	18.0

¹Discharges per 10,000 population.

²ICD-9 Codes 390-398, 402, 404-429.

³ICD-9 Codes 140-208.

⁴ICD-9 Code 250.

⁵ICD-9 Codes 490-496.

⁶ICD-9 Codes 460-466.

⁷ICD-9 Codes 480-487.

⁹ICD-9 Code 276.5.

¹⁰ICD-9 Codes 740-759.

¹¹ICD-9 Codes 540-543.

¹²ICD-9 Code 345.

¹³ICD-9 Code 282.6. Rates are for minorities.

¹⁴ICD-9 Code 382.0.

¹⁵ICD-9 Codes 290-319.

Table 16

Young Children Served in Area Mental Health Centers By
Specified Principal or Primary Diagnosis, Age, Race, and Sex
North Carolina FY 1984 and FY 1994

Patient Characteristics	Total		Developmental Disability		<u>Diagnosis</u> Substance Abuse		Mental Illness	
	<u>1984</u>	<u>1994</u>	<u>1984</u>	<u>1994</u>	<u>1984</u>	<u>1994</u>	<u>1984</u>	<u>1994</u>
Total	10,814	24,439	2,754	7,616	28	33	8,032	16,790
Age								
0-4	4,296	9,778	1,928	5,994	15	18	2,353	3,766
5-9	6,518	14,661	826	1,622	13	15	5,679	13,024
Race								
White	6,823	13,830	1,592	4,005	23	17	5,208	9,808
Black	3,765	9,465	1,083	3,218	5	13	2,677	6,234
Other/Unknown	226	1,144	79	393	0	3	147	748
Sex								
Male	6,734	15,167	1,662	4,746	23	26	5,049	10,395
Female	4,080	9,272	1,092	2,870	5	7	2,983	6,395

Source: N.C. Department of Human Resources, Division of Mental Health, Developmental Disabilities, and Substance Abuse Services.

Table 17

Number and Percentage of Children Aged 5-9 Classified as
Overweight by Race, Sex, and Age
North Carolina Child Health Program 1988-91

<u>Sex and Age</u>	<u>Total</u>		<u>Whites</u>		<u>Blacks</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Males						
5-7	4,290	26.3	2,312	26.7	1,793	25.9
8-9	684	30.1	362	31.0	295	28.8
Females						
5-7	4,283	26.4	2,164	25.5	1,978	28.0
8-9	736	31.7	342	29.0	376	35.5
Males 5-9	4,974	26.8	2,674	27.2	2,088	26.2
Females 5-9	5,019	27.1	2,506	25.9	2,354	29.0
Total 5-9	9,993	26.9	5,180	26.6	4,442	27.6

Note: Based on Body Mass Index (BMI), overweight is defined by the age-sex-specific 85th percentile values for the combined samples of U.S. children examined in the first two National Health and Nutrition Examination Surveys (NHANES I and NHANES II, 1971-1980).³¹ BMI is calculated by dividing weight in kilograms by the square of height in meters. Here, BMI is based on the age, height, and weight of an individual at last visit (during the 4-year period) for which height and weight were recorded. Counts were insufficient to examine the data for American Indians, Asians, and Hispanics.

Table 18

Number and Percentage of Children Aged 2-4 with
 Weight-for-Height Above the 85th Percentile and Height-for-Age
 Below the 5th Percentile by Race and Sex
 North Carolina WIC Program 1992

Weight-for-Height Above the 85th Percentile

Race/Ethnicity	Total		Males		Females	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Total	21,433	19.0	10,584	18.5	10,849	19.5
White	9,478	18.1	4,697	17.6	4,781	18.6
Black	11,186	19.9	5,492	19.4	5,694	20.4
American Indian	537	18.5	268	18.4	269	18.5
Asian	232	19.5	127	20.9	105	18.2

Height-for-Age Below the 5th Percentile

Race/Ethnicity	Total		Males		Females	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Total	8,724	7.7	4,461	7.8	4,263	7.7
White	4,939	9.4	2,463	9.2	2,476	9.6
Black	3,372	6.0	1,783	6.3	1,589	5.7
American Indian	265	9.1	148	10.2	117	8.0
Asian	148	12.5	67	11.0	81	14.0

Note: These data are based on the weight, height, and age of a child at last 1992 WIC visit for which height and weight were recorded. Percentile values are for children in the CDC/WHO International Growth Reference.³²

Table 19

Percentage of Infants Breastfeeding by Age
North Carolina WIC and United States 1991-1993

Age	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>Percent Change 91-93</u>
Newborns ¹				
N.C. WIC ²	20.4	24.0	28.4	39.2
U.S. WIC ³	36.9	38.8	41.6	12.7
U.S. Total ³	53.3	54.2	55.9	4.9
Infants 5-6 Months ¹				
N.C. WIC ²	4.4	5.7	10.3	134.1
U.S. WIC ³	9.8	10.9	11.7	19.4
U.S. Total ³	18.2	18.9	19.0	4.4
Infants Still Breastfeeding at 5-6 Months ⁴				
N.C. WIC ²	21.5	23.9	36.4	69.3
U.S. WIC ³	26.6	28.1	28.1	5.6
U.S. Total ³	34.1	34.9	34.0	-0.3

¹Denominator is newborns (live births).

²Data are from the North Carolina WIC Program.

³Data are from Ross Mothers' Survey, Ross Products Division, Abbott Laboratories.³³

⁴Denominator is infants breastfeeding as newborns.

Table 20

Estimates of Uninsured Children by Age
North Carolina 1990 and 1992

<u>Age</u>	<u>Source and Year</u>		
	<u>Southern Institute 1990³⁵</u>	<u>Health Policy Research 1990³⁶</u>	<u>Sheps Center 1992³⁷</u>
Total 0-17	278,000	224,287	204,279
Ages 0-5	106,000	67,415	36,359
Under 1	NA	14,352	3,842
1-5	NA	53,063	32,517
Ages 6-17	172,000	156,872	167,920

Table 21

**Number of Children Aged 0-5 Authorized for Medicaid
by Age with Percent Changes
North Carolina, Federal Fiscal Years 1990-1994
(October through September)**

<u>Age</u>	<u>Fiscal Year</u>					<u>Percent Change 1990 to 1994</u>
	<u>1990</u> ¹	<u>1991</u> ²	<u>1992</u> ²	<u>1993</u> ²	<u>1994</u> ²	
Total	157,858	199,946	241,819	276,496	291,144	84.4
Under 1 Year	55,421	66,155	74,333	79,726	79,423	43.3
1-5 Years	102,437	133,791	167,486	196,770	211,721	106.7

¹Income eligibility levels were 150% of the poverty level for infants younger than one year, 100% of the poverty level for children aged 1-5.

²Income eligibility levels were 185% of the poverty level for infants younger than one year, 133% of the poverty level for children aged 1-5.

Source: North Carolina Division of Medical Assistance.

Table 22

**Number and Estimated Percentage of Children Aged 0-5
Authorized for Medicaid Showing Estimated Population
Eligible by Age
North Carolina November 1994**

<u>Age and Medicaid Income Level</u>	<u>Medicaid-Authorized</u>	<u>Estimated Population Eligible*</u>	<u>Percent Authorized</u>
TOTAL	201,906	182,014	110.9
Less than 1 year and less than 185% of poverty level	41,849	48,967	85.5
1-5 years and less than 133% of poverty level	160,057	133,047	120.3

*1990 age and income percentages applied to 1993 population estimates.

Source: North Carolina Division of Medical Assistance.

Summary of Financial Statements of the University of California, Berkeley for the year ending June 30, 1961

Category	1961	1960	1959	1958	1957
TOTAL	20,000	18,500	17,000	15,500	14,000
Operating Expenses	15,000	14,000	13,000	12,000	11,000
Operating Income	5,000	4,500	4,000	3,500	3,000
Capital Expenses	10,000	9,000	8,000	7,000	6,000
Net Income	10,000	9,500	9,000	8,500	8,000

The following table shows the financial results of the University of California, Berkeley for the year ending June 30, 1961. The total operating expenses for 1961 were \$15,000, compared with \$14,000 in 1960. Operating income for 1961 was \$5,000, compared with \$4,500 in 1960. Capital expenses for 1961 were \$10,000, compared with \$9,000 in 1960. Net income for 1961 was \$10,000, compared with \$9,500 in 1960.

APPENDIX

Healthy People 2000

Key Health Status Objectives Targeting Children

Duplicate objectives, which appear in two or more priority areas, are marked with an asterisk (*).

Except as otherwise noted, all rates in the following objectives are annual. Where the baseline rate is age adjusted, it is age adjusted to the 1940 U.S. population, and the target is age adjusted also. If a rate is age adjusted, the crude baseline rate may be found in Appendix D.

- 2.4 Reduce growth retardation among low-income children aged 5 and younger to less than 10 percent. (Baseline: Up to 16 percent among low-income children in 1988, depending on age and race/ethnicity)

Special Population Targets

	Prevalence of Short Stature	1988 Baseline	2000 Target
2.4a	Low-income black children <age 1	15%	10%
2.4b	Low-income Hispanic children <age 1	13%	10%
2.4c	Low-income Hispanic children aged 1	16%	10%
2.4d	Low-income Asian/Pacific Islander children aged 1	14%	10%
2.4e	Low-income Asian/Pacific Islander children aged 2-4	16%	10%

Note: Growth retardation is defined as height-for-age below the fifth percentile of children in the National Center for Health Statistics' reference population.

- 6.3 Reduce to less than 10 percent the prevalence of mental disorders among children and adolescents. (Baseline: An estimated 12 percent among youth younger than age 18 in 1989)
- 7.1a† Reduce homicides among children aged 3 and younger to no more than 3.1 per 100,000. (Age-adjusted baseline: 3.9 per 100,000 in 1987)
- 7.4 Reverse to less than 25.2 per 1,000 children the rising incidence of maltreatment of children younger than age 18. (Baseline: 25.2 per 1,000 in 1986)

Type-Specific Targets

	Incidence of Types of Maltreatment (per 1,000)	1986 Baseline	2000 Target
7.4a	Physical abuse	5.7	<5.7
7.4b	Sexual abuse	2.5	<2.5
7.4c	Emotional abuse	3.4	<3.4
7.4d	Neglect	15.9	<15.9
9.3a	Reduce deaths among children aged 14 and younger caused by motor vehicle crashes to no more than 5.5 per 100,000. (Baseline: 6.2 per 100,000 in 1987)		
9.5a†	Reduce drowning deaths among children aged 4 and younger to no more than 2.3 per 100,000. (Age adjusted baseline: 4.2 per 100,000 in 1987)		
9.6a†	Reduce residential fire deaths among children aged 4 and younger to no more than 3.3 per 100,000. (Age-adjusted baseline: 4.4 per 100,000 in 1987)		
9.8a	Reduce nonfatal poisoning among children aged 4 and younger to no more than 520 emergency department treatments per 100,000. (Baseline: 650 per 100,000 in 1986)		
11.1b	Reduce asthma morbidity among children aged 14 and younger, as measured by a reduction in asthma hospitalizations to no more than 225 per 100,000. (Baseline: 284 per 100,000 in 1987)		
11.4	Reduce the prevalence of blood lead levels exceeding 15 µg/dL and 25 µg/dL among children aged 6 months through 5 years to no more than 500,000 and zero, respectively. (Baseline: An estimated 3 million children had levels exceeding 15 µg/dL, and 234,000 had levels exceeding 25 µg/dL, in 1984)		

Special Population Target

	Prevalence of Blood Lead Levels Exceeding 15 µg/dL & 25 µg/dL	1984 Baseline	2000 Target
11.4a	Inner-city low-income black children (annual family income <\$6,000 in 1984 dollars)	234,900 & 36,700	75,000 & 0

†The baseline and target rates are not age-adjusted¹⁸

- 13.1 Reduce dental caries (cavities) so that the proportion of children with one or more caries (in permanent or primary teeth) is no more than 35 percent among children aged 6 through 8 and no more than 60 percent among adolescents aged 15. (Baseline: 53 percent of children aged 6 through 8 in 1986-87; 78 percent of adolescents aged 15 in 1986-87)

Special Population Targets

<i>Dental Caries Prevalence</i>		<i>1986-87 Baseline</i>	<i>2000 Target</i>
13.1a	Children aged 6-8 whose parents have less than high school education	70%	45%
13.1b	American Indian/Alaska Native children aged 6-8	92% [†] 52% [‡]	45%
13.1c	Black children aged 6-8	61%	40%
13.1d	American Indian/Alaska Native adolescents aged 15	93% [‡]	70%

[†]In primary teeth in 1983-84 [‡]In permanent teeth in 1983-84

- 13.2 Reduce untreated dental caries so that the proportion of children with untreated caries (in permanent or primary teeth) is no more than 20 percent among children aged 6 through 8 and no more than 15 percent among adolescents aged 15. (Baseline: 27 percent of children aged 6-8 in 1986; 23 percent of adolescents aged 15 in 1986-87)

Special Population Targets

<i>Untreated Dental Caries Among Children</i>		<i>1986-87 Baseline</i>	<i>2000 Target</i>
13.2a	Children aged 6-8 whose parents have less than high school education	43%	30%
13.2b	American Indian/Alaska Native children aged 6-8	64% [†]	35%
13.2c	Black children aged 6-8	38%	25%
13.2d	Hispanic children aged 6-8	36% [‡]	25%

[†]1983-84 baseline [‡]1982-84 baseline

- 14.1 Reduce the infant mortality rate to no more than 7 per 1,000 live births. (Baseline: 10.1 per 1,000 live births in 1987)

Special Population Targets

<i>Infant Mortality per 1,000 Live Births</i>		<i>1987 Baseline</i>	<i>2000 Target</i>
14.1a	Blacks	17.9	11
14.1b	American Indians/Alaska Natives	12.5 [†]	8.5
14.1c	Puerto Ricans	12.9 [†]	8

Type Specific Targets

<i>Neonatal and Postneonatal Mortality per 1,000 Live Births</i>		<i>1987 Baseline</i>	<i>2000 Target</i>
14.1d	Neonatal mortality	6.5	4.5
14.1e	Neonatal mortality among blacks	11.7	7
14.1f	Neonatal mortality among Puerto Ricans	8.6 [†]	5.2
14.1g	Postneonatal mortality	3.6	2.5
14.1h	Postneonatal mortality among blacks	6.1	4
14.1i	Postneonatal mortality among American Indians/Alaska Natives	6.5 [†]	4
14.1j	Postneonatal mortality among Puerto Ricans	4.3 [†]	2.8

[†]1984 baseline

Note: Infant mortality is deaths of infants under 1 year; neonatal mortality is deaths of infants under 28 days; and postneonatal mortality is deaths of infants aged 28 days up to 1 year.

- 17.8* Reduce the prevalence of serious mental retardation in school-aged children to no more than 2 per 1,000 children. (Baseline: 2.7 per 1,000 children aged 10 in 1985-88)

Note: Serious mental retardation is defined as an Intelligence Quotient (I.Q.) less than 50. This includes individuals defined by the American Association of Mental Retardation as profoundly retarded (I.Q. of 20 or less), severely retarded (I.Q. of 21-35), and moderately retarded (I.Q. of 36-50).

- 20.3d* Reduce Hepatitis B (HBV) among children of Asians/Pacific Islanders to an incidence of no more than 1,800 cases. (Baseline: An estimated 8,900 cases in 1987)
- 20.8 Reduce infectious diarrhea by at least 25 percent among children in licensed child care centers and children in programs that provide an Individualized Education Program (IEP) or Individualized Health Plan (IHP). (Baseline data available in 1992)
- 20.9 Reduce acute middle ear infections among children aged 4 and younger, as measured by days of restricted activity or school absenteeism, to no more than 105 days per 100 children. (Baseline: 131 days per 100 children in 1987)
- 20.10 Reduce pneumonia-related days of restricted activity as follows:

	<i>1987 Baseline</i>	<i>2000 Target</i>
Children aged 4 and younger (per 100 children)	27 days	24 days

Key Risk Reduction Objectives Targeting Children

- 1.3* 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)

Note: Light to moderate physical activity requires sustained, rhythmic muscular movements, is at least equivalent to sustained walking, and is performed at less than 60 percent of maximum heart rate for age. Maximum heart rate equals roughly 220 beats per minute minus age. Examples may include walking, swimming, cycling, dancing, gardening and yardwork, various domestic and occupational activities, and games and other childhood pursuits.

- 1.4 Increase to at least 20 percent the proportion of people aged 18 and older and to at least 75 percent the proportion of children and adolescents aged 6 through 17 who engage in vigorous physical activity that promotes the development and maintenance of cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion. (Baseline: 12 percent for people aged 18 and older in 1985; 66 percent for youth aged 10 through 17 in 1984)

Note: Vigorous physical activities are rhythmic, repetitive physical activities that use large muscle groups at 60 percent or more of maximum heart rate for age. An exercise heart rate of 60 percent of maximum heart rate for age is about 50 percent of maximal cardiorespiratory capacity and is sufficient for cardiorespiratory conditioning. Maximum heart rate equals roughly 220 beats per minute minus age.

- 1.5 Reduce to no more than 15 percent the proportion of people aged 6 and older who engage in no leisure-time physical activity. (Baseline: 24 percent for people aged 18 and older in 1985)

Note: For this objective, people with disabilities are people who report any limitation in activity due to chronic conditions.

- 1.6 Increase to at least 40 percent the proportion of people aged 6 and older who regularly perform physical activities that enhance and maintain muscular strength, muscular endurance, and flexibility. (Baseline data available in 1991)

- 2.10 Reduce iron deficiency to less than 3 percent among children aged 1 through 4 and among women of childbearing age. (Baseline: 9 percent for children aged 1 through 2, 4 percent for children aged 3 through 4, and 5 percent for women aged 20 through 44 in 1976-80)

Special Population Targets

<i>Iron Deficiency Prevalence</i>		<i>1976-80 Baseline</i>	<i>2000 Target</i>
2.10a	Low-income children aged 1-2	21%	10%
2.10b	Low-income children aged 3-4	10%	5%

<i>Anemia Prevalence</i>		<i>1983-85 Baseline</i>	<i>2000 Target</i>
2.10d	Alaska Native children aged 1-5	22-28%	10%

Note: Iron deficiency is defined as having abnormal results for two or more of the following tests: mean corpuscular volume, erythrocyte protoporphyrin, and transferrin saturation. Anemia is used as an index of iron deficiency. Anemia among Alaska Native children was defined as hemoglobin <11 gm/dL or hematocrit <34 percent. For pregnant women in the third trimester, anemia was defined according to CDC criteria. The above prevalences of iron deficiency and anemia may be due to inadequate dietary iron intakes or to inflammatory conditions and infections. For anemia, genetics may also be a factor.

- 3.5 Reduce the initiation of cigarette smoking by children and youth so that no more than 15 percent have become regular cigarette smokers by age 20. (Baseline: 30 percent of youth had become regular cigarette smokers by ages 20 through 24 in 1987)

Special Population Target

<i>Initiation of Smoking</i>		<i>1987 Baseline</i>	<i>2000 Target</i>
3.5a	Lower socioeconomic status youth [†]	40%	18%

[†]*As measured by people aged 20-24 with a high school education or less*

- 3.8 Reduce to no more than 20 percent the proportion of children aged 6 and younger who are regularly exposed to tobacco smoke at home. (Baseline: More than 39 percent in 1986, as 39 percent of households with one or more children aged 6 or younger had a cigarette smoker in the household)

Note: Regular exposure to tobacco smoke at home is defined as the occurrence of tobacco smoking anywhere in the home on more than three days each week.

- 8.3 Achieve for all disadvantaged children and children with disabilities access to high quality and developmentally appropriate preschool programs that help prepare children for school, thereby improving their prospects with regard to school performance, problem behaviors, and mental and physical health. (Baseline: 47 percent of eligible children aged 4 were afforded the opportunity to enroll in Head Start in 1990)

Note: This objective and its target are consistent with the National Education Goal to increase school readiness and its objective to increase access to preschool programs for disadvantaged and disabled children. The baseline estimate is an available, but partial, proxy. When a measure is chosen to monitor this National Education Objective, the same measure and data source will be used to track this objective.

- 9.12a Increase use of occupant protection systems, such as safety belts, inflatable safety restraints, and child safety seats, to at least 95 percent of children aged 4 and younger who are motor vehicle occupants. (Baseline: 84 percent in 1988)

- 11.6 Increase to at least 40 percent the proportion of homes in which homeowners/occupants have tested for radon concentrations and that have either been found to pose minimal risk or have been modified to reduce risk to health. (Baseline: Less than 5 percent of homes had been tested in 1989)

Special Population Target

<i>Testing and Modification As Necessary</i>		<i>Baseline</i>	<i>2000 Target</i>
11.6b	Homes with children	—	50%

- 13.8 Increase to at least 50 percent the proportion of children who have received protective sealants on the occlusal (chewing) surfaces of permanent molar teeth. (Baseline: 11 percent of children aged 8 and 8 percent of adolescents aged 14 in 1986-87)
- Note: Progress toward this objective will be monitored based on prevalence of sealants in children at age 8 and at age 14, when the majority of first and second molars, respectively, are erupted.*
- 20.11 Increase immunization levels as follows:
- Basic immunization series among children under age 2: at least 90 percent. (Baseline: 70-80 percent estimated in 1989)
 - Basic immunization series among children in licensed child care facilities and kindergarten through post-secondary education institutions: at least 95 percent. (Baseline: For licensed child care, 94 percent; 97 percent for children entering school for the 1987-1988 school year; and for post-secondary institutions, baseline data available in 1992)
 - Pneumococcal pneumonia and influenza immunization among noninstitutionalized, high-risk populations, as defined by the Immunization Practices Advisory Committee: at least 60 percent. (Baseline: 10 percent estimated for pneumococcal vaccine and 20 percent for influenza vaccine in 1985)
 - Hepatitis B immunization among high-risk populations, including infants of surface antigen-positive mothers to at least 90 percent. (Baseline data available in 1992)
- 21.2a Increase to at least 90 percent the proportion of infants up to 24 months who have received, as a minimum within the appropriate interval, all of the screening and immunization services and at least one of the counseling services appropriate for their age and gender as recommended by the U.S. Preventive Services Task Force. (Baseline data available in 1991)
- 21.2b Increase to at least 80 percent the proportion of children aged 2 through 12 who have received, as a minimum within the appropriate interval, all of the screening and immunization services and at least one of the counseling services appropriate for their age and gender as recommended by the U.S. Preventive Services Task Force. (Baseline data available in 1991)

Key Service and Protection Objectives Targeting Children

- 1.8 Increase to at least 50 percent the proportion of children and adolescents in 1st through 12th grade who participate in daily school physical education. (Baseline: 36 percent in 1984-86)
- 1.9 Increase to at least 50 percent the proportion of school physical education class time that students spend being physically active, preferably engaged in lifetime physical activities. (Baseline: Students spent an estimated 27 percent of class time being physically active in 1983)
- Note: Lifetime activities are activities that may be readily carried into adulthood because they generally need only one or two people. Examples include swimming, bicycling, jogging, and racquet sports. Also counted as lifetime activities are vigorous social activities such as dancing. Competitive group sports and activities typically played only by young children such as group games are excluded.*
- 5.8 Increase to at least 85 percent the proportion of people aged 10 through 18 who have discussed human sexuality, including values surrounding sexuality, with their parents and/or have received information through another parentally-endorsed source, such as youth, school, or religious programs. (Baseline: 66 percent of people aged 13 through 18 had discussed sexuality with their parents; reported in 1986)
- Note: This objective, which supports family communication on a range of vital personal health issues, will be tracked using the National Health Interview Survey, a continuing, voluntary, national sample survey of adults who report on household characteristics including such items as illnesses, injuries, use of health services, and demographic characteristics.*
- 6.14 Increase to at least 75 percent the proportion of providers of primary care for children who include assessment of cognitive, emotional, and parent-child functioning, with appropriate counseling, referral, and followup, in their clinical practices. (Baseline data available in 1992)
- 7.13 Extend to at least 45 States implementation of unexplained child death review systems. (Baseline data available in 1991)
- 7.14 Increase to at least 30 the number of States in which at least 50 percent of children identified as neglected or physically or sexually abused receive physical and mental evaluation with appropriate followup as a means of breaking the intergenerational cycle of abuse. (Baseline data available in 1993)



- 7.15 Reduce to less than 10 percent the proportion of battered women and their children turned away from emergency housing due to lack of space. (Baseline: 40 percent in 1987)
- 8.9 Increase to at least 75 percent the proportion of people aged 10 and older who have discussed issues related to nutrition, physical activity, sexual behavior, tobacco, alcohol, other drugs, or safety with family members on at least one occasion during the preceding month. (Baseline data available in 1991)

Note: This objective, which supports family communication on a range of vital personal health issues, will be tracked using the National Health Interview Survey, a continuing, voluntary, national sample survey of adults who report on household characteristics including such items as illnesses, injuries, use of health services, and demographic characteristics.

- 9.15 Enact in 50 States laws requiring that new handguns be designed to minimize the likelihood of discharge by children. (Baseline: 0 States in 1989)
- 13.12 Increase to at least 90 percent the proportion of all children entering school programs for the first time who have received an oral health screening, referral, and followup for necessary diagnostic, preventive, and treatment services. (Baseline: 66 percent of children aged 5 visited a dentist during the previous year in 1986)

Note: School programs include Head Start, prekindergarten, kindergarten, and first grade.

- 14.11 Increase to at least 90 percent the proportion of all pregnant women who receive prenatal care in the first trimester of pregnancy. (Baseline: 76 percent of live births in 1987)

Special Population Targets

<i>Proportion of Pregnant Women Receiving Early Prenatal Care</i>		<i>1987 Baseline</i>	<i>2000 Target</i>
14.11a	Black women	61.1 [†]	90 [†]
14.11b	American Indian/Alaska Native women	60.2 [†]	90 [†]
14.11c	Hispanic women	61.0 [†]	90 [†]
	[†] Percent of live births		
14.16	Increase to at least 90 percent the proportion of babies aged 18 months and younger who receive recommended primary care services at the appropriate intervals. (Baseline data available in 1992)		
17.15	Increase to at least 80 percent the proportion of providers of primary care for children who routinely refer or screen infants and children for impairments of vision, hearing, speech and language, and assess other developmental milestones as part of well-child care. (Baseline data available in 1992)		
17.16	Reduce the average age at which children with significant hearing impairment are identified to no more than 12 months. (Baseline: Estimated as 24 to 30 months in 1988)		
17.20	Increase to 50 the number of States that have service systems for children with or at risk of chronic and disabling conditions, as required by Public Law 101-239. (Baseline data available in 1991)		
	<i>Note: Children with or at risk of chronic and disabling conditions, often referred to as children with special health care needs, include children with psychosocial as well as physical problems. This population encompasses children with a wide variety of actual or potential disabling conditions, including children with or at risk for cerebral palsy, mental retardation, sensory deprivation, developmental disabilities, spina bifida, hemophilia, other genetic disorders, and health related educational and behavioral problems. Service systems for such children are organized networks of comprehensive, community-based, coordinated, and family-centered services.</i>		
21.4	Improve financing and delivery of clinical preventive services so that virtually no American has a financial barrier to receiving, at a minimum, the screening, counseling, and immunization services recommended by the U.S. Preventive Services Task Force. (Baseline data available in 1992)		



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