NCPH
North Carolina Public Health
SCHS Studies
A Special Report Series by the State Center for Health Statistics
P.O. Box 29538, Raleigh, N.C. 27626-0538
www.schs.state.nc.us/SCHS/

No. 102 February 1997

NORTH CAROLINA PERFORMANCE ON *YEAR 2000* CHILD HEALTH OBJECTIVES

by

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ABSTRACT

This report reviews North Carolina performance on national health objectives related to the health of children ages 1-19. The current set of health objectives to be achieved by the year 2000 are described in *Healthy People 2000,* which was published by the United States Public Health Service in 1987. Initially developed in 1979, these national goals for health promotion and disease prevention are frequently used for describing overall health status for the nation as a whole and/or for selected population groups.

The focus for this report is North Carolina performance on 37 objectives related to child health beyond the perinatal period and infancy. State level data is available to track the health indicators referenced in *Healthy People 2000* for 18 of the 37 objectives. For the remaining indicators, state data is available for a subset of the *Healthy People 2000* target (12), or data relevant to the objective is available (7). The majority of the objectives examined have not been achieved by the state or the nation.

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Introduction

This report on health status of the children of North Carolina updates and expands previous reports on child health status and North Carolina performance on national health objectives described in *Healthy People 2000*.

Development of a national strategy for health promotion and disease prevention was initiated in 1979, following the publication of *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*. These efforts were expanded in 1980 when the United States Public Health Service published *Promoting Health/Preventing Disease: Objectives for the Nation,* which contained objectives to be achieved by 1990. In 1987, under the direction of the National Academy of Sciences Institute of Medicine (IOM) and the United States Public Health Service (PHS), a consortium of health care providers, researchers, consumers, and advocates was convened to develop consensus on health promotion and disease prevention objectives for the nation. The consortium obtained input from individuals, organizations, and representatives of the health care industry through regional hearings and written testimony. Prior to final publication, the proposed objectives were subject to public review and comment. The resulting objectives, published by the United States Public Health Service in *Healthy People 2000: National Health Promotion and Disease Prevention*, are "deliberately comprehensive....in order to allow local communities and States to choose from among its recommendations in addressing their own high priority needs."[1] Some of the objectives contained in Healthy People were revised in 1995 after a mid-decade review of progress by the PHS.

Previous State Center for Health Statistics publications have included data to track North Carolina performance on a range of *Healthy People 2000* objectives.[2] The purpose of this report is to review North Carolina status for objectives related to the health of children ages 1-19. This age group is of special interest because statistics regarding perinatal and infant health are reported and analyzed more frequently, due in part to the relative wealth of available data.

Methods

After reviewing the national health objectives included in *Healthy Children 2000* (a compilation of *Healthy People 2000* objectives particularly relevant to infants, children, and adolescents), we selected a subset of those objectives that:

1. Are related to health status or risk-related behaviors of children and adolescents ages 1-19; and

2. Can be measured by indicators for which *state* level data is available.

For each objective included, we sought to obtain national and state data for a baseline period (usually in the mid-1980s), and for each of the years between 1990 and 1995. Data limitations at both the national and state level made this difficult for a substantial number of objectives. However, the report provides a current summary of North Carolina progress in attaining a number of health status and risk reduction goals established for children and adolescents in the United States. A list of the objectives selected for this report is included in the Appendix.

Findings

Physical Fitness

Achievement of the *Healthy People 2000* objective for **regular vigorous activity** requires that at least 75 percent of children and adolescents ages 6-17 engage in exercise strenuous enough to cause a

sweat three or more times per week. The objective can be tracked using results of the Youth Risk Behavior Survey (YRBS), which measures selected risk-taking and risk-reduction behaviors of high school students (9th to 12th grade) through a self-administered written survey.[3]

Both North Carolina and the nation have yet to meet the *Year 2000* goal by mid-decade. In 1995, 61.3 percent of North Carolina and 63.7 percent of all United States high school students reported vigorous exercise on three or more days per week.

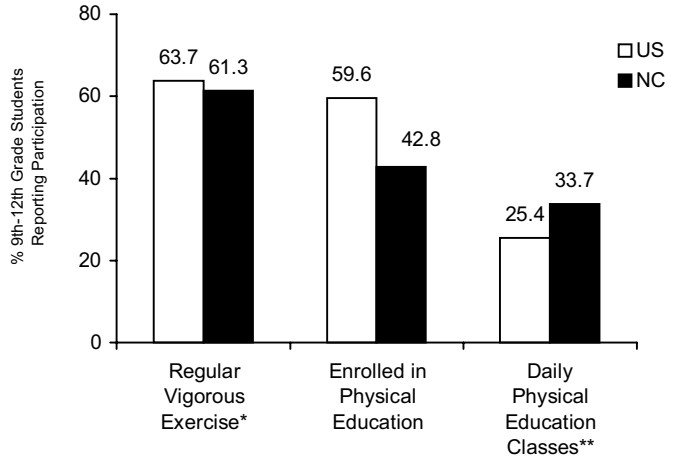
An additional physical fitness objective is to increase to 50 percent the proportion of all students with **daily physical education classes** at school. Data from the 1995 Youth Risk Behavior Survey indicate that 25.4 percent of United States high school students and 33.7 percent of North Carolina high school students have daily PE classes (Figure 1).

Nutrition

Healthy People 2000 includes an objective of maintaining the proportion of **overweight adolescents** to a level no higher than 15 percent. This reflects maintenance of national levels documented by the 1980 National Health and Nutrition Examination Survey (NHANES II). Overweight is defined as body mass index (BMI) above the 85th percentile.[4] NHANES survey data are available only for the nation as a whole. In North Carolina, information for adolescents ages 12-19 served by WIC (a public health program designed to address the nutritional needs of low income populations) is used to track this objective. While this population may not be representative of *all* North Carolina adolescents, the proportion of overweight adolescents in this group was stable between 1991 and 1993 at approximately 30 percent – a level twice the *Year 2000* target (Figure 2).

Figure 1

Percent of High School Students Participating in Selected Physical Activities: United States and North Carolina, 1995

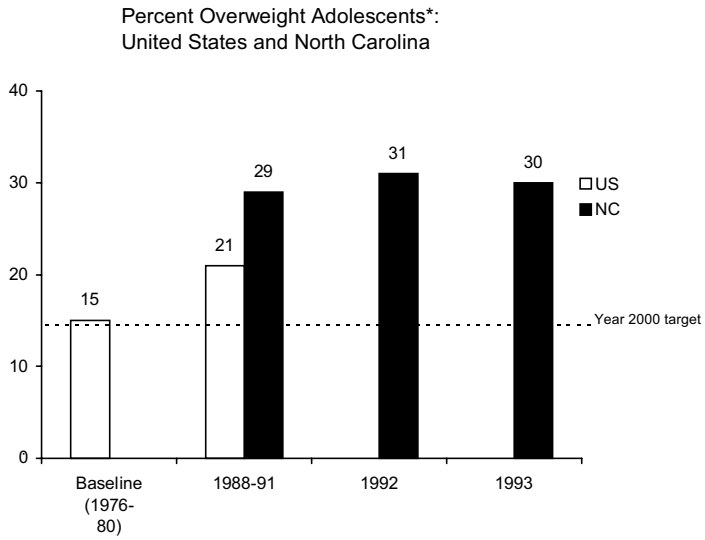


* Exercise strenuous enough to cause a sweat, done 3 or more times per week.
**Among those enrolled in PE.
Source: Youth Risk Behavior Survey

Year 2000 Objective 1.4:
Increase to at least 75% the proportion of children and adolescents ages 6-17 who engage in vigorous physical activity 3 or more days per week for 20 minutes or more per occasion.

Year 2000 Objective 1.8:
Increase to at least 50% the proportion of children and adolescents in 1st-12th grades who participate in daily school physical education.

Figure 2



*Body Mass Index (BMI) > 85th percentile, ages 12-19

Source:
US National Health and Nutrition Examination Survey (NHANES II), National Health Interview Survey .
NC DEHNR Child and Youth Program.

Year 2000 Objective 2.3:
Reduce overweight to a prevalence of no more than 15% among adolescents ages 12-19.

Healthy People 2000 also targeted reduction of **growth retardation** among low income children ages 5 or younger to less than 10 percent. For purposes of tracking this objective, "low income children" are defined as those participating in the WIC program. Growth retardation is measured by the proportion of these children with height-for-age measurements below the 5th percentile for standard growth curves. Both the United States and North Carolina had reached the *Year 2000* goal by 1992 when approximately 8 percent of children in the target group had height-for-age measurements below the 5th percentile (Figure 3).

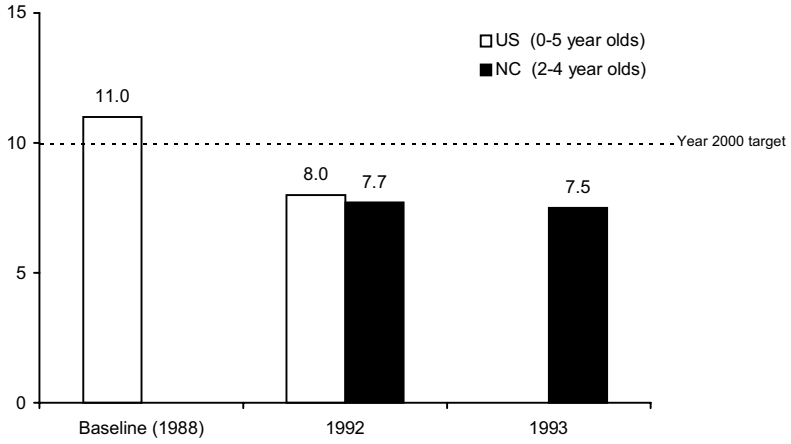
Tobacco

Healthy People 2000 objectives related to **cigarette smoking** target initiation of smoking by children and adolescents as measured by the proportion of 20-year-olds who are regular smokers. In order to include direct measures of the behavior in our target population group (ages 1-19), we provide data for high school students. Smoking behavior in this group may be indicative of the number of young adults who continue smoking into their early 20s.

In 1995 the proportion of high school students in the United States and North Carolina that smoked at least one cigarette in the past 30 days was 34.8 percent and 31.3 percent respectively. About half of these "current users" smoked cigarette(s) on 20 or more of the past 30 days ("frequent users"). This proportion is higher than, but relatively close to, the *Year 2000* target of limiting routine cigarette use to 15 percent of all 20-year-olds (Figure 4).

Figure 3

Percent of Low Income Children Ages 5 and Under with Height-for-Age Measurements Below the 5th Percentile: United States and North Carolina

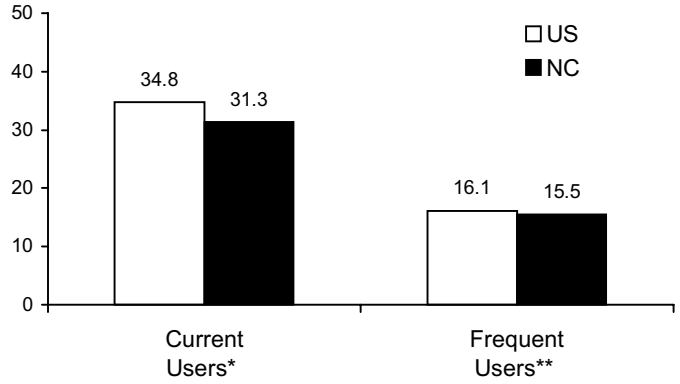


Sources:
US Pediatric Nutrition Surveillance Survey
NC DEHNR Child and Youth Program (WIC program data)

Year 2000 Objective 2.4:
Reduce growth retardation among low-income children ages 5 and younger to less than 10%.

Figure 4

Percent of High School Students Who Currently and Frequently Smoke Cigarettes: United States and North Carolina, 1995



Note:
* Current users include those that smoked at least one cigarette in past 30 days.
**Frequent users include those that smoked at least one cigarette on 20 or more of the past 30 days.

Source: Youth Risk Behavior Survey

Year 2000 Objective 3.5:
Reduce initiation of smoking by children and youth so that no more than 15% have become smokers by age 20.

Healthy People 2000 targets reduction of **smokeless tobacco use by adolescent males** ages 12 to 24 to a prevalence of no more than 4 percent. Achievement of this objective among males ages 12-17 is tracked by the National Household Survey on Drug Abuse. Comparable state data are not available. However, 1995 YRBS data indicate that among males, 16.6 percent of North Carolina high school students used smokeless tobacco at least once in the past 30 days. Smokeless tobacco use is markedly higher among white males in this age group compared to blacks (Figure 5). About one-third of male students in North Carolina middle schools have **ever** tried smokeless tobacco products.

Alcohol and Other Drugs

Healthy People 2000 includes objectives related to use of **alcohol, marijuana, and cocaine** by adolescents ages 12-17. Achievement of these goals can be monitored at the national and state level using data from the Youth Risk Behavior Survey. Results of the 1995 YRBS indicate that use of alcohol, marijuana, and cocaine by high school students in the past 30 days was above the *Year 2000* targets for the United States and North Carolina (Figure 6).

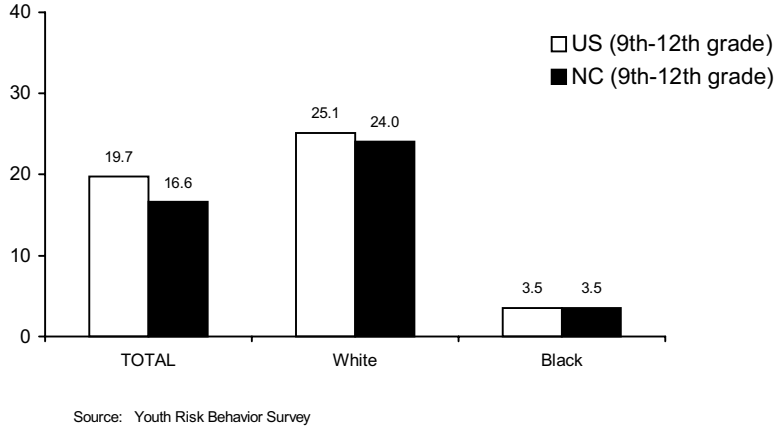
A separate objective related to episodic heavy use of alcohol (**binge drinking)** among high school seniors has also been established. The target is to reduce to 28 percent the proportion of high school seniors reporting recent consumption of five or more alcoholic drinks on one occasion. North Carolina reached this target in 1993 when the proportion of high school seniors reporting such behavior within the past 30 days was 28 percent, compared to 39 percent of all United States high school seniors. In 1995, the national figure remained at 39 percent, while North Carolina dropped to 26.2 percent (Figure 6).

Family Planning

Healthy People 2000 established national goals for **teen pregnancy** among all females ages 15-17 and among black females in the same age group.[5] Total pregnancies are estimated by the number of births plus reportable fetal deaths plus abortions within the specified age and race group. North Carolina remains above the national goal for all teens and for black teens (Figure 7).

Figure 5

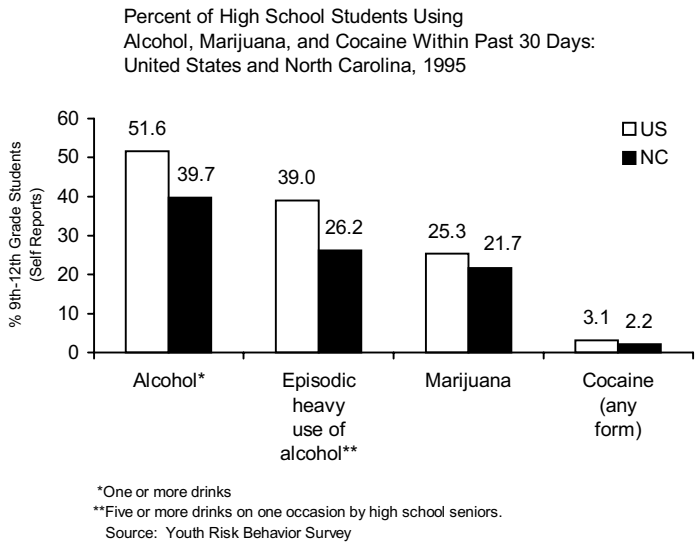
Percent of Male Students Using
Smokeless Tobacco Products Within Past 30 Days:
United States and North Carolina, 1995



Source: Youth Risk Behavior Survey

Year 2000 Objective 3.9:
Reduce smokeless tobacco use by males ages 12-24 to a prevalence of no more than 4%.

Figure 6

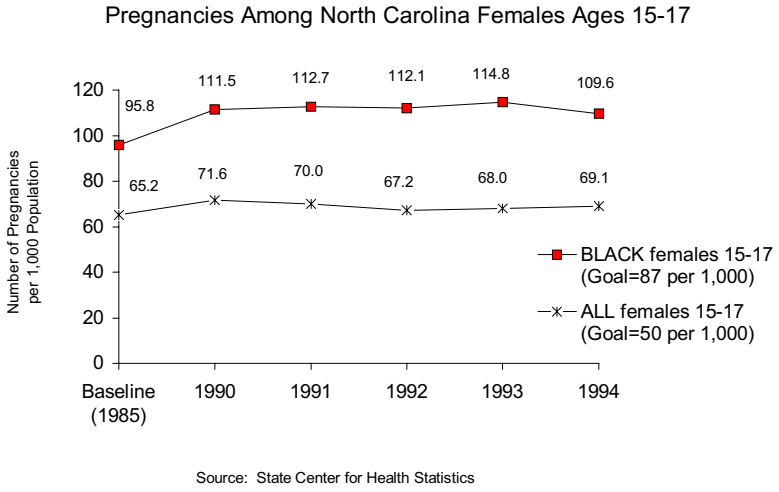


*One or more drinks
**Five or more drinks on one occasion by high school seniors.
Source: Youth Risk Behavior Survey

Year 2000 Objective 4.6:
*Reduce the proportion of young people ages 12-17 who have used **alcohol** in the past month to 12.6%.*
*Reduce the proportion of young people ages 12-17 who have used **marijuana** in the past month to 3.2%.*
*Reduce the proportion of young people ages 12-17 who have used **cocaine** in the past month to 0.6%.*

Year 2000 Objective 4.7:
Reduce the proportion of high school seniors ... engaging in recent occasions of heavy drinking of alcoholic beverages to no more than 28%.

Figure 7

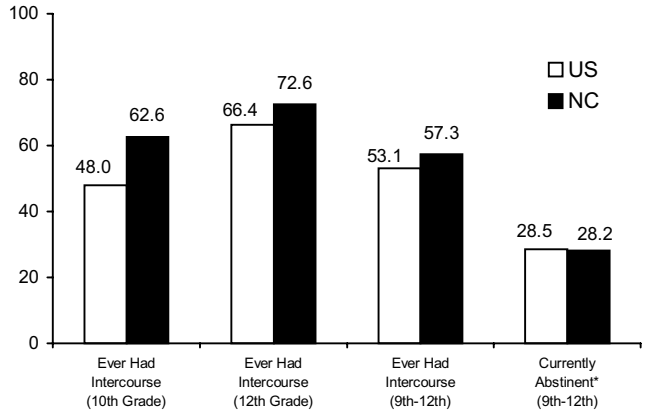


Source: State Center for Health Statistics

Year 2000 Objective 5.1:
Reduce pregnancies among girls ages 15-17 to no more than 50 per 1,000.
Reduce pregnancies among black girls ages 15-17 to no more than 87 per 1,000.

Figure 8

Percent of High School Students
Engaging in Selected Sexual Behaviors:
United States and North Carolina, 1995



Year 2000 Objective 5.4:
Reduce the proportion of adolescents who have engaged in sexual intercourse to no more than 15% by age 15, and no more than 40% by age 17.

* No sexual intercourse in the three months prior to completion of the survey among those who have ever had intercourse.

Source: Youth Risk Behavior Survey

Goals for reducing age of **initiation of sexual intercourse** include reducing the proportion of adolescents ages 15 and 17 who have ever had sexual intercourse to 15 percent and 40 percent respectively. Achievement of these goals is monitored using the Youth Risk Behavior Survey responses of 10th graders for 15 year olds, and 12th graders for 17-year-olds. In 1995, YRBS results revealed that slightly less than half of United States 10th graders, and two thirds of 12th graders reported engaging in sexual intercourse at least once. For North Carolina, the rates were higher. Over half of 10th graders (62.6%) and almost three-quarters of 12th graders (72.6%) reported having engaged in sexual intercourse.

Over half (57.3%) of all North Carolina high school students reported ever having sexual intercourse. Of these, a significant proportion (28%) are currently sexually abstinent, defined here as no intercourse in the past three months (Figure 8).

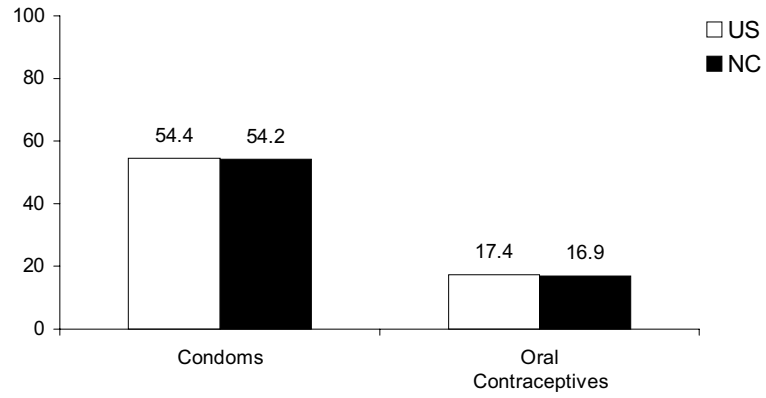
Attainment of objectives related to levels of **contraceptive use** among sexually active, unmarried adolescents is measured by the proportion of sexually active high school students using contraception at the last intercourse. In 1995, 54 percent of sexually active students in North Carolina high schools reported using condoms at last intercourse and 17 percent reported using oral contraceptives (Figure 9).[6]

Mental Health

Objectives in this category include those related to attempted and completed suicides. The national goals are to: reduce **suicides** among adolescents ages 15-19 to 8.2 per 100,000; and to reduce **injurious suicide attempts** to no more than 1.8 percent of high school students. Injurious suicide attempts are those resulting in medical or nursing attention.

Figure 9

Percent of Sexually Active* High School Students Using Condoms or Oral Contraceptives at Most Recent Intercourse: United States and North Carolina, 1995

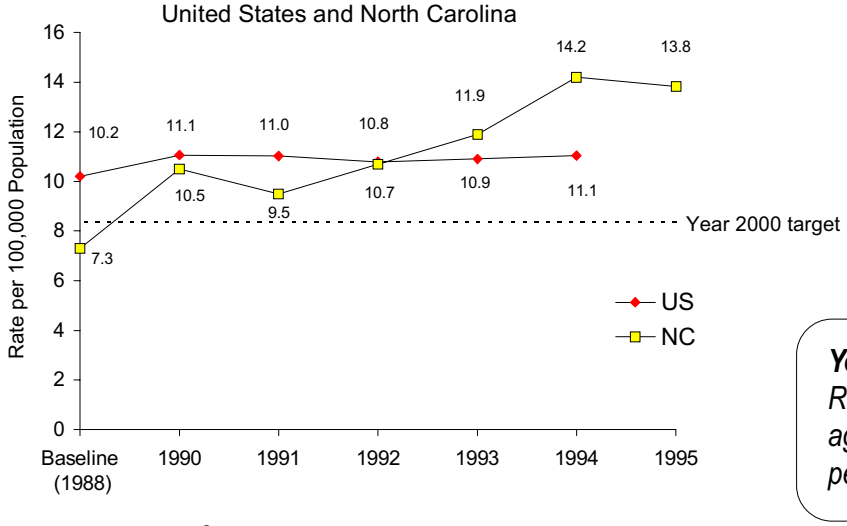


*Students reporting sexual intercourse in the 3 months prior to completing survey.
Source: Youth Risk Behavior Survey

Year 2000 Objective 5.6:
Increase to at least 90% the proportion of sexually active, unmarried people ages 19 and younger using contraception, especially combined method contraception that both effectively prevents pregnancy and provides barrier protection against disease.

Figure 10

Suicides Among Adolescents Ages 15-19: United States and North Carolina

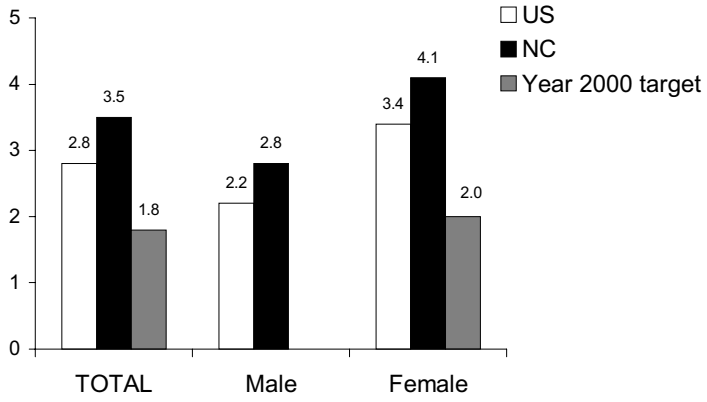


Source:
US: National Center for Health Statistics
NC: State Center for Health Statistics

Year 2000 Objective 6.1a:
Reduce suicides among youth ages 15-19 to no more than 8.2 per 100,000.

Figure 11

Percent of High School Students
Reporting Injurious Suicide Attempt Within Past 12 Months:
United States and North Carolina, 1995



Year 2000 Objective 6.2:
Reduce by 15% the incidence of injurious suicide attempts among adolescents ages 14-17 to no more than 1.8% per year.

Note: Injurious attempts include those requiring medical or nursing attention.
Source: Youth Risk Behavior Survey

In North Carolina the suicide rate for this group of adolescents has risen steadily from 7.3 per 100,000 in 1988 to 13.8 in 1995 (Figure 10). The same year, 3.5 percent of North Carolina high school students reported suicide attempts serious enough to require medical or nursing attention. The corresponding proportion of all United States high school students was 2.8 percent (Figure 11).

Violence

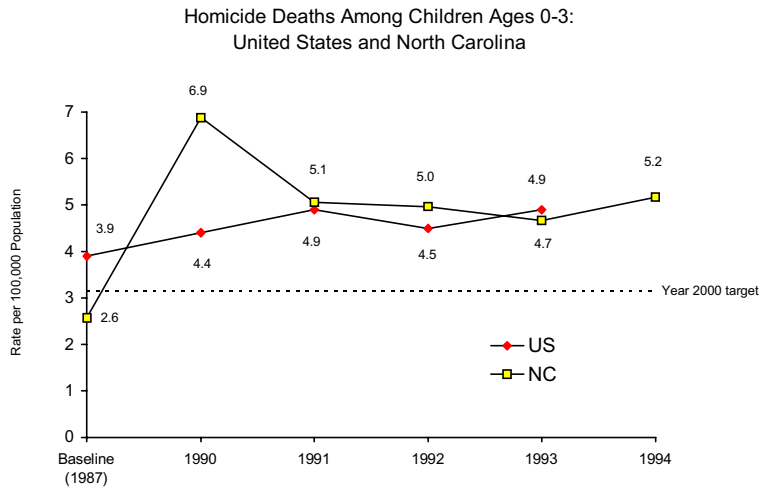
National objectives have been established for lethal and non-lethal violent behavior. To track the most severe form of child abuse, goals were established for **homicide rates among children ages 0-3**. The national goal is a rate no higher than 3.1 per 100,000. While North Carolina was below the *Year 2000* target at baseline (1987), by 1990 the homicide rate for this age group had risen above the target level and has remained at the higher levels (Figure 12).

Another objective is to reduce **homicides among black males** ages 15-34 to no more than 72.4 per 100,000. North Carolina rates are below the national rates, but have been above the *Year 2000* target throughout the 1990s (Figure 13).

National objectives include a reduction in the 12-month incidence of **physical fighting among adolescents** ages 14-17. CDC reports two indicators for fighting based on responses to the YRBS: incidents per 100 students per year and the percentage of students involved in a fight in the last year. The *Year 2000* goal is an incidence of no more than 110 per 100 students per year for all students (160 for black male students). No national goal for the percent of students involved in fights was established.[7]

Similarly, reduction of **weapon-carrying** behavior among high school students is measured by incidents per 100 students per month, and by the percentage of students reporting weapon-carrying in

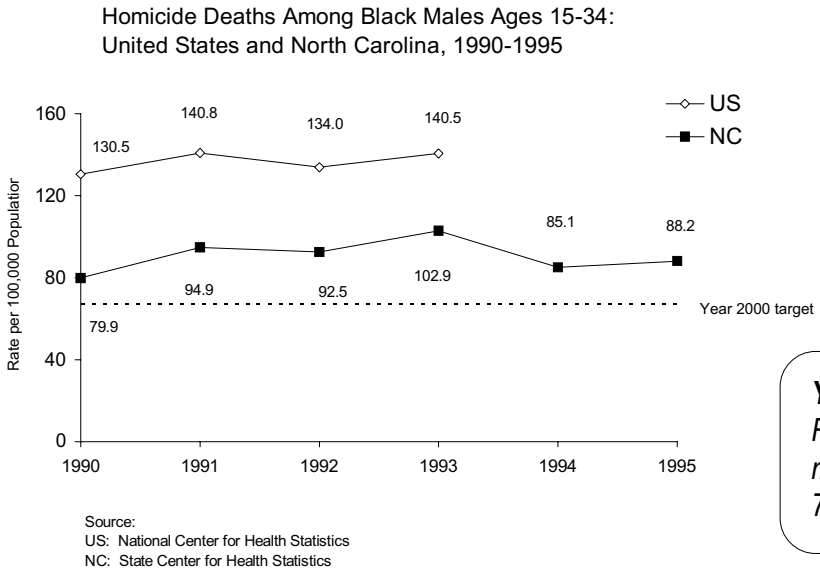
Figure 12



Source:
US: National Center for Health Statistics
NC: State Center for Health Statistics

Year 2000 Objective 7.1a:
Reduce homicides among children ages 3 and younger to no more than 3.1 per 100,000 children.

Figure 13

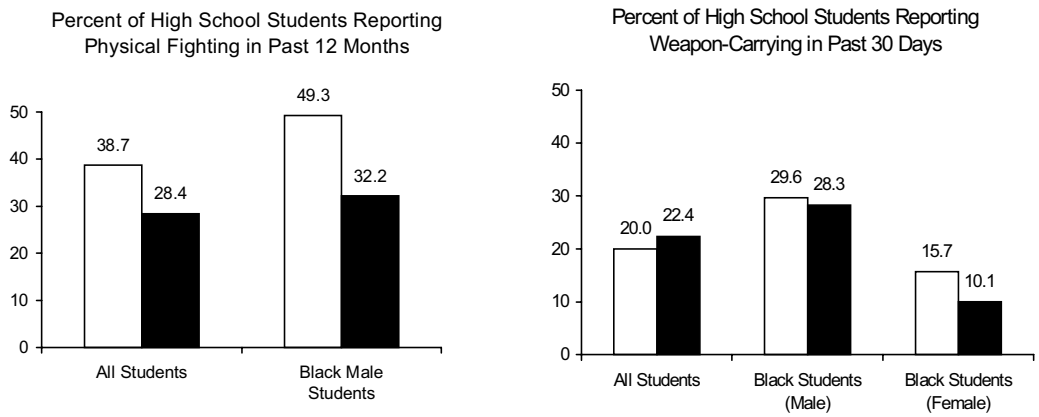


Source:
US: National Center for Health Statistics
NC: State Center for Health Statistics

Year 2000 Objective 7.1c:
Reduce homicides among black men ages 15-34 to no more than 72.4 per 100,000.

Figure 14

Physical Fighting and Weapon-Carrying Among High School Students:
United States and North Carolina, 1995



Incidence of **Physical Fighting** per 100 Students per Year	US	NC	*Year 2000* target
All Students	127.7	92.6	110.0
Black Male Students	180.5	---	160.0
Incidence of **Weapon-Carrying** per 100 Students per Month			
All Students	81.3	95.7	86.0
Black Students	119.4	---	105.0

Source: Youth Risk Behavior Survey

Year 2000 Objective 7.9:
Reduce the incidence of physical fighting among adolescents ages 14-17 to no more than 110 incidents per 100 students per year.

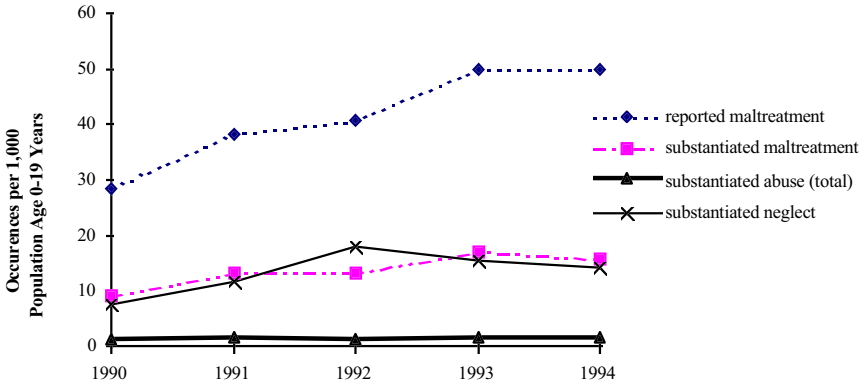
Year 2000 Objective 7.10
Reduce the incidence of weapon carrying by adolescents ages 14-17 to no more than 86 incidents per 100 students per month.

the past 30 days. The *Year 2000* target is no more than 86 incidents per 100 students per month (105 incidents per 100 black male students).[8] In 1995, North Carolina was below the national target for fighting, but above the target for weapon carrying (Figure 14).

Healthy People 2000 includes four additional objectives related to **child abuse and neglect**. The targets are based on reduction of the incidence of maltreatment (all abuse and neglect), physical abuse, emotional abuse, and neglect. Achievement of the objectives is measured by incidence per 1,000 youth age 18 and under.

Figure 15

Rate of Reported and Substantiated Child Maltreatment:
North Carolina, 1990-1994



Rates per 1,000 Population Ages 0-19

	1990	1991	1992	1993	1994
reported maltreatment	28.43	38.20	40.89	49.87	49.90
substantiated maltreatment	9.04	13.28	13.39	16.90	15.83
substantiated abuse (total)	1.33	1.46	1.29	1.49	1.55
substantiated neglect	7.71	11.83	17.96	15.35	14.07

Note: "Maltreatment" includes all cases of abuse and neglect.
Source: NC Department of Human Resources, Division of Social Services

The North Carolina Department of Human Resources, Division of Social Services (DSS) reports the total number of abuse/neglect reports and the number of reports that are substantiated. Because a child may be reported more than one time in a given year, or more than one child may be involved in each report, the data do not represent an unduplicated count. Although the data available can not measure precise attainment of the *Year 2000* target, which is expressed as unduplicated incidence of child maltreatment, the completeness of state data does allow comparison over time within North Carolina.

Using data published in the DSS 1995 annual report, we calculated the rate of reported and substantiated abuse and neglect cases per 1,000 children and youth age 19 and under. During the years between 1990 and 1994, the actual number of reports almost doubled from 52,633 to 95,811. The rate of reports per 1,000 children and youth age 19 or younger rose from 28 to 50. Approximately one third of reported cases of child maltreatment were substantiated in each of these years (Figure 15).[9]

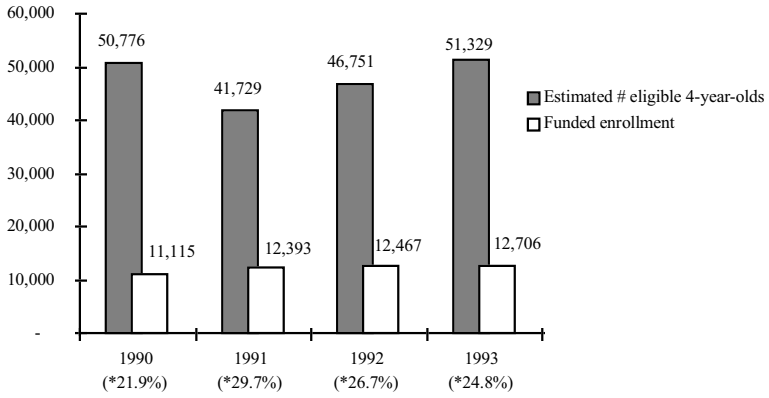
Education

Healthy People 2000 includes objectives for **access to Head Start** for low income pre-school children. A strong health component is part of the Head Start program to assure school readiness for vulnerable children. The national goal is to serve 100 percent of eligible 4-year-old children.

The North Carolina Division of Child Development estimates that half of North Carolina 3- and 4-year-olds are eligible for Head Start. The Head Start Program Information Report (PIR), which includes the total number of available slots within

Figure 16

Estimated Number of Head Start Eligible 4-Year-Old Children and
Funded Enrollment for North Carolina Head Start Programs, 1990-1993

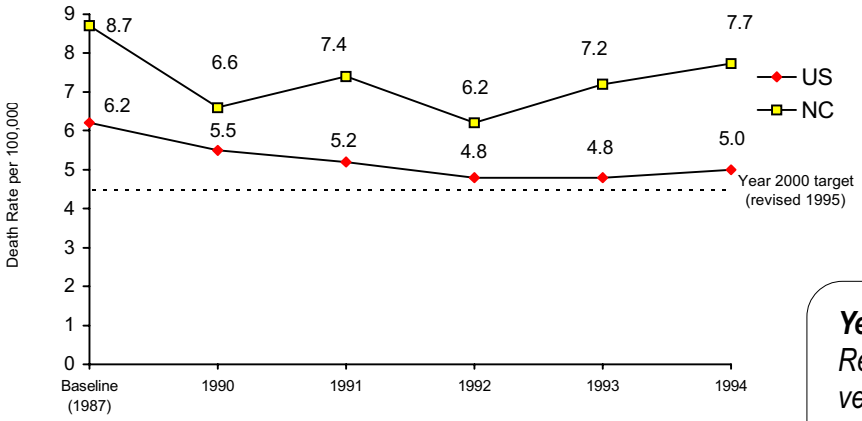


*Estimated proportion of eligible 4-year-olds with access to Head Start programs in NC.

Year 2000 Objective 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.

Figure 17

Motor Vehicle Crash Deaths
Among Children Ages 14 and Younger:
United States and North Carolina

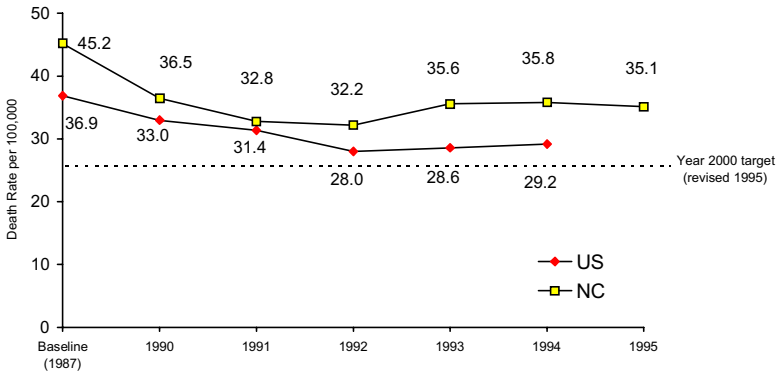


Source:
US: Fatal Accident Reporting System, DOT, National Highway Traffic Safety Administration
NC: State Center for Health Statistics

Year 2000 Objective 9.3a:
Reduce deaths caused by motor vehicle crashes to no more than 4.4 per 100,000 children ages 14 and younger.

Figure 18

Motor Vehicle Crash Deaths Among Adolescents and Young Adults Ages 15-24:
United States and North Carolina

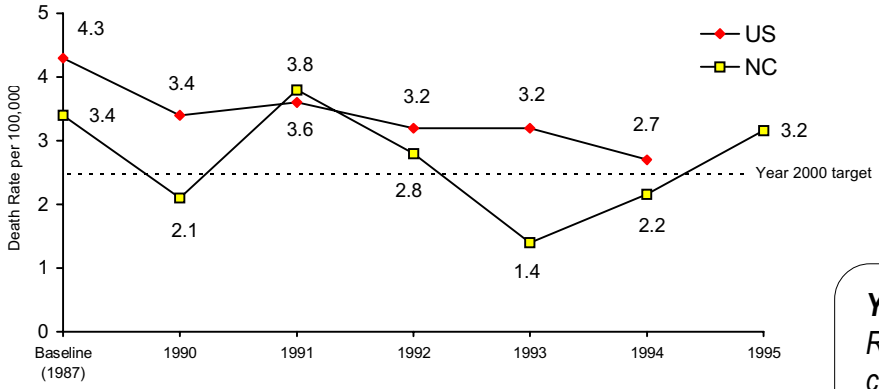


Source:
US: Fatal Accident Reporting System, DOT, National Highway Traffic Safety Administration
NC: State Center for Health Statistics

Year 2000 Objective 9.3b:
Reduce deaths caused by motor vehicle crashes to no more than 26.8 per 100,000 youth ages 15-24.

Figure 19

Drowning Deaths Among Children Ages 4 and Younger:
United States and North Carolina, 1987 (baseline) and 1990-1994

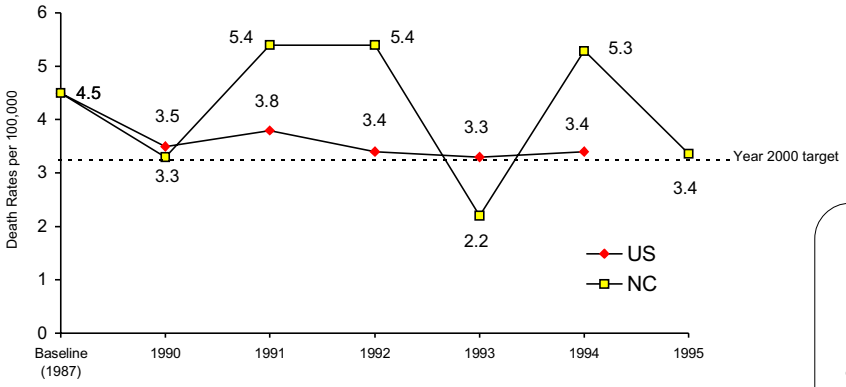


Source:
US: National Center for Health Statistics
NC: State Center for Heallth Statistics

Year 2000 Objective 9.5a:
Reduce drowning deaths among children ages 4 and younger to no more than 2.3 per 100,000.

Figure 20

Residential Fire Deaths Among Children Ages 4 and Younger:
United States and North Carolina, 1987 (baseline) and 1990-1994

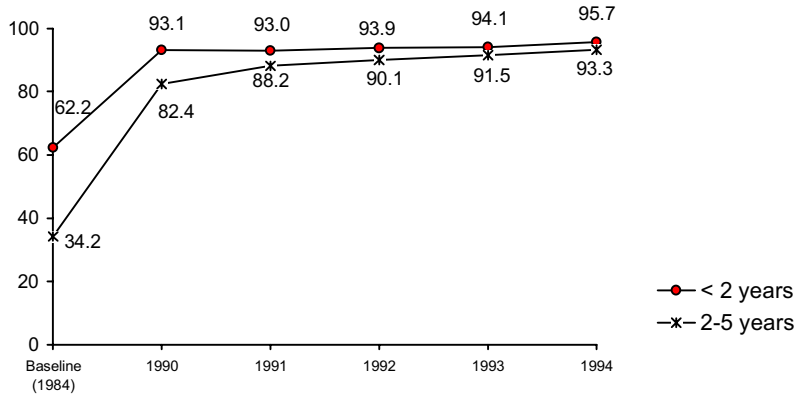


Source:
US: National Center for Health Statistics
NC: State Center for Health Statistics

Year 2000 Objective 9.6a:
Reduce residential fire deaths among children ages 4 and younger to no more than 3.3 per 100,000.

Figure 21

Percent Children Ages 5 and Under Using Auto Restraints
(Based on Police-Reported Motor Vehicle Crashes):
North Carolina, 1984 and 1990-1994



Source: NC Department of Motor Vehicles, Traffic Accident Reports

Year 2000 Objective 9.12a:
Increase use of child restraint systems to at least 70% among children age 4 and younger involved in potentially fatal crashes.

North Carolina Head Start programs, was used to estimate the number of children actually served by the program. The PIR data reflects the number of available slots for the year. Because children move in and out of the program, the number actually served will be higher. Estimates based on this information suggest space for about one quarter of eligible 4-year-olds in Head Start programs in the state (Figure 16).

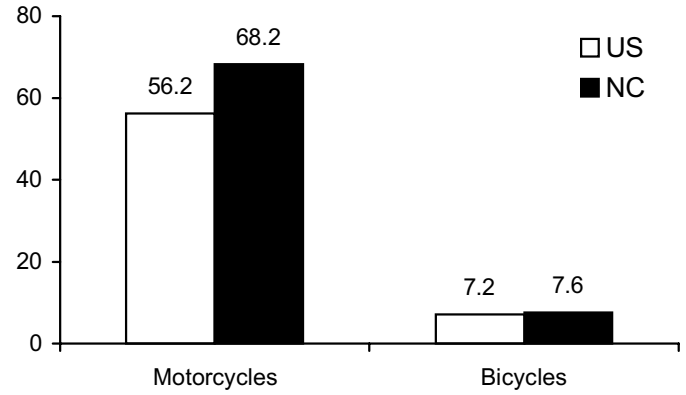
Injuries

There are national objectives related to injury deaths from **motor vehicle crashes** for ages 0-14 and 15-24; **drowning** (ages 4 and younger); and **residential fires** (ages 4 and younger). In 1995, North Carolina rates were near the *Year 2000* target levels for deaths due to drowning and residential fires among children age 4 and younger. The North Carolina motor vehicle crash death rates for the 0-14 and 15-24 year old age groups are above the *Year 2000* goal (Figures 17,18,19, and 20).

Injury prevention goals include automobile restraint use by children age 4 and younger, and helmet use by motorcyclists and bicyclists. The original *Healthy People 2000* goal of increasing **use of motor vehicle occupant protection systems** to 95 percent for children ages 0-4 was revised in 1995. The current goal is to increase such use to at least 70 percent of children ages four and younger involved in potentially fatal crashes. North Carolina Department of Motor Vehicles (DMV) statistics for all police-reported motor vehicle crashes is used to track this objective. Information is reported routinely for children under age 2, and for the 2-5 year old age group. Child safety seat use increased rapidly after legislation requiring child restraint use was

Figure 22

Percent High School Students
Using Motorcycle and Bicycle Helmets:
United States and North Carolina, 1995



Year 2000 Objective 9.13:
Increase use of helmets to at least 80% of motorcyclists, and at least 50% of bicyclists.

Note: Includes respondents who rode motorcycle or bicycle during the 12 months preceding survey, and reported using helmets "always", "sometimes", or "most times".

Source: Youth Risk Behavior Survey

enacted in 1982, and again after the law was strengthened in 1984. In 1994, 95 percent of children under age 2 and 93 percent of children age 2-5 involved in police-reported motor vehicle crashes were in restraints (Figure 21). Because fines are associated with failure to comply with auto restraint use, reported usage at the scene of a motor vehicle crash may be inflated.

Attaining goals for **motorcycle and bicycle helmet use** requires increasing such use to 80 percent and 50 percent respectively. State and national responses to the 1995 Youth Risk Behavior Survey indicate that we are far from this goal for high school students. Of North Carolina high school student respondents who had ridden a motorcycle in the past 12 months, 68.2 percent reported helmet use. Of bicyclists, only 7.6 percent reported helmet use (Figure 22).

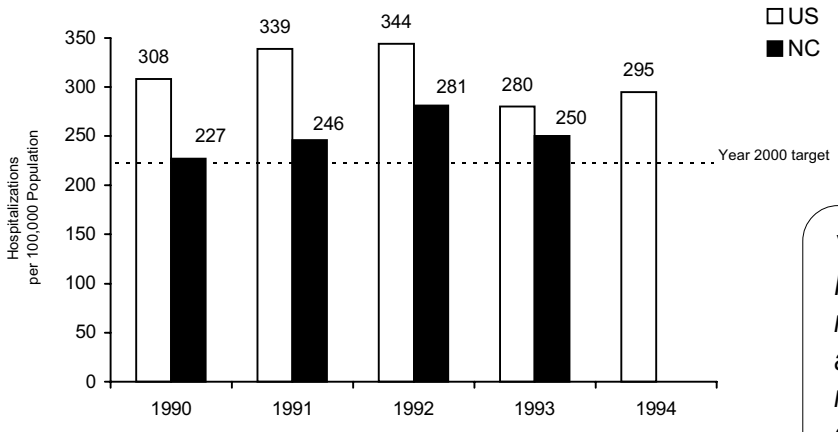
Environmental Health

Asthma, especially among children, represents a potentially preventable source of mortality and morbidity. **Asthma morbidity** among children is tracked by the number of hospitalizations for asthma among children age 14 and younger. The national goal is a rate no higher than 225 hospitalizations per 100,000 in this age group. As of 1993, the state and the nation were slightly above this target level (Figure 23).

The national goal for **blood lead levels** among children ages 6 months to 5 years is to limit elevations above 15 µg/dL to no more than 300,000 per year, and to entirely eliminate elevations above 25 µg/dL. Prevalence of elevated blood lead levels among North Carolina children is estimated by the proportion of children screened that were found to have abnormally high readings. DEHNR collects blood lead test results from public and private laboratories. Between October, 1992 and December, 1995, a total of 231,955 children were screened for lead. Of that total, 4,636 (2%) had readings of 15-24 µg/dL, and 916 (0.4%) had readings of 25µg/dL or higher (Figure 24).

Figure 23

Asthma Hospitalizations Among Children Ages 14 and Younger:
United States and North Carolina, 1990-1994

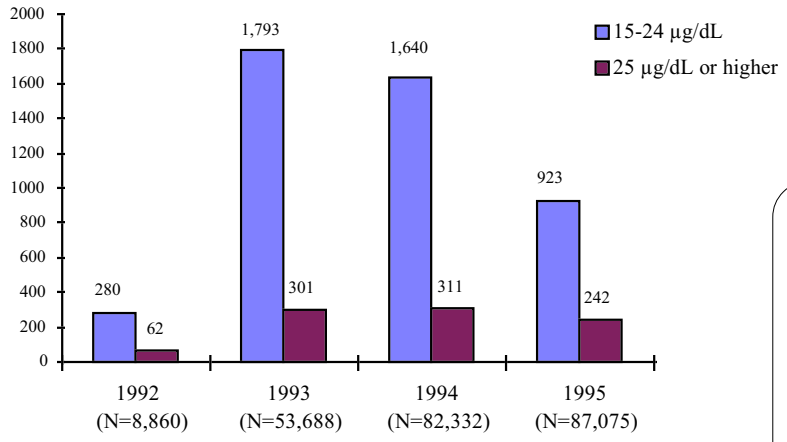


Source:
US: National Hospital Discharge Survey
NC: State Center for Health Statistics

Year 2000 Objective 11.1a:
Reduce asthma morbidity, as measured by a reduction in asthma hospitalizations to no more than 225 per 100,000 children ages 14 and younger.

Figure 24

Blood Lead Elevations Among North Carolina Children Ages 6 Months to 5 Years
(Screening Results from Public and Private Laboratories Reported to DEHNR 1992-1995)

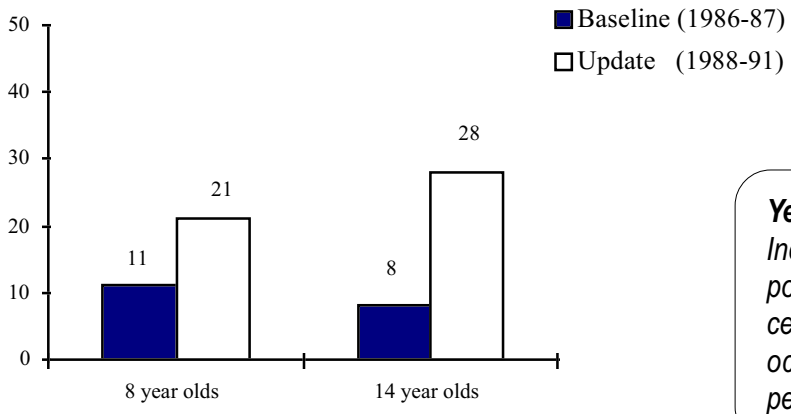


N= Total number of children reported to DEHNR.
Source: DEHNR Division of Environmental Health, Children's Environmental Health Branch

Year 2000 Objective 11.4:
Reduce the prevalence of blood lead levels exceeding 15 µg/dL and 25 µg/dL among children ages 6 months-5 years to no more than 300,000 and zero, respectively.

Figure 25

Percent of Children with Dental Sealants in Place:
United States, 1986-1987 and 1988-1991



Sources: (baseline) National Health Interview Survey,
(update) National Survey of Dental Caries in US School Children

Year 2000 Objective 13.8:
Increase to at least 50% the proportion of children who have received protective sealants on the occlusal (chewing) surfaces of permanent molar teeth.

Oral Health

Achievement of the national goal of **dental sealants** for 50 percent of all children is tracked using surveys of children at ages 8 and 14 years. The target of 50 percent coverage had not been reached by the latest year for which national data is available (1991). However, the proportion of United States 8 and 14 year olds with sealants in place rose substantially between 1986 and 1991 (Figure 25).

Estimates of the prevalence of dental sealants among children in North Carolina is based on periodic surveys of elementary and middle school students. The last comprehensive survey of all North Carolina school children was completed during the 1986-87 school year. At that time, 12 percent of all school children (K-12) had sealants in place.

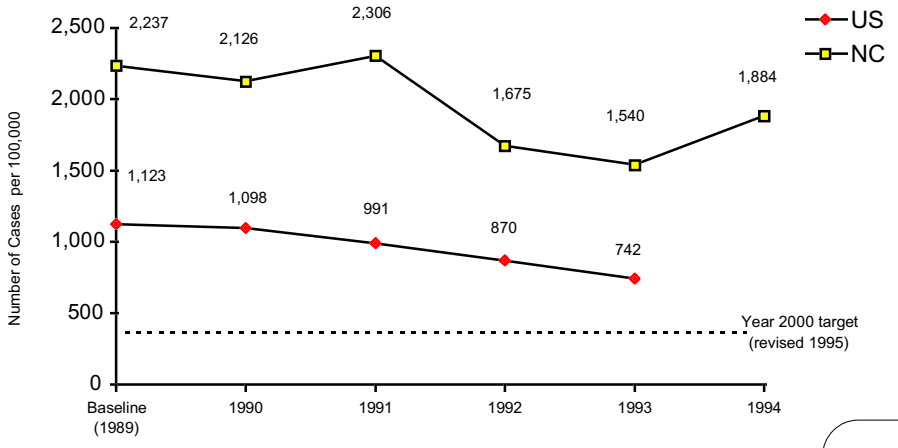
During the 1995-96 school year, 71 (of 100) North Carolina counties provided the DEHNR Division of Dental Health with data for 5th and 6th graders (11 and 12 year olds). Of the 45,074 children screened, 11,887 (26.4%) had sealants in place. This percentage may not reflect prevalence of children with dental sealants across the state. Beginning in the 1996-97 school year, the Division of Dental Health will collect and report sealant data for 5th graders (11-year-olds).

Sexually Transmitted Diseases

The original objective for reduction in reported cases of **gonorrhea** among adolescents ages 15-19 (to 750 cases per 100,000) was achieved for the nation in 1993. In 1995, the goal was revised to a rate of no more than 375 cases per 100,000. North Carolina rates are twice the national rates, and are on the rise, after a drop in 1992 and 1993 (Figure 26).

Figure 26

Reported Cases of Gonorrhea Among Adolesents Ages 15-19:
United States and North Carolina

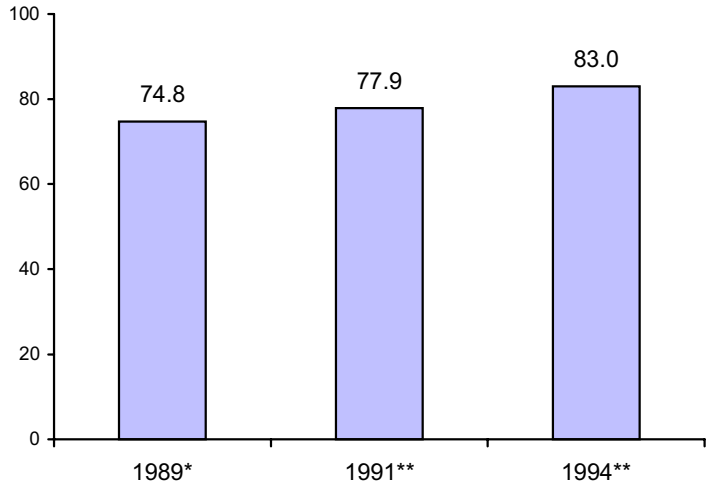


Source:
US: National Sexually Transmitted Disease Surveillance System
NC: State Center for Health Statistics

Year 2000 Objective 19.1b: *Reduce gonorrhea among adolescents ages 15-19 to an incidence of no more than 375 cases per 100,000.*

Figure 27

Completed Basic Immunization Series
Among 2-Year-Old Children in North Carolina



* Recommended immunizations included 4 DTP, 3 OPV, and 1 MMR
** Recommended immunizations included 4 DTP, 3 OPV, 1 MMR and 1 Hib

Source: DEHNR Immunization Program

Year 2000 Objective 20.11: *Increase proportion of children under age 2 with basic immunization series to 90%.*

Immunizations

Meeting the *Healthy People 2000* target requires that 90 percent of two year old children complete the **basic immunization series.** The currently recommended basic series includes administration of 4 DTP, 3 OPV, 1 MMR and 3 Hib vaccines. Immunization rates for two-year-olds in North Carolina have risen steadily since 1989. In 1994, DEHNR reported that 83 percent of two-year-olds had received all recommended vaccinations (Figure 27).

Summary

This report includes data for 37 *Healthy People 2000* objectives useful for monitoring health status of children beyond the perinatal period. Measuring health status for this generally healthy population requires assessing a broad range of indicators of physical, mental, and social well-being. Population-based health status measures that are collected routinely and consistently (i.e. death rates and incidence of life-threatening diseases) provide an important but incomplete picture of child and adolescent health. Comprehensive description of child health status also requires information about personal behaviors (especially risk-taking behavior) and use of health services.

Variations in state and national data sources pose challenges for using national objectives to monitor child health status. Many *Healthy People 2000* indicators are based on information that is currently unavailable, or available only at the national level. Therefore, statements about the extent to which North Carolina has met the goals are dependent upon the availability of state data to measure the *Healthy People 2000* indicators. The 37 objectives referenced in this report fall into three categories:

Summary of North Carolina Performance on *Year 2000* Child Health Objectives

	Relationship of North Carolina Measure to Healthy People 2000 Indicators		Attainment of Objective NO	YES	Total
1.	Objectives for which state data are available for same indicator referenced in *Healthy People 2000*.	Has the state reached the national goal?	14	4	18
2.	Objectives for which state data are available for a subset of the population referenced in the *Healthy People 2000* indicator.	Was the national goal achieved within the population sub-group for which state data is available?	11	1	12
3.	Objectives for which state data are unavailable for the *Healthy People 2000* indicator. North Carolina indicator is based on other relevant state data.	Does available information indicate general movement towards achievement of national goals?	6	1	7
		Total	31	6	37

1. Objectives for which state data are available for the same indicator referenced in *Healthy People 2000*;

2. Objectives for which state data are available for a subset of the population referenced in *Healthy People 2000* indicator; and

3. Objectives for which the *Healthy People 2000* indicator can not be measured at the state level, but for which other relevant information can be used to assess attainment of the goal.

The table below categorizes the 37 objectives addressed in this report and indicates performance on the *Year 2000* objectives. The appendix contains a complete list of objectives included in this report, indicators used for state level measurement, and current status of United States and North Carolina achievement of *Year 2000* targets.

Discussion

Establishment of broad goals and interim targets is based on accurate documentation of current status (what *is)* and assessment of what can or should be achieved (what *ought to be*). There are many ways of determining what "ought to be," and that variation is reflected in the target levels for each of the national health objectives contained in *Healthy People 2000*. Targets can be based on maintaining current health status levels or existing positive trends. Frequently, more optimistic or ambitious assessments of national and state potential for improvement were used to set targets. It is not surprising, therefore, that many of the objectives described in this report had not been achieved by the early 1990s.

By design, the national health goals contained in *Healthy People 2000* include references to indicators for which reliable and routinely collected data is not yet available. The document was intended, in part, to guide or influence efforts to improve data availability. The use of indicators for which little or no data is available limits the usefulness of this document as a source for "standard" measures of the population's health. In the years since this group of objectives were selected and ratified, there has been increasing emphasis on collecting and using data at the state and local level to monitor health status. These trends suggest a greater need for data on health status indicators that are relevant to state and local areas.

Notes

1. Healthy People 2000: National Health Promotion and Disease Prevention Objectives, page 2.
2. K.B. Surles, CHES Studies, No. 77 (1993); K.P. Blue CHES Studies, No. 87 (1994).
3. The *Youth Risk Behavior Survey* (YRBS) is administered by the North Carolina Department of Public Instruction (DPI) in collaboration with the Centers for Disease Control. The YRBS was developed by the CDC to monitor selected risk-related behaviors among adolescents. The CDC provides participating departments of education with fiscal and technical assistance to conduct the survey and analyze results. The YRBS is administered biennially (odd years) to a representative sample of public and private high school students. North Carolina high school students were surveyed in 1991, 1993, and 1995. A shorter version of the YRBS was administered to a randomly selected sample of middle school students in 1995. Parental permission is required to participate in the survey.
4. Body Mass Index (BMI) is calculated by dividing weight in kilograms by the square of height in meters. Age- and sex-specific data from the 1976-80 *National Health and Nutrition Examination Survey* (NHANES II) were used to determine the 85th percentile cut off.
5. The original Healthy People 2000 objective was to "reduce pregnancies among black adolescent girls aged 15-19 to no more than 120 per 1,000." The following note was included: "For black and Hispanic adolescent girls, baseline data are unavailable for age[s] 15-17. The [original] targets for these two populations are based on data for women age[s] 15-19. If more complete data become available, a 35-percent reduction from baseline figures should be used as the target." Subsequently, a baseline (1985) rate of 134 pregnancies per 1,000 for black teens ages 15-17 was reported by the National Center for Health Statistics, making the corresponding *Year 2000* objective 87.1 pregnancies per 1,000 for this population.
6. YRBS asks respondents to identify for the most recent intercourse the *one* method used (by self or partner) to prevent pregnancy.
7. The established target is based on a 20 percent reduction in the baseline (1991) rate. CDC measures incidence of fighting by number of incidents per 100 students per year. The 1991 rate of 137 corresponds to a *Year 2000* target of 110.

   Incidence is calculated as follows: students who report fighting 2 or 3 times in the 12 months preceding the survey were assigned a frequency of 2.5; 4 or 5 times = 4.5; 6 or 7 times = 6.5; 8 or 9 times = 8.5; 10 or 11 times = 11.5; and students responding that they were involved in fights 12 or more times were assigned a frequency of 12.
8. The target for this objective is measured by the number of days a respondent carried a weapon (such as a gun, knife, or club) in the 30 days preceding the survey. Students reporting weapon-carrying on 2 or 3 days during the month preceding the survey were assigned a frequency of 2.5; 4 or 5 times = 4.5; and students responding that they carried a weapon 6 days or more were assigned a frequency of 6.

   A 20 percent reduction in the baseline (1991) rate of 110 corresponds to a Year 2000 target of 86 incidents of weapon-carrying per 100 students per month.
9. Percent of DSS reports of child maltreatment that were substantiated, by year:

1990	31.8%
1991	34.8%
1992	32.7%
1993	33.9%
1994	31.7%

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Appendix
Summary of Objectives Included in Report

			Attainment of *Year 2000* Target*	
Healthy People 2000 National Health Objective		Indicator Reported for North Carolina	United States	North Carolina
PHYSICAL FITNESS				
1.4	Increase to at least 75% the proportion of children and adolescents ages 6-17 who engage in vigorous physical activity 3 or more days per week for 20 minutes or more per occasion.	% 9th-12th grade students (14-17 years old) reporting physical activity vigorous enough to cause a sweat at least three days per week.	No	No[2]
1.8	Increase to at least 50% the proportion of adolescents in 1st-12th grades participating in daily school physical education.	% 9th-12th grade students participating in daily physical education classes at school.	No	No[2]
NUTRITION				
2.3	Reduce overweight to a prevalence of no more than 15% among adolescents ages 12-19.	% WIC program participants ages 12-18 that are overweight.	No	No[2]
2.4	Reduce growth retardation among low-income children ages 5 and younger to less than 10%.	% WIC program participants under age 5 with height-for-age below 5th percentile.	Yes	Yes[1]
TOBACCO				
3.5	Reduce the initiation of cigarette smoking by children and youth so that no more than 15% have become regular cigarette smokers by age 20.	% 9th-12th grade students that regularly smoke cigarettes.	Yes	Yes[3]
3.9	Reduce smokeless tobacco use by males ages 12-24 to a prevalence of no more than 4%.	% high school male students using smokeless tobacco in the last month.	No	No[2]
ALCOHOL and OTHER DRUGS				
4.6	Reduce the proportion of 12-17 year olds who have used alcohol in the past month to 12.6%.	% 9th-12th grade students (14-17 year olds) who have used alcohol in the last month.	No	No[2]
4.6	Reduce the proportion of 12-17 year olds who have used marijuana in the past month to 3.2%.	% 9th-12th grade students (14-17 year olds) who have used marijuana in the last month.	No	No[2]
4.6	Reduce the proportion of 12-17 year olds who have used cocaine in the past month to 0.6%.	% 9th-12th graders (14-17 year olds) who have used cocaine in the last month.	No	No[2]
4.7	Reduce the proportion of high school seniors engaging in recent occasions of heavy drinking of alcoholic beverages to no more than 28% of high school seniors.	% 12th grade students drinking heavily within past 30 days.	No	Yes[1]

Appendix (continued)
Summary of Objectives Included in Report

			Attainment of *Year 2000* Target*	
Healthy People 2000 National Health Objective		Indicator Reported for North Carolina	United States	North Carolina
FAMILY PLANNING				
5.1	Reduce pregnancies among girls ages 15-17 to no more than 50 per 1,000 adolescents.	Number of pregnancies per 1,000 girls ages 15-17	No	No[1]
5.1	Reduce pregnancies among black girls ages 15-17 to no more than 87 per 1,000.	Number of pregnancies per 1,000 black girls age 15-17.	No	No[1]
5.4	Reduce the proportion of adolescents who have engaged in sexual intercourse to no more than 15% by age 15 and no more than 40% by age 17.	% 10th and 12th grade students that have engaged in sexual intercourse.	No	No[1]
5.6	Increase to at least 90% the proportion of sexually active, unmarried people ages 19 and younger using contraception, especially combined method contraception that both effectively prevents pregnancy and provides barrier protection against disease.	% sexually active 9th-12th grade students using condoms or oral contraceptives at most recent intercourse.	No	No[2]
MENTAL HEALTH				
6.1a	Reduce suicides among youth ages 15-19 to no more than 8.2 per 100,000.	Number of suicides per 100,000 youth ages 15-19.	No	No[1]
6.2	Reduce by 15% [to no more than 1.8%] the incidence of injurious suicide attempts among adolescents ages 14-17.	% 9th-12 grade students reporting injurious suicide attempts.	No	No[1]
VIOLENCE				
7.1a	Reduce homicides among children ages 3 and younger to no more than 3.1 per 100,000 children.	Homicides per 100,000 children age 3 or younger.	No	No[1]
7.1c	Reduce homicides among black men ages 15-34 to no more than 72.4 per 100,000.	Homicides per 100,000 black men ages 15-34.	No	No[1]
7.4	Reverse to less than 25.2 per 1,000 children the rising incidence of maltreatment of children younger than age 18.	Incidents of maltreatment per 1,000 children ages 19 and younger.	No	No[3]
7.4a	Reverse to less than 5.7 per 1,000 children the rising incidence of physical abuse of children younger than age 18.	Number of substantiated reports of physical abuse per 1,000 children ages 19 and younger.	No	No[3]
7.4b	Reverse to less than 2.5 per 1,000 children the rising incidence of sexual abuse of children younger than age 18.	Number of substantiated reports of sexual abuse per 1,000 children ages 19 and younger.	No	No[3]

Appendix (continued)
Summary of Objectives Included in Report

			Attainment of *Year 2000* Target*	
Healthy People 2000 National Health Objective		Indicator Reported for North Carolina	United States	North Carolina
VIOLENCE (continued)				
7.4c	Reverse to less than 3.4 per 1,000 children the rising incidence of emotional abuse of children younger than age 18.	Number of substantiated reports of emotional abuse per 1,000 children ages 19 and younger.	No	No[3]
7.4d	Reverse to less than 15.9 per 1,000 children the rising incidence of neglect of children younger than age 18.	Number of substantiated reports of neglect per 1,000 children ages 19 and younger.	No	No[3]
7.9	Reduce the incidence of physical fighting among adolescents ages 14-17 to no more than 110 incidents per 100 students per year.	Incidents per 100 9th-12th grade students per year.	No	Yes[1]
7.10	Reduce the incidence of weapon-carrying by adolescents ages 14-17 to no more than 86 incidents per 100 students per month.	Incidents per 100 9th-12th grade students per month.	No	No[1]
EDUCATION				
8.3	Achieve for all disadvantaged children ... access to high quality and developmentally appropriate preschool programs that help prepare children for school.	Head Start funded enrollment slots as a proportion of estimated number of eligible 4-year-old children.	No	No[3]
INJURIES				
9.3a	Reduce deaths among children ages 14 and younger caused by motor vehicle crashes to no more than 4.4 per 100,000.	Motor vehicle crash-related deaths per 100,000 children age 14 and younger.	No	No[1]
9.3b	Reduce deaths among youth ages 15-24 caused by motor vehicle crashes to no more than 26.8 per 100,000.	Motor vehicle crash-related deaths per 100,000 youth ages 15-24.	No	No[1]
9.5a	Reduce drowning deaths among children ages 4 and younger to no more than 2.3 per 100,000.	Drowning deaths per 100,000 children ages 4 and younger.	Yes	No[1]
9.6a	Reduce residential fire deaths among children ages 4 and younger to no more than 3.3 per 100,000.	Residential fire deaths per 1,000 children ages 4 and younger.	Yes	Yes[1]
9.12a	Increase use of child restraint systems to at least 70% among children age 4 and younger involved in potentially fatal crashes.**	% motor vehicle occupants ages 4 and younger using restraints (police reported incidents only).	No	Yes[2]
9.13	Increase use of helmets to at least 80% of motorcyclists and at least 50% of bicyclists.	% high school students reporting use of motorcycle and bicycle helmets.	No	No[2]

Appendix (continued)
Summary of Objectives Included in Report

			Attainment of *Year 2000* Target*	
Healthy People 2000 National Health Objective		Indicator Reported for North Carolina	United States	North Carolina
ENVIRONMENTAL HEALTH				
11.1a	Reduce asthma morbidity among children, as measured by a reduction in asthma hospitalizations to no more than 225 per 100,000 people.	Number of asthma hospitalizations per 100,000 children 14 or younger.	No	No[1]
11.4	Reduce the prevalence of blood lead levels exceeding 15 µg/dL and 25 µg/dL among children ages 6 months-5 years to no more than 300,000 and zero, respectively.**	Number of children ages 6 months to 5 years screened with blood lead level 15-24 µg/dL. Number of children ages 6 months to 5 years screened with blood lead level > 25 µg/dL.	No	No[2]
ORAL HEALTH				
13.8	Increase to at least 50% the proportion of children who have received protective sealants on the occlusal (chewing) surfaces of permanent molar teeth.	% 5th and 6th grade students with sealants on occlusal surface of permanent teeth (selected counties).	No	No[2]
SEXUALLY TRANSMITTED DISEASES				
19.1	Reduce gonorrhea among adolescents ages 15-19 to an incidence of no more than 375 cases per 100,000.	Number of reported cases of gonorrhea per 100,000 adolescents ages 15-19.	No	No[1]
IMMUNIZATIONS and INFECTIOUS DISEASES				
20.11	Increase proportion of children under age 2 with basic immunization series to at least 90%.	% children less than 2 with completed basic immunizations.	No	No[1]

*North Carolina attainment of national *Healthy People 2000* objectives assessed for these types of indicators:

1. Objectives for which state data are available for indicator referenced in *Healthy People 2000*. (Has state reached goal?)
2. Objectives for which state data are available for a subset of the population referenced in *Healthy People 2000*. (Was goal achieved for population subset?)
3. Objectives for which the *Healthy People 2000* indicator can not be measured at the state level, but for which other relevant information can be used to assess attainment of the goal. (Does data indicate movement towards achieving goal?)

**Goal was revised downward (made more challenging) in 1995 after PHS mid-decade review.

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