

## EXECUTIVE SUMMARY

Connecticut's last comprehensive state health plan, *Health, Connecticut...Looking Ahead, Planning Ahead*, was published in 1986 to inform policy makers and the public about the health of Connecticut residents, the state's health care delivery system, the need for health services and programs, and their fiscal implications. The current document shares those objectives.

Chapters 1 and 2 of *Looking Toward 2000 -- An Assessment of Health Status and Health Services* describe the infrastructure that protects the health and safety of the population and address the emerging issues facing public health. Chapters 3 and 4 provide an assessment of Connecticut's health status and components of the existing health service delivery system. Finally, Chapter 5 identifies the public health priorities for Connecticut in the next biennium.

### PUBLIC HEALTH INFRASTRUCTURE

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The public health infrastructure refers to the federal, state, and local governments' capacity to meet the basic responsibilities of preserving the health of the community. The basic responsibilities include: vital statistics, health information and education, epidemiological investigation, laboratory analysis, and administration.

The Department of Public Health (DPH) is the lead administrative agency for public health initiatives in the state. Other state agencies involved with health issues include the Department of Mental Health and Addiction Services (DMHAS), Department of Social Services (DSS), Department of Children and Families (DCF), Department of Education (DOE), and the Department of Mental Retardation (DMR). Local health departments are the providers of population-based essential public health services at the local level. Each municipality in Connecticut is served by a local health department or district. In 1997, there were 69 part-time and 26 municipal full-time health departments, and 18 health districts serving 83 municipalities.

The public health infrastructure supports the national and state goals and objectives developed to improve health status and services in the next century. The *Healthy Connecticut 2000 Baseline Assessment Report* provides a framework for program planning and evaluation with 130 objectives that focus on health status (to reduce death, disease, and disability), risk reduction (to reduce the prevalence of risks to health), and services and protection (to increase comprehensiveness, accessibility, and quality of preventive services and interventions).

Healthy community initiatives identify the local interventions needed to improve the overall health and quality of life by organizing the business, government, and health sectors to address local issues and needs. The healthy community concept relies on personal and community responsibility for determining health status.

## EMERGING ISSUES

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Emerging public health issues are those that either pose a threat or reduce a threat to the health of the population. An emerging issue can be a disease or injury that has either increased its incidence or prevalence in the past decade or threatens to increase in the near future. It can also be a “horizon issue” that has just appeared without the future public health effects being known. Finally, it can be a long-standing health issue that has become more prominent in its effects on the public’s health. The dynamic areas of public health concern for Connecticut are summarized below.

### EMERGING ISSUES IN HEALTH STATUS

#### Infectious Diseases

- New tools for preventing infectious diseases, including anti-viral agents to prevent HIV transmission; vaccines against varicella, pneumococcal disease, hepatitis A, rotavirus gastroenteritis, and Lyme disease; and national prevention initiatives for foodborne illnesses and Group B streptococcal disease.
- The changing epidemiology of tuberculosis, the greatest incidence of which is now in those born outside the U.S., and sexually transmitted diseases, which principally affect minorities in urban areas.
- The emergence of drug-resistant bacteria, which challenges both the medical and public health communities.

#### Chronic Conditions and Risk Reduction

- Violent crimes in which youth are perpetrators and/or victims.
- Obesity among children, adolescents, and adults, which is a risk factor for heart disease, stroke and high blood pressure; colon, breast, and prostate cancer; and diabetes.
- Iron overload disease (hemochromatosis), which leads to severe organ damage, arthritis, cirrhosis, diabetes, heart disease, or psychological and sexual dysfunction.
- Asthma, the most common chronic disease of childhood.
- Genetic research, particularly its impact on the diagnosis and treatment of diseases.
- Cardiovascular disease in women.

#### Environmental Conditions

- Environmental tobacco smoke, which contributes to deaths and to the development of acute and chronic illnesses.
- Food protection -- identifying safe and effective methods of ensuring that the food supply is free of pathogenic organisms.
- Health hazards from housing materials, including lead, asbestos, and formaldehyde, and radon emissions from soils.

## Occupational Conditions

- Latex allergy in workers with chronic latex exposure.
- Endocrine disrupters, environmental chemicals that exert toxic effects by mimicking hormones or by changing the way hormones normally function.

## Family Health

- Infant mortality, particularly the disparity in mortality rates between whites and non-whites, and low birthweight.
- Proper nutrition for children in child care centers.
- Breastfeeding to prevent illnesses early in life and to reduce the risk of certain chronic diseases.
- Fetal alcohol syndrome, resulting from maternal alcohol consumption during pregnancy.
- Neural tube defects such as spina bifida and anencephaly.

## EMERGING ISSUES IN HEALTH SERVICES

### Managed Care

- *Managed Care.* As more people are insured by managed care organizations, a change is occurring in the health care system's financial incentives and service delivery. The major changes are the consolidation of hospitals through mergers and acquisitions, a reduction in the length of inpatient hospital stays, and the conversion of non-profit hospitals and health plans to for-profit status.
- *Medicare Managed Care.* As a way to contain costs for the aging population, both private companies and the federal government are offering managed care plans to retirees and the Medicare-eligible.

### State Managed Care Initiatives

- *Employee Health Plan.* Employees of the State of Connecticut are offered several managed care plans for health insurance; an indemnity plan was eliminated.
- *Healthcare for Uninsured Kids and Youth (HUSKY).* Connecticut took advantage of a new Title XXI of the Social Security Act, called the State Children's Health Insurance Program (CHIP), and created the HUSKY program in October, 1997. The program is administered by the Connecticut DSS and has three parts, HUSKY Part A, HUSKY Part B, and HUSKY Plus. For Part A, CHIP funding is used for a Medicaid expansion which covers 14-18 year olds with family income up to 185% of poverty. Part B is a new state program which will provide health insurance for uninsured children under age 19 whose family income is between 185% and 300% of the federal poverty level. Families with children who are uninsured and have incomes over 300% of the federal poverty level may buy into the plan at the state-negotiated rate. Children enrolled in Part B, whose needs cannot be accommodated by the Part B standard benefit package, can apply for coverage under HUSKY Plus. HUSKY Plus provides two supplemental insurance options at no additional cost to children with special physical or behavioral health care needs.
- *Medicaid Managed Care.* DSS administers the State's Medicaid Managed Care program ("HUSKY Part A", formerly "Connecticut Access") through a federal 1915(b) waiver approved by the Health Care Financing Administration (HCFA). The program covers those clients in the TANF (Temporary Assistance to Needy Families) program and related coverage groups such as pregnant women extension groups, children up to age 19 with incomes under 185% of poverty, and children in the custody of DCF. EPSDT participation rates have improved over fee-for-service rates but remain below the 80% target mandated by the federal government.
- *Integrated Care for Dually Eligible Individuals.* As of August 1997, Connecticut was developing a Section 1115 Research and Demonstration Waiver proposal that would create a managed care model for the financing

and delivery of health care services to older persons and persons with disabilities who are dually eligible for Medicaid and Medicare. In response to concerns raised that seeking a Section 1115 waiver was too comprehensive, DSS was directed to scale this initiative back to a pilot project. This pilot project is called Connecticut Lifelong Care (CTLIC) and is modeled after the national program known as the Program for All-inclusive Care for the Elderly (PACE). It will offer adults who are qualified for nursing home care and are age 55 or older and are eligible for both Medicare and Medicaid benefits the opportunity to remain in the community. The program's goal is to improve coordination of community based services in order to delay or prevent more costly institutionalized care. Services are scheduled to begin in late 1999.

- *Managed Care Regulation.* Recent legislation provided the state's Department of Insurance with broader oversight of managed care organizations and their utilization review companies, and mandated coverage for 48-hour maternity stays and 48-hour hospital stays after mastectomy or lymph node dissection.

### Policy Issues

- *Quality Assurance.* Current debate focuses on quality centers, performance measurement, and how to hold health plans accountable for the health status of their members. Quality oversight in Connecticut is fragmented across several agencies.
- *Utilization Review.* Guidelines designed to set standards for managed care organizations regarding the assessment of medical necessity and appropriateness of clinical services have been misused and may be inadequate.
- *Managed Care Integration with Public Health.* There are concerns about access to preventive health services, the incorporation of health promotion and disease prevention into the mainstream of care, and the provision of public health services (vaccines, outreach, etc.) under managed care.

### Uninsured and Underinsured Populations

- The numbers of uninsured in Connecticut's non-elderly population has increased. Concurrently, employer-based health insurance coverage has declined.
- Large disparities in insurance coverage exist among races and ethnicities, with Hispanics being more likely to be uninsured than any other ethnic groups.
- The underinsured are thought to represent a greater proportion of the population than previously estimated.

### Elderly Services

- As the population ages, the prevalence of chronic health conditions that predominantly affect the elderly will increase.
- The health care marketplace is not supplying enough affordable, accessible health and social services for the chronically ill and disabled elderly population.
- Although the demand for care-giving will increase as the elderly population increases, the supply of caregivers and family support personnel is decreasing.

### Financing Long Term Care

- Medicare does not finance most nursing facility and home care services. Private, long-term-care insurance is a small but growing source of financing for nursing facilities and home care, and other financing options have emerged and are being tested.
- A moratorium on new nursing facility beds in Connecticut has been in effect since 1991 and is scheduled to remain in effect until 2002.
- Utilization demand is increasing for home- and community-based services. These services less costly than nursing homes.

## HEALTH STATUS AND RISK REDUCTION

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### SOCIODEMOGRAPHIC PROFILE OF CONNECTICUT

- Although Connecticut has lost population from 1990 to 1995, outmigration is slowing.
- An important demographic trend in the state is the aging of the population; compared to 1995 numbers, the proportion of persons age 85 and older is projected to be 20% higher in 2000, 43% higher in 2005, 63% higher in 2010, and 78% higher in 2020.
- In 1990, the most recent year for which data are available, Connecticut's population of 3.3 million was 85% white, 8% black, 6% Hispanic, and 1% other.
- Connecticut's economic recovery from the recession that began in 1989 has lagged behind that of the rest of New England; still, the state ranks first in the nation in *per capita* income.
- Striking racial/ethnic disparities exist among whites, blacks, and Hispanics in the areas of education level, housing, and income, with minorities faring worse than whites in all respects. Wide variation in these factors also exists by town.

### CONSENSUS HEALTH INDICATORS

Based on a consensus set of 18 health indicators used by the U.S. Public Health Service for community health assessment, the overall health status of Connecticut residents is comparatively good. In 1992, Connecticut ranked among the best ten states for eight indicators (white infant mortality; death rates for all causes, motor vehicle crashes, work-related injury, suicide, and stroke; births to adolescents; and prenatal care), but was among the worst ten states for measles incidence, AIDS incidence, and sub-standard air quality.

### MORTALITY

- When ranked by number of deaths, the top five leading causes of death for Connecticut residents (1989-91) were diseases of the heart, cancer, cerebrovascular disease, pneumonia and influenza, and chronic obstructive pulmonary disease. In 1995, these same causes were still among the top five.
- When ranked by prematurity of death (years of potential life lost to age 65), the top five leading causes of premature death (1989-91) were cancer, unintentional injuries, diseases of the heart, suicide, and homicide. By 1995, homicide had been replaced by HIV infection as one of the top five causes of premature mortality.
- There was substantial geographic variation in mortality (1989-91) in terms of both years of potential life lost (YPLL) and age-adjusted mortality rate (AAMR). The highest YPLL rates were found in the towns of Bridgeport, Hartford, New Haven, and New London. The towns with the highest AAMRs were Hartford, New Haven, Bridgeport, Sprague, and Voluntown.

### MATERNAL AND INFANT HEALTH

#### Infant Mortality

- From 1986 to 1995, there was an overall decline in infant mortality, from 9.0 to 7.3 deaths per 1,000 live births, largely reflecting a 33% decrease in the neonatal mortality rate. The decrease in infant mortality is

believed to result from the improved efficacy of newborn intensive care units, with increased survival mainly for infants of moderately low birthweight.

- Rates of infant mortality among blacks exceeded rates for whites in all years from 1986 to 1995, reflecting the higher prevalence among blacks of risk factors such as low birthweight, birth rates among teenagers, and lack of adequate prenatal care.
- Further reductions in infant mortality and morbidity will require new strategies to modify the behaviors and lifestyles that affect birth outcomes, such as smoking, drinking, illicit drug use, and utilization of prenatal care services.

#### Births to Teens and Women Aged 40-44 Years

- Women at both extremes of the childbearing age distribution were more likely to have poor pregnancy outcomes than women in their middle years.
- Birth rates among 15-19 year olds increased slightly from 1986 to 1995. In this age group, along with the 20-24 year age group, birth rates to Hispanic teens were the highest, followed by black non-Hispanics and white non-Hispanics. Rates for the three racial/ethnic groups converged at ages 25-29.
- Birth rates for teens varied substantially by town. The birth rate for females aged 15-17 was four times higher in Hartford than the statewide rate of 2.7% in 1990. Seven other towns (Bridgeport, New Haven, New London, Waterbury, New Britain, Windham, and Meriden) had rates that were at least 1.6 times above the state rate.

#### Prenatal Care

Prenatal care utilization is assessed using two risk indicators: “late or no prenatal care,” which identifies mothers who did not receive care during the first trimester (13 weeks) of pregnancy; and “non-adequate prenatal care,” which is a composite index reflecting both the trimester in which the first prenatal care visit was made and the total number of visits.

- From 1986 to 1995, the level of late or no prenatal care received by Connecticut women improved slightly, and in 1995 only about 12.3% of mothers did not initiate care during the first trimester (about half the U.S. rate). Blacks and Hispanics experienced much higher percentages than whites, but their rates of improvement over time were much better than that for whites.
- The 1986-1995 trends for non-adequate prenatal care and the differences by race/ethnicity paralleled those for late or no prenatal care, including the greater rates of improvement for blacks and Hispanics.

#### Low Birthweight

Low birthweight (<2,500 grams) is a measure of the adequacy of fetal growth during pregnancy. It is a major cause of infant mortality and long-term health problems, and is associated with increased risk of disability, such as mental retardation, cerebral palsy, and vision and hearing disabilities. Low birthweight can be prevented, however, by modification of risk factors such as poor nutrition, smoking, alcohol and other substance abuse, exposure to environmental toxicants, and absent or inadequate prenatal care.

- Percentages of low birthweight in Connecticut remained fairly constant from 1986-1995, with blacks and Hispanics having higher percentages than whites.
- In 1995, low birthweight accounted for about 7% of births and 69% of infant deaths in Connecticut. Women aged 15-19 had the greatest risk of delivering a low birthweight baby, and women aged 40-44 had the second greatest relative risk.

## BEHAVIORAL RISKS

The Behavioral Risk Factor Surveillance System (BRFSS) is a statewide telephone survey of non-institutionalized adults aged 18 and older that provides prevalence estimates for key behavioral risk factors.

Of the risk factors assessed in the survey, those discussed below are directly related to chronic diseases, low birthweight, and other adverse health outcomes.

### Tobacco

Smoking is associated with deaths from cardiovascular disease, lung, cervical, and bladder cancers, pneumonia, influenza, chronic obstructive pulmonary disease, burns, and diseases of newborn (sudden infant death syndrome and respiratory diseases). An estimated 19% of all deaths in Connecticut in 1989 were attributed to smoking. In 1995, about 1 in 5 adults reported current smoking, down from 1 in 4 in 1989. Also about 3 in 10 high school students reported current smoking.

### Alcohol

Alcohol abuse has been linked to heart disease, cancers, hepatitis, cirrhosis of the liver, and other diseases. It is a factor in about half of all motor vehicle fatalities, and can adversely affect birth outcomes. In 1995, 64.8% of Connecticut adults reported current drinking, 14.4% binge drinking, 4.4% chronic drinking, and 2.5% drinking and driving. Men and young people were at higher risk than others for alcohol use and abuse, and non-whites overall were at lower risk than whites for binge drinking.

### Physical Inactivity

Regular exercise decreases the risk of coronary heart disease and may also have beneficial effects on hypertension, diabetes, weight control, osteoporosis, anxiety, and depression. Between 1989 and 1994, at least 20% of Connecticut adults reported “no leisure time physical activity.” Women and non-whites were significantly more likely than men and whites to report no leisure time physical activity.

### High Blood Pressure

High blood pressure (hypertension) is a major risk factor for stroke and heart disease. Because it has no clear symptoms, regular blood pressure measurements are needed for detection and control. Weight control, physical activity, lower salt intake, non-smoking, and moderate alcohol consumption reduce the risk of hypertension. For 1991 through-1993, and again in 1995, more than 94% of Connecticut respondents indicated that they had their blood pressure measured by a health professional within the past 2 years. In 1995, nearly 1 in 5 adults reported they had ever been told their blood pressure was high.

### Blood Cholesterol

High blood cholesterol is a major modifiable risk factor for cardiovascular disease, especially coronary heart disease. A diet high in fat, especially saturated fat, is a risk factor for high cholesterol, and physical inactivity and smoking are related to lower levels of HDL--the “good” cholesterol. When asked in 1995, whether they had been tested for blood cholesterol and told that it was high, 25.2% of Connecticut respondents reported “yes.” This represents about 472,000 state residents.

### Diet and Overweight

Consumption of fruits and vegetables is related to reduced cancer risk, heart disease, and certain birth defects, whereas overweight is associated with a higher risk of cardiovascular disease, type II diabetes, hypertension, high blood cholesterol, and certain cancers. In 1994, two-thirds of Connecticut adults reported they did not eat five servings of fruits and vegetables daily, and in a 1995 survey of Connecticut students, more than 50% reported not eating any fruit and 25% reported not eating any vegetables the previous day. In 1995 about 1 in 4 adults was overweight. From 1989 to 1995, men were more likely than women to be obese.

## CHRONIC DISEASES

Chronic diseases are generally characterized by multiple risk factors, a long latency period, a prolonged course of illness, non-contagious origin, functional impairment or disability, and low curability. Although the causes of many chronic diseases are unknown, specific risk factors associated with many of the leading chronic diseases have been identified; many were discussed under *Behavioral Risks* (above).

### Cardiovascular Disease (CVD)

CVD is a category of disorders affecting the heart and blood vessels, and includes coronary heart disease, diseases of the heart, atherosclerosis, hypertension, and cerebrovascular disease. The major risk factors are smoking, physical inactivity, hypertension, and overweight. Although age-adjusted mortality rates for CVD declined steadily from 1986 to 1995, it remains the leading cause of death in Connecticut. For diseases of the heart (1989-1991), premature death rates were greater for black males and females than for whites and Hispanics. Blacks of both sexes also had the highest age-adjusted mortality rates, compared to whites and Hispanics.

### Cancer

Several types of cancers were selected for inclusion here on the basis of high incidence rates (lung and breast), knowledge of major causal factors (i.e., smoking for lung cancer, and excessive sun exposure for melanoma), and availability of effective screening tests that can detect cancers at an early stage (breast, cervical, and colorectal cancers).

- *Lung Cancer.* Lung cancer is the leading cause of cancer deaths in Connecticut. About 90% of lung cancers may be preventable through abstinence from tobacco. Incidence and mortality rates declined among Connecticut males from 1980-1994, but increased among women. Crude incidence was greater in whites than blacks, and particularly in white females. In both whites and blacks, age-specific average annual incidence rates (1990-1994) rose sharply after ages 40-44, especially among males.
- *Breast Cancer.* Breast cancer is the most common cancer diagnosed among Connecticut women and is the second leading cause of cancer death. The risk of breast cancer may be modified by lower fat intake, higher fruit and vegetable consumption, increased physical activity, reduced body weight, and reduced alcohol intake. Nearly one-third of Connecticut breast cancers were detected at regional and distant stages, after some metastasis had occurred. Mammography and clinical breast examination are important in reducing breast cancer mortality, through detection at an early stage.
- *Colorectal cancer.* Colon cancer is the third most commonly diagnosed cancer in Connecticut but detection and treatment of early-stage cancers reduces mortality. Evidence also supports screening for colorectal cancer among persons 50 years of age and older.
- *Melanoma of the Skin.* This cancer is a growing public health problem, and in many cases maybe prevented by modifying behavior (i.e. avoiding sun exposure) starting in childhood. Age-standardized incidence rates increased for both sexes in Connecticut from 1980-84 through 1990-94, and in 1990-94 the rates were 18.2 and 12.5 per 100,000 population in males and females, respectively. Incidence varied by town, with higher than expected incidence in certain shoreline towns.
- *Invasive Cervical Cancer.* This cancer is largely preventable through screening to detect pre-invasive lesions. Social class affects the risk of developing lesions that progress to invasive cancer. Incidence rates in Connecticut declined from 1980 to 1994, and in 1990-94 the age-standardized incidence was 7.4 per 100,000 population. For the same period, crude incidence rates were higher for black women than for white women (12.8 and 8.8/100,000, respectively). Age-specific incidence rates in 1990-94 rose through ages 45-49 years, with no clear pattern at older ages. The 1994 age-standardized death rate was 2.1 per 100,000 population, nearly twice the year 2000 objective.

## Chronic Obstructive Pulmonary Disease (COPD)

COPD (chronic bronchitis, emphysema, chronic airway obstruction) is thought to result from direct interaction of lung tissue with environmental agents, of which tobacco smoke is the most significant; cigarette smoking is thus the strongest risk factor for COPD. From 1986-1995, AAMRs for COPD in Connecticut males were fairly constant (around 30 per 100,000 population), whereas rates for females increased steadily, from 15.3 to 20.4/100,000.

## Diabetes

Diabetes is the leading cause of end-stage renal disease over all ages, and the leading cause of blindness among working-age adults. An estimated 127,000 Connecticut adults or 5.1% of the population have diagnosed diabetes; however, the true prevalence may be twice that value. Prevalence rates are higher in black non-Hispanics and Hispanics than in white non-Hispanics, and prevalence by age group is highest at age 65+. In addition, an estimated 915,170 Connecticut adults are at increased risk of undiagnosed diabetes due to the risk factors of age, obesity, sedentary lifestyle, or history of gestational diabetes. Diabetes was the seventh leading cause of death in Connecticut in 1994. AAMRs in 1989-1991 were about 2.5 times greater for blacks than whites, regardless of sex.

## Dental Diseases

Dental diseases and conditions are among the most prevalent and preventable chronic health problems. A severe lack of access to dental care exists for Connecticut's Medicaid-eligible children. The 1996 prevalence of dental decay in Connecticut 6-8 year old children was approximately 55%. Prevalence rates for baby bottle tooth decay, caused by improper feeding practices, were 25% in children enrolled in Head Start in the city of Hartford, and 20% in the towns of northwestern Connecticut.

## INJURIES

### Unintentional Injuries

Unintentional injuries kill 1,000 Connecticut residents and result in 36,000 hospital admissions in Connecticut each year. Injuries are the leading cause of premature death for males and the second leading cause for females, surpassed only by cancers. The age-adjusted mortality rate for unintentional injuries declined from 1989 to 1991, then rose 14% from 1991 to 1994. In 1994, they were the third leading cause of death based on age-adjusted mortality rate (24.4 per 100,000 population) and the sixth leading cause of death in Connecticut based on number of deaths (1,004). Also, they were the leading cause of death for individuals aged 1-34 years. Deaths to males exceeded deaths to females in every age group. More children and adolescents die each year from unintentional injuries than from all other childhood diseases combined. Important risk factors for unintentional injuries in general are alcohol/substance abuse, risk-taking behavior, the perception that injuries are "accidents," and low socioeconomic status.

- *Residential Fires.* In 1994, burn injury and smoke inhalation killed 42 Connecticut residents. Children under age 5 and adults age 65+ each had an AAMR of 2.2 per 100,000 population, or twice the rate for state residents of all ages. The AAMR for black males was 2.4/100,000.
- *Falls.* In 1995, falls were the most common cause of non-fatal injury and the second leading cause of unintentional injury death in Connecticut (196 deaths). In 1995, there were 11,055 hospitalizations in Connecticut due to falls, or nearly 60 hospitalizations for every fatality. Males at all ages and elderly females are at higher risk than the rest of the population for non-fatal fall-related injuries.

- *Motor-vehicle-related Injuries.* Motor vehicle crashes are the leading cause of unintentional injury death in Connecticut, accounting for an average of nearly one death per day. No disease or injury claims more lives of people between the ages of 1 and 34. Motor-vehicle-related injuries also account for nearly 4,000 hospitalizations in Connecticut each year. Modifiable risk factors for motor vehicle crashes include non-use or improper use of safety belts and child safety seats, drinking and driving, and, for motorcyclists, failure to wear a helmet. The 1994 Connecticut AAMR for motor vehicle crashes was 10.9 per 100,000 population, which surpassed the year 2000 target. Occupants including both drivers and passengers represented more than half of 1994 fatalities, while pedestrians constituted about one-quarter of the deaths. Death rates and number of deaths due to motor vehicle crashes, and alcohol involvement in fatal crashes in Connecticut dropped since the 1980s; the number and percentage of fatal crashes with alcohol involvement increased, however, in 1995. In 1994, males between the ages of 15 to 34 accounted for the most motor vehicle-related fatalities, and males aged 85 and older had the highest rate of death. Between 1990 and 1994, three out of every four motor-vehicle-related fatalities to Connecticut residents occurred to males.
- *Drownings.* From 1989 to 1994, there were an average of 41 drownings annually among Connecticut residents. The Connecticut's age-adjusted death rate for drowning was 0.9 per 100,000 population which surpassed the year 2000 objective of 1.0 deaths per 100,000. The number of deaths in Connecticut from unintentional drownings declined between 1989 and 1994, due mainly to a decline in male drowning deaths.

### Intentional Injuries

Intentional injury encompasses injuries and deaths that are self-inflicted or perpetrated by another person. In 1995, 2,134 hospitalizations of Connecticut residents were reported for self-inflicted injury and 3,340 for assault. The categories of intentional injuries discussed here are suicide and attempted suicide, homicide and injuries due to assault, domestic violence, and deaths and injuries due to firearms.

- *Suicide and Suicide Attempts.* Suicide ranks eleventh as a cause of death in Connecticut, and sixth in terms of premature deaths. The state AAMR for suicide was fairly stable from 1984-1994. Connecticut's 1994 age adjusted-suicide rate of 9.1 per 100,000 was about 20% lower than the U.S. rate, but fell far short of the year 2000 target rate of 6.7 per 100,000. In 1994, 320 Connecticut residents took their own lives. Most suicides (249) were males. The highest rate of suicide was among elderly white males, and the rate for whites was double that for blacks. Nearly half of Connecticut suicides were performed with a firearm. Hangings and carbon monoxide poisoning from motor vehicle exhaust accounted for one-fourth and one-fifth of the suicides respectively.
- *Homicide and Injury Due to Assault.* In 1994, an average of four Connecticut residents died each week from homicide; deaths from intentionally inflicted injuries included seven children under age 5. In 1996, 7,012 aggravated assaults were reported to police. Firearms were used in seven out of ten homicide deaths. Although Connecticut's homicide rate of 7.5 per 100,000 was lower than the U.S. rate of 10.1, the state rate was considerably higher than the year 2000 rate. Connecticut's age-adjusted mortality rate for homicides nearly doubled from 1986 to 1994, attributable to the increase in firearm homicides. During the same period, the rate of death due to non-firearm homicides remained steady. By contrast, the aggravated assault rate decreased 63% from 1990 to 1995. Three times more males than females died from homicide. In 1994, the 15-34 year age group accounted for the most deaths; 44% of the victims were black and 27% were Hispanic. Homicide was the fourth leading cause of death among black males.
- *Domestic Violence.* In 1995, 8.9 per 1,000 couples or 12,229 females age 16 and older were victims of family violence reported to Connecticut police, a 2.5% increase from 1994. In 1996, 2,637 or 14% of Connecticut's children were directly involved in situations in which one or both adults in their homes were arrested for cases involving family violence. Another 6,000 children (32%) were present in the home when a violent incident occurred, but were not directly involved. In 1995, 666 forcible rapes of females and 107 attempted rapes were reported to Connecticut police, and in SFY 1995-96, 1,084 rapes of women age 12 and over were reported to the Connecticut Sexual Assault Crisis Center.

- *Deaths and Injuries Due to Firearms.* Firearms cause nearly one of every five injury deaths in Connecticut. In 1994, 293 Connecticut residents were shot to death; 49% of the firearms deaths were homicides, 48% were suicides and 3% resulted from unintentional shootings. In 1994, 87% of the firearms deaths in Connecticut occurred to males. The firearms mortality rate for blacks was four times higher than for whites, and the risk of gun-related death was highest for the 15-24 age group. Connecticut's firearms mortality rate increased more than 50% from 1985-1994. The rate for blacks increased 91%, while the rate for whites increased 41%.

## INFECTIOUS DISEASES

*Infectious Diseases* presents data on selected communicable diseases of importance to public health in Connecticut. The diseases covered in this section are HIV/AIDS, primary and secondary syphilis, gonorrhea, chlamydia, measles, tuberculosis, Lyme disease, varicella, and certain foodborne diseases. Childhood immunizations, pneumococcal and influenza vaccination of the elderly, and invasive pneumococcal disease also are considered.

### HIV Infection and AIDS

- Acquired Immunodeficiency Syndrome (AIDS) is a life threatening state of immunodeficiency that is the usual end result of infection with the human immunodeficiency virus (HIV).
- After a steady climb since the beginning of the epidemic, the Connecticut crude AIDS incidence rate by year of diagnosis remained stable in 1994 and 1995. In addition, pediatric AIDS cases decreased each year from 1993-1995, and the HIV seroprevalence among childbearing women also decreased. Finally, the death rate in persons with AIDS dropped for the first time ever in 1996.
- Despite the positive trends, the magnitude and epidemiology of AIDS continue to pose a major challenge to prevention. In 1995, HIV infection was the leading cause of mortality for Connecticut residents aged 25-44 years, and overall, HIV infection was the seventh leading cause of death. One hundred fifty-nine of the 169 towns in Connecticut have had at least one AIDS case among their residents. While injection drug use remains the leading means of HIV transmission, heterosexual contact has become the next leading means of HIV transmission. Poor urban areas and racial/ethnic minorities continue to be disproportionately affected, with persons of Hispanic ethnicity making up an increasing proportion of all new cases.

### Sexually Transmitted Diseases

- *Primary and Secondary (P&S) Syphilis.* Syphilis is most infectious during the primary and secondary stages, and often goes unnoticed or is misdiagnosed. Untreated, it can cause debilitating nervous system disorders and death in both infected adults and newborns, and it is also a significant risk factor for HIV transmission. In 1996, the rate of P&S syphilis for Connecticut was 3.2 cases per 100,000 population. There was a 20% increase in number of cases from 1995, which was Connecticut's first increase since 1989. Between 1989 and 1995, P&S syphilis had fallen 92% from the 1989 high. In 1996, 89 of 103 cases occurred in Hartford County residents. The 1996 incidence rate in blacks was 2.8 and 61.6 times greater than the rates for whites and Hispanics, respectively.
- *Gonorrhea.* Gonorrhea is a major cause of pelvic inflammatory disease and infertility in women, and untreated infections can predispose to HIV transmission. The rate of gonorrhea per 100,000 Connecticut residents in 1996 was 103, a decrease of 17% from the 1995 rate and the lowest rate ever reported in Connecticut. From 1995 to 1996, levels of gonorrhea declined in the state's largest cities except New Haven, where it increased by 43%. The 1996 incidence rate of gonorrhea in blacks was 3.3 and 58 times the rates for Hispanics and whites, respectively.
- *Chlamydia.* Like gonorrhea, chlamydia also causes pelvic inflammatory disease and infertility in women, and untreated infection can predispose to HIV infection. Chlamydia first became reportable in the state in

1990, and reported cases declined each year from 1992 to 1996. From 1995-1996, chlamydia declined in the state's largest cities except New Haven, where it increased 41%. Most reported chlamydia infections are in women, reflecting efforts to screen and treat asymptomatic cases before they progress. From 1992 to 1996, the reported chlamydia infections were greater in blacks than in other racial/ethnic groups.

### Measles

Measles is a vaccine-preventable disease that is caused by a highly infectious virus. Complications of measles include pneumonia, encephalitis, and death. A national objective for the year 2000 is to reduce indigenous cases of measles to zero. Each year from 1980-1988, no more than 25 cases were reported in Connecticut. The number of cases increased in 1989-1990 to a total of 424 and an annual average case rate of 6.5 cases per 100,000, which was more than 15 times the annual average rate for the previous 10 years. A similar increase occurred nationally. A major factor underlying the increase was low immunization rates in pre-school children, particularly in urban areas. In 1991, the number of reported measles cases began to drop, and reached an all-time low in 1995 and 1996 of 2 cases per year.

### Tuberculosis (TB)

In 1996, 138 TB cases were reported in Connecticut, the lowest number ever reported and the fourth consecutive year of decrease. Since 1986, TB incidence has decreased at an annual average rate of 2%. Only 9% of 1996 cases have been documented as having HIV co-infection, the lowest percentage since HIV-TB co-infection became reportable in 1991. The decrease in TB and HIV-related TB is due primarily to aggressive prevention activities. High risk groups for TB in Connecticut include racial/ethnic minorities, especially those of Asian and African origin, residents of urban areas, and persons born outside the U.S. and its territories.

### Childhood Immunizations

Vaccination coverage rates for primary immunization series completion by age 2, reported for children in Connecticut in 1994 and 1995 were 86% and 85%, respectively, which approaches the national year 2000 objective of 90%. Monitoring of children enrolled in Medicaid managed care is also being done. Vaccination levels are low among urban residents of the state, among children who have delayed initiation of vaccination, among children who have moved into an area after birth (in-migrants), and among those whose parents have other indicators of poor utilization of or poor access to health care.

### Lyme Disease

Connecticut has had the highest reported rate of Lyme disease in the nation for the previous six years. Since the first full year of surveillance in 1988, Lyme disease incidence has increased in all areas of the state, particularly in Windham and Litchfield Counties. In 1996, the incidence of Lyme disease statewide was 94 cases per 100,000 population.

### Varicella (Chickenpox and Shingles)

Infection with varicella-zoster virus causes varicella (chickenpox) and shingles. It has assumed public health importance since varicella vaccine was licensed in early 1995. Chickenpox is still viewed as a benign disease of childhood against which vaccination is not needed; however, this is not the case. In Connecticut each year from 1991 to 1995, an average of 156 residents were hospitalized with chickenpox and 569 with shingles. In addition, each year between 1990 and 1994, an average of two state residents died because of chickenpox, and another 25 from shingles. Overall, blacks were 2.5 times more likely to be hospitalized with varicella than whites, and Hispanics were 4.1 times more likely. Since January 1, 1997, the

state Immunization Program has been making varicella vaccine purchased with federal funds available to vaccinate all infants without health insurance or enrolled in Medicaid.

### Invasive Pneumococcal Disease

The bacterium *Streptococcus pneumoniae* causes a wide range of infections, including pneumonia, otitis media, meningitis, and bloodstream infections. Invasive infections due to *S. pneumoniae* are among the most common serious bacterial infections in man. They are of public health concern because many are preventable with vaccine, they can occur in clusters in crowded settings, and because antibiotic-resistant strains of *S. pneumoniae* have recently emerged. During the first 12 months of active surveillance (March 1, 1995 through February 29, 1996), 801 cases of invasive pneumococcal disease were identified. Of 733 isolates, 16% were penicillin non-susceptible and 9% had high-level resistance. This is a 12-fold increase in penicillin non-susceptible *S. pneumoniae* and a 36-fold increase in high-level resistance from 1993. The rate of invasive pneumococcal disease was highest among those aged 0-4 years, those 65 years and older, and among blacks. Although the rate was lowest among whites, levels of penicillin-non-susceptible and penicillin-highly-resistant *S. pneumoniae* were much higher in whites than in other groups. No cases of penicillin non-susceptible or penicillin highly resistant *S. pneumoniae* were reported among Hispanics.

### Pneumococcal and Influenza Immunization in the Elderly

A national year 2000 objective is to increase influenza and pneumococcal vaccination levels to at least 60% for persons at high risk for influenza and pneumococcal disease, including those aged 65 years or older. In Connecticut in 1995, 62% of BRFSS respondents aged 65 and older reported getting a flu shot in the past year, which exceeded the national objective. Only 37% of respondents aged 65 and older reported they had received a pneumonia vaccination. This was a marked improvement over the 19% rate reported in 1993, though still far below the objective.

### Foodborne Diseases

Ingestion of food products contaminated with pathogenic infectious agents can lead to a wide range of health consequences with substantial mortality. Four relatively common foodborne bacterial pathogens with many health consequences are most commonly used for monitoring food safety: *Salmonella*, *Campylobacter*, *Escherichia coli* O157:H7 (referred to henceforth as O157), and *Shigella*. The year 2000 objective for infection rate was met in Connecticut in SFY 1996 for O157, but not for *Salmonella*. For salmonellosis, rates of illness were highest in children under age 10 years and adults aged 20-29 years and >80 years. Rates of illness in cases of shigellosis were highest among those aged <10 years and 20-29 years. The highest rates of O157 infections were observed in children under the age of 10. Annual incidence of infections was fairly constant from 1992 to 1996.

## ENVIRONMENTAL AND OCCUPATIONAL HEALTH

*Environmental and Occupational Health* focuses on environmental risks (air pollution, hazardous wastes, contaminated drinking water) and disease (lead poisoning in children); surveillance for birth defects; and job-related deaths, injuries, and diseases.

### Air Pollution

Year 2000 objectives include county attainment standards for ambient air pollution. In 1996, all eight counties in Connecticut were out of attainment for at least one of the six "criteria" air pollutants regulated by the U.S. EPA. The contaminant of most concern in Connecticut is ozone. All counties in

Connecticut did not meet the ozone standard. Other contaminants such as particulate matter and carbon monoxide were problems in more limited areas of the state. In 1996, in ozone non-attainment areas in Connecticut, an estimated 43,000 residents in high-risk age groups were at risk for pediatric asthma, 92,000 for adult asthma, and 188,000 for chronic obstructive pulmonary disease.

### Hazardous Waste Sites

Proximity to hazardous waste is associated with a small to moderate increased risk of some specific cancers, and increases in the risk of birth defects, neurotoxic disorders, leukemia, respiratory and sensory irritation, and dermatitis. More than 110,000 Connecticut residents live within one mile of the state's 15 federal Superfund sites (i.e., those that are on the National Hazardous Waste Priority List). Approximately 74,000 people have been exposed to site-related contaminants. The Superfund sites represent only a small fraction of the more than 500 state-listed sites, many of which have not yet been fully characterized.

### Drinking Water

There has been zero incidence of waterborne disease in Connecticut in the 1990's. The high quality of drinking water in Connecticut is maintained through a variety of regulatory activities and coordinated planning activities. All surface water supplies, for example, are filtered or are under order to do so, significantly reducing risk from waterborne disease. The national year 2000 objective for safe drinking water has been exceeded in Connecticut. In 1996, greater than 90% of Connecticut's population on community water supplies received drinking water in full compliance with the federal standards.

### Blood Lead Levels in Children

Childhood lead poisoning is one of the most common and preventable pediatric public health problems in the United States. Based on preliminary data, the prevalence of elevated blood lead levels of 10 µg/dL or greater among Connecticut children under age 6 was 6.2% during 1995. This figure is higher than the national estimate of 4.4% for this age group. The prevalence of children with elevated blood lead levels in Connecticut's urban areas was even higher than the Connecticut statewide or national figures. Urban areas also contain a larger share of the state's older housing and are more likely to contain lead-based paint in deteriorated condition. Based on preliminary data, the three towns with the highest prevalence of elevated blood lead levels for children less than 6 years of age were Bridgeport (22.1%), New Haven (18.0%), and Hartford (12.9%),

### Birth Defects Prevention Surveillance

Environmental and nutritional causes of birth defects have been postulated, but supporting data are limited. In Connecticut in 1992, the infant mortality rate due to birth defects was 1.7 per 1,000 live births. In contrast to the U.S. figures, this rate was highest for white births (1.8 per 1,000) followed by blacks (1.2 per 1,000), and others (0.7 per 1,000). There is no comprehensive national surveillance system for birth defects. DPH is developing a statewide surveillance system for birth defects.

### Occupational Deaths, Injuries, and Diseases

Connecticut's overall occupational fatality rate (2.3 per 100,000 full-time worker equivalents) for 1992-1995 was lower than the U.S. year 2000 target (4.0 per 100,000). However, the rate for the agriculture, forestry and fishing sector (22.5 per 100,000) exceeded the year 2000 target (9.5 per 100,000). Connecticut's construction sector had a lower rate (9.7 per 100,000) for the period than the year 2000 target (17 per 100,000). From 1992 to 1995, the most common types of workplace fatalities were transport incidents and assaults and violent acts. The occupational illnesses most reported were repetitive trauma disorders,

poisonings by toxic substances, skin diseases/disorders, and respiratory diseases/disorders. The number of reports increased each year because outreach efforts have made more physicians aware of the reporting requirements; however, the relative proportions of reports in each of the four major categories remained fairly stable.

## HEALTH SERVICES DELIVERY

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Connecticut's health care delivery system provides its residents with personal health care services from a wide range of facility providers including, but not limited to, school based health centers, community health centers, outpatient clinics, and physicians' offices for primary care services; free-standing and hospital-based outpatient surgical centers for diagnostic or minor surgical procedures; acute care hospitals for emergency care, routine outpatient, or inpatient services; long term care facilities for chronic care or rehabilitative services; and increasingly non-institutional settings, such as the home, for services ranging from intravenous infusion of medications to physical therapy. Utilization is dependent upon a variety of demographic, economic, and environmental factors. Promotion of high quality health care and services is guided by the licensure or certification of health care facilities and health care professionals. Connecticut still maintains a Certificate of Need program that regulates health care facilities with regard to new or expanded facilities or services, decreased or terminated services, and purchases of medical equipment.

### ACUTE CARE

- The number of hospital discharges as well as the number of days spent in a hospital declined from FFY 1991 to FFY 1995. The future need for acute care services indicates an overall service reduction, particularly for medical/surgical services, but a somewhat greater need for intensive services such as provided in intensive care, coronary care, or neonatal intensive care units.
- The top six leading causes of hospitalization in FFY 1995 were birth-related conditions, heart disease, digestive system disorders, mental health, cancer, and injuries.
- Females were hospitalized more often than males for cancer, chronic obstructive pulmonary disease, central nervous system disorders, and digestive system disorders. Males were hospitalized more often than females for heart disease, alcohol and drug abuse or dependence, and HIV/AIDS.
- Excluding birth-related conditions, adults aged 65 and over were the largest users of hospital services and they prevailed in nearly all the leading causes of hospitalization. Seventy percent of the hospitalizations for HIV/AIDS were persons aged 30-44; 50% of the hospitalizations for alcohol and drug abuse or dependence were 25-44; and the asthma hospitalization rate for children under age five was triple that of all other patients.
- Between Medicare and Medicaid, 50% of all hospitalizations and 60% of total hospital charges were publicly funded.

### LONG TERM CARE

- Provision of chronic care services is being provided not only in nursing home facilities, but also in alternative settings such as home care, assisted living, and adult day care settings.
- In FFY 1995, Connecticut's nursing facility residents were predominantly female (74%), the average length of stay was 2.2 years, and utilization increased markedly with age.
- The state's nursing facility bed capacity did not peak until 1994 even though a moratorium on newly licensed beds was established in 1991 to reduce nursing facility utilization. The proportion of rest home with nursing supervision (RHNS) beds, the lower intensity category of beds, to chronic care nursing home

(CCNH) beds declined by half since 1991, primarily due to federal reimbursement policies. With the overall trend toward lower intensity levels of care, a net undersupply will be created for RHNS beds by 2005.

## HOME HEALTH CARE SERVICES

Home health care services doubled from SFY 1991 to SFY 1995. Projections indicate that the need for services could double again by 2005.

## EMERGENCY MEDICAL SERVICES

The planning, development, and administration of the statewide EMS system is carried out by DPH. The EMS delivery system includes 276 prehospital care providers, 68% of which are volunteer ambulance companies and volunteer fire departments; nine hospitals are designated trauma facilities. Although a trauma registry exists, a statewide prehospital data collection system is still lacking.

## PRIMARY CARE SERVICES

- *School-based Health Centers.* From SFY 1991 to SFY 1996, the number of school-based health centers grew four-fold, the number of clients served increased nine-fold, and the number of visits increased by a factor of 12, in an attempt to provide access to primary and preventive health services for children. This translates into a three-fold real growth effect, because the increase in the number of visits was triple that of the number of centers.
- *Community Health Centers.* From SFY 1990 to SFY 1996, the utilization of community health centers has more than doubled. These facilities offer community-based, primary health care services to low income clients located in medically underserved urban or rural areas.
- *Ambulatory Services.* The State of Connecticut currently does not collect data regarding routine patient encounters with their doctors, nor data related to outpatient surgery performed in hospital owned or operated outpatient facilities, in free-standing ambulatory surgical centers, or in physicians' offices.
- *Health Workforce.* Although areas in Connecticut have been designated as Health Professional Shortage Areas, indicating that the ratio of the population to primary care physicians exceeds 3,000:1, data are not collected regarding the distribution of practicing physicians and other health professionals across the state.

## CONNECTICUT'S PUBLIC HEALTH PRIORITIES

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The public health priorities for Connecticut were chosen based on DPH's responsibility to provide certain basic, core public health programs, and the concepts of disease burden and modifiability. DPH identified 25 public health priorities for promoting the health of state residents.

### HEALTH STATUS PRIORITIES

1. Prevention and cessation of tobacco use
2. Reduction of the factors associated with intentional, unintentional, and occupational injury
3. Improvement in rates of breast, cervical, and colorectal cancer screening and follow-up
4. Improvement in rates of hypertension detection and control
5. Improvement in rates of diabetes monitoring and control
6. Improvement in diet and rates of blood cholesterol monitoring and control
7. Further determination and reduction of the factors associated with adverse pregnancy outcomes
8. Reduction of risky sexual behavior that leads to acquisition of HIV/AIDS, STDs, and unwanted pregnancy
9. Reduction of physical inactivity
10. Reduction of alcohol abuse
11. Reduction of illicit substance use and practices associated with transmission of infectious diseases

### HEALTH SERVICES PRIORITIES

1. Reinforce and strengthen the public health infrastructure
2. Focus resources on the collection, analysis, interpretation, and dissemination of health data and information for better monitoring of the health care delivery system
3. Promote the development of adequate programs and services for persons 65 years of age and older
4. Monitor the growth and development of managed care and its impact on the delivery and utilization of personal health care services
5. Expand access to affordable health insurance and primary and preventive health care services to the uninsured and underinsured

### ESSENTIAL PUBLIC HEALTH PROGRAMS

1. Infectious disease control
  - 1.1. Monitoring and control of all infectious diseases
  - 1.2. Investigation of outbreaks of infectious diseases and food poisoning
  - 1.3. Immunization programs
2. Health provider quality assurance
  - 2.1. Setting and enforcing standards for professional provider qualifications and provider and facility quality assurance
3. Environmental assurance
  - 3.1. Protection of food and water through the setting and enforcing of quality standards
  - 3.2. Lead abatement in housing and testing of children for blood lead levels
4. Health services assurance
  - 4.1. Setting and enforcing standards for preventive health care
  - 4.2. Assuring the provision of health care services to underserved populations
  - 4.3. Family nutrition programs

The health status priorities focus on reducing mortality and morbidity by targeting problems that are modifiable. The health service priorities focus on improving the quality and accessibility of the state's personal health services, and developing better health information. The essential public health programs support activities that assure protection from preventable environmental conditions and infectious diseases, and regulate personal health care standards.

Based on the issues and the priorities identified in the *Assessment*, DPH's policies and programs will emphasize those health conditions that are the most pervasive among our residents: cardiovascular and cerebrovascular disease, cancer, unintentional injuries, and the modifiable risk factors associated with them. These factors are tobacco use, diet and cholesterol, physical inactivity, and hypertension.

DPH is now in the process of allocating resources for public health action to four key areas addressed by the priorities:

- ◇ Cardiovascular disease
- ◇ Cancer
- ◇ Injuries
- ◇ Surveillance and monitoring

To maintain currency in its planning and priority-setting efforts, DPH will reassess the health status and health services of the state every two years. This biennial planning process is essential for setting meaningful policy and program direction for the Connecticut DPH in the future.