

# CHAPTER 2

## EMERGING ISSUES

### INTRODUCTION

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While trying to resolve long-standing health issues, public health must also be prepared to address new concerns. The most reliable guide to predicting future developments in health is a careful examination of current trends in society and progress in research.<sup>1</sup> As noted in Chapter 1, essential public health services include the monitoring of health status and health services while searching for innovative solutions to health problems. The Institute of Medicine stated that the approach to public health in the U.S. has too often been driven by crisis; a more costly approach than instituting preventive measures before the crisis breaks.<sup>2</sup> Such an approach also ignores the contribution prevention can make to the public's overall health, quality of life, and productivity.

Emerging health issues are those that pose either a threat or relief from threat to the overall health of the population. An emerging issue can be a disease or injury that has either increased 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 begun to develop in our society and the future public health effects of which are uncertain. Finally, it can be an increased visibility in a long-standing health issue that continues to obstruct the public health goal of reducing death and disability.

The emerging issues affecting health status reflect the dramatic changes in our society and environment. Personal and population health status are broadly defined to include the physical environment (e.g. air and water); the socio-economic environment (e.g. poverty, age); the personal health habits of the population (e.g. smoking, use of seat belts); and the presence of disease and injury. Each of these areas evolves and affects the overall health status of the population. Connecticut and the nation are seeing increases in the population aged 65 and older, implementation of welfare reform which affects poverty rates, increasing levels of urban violence, and greater exposure to new infections.<sup>3</sup> Public health responds to these changes with surveillance to monitor the changes, research for innovative solutions to health problems, and policies to address the changing health environment. There is a national effort, for example, to update *Healthy People 2000*<sup>4</sup> to develop objectives for the year 2010 which affect positive change in health status.

This chapter explores emerging issues that concern public health today. Issues related to the health of the population include the emergence of new AIDS treatments, the changing epidemiology of sexually transmitted diseases, tuberculosis, asthma, women and heart disease, and obesity in children. Emerging environmental issues include exposure to secondary tobacco smoke, recent tobacco litigation, foodborne diseases, and blood lead levels in children. The long-standing family health issues of infant mortality and child nutrition are also considered, because of their potential to cause future declines in health status.

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<sup>1</sup> Lawrence, RS. Future of Health Promotion and Disease Prevention in Clinical Practice and in the Community. In: Woolf, SJ, Jonas S, Lawrence, RS, editors. *Health Promotion and Disease Prevention in Clinical Practice*. Baltimore: Williams & Wilkins, 1995: 569.

<sup>2</sup> Institute of Medicine. *The Future of Public Health*. Washington, D.C.:National Academy Press, 1988: 225pp.

<sup>3</sup> U.S. Department of Health & Human Services, Public Health Service, Centers for Disease Control and Prevention. *Addressing Emerging Infectious Disease Threats A Prevention Strategy for the United States*. Atlanta: 1994: 46pp.

<sup>4</sup> U.S. Department of Health and Human Services. Public Health Service *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. Washington: U.S., 1990: 692pp.

Emerging issues in the health care delivery system focus on the financing mechanisms for personal health services and the lack of sufficient services for the uninsured and the growing elderly population. Connecticut is part of the national trend in the delivery of personal health services with the expansion of managed care as the dominant organizational form. These new methods of financing affect the availability and delivery of services and the quality of patient outcomes, with the promise, but not the guarantee, of greater efficiency.

## EMERGING ISSUES IN HEALTH

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### INFECTIOUS DISEASES

At least three dynamic areas concerning infectious disease need to be anticipated in planning for disease control and prevention. They are: 1) the use of new tools for preventing infectious diseases; 2) the changing epidemiology of diseases currently under surveillance; and 3) antibiotic resistance in bacterial pathogens.

#### Tools for Preventing Infectious Diseases

##### *Antiviral Agents*

HIV can be transmitted from an infected pregnant mother to her child; however, antiviral agents such as AZT are highly effective in preventing perinatal HIV transmission. Although the rate of infants born to HIV-infected mothers is decreasing, the extent to which antivirals are being used in Connecticut still needs to be assessed. An active outreach program to assure that all HIV-infected pregnant women are identified and counseled to take antiviral therapy during pregnancy therefore merits consideration.

##### *Vaccines*

Vaccines are one of the most cost-effective public health prevention measures. Several new vaccines recently have been licensed for use, and more new ones are expected. Varicella-zoster virus (chickenpox, shingles) results in an average of 12 deaths and 725 hospitalizations in Connecticut each year.<sup>5</sup> Because varicella vaccine has been available only since 1995, many susceptible children and adolescents still have not been vaccinated. Since January 1, 1997, the Department of Public Health (DPH) has made federally purchased varicella vaccine available to the uninsured and to all Medicaid enrollees. Surveillance is now needed to evaluate the effectiveness of vaccination programs and prevention strategies and to monitor expected long term changes in the epidemiology of the disease. If necessary, steps may need to be taken to assure that varicella is fully integrated into the routine infant vaccination schedule.

Pneumococcal disease (pneumonia, meningitis, bacteremia, otitis media) is currently second only to AIDS as an infectious-agent-specific cause of death in Connecticut. Persons at increased risk include young children, the elderly, and immunocompromised persons. The problem is compounded by the rapid increase in antibiotic resistant pneumococcal bacteria, *Streptococcus pneumoniae* (see "Antibiotic Resistance" below). A vaccine for the 23 most common serotypes of *S. pneumoniae* has been available since the early 1980's but remains underutilized. Pneumococcal vaccine usage needs to be assessed and steps taken to promote more widespread use, especially as drug-resistant pneumococci become more prevalent.

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<sup>5</sup> Connecticut Department of Public Health, Infectious Diseases Division.

Hepatitis A (infectious hepatitis) is spread by the fecal-oral route as a result of poor sanitation practices, and transmission from infected food handlers is a significant public health problem. There were 135 reported cases of hepatitis A in Connecticut in 1996, up from 86 in 1995.<sup>6</sup> A safe and effective hepatitis A vaccine was licensed recently but is not yet used widely. We need to consider promoting its use among food handlers and others at risk (children in daycare centers, travelers to countries where the disease is endemic). To promote its use effectively, an active role in providing the vaccine may need to be considered.

Vaccines against rotavirus gastroenteritis and against Lyme disease are currently in the clinical trial phase, with licensing possible before the year 2000. The incidence of reported tickborne Lyme disease in Connecticut almost doubled between 1995 and 1996, and Connecticut continues to have one of the highest infection rates in the nation. Rotavirus infection is the major cause of hospital-acquired diarrhea of newborns, infants, and children under age 5.

#### *National Prevention Initiatives*

Both foodborne illness and invasive Group B streptococcal disease have been targeted by the Center for Disease Control (CDC) for intensive surveillance to determine their magnitude and public health impact, as part of the national response to emerging infections. Group B streptococcal disease is the most common cause of meningitis and bloodstream infection (septicemia) in infants and children. From 1992 to 1996 more than 4,700 cases of foodborne infections due to *Salmonella*, *E. coli*, and *Shigella* bacteria were reported in Connecticut, and in 1995 septicemia was the fifth leading cause of death of Connecticut children aged 1-4. As a national sentinel site for emerging infections surveillance, Connecticut needs to consider special efforts to assess and promote prevention of these two groups of infections.

### Changing Epidemiology of Tuberculosis and Sexually Transmitted Diseases

#### *Tuberculosis (TB)*

During the past 10 years, tuberculosis in persons born and latently infected in high incidence areas of the world has become the greatest challenge to TB control in Connecticut. The incidence of TB in this group and its proportional contribution to morbidity in our state has risen steadily since 1980, and 50% of all cases now occur in those born outside the U.S. Strategies and efforts are needed to 1) identify shortly after their arrival in Connecticut those visitors who intend to stay in the U.S. for more than a few months; and 2) to screen them with tuberculin and give preventive treatment to those with latent TB infection.

#### *Sexually Transmitted Diseases (STDs)*

Although the incidence of STDs (primary and secondary syphilis, gonorrhea, and chlamydia) has decreased in most of Connecticut during the past 5 years, rates remain high in urban areas, especially Hartford, and among minorities, especially blacks. In addition to their own pathologies, STDs are important because their presence facilitates the transmission of HIV. To reduce the risk and direct cost of STDs and to decrease their contribution to HIV transmission, more intensive and effective efforts targeting minority groups are needed in urban areas, especially Hartford.

#### *Antibiotic Resistance*

As noted above ("Vaccines") pneumococcal disease is currently second only to AIDS as an infectious-agent-specific cause of death in Connecticut. Between 1993 and 1995, however, there was a 36-fold increase in high-level penicillin resistance in *Streptococcus pneumoniae*, which causes pneumococcal disease, and a 12-fold increase in the number of bacterial isolates that were not susceptible to penicillin. Another type of bacteria, vancomycin-resistant enterococci, is the most antibiotic-resistant of all known bacterial

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<sup>6</sup> Connecticut Department of Public Health, Infectious Diseases Division.

pathogens. Between 1994 and 1995, the number of infections due to it in Connecticut nearly doubled, from 58 to 104.<sup>7</sup>

The emergence of such drug-resistant bacteria presents a challenge to both the medical and public health communities; more judicious use of antimicrobial agents in both community and hospital settings and wider use of the existing vaccine against *S. pneumoniae* will be needed to control the increase of drug-resistant bacteria. We also need to address whether current surveillance for antibiotic-resistant bacteria is appropriate, and to consider taking steps to try to slow their development through initiatives to reduce the overuse of antibiotics.

## HIV Infection and AIDS

### *Impact of new medications*

Over the last eighteen months, several new medications for HIV infection have come on the market. These medications fall into two main categories: protease inhibitors and non-nucleoside reverse transcriptase inhibitors (NNRTIs). Anti-HIV drugs, like azidothymidine (AZT), block enzymes that the HIV virus needs to reproduce itself, the protease inhibitors do so late in the reproductive cycle, and NNRTIs do so in the early to middle stages of the reproductive cycle. By combining these antiviral drugs, it is less likely that the HIV virus will develop a resistance to the drugs, as has been the case with AZT. Consequently, the protease inhibitors and NNRTIs, commonly referred to as “AIDS cocktails”, hold the promise of lengthening the life of people infected with HIV.

Little is known, however, about the effect of the availability of the new medications on the risk behaviors of those infected, and of those who are not infected but engage in risky behaviors. In a survey at the University of California at San Francisco, 26% of the 54 HIV negative gay men surveyed indicated that they were less concerned about being HIV positive because of the new drug therapies. In addition, 15% of the gay men said that they had already engaged in risky sex because they were less concerned about the danger of getting infected due to the new medications.<sup>8</sup> Research is needed to ensure that prevention programs remain responsive to changes in risk behaviors.

Antiviral drug combination therapy increases the likelihood of a course of illness for HIV infection similar to that of a long term, chronic, potentially disabling illness. This will affect the health care and social service systems, especially those financed with public funds. For example, the AIDS Drug Assistance Program, funded primarily by DPH using federal funds and operated by the Department of Social Services (DSS), will be unable to continue serving all eligible clients unless significant new funding is received, since with the new therapies each client is likely to remain on the program for a substantially longer period of time than previously. The expected increase in life span will also have a similar impact on the Ryan White Case Management Program, which is funded by the federal government through local agencies. New initiatives may be needed, such as a Medicaid waiver to allow people with HIV infection to continue receiving publicly-funded medications that keep them healthy enough to work, even though working would otherwise make them financially ineligible for the funds for the medication.

### *New technologies for HIV testing*

A newly developed home collection kit allows a person to collect a sample of blood and mail it in for an HIV test. Rapid, 15-minute blood tests, are already available in many countries, and are likely to be licensed in the U.S. in a few years. Whether these tests are used at home or in a medical setting, they could

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<sup>7</sup> Connecticut Department of Public Health, Infectious Diseases Division.

<sup>8</sup> Connecticut Department of Public Health, Infectious Diseases Division.

affect the current system of HIV testing and counseling the entry of infected individuals into medical treatment.

### *Perinatal HIV Transmission*

Approximately 90 HIV-infected women give birth each year in Connecticut.<sup>9</sup> Of these, up to 25% may be infected without intervention. With treatment during pregnancy, birth, and in the first 6 weeks of the infant's life, transmission can be decreased by two-thirds. A new outreach approach similar to that used with Hepatitis B is being considered by DPH, whereby infected women are educated about, and offered, appropriate treatment to avoid infecting their children. Various funding and programmatic issues, particularly those related to confidentiality, need to be addressed before the approach can be implemented.

## CHRONIC CONDITIONS AND RISK REDUCTION

### Injuries: Youth Violence

The serious nature of injuries is reflected in its status as the leading cause of death for individuals below 35 years of age. There is an emerging concern in communities across the country regarding injuries resulting from youth violence. The majority of violent crimes are committed by teenagers and young adults, and these youths represent a disproportionate share of the victims.<sup>10</sup>

After declining in the early 1980s, the homicide rate in Connecticut doubled between 1985 and 1994. By 1994, an average of four Connecticut residents died each week from homicide. Persons aged 15-24 accounted for 12% of the Connecticut population and 42% of all homicide victims in 1994. This same age group represented 37% of all firearms deaths. Another violent injury affecting youth is suicide, which ranks eleventh as a cause of death in Connecticut. Suicide ranks sixth in terms of premature deaths, reflecting the younger average age of suicide victims. The results of a 1995 survey of high school students found that 24% of Connecticut high school students had seriously considered suicide within the past year.<sup>11</sup>

The public's health and well-being are threatened by violence, and public health agencies are responding to youth violence through injury prevention initiatives. A public health approach to youth violence requires an assessment of its extent, in terms of injuries, disabilities, and deaths, and the associated risk factors. The development of prevention programs and policies focuses on the modifiable behaviors that contribute to violent crime. Risk factors associated with homicide and suicide include a history of psychological, physical, or sexual abuse; lower socio-economic status; racism; living in overcrowded conditions; and emotional or physical disabilities. Chapter 3 presents a detailed review of unintentional and intentional injury mortality by race, age, and sex.

### Obesity

Obesity among Connecticut residents is increasing. It is the only risk factor consistently measured on the Behavioral Risk Factor Surveillance Survey (BRFSS) that has clearly worsened in Connecticut since 1989. Approximately 26% of children aged 6-17, 33% of men, and 36% of women are overweight.<sup>12</sup> Since 1970 the overweight population has increased by 3% for children, 5% for adolescents, and 6% for adults.<sup>13</sup>

<sup>9</sup> Connecticut Department of Public Health, Infectious Diseases Division.

<sup>10</sup> Connecticut Department of Public Safety. *Crime in Connecticut, 1996 Annual Report*. Hartford, CT: Division of Connecticut State Police. 1996: 101pp.

<sup>11</sup> Connecticut Department of Education. *1995 Youth Risk Behavioral Survey Report*. Hartford, CT. 1996.

<sup>12</sup> The national health and nutrition examination survey III (NHANES 1991-94). *Morbidity and Mortality Weekly Report*. 1997;46:199-202.

<sup>13</sup> The national health and nutrition examination survey III (NHANES 1991-94). *Morbidity and Mortality Weekly Report*.

Eighty percent of obese adolescents become obese adults.<sup>14</sup> Therefore, primary prevention of obesity should target children and their care providers with guidance for healthy, age-appropriate food behaviors and early physical activity, while avoiding the development of anorexia nervosa or other eating disorders.

Obesity prevalence in Connecticut is 24%<sup>15</sup>, and has been increasing since 1989, following a national trend. Obesity is related to age, with the prevalence increasing up to 64 years of age; 37% of adults between the ages of 55 and 64 are obese. If obesity continues to increase with age, the numbers will be affected by the baby boomers when they reach the 55-64 age category. Obesity is also more prevalent among certain race/ethnic groups, with non-whites, especially blacks, having rates significantly higher than non-Hispanic whites. The prevalence of obesity among the 138 blacks surveyed in the 1995 BRFSS was over 40%.

Obesity is a risk factor for heart disease, stroke and high blood pressure; colon, breast, and prostate cancer; and diabetes. Death due to coronary heart disease is associated with obesity at the upper range of body weight (i.e., a relative weight of 140% or greater, or a body mass index greater than 30).<sup>16,17</sup> The prevalence of high blood pressure and diabetes is three times greater among overweight people than among those of normal body weight.<sup>18</sup> Half of all type II diabetes (non-insulin-dependent diabetes mellitus) is estimated to be preventable by obesity control.<sup>19</sup>

Obesity and diet contribute to an estimated 3,217 deaths in Connecticut, or 11% of all deaths.<sup>20</sup> The combined risk factors of poor diet and sedentary lifestyle are estimated to contribute to 14% of all deaths each year.<sup>21</sup> In 1994, only 33% of Connecticut adults consumed the recommended five or more servings of fruits and vegetables each day, significantly below the *Healthy People 2000* objective of 100%.

Physicians can play an important role in decreasing the prevalence of this risk factor. A recent study indicated that only 29% of overweight patients were counseled by their physicians to lose weight, but when they were, the overweight were much more likely to try to lose weight.<sup>22</sup> A more detailed discussion of obesity can be found in Chapter 3.

#### Hemochromatosis (Iron Overload Disease)

Hemochromatosis is the excessive storage of iron in the body and, until recently, had been thought rare, but new information shows that it affects at least one in 300 individuals.<sup>23</sup> The CDC is expected to publish pioneering new iron overload screening and treatment recommendations soon.<sup>24</sup> These draft guidelines state that the chronic excess iron accumulation often leads to severe organ damage, arthritis, cirrhosis, diabetes, heart disease, or psychological and sexual dysfunction. The strategy for prevention is the screening of adults for hereditary hemochromatosis during routine medical encounters.

Providers and the public need to be informed about these new guidelines, because screening may identify more than 10,000 individuals with this condition in Connecticut. Treatment involves periodic blood

<sup>14</sup> U.S. Department of Health and Human Services, Public Health Service, Health Resources and Services Administration, Maternal and Child Health Bureau. Executive Summary: *Promoting Healthy Weight Among Children*. Washington, D.C.:1995 December.

<sup>15</sup> Connecticut Department of Public Health. *Behavioral Risk Factor Surveillance System*. 1995.

<sup>16</sup> Kris-Etherton PM, ed. *Cardiovascular Disease: Nutrition for Prevention and Treatment*. Chicago, Ill.: American Dietetic Association, 1990.

<sup>17</sup> National Research Council. *Diet and Health: Implications for Reducing Chronic Disease Risk*. Washington, DC: National Academy Press, 1989.

<sup>18</sup> Fisher M, Eckhart C, eds. *Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions. Report of the US Preventive Services Task Force*. Baltimore, MD: Williams & Wilkins, 1989.

<sup>19</sup> Herman WH, Teutsch SM, Geissm LS. Diabetes mellitus. *American Journal of Preventive Medicine*. 1987;3(suppl):72-82.

<sup>20</sup> Hahn, RA, Teutsch, SM, Rothenberg, RB, Marks, JS. Excess deaths from nine chronic diseases in the United States, 1986. *Journal of the American Medical Association*. 1990;264:2654-2659.

<sup>21</sup> McGinnis & Foege. Actual causes of death in the United States. *Journal of the American Medical Association*. 1993;2207-2212.

<sup>22</sup> Nawaz H, Adams ML, Katz DL. Pattern and impact of weight management counseling by physicians. Submitted to *American Journal of Preventive Medicine*. 1996.

<sup>23</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control. *Draft Recommendations for the Prevention and Management of Iron Deficiency and Iron Overload*. Washington, D.C.: 1996.

<sup>24</sup> U.S. Department of Health and Human Services.

donation, and is safe, cheap, and effective. Targeting high-risk individuals and males over age 20, who may not have insurance, can reduce morbidity and reduce future health care costs.

### Asthma<sup>25</sup>

Asthma is a chronic, inflammatory disorder of the airways. In susceptible individuals, this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning. The episodes are associated with widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment. Over the past decade asthma fatalities have increased 80% and now account for 4,000 deaths per year nationally.

Asthma is the most common chronic disease of childhood, affecting an estimated 5 million children under the age of 18. Hospitalizations among this group have increased 36% in the past decade. Among children aged 5-14, the asthma death rate nearly doubled from 1980 to 1993.<sup>26</sup> Aside from the medical costs, asthma affects the quality of life by limiting school and work attendance, occupation choices, and physical activity. Asthma accounts for 10 million missed school days per year. In 1990, over \$6 billion was spent for asthma-related health care. If no intervention occurs, that cost will more than double by the year 2000.

Deaths and hospitalizations from asthma are considered largely preventable. Asthma is amenable to public health intervention, including those reducing occupational exposures, tobacco smoke, household allergens, ambient ozone, and dust. Most states, including Connecticut, have inadequate data to define the distribution of asthma. Such data are critical to begin intervention. Initial steps have been taken to establish a data base to allow for analysis of asthma in our state.

### Genetic Research

One trend with significant implications for disease prevention and health promotion is stimulated by advances in genetic research with molecular medicine. Creating a map of the human genome is one of the goals of the international Human Genome Project funded by the National Institute of Health and the Department of Energy. Genes play a major role in human health and disease, and mapping the 50,000 to 100,000 genes that compose the human genome will enhance prediction of potential future health. As of mid-1996, more than 6,000 genes had been mapped.<sup>27</sup> Knowing locations and functions of genes helps scientists to understand how they may mutate, and subsequently, cause diseases. In turn, this may lead to better diagnoses and treatments, potentially using gene therapy.

Researchers have already mapped *single* genes associated with diseases, such as cystic fibrosis, Huntington's disease, Duchenne muscular dystrophy, neurofibromatosis, and retinoblastoma. Genetics have been implicated in many major disabling and fatal diseases including heart disease, stroke, diabetes, and several kinds of cancer.<sup>28</sup> However, the majority of diseases are not related to single genes, but rather are caused by multiple genes or by a combination of genetic and environmental factors. For example, several different genes may play a role in triggering diabetes, in combination with environmental and lifestyle factors, such as diet or viruses.<sup>29</sup> Such diseases are much more difficult to understand than those associated with single genes.

Two genes, called BRCA1 (1994) and BRCA2 (1995) are involved in a high proportion of "inherited" breast cancers, but only about 5 to 10% of breast cancer cases may be inherited.<sup>30</sup> More than

<sup>25</sup> American Public Health Association. Fact sheet on asthma. May 30, 1997.

<sup>26</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. *Mortality and Morbidity Weekly Report*. May 3, 1996: Vol. 45, #17.

<sup>27</sup> Jaroff L. Keys to the kingdom. *Time*, 1996 Fall;147(14):24-29.

<sup>28</sup> Impact of the human genome project. [www.gdb.org/Dan/DOE/prim5.html](http://www.gdb.org/Dan/DOE/prim5.html).

<sup>29</sup> Diabetes and genetic risk factors. [www.ncgr.org/gpi/odyssey/diabetes](http://www.ncgr.org/gpi/odyssey/diabetes).

<sup>30</sup> Family history of breast cancer. *International Journal of Cancer*. 1997;71:800-809.

200 different mutations in the two BRCA genes may confer different risks of breast cancer; moreover, the same mutation can have different effects in different women. Such circumstances underscore the role of modifying factors, whether genetic or environmental, in determining whether a given BRCA mutation causes cancer. The lifetime risk of developing breast cancer for women with a BRCA gene mutation is high, but not precisely known. Studies have suggested that the risk of developing breast cancer for women with just one BRCA gene mutation is 85%. More recent studies, however, based upon a broader population of women, indicate that the risk is only 56%.<sup>31</sup> Understanding the genetics of human breast cancer has potential for prevention and treatment. It affects the care of individual patients, particularly those “carriers” of mutated genes who opt to have prophylactic mastectomies to reduce the risk of developing breast cancer.

The growing population aged 85 and older highlights the need to address many problems associated with aging. Future progress is likely to be associated with advances in medical genetics with the potential to affect healthy aging. For example, genetic factors play a role in the onset of Alzheimer’s disease, the prevalence of which may approach 50% among persons aged 85 and older.<sup>32</sup> In Connecticut, Alzheimer’s disease was the eighth leading cause of death for the 85+ population in 1995.<sup>33</sup> Efforts are underway to identify the environmental causes of and diagnostic markers for Alzheimer’s disease, particularly because, like heart disease and cancer, it may begin early and be a lifelong disease process,<sup>34</sup> and pharmaceutical companies hope to identify the genetic foundations of asthma and then develop drugs that will prevent the development of symptoms.<sup>35</sup>

The practice of medicine is on the verge of a significant transformation enhanced by daily genetic discoveries. One of the challenges affecting the nation’s future health will be “to assess the impact and potential of genetic advances.”<sup>36</sup>

### Heart Disease in Women

Cardiovascular disease<sup>37</sup> (CVD) is an important women’s health problem and will continue to be the leading cause of death in women for the foreseeable future. Heart disease is the number one killer of American women.<sup>38</sup> Every year an estimated 485,000 American women die of CVD, more than twice the number who die of all forms of cancer combined.<sup>39</sup> Of the CVDs, heart disease kills an estimated 245,000 women annually, five times the number who die of breast cancer and nearly half (49%) of the total heart disease deaths that occur each year.<sup>40</sup> An estimated 20,800 women under the age of 65 die of heart attacks each year; over 29% of them are under the age of 45. Black women have a 33% higher death rate from coronary heart disease than white women and a 77% higher death rate from stroke. Nearly 24% of women ages 20 and older have high blood pressure, a major risk factor in coronary disease and stroke.<sup>41</sup>

In 1994, CVD was listed as a principal or secondary diagnosis in 71,900 women’s hospitalizations, about 19% of all hospitalizations in Connecticut. Women aged 65 years or older accounted for 74% of women’s hospitalizations with CVD as the principal diagnosis and diabetes listed as a secondary diagnosis.<sup>42</sup>

<sup>31</sup> Healy, B. BRCA genes -- Bookmaking, fortune telling, and medical care. *New England Journal of Medicine*. 1997;336:1448-9.

<sup>32</sup> The Alzheimer’s Disease and Genetics Information Directory. [www.ncgr.org/gpi/odyssey/alzheim/](http://www.ncgr.org/gpi/odyssey/alzheim/)

<sup>33</sup> Connecticut Department of Public Health, Office of Policy, Planning, and Evaluation.

<sup>34</sup> PET scans detect Alzheimer’s. *The Lancet*. 1997;349:1805-1809.

<sup>35</sup> Staff Reporter. Schering and Genome join forces to search for an asthma gene. *Wall Street Journal*. 1996 December 24.

<sup>36</sup> Edward J. Sondik, Ph.D., Director of the National Center for Health Statistics. Personal Correspondence to Stephen Harriman, Commissioner of the Connecticut Department of Public Health. 1996 September.

<sup>37</sup> Cardiovascular disease includes coronary heart disease, diseases of the heart, and cerebrovascular disease.

<sup>38</sup> The National Institute of Health. *Healthy Heart Handbook for Women*.

<sup>39</sup> The National Institute of Health. *Healthy Heart Handbook for Women*.

<sup>40</sup> The National Institute of Health. *Healthy Heart Handbook for Women*.

<sup>41</sup> The National Institute of Health. *Healthy Heart Handbook for Women*.

<sup>42</sup> Connecticut Department of Public Health, Health Education and Intervention Unit, and the Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base, 1994.

## ENVIRONMENTAL CONDITIONS

### Environmental Tobacco Smoke

Every year the first-hand use of tobacco kills more Americans than alcohol, accidents, fires, illegal drugs, AIDS, murder, and suicide, combined. Exposure to environmental tobacco smoke (ETS) also may contribute to the development of acute and chronic illnesses that result in premature loss of life. ETS is known to effect or worsen symptoms of illnesses ranging from sub-clinical manifestations to those requiring hospitalization. These symptoms do not necessarily result in imminent life-threatening situations or death.

There is no known safe level of exposure to ETS, and no way, unless direct monitoring were taking place, to determine how much actual exposure there is. In addition, the array of individual characteristics and factors that may affect symptoms or illness are extremely difficult to account for. For fetuses, infants, and very young children, it is simpler to describe the risks of exposure to ETS. While there is no known safe level of exposure to ETS in adults, there is absolutely no safe level of exposure for this population, whose respiratory, cardiovascular, and other bodily systems are developing.

Children's exposure to ETS is a significant public health problem. A large population is at risk from a very real threat to its health which has resulted in a rise in the number of young women of childbearing age who have begun smoking. Smoking during pregnancy is associated with low birthweight and Sudden Infant Death Syndrome. Each year an estimated 30 infants die from causes related to maternal smoking during pregnancy and/or exposure to ETS in the first months of life.<sup>43</sup> ETS worsens asthma in children and is a risk factor for asthma in healthy children. Exposure to ETS is associated with an increased amount of respiratory symptoms: wheezing, coughing, and sputum production; an increased amount of middle ear effusion (fluid), a risk factor for middle ear infection; and a measurable reduction in lung function<sup>44</sup>. For children under age 5 in the United States, ETS is responsible for:<sup>45</sup>

- 136 to 212 deaths from lower respiratory infection
- 148 deaths from fires
- 354,000 to 2.2 million cases of otitis media
- 5,200 to 165,000 tympanostomies
- 14,000 to 21,000 tonsillectomies
- 529,000 asthma visits to physicians
- 260,000 to 436,000 episodes of bronchitis
- 115,000 to 190,000 episodes of pneumonia

During the last decade, more effective tobacco control efforts have emerged. Cities and towns are banning smoking in public places and states are raising tobacco and/or cigarette taxes for the combined effect of providing a financial disincentive to purchase these products and a mechanism to finance tobacco prevention programs. Recently, state attorneys general have been working on a settlement with the tobacco industry which provides compensation for current and future costs of smoking-related illness for state medical assistance clients, and regulation of the industry in terms of marketing, illegal sales to minors, and advertising.

### Food Protection

#### *Outbreaks of Foodborne Diseases*

The identification of safe and effective methods of ensuring that our state's food supply is free of pathogenic organisms has long been a goal of DPH. Recent increases in foodborne disease outbreaks,

<sup>43</sup> Connecticut Department of Public Health. *The Toll of Environmental Smoke in Connecticut*. Hartford, CT: 1996.

<sup>44</sup> U.S. Environmental Protection Agency. *The Health Effects of Passive Smoking*. Washington, D.C.:1993.

<sup>45</sup> Difranza and Law. *Pediatrics*. April 1996.

especially with meat, poultry, and fresh produce have served to emphasize the importance of this problem. The risk of foodborne disease attributed to bacteria, parasites and viruses is increasing. The well established pathogens such as *Salmonella* continue to cause significant numbers of illness. Public health officials are being challenged by emerging pathogens along with the traditional foodborne pathogens. Three recent examples of foodborne illnesses that have occurred nationwide and in Connecticut follow.

- Hepatitis A Virus (HAV) - Spring, 1997. Associated with frozen strawberries grown in Mexico and processed in California. Served through school lunch programs with cases occurring in a number of states nationwide.
- *Cyclospora cayatanesis* (protozoan parasite) - Spring, 1996 and 1997. Several outbreaks and cases nationwide, including Connecticut. Associated with raspberries, primarily from Guatemala and possibly South America.
- *Escherichia coli* (bacterium) - Connecticut experienced an outbreak in the summer of 1996 associated with a domestic grown lettuce blend (mesclun). Concurrently, an outbreak due to the same strain of *E. coli* and associated with the same food item occurred in Illinois.

In the fall of 1996 an outbreak of *E. coli* in Connecticut was associated with the consumption of fresh, refrigerated apple cider. Shortly after, another outbreak was identified on the west coast which also implicated fresh juices (apple and apple blends) as the vehicle for this bacterial agent.

The lessons learned from recent foodborne disease is that constant vigilance is required. While some foodborne diseases represent mild illnesses to otherwise healthy adults, they can have serious consequences for high-risk populations, such as the very young, very old, and those with existing illnesses, especially the immunocompromised. Free-trade agreements have opened new markets and have increased the availability and variety of fresh fruits and vegetables. Some of these fruits and vegetables originate in underdeveloped countries and have been implicated in outbreaks of disease in the United States.

#### *Trained Workforce*

A key component of a comprehensive, effective program for food safety at the retail level is an educated workforce. After the occurrence of three major *Salmonella* outbreaks over a four-month period (one nursing home outbreak resulted in four deaths) in late 1986 and early 1987, the Connecticut General Assembly mandated food safety knowledge for food operators. The premise of the legislation was that each establishment should have at least one individual with a demonstrated knowledge of food safety.

Foodborne disease and food safety are dynamic issues which require public health professionals to keep pace with changing technologies and the emergence of new pathogens. While food service operators do not need the same level of knowledge required for health professional they need a basic understanding of the causes of foodborne disease and how it can be prevented. Additionally, food service employees need periodic updates and refresher training.

#### *Regulatory Improvement*

Most state health code regulations in this country pertaining to food protection are based on models developed by, or in cooperation with, the FDA. The Connecticut food protection regulations are based on the 1962 FDA Model Code. Since then the FDA has revised the code in 1976, 1993, 1995, and 1997. In 1993, the FDA developed one comprehensive code to cover all retail operations, retail grocery stores, food service, itinerant vendors, and caterers. They also adopted a two-year process of review and revision.

Local health officials in Connecticut have expressed a desire to bring the food protection regulations up-to-date. There is a need to consider changes in technology, and the emergence of new pathogens, and new vehicles of transmission (e.g., whole shell eggs, ground beef, apple cider, raspberries, lettuce, melons, etc.). This process has begun with a review of current certification and re-certification protocols, with a goal of establishing more clearly defined and formal regulatory procedures.

### *Education*

The need for food safety education occurs at the level of regulation, production, and the general public. Rapid changes in the food service industry (bulk food sales at supermarkets, changes in menus, and food selection resulting from the globalization of the food supply) and changes in food preparation methods (refrigerated pastas, modified atmospheric packaging) all represent opportunities for disease transmission. This education effort will need to make use of traditional methods such as classroom instruction and print media, and new technologies such as the Internet.

### *Irradiation of Food*

Various techniques of sterilizing food by exposure to ionizing radiation have been developed. These techniques are currently in use in over 38 countries and have been endorsed by the World Health Organization. Despite their widespread recognition, the techniques have not been well accepted in the U.S. This is based primarily on concerns of residual by-products of ionization that place consumers at increased risk for cancer and other adverse health effects.

Food that has been irradiated does not contain residual radiation. The Environmental Epidemiology and Occupational Health (EEOH) Division has been reviewing studies of irradiated food to determine the risks from this technique and to develop a means of communicating these to consumers.

### *Housing Materials*

Lead poisoning is a serious but preventable health problem. Lead is a poison that affects virtually every system in the body. It is particularly harmful to the developing brain and nervous system of fetuses and young children. Lead dust and lead-based paint are the major sources of lead poisoning in children, particularly if the paint weathers, flakes or becomes chalky. Children in homes built prior to 1978 are at highest risk of being in a lead-based paint environment.<sup>46</sup>

The EEOH Division's Childhood Lead Poisoning Prevention Program (CLPPP) has been actively promoting the screening of children up to the age of six for lead poisoning since the CDC issued screening guidelines in 1991. While the CLPPP initially focused on all children in this age range, the accumulated screening data suggest that the prevalence of lead poisoning is greatest in cities that have both a high percent of older, pre-1950, housing and large numbers of children exposed to painted surfaces in poor condition.

The CDC revised the screening guidelines in November of 1997.<sup>47</sup> To initiate the best approach to implementing these guidelines, the CLPPP has formed an advisory group, the Connecticut Lead Poisoning Screening Committee to review current information on Connecticut housing, populations, and current lead poisoning prevalence data. The Committee will determine the best approach to identifying children with elevated blood lead levels and preventing additional cases of lead poisoning.

CLPPP has received a growing number of notices from local health officials regarding multiple environmental hazards for lead exposure encountered in the assessment of apartments and other homes. These hazards range from asbestos fibers emitted from old pipe insulation to formaldehyde out-gassing from carpets, particle board, and other furnishings and building products, and radon emissions from natural radium deposits in soils. In some cases, efforts to mitigate one hazard may increase exposure to others. Moreover, information aimed at increasing public recognition of a single substance may direct attention and resources away from other, more hazardous issues.

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<sup>46</sup> University of Connecticut and the Connecticut Department of Public Health. *What you Should know about Lead Poisoning: A Resource Manual for Childcare Providers*. Hartford, CT: 1997.

<sup>47</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. *Screening Young children for Lead Poisoning: Guidance for State and Local Public Health Officials*. 1997.

While some hazards, such as asbestos, are part of formal regulatory programs, others, such as formaldehyde, mold, mildew, and dust mites are not. Both comprehensive regulatory and public education programs are needed to provide a coordinated approach to these hazards.

## OCCUPATIONAL CONDITIONS

### Latex Allergy

The prevalence of latex allergy in the general population is thought to be less than 1%. However, the prevalence in individuals with spina bifida, urogenital abnormalities, childhood atopy, eczema, and certain food allergies can range from 28% to 67%. In health care workers, the prevalence is estimated to be between 7 and 10%. Atopic health care workers are at even a greater risk. Other workers at risk include kitchen/dietary workers, maintenance personnel, workers involved in the manufacture of rubber or rubber products (toys, rubber bands, gloves), and any other workers with chronic latex exposure.<sup>48</sup>

Latex is the sap from the rubber tree *Hevea brasiliensis*. Many health care, food service, maintenance, and day care workers report allergic reactions to latex-containing medical products, particularly latex gloves. With the implementation of universal precautions, health care workers' exposure to latex has increased dramatically. Exposure can occur by direct contact with skin and mucus membranes, and by inhalation. People at high risk for developing latex allergy include those with allergies to certain foods (banana, kiwi, chestnut, avocado), those undergoing many medical procedures (children with spina bifida), and those who use latex gloves in work settings.

The increased numbers of persons who have developed allergy to latex products have serious public health implications. Persons with sensitivity to latex products are susceptible to strong adverse reactions, which may even be life-threatening, when they come into contact with latex. Reactions have occurred after exposure to latex in adhesives, shoes, gloves, condoms, balloons, stretch textiles, urinary catheters, barium enema equipment, and even a squash racket handle. Although approximately 80% of all latex reactions are non-immunologic (or due to irritation), approximately 20% have an immune basis.<sup>49</sup>

The predominant immunologic response to natural latex rubber is Type IV delayed hypersensitivity to rubber additives, which often presents with contact dermatitis. The additives include accelerators used during the manufacturing process to speed curing. Approximately seven days are required for the induction and sensitization process in Type IV delayed reactions. Contact dermatitis may be prevented with barrier creams and seamless, nylon glove liners.

Type I hypersensitivity reactions to latex are serious and life threatening. They occur immediately, with a different immunologic mechanism, and are manifested by massive local release of histamine. They include hives, nasal congestion, wheezing, angioedema, conjunctivitis, throat tightness, and anaphylaxis. Between 1988 and 1992, the FDA reported more than 1,000 systemic reactions to latex, of which 15 were fatal. Some health care workers may develop Type I sensitization after regular exposure to latex. Areas with significant airborne latex allergens (operating rooms, intensive care units, and dental suites) may sensitize workers who inhale allergenic proteins. One concern of experts is that initial mild immune reactions can progress to more serious reactions with continued exposure. There is also concern that non-allergic reactions such as irritant hand dermatitis disrupt the skin barrier, increasing exposure and the risk of developing allergy.

Research to better understand latex hypersensitivity is ongoing. In spina bifida patients, it is believed that sensitization may occur from early, intense, and chronic exposure to rubber products during multiple

<sup>48</sup> Massachusetts Department of Public Health and Occupational Health Surveillance and the Massachusetts Thoracic Society. Latex allergy in health care workers. *SENSOR Occupational Lung Disease Bulletin*. February 1995.

<sup>49</sup> Massachusetts Department of Public Health and Occupational Health Surveillance and the Massachusetts Thoracic Society.

surgeries, examinations, and diagnostic procedures, and bowel and bladder programs. The Spina Bifida Association of America produces materials to educate health professionals and their patients about latex allergies in this high risk population. The Spina Bifida Association literature includes a list of products that contain latex, and examples of latex-safe alternatives. Some institutions with large pediatric populations are moving towards becoming "latex-safe," i.e., minimizing the use of latex throughout the hospital. Nationally, the Shriners Hospitals network has banned certain latex-containing products from hospital floors.

### Endocrine Disruptors

Endocrine disruptors are environmental chemicals that exert toxic effects by mimicking hormones or by changing the way hormones normally function. Recent findings of endocrine disruption and reproductive effects in wildlife exposed to chemicals has spurred public concern and research interest in the potential effects of these chemicals on human reproduction.<sup>50</sup> While most interest has focused upon chlorinated chemicals such as dioxin, PCBs, and banned pesticides (DDT, chlordane), the list of potential endocrine disruptors has grown to include such chemicals as those commonly used in plastics.<sup>51</sup> A major research initiative at the federal level is aimed at developing new methods to detect and identify endocrine disruptors. As new data are developed, risk assessments will be needed to evaluate the potential reproductive hazards, such as infertility, and abnormal development, associated with exposure to these common chemicals. Further, the public will need sound and sensible risk communication to understand this complex issue.

## FAMILY HEALTH

### Infant Mortality

Infant mortality is generally on the decline in Connecticut. However, there is a continued disparity between white and non-white infant mortality rates and with urban areas showing considerably higher rates than other parts of the state. Low birthweight is a significant contributor to infant mortality. Low birthweight can result from either gestational prematurity or intrauterine growth retardation, among other factors. Both of these causes may be ameliorated by improved prenatal care, nutrition, smoking cessation, and cessation or decreased substance use and abuse.

The State supports numerous programs to improve and maintain the participation of high-risk populations in prenatal care services. Strategies to improve participation in prenatal care services must include more than merely assuring early entry into prenatal care but also those which ensure compliance with regular prenatal care visits. Other strategies include participation in smoking cessation programs, and referrals for nutritional counseling, and food supplements. A more detailed analysis of infant mortality and low birthweight is given in Chapter 3.

### Nutrition in Child Care

During the last decade, responsibility for children's food intake has shifted from the family to the child care center/provider and the level of physical activity in children has fallen. Welfare reform, the return of mothers of young children to the work force sooner after childbirth, and other social factors are causing greater numbers of children to spend increasing amounts of time in a variety of non-traditional child care settings. Children are consuming greater proportions of their daily nutrients at child care centers and in other out-of-home environments. While some children bring food from home, many of these settings provide meals for the children in their care.

<sup>50</sup> Colborn, T., vom Saal, F.S., and Soto, A.M. Developmental effects of endocrine-disrupting chemicals in wildlife and humans. *Environmental Health Perspectives*. 1993. 101:378-383.

<sup>51</sup> Birnbaum, L.S. Endocrine effects of prenatal exposure to PCBs, dioxins, and other xenobiotics: implications for policy and future research. *Environmental Health Perspectives*. 1994. 102:676-679.

The change in responsibility for children's food intake raises concerns about the quantity and quality of children's nutrient intake. Proper nutrition is directly related to improved school performance, enhanced growth and development, and a reduction in obesity. To minimize the incidence of growth retardation, anemia, and other problems associated with poor diet, child care centers need to emphasize healthy eating. Healthy eating for children should include increasing intakes of calcium, fiber, fruits, and vegetables, while reducing fat intake. To implement these policies, many child care providers need technical assistance with menu planning, safe food handling, food preparation, and developing positive food experiences for the children in their care. They may also need assistance in developing strategies to promote physical activity.

### Breastfeeding

*Healthy CT 2000* and *Healthy People 2000* include objectives that call for an "increase to at least 75% the proportion of mothers who breastfeed their babies in the early postpartum period and to at least 50% the proportion who continue breastfeeding until their babies are 5-6 months old."<sup>52</sup> However, in Connecticut in 1994, the breastfeeding initiation rate among the general population was only 59% and the rate at 5-6 months only 19%.<sup>53</sup> In the low-income population served by the Women, Infant, and Children (WIC) Program, the rates during this period were significantly lower, at 41% and 10%, respectively.

Breastfeeding has advantages for both babies and mothers, and the advantages are seen in rich and poor nations.<sup>54</sup> They include the prevention of gastrointestinal and respiratory illness, of infections, and of certain immunologic disorders among infants. In addition to preventing illness early in life, breastfeeding appears to reduce the risk of certain chronic diseases and the reduction of morbidity associated with breastfeeding is of sufficient magnitude to be of public health significance.<sup>55</sup> Breastfeeding, particularly for extended periods, may also reduce the risk of breast cancer in premenopausal women.<sup>56</sup> This protective effect may be stronger among women of low parity.<sup>57</sup>

### Fetal Alcohol Syndrome (FAS)

Fetal Alcohol Syndrome (FAS) is the adverse effect of maternal alcohol consumption during pregnancy. Alcohol readily crosses the placenta and affects the developing fetus. An infant with FAS is characterized by abnormal facial features (short palpebral fissures, poorly developed philtrum, low nasal bridge, and thin upper lip), growth retardation, and neurological impairment. As FAS children grow and develop they often suffer from attention deficit problems, below average intellectual functioning, poor memory, reduced problem solving ability, and lower verbal fluency.<sup>58</sup>

Unlike most birth defects, FAS has a known etiology and is preventable. The *Healthy People 2000* objective is to reduce the rate of FAS to 1.2 per 10,000 live births. National data show an increase in the prevalence of FAS from 1 per 10,000 live births in 1979 to 6.7 per 10,000 live births in 1993.<sup>59</sup> The

<sup>52</sup> U.S. Department of Health and Human Services, Public Health Service. *Healthy People 2000 Conference Edition*. Washington DC. 1990:692pp. (Objective 14.9:377). *Healthy Connecticut 2000*. Objective 2.11 Nutrition section.

<sup>53</sup> Abbott Laboratories, ROSS Products Division. *Mothers' Survey*. 1996.

<sup>54</sup> Cunningham AS, Derrick DB, Jelliffe EFP. *Breastfeeding and health in the 1980s: A global epidemiologic review*. *Journal of Pediatrics*. 1991 May;118(5):664.

<sup>55</sup> Dewey KG et al. Differences in morbidity between breast-fed and formula-fed infants. *Journal of Pediatrics*. 1995;126(5)pt 1:696-702.

<sup>56</sup> Hirose K et al. A large-scale, hospital-based case-control study of risk factors of breast cancer according to menopausal status. *Japanese Journal of Cancer Research*. 1995;86:146-154.

<sup>57</sup> Michels KB, Willett WC, Rosner BA, et al. Prospective assessment of breastfeeding and breast cancer incidence among 89 887 women. *The Lancet*. 1996 February 17;347:435.

<sup>58</sup> Connor PD, Streissguth AP. Effects of prenatal exposure to alcohol across the life span *Alcohol Clinical Experience Research*. 1997;170-174.

<sup>59</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control. Update: trends in fetal alcohol syndrome - United States, 1979-1993. *Morbidity and Mortality Weekly Report*. 1995 April 7;44:249-251.

American Indian and African American populations are estimated to have higher prevalence rates than the general population.<sup>60,61</sup>

In Connecticut in 1993, the prevalence of FAS diagnosed during the first year of life is estimated to be 9.00 per 10,000.<sup>62</sup> This estimate is based on the number of cases ascertained through a passive surveillance system. A follow-up study may indicate that some cases may be fetal alcohol effects. In addition, Connecticut has been identified as a state at high risk for FAS, based on data from the BRFSS. Among women of childbearing age surveyed in 1995, Connecticut ranked fifth nationally in the proportion of women who reported any drinking in the past month, and 11% of those surveyed reported frequent drinking. Of Connecticut births in 1995, 522 (1.3%) were to mothers who had consumed alcohol during pregnancy.<sup>63</sup>

Most FAS prevalence rates are determined using the number of cases diagnosed in the first year of life. However, the principal dysmorphic features and central nervous system abnormalities are not always apparent during the first year of life. An active surveillance system that continues case ascertainment until a child reaches seven years of age would maximize the number of cases of this disease identified.

### Neural Tube Defects

Neural tube defects (NTDs) are birth defects of the brain or spinal cord. Spina bifida and anencephaly are two of the more common defects. The estimated lifetime medical cost for a case of spina bifida is \$324,000.<sup>64</sup>

A recurring theme in the NTD epidemiology is that acute or chronic poverty may play a key role in its etiology.<sup>65</sup> Further research led to the B-vitamin folic acid as an important agent of NTDs. Mothers who took folic acid, immediately before and during the first two months of pregnancy dramatically reduced the risk of spina bifida and anencephaly in their babies.<sup>66</sup> It has been estimated that half of NTD cases could be prevented by folic acid supplementation in the amount of 400 micrograms daily taken in the form of a multivitamin that also contains vitamin B-12 to prevent the masking of pernicious anemia that could happen from folic acid supplementation.<sup>67</sup>

The incidence of NTDs in the United States is estimated to be one case per 1000 live births.<sup>68</sup> However, the true incidence of the defects is not known, because the number of pregnancies that terminate because of the defects is not usually included in estimates of disease occurrence.<sup>69</sup> There were 19 live births with NTDs identified in the Connecticut Birth Defect Prevention and Surveillance Project registry in 1993, or 4.07 per 10,000 live births. Pregnancies that were prenatally diagnosed with NTDs and subsequently terminated before 20 weeks gestation are not included in the registry.

Since the early 1970s, progress has been made in the prenatal diagnosis of NTDs by both maternal serum alpha-fetoprotein screening and high-resolution ultrasonography. In a study involving the population-

<sup>60</sup> Chavez GF, Cordero JF, Becerra JE. Leading major congenital malformations among minority groups in the United States, 1981-1986. In: CDC surveillance summaries. *Morbidity and Mortality Weekly Report*. 1988;37(No. ss-3):17-24.

<sup>61</sup> Abel EL. An update on incidence of FAS: FAS is not an equal opportunity birth defect. *Neurotoxicology and Teratology*. 1995;17:437-443.

<sup>62</sup> Connecticut Department of Public Health. Connecticut Birth Defect Prevention and Surveillance Project.

<sup>63</sup> Connecticut Department of Public Health. *Registration Report of Births, Deaths, Marriages, and Divorces*. Hartford, CT:1995.

<sup>64</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. Time for Action: Prevention of Spina Bifida and Anencephaly. CDC Conference Presentation, Alexandria, VA: 1995.

<sup>65</sup> Slattery ML, Janerich DT. The epidemiology of neural tube defects: A review of dietary intake and related factors as etiologic agents. *American Journal of Epidemiology*. Johns Hopkins University School of Hygiene and Public Health. 1991;133(6):526.

<sup>66</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control. Recommendations for the use of folic acid to reduce the number of cases of spina bifida and other neural tube defects. *Morbidity and Mortality Weekly Report*. 1992 September 11;41:1-7.

<sup>67</sup> U.S. Department of Health and Human Services.

<sup>68</sup> Elwood JM, Elwood JH. Epidemiology of anencephalus and spina bifida. Oxford: Oxford University Press. 1980.

<sup>69</sup> Sever LE. Epidemiologic aspects of neural tube defects. In: Crandall BF, Brazier MAB, eds. *Prevention of Neural Tube Defects: The Role of Alpha-fetoprotein*. Chap. 8. New York: Academic Press, Inc. 1978.

based surveillance systems in four states, the percentage of pregnancies in the early 1990s that resulted in early termination due to prenatal diagnosis of NTDs ranged from 9% to 42%.

## EMERGING ISSUES IN HEALTH CARE

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### MANAGED CARE

Since 1980, managed care has reshaped the financing and delivery of health services in the United States. Managed care organizations (MCOs) provide, arrange for and finance medical services using provider payment mechanisms that encourage cost containment and selective contracting with networks of providers.<sup>70</sup> As part of this process, MCOs often employ or contract with utilization review staff to determine the medical necessity, efficiency, or appropriateness of health care services and treatment. There are a variety of managed care organizational structures, but the three types that account for the greatest share of enrollment nationally are Health Maintenance Organizations (HMOs), Point of Service Plans (POS), and Preferred Provider Organizations (PPOs).

In the early 1980s, health insurance became a major cost of doing business for American employers. At the time approximately 69% of the population had employer-provided health insurance, and employers paid about 80% of the premium. Health care costs were typically passed on to the consumer in the form of higher prices for goods and services, but these costs began to affect American competitiveness overseas.<sup>71</sup> As such, employers became the principal drivers in seeking health care cost containment strategies. These strategies included ensuring appropriate hospital use, negotiating set fees or caps in advance for costly procedures like heart surgery and transplants, negotiating discounted fees with “preferred providers” for medical services, and encouraging employees to join HMOs.<sup>72</sup> In addition, the cost of financing health benefits was limited or shifted to employees through higher coinsurance rates or decreased health benefits. Between 1988 and 1993, the rate of employer sponsored insurance coverage dropped for every income group,<sup>73</sup> and between 1992 and 1995, the employee share of total health insurance premiums rose from 23.6% to 28.9%.<sup>74</sup> For employers, these techniques of managing health care costs helped to slow increases of up to 20% a year in their medical bills. With this success, federal and state governments moved to develop and implement managed care programs for their employees and those eligible for medical assistance programs.

Managed care’s success in controlling costs is based on changing the financial incentives upon which physicians operate. Under the fee-for-service system, physician income was a function of the number of services provided, creating an incentive to overutilize health services. To control this, managed care organizations may selectively contract with a defined set of providers enabling them to track and monitor utilization and costs associated with physician practice patterns. Additionally, they may use several forms of provider payment mechanisms that encourage cost containment (e.g. capitation, case rates, per diem). Each presents slightly different incentives to the physician when utilizing health services. Capitation is the most comprehensive payment mechanism, requiring the provider to deliver or arrange for all the health services an enrollee needs for a fixed dollar amount. The incentive for the provider is to limit those services for which the patient’s benefit is marginal and avoid costly hospitalizations.<sup>75,76</sup>

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<sup>70</sup> American Public Health Association. APHA policy paper: public health services and managed care. *The Nation's Health* 1996 Oct; 12-13.

<sup>71</sup> A highly documented case was that health insurance costs added \$600 to the price of a car at the Chrysler Corporation. Thurow L. *Medicine versus economics. New England Journal of Medicine* 1985 Sept; 313(10):611-14

<sup>72</sup> Chapman FS. Deciding who pays to save lives. *Fortune* 1985 May; 135 (10): 59-67.

<sup>73</sup> Holahan C, Winterbottom C, Rajan S. A shifting picture of health insurance coverage. *Health Affairs* 1995 Winter; 14(4): 253-264.

<sup>74</sup> Center for Studying Health System Change. Tracking health care costs: a slowing of the rate of increase. *Issue Brief*. 1997 Jan; (6): 1-4.

<sup>75</sup> Average physician encounters per member fell 3% from 1994-1995. Average number of ambulatory visits fell by 17.6% from 1994-1995.

<sup>76</sup> Hoechst Marion Roussel. *Managed Care Digest Series: HMO-PPO Digest*, 1996. Kansas City (MO); 1996.

Effect of Managed Care on Health Care Costs

Beginning in 1994, health care costs have slowed significantly. Table 2-1 contains a comparison of different data sources and surveys of national health care costs. While data and methods vary and this affects the magnitude of change, all sources show a clear trend of decreasing rates of increase for health care costs.<sup>77</sup> However, the issue is whether these low rates of increase can be sustained, particularly as the population ages.

Managed Care Enrollment

With both the private and public sectors continuing to move their populations into managed care programs, enrollment in managed care plans has grown rapidly. Nationally, an estimated 120 million people are enrolled in HMOs alone. In Connecticut, there are over one million people, representing approximately 32% of the state’s population for 1996. This is an increase of 35% since 1993.<sup>78</sup>

**Table 2 - 1  
National Health Care Costs**

Indicator	Year	Percent Increase	Year	Percent Increase
National Health Expenditures <sup>a</sup>	1990	+11%	1994	+5.4%
Health Cost Index <sup>b</sup>	1990	+10.9%	1995	+3.2%
Employer Survey <sup>c</sup>	1992	+11.8%	1995	+1.2%

Source: Center for Studying Health System Change. Tracking Health Care Costs: A Slowing Down of the Rate of Increase. Washington, D.C.: January, 1997

<sup>a</sup>National Health Accounts database prepared by HCFA using information from providers and insurers. Annual percentage change per capita for years 1990 and 1994 noted.

<sup>b</sup>The Index is based on provider survey data for major health spending components (hospitals, physicians, and prescription drugs). Per capita increases in spending for 1990 and 1995 noted.

<sup>c</sup>Survey of employer-sponsored health plans. Per capita increase in premiums per enrollee for 1992 and 1995 noted.

Health Care Industry Changes

As more of the population becomes covered by managed care organizations and the financial incentives change, the health care delivery system continues to undergo a rapid transformation. The major changes, identified below, will have an indirect effect on the public health infrastructure and provision of public health services in the future.

*Consolidation*

Across the nation, hospital and health plan mergers and acquisitions occur at an unprecedented level. For hospitals, this type of activity increased 5% in 1996. Although consolidation is often presented as a transaction that will create administrative efficiencies, it also has the potential to create powerful entities that can raise prices, have less need to respond to their customers, and have limited incentives for innovation. If several large entities control one area, choice, quality, and accountability become issues of concern.<sup>79</sup>

<sup>77</sup> In Connecticut, benefit costs per employee in both HMO and indemnity plans have decreased from 1994 to 1995. Connecticut General Assembly, Legislative Program Review and Investigations Committee, State of Connecticut. *Regulation and Oversight of Managed Care*. Hartford: Legislative Program Review and Investigations Committee; 1996 Dec; 8.

<sup>78</sup> Connecticut Department of Insurance. 1996 HMO Year End Enrollment Report. 1997 April.

<sup>79</sup> Center for Community Health Action. Consolidation in the health care market: good or bad for consumers. *States of Health* 1996 Feb; 6(2): 1-7.

### *Decreasing Length of Inpatient Hospital Stays*

Under managed care, hospitals are viewed as “cost centers,” and therefore routine treatments are being shifted to outpatient or alternative settings like free-standing surgi-centers. While the trend may be fueled by incentives related to managed care (e.g. changes in hospital reimbursements, growth in the number of hospital outpatient departments), advances in technology also make this change possible (e.g. new surgical techniques resulting in less invasive procedures, and advances in anesthesiology and pain control). Inpatient utilization is expected to continue to decline particularly for surgical inpatient days, births, and mental health care. This trend resulted in new laws dictating lengths-of-stay for particular services. Reflecting both national and northeast trends, the statewide average length of stay in Connecticut’s acute care general hospitals decreased 23.6% between 1991 and 1995 from 6.8 days to 5.5 days. (See Chapter 4 for more information.)

### *Conversions of Non-Profit Hospitals and Health Plans to For-Profits:*

In 1996, 63 non-profit hospitals converted to for-profit status, while Blue Cross/Blue Shield plans in eight states obtained or pursued for-profit status from 1995 to 1997.<sup>80</sup> The major reason for this shift is the financial pressures of a competitive health care system, which force hospitals and health plans to raise capital for financing acquisitions, building computer technology, and forming network alliances. Unlike for-profits, non-profits do not have the capacity to raise capital required for such activities. Conversions are being watched carefully due to the potential loss of public assets and the effect public ownership may have on access and delivery of health care. As these organizations will answer to shareholders and seek to maximize profits, historically unprofitable community services such as trauma and burn centers, perinatal intensive care units, care for the chronically ill, AIDS patients, and the poor and underinsured could be negatively affected.<sup>81</sup>

### Medicare Managed Care

Medicare costs have risen dramatically due to a shift in national demographics in which more people are living longer, fewer births are occurring, and the portion of the population known as the “baby boomers” are aging. (See Chapter 3 for more on demographic trends). Additionally, the elderly are high consumers of costly acute and long-term care services. As more of the nation’s population needs elderly health services and a declining proportion of the population will be contributing taxes to finance the program, Medicare’s fiscal health will remain in jeopardy if programmatic changes are not initiated. Table 2-2 illustrates increasing payments experienced by the Medicare program for certain benefits.

**Table 2 - 2**  
**Growth in Medicare Payments**

Medicare Benefit	1994 (In billions)	1995 (In billions)	% Increase
Skilled Nursing Facility	\$7.1	\$9.1	28.2%
Home Health	\$12.0	\$15.1	25.8%
Hospice	\$1.4	\$1.9	35.7%

Source: HCFA, Bureau of Data Management

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 Medicare eligibles. While enrollment in HMOs for Medicare beneficiaries has doubled in the past five years, at the end of 1996 HMOs covered only about 10% of beneficiaries, with Health Care Financing Administration (HCFA) actuaries projecting a 2% increase

<sup>80</sup> Alpha Center. State oversight of hospital and health plan conversions. *State Initiatives in Health Care Reform*. 1997 Feb; (21): 1-12.

<sup>81</sup> Alpha Center, 2.

by the end of 1997. Enrollment is expected to approach 10 million beneficiaries by the year 2002.<sup>82</sup> Despite this recent growth, Medicare beneficiary enrollment into managed care lags behind the private sector in which approximately 70% of the population under age 65 receiving health benefits are now enrolled.<sup>83</sup> One reason for this lag is that the move to managed care for Medicare eligibles is strictly voluntary.

Several changes will be made to the Medicare program through the federal Balanced Budget Act of 1997.<sup>84</sup> Congress postponed the immediate threat of fiscal insolvency by reducing payments to providers. Incentives to move to managed care plans were bolstered by providing beneficiaries with more choices through allowing alternative managed care arrangements to participate in the program (e.g. Provider Sponsored Organizations (PSOs) and PPOs). Preventive benefits such as mammography, pap smears, diabetes, prostate screening, and vaccines were added as covered benefits. Longer term solutions to the cost issue will be addressed through a national Bipartisan Commission on the Future of Medicare, which will assess the impact of the "baby boom" generation and make recommendations to Congress to preserve the program. Any fundamental changes to the Medicare program should be monitored to ensure that quality and access do not decline for this population. Increasing costs and a complicated system such as managed care may already act as access barriers for the elderly; even small changes in out-of-pocket payments can affect access, as many are on fixed incomes. Additionally, strong quality assurance programs will be needed. The elderly often have chronic illness, disability, and higher hospitalization rates. Higher utilization must be balanced with the financial incentives to limit treatments and avoid hospitalizations existing within capitated MCOs. Additionally, the MCOs have had relatively little experience determining appropriate medical care and utilization for the Medicare population.

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<sup>82</sup> Cosgrove, James C. United States General Accounting Office. Data from the Health Care Financing Administration, Medicare Managed Care Monthly Report and Congressional Budget Office Medicare Baseline, January, 1997.

<sup>83</sup> United States General Accounting Office. *Medicare HMOs: Rapid Enrollment Growth Concentrated in Selected States*. Washington (D.C.): 1996 Report No: GAO/HEHS-96-63.

<sup>84</sup> Majority staffs of the House and Senate Committees on the Budget. *"The Conference Agreement on the Balanced Budget Act of 1997: Summary of Provisions"*. <http://www.house.gov/budget/papers/mainsumm.htm>. (30 July 1997).

## STATE INITIATIVES

The State of Connecticut's experience with managed care encompasses the state employee health plan, the Healthcare for Uninsured Kids and Youth Program (HUSKY), the Medicaid managed care program (formerly "Connecticut Access" now referred to as HUSKY Part A), and the development of a pilot program of integrated care for dually eligible individuals (those eligible for both Medicare and Medicaid). Additionally, the state is in the process of implementing an enhanced managed care regulatory structure enacted by the 1997 Legislature.

### State Employee Health Plan

Historically, coverage for State employees, retirees and dependents was provided by a State-purchased, fully insured indemnity plan. By the early 1980's, State health insurance costs were increasing by more than 10% a year, a problem familiar to most employers offering health insurance to employees and retirees. As such, the State and labor unions created the Health Care Cost Containment Committee with responsibility for implementing cost control measures and initiating health promotion and wellness activities.

To help control costs, employees were given the option to choose nine different HMOs throughout Connecticut, but nearly 80% chose the indemnity plan.<sup>85</sup> As the state's fiscal condition worsened in the early 1990's, the State eliminated the indemnity option for resident employees and began offering several managed care plans. For dental services, the State offers two options, an indemnity plan and a capitated managed care plan. Although open now, new enrollment in the capitated managed care plan had previously been suspended, highlighting a general problem in Connecticut regarding access to dental providers.<sup>86,87</sup>

The State's quality improvement system is described in Appendix G. While the State is starting to incorporate the use of the Health Plan Employer Data and Information Set (HEDIS) data and programs for prenatal care and childhood immunizations, it falls short of more comprehensive quality improvement systems in public programs. More aggressive purchasing methods can be beneficial in holding plans accountable for the quality and cost-effectiveness (i.e. value) of services they provide.<sup>88</sup> Large employers, like the State, are in a better position to negotiate for this, because of the large number of enrollees they offer.

### Healthcare for Uninsured Kids and Youth (HUSKY)<sup>89</sup>

The federal Balanced Budget Act of 1997 created a new Title XXI of the Social Security Act called the State Children's Health Insurance Program (CHIP). It allocates approximately \$20 billion over the next five years to states who initiate or expand child health coverage to uninsured, low-income children. Although federal funding after five years has not been guaranteed, states are attracted to the program by the enhanced federal matching rate of 65%. The law allows states numerous design and implementation options although basic guidelines have been established. The guidelines primarily affect program eligibility, scope of benefits, and cost-sharing.<sup>90</sup> With respect to program design, states may implement a Medicaid expansion, a new state program which enrolls children in private health plans, a combination of these approaches, or fund direct provision of services.

<sup>85</sup> The Health Care Cost Containment Committee and the Office of the State Comptroller. *Labor and Management's Health Care Cost Containment Efforts: History, Recent Developments and Future Prospects for Connecticut*. 1995 Feb. 8;1-15.

<sup>86</sup> On the commercial side, a shortage of dentists has been identified in census tracts from all counties except Litchfield. Bureau of Community Health, Department of Public Health, State of Connecticut. Supplement to the CT Primary Care Access Plan. 1996 June.

<sup>87</sup> Dentists non-participation in managed care has been widely discussed within the context of the Medicaid managed care program.

<sup>88</sup> Nazemetz P. Ensuring quality: documenting value. Blue Cross/Blue Shield and University of Connecticut Symposium on Integrated Delivery Systems; North Haven, CT, 1995 May 24.

<sup>89</sup> Technical information on the HUSKY program and its provisions was provided through DSS prepared documents and personal communications with HUSKY Plan Project Manager, Linda J. Mead.

<sup>90</sup> Ullman F, Bruen B, Holahan J. *The state children's health insurance program: A look at the numbers*. The Urban Institute. 1998 March.

Connecticut, like many other states, took advantage of this opportunity. A special legislative session was convened in October, 1997 and the subsequent passage of Public Act 97-1 created the HUSKY program. It will be financed by federal monies totaling \$36 million (or 65%) and a state contribution of \$19 million (or 35%). The program includes both a Medicaid expansion and a new state program. It is administered by DSS. The program has three parts, HUSKY Part A, HUSKY Part B, and HUSKY Plus, which are discussed in more detail below.

*HUSKY Part A*

Part A includes both the Medicaid managed care program and a new Medicaid expansion. However, CHIP funding is used to finance the Medicaid expansion only. The expansion includes 14 and 15 year olds up to 185% of poverty who became eligible for Medicaid July 1, 1997; 16 year olds up to 185% of poverty who became eligible October 1, 1997; and 17 and 18 year olds up to 185% of poverty who became eligible January 1, 1998. The HUSKY Part A program is discussed below in more detail under "Medicaid Managed Care".

*HUSKY Part B*

Part B is a new state program which will provide health insurance for uninsured children under age 19 whose family income is between 185% to 300% of the federal poverty level. Families with children who are uninsured and have incomes over 300% of the federal poverty level may buy-in to the plan at the state negotiated rate. Because it is a separate program from Medicaid, Part B is a non-entitlement program. Eligibility, cost sharing and estimated eligibles are provided in Table 2-3 below:

**Table 2-3  
HUSKY Part B Eligibility and Cost Sharing**

% of Federal Poverty Level	Premiums	Aggregate, Annual, Cost Sharing Limitations <sup>91</sup>	Estimated # of Eligibles
Over 185-235	N/A	\$650	15,300
Over 235-300	\$30 per child per month with a max of \$50 per family	\$1250	7,000
300+	State negotiated premium rate	N/A	14,400

Source: Department of Social Services

Through a competitive bidding process, the DSS has chosen the following health plans to provide care to Part B enrollees: BlueCare Family Plan, Community Health Network, HealthRight, Kaiser Permanente and Preferred One. These plans also participate in HUSKY Part A. Enrollment, which began July 1, 1998, has reached approximately 2000 children.<sup>92</sup> This is about 9% of the estimated eligible population for Part B. Enrollment in the HUSKY Plus program (described below) has only reached approximately 10 children.<sup>93</sup> DSS is investigating the reasons for the low enrollment levels but they are still unknown at this time. However, low enrollment in CHIP programs appears to be an issue across all states. States are concerned that federal baseline projections of the uninsured are much higher than actual (particularly for smaller states like Connecticut). Increased, targeted outreach efforts, and marketing efforts to reduce the "stigma" of state assistance could help enrollment levels but a clearer understanding of the reasons for low enrollment levels is needed in order to develop appropriate actions to resolve the issue.

Under federal law, the state can develop a benefits package based on either the benefits offered to state employees, the federal employee health benefit plan, or the health benefits plan offered by the state's

<sup>91</sup> Per Public Act 97-1, these cost sharing provisions apply through July 1, 1999 at which time DSS must submit a schedule for maximum annual cost sharing subject to legislative committee review.

<sup>92</sup> This figure represents enrollment in Part B as of December 1, 1998.

<sup>93</sup> This figure represents approximate enrollment in HUSKY Plus as of December 1, 1998.

largest commercial HMO. HUSKY enrollees will receive benefits that are a combination of those offered under three state employee health benefit plans. Five dollar copayments will be charged for outpatient physician services, eye exams, hearing exams, and services provided by nurse midwives, nurse practitioners, podiatrists, chiropractors, and naturopaths, and oral contraceptives. Prescription drug copays vary depending upon whether the drug is generic brand (\$3) or a brand name (\$6). Copays will also be charged on outpatient mental health services (\$25 dollars or more after the first ten visits) and some dental services (bridge and crowns, root canals, dentures, extractions, orthodontia).

Federal law, state law, and state purchasing efforts govern HUSKY quality assurance activities. Each participating plan must have an internal quality assurance plan and must report regularly on quality, access,<sup>94</sup> and enrollment levels. An independent external quality review of the program must also be performed. Qualidigm (formerly the CT Peer Review Organization) was chosen to provide this assessment and it will be based on a sampling of patient charts, encounter data and a patient satisfaction survey. Performance measures will include the HEDIS measurement set relevant to children and adolescents as well as targets to reduce uninsured children. Participating plans will also have to submit financial data and utilization reports which include preventive care, behavioral health, inpatient services, immunizations, maternal and child health, and member satisfaction. Utilization reports are not yet available due to the infancy of the program. In general, assessing outcomes and performance of this program may present challenges. Outcome measures have been widely studied for adult populations but the knowledge base is more limited for children and adolescents.<sup>95</sup> Additionally, baseline, comparison data will not be available for the Part B population as these enrollees have not been previously eligible for state health insurance assistance.

Outreach is an important part of the program and will target all uninsured children whether they may be eligible for Part A (Medicaid) or Part B. Outreach strategies have included some of the more conventional activities such as radio and TV ads, a direct mail campaign, brochures and flyers, a toll free number, a website, and presentations. DSS will also be contracting with various community-based organizations, human service agencies, or coalitions which will be better able to reach those eligible for the program. Up to ten contracts may be awarded at varying monetary levels. Timely release of the outreach grants and marketing efforts coincided with the beginning of the school year may be helpful in increasing enrollment. Additionally, public health agencies offer many programs that provide outreach, care coordination, and linkage of services to needy and underserved populations including sites for adolescent and youth pregnancy prevention, healthy start, family planning, school based health centers, and community health centers. These programs penetrate the majority of Connecticut towns and therefore would be ideal to aid HUSKY outreach efforts.

### *Husky Plus*

The HUSKY Part B benefit package provides for coverage of acute care and primary care services however, DSS expects a small percentage of children to require extraordinary services. Children enrolled in Part B between 185- 300% of the federal poverty level 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. They are: HUSKY Plus Behavioral and HUSKY Plus Physical. Each program has an appointed Steering Committee which functions in an advisory capacity. In the

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<sup>94</sup> Dental access is of particular concern among advocates. The HUSKY program has the potential for 37,000 more children to access dental services. While there is no documentation that a dental access problem exists in Part B, the potential is inferred given the documented access problems in the Medicaid program (see Medicaid Managed Care - Ongoing Issues).

<sup>95</sup> Association of State and Territorial Health Organizations. *Children's health insurance implementation: Beginning the discussion on quality and performance measurement*. 1998 May.

case of HUSKY Plus Physical, the Committee will consist of the existing Title V<sup>96</sup> advisory committee with the additions of DSS and DCF representatives.<sup>97</sup>

### HUSKY Plus Physical

HUSKY Plus Physical will be jointly administered by the Title V providers, CT Children's Medical Center and Yale New Haven Children's Hospital. The providers utilized by the two hospitals in the Title V program will provide the services. Clinical eligibility is determined based on medical eligibility criteria established by the DPH Title V program or by the definition of Children with Special Health Care Needs (CSHCN) adopted by the Steering Committee. Children who are determined eligible will receive care coordination, advocacy, case management, and multidisciplinary evaluation. The children will receive benefits consistent with the Title V program to the extent that they are not covered under the Part B benefits package. All services are subject to prior authorization based on the definition of medical necessity adopted for the program. Like HUSKY in general, the plan will be reviewed annually by Qualidigm. Additionally, the Steering Committee hopes to develop outcome measures based on work done by the federal Maternal and Child Health Bureau (MCHB). The MCHB has developed 18 mandatory performance measures addressing children with special needs and maternal and child health. States are also required to add seven additional performance measures that are state specific. Connecticut has not chosen any performance measures specific to CSHCN at this time.

As mandated by PA 97-1, the DPH expanded coverage for the CSHCN program from 200-300% of poverty. It is expected that some Title V recipients will now be eligible for HUSKY Plus Physical. Title V programs have promoted and supported the concepts of community-based and family centered systems, cultural competency, care coordination, family participation, and linkage with other payers of health care services. The MCHB sets quality standards for CSHCN and expects each state through its Title V agency, to perform statewide needs assessments every five years for the entire maternal and child health population including CSHCN. Annual updates of these needs and services available for CSHCN are reported in the maternal and child health block grant application. Additionally, the MCHB expects the Title V agency to be an active participant in the development of policies and health care systems that include all payer types. It is important that these activities and priorities be carried over to the HUSKY Plus Physical program.

### HUSKY Plus Behavioral

DSS has contracted with the Yale Child Study Center to serve as the lead provider and manager for Plus behavioral services. The statewide provider network established by the Yale Child Study Center will include child guidance clinics, family service agencies, and youth service bureaus to provide care coordination, case management, and direct services. Through a competitive bidding process, twelve centers have been chosen to serve children throughout the state. To supplement the Part B package, the plan will offer case management, intensive in-home child and adolescent psychiatric services, and mobile crisis services. Eligibility will be assessed based on the severity of psychiatric and substance abuse symptoms, level of functional impairment secondary to symptoms, and intensity of service needs. Each eligible will have a Child and Family Treatment Team which may include parents, Center clinicians, HUSKY B and HUSKY Plus Behavioral representatives, and the primary care provider. Services are subject to utilization guidelines by Interqual and the American Academy of Child and Adolescent Psychiatry and case management guidelines developed by the CT Child Guidance Clinic Association. In addition to an annual review by Qualidigm, the Yale Child Study Center will have an outcome-based quality improvement system which

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<sup>96</sup> Title V of the federal Maternal and Child Health block grant provides funding to the state's Title V agency (the Department of Public Health). The funds are used to provide programs and services to maternal and child health populations. As part of this block grant funding, DPH administers a program for children with special needs. The program is the payor of last resort for underinsured children up to 300% of the federal poverty level who qualify under established medical eligibility criteria. The program provides ambulatory services.

<sup>97</sup> In January, 1999, the committee will be reorganized to include additional voting members from the Department of Insurance, Department of Mental Retardation, and the Office of The Child Advocate.

monitors the progress of children overtime on the combined utilization and outcome data from HUSKY Plus and HUSKY Part B.<sup>98</sup>

### *Public Health and CHIP*

The expansion of children's health insurance is a positive step for Connecticut in improving the health status of its youngest residents. Some of the areas where public health agencies can specifically contribute to the HUSKY program include:<sup>99</sup>

- providing policy guidance with respect to children with special health care needs and filling gaps in care;
- using existing services to create access points for referral or applications to enhance outreach and enrollment;
- work with other providers and local health departments to identify and develop needed enabling services;
- quality improvement activities and evaluation;
- linking state public health programs such as WIC, childhood immunizations and other MCHB sponsored programs.

Despite the new HUSKY program, it is likely that some children will remain uninsured. For this population, public health agencies need to continue (1) enabling and family support services for low income families or families caring for children with chronic illness or disability, (2) the provision of population-based prevention services, and (3) infrastructure services such as maintaining quality standards and ensuring access through Connecticut's safety net providers.

### Medicaid Managed Care

#### *Program Summary as of January, 1998*

DSS administers the state's Medicaid Managed Care program ("HUSKY Part A", formerly "Connecticut Access") through a federal 1915(b) waiver approved by the 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,<sup>100</sup> children up to age 19 with incomes under 185% of poverty, and children in the custody of the Department of Children and Families (DCF). For these groups, enrollment in managed care plans is mandatory. The program covers 218,000 clients however, enrollment fluctuates monthly due to changes in eligibility status.<sup>101</sup> Children comprise approximately 70% of the population enrolled.

Eight plans participate in the program.<sup>102</sup> Participating plans, enrollment levels, and market share as of January 1, 1998, are provided in Appendix F. Plans are responsible for all Medicaid covered services except medically related costs of special education in public schools and "Birth to Three" early intervention services for children up to age three with diagnosed or established developmental delays. All plans receive capitated payments for both inpatient and outpatient services.

Premiums are based on approximately 92% of the projected fee-for-service cost of the covered package of services. Premiums vary based on experience related to the clients' age, sex, and county of

<sup>98</sup> Schaefer M. Personal communication. 1998 Nov. 27

<sup>99</sup> The Lewin Group. *The impact of expanding children's health insurance on the role of maternal and child health Title V programs*. Prepared for the Maternal and Child Health Bureau. 1998 May 20.

<sup>100</sup> This category includes women and children born after September 30, 1983, with incomes under 185% of federal poverty level.

<sup>101</sup> Since the initial publication of the Assessment in January, 1998, enrollment has jumped to over 223,000 as of 11/1/98. DSS attributes this to the Medicaid expansion discussed under *HUSKY Part A* above and outreach efforts for the HUSKY program in general.

<sup>102</sup> Since the initial publication of the Assessment in January, 1998, one health plan (Oxford) has left the program bringing the total number of participating plans to seven down from eleven since the program's inception in 1995. Other plans leaving the program as of 10/1/97 include Aetna while HealthChoice and Bridgeport Hospital have merged with Yale Preferred.

residence, but average approximately \$142 per member per month.<sup>103</sup> At the direction of the legislature, a competitive bidding process will be used to develop rates for the upcoming contract renewal process with participating health plans.<sup>104</sup>

The program continually evolves in response to federal mandates and state purchasing requirements. New programmatic features scheduled to be included are a 12 month lock-in of enrollees, continuous enrollment for children for 12 months, and 6 month guaranteed eligibility for adults.<sup>105</sup> Due to programmatic changes, rate reductions, and a changing health care environment fewer plans are participating in the program. This was anticipated, however, if fewer plans participate in the future network capacity issues could result in placing clients back into fee-for-service. Fewer plans do provide an opportunity for greater and more effective oversight, but also triggers a re-enrollment process for clients whose plans no longer participate and narrows the choices offered to beneficiaries.

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<sup>103</sup>These approximate rates are in effect from 8/1/98 through 6/30/99. New rates will be established for the period 7/1/99-6/30/99.

<sup>104</sup> Since the initial publication of the Assessment in January, 1998, the competitive bidding and contract re-negotiations for 1998 had been delayed due to the incorporation of the HUSKY program and the delay in finalizing the business cost proposal. An RFA process has since been completed and all seven plans will continue in the program. Contract negotiations are expected to be finalized by 1999 and will take effect for the time period 2/1/99 - 6/30/2000.

<sup>105</sup> These provisions were part of the federal Balanced Budget Act of 1997. Since the initial publication of the Assessment in January, 1998, Connecticut has implemented the provisions for continuous enrollment for children and guaranteed eligibility for adults. The 12 month lock-in provision will be implemented pending HCFA approval of the state's 1915(b) waiver renewal expected in the first quarter of 1999.

### *On-going Issues*

Since implementation in August, 1995, there have been a variety of issues related to enrollment, education and information, coordination of care, and provider practice which have raised concerns as to whether the program is providing services equivalent to those offered under a fee-for-service system. The changing system and the rapid pace at which implementation occurred caused confusion among beneficiaries, providers, plans, and advocates. Many of these “informational” problems were corrected over time but there are several major issues still to be resolved.

#### Access to Dental Services

As under the fee-for-service Medicaid program, access to dental services remains a significant problem. The problem exists in all Medicaid managed care networks and has been substantiated by several surveys over the past year. A survey by DPH estimated that 40% of dentists participating in the fee-for-service Medicaid program intended to resign when the managed care program was implemented. Random phone calls to dental provider offices by DSS staff documented difficulty in scheduling appointments with dental providers. The outcome of the Children’s Health Council satisfaction and utilization surveys showed that more access problems occurred with dental care than any other type of specialty service.<sup>106</sup> Additionally, it found that even those dentists that participate in Medicaid may do so on a limited basis. Nearly 80% of the participating dentists were not accepting additional Medicaid children. The providers cited burdensome paperwork and related administrative requirements, patient non-compliance, and dental fee reimbursement rates as reasons for non-participation.<sup>107</sup> Although administrative complexity and cultural issues are being addressed, discussions regarding reimbursement rates are more complex. Most participating plans reimburse dentists at the level of Medicaid fee-for-service rates, which are approximately 55% of private rates for children and 35% for adults.<sup>108</sup> Interestingly, a previous rate increase in 1993 by DSS had the effect of increasing the number of services provided by participating dentists, but did not increase the number of dentists participating in the program.<sup>109</sup> Therefore, it is unclear if higher reimbursement rates would help solve the access crisis for managed care enrollees.

#### Integration of School-Based Health Centers (SBHCs) in the Medicaid Managed Care Program<sup>110</sup>

Although DSS requires participating plans to contract with SBHCs in the plans’ geographic service areas, there have been many organizational and financial barriers to integrating these entities into the Medicaid managed care program. A major barrier is the merging of two separate organizational cultures, as both health plans and SBHCs have little expertise in working with each other. There have also been lengthy credentialing processes for the centers and their providers, preauthorization hurdles, and limitations on covered services. Contracting with SBHCs for behavioral health services remains a problem, as many plans typically subcontract the behavioral health portion, and some subcontractors remain unwilling to include SBHCs. The DPH and DSS have worked together to identify barriers to the contracting process and to facilitate a resolution to the problems mentioned above. All SBHCs have been able to contract for primary care and continue to pursue mental health sub-contracts.

<sup>106</sup> Maximus, Inc. *Summary report: Medicaid client utilization and satisfaction survey*, Prepared for the Children’s Health Council, 1996.

<sup>107</sup> Wolfe SH. *Present and Projected Dental Provider Participation in the Connecticut Medicaid Managed Care Program: Impact on Dental Care Access*. Hartford: Connecticut Department of Public Health; 1997 Feb.

<sup>108</sup> Andrews E. Memoranda summarizing dental rates. Prepared for the Medicaid Managed Care Council. 1997 April 18.

<sup>109</sup> Connecticut Department of Social Services. Memoranda on the impact of pediatric dental fee increases. 1995 April 13.

<sup>110</sup> Connecticut Departments of Public Health and Social Services. *Connecticut Access: Contracts Between Health Plans and School-Based Health Centers*. 1997 Mar. 26.

## EPSDT Requirements

The federal Early Periodic Screening, Diagnosis, and Treatment (EPSDT) program requires states to provide comprehensive screening, diagnosis and treatment benefits to all Medicaid beneficiaries under age 21. The program is designed to improve primary health benefits for children by emphasizing preventive care through distinct periodicity schedules for vision, dental, hearing, blood lead, immunizations, and developmental assessments.<sup>111</sup> States are required to meet a participation rate of 80%. Under the fee-for-service program, participation rates improved between FY's 1992 and 1994, but remained around 42% from FY 1994 to 1996.<sup>112</sup> Preventive dental assessments had actually declined from 29.7% in FY 1995 to 24.3% in FY 1996.<sup>113</sup> Data for the second quarter of 1997 however, show that participation rates have increased to 61%. While this is a big improvement, it is still below the federal goal of 80%.<sup>114</sup> EPSDT participation is expected to increase under managed care due to features like coordination of care by a primary care physician and utilization tracking by DSS. Additionally, participating health plans are required to provide these services to all eligibles under Connecticut's EPSDT program, "Healthtrack".

## Definition of Medical Necessity

In the Medicaid managed care program, children and families have been denied services based on a more limited interpretation of the definition of medical necessity than that held by DSS under the fee-for-service program.<sup>115</sup> This particularly affects children with special needs, because when they enter the managed care program, health plans typically review the services they are receiving and decide whether these services should be continued. Plans tend to make determinations about the nature and extent of services available to special needs children using the same medical necessity criteria that they use for children who do not have chronic or disabling conditions. For example, plans often judge children's occupational therapy, physical therapy, speech-language pathology services, and even mental health services as being educationally related and therefore not medically necessary, even though Medicaid has historically reimbursed these services.<sup>116</sup> Some decisions lead to reductions or discontinued care. The review has particularly caused restrictions on mental health and home health services.<sup>117,118</sup>

## Integrating Services Provided by State Agencies

Many families who participate in the Medicaid managed care program may also receive services from a variety of other health-related programs provided by the State like WIC, Healthy Start, Birth to Three, Healthy Families, Head Start, preschool, special education, and other child care programs. Relationships and coordination of care between health plans and these programs have not been established, leading to a loss of services to clients and a loss of money to the State, as the services have already been built into the premium base. For example, WIC recertification requires a six-month check up, but it is not part of health plans'

<sup>111</sup> U.S. Department of Health and Human Services, Health Care Financing Administration. *State Medicaid Manual, Part 5: Early and Periodic Screening, Diagnosis, and Treatment*. Washington, DC, 1990 April.

<sup>112</sup> Children's Health Council. *EPSDT Under Connecticut Access*. 1997 June 3.

<sup>113</sup> Children's Health Council, p. 6.

<sup>114</sup> Since initial publication of the *Assessment* in January, 1998, utilization reports submitted by plans to DSS show that median participation and screening rates for the second quarter of 1998 have further improved to 67% and 75% respectively. Adolescent rates (while improving as well) remain lower than the median.

<sup>115</sup> Medicaid Managed Care Council's Access/EPSDT Subcommittee, Meeting Minutes, December, 1996.

<sup>116</sup> Fox HB, McManus M. *Medicaid Managed Care for Children with Chronic or Disabling Conditions: Improved Strategies for States and Plans*. Maternal and Child Health Policy Research Center. 1996 July: 26.

<sup>117</sup> Lee MA. Prepared testimony to the Medicaid Managed Care Council on behalf of the Children's Health Council. 1997 January 29.

<sup>118</sup> Since initial publication of the *Assessment* in January, 1998, DSS expects to include a clarified definition of medical necessity into the new contracts expected to become effective February, 1999.

approved schedule of pediatric care.<sup>119</sup> Confusion resulting from the structural changes in the delivery of services and different interpretations regarding the scope of benefits have led families to seek services previously provided under the Medicaid fee-for-service system from state agencies (DCF, DPH, DMR) and non-profit agencies. Increased efforts to integrate these services are needed to achieve continuity of care through the appropriate funding mechanisms.<sup>120</sup>

### Grievance and Appeals Process

The grievance and appeals process is necessary to ensure consumer protection under managed care, as financial incentives to underutilized care exists. The Medicaid managed care program includes several mechanisms in this regard. Plans are required to have an internal grievance and appeals process in place. DSS provides clients the right to appeal through a fair hearing process, and by federal law, Medicaid recipients must be given an opportunity for notice and appeal prior to the reduction or termination of services. However, there has been confusion as to the timing of the fair hearing process. A review of health plan grievance and appeals descriptions by the Children's Health Council showed that the information on when to access DSS's process was inconsistent across plans.<sup>121,122</sup> Additionally, plans have not complied with the federal regulation regarding notice prior to the termination or reduction of services which has had a particular impact on children with special needs whose services have been reviewed under the plan's interpretation of medical necessity.<sup>123,124</sup>

### Delays in Newborn Eligibility Determination<sup>125</sup>

Delays in processing Medicaid eligibility for newborns has led to decreased access to medical services and screenings for infants regardless of the guarantee of immediate and continuous coverage under EPSDT. The problem primarily involves the assignment of a Medicaid number, which can take up to three months. Since providers cannot verify the plan to which these newborns belong, they are reluctant to provide services for the new client for fear that the service will not be reimbursed. Delays in enrollment are attributed to the combination of delays in hospital reporting of new births and delays in eligibility processing at DSS regional offices.<sup>126</sup>

### Medicaid Managed Care and Traditional Public Health Providers

Medicaid reimbursement is a major source of revenue for traditional public health providers (safety net providers),<sup>127</sup> and changes in the financing and delivery of Medicaid services are likely to affect these organizations. Before the Medicaid managed care program, safety net providers were able to provide primary

<sup>119</sup> Solomon J, Lee MA. *Evaluation of the Connecticut Access Medicaid Managed Care Program: Impact on Recipient Access to Quality Care*. Children's Health Council. Hartford, CT. 1997 April.

<sup>120</sup> Since initial publication of the *Assessment* in January, 1998, all participating health plans will be required to develop contracts with state and community-based organizations for coordination and appropriate funding of services. This provision will be part of the new contracts expected to be effective February, 1999.

<sup>121</sup> Solomon and Lee, 52.

<sup>122</sup> Since initial publication of the *Assessment* in January, 1998, DSS has developed a uniform grievance and fair hearing process that will be implemented in the next contract period expected to become effective February, 1999.

<sup>123</sup> Solomon and Lee, 56

<sup>124</sup> Since initial publication of the *Assessment* in January, 1998, DSS has issued policy transmittals and clarifications on the continuity of care and notice of action which has better enabled them to intervene and clarify a plan's responsibility when a conflict occurs.

<sup>125</sup> Solomon and Lee, 47-49.

<sup>126</sup> Since initial publication of the *Assessment* in January, 1998, DSS has moved eligibility processing to the central office in Hartford and has worked with hospitals to limit the processing to five days in most cases.

<sup>127</sup> Grogan C, Gusmano M. *The Status of Safety Net Providers in Connecticut: A Survey of Connecticut's Safety Net Providers*. Prepared for the Public Health Subcommittee of the Connecticut Medicaid Managed Care Council. 1997 March. Safety net providers are identified as community health centers, school-based health centers, child guidance clinics, local health departments, non-profit visiting nurse associations, family planning clinics, and public dental clinics.

care to uninsured or underinsured residents by depending heavily upon Medicaid reimbursements and cost-shifting from paying patients. As the Medicaid program moved from fee-for-service to capitated payments, traditional providers have experienced a decline in reimbursement, either because they have been unable to secure contracts with MCOs (or have contracts to provide only a subset of services) or if contracts exist, they have had to negotiate rates individually with MCOs.<sup>128</sup> Lower rates threaten the financial viability of safety net providers when service levels are maintained, but they may also cause a change in the number and types of services provided and the number of uninsured patients seen. As long as federal and state financing policies do not address the uninsured, the safety net providers remain essential for access to primary care services for the uninsured and underinsured. A comprehensive discussion of safety net providers in Connecticut can be found in Appendix G.

### Quality Oversight

As administrator of the Medicaid managed care program, DSS has primary responsibility for ensuring that quality services are provided to Medicaid clients. DSS follows HCFA's Quality Assurance Reform Initiative (QARI) guidelines, and as required by HCFA, has developed an independent external quality assurance program.<sup>129</sup> DSS also requires quarterly reporting by participating plans. Additionally, the Children's Health Council, created by the Legislature in 1995, provides independent quality oversight of children's health issues.

DSS has contracted with Qualidigm (formerly CPRO) for the independent external quality assurance program. Their major responsibilities will include completing a contract compliance audit with site visits to MCOs, constructing a data base, and conducting patient-focused studies.<sup>130</sup> The first focused study is on pediatric asthma. Because the contract with Qualidigm was initiated over a year after implementation of the managed care program, a significant delay in developing an operational quality assessment program has resulted.

The Children's Health Council has been particularly active in monitoring and evaluating health plan compliance with EPSDT requirements. EPSDT is one of the few areas for which a fee-for-service baseline exists to compare the performance of EPSDT in the managed care program. The Council is an advocate for children under the age of 21, and provides education, information, and individual casework services for coordination of care and access problems for this population.<sup>131</sup> The Council also provided an independent evaluation of the quality and access components of the Medicaid managed care program. Many of the issues brought forth by this review have been described in "Ongoing Issues" in this chapter.

Information on the utilization of services by Medicaid managed care enrollees is received mostly through self-reported quarterly reports from the health plans and through the use of encounter data. Regarding the quarterly reports, data are available on pap smears, mammograms, low birthweight, behavioral health, EPSDT, inpatient and emergency room use, prescriptions, vision, and dental exams.<sup>132</sup> However, reporting compliance by health plans has been somewhat problematic, with much of the data missing, late, or incomplete. This however, is beginning to improve. Data collection on other important elements such as immunization rates is still in process, and reports are expected shortly.<sup>133</sup> Encounter data have been reported to both the Children's Health Council and Qualidigm since 1996 and will be used increasingly by Qualidigm for focused studies. The quality of the data however, is at issue and Qualidigm will use medical record audits to verify completeness and accuracy.

<sup>128</sup> Grogan and Gusmano, 2.

<sup>129</sup> Linnane J, Griffis A. Connecticut Department of Social Services. Personal communication. 1997 April 14.

<sup>130</sup> Children's Health Council. Meeting Summary. 1997 May 12;3.

<sup>131</sup> Lee M. Children's Health Council. Personal communication. 1997 April 21.

<sup>132</sup> Connecticut Department of Social Services. Correspondence to the Medicaid Managed Care Council. 1997 May 9.

<sup>133</sup> Lee M. Children's Health Council. Personal communication. 1997 August 25. Since initial publication of the Assessment in January, 1998, reports of immunization rates are still in process but are expected shortly.

Data partnerships between DSS, the health plans, and other state agencies, particularly the public health and mental health agencies, would help to improve the accuracy and timeliness of the data reporting. Such partnerships are essential for reducing duplicative efforts in data collection and monitoring. In addition, the evaluation of the QARI demonstration project indicated that coordination of data requests and data partnerships were key for health plans concerned with the burden of multiple overlapping reviews and requests.<sup>134</sup> An initiative to link public birth records with DSS and managed care plans' enrollment files would enable evaluation of prenatal care and birth outcomes using the official state birth record. The birth records contain information on the number of prenatal care visits and the necessary information to provide rates of low birthweight or Cesarean sections. Coordinating public health information systems including linkages with death records, hospital discharge records, and the State's cancer registry could also be used to further evaluate and report on the health of Connecticut's Medicaid managed care population.

### 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 financing and delivery of health care services to older persons and persons with disabilities who are dually eligible for Medicaid and Medicare. The program was being developed by DSS to address cost issues related to this population. In Connecticut, 16% of the Medicaid population are dually eligible (about 43,000 individuals), but these clients consume 51% of the Medicaid budget (about \$920 million).<sup>135</sup> Ninety-one percent of the dually eligible are 65 years of age and older and 9% are young adults with disabilities. The majority of funds are allocated to long term care services in institutions.

In response to concerns raised that seeking a Section 1115 waiver was too comprehensive, DSS was directed to scale back to a pilot project. This pilot project is called Connecticut Lifelong Care (CTLTC).<sup>136</sup> The CTLTC is modeled after the national program known as the Program for All-inclusive Care for the Elderly (PACE). It will offer nursing home qualified adults who are age 55 and older and 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. Two CTLTC centers, one in Hartford (Hebrew Home and Hospital) and one in New Haven (Masonicare), will be responsible for the coordination and delivery of an integrated benefit package of Medicaid and Medicare services under a capitated rate. The centers are scheduled to begin offering services in late 1999. The program is voluntary, but the incentive to join the program lies in the increased availability of community-based services to replace care provided in institutions, and the expectation of better coordinated services. DSS expects approximately 300 individuals to enroll during the first two years of operation. At the end of the fifth year, DSS expects that expansion activities will result in approximately 2,000 participants in the program.

The PACE program has demonstrated success in managing enrollee care, quality of care, and client satisfaction. For example, the rate of hospital use is lower than that of the Medicare 65+ population which includes healthy older persons, and PACE enrollees have shorter length of stays in the hospital than the aged Medicare population as a whole.<sup>137</sup> In 1997, a review by Abt Associates for HCFA reported improved health status and quality of life including lower mortality rates among PACE enrollees.<sup>138</sup> In terms of satisfaction, enrollees generally remain in the program until death with only about 3% disenrolling due to dissatisfaction.<sup>139</sup>

<sup>134</sup> Felt-Lisk S, St. Peter R. Quality assurance for Medicaid managed care. Reprint from *Health Affairs*. 1997 May/June;16(3):249.

<sup>135</sup> Connecticut Department of Social Services. Integrated Service Networks in Connecticut, Survey and Information Request.

<sup>136</sup> Technical information on the Connecticut Lifelong Care Program was provided by the Connecticut Department of Social Services, Integrated Care Unit.

<sup>137</sup> National PACE Association. *Success to date of the PACE replication*. 1997 Oct.

<sup>138</sup> National PACE Association.

<sup>139</sup> On Lok, Inc. *PACE fact book*. 2nd. ed. San Francisco: Onlok, Inc., 1996.

As noted above, PACE programs have had documented success, but the use of managed care techniques with disabled and elderly populations warrants close monitoring in terms of access to services and quality of care. The population eligible for PACE programs often have chronic conditions needing frequent, specialized services, and this must be balanced with the financial incentives provided under capitation. Several studies document that HMOs operating under a capitated rate reduce utilization, hospital admission rates, length of stays, and use of expensive technologies.<sup>140</sup> A recent study found that 54% of patients 65 years of age and older who were treated in HMOs reported a decline in health, compared with 28% of those in fee-for-service plans.<sup>141</sup> Likewise 22% of poor patients treated in HMOs reported improvements in health compared with 58% in fee for service. While PACE programs are not HMO models, they are similar in that they manage care for enrollees under a capitated rate. The financial incentives under a capitated model need to be properly assessed and managed to ensure that elderly and poor clients of the state receive appropriate, high quality services.

### Managed Care Regulation

In 1996, the Connecticut General Assembly vigorously debated a comprehensive managed care bill that would have given the state's public health agency broad oversight of quality and consumer protection related to managed care organizations. The major provisions of the bill included a certificate of authority program, stronger oversight of utilization review and appeals, on-site inspections, HEDIS data collection, and the collection and dissemination of consumer information. While this measure did not pass, a bill mandating coverage for 48-hour maternity stays was signed into law. A provision was also included that prevents health insurers from refusing to cover women who previously had breast cancer, provided that the woman has been cancer free for five years.

In 1997, the General Assembly passed a bipartisan bill (Public Act 97-99) which is less comprehensive than the 1996 proposal. The Act provides the state's Department of Insurance with broad oversight of managed care organizations and utilization review companies. The major components of the Act include increased, standardized consumer information, the development of an external appeals process to the State for services that have been denied, guidelines for utilization review and medical protocols, and HEDIS data collection from licensed health plans in the state. Other managed care bills receiving approval in 1997 include requiring health plans to pay for at least 48-hour hospital stays after a mastectomy or lymph node dissection.

## POLICY ISSUES

### Quality Assurance

Quality assurance in a managed care environment is particularly important given the financial incentives to limit care. Currently, the debate on quality centers on performance measurement or how best to hold health plans accountable for the health status of their members. Performance measurement may include:

- Structural indicators such as accreditation status or the proportion of physicians who are board certified;
- Licensure status of institutions as well as health care practitioners;
- Process measures, which address the rate at which interventions are performed, such as mammography or blood pressure screening, or immunizations;
- Health outcomes, or those effects that patients actually experience, such as death, disability, or satisfaction with the care provided.

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<sup>140</sup> Ware JE, Bayliss MS, Rogers WH, Kosinski M, Tarlov AR. Differences in 4-year outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-service systems. *Journal of the American Medical Association* 1996; 276(13): 1039-1047.

<sup>141</sup> Ware JE et. al., 1039.

Performance measurement most often occurs around plan processes that are focused on preventive services, as most experts feel, “what gets measured, gets done.”<sup>142</sup> But the issue within quality assurance is how to measure patient outcomes and more sophisticated clinical outcomes that go beyond mortality like readmission rates or infection rates. Problems cited in measuring outcomes include turnover in plan membership, which causes difficulty in tracking patients, and the effect on outcomes of other factors that are out of the plan’s control, like severity of disease.<sup>143</sup> Measuring patient outcomes will become more important in the future because the purpose of the health care system is to improve health outcomes and health outcomes are a gauge for how well a health plan is performing.

### *NCQA and HEDIS*

Several efforts are underway that reflect increased attention to quality of care in a managed care environment. These include the NCQA (National Committee for Quality Assurance) accreditation standards and the HEDIS performance measures. NCQA is a not-for-profit organization that evaluates and reports on the quality of managed care plans in six general areas: quality management and improvement, utilization management, credentialing, members’ rights and responsibilities, preventive health services, and medical records.<sup>144</sup> HEDIS is a set of standardized performance measures for comparing the performance of managed care plans.<sup>145</sup> NCQA’s accreditation program uses HEDIS data to help evaluate the quality of managed care plans. The 71 HEDIS reporting measures and 33 testing set measures are listed in Appendix H.

Consensus among managed care plans, employers, and government agencies appears to be developing around the use of the HEDIS performance indicators as a foundation for quality oversight.<sup>146</sup> In 1996, more than 330 health plans across the country were producing HEDIS statistics, and more than 50% of the large corporations that purchase managed care benefits were using HEDIS data to help guide their managed care purchasing decisions.<sup>147</sup> While it is appropriate to focus on improving quality of care under managed care arrangements, the same standard of care should apply for all patients; high quality care should be the same no matter who is paying for that care.

### *Model Quality Monitoring Programs and Performance Improvement Systems*

Despite the ongoing quality efforts, no quality monitoring program or performance improvement system has been defined as a standard. Two quality monitoring programs are identified below and could be considered as a framework for a model program.

Yale University School of Medicine’s Department of Epidemiology and Public Health prepared an independent report for DPH entitled, *A Blueprint: State Government’s Role in Quality Assessment and Performance Improvement for Managed Care in Connecticut*.<sup>148</sup> The report provides recommendations for components of a State program that oversees the quality of managed care organizations. These recommendations, however, have not been adopted by the State and are not formally used by any Connecticut health system.

In 1991, HCFA’s Medicaid Managed Care Office initiated QARI to design a more credible approach to monitoring and improving the quality of managed care services for Medicaid recipients.<sup>149</sup> QARI

<sup>142</sup> Harris JR. “Prevention and Intervention.” *Widening the Quality Circle, 1996 Annual Report*. <http://www.ncqa.org/ar96.htm>. (14 Mar. 1997). NCQA cites HealthPartners in Minneapolis where the immunization rate was steady until HEDIS measures were used.

<sup>143</sup> Eddy DM. *Outcomes: Excerpt from Widening the Quality Circle: 1996 Annual Report*. <http://www.ncqa.org/ar96.htm>. (14 Mar. 1997).

<sup>144</sup> National Committee for Quality Assurance. *1997 NCQA Standards for Accreditation*. 1997 April.

<sup>145</sup> National Committee for Quality Assurance.

<sup>146</sup> The Association of State and Territorial Health Officials. *Ensuring And Improving The Quality Of Care In A Managed Care Environment.. Managed Care Monograph Series*. Washington D.C. 1995 November;2.

<sup>147</sup> National Committee for Quality Assurance. *HEDIS 3.0 Draft for Public Comment*. 1996 July;10.

<sup>148</sup> Grogan CM, Horwitz SM, Schlesinger M. *A Blueprint: State Government’s Role in Quality Assessment and Performance Improvement for Managed Care in Connecticut*. Yale University School of Medicine’s Department of Epidemiology and Public Health. 1996 April.

<sup>149</sup> Booth M, Fuller E. *Quality Improvement Primer for Medicaid Managed Care Final Report*. National Academy for State Health Policy. 1995 June;1.

establishes five key elements of a health care quality improvement system (HCQIS).<sup>150</sup> The QARI framework is similar to the Yale *Blueprint* recommendations in that each requires internal and external quality reviews, focused studies, and an external grievance process. HCFA has contracted with the National Academy for State Health Policy to conduct a new project, the quality improvement system for managed care (QISMC), to replace QARI.<sup>151</sup> QISMC, which applies to both Medicare and Medicaid, will define and elaborate what HCFA's expectations are with regard to internal quality assessment and performance improvement, including the development of unified standards and reviewer guidelines.<sup>152</sup>

Appendix I provides a comparison of public quality oversight programs (Medicare, Connecticut's Medicaid program, the Connecticut State employee health plan, and oversight of managed care plans through Connecticut Public Act 97-99) with Yale's recommendations for a quality monitoring program. Assuming that the State and federal government actually implement their quality initiatives effectively, their oversight initiatives generally match up well to Yale's recommended system. State oversight (through Public Act 97-99) for Connecticut's commercial populations enrolled in managed care are not held to these same standards.

### *Quality Oversight in Connecticut*

Significantly less quality oversight by the State occurs for the commercial population than for those enrolled in public programs (Appendix I). Additionally, quality oversight in Connecticut is fragmented across several agencies. DSS is responsible for the quality oversight of the Medicaid Managed Care program. DPH oversees the quality of care provided to individuals by institutional and individual providers, but does not include managed care organizations. The oversight consists of State licensing and/or federal certification (Medicare/Medicaid) of health care providers and institutions including, but not limited to, hospitals, nursing homes, ambulatory services, home care services, behavioral health services, intermediate care facilities for the mentally retarded, clinical laboratories, investigation of complaints, determining if minimum standards as defined in state and federal laws and regulations are met and institution enforcement actions, as necessary. Finally, the Department of Insurance (DOI) regulates health insurers and health maintenance organizations to ensure they meet licensing and financial solvency standards, reviews and approves rates and policies, handles complaints, and oversees companies' conduct in the marketplace.<sup>153</sup> DOI also licenses utilization review companies, oversees guidelines for notification of utilization review (UR) decisions and specifications for appeals procedures, and acts as an ombudsman for consumers regarding review of denied appeals. DOI's responsibilities for oversight of both managed care organizations and utilization review companies has been expanded through Public Act 97-99 (referred to under "Managed Care Regulation" earlier in this Chapter).

### Utilization Review

Utilization review has become an issue within managed care and quality assurance due to its function of assessing medical necessity and appropriateness of health care services and treatment. Connecticut HMOs commonly use Milliman & Robertson Healthcare Management Guidelines to determine appropriateness for patients having no complications.<sup>154</sup> However, the guidelines may be used inappropriately as a cost containment tool (e.g. by limiting individual patients' utilization) rather than as a mechanism to enhance quality by reducing variations in physician's practicing patterns. The guidelines are also criticized for not considering the infrastructure of Connecticut's health care system and its ability to provide the outpatient

<sup>150</sup> U.S. Department of Health and Human Services, Health Care Financing Administration, Medicaid Bureau. *A Health Care Quality Improvement System For Medicaid Managed Care A Guide for States*. 1993 July 6;7-11.

<sup>151</sup> Macrae A. U.S. Department of Health and Human Services, Health Care Financing Administration, Office of Managed Care. Personal communication. 1997 June 3.

<sup>152</sup> Macrae A. Personal communication. 1997 June 3.

<sup>153</sup> Connecticut General Assembly, Legislative Program Review and Investigations Committee. *Regulation and Oversight of Managed Care*. Hartford, CT, 1996 December; 22.

<sup>154</sup> Connecticut General Assembly, Legislative Program Review and Investigations Committee. *Regulation and Oversight of Managed Care*. Hartford, CT, 1996 December; 77-78.

and follow-up services that are often prescribed as alternatives to inpatient care, or a patient's family's capacity to provide home care and support when hospital stays are limited.

### Integrating Managed Care with Public Health

As the health system and the financial incentives to providers change, several issues arise concerning how public health and managed care should interact. First, there is a concern that individuals may not be accessing preventive health services as they should. A recent analysis of pediatric immunization rates among Medicaid managed care organizations showed that close to 30% of children born in 1994 and 1995 were not being tracked.

Second, the public health concept of improving health status could be integrated into the incentives of the emerging financing and delivery systems. Because the goal of MCOs is to maintain the health and manage the care of their enrollees, this can be achieved by incorporating health promotion and disease prevention activities into the mainstream of care. Another way this can be achieved is through broadening the scope of preventive services and treatments offered. For example, most MCOs do not cover nutrition services, though optimal nutrition can prevent disease, reduce risk of illness, enhance recovery and reduce complications, and promote general health and well being.<sup>155</sup> Some MCOs have already begun to establish wellness programs that offer discounts at health clubs, prenatal self care, and weight loss programs. MCOs can also influence participating physicians to incorporate health promotion and disease prevention activities into routine patient care by providing financial incentives and educational tools for them to focus on a patient's personal health practices like exercise, diet, and stress reduction. These activities may be more valuable in improving overall health than more commonly used clinical methods of prevention such as screenings for early disease.<sup>156</sup>

Finally, some traditional public health services such as the provision of vaccines, laboratory services, and outreach services could be transferred to MCOs to provide to their enrollees. It will be important for public health agencies and advocates to monitor managed care closely to determine its effect on preventive services delivery and outcomes. And while it may be possible for the public health sector to shift some costs of delivering preventive care to MCOs, a corresponding reduction in the public's health should not follow. It will be important to determine not only which health services should be appropriately shared with MCOs, but also how successfully managed care delivers those services.

#### *Community Benefits*

For health problems such as substance abuse or violence, broader efforts like school-based programs or community education may be more effective than individual services.<sup>157</sup> For these health problems, plans have an incentive to invest in community programs that prevent health problems. Theoretically, keeping the community healthy will lower utilization of health services over the long run, particularly if the health plan services a large proportion of a given community. Assessing the community's health problems and designing programs to prevent their occurrence may be a more cost-effective way for plans to eliminate unnecessary health problems or injuries, while improving health outcomes and the overall health status of the community.

Although managed care plans are increasingly designing wellness programs for their enrollees, very few offer these activities to the community at large. In Massachusetts, the Attorney General's office has developed a set of guidelines to encourage HMOs to promote community health. (See Appendix J). The guidelines support the development of community benefit plans by HMOs operating in the state and encourage HMOs to identify and meet community health needs in their market area.

## UNINSURED AND UNDERINSURED POPULATIONS

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<sup>155</sup> American Dietetic Association. Cost effectiveness of medical nutrition therapy. *Journal of the American Dietetic Association*. 1995 January.

<sup>156</sup> United States Preventive Services Task Force, *Guide to Clinical Preventive Services*, 2nd edition. (Baltimore, MD: 1996).

<sup>157</sup> United States Preventive Services Task Force, 32.

Providing personal health services to the uninsured and underinsured has become an issue because 1) the numbers of uninsured have increased over the past decade; 2) the decline in employer-based coverage leaves many working families without insurance coverage; 3) Hispanics are more likely to be uninsured than any other ethnic group; and 4) the underinsured are thought to represent a much higher proportion of the population than previously estimated.

The uninsured are those who have no health insurance. Usually, a fairly reliable estimate of their numbers can be developed through surveys. The underinsured, those with inadequate health insurance coverage,<sup>158</sup> are a more difficult group to measure because of the difficulty in defining “inadequate”, and difficulties in obtaining detailed data on an individual’s insurance status.<sup>159</sup> However, for the years 1987 and 1994 it was estimated that 19% of the privately insured population under age 65 are underinsured if faced with a catastrophic illness.<sup>160</sup> This is an increase from a comparable estimate in 1977 of 13%.<sup>161</sup> Additionally, most patients having trouble paying their medical bills are insured.<sup>162</sup>

### The Uninsured Population

The percent of the U.S. population lacking health insurance has been increasing over time (Figure 2-1), and it is uncertain whether this trend will continue. Some indicators like the erosion of employer-based health insurance and conservative social policies such as cutbacks in Medicaid and welfare, point to further increase,<sup>163</sup> but incremental policies, e.g., the State Children’s Health Insurance Program (CHIP) and the Health Insurance Portability and Accountability Act (described previously under “Healthcare for Uninsured Kids and Youth (HUSKY) and Appendix K respectively) may mitigate this increase somewhat. Those uninsured today, however, may be faced with more limited sources of free care because of a diminishing safety net of providers, as discussed previously in this Chapter. For Connecticut, there has been a general rise in the state’s uninsured population through 1994 which appears to have stopped in 1995. The decline can, in part, be attributed to Connecticut’s robust economy after several years of recession; however, more data are needed to determine if this is a trend or one time occurrence.<sup>164</sup>

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<sup>158</sup> In general this term refers to individuals who are exposed to significant financial losses or are unable to obtain needed care due to limited insurance coverage. Office of the Comptroller, State of Connecticut. *Health Care in Connecticut: The Uninsured, Health Care Financing, Access and Uncompensated Care*. 1996 Sept 10.

<sup>159</sup> Weissman J. Uncompensated hospital care: will it be there if we need it? *Journal of the American Medical Association* 1996 Sept;276(1):823-828.

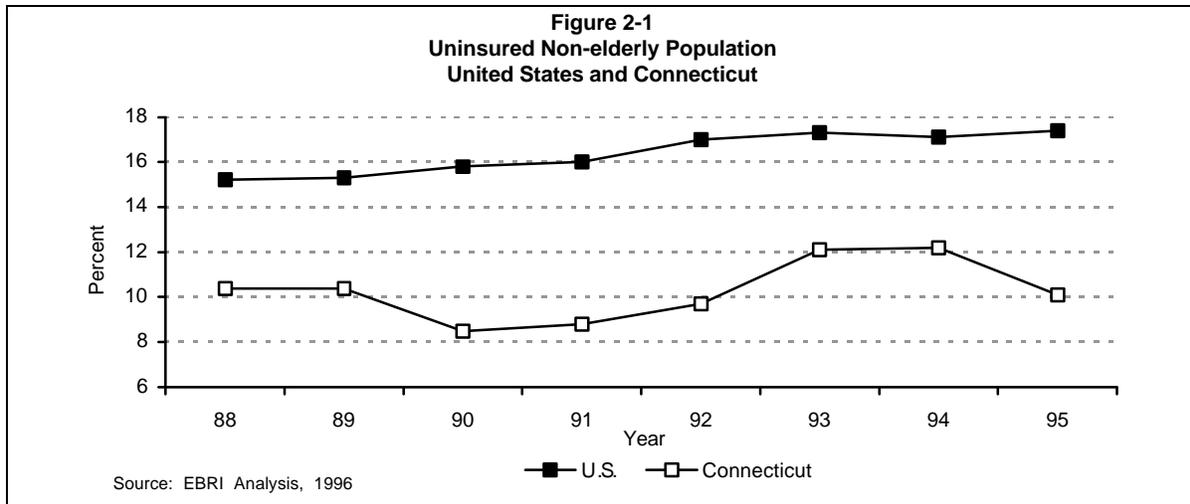
<sup>160</sup> Short PF, Banthin JS. New estimates of the underinsured younger than 65 years. *Journal of the American Medical Association* 1995 Oct; 274(16): 1302-1306.

<sup>161</sup> Short and Banthin, 1304.

<sup>162</sup> Weissman, 823.

<sup>163</sup> Davis K. Uninsured in an era of managed care. *Health Services Research* 1997 Aug 31(6):641-649.

<sup>164</sup> The Connecticut General Assembly’s Legislative Program Review and Investigations Committee, State of Connecticut. *Regulation and Oversight of Managed Care*. Hartford, CT, December, 1996.



### The Decline in Employer-Based Coverage

Since the end of World War II, employment has been strongly associated with health insurance coverage. Since the 1970's, however, employer sponsored health insurance coverage has been declining steadily.<sup>165</sup> Although 63.8% of non-elderly Americans in the U.S. were covered by an employment-based plan in 1995, there has been a steady decline since 1988 (Figure 2-2).<sup>166</sup> The shift in employer-based coverage has indirectly affected insurance coverage to children.<sup>167</sup> Of the 10 million uninsured children in 1994, 25% of those with a parent working full time did not have private, employment-based insurance, and almost 12% of those with a parent working full time were uninsured.<sup>168</sup> Medicaid expansions of the early 1990's covered many poor uninsured children, but reaching children remains a problem. Millions of Medicaid eligible children are not enrolled.<sup>169</sup> The number of uninsured children has fluctuated between 12 and 14% since 1987. After rising steadily between 1992 and 1994 (Figure 2-3), the population of uninsured children declined in Connecticut in 1995; more data are needed to determine if this is a trend.

### Disparities Based on Race or Ethnicity

Large disparities in insurance coverage exist among races and ethnicities particularly among whites, blacks, and Hispanics. Whites comprise the majority of the non-elderly population, and have the highest rate of insurance coverage. Hispanics have the lowest rate. This may be related to the fact that a majority of the Hispanic population reported incomes below 200% of the federal poverty level, were less likely to be covered by private insurance, and were more likely to be noncitizens -- all factors associated with being uninsured.<sup>170</sup> In Connecticut, data from the BRFSS show more blacks lacking health insurance than Hispanics, but both groups have higher rates of being uninsured than whites.<sup>171</sup>

<sup>165</sup> Davis, 642.

<sup>166</sup> Employee Benefit Research Institute. *Sources of Health Insurance and Characteristics of the Uninsured: Analysis of the March 1996 Current Population Survey*. Washington, D.C.:EBRI;1996.

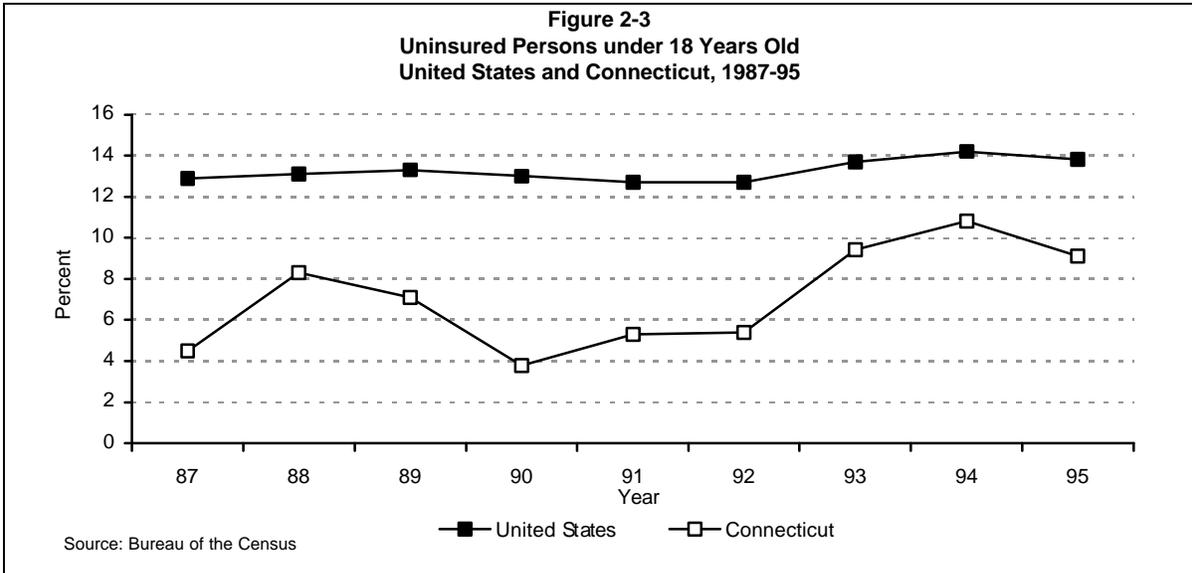
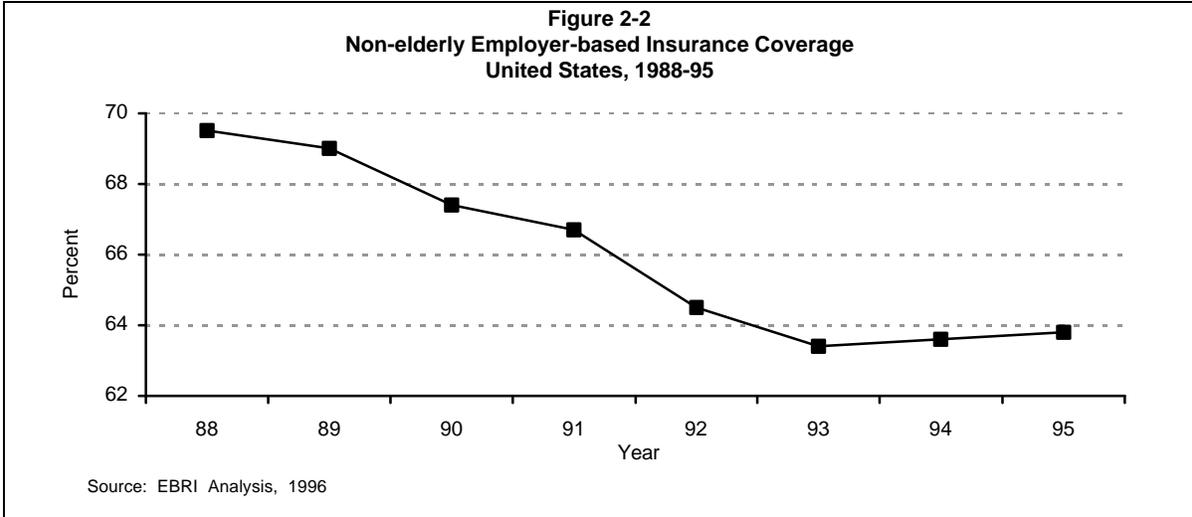
<sup>167</sup> Davis, 643.

<sup>168</sup> Employee Benefit Research Institute, 22.

<sup>169</sup> Summer L, Parrot S, Mann C. Millions of uninsured and underinsured children are eligible for Medicaid. Center on Budget and Policy Priorities; 1996 Dec. 10.

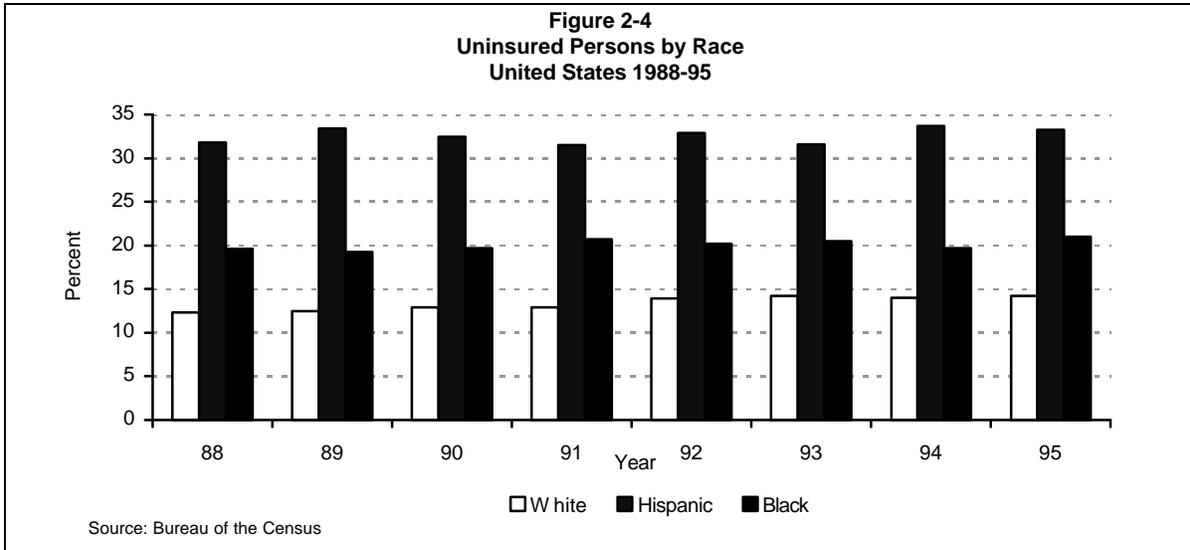
<sup>170</sup> Employee Benefit Research Institute, 19.

<sup>171</sup> Connecticut Department of Public Health, Bureau of Community Health. Behavioral Risk Factor and Surveillance System, *Statewide Survey Data: Health Care Coverage by Race*. Hartford, CT, 1992-95.



### Major Characteristics of the Uninsured

While the predominant risk factor for health insurance status is low income,<sup>172</sup> several other factors are involved. They include employment and race (previously discussed), the nature of employment, age, and marital status. For an employed individual, the nature of employment, the type of industry, and the size of the firm often determine the cost and extent of coverage. The self-employed and those employed by businesses with less than ten employees, are less likely to have coverage. Businesses in industries such as retail, construction, and agriculture are also less likely to offer coverage. Part-time workers are also less likely to be covered by employer-sponsored insurance.



The uninsured are typically under 64 years of age, as Medicare covers almost all those 65 and older. For those under age 64, most uninsured are adolescents and young adults between age 19 and 24, mostly due to losing coverage under a parent's policy, still being in school, or assuming that they will be healthy.<sup>173</sup> An important health issue facing adolescents is the transition to adult health care. This is particularly true for youth with special health care needs. Another age group is between 55 and 64 because employer-based coverage for retirees has fallen 23% between 1988 and 1994.<sup>174</sup> Singles and single parents are more likely to be uninsured than married couples, who may have two sources of income and greater chances of employment-based insurance.

While there is a lack of specific information on the major characteristics of Connecticut's uninsured, no data indicate that the national characteristics do not describe Connecticut's population. Likewise, the characteristics of the underinsured are considered similar to those of the uninsured population.<sup>175</sup>

### Consequences of Lacking Health Insurance

People without insurance coverage have more difficulty gaining access to personal health services and use less medical services than the insured.<sup>176</sup> The uninsured receive less ambulatory and inpatient care

<sup>172</sup> Davis, 642.

<sup>173</sup> Davis K, Rowland D. Uninsured and underserved: inequities in health care in the United States. *Milbank Memorial Fund Quarterly*. 1983;61(2):149-175.

<sup>174</sup> Davis, 645.

<sup>175</sup> Monheit AC. Underinsured Americans: a review. *Annual Review Public Health* 1994;15:461-85.

and, as a result, tend to have worse health status than insureds.<sup>177</sup> Persons without insurance often seek care later at a more advanced stage of disease and have higher mortality rates than the insured population.<sup>178</sup> This is demonstrated in cases of women with breast cancer in which early diagnosis and treatment are critical. Women without insurance are more likely than privately insured women to be diagnosed later, at a more advanced stage of the disease, and are 49% more likely to die during the 4 to 7 years following their initial diagnosis.<sup>179</sup> Without health insurance, many families face difficulties getting preventive and basic care for their children. Children without health insurance are less likely to be appropriately immunized, to get care for injuries, to see a physician if chronically ill, or get dental care.<sup>180,181</sup>

The lack of insurance coverage affects society as a whole by reducing productivity. Dental conditions, for example, account for an estimated 51 million hours of school lost by children and 164 million missed hours of work annually for adults.<sup>182</sup> The lack of health insurance places a financial strain on hospitals, physicians, and other health care providers who provide care to the uninsured. Much of this care is unreimbursed and is relatively costly due to the expensive settings in which care is sought (emergency rooms) or the late stage of illness. This cost is shared by all payers including individuals, through higher health insurance premiums and medical service charges, and loss of funds that could be used to support other services.

## HEALTH CARE FOR THE ELDERLY

Maintaining the health of individuals 65 years and older remains a serious challenge for the state and country. The increase in those aged 85 and older is of particular concern. While the state's population is projected to increase by only 9% from 1995 to 2020, the segment of the population aged 65+ will increase by 35%, and the 85+ age group by 78%.

These numbers are significant because the elderly are major consumers of health services, particularly costly acute, long term, and home health care services. Adults aged 65 and older, accounted for 34% of all Connecticut hospitalizations in 1995. If birth-related conditions are excluded, this age group composed 46% of hospitalizations. More than 60% of the patients hospitalized for heart disease, cerebrovascular disease, and pneumonia were in this age group. The hospitalization rate for injuries was four times greater for the elderly than for those under age 65.

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<sup>176</sup> Davis and Rowland, 165-168.

<sup>177</sup> Davis and Rowland, 160-165.

<sup>178</sup> Franks P., Clancy CM, Gold MR. Health insurance and mortality. *Journal of the American Medical Association* 1993 vol. 270, pp.737-741.

<sup>179</sup> Ayanian JZ, Kohler BA, Abe T, Epstein AM. The relation between health insurance coverage and clinical outcomes among women with breast cancer. *New England Journal of Medicine* 1993 July;329(5):326-331.

<sup>180</sup> Blumberg LJ, Liska DW. The uninsured in the United States: a status report. 1996 April.

<sup>181</sup> Families USA. Unmet needs: the large differences in health care between uninsured and insured children. Analysis of the 1994 National Health Interview Survey. Washington, D.C.: 1997 June.

<sup>182</sup> Gift HC, Reisine ST, Larach DC. The social impact of dental problems. *American Journal of Public Health* 1992 Dec; 82(12):1663-1668.

### Chronic Illness and Disability<sup>183</sup>

As the population ages, the prevalence of chronic health conditions will increase. Some chronic illnesses such as arthritis, diabetes, heart disease, and high blood pressure predominantly affect the elderly. Among people aged 65 to 84 years, chronic diseases such as arthritis, high blood pressure, and heart disease are the most prevalent and are the leading causes of disability. Among people aged 85 and older, chronic diseases continue to disable, but the combination of cognitive and sensory impairments (particularly visual impairment) cause as much disability as chronic disease. Chronic illness may begin in middle age, but as a person ages it progresses in severity and the degree to which it limits a person's activities. In 2020, there will be 12 million Americans aged 65 years and older with a limitation in a major activity due to a chronic condition. By 2020, 14 million elderly will need long term care - double the seven million who need long term care today.

One in five of the almost 50 million disabled Americans needs help with basic activities of daily living (ADLs) such as bathing, dressing, and eating, or instrumental activities of daily living (IADLs) such as household chores, laundry, and grocery shopping. The majority (58%) of these people are aged 65 and older. Comorbidity, the state of having more than one health condition at a time, puts people at greater risk of disability and can result in physical limitation, such as the inability to walk. The majority (69%) of people with more than one chronic condition are aged 65 and older.

### System Capacity

The health care marketplace is not supplying enough affordable, accessible services and products to help people with chronic conditions maintain an independent lifestyle. The proportion of people aged 65 and older who require assistance with dressing and toileting is 37%, bathing 36%, and eating 31%.<sup>184</sup> According to the 1984 National Long Term Care Survey, based on 6,000 people living in the community and 1,700 people living in institutions, one-third of the disabled elderly who live in the community have unmet needs with ADLs.<sup>185</sup> Nearly one million elderly people, for example, needed handrails in their residences, but did not have them. Lack of this assistive device increases the risk of falling, a prominent risk factor for injury and further deterioration of health. Unless individuals receive support for these needs to maintain an independent lifestyle, the health care system will be burdened by patients with multiple chronic conditions and personnel, resources, and financing will be strained.

### Caregiving and Family Support<sup>186</sup>

The demand for caregiving will increase as the elderly population increases, particularly among people aged 85 years and older. However, the supply of caregivers is decreasing due to decreasing birth rates and smaller family networks with older family members. Additionally, women have entered the work force in increasing numbers since the 1960s and are no longer as available as they once were to serve as unpaid family caregivers. As the average family size decreases, fewer children will be available for caregiving, and sibling support networks will decrease in size. In 1990, the ratio of the population in the average caregiving age range of 50 to 64 years, to the population aged 85 and older was eleven to one. By 2050, there will be only four potential caregivers for every elderly person.<sup>187</sup>

## FINANCING LONG TERM CARE

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<sup>183</sup> The Robert Wood Johnson Foundation. *Chronic Care in America: A 21st Century Challenge*. Princeton, NJ: The Foundation, 1996.

<sup>184</sup> The Robert Wood Johnson Foundation, 57.

<sup>185</sup> The Robert Wood Johnson Foundation, 58.

<sup>186</sup> The Robert Wood Johnson Foundation, 62.

<sup>187</sup> The Robert Wood Johnson Foundation, 64.

Long term care services for people aged 65 and older are funded by several sources, including state and federal governments, self-payment, and private insurance. In 1987, federal and state governments paid 41% of the costs of chronic care, excluding nursing facility care, private insurance paid 33%, and individuals paid 22% out-of-pocket. In contrast, federal and state governments paid only 19% of the cost of acute health conditions, private insurance paid 45%, and individuals paid 29%.<sup>188</sup>

The availability of public funds for long term care influences the services available and the settings in which they are delivered. Funding mechanisms favor institutional care with fewer resources applied to home and community-based services. Community-based services, often necessary to prevent institutionalization, may only be provided by public sources through a federal waiver of the Medicaid program.

In Connecticut, the majority of long term care resources are used to pay for institutional care (more than 8% of the State General Fund budget in FY 1995). The Connecticut Home Care Program (CHCP), which is the primary vehicle used by the State to provide home and community-based services to frail people aged 65 and older, consumed less than 1% of the State General Fund budget.<sup>189</sup>

The fact that Medicare, contrary to popular belief, does not finance most nursing facility and home care services, has led to public confusion and a general lack of preparation for the potentially catastrophic financial risk of paying for chronic care. As few people have private long term care insurance to cover the high cost of nursing facility care, many chronically ill people deplete their savings. They become impoverished and therefore eligible for Medicaid. Recent data indicate that Americans pay 33% of the total cost of nursing facility care out of pocket (\$23 billion).<sup>190</sup> Medicaid's expense of \$36 billion represented 52% of total expenditures in that area. In FFY 1995, the payer for the majority of Connecticut nursing facility residents was Medicaid (66%), followed by private-pay (20%) and Medicare (10%).<sup>191</sup>

For reasons noted above, private long term care insurance is a small but growing source of financing for nursing facilities and home care. Although the private insurance market may continue to expand, many policymakers believe private insurance alone cannot be relied upon to resolve financing problems in nursing facility care, home care, and other chronic care. Several innovations in long term care financing have emerged and are being tested. Among them are the long term care partnership models such as the Connecticut Partnership for Long Term Care (CPLTC), which combine private long term care insurance with Medicaid funds at the state level. Medicaid is expected to break even on nursing facility expenditures in the early years of the CPLTC, with savings increasing to 6.8% per year by 2020.

As noted above long term care costs have led to a financial strain on both federal and state governments. New financing mechanisms are being demonstrated and evaluated both nationally and at the state level. Other strategies used to constrain long term care costs in Connecticut include limits on nursing facility beds, increased use of home and community-based services, and the marketing of private long term care insurance.

### Limits on Nursing Facility Beds

The goal of the state moratorium on new nursing facility beds, which was established in 1991, is to reduce nursing facility utilization. While the total number of licensed beds has remained stable, the proportion of rest homes with nursing supervision (RHNS) beds is decreasing. The loss of RHNS beds can be attributed primarily to the conversion of RHNS beds to the higher chronic and convalescent nursing home (CCNH) level of care. The decrease in RHNS beds may affect access to nursing facilities by those in need of less intensive nursing care. Nevertheless, the State Nursing Home Task Force recommended continuing the moratorium, which is scheduled to remain in effect until 2002.

<sup>188</sup> The Robert Wood Johnson Foundation, 44.

<sup>189</sup> Connecticut General Assembly, Legislative Program Review and Investigations Committee, State of Connecticut. *Services for the Elderly to Support Daily Living* Hartford, CT, December 1996.

<sup>190</sup> The Robert Wood Johnson Foundation, 44.

<sup>191</sup> Connecticut Department of Public Health, Office of Policy, Planning and Evaluation. Nursing Facility Registry. Hartford, CT, 1995.

### Home and Community-Based Services

Nursing facilities are a particularly costly segment of the chronic care continuum, a primary reason most reforms in the chronic care system include methods to help people remain independent and out of institutions as long as possible. In State Fiscal Year (SFY) 1995, the average monthly cost per CHCP client was \$948, below the average monthly Medicaid nursing facility rate of \$3,268. While home and community-based services are less costly per person, their use has increased demand for home and community-based care. Home care expenditures almost doubled between 1990 and 1993.<sup>192</sup>

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<sup>192</sup> The Robert Wood Johnson Foundation, 52.