COMMUNITY HEALTH DATA SCAN FOR CONNECTICUT

A Report Commissioned by the Connecticut Health Foundation

March 2007

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The opinions included in this report are solely those of the author.

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Note on race and ethnicity labeling conventions

Use of race and ethnicity labels is a complex issue. In much of the health-related literature, black and white are not capitalized, while Hispanic and Asian are capitalized. In some places (e.g., the U.S. Census Bureau) black and African American are used interchangeably, although black is a more inclusive term, and it includes individuals who would identify as black but not African American. Latino and Hispanic are also used interchangeably, and there appears to be some regional variation in preferences for these terms. Following most but not all practice, the terms Asian, black, Hispanic, and white will be used in the text and capitalized in the tables. In some datasets there is a distinction between white and white-alone, black and black-alone, and Asian and Asian-alone. The latter terms remove persons who choose multiple race identifiers. Finally, in some places, Asian-alone non-Hispanic, white-alone non-Hispanic, and black-alone non-Hispanic are used to clearly identify persons who claim single race, and do not claim Hispanic ethnicity. State agencies may report, for example, a count for black residents with a particular health condition. The rate calculated for this *Data Scan* may use total black-alone non-Hispanic residents as a denominator. This may introduce a slight bias in the rate calculation, since the denominators will be slightly too low, and the resulting rates slightly too high, due to possible misclassification of multiracial individuals in the counts. The extent of multiracial identification in Connecticut is described in the report. A variety of orderings of race and ethnicity groups are used, typically following the ordering used in U.S. Census Bureau and the Connecticut Department of Public Health (DPH) tables. Ordering by population size is sometimes used as an alternative.

Comments on Statistical Analysis of Results

The analysis of data in this report has been accompanied by statistical tests to assure that small differences in rates are not over-interpreted. Specifically, for all rates, confidence intervals were calculated. In cases where there was no overlap in the confidence intervals for two rates, the difference in rates was termed statistically significant. This is a somewhat "conservative" procedure. It produces few false positive results (concluding that a difference between two rates exists when none does), at the expense of some false negatives (concluding that no difference exists when one does truly exist). The narrative is written to draw attention only to differences that are statistically significant.

The choice not to present explicit statistical tests in the report was taken to improve the readability of the report. With six Health Reference Groups (HRGs) crosscutting counts, crude rates, age-adjusted rates, white, black, Hispanic and Asian specific rates, it was believed that the introduction of additional statistical figures would detract from the readability of the presentation.

Selected data and charts used in the report are presented at www.cthealth.org and include the rates and associated confidence intervals, for the statistically minded reader.

Comments on Calculated and "Official" Rates

In this report, many rates are calculated beyond those provided by state agency case counts. The rates reported are not a substitute for "official" rates that may be available or calculated in future years, based on population information currently not available. In some cases slight differences in population estimation will produce small differences between rates calculated for this report and rates calculated by state agencies. The purpose of the report is to provide a guide for understanding the community health data available; to offer an analysis of health disparities among different types of communities and different race and ethnicity groups; and to use such analysis to suggest priorities for action.

EXECUTIVE SUMMARY

INTRODUCTION

The *Community Health Data Scan for Connecticut* was developed by the Connecticut Health Foundation (CHF) for several purposes: to help the foundation set priorities for funding programs and policy studies; to help citizens better understand a range of key health risk, health care and health outcome issues; and to provide state policy-makers and community leaders with information that can be used in developing sound public policy. The *Data Scan* reports quantitative data on the social characteristics, health and well-being of Connecticut's residents gathered from a variety of sources at the federal, state and town levels, as well as from non governmental sources. Some data presented in the analyses will be superseded in the near future, indeed, by the time of publication. Indicators were selected that typically change only slowly over time, such that the major study conclusions are unlikely to be affected. This document is not intended to be an exhaustive report on all possible health indicators for Connecticut.

Racial and ethnic disparities are one of the main concerns investigated in the *Data Scan*. This issue provided a consistent theme for the analysis, along with a report of data on different kinds of communities arrayed in Health Reference Groups (HRGs). The *Data Scan* provides an analysis of the data, prioritizes areas for health promotion effort and includes six recommended focus areas. This report does not focus on children's mental and oral health since CHF is already addressing these problems and other reports focus on these topics.

ADVISORY COMMITTEE ROLE

The CHF Advisory Committee provided suggestions and possible measures to be investigated, emphasizing the need to track health disparities among racial and ethnic groups.

ORGANIZATION OF THE EXECUTIVE SUMMARY

The Executive Summary is organized to present the basic methods used in the study, including an innovation called Health Reference Groups (HRGs), and findings and recommendations in six priority areas.

MEASUREMENT SCAN METHODOLOGY

The *Data Scan* investigated six sources of data:

1. Relevant Connecticut state government web sites
2. Key Connecticut state agency data available offline
3. U.S. Census Bureau datasets available online and via CD-ROM
4. Federal web sites containing state-level data
5. Data defining state and federal legislative districts
6. Data from other agencies, e.g., Boys and Girls Clubs, Jack and Jill Clubs

THE INDICATORS

The many quantitative indicators for the report are summarized in more than 170 tables and figures.

HEALTH REFERENCE GROUPS

The *Data Scan* uses a principal methodology of HRGs to report data. These HRGs were especially useful in considering small towns where the community size and indicator counts would be too small to obtain reliable estimates, or where Connecticut agencies would suppress the data for reasons of confidentiality.

Six HRGs were formed via statistical cluster analysis. These clusters were named: 1) Urban Centers (the three largest cities: Bridgeport, Hartford and New Haven); 2) Manufacturing Centers; 3) Diverse Suburbs; 4) Wealthy Suburbs; 5) Mill Towns; and 6) Rural Towns. A map showing the towns and HRG clusters is in the Executive Summary Appendix. Additional town-level data and maps are available for some indicators at www.cthealth.org. A list of the towns in each HRG is in Appendix A, and a detailed description of the HRGs is in Appendix B.

EXECUTIVE SUMMARY TABLE 1: HEALTH REFERENCE GROUPS AND THEIR POPULATIONS

HEALTH REFERENCE GROUPS	1	2	3	4	5	6
DESCRIPTIVE	Urban Centers (UC)	Manufacturing Centers (MC)	Diverse Suburbs (DS)	Wealthy Suburbs (WS)	Mill Towns (MT)	Rural Towns (RT)
Number of Cities/Towns	3	10	15	27	39	75
Total Population	384,733	662,398	587,504	487,620	698,517	584,793
Average City/Town Population Size	128,244	66,240	39,167	18,060	17,911	7,797
Percentage of Connecticut Population	11.3%	19.5%	17.3%	14.3%	20.5%	17.2%

Source: U.S. Census 2000, SF1: Table P1.

RACE AND ETHNICITY

The author made a considerable effort to define Connecticut populations in racial and ethnic terms following, where possible, requirements of the U.S. Census Bureau and the federal Office of Management and Budget (OMB) Directive 15 (1997 Revision).[1]

POPULATION CHANGE

Any discussion of health priorities should take into account the growth pattern in the population. Connecticut's population will change markedly over the next 25 years, increasing between 2000 and 2025 and then remaining stable through 2030. The total change between 2000 and 2030 is projected at 8.3 percent.

The population will also change in composition. Projections show that there will be virtually no growth in the "white race" population through 2025 (+2.5 percent). The "black race" population is expected to increase by more than 50 percent, the "Hispanic ethnicity" population by 99 percent, and the "Asian race" population by 113 percent.

The Hispanic population is currently the youngest group (74 percent are under 35), followed by the black race population (59 percent), the Asian race population (55 percent), and the white race population (41 percent).

KEY RISK FACTORS FOR MORBIDITY AND MORTALITY

Another context for examining the health data is research-based knowledge of the major risk factors for leading causes of morbidity and mortality, such as smoking, diet and exercise, alcohol abuse, microbial agents, toxic agents, firearms, sexual behavior, and motor vehicle crashes. Many of these issues are analyzed in the report. The report also considers problems of health care access, health care quality and environmental health.

A SYSTEMS VIEW

Health-related behaviors can be understood only in their relevant contexts — including health care and health promotion access, utilization and quality; peer group and cultural norms; the physical environment — and by examining both assets and barriers to good health.

Six Priority Areas and Recommendations

The *Data Scan* suggests six priority areas. The detailed findings and rationale are provided in the *Data Scan*, and they are summarized in Chapter 11, Summary and Recommendations.

1. FOCUS ON THE HEALTH REFERENCE GROUPS AND RACIAL/ETHNIC GROUPS IN GREATEST NEED

The three Urban and 10 Manufacturing centers in Connecticut need the greatest health-promoting investments. Within these communities, black/African American and Hispanic residents are in greatest need.

2. FOCUS ON DIABETES AND OTHER CONDITIONS IN THE METABOLIC SYNDROME

Risk factors for diabetes and related conditions — called the metabolic syndrome — are increasing nationwide and are prevalent in Connecticut in several populations, especially in the black/African American population. To address the problem effectively, public policy solutions must be developed and prevention-focused support given to organizations that serve youth and adults. It will be important to focus on health care access and quality (e.g., better primary care access and utilization) and for primary care to focus on the key metabolic syndrome issues.

3. FOCUS ON ENSURING A MEDICAL HOME FOR ALL CONNECTICUT RESIDENTS

Overuse of emergency department (ED) care and many hospital admissions could be avoided if every Connecticut resident had, and used, a primary care "medical home." Reducing avoidable ED and hospital utilization will require a whole systems approach focused on increasing access to and comfort with the language and cultural surroundings of the medical home; using the medical home to discuss issues of chronic disease and child and youth safety; and promoting adherence to medical regimens prescribed in the primary care setting.

4. FOCUS ON THE BINGE DRINKING AND SMOKING CULTURE

Smoking and binge drinking are major contributors to many health problems and to premature mortality. The youth and young adult white population is especially at risk for binge drinking and smoking, and these behaviors may spread to immigrant populations as they acculturate. Methods of changing the culture of chronic and binge drinking and smoking could include: increasing the level of information about the signs and consequences of alcohol abuse and tobacco use; supporting stronger coverage of the tobacco ban for small workplaces; and supporting changes in the law that would clarify which state level agencies are charged with enforcement of tobacco-related regulations.

5. FOCUS ON YOUTH RISKS AND OPPORTUNITIES

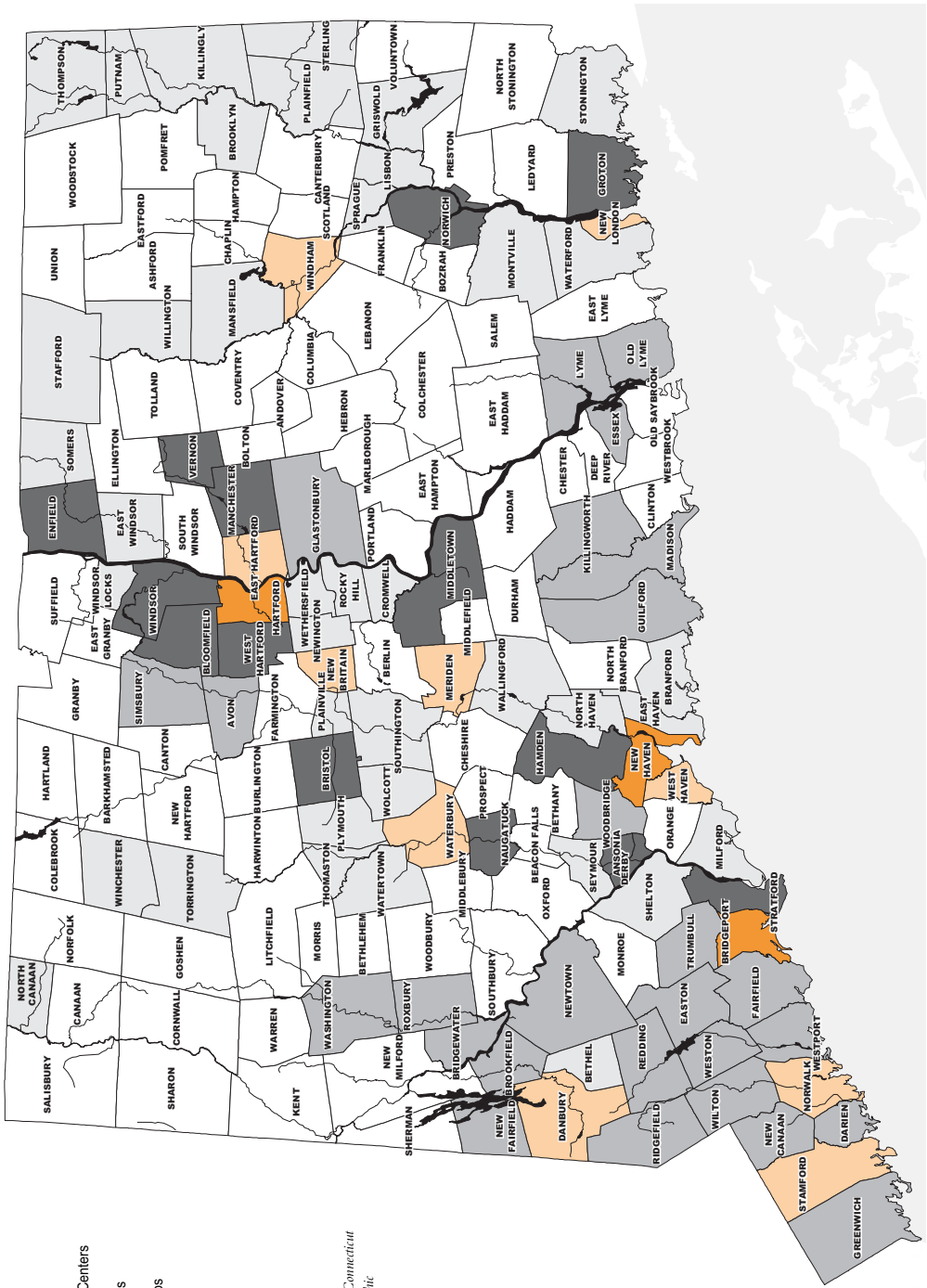
Major youth health risks include sexually transmitted diseases (STDs), teen pregnancy, lack of use of seat belts and bicycle helmets, and child abuse. There is a need for broad initiatives on child and youth risk taking and safety, focused especially on the Urban and Manufacturing centers, and with black and Hispanic children and youth, who are most at risk regarding a variety of safety and risk issues. Some of these problems could be addressed through support for focused initiatives by youth out-of-school programs.

6. IMPROVE THE HEALTH DATA SYSTEM

The health data system could be improved in many areas to provide data where none currently exists and make data more easily available to the public. Issues that need to be addressed include: data access, data delays, mapping information, health observations, race and ethnicity categories, health care quality indices, mental health data, out-of-school data, and documentation about the data (meta-data).

EXECUTIVE SUMMARY APPENDIX

FIGURE 1: HEALTH REFERENCE GROUPS MAP

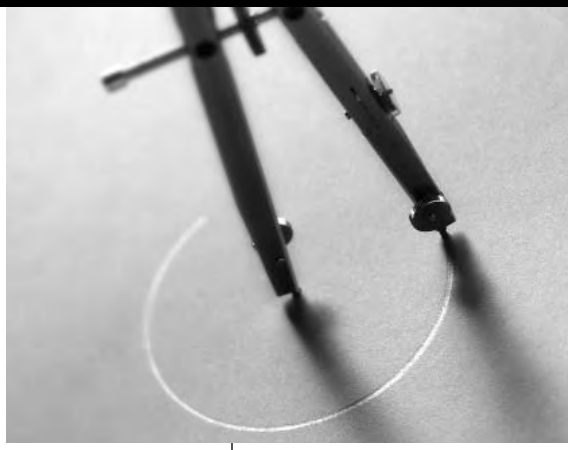


CHAPTER 1

Background, Goals and Scope

CHAPTER 1

BACKGROUND, GOALS AND SCOPE



GOALS

The *Community Health Data Scan for Connecticut* was developed by the Connecticut Health Foundation (CHF) for several purposes: to help the foundation set priorities for funding programs and policy studies; to help citizens better understand a range of key health risk, health care and health outcome issues; and to provide state policy-makers and community leaders with information that can be used in developing sound public policy. It reports quantitative data on the social characteristics, health and well-being of Connecticut residents gathered from a variety of federal, state and nongovernmental sources.

Racial and ethnic disparities were prominent among the concerns investigated. These disparities were a consistent theme for the analysis, along with a report of data on different kinds of communities arrayed in Health Reference Groups (HRGs). The *Data Scan* provides an analysis of the data, prioritizes areas for health promotion effort and includes six recommended focus areas.

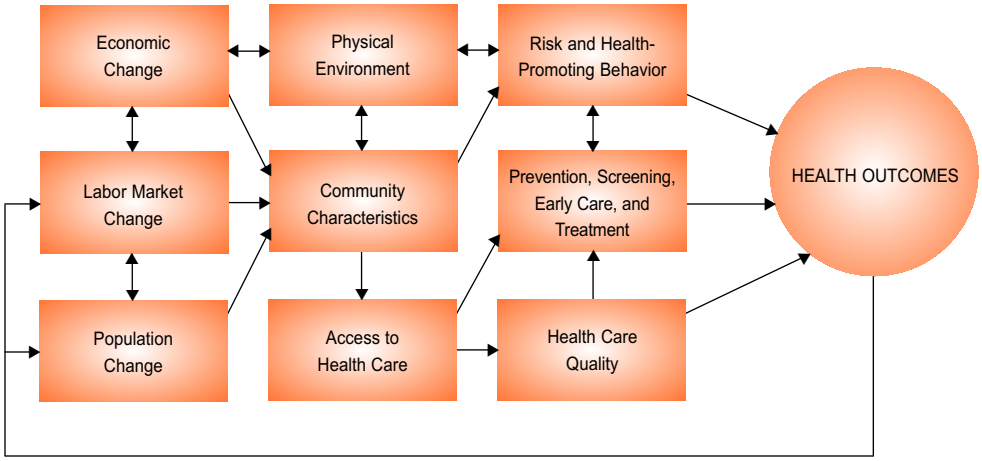
ADVISORY COMMITTEE ROLE

CHF's *Data Scan* Advisory Committee met on Oct. 29, 2004, and on March 2, 2005. The committee provided suggestions and possible measures to be investigated. E-mail and telephone follow-up elicited further useful information and emphasized the need to track and understand health disparities. Finally, committee members provided feedback on a presentation of the results at a CHF board of directors retreat on Nov. 5, 2005.

ORGANIZATION OF FINDINGS

The findings of the *Data Scan* are organized to follow a causal model, as shown in Figure 1. This causal model has been adapted to examine both geographic and racial/ethnicity disparities.

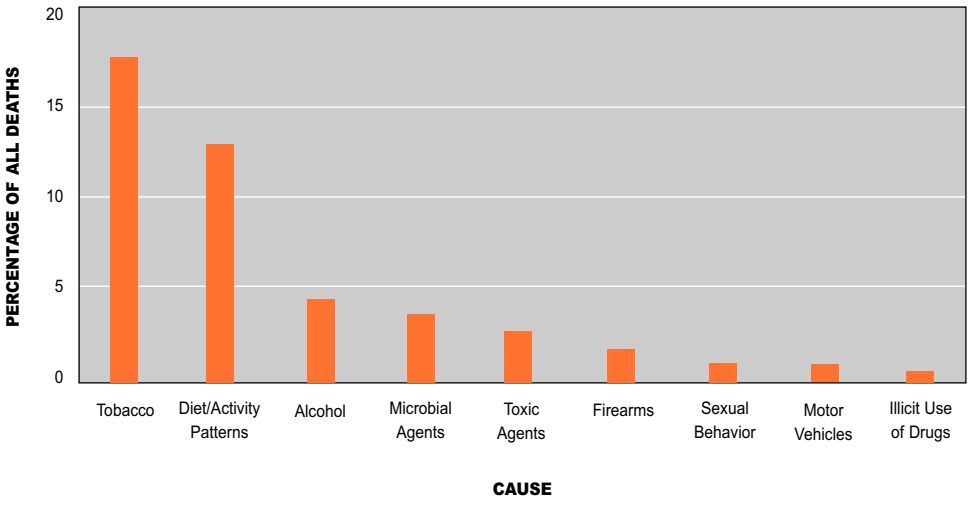
FIGURE 1: A CAUSAL MODEL FOR COMMUNITY HEALTH



PRIORITY-SETTING CONTEXT

Areas for health promotion efforts have been prioritized in two ways: (1) by the types of communities found to be most in need; and (2) by the "leading risk factors for mortality" framework contained in McGinnis and Foege's classic study of the risk factors behind the leading categories of death — including heart disease, diabetes, injury-related death, and cancers.[2] The causes of these deaths include such factors as smoking, poor diet, lack of exercise, and alcohol abuse, as illustrated in Figure 2. Focusing system changes on these factors, along with problems of health care access and quality, can help communities promote greater health.

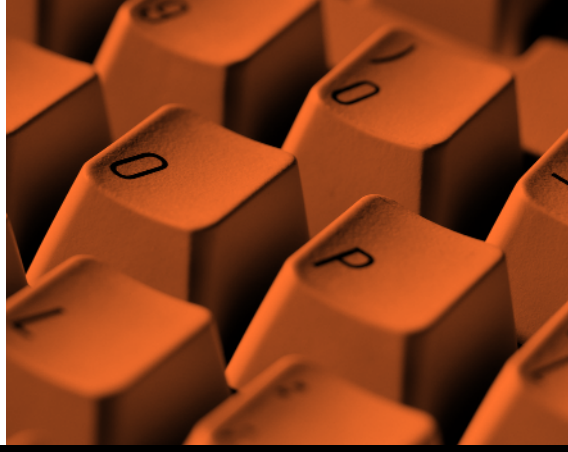
FIGURE 2: PERCENTAGE OF TOTAL MORTALITY ATTRIBUTABLE TO LEADING RISK FACTORS, UNITED STATES



Source: McGinnis MJ, Foege WH. Actual Causes of Death in the United States. Journal of the American Medical Association. 1993;270:2207-2212.

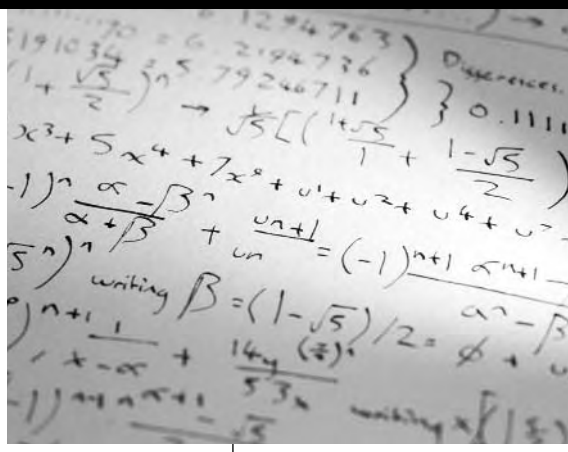
CHAPTER 2

Data Scan Methodology



CHAPTER 2

DATA SCAN METHODOLOGY



ANALYSIS OF COMMUNITY HEALTH AND RELATED DATA IN CONNECTICUT

Four fundamental problems must be addressed in health data reporting: 1) ascertaining the existence of data; 2) obtaining access to data; 3) developing methods to analyze data; and 4) developing display methods that maximize understanding and use of data. Some key analysis problems are discussed in the next section because the answers to these problems frame the methods used in the *Data Scan*.

Many data items are available for Connecticut, statewide. But sub-state level data are indispensable for analytic and public policy purposes, and to encourage local (including legislative) interest and action. As stated in the Washington state query driven system of health data (called VISTA), "Assessment is most likely to be translated into successful policy and assurance activities if the analysis is specific to a well-defined community ... the capacity to perform assessment at the community level is critical."[3]

THE "TOWN PROBLEM"

Data from individual cities and towns need to be combined in some rational way to provide better rate estimates because when analyzed alone, the towns are mostly too small to produce reliable rates of health outcomes. Also, some measures, such as child abuse and neglect and emergency department (ED) visits, for which there are few cases in small towns, are "suppressed" for confidentiality reasons.

Grouping towns into "like" clusters provides meaningful information about all communities and avoids data suppression. This approach will have impact and suggest public policy and programmatic efforts related to the characteristics of these clusters.

The number of clusters must be large enough that decision makers will see them as fairly capturing meaningful differences. But the number also must be small enough that each one contains large numbers of households/residents to provide stable community health estimates and avoid data suppression. As outlined below, various strategies have been examined.

GEOGRAPHICALLY BASED COMMUNITY GROUPINGS AND THEIR LIMITATIONS

Several groupings of Connecticut communities are now or recently have been used. Each offers both advantages and limitations, as outlined below:

1. **Statewide:** Using statewide data misses local or regional differences that may be compelling for local activists. Statewide data also do not portray the true complexity of the pattern of health disparities that may have public policy implications.

2. **City and Town:** With 169 cities and towns, some of them very small (e.g., Union has only 683 residents), town-level analysis will yield unsatisfactory reliability due to large random fluctuations in rates in small communities. In other cases, individual town-level data are reported only for towns with more than a criterion number of cases or population. For example, a Connecticut Department of Public Health (DPH) report on ED visits includes only communities with 10 or more asthma-related ED visits and/or hospitalizations for a two-year interval. It listed only 100 individual cities and towns for asthma ED visits, leaving 16 towns "paired" with other towns for reporting purposes and 53 towns whose data were completely suppressed for confidentiality reasons.[4] These were mainly small rural communities and were therefore "missed" in the analysis.

3. **Health District:** This level still yields numbers too small for effective analysis. Connecticut has 30 cities and towns with municipal health departments, 107 towns combined in 20 districts with full-time health directors, and another 32 towns with only part-time health directors.

4. **County:** Connecticut counties mask significant town-by-town variation within them, and they have few relevant operational or policy functions.

5. **Uniform Service Regions (USR) or Emergency Medical Service Regions (EMSR):** The five USRs, and almost identical EMSRs are useful as organizing tools only to the extent that they can drive programmatic effort. Like counties, USR/EMSR-specific health rates mask much meaningful variation.

REFERENCE GROUPS OF TOWNS

Some government reports use aggregates of big cities. A DPH asthma report, for example, aggregates the five large cities (Bridgeport, Hartford, New Haven, Stamford, and Waterbury) and the "rest of the state" for analytic purposes.[5] Although Stamford is included in the big city cluster because of its population of over 117,000, its socio-demographic characteristics and consequent health rates are much more like those of communities such as Norwalk and Danbury than like the other communities in the large city cluster. In other places, DPH characterizes data by such groupings as "urban" and "suburban" when examining youth smoking.[6] The reports do not indicate exactly how these groupings are defined.

There are several options to solve the "town problem," including: (1) use the "Five Connecticuts" scheme published by the University of Connecticut's Center for Population Research; (2) use the nine established Education Reference Groups (ERGs) of school districts devised by the Connecticut State Department of Education (SDE); or (3) create new HRGs based on city and town data. These options are reviewed below.

The "Five Connecticuts" of the Connecticut Center for Population Research

Based on seven indicators, the Center for Population Research created five clusters of Connecticut communities, including Rural, Suburban, Wealthy, Urban Periphery, and Urban Core.[7] Although these have some intrinsic meaning, the population in one of these groups (the "wealthy" towns) was too small — only 184,437 — to be suitable for some of the health data analyses anticipated.

Connecticut Educational Reference Groups (ERGs)

Analysts at the SDE in 1996 issued a "third generation" of clusters for Connecticut school districts. They defined nine ERGs[8] using a combination of school district and other state data from the U.S. Census 1990 National Center for Educational Statistics. They used statistical clustering to establish the nine clusters. School superintendents were then given the option to "move" into a different (but socio-demographically adjacent) cluster. The nine final clusters correlate highly with such educational measures as Connecticut Academic Performance Test (CAPT) exam scores. An ERG update using the U.S. Census 2000 data and additional measures was constructed in Spring 2005.

The ERG system offers several positive features: (1) It has a strong methodological base, only slightly corrupted by giving individual school superintendents the option to move to a different ERG; (2) The system, according to its author, is well accepted in Connecticut; and (3) ERGs have been used to analyze data outside of the SDE. For example, DPH drafted an extensive cardiovascular disease (CVD) report that includes analyses using the ERG clusters.[9] The ERG clusters were also used in a DPH report on cancer.[10] ERGs appear to differentiate adult smoking and other behavioral risk rates quite well.

From a health perspective, the ERG system has several drawbacks: (1) Most of the clustering variables are based on data about public school parents, rather than the whole population; (2) Superintendents are able to move districts into different clusters at their discretion, as noted above; (3) The system is school district-based rather than city/town-based, and thus aggregates 25 towns for which individual reports are unavailable into two- or three-town school districts; (4) The system does not directly utilize measures of race/ethnicity, which are of great interest in analyses of health disparities; (5) The ERG's nine clusters can result in sample sizes for some surveys, such as Behavioral Risk Factor Surveillance System (BRFSS) surveys, that are too small to permit more refined analyses of health risk and outcome disparities (This is why the nine ERGs were reduced to only five on a few measures in the DPH reports on CVD and cancer); and (6) The ERG update for 2005 was not approved by the SDE in time for use in the *Data Scan*.

Connecticut Health Reference Groups (HRGs)

An alternative, chosen for this report, was to create a smaller number of HRGs that avoid the problems of other groupings and allow meaningful analysis of health disparities and trends below the state level.

Six HRGs were formed using normalized and standardized transformations of the measures in Table 1. These measures were selected because they were known correlates of health. However, none of the measures is itself a health indicator. This strategy was chosen so that the HRGs would embody good predictors of health, based on highly reliable and accessible data, rather than being health indicators in themselves. A statistical clustering procedure, called "SAS Proc FastClus," was used to group Connecticut communities. The clusters feature the characteristics shown in Table 2 and are numbered somewhat in order of urbanization.

TABLE 1: INDICATORS USED FOR HEALTH REFERENCE GROUPS

INDICATOR	POPULATION GROUP	SOURCE	YEAR
Number of Residents	Total Population	U.S. Census 2000, SF1: Table P1	2000
Percent of Total Property Valuation that is Residential	Town Total	Connecticut Department of Revenue	2004
Residential Property Valuation Per Capita	Town Total	Connecticut Department of Revenue and U.S. Census, 2000 SF1: Table P1	2004
Single Female-Headed Families with Related Children Under 18	Total Families	U.S. Census 2000, SF1: Table P35	2000
Percent Black-alone Not Hispanic	Total Population	U.S. Census 2000, SF1: Table P4	2000
Percent Hispanic	Total Population	U.S. Census 2000, SF1: Table P4	2000
Population Density	Total Population	U.S. Census 2000, SF1: Table GCT-PH1	2000
Percent that are College Graduates Among Residents 25 and Over	Population 25 and Over	U.S. Census 2000, SF3: Table P37	2000
Percent Below Federal Poverty Criteria	Total Population	U.S. Census 2000, SF3: Table P87	2000

TABLE 2: HEALTH REFERENCE GROUPS AND THEIR CHARACTERISTICS

HEALTH REFERENCE GROUP DESCRIPTIVE TOTALS AND AVERAGES	1 Urban Centers (UC)	2 Manufacturing Centers (MC)	3 Diverse Suburbs (DS)	4 Wealthy Suburbs (WS)	5 Mill Towns (MT)	6 Rural Towns (RT)
Number of Cities/Towns	3	10	15	27	39	75
Total Population	384,733	662,398	587,504	487,620	698,517	584,793
Percent of Total Property Valuation that is Residential	51.7	66.7	72.8	88.8	74.1	84.7
Residential Property Valuation Per Capita	$11,989	$26,216	$28,459	$106,0665	$32,688	$51,197
Average Town Population	128,244	66,240	39,167	18,060	17,911	7,797
Percent of Family Households Headed by Single Females with Children Under 18	32.3	17.2	12.4	4.6	8.7	5.9
Percent Black-alone Not Hispanic Population	33.6	12.2	11.2	0.8	1.8	1.0
Percent Hispanic Population	31.2	18.9	5.4	2.0	2.7	1.7
Population Density Per Square Mile	7,435	3,315	1,830	649	821	277
Percent College Graduates Among Residents 25 and Over	17.2	21.9	26.3	56.2	23.8	34.5
Percent Below Poverty Criteria	46.9	28.7	18.7	7.2	15.8	10.9

Source: See Table 1.

The HRGs are based on an integration of the nine indicators in Table 1. The placement of communities within HRGs would vary if one or more of the indicators were dropped or others were added. But given the correlations among indicators used in building the HRG structure, such variation is likely to be small. Since HRGs are based on socio-demographic similarity, they do not correspond to regions, such as counties, Health Districts or Uniform Service Regions. These latter regions comprise many dissimilar communities, and health differences will tend to be "averaged out," diminishing the analysis of disparities. In addition, the HRGs can focus on disparities related to poverty and concentrated disadvantage that might not come through in the analysis of race and ethnicity alone.[a] A map of the HRGs can be viewed in the Executive Summary and at www.cthealth.org. A list of the towns in each HRG is in Appendix A.

Race and ethnicity counts are included in Table 3 for reference in the analyses of health disparities. The U.S. Census 2000 allowed people to claim more than one race, and either Hispanic ethnicity or not, making many combinations possible. Since it has been demonstrated that persons claiming more than one race have different health risks than those claiming only one race, the analysis is restricted to those claiming one race only and Hispanic ethnicity, regardless of race.

TABLE 3: POPULATIONS OF HEALTH REFERENCE GROUPS AND SELECTED CITIES, BY RACE AND ETHNICITY

CITY OR HRG AND NUMBER OF TOWNS WITHIN HRG	All Races and Ethnicities	Percentage	White-alone, Not Hispanic	Black-alone, Not Hispanic	Asian-alone, Not Hispanic	Hispanic Ethnicity, Any Race	All Other
Urban Centers (3)	384,733	11.3	108,814	129,347	11,133	120,181	15,258
Bridgeport	139,529		43,158	40,974	4,459	44,478	6,460
Hartford	121,578		21,677	43,775	1,898	49,260	4,968
New Haven	123,626		43,979	44,598	4,776	26,443	3,830
Manufacturing Centers (10)	662,398	19.5	416,548	83,623	20,874	122,686	18,667
Diverse Suburbs (15)	587,504	17.3	471,405	56,430	14,928	31,586	13,155
Wealthy Suburbs (27)	487,620	14.3	452,449	5,126	12,460	12,633	4,952
Mill Towns (39)	698,517	20.5	641,045	12,572	13,718	21,347	9,835
Rural Towns (75)	584,793	17.2	548,584	8,473	8,451	11,890	7,395
Connecticut (169)	3,405,565	100.0	2,638,845	295,571	81,564	320,323	69,262

Source: U.S. Census 2000, SF1: Tables PCT 12H, I, J, L.

SUMMARY OF HEALTH REFERENCE GROUP CHARACTERISTICS AND THEIR HISTORICAL DEVELOPMENT

The six HRGs were created for this report on the basis of relative similarity. These groups are labeled for convenience, with the understanding that all such labels will be approximations and that there will be a few communities that seem to fall outside the pattern. We have named the six HRGs: (1) Urban Centers; (2) Manufacturing Centers; (3) Diverse Suburbs; (4) Wealthy Suburbs; (5) Mill Towns; and (6) Rural Towns.

The historical geography of the HRGs is briefly described below and more extensively in Appendix B.[b]

Urban Centers

The three Urban Centers (Bridgeport, Hartford and New Haven) are traditional large population centers, which benefited after 1830 from the movement of industry from small mill towns to larger population centers. These towns already were large, and the growth of industry added to their economic mix. Their populations became more diverse throughout the 20th century with the in-migration of blacks and, later, Hispanics. Post-World War II suburbanization and deindustrialization, however, helped to create large concentrations of poor black and Hispanic populations within these Urban Centers.

Manufacturing Centers

The 10 Manufacturing Centers were the most successful mill towns in the early 1800s. Early industries in these towns became highly specialized, dominated national markets, and flourished in the 1800s and into the 1900s. For example, Danbury was identified with hat-making, Waterbury with precision manufacturing, Windham with thread, and New Britain with hardware. As the white population became better educated, manufacturing labor demand in the 20th century was met through the in-migration of black and Hispanic workers. These cities and their populations have suffered from suburbanization and deindustrialization. Their poverty and economic development problems are as or more difficult than those of the three Urban Centers because they have a less diverse economic base.

Diverse Suburbs

The 15 Diverse Suburbs are not as readily defined and may be thought of as a set of relatively dense, medium-sized towns with diverse populations. Some of these towns, such as Manchester and Vernon, were medium-sized mill towns. Their stories would be similar to those of other such towns except that they are located close enough to large population clusters that they have benefited by becoming suburban communities. Another subset of the Diverse Suburbs is more properly labeled inner-ring suburbs. Hamden and West Hartford, for example, experienced a wave of suburbanization after 1900. They have an older housing stock and an increasingly diverse population, but their stability is ensured through demand for their housing and good educational opportunities. The Diverse Suburbs are similar in the age of their housing stock, density, population size, and population diversity.

Wealthy Suburbs

The 27 Wealthy Suburbs were largely untouched by industrialization and retained their rural character well into the 1900s. Improvements in transportation, increasing incomes and federal government policies all contributed to their suburbanization after World War II. These towns are generally located in Fairfield County adjacent to New York or along Long Island Sound.

Mill Towns

The 39 Mill Towns are generally the smaller, earliest mill towns that never succeeded on a national scale. Their industrial base was retained until recently, but their slow growth in the 1900s meant they never experienced large black or Hispanic in-migration. Thus, these towns face many of the same problems of entrenched poverty as the Manufacturing Centers, but they are not as large. Also, their populations are predominately white. We have labeled them Mill Towns, but so much of their industrial base has been eroded that it may be more appropriate to speak of them as "former mill towns."

Rural Towns

The 75 Rural Towns were largely untouched by industrialization, suburbanization or deindustrialization. Their populations consist of people whose families have lived in town for generations (if not centuries) and for various reasons (e.g., distance and lack of transportation infrastructure) have escaped large-scale suburbanization. Many of these towns have seen the development of low-density, high-end housing by wealthy in-migrants. Thus, the rural towns face some degree of conflict over the loss of their rural character and over the provision of town services. However, these towns remain relatively rural, low-density, residential communities with a traditional New England landscape.

HEALTH REFERENCE GROUP CONCLUSIONS

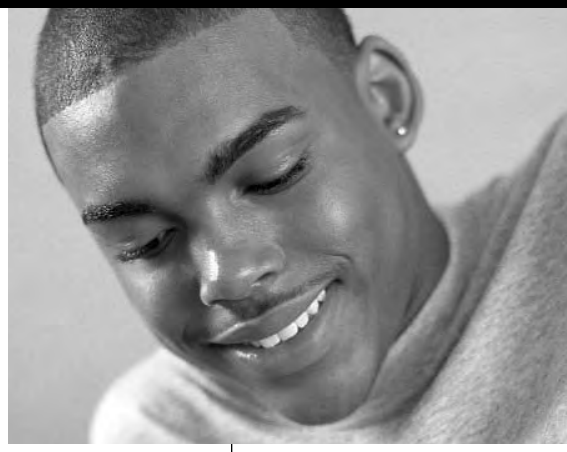
Several "test" health indicators were analyzed using the HRG model and marked differences were found — such as in lead poisoning and child abuse and neglect statistics. The HRG model was adopted for the *Data Scan* because of the rigor with which the HRGs were defined, their capacity to clearly differentiate communities in demographics and health outcomes, their "reasonableness" when examined by the CHF's Advisory Committee and other reviewers, and the lack of a current rigorously defined alternative.

CHAPTER 3

Connecticut Community Profile

CHAPTER 3

CONNECTICUT COMMUNITY PROFILE



This chapter presents data on these key aspects related to health:

- Concepts for understanding community differences
- Demographics
- Births
- Community assets

CONCEPTS FOR UNDERSTANDING COMMUNITY DIFFERENCES

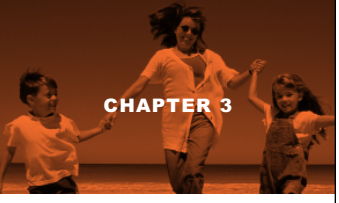
Community health researchers use several key concepts to understand community differences, including composition, context and selective migration.

Composition Effects

The composition effect, a key notion in research on community differences,[11] asserts that the difference in health status rates among communities is due to the differences in the individuals who compose them. For example, the rate of black teen births is more than six times higher in Connecticut's Urban Centers (61.7 per 1,000 black teens) than it is in the Rural Towns (9.5 per 1,000 black teens). This might reflect some difference in the personal characteristics of the black teens living in the Urban Centers as compared to those living in the Rural Towns.

The composition effect implies that these differences are characteristics the teens will "take with them" wherever they go. Health program interventions would need to target individual change — improving individual circumstances and character — if all health outcomes were due to composition effects.

A concern with composition effects could lead to further data collection about other characteristics of individuals, families and households, such as employment, education or poverty levels.



Context Effects

The context effect asserts that people are affected by their community of residence. In this interpretation, the difference between black teen birth rates in the Urban Centers versus the Rural Towns is due to some kind of protective effect of life in the Rural Towns or a "health-demoting" aspect of life in the Urban Centers. Context effects imply that intervention at the community level may have important consequences for health outcomes.

A concern with context effects could lead to further data collection and analysis of assets and barriers at the community level, such as the number of out-of-school youth programs available or problems in transportation to these programs.

There is a particular context effect, called "hypersegregation," that may be important for understanding the Urban Centers. Hypersegregation refers to the intersection and cumulative effect of distinct aspects of segregation that may influence the lives of black and (in Connecticut) Puerto Rican Hispanic residents in these cities — including dissimilarity, isolation, clustering, centralization, and concentration.[12] The concepts of segregation and hypersegregation are discussed in more detail in Appendix C.

Combinations of Composition and Context Effects

As with most such concepts, the distinction between composition and context effects can be oversimplified. Both composition and context effects may result in rate differences. For example, the substantial health rate differences between black residents in the Urban Centers and Rural Towns could be due to both composition and context effects, rather than to either one alone.

Selective Migration

Another effect, related to both composition and context, is selective migration. For example, selective immigration to the United States means that immigrants tend to be younger and healthier than the "average" person in their home countries and may also be younger and healthier than others in their U.S. communities. Thus, a heavily immigrant Connecticut community may tend to be younger and healthier than the same community would be without the influx of immigrants.[c] On the other hand, certain diseases such as tuberculosis may be more prevalent in some immigrant populations.

There also may be more complex effects for migration (e.g., from the Commonwealth of Puerto Rico) from other states or internally within Connecticut. For example, persons who suffer reverses in personal circumstance, such as divorce or unemployment, may move to larger urban areas in search of work or more affordable or subsidized housing.

POPULATION PROJECTIONS

Any planning analysis will include both current population data and future projections, knowing that these projections will contain a healthy margin of error.

United States Projections

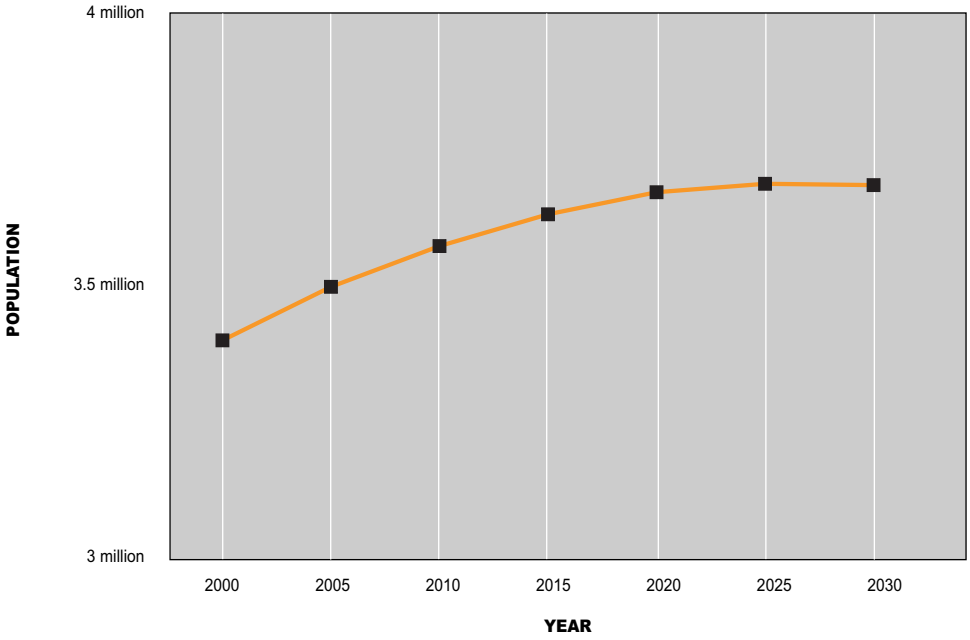
Based on recent population data, racial/ethnic "minorities" are growing at a faster pace than the "majority" population. According to U.S. Census 2000 data, one of every four residents self-reported as a "person of color." By the year 2010, this number will rise to one in three, and by 2050 the projected number is one in two.[13]

The Asian-alone population nationally will grow 111.3 percent by 2030, and the Hispanic population will grow by 105.1 percent in the same period. The black-alone population will grow by 40.8 percent, and the white-alone population will grow by 20.6 percent. The white-alone, non-Hispanic share of the population will decline from 69.4 percent in 2000 to 57.5 percent in 2030 and further to 50.1 percent in 2050.[14]

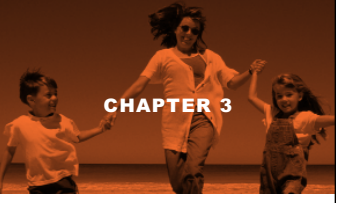
Connecticut Projections

The current projection is that Connecticut's population will increase through 2025, and decline slightly between 2025 and 2030, as illustrated in Figure 3.

FIGURE 3: POPULATION PROJECTIONS FOR CONNECTICUT



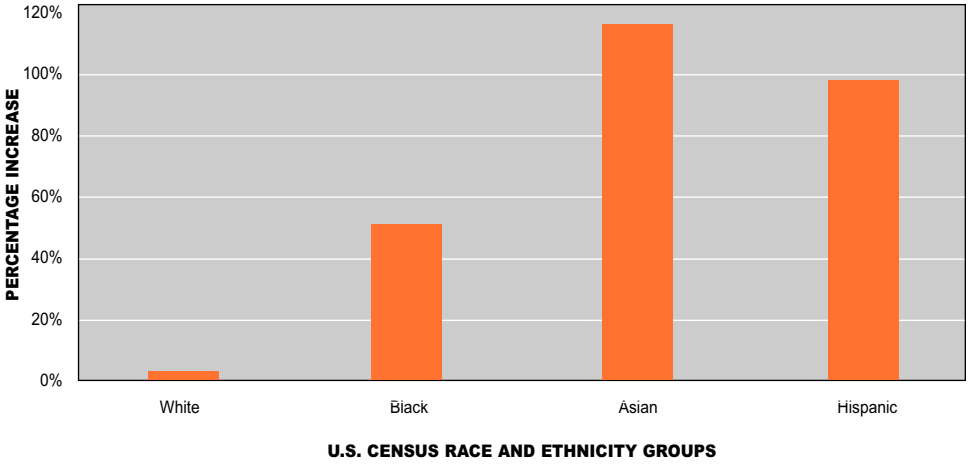
Source: U.S. Census Bureau, Population Division. Interim State Population Projections, 2005, Table 3. Available at: http://www.census.gov/population/www/projections/projectionsagesex.html.



Overall, Connecticut will experience only slight population growth between 2000 and 2030, from 3,405,565 to a projected 3,688,630 — 8.3 percent, compared to U.S. population growth of 29.2 percent over the same time span. Connecticut will decline in rank among states from 29th to 30th in overall population. As with much of the country, Connecticut's population will grow older, from 13.8 percent to 21.5 percent age 65 and over. This compares with 12.4 percent age 65 and over in the United States in 2000, and 19.7 percent in 2030.[15] Additionally, the race and ethnicity composition of the population will change. While neither the U.S. Census Bureau nor Connecticut state authorities have yet released race and ethnicity projections based on the U.S. Census 2000, the Census Bureau has released projections from the 1990s forward to 2025, shown in Figure 4.

Detailed population projections for cities and towns by race, ethnicity and age to 2050 are anticipated in 2007.[16]

FIGURE 4: PROJECTED PERCENTAGE INCREASE IN CONNECTICUT POPULATION GROUPS BETWEEN 2000 AND 2025



Source: U.S. Census Bureau. Projected State Populations, by Sex, Race and Hispanic Origin: 1995-2025. Available at: http://www.census.gov/population/projections/state/stpjrace.txt.

The projections in Figure 4 indicate that Connecticut's Asian population will grow by more than 113 percent between 2000 and 2025, the Hispanic population by more than 99 percent, the black population by more than 50 percent, and the white population by only 2.5 percent. Further analysis shows that the nonwhite population is a younger population than the white population. As of 2000, 41.1 percent of the white population was under 35 years old, in contrast with the black population (59.3 percent under 35), the Asian population (55.2 percent under 35), and the Hispanic population (73.7 percent under 35).[17] Thus, if current trends continue, Connecticut will be increasingly characterized by an older white, and a younger black, Asian and Hispanic population. And the trend may be underestimated in the available data. While the overall undercount of population in Connecticut is small, younger black, Asian, Hispanic, and immigrant populations are more likely to be undercounted, according to several U.S. Census Bureau analyses.[d]

DEMOGRAPHICS

Understanding Connecticut's demographic composition can alert health organizations to racial and ethnic disparities in risk factors and health outcomes for potential intervention. Research shows there are disparities for many health conditions. A primary goal of *Healthy People 2010*, the federal government's major national initiative to improve health, is to reduce and eliminate disparities, especially along racial and ethnic lines.

The Connecticut Health Foundation's (CHF) web site (www.cthealth.org) features charts and maps that report data by the major cities of the Urban Centers, HRGs and for the state as a whole, selected state Senate and House districts, town-level, census tract, block group, and block data.

In this chapter the focus is on several U.S. Census Bureau items of interest from a community health perspective, as shown in Table 4.

TABLE 4: DATA ITEMS AVAILABLE ON CENSUS 2000 SHORT AND LONG FORMS

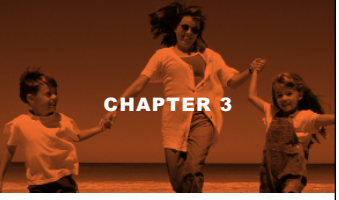
SHORT FORM ITEMS ON THE CENSUS 2000	LONG FORM ITEMS ON THE CENSUS 2000
• Age	• Education
• Gender	• Income
• Households	• Disability status
• Family structure, including marital status and unmarried partners	• Language and linguistic isolation
• Ethnicity	• Country of origin
	• Transportation type to work
	• Commuting time to work

Race, Ethnicity and Ancestry Concepts

Data on the race/ethnicity/ancestry distribution of Connecticut residents is important because of the well-documented correlations of race and ethnicity with health risks and health outcomes discussed in *Healthy People 2010*.[18]

Recently, some have claimed that race is a "social construct" without biological meaning. "Race is historically created (and recreated) by how people are perceived and treated in the normal actions of everyday life."[19] Camara Jones, the epidemiologist, has stated that "race is a contextual variable, not a characteristic of the person."[20]

The issues raised by this debate are beyond the scope of the *Data Scan*, but those interested in further reading on the topic should check issues of the *American Psychologist* (January 2005), *Nature Genetics* (published online Oct. 26, 2004) and the *American Journal of Public Health* (AJPH) (November 2000), all dedicated to the topic of race and ethnicity. The latter issue describes Office of Management and Budget (OMB) Directive 15 (1997 Revision) standards now required by the U.S. government for categorizing people in race/ethnicity terms. This directive has current or future application to virtually all public data.



Following OMB Directive 15, the U.S. Census Bureau includes a variety of ways for respondents to describe backgrounds, including race, ethnicity, ancestry, and origin.

There were six race categories in the U.S. Census 2000: American Indian or Alaska Native, Asian, black, Native Hawaiian or Pacific Islander, Other, and white. Respondents, rather than census takers, classified their own race and ethnicity. Beginning with U.S. Census 2000, residents could mark more than one race category. Ethnicity is a separate question and can be marked either Hispanic/Latino or non-Hispanic/Latino. Ancestry is an open-ended item to be filled in by respondents according to their own choices. This question, unlike race and ethnicity, is asked only on the census long form, sent to about one in six households.

U.S. Census 2000 defines "black race" as persons who specified their race as black/African American or Negro. Whites are defined as persons with origins in any of the original peoples of Europe, the Middle East or North Africa. The U.S. Census Bureau defines Latino ethnicity (which it uses interchangeably with Hispanic ethnicity) as persons identifying themselves as Mexican, Puerto Rican, Cuban, Central or South American, or of some other Latino (Spanish-speaking) origin. Asians may check several places of origin, including China, Vietnam or Asian Indian.

In summary, combinations like white-alone, non-Hispanic and white-alone Hispanic or black-Asian-white-Hispanic, or Other race-alone, Hispanic are all possible. For the U.S. Census 2000, an individual could be recorded as of Brazilian ancestry and white-Asian race and non-Hispanic ethnicity. An individual could also be of African ancestry, white-alone race and non-Hispanic ethnicity — as some North or South African immigrants might claim, for example.

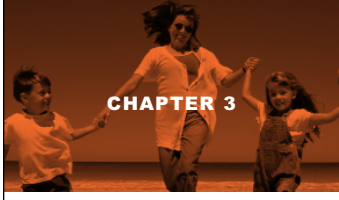
Environmental Justice (EJ) Block Groups

Environmental justice reflects an hypothesis that people in some neighborhoods may be more exposed to adverse environmental conditions that negatively affect their health. Neighborhoods with environmental justice block groups, reflecting high concentrations of low-income, "minority," or people with limited English-speaking proficiency, are of specific concern.

Immigration and Migration

Connecticut is characterized by disparate community histories, settlement patterns, and in- and out-migration. The state is experiencing several current, well-known trends that will be increasingly important in the future. Migration to Connecticut from Latin and Asian areas in the last 20 years has changed the "landscape" of many Connecticut communities, and it presents both opportunities and challenges.

Without the young Latino/Hispanic and Asian populations, Connecticut would suffer a stagnant and increasingly elderly population. To the extent that Connecticut maintains a young working-age population, it will be due to immigration. One researcher has noted: Connecticut "is one of only seven states in which the number of immigrants from 2000 to 2004 is larger than both the number of newcomers from other states ... and the 'natural increase' calculated by subtracting deaths from births."[21] The other states are Massachusetts, New Jersey, New York, Oregon, Pennsylvania, and Rhode Island.



National and state leadership will need to attend to trends in immigrant health. Connecticut's immigrant population is typically a "healthy" young population, so it currently puts little burden on the chronic disease care system.[e] But this picture is likely to change, as explored in later chapters. Briefly, the more acculturated black and Hispanic immigrants become, the worse their health is likely to be.[22, 23]

As far as U.S. Census Bureau data allow, the different characteristics of Connecticut communities are demonstrated below. The HRGs are used as a way of summarizing results for all 169 Connecticut cities and towns, as shown in Table 5. See also www.cthealth.org.

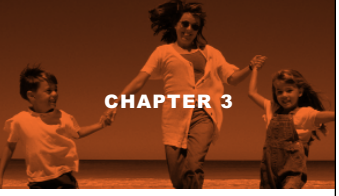
TABLE 5: PERCENTAGES OF PERSONS OF SELECTED RACES AND ETHNICITIES WITHIN HEALTH REFERENCE GROUPS

AREA	All Races and Ethnicities	White-alone, Not Hispanic	Black-alone, Not Hispanic	Asian-alone, Not Hispanic	Hispanic Ethnicity, Any Race	All Other
HRG 1 (3)-UC	11.3	4.1	43.8	13.6	37.5	22.0
Bridgeport	4.1	1.6	13.9	5.5	13.9	9.3
Hartford	3.6	0.8	14.8	2.3	15.4	7.2
New Haven	3.6	1.7	15.1	5.9	8.3	5.5
HRG 2 (10)-MC	19.5	15.8	28.3	25.6	38.3	27.0
HRG 3 (15)-DS	17.3	17.9	19.1	18.3	9.9	19.0
HRG 4 (27)-WS	14.3	17.1	1.7	15.3	3.9	7.1
HRG 5 (39)-MT	20.5	24.3	4.3	16.8	6.7	14.2
HRG 6 (75)-RT	17.2	20.8	2.9	10.4	3.7	10.7
Connecticut	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Census 2000, SF1: Tables PCT 12H,I,J,L.

Table 5 illustrates the clustering of black residents in the Urban and Manufacturing centers. This is not surprising since the percentage of black residents was one of the variables used in defining the HRGs, so as to reveal racial and ethnic disparities. Nevertheless, it is noteworthy that almost half (43.8 percent) of black residents in Connecticut reside in just three cities: Bridgeport, Hartford and New Haven, and almost three-quarters (72.1 percent) live in either the Urban or Manufacturing centers. This fact will have consequences for the analysis of health conditions and outcomes.

Likewise, Hispanic residents tend to be clustered in the three large cities (37.5 percent) or the Manufacturing Centers (38.3 percent). This is also not surprising, since one of the variables used in defining the HRGs was the percentage of Hispanic residents. Yet, the concentration of Hispanic residents is demonstrably less than that of black residents. See Appendix C for a detailed discussion of segregation and hypersegregation in Connecticut, and the relative degree of segregation of black, Puerto Rican and non-Puerto Rican Hispanic residents.



Race, Ethnicity and Age

A key problem in the analysis of race- and ethnicity-specific health data is the difference in age distribution, since older persons are likely to suffer from chronic diseases and the white population is older. Table 6 demonstrates the differences in race- and ethnicity-specific age distributions for the Urban Centers cities, HRGs and the state as indexed by the percentage under 35 years of age.

TABLE 6: PERCENTAGE UNDER 35 YEARS OLD, BY RACE AND ETHNICITY, CITIES, HEALTH REFERENCE GROUPS, AND CONNECTICUT

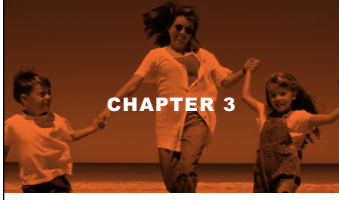
AREA	All Races and Ethnicities	White-alone, Not Hispanic	Black-alone, Not Hispanic	Asian-alone, Not Hispanic	Hispanic, any Race
HRG 1 (3)-UC	57.6	41.9	59.1	71.3	68.4
Bridgeport	55.5	37.2	59.8	67.1	66.9
Hartford	58.1	38.4	56.8	64.2	67.6
New Haven	59.6	48.3	60.5	77.9	72.6
HRG 2 (10)-MC	49.0	40.2	57.8	60.8	68.6
HRG 3 (15)-DS	45.7	41.8	56.2	60.1	68.7
HRG 4 (27)-WS	41.1	40.1	47.8	48.2	56.0
HRG 5 (39)-MT	43.2	41.6	55.3	59.5	65.3
HRG 6 (75)-RT	42.4	41.3	55.0	54.2	63.9
Connecticut	46.0	41.1	57.7	59.3	67.7

Source: U.S. Census 2000, SF1: Tables P12, P12H, PCT 12I, J, L.

The large differences in age and by race and ethnicity can be summarized as follows: Overall, the median age for Connecticut residents is 37.4 years; for white-alone residents it is 39.6, for black-alone residents it is 29.9, for Asian-alone residents it is 30.7, for Hispanic residents it is 25.4. For white-alone, non-Hispanic residents the median age is 40.2.[f] Thus, there is a 15-year gap between white-alone non-Hispanics and Hispanics, and a 10-year gap between white-alone, non-Hispanic and black-alone or Asian-alone, non-Hispanic residents of Connecticut. These gaps have a profound impact on the analysis and interpretation of health data of all kinds.

Table 6 shows that the HRGs differ substantially in the percentage of young persons (below age 35). The Urban Centers are dominated by a young population (57.6 percent), while the other HRGs are all below 50 percent on this indicator. The oldest population overall is in the Wealthy Suburbs.

But the overall figures hide significant differences among race and ethnicity groups. For example, the age distribution for whites is essentially the same across all HRGs, and whites consistently have the lowest percentage under age 35. The black and Asian populations have close to 60 percent under age 35. But the Wealthy Suburbs have an older black population (only 47.8 percent under 35) and the Asian population is substantially younger in the Urban Centers (71.3 percent under 35) and substantially older in the Wealthy Suburbs.



The Hispanic population is the youngest population in the state, but it varies significantly with a substantially older Hispanic population in the Wealthy Suburbs than in other HRGs.

These patterns suggest important demographic variations among the black, Asian and Hispanic populations that are worth exploring further. This also means that "crude" race and ethnicity-specific rates of disease are inappropriate indicators, and they should be replaced by age-adjusted rates wherever possible, as this "adjusts out" the differences in age composition.

Ancestry

The U.S. Census Bureau allows respondents to claim multiple ancestries, and publishes tables of up to two ancestries, estimated from the long form census survey sample. Detailed results are available in Appendix D. There is significant variation by city and town. For example, while only 6.8 percent of all Connecticut residents are of Polish first-ancestry, this ancestry accounts for 20.1 percent of the residents of New Britain.

Race, Ethnicity, Origins, Types, and Ancestries

Table 7 shows a more detailed breakdown of Asians by specific origin. Table 8 shows Hispanics by "type" and, Table 9 shows blacks by ancestry. These results have important social and public health implications.

TABLE 7: PERCENTAGE OF ASIANS BY SPECIFIC ORIGIN

AREA	Asian Indian	Cambodian	Chinese, Not Taiwanese	Filipino	Japanese	Korean	Laotian	Vietnamese	All Asian
HRG 1 (3)-UC	20.7	5.1	22.0	4.7	4.7	8.3	6.1	16.4	11,526
Bridgeport	18.2	10.4	11.2	3.1	4.9	4.8	11.2	26.1	4,626
Hartford	32.6	0.5	17.2	5.7	1.8	5.8	1.3	27.1	2,007
New Haven	18.1	2.1	34.0	5.7	5.7	12.5	3.2	2.9	4,893
HRG 2 (10)-MC	35.0	5.0	18.9	10.6	2.5	4.7	4.4	9.6	21,505
HRG 3 (15)-DS	29.5	2.5	21.1	11.2	2.8	8.3	3.3	10.6	14,815
HRG 4 (27)-WS	24.5	0.7	27.9	8.7	16.6	12.6	0.3	3.1	12,689
HRG 5 (39)-MT	30.4	2.1	24.8	9.3	2.7	8.7	4.0	9.5	14,632
HRG 6 (75)-RT	27.4	0.9	28.0	10.2	3.9	12.8	2.2	5.8	8,622
Connecticut	28.9	3.0	23.0	9.3	5.2	8.6	3.5	9.3	83,789

Source: U.S. Census 2000, SF1: Table PCT5.

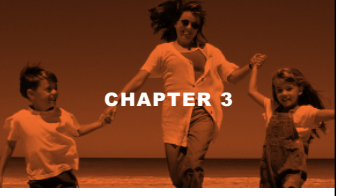


TABLE 8: PERCENTAGE OF HISPANICS BY TYPE

AREA	Puerto Rican	Central American	South American	Mexican	Dominican	Cuban	Other	Hispanic Total
HRG 1 (3)-UC	74.4	2.0	5.0	0.6	2.0	1.6	14.3	120,181
Bridgeport	72.3	3.2	4.5	1.2	2.0	2.2	14.5	44,478
Hartford	80.4	0.9	4.9	0.0	2.1	1.2	10.5	49,260
New Haven	66.9	2.2	6.2	0.4	1.7	1.4	21.2	26,443
HRG 2 (10)-MC	54.5	6.7	11.6	1.0	4.4	1.3	20.5	122,686
HRG 3 (15)-DS	59.6	2.4	10.2	1.3	2.3	3.1	21.0	30,448
HRG 4 (27)-WS	23.4	5.3	27.2	0.8	1.8	6.9	34.6	12,633
HRG 5 (39)-MT	51.4	2.5	12.2	1.6	3.1	4.3	24.9	22,485
HRG 6 (75)-RT	45.5	2.9	14.0	0.8	2.0	6.3	28.6	11,890
Connecticut	60.7	4.1	9.8	0.9	3.0	2.2	19.4	320,323

Source: U.S. Census 2000, Table QT-P9.

TABLE 9: RATIOS OF SELF-REPORTED WEST INDIAN AND AFRICAN ANCESTRY TO TOTAL BLACK-ALONE, NOT HISPANIC POPULATION

AREA	Black-alone, Not Hispanic Population	West Indian (Excluding Hispanic) and African Population	Ratio of West Indian (Excluding Hispanic) and African Ancestry to Black-alone, Not Hispanic Population
HRG 1 (3)-UC	129,347	25,241	0.20
Bridgeport	40,974	10,387	0.25
Hartford	43,775	10,858	0.25
New Haven	44,598	3,996	0.09
HRG 2 (10)-MC	83,623	21,283	0.25
HRG 3 (15)-DS	56,430	13,257	0.23
HRG 4 (27)-WS	5,126	1,968	0.38
HRG 5 (39)-MT	12,572	3,320	0.26
HRG 6 (75)-RT	8,473	1,828	0.22
Connecticut	295,571	66,897	0.23

Source: U.S. Census 2000 SF1: Table P4; SF3: Table P16.

Tables 7, 8 and 9 demonstrate that simplistic concepts of race and ethnicity mask significant intrarace and intra-ethnic variation. For example, while Chinese background residents are distributed throughout the HRGs, Japanese and Korean residents show large percentages in the Wealthy Suburbs, while Vietnamese, Cambodians and Laotians show significant percentages in the Urban Centers and Vietnamese especially so in Bridgeport and Hartford. The three latter Asian subgroups are significantly underrepresented in the Wealthy Suburbs.

Although Puerto Rican Hispanics represent the largest share of Hispanics in Connecticut, and the largest percentage in the Urban Centers, they rank third among Hispanic subgroups in the Wealthy Suburbs. South Americans represent the largest percentage of Hispanics in the Wealthy Suburbs.

The U.S. Census Bureau has no comparable origin data for whites and blacks within the race and ethnicity question as it does for Hispanics, Asians, American Indians, and Pacific Islanders. The nearest question to these concepts is the "ancestry" question on the long form of the census. These data allow us to compare the numbers of persons indicating black "race" and various ancestries that are predominantly black, including West Indian and African.

Table 9 shows that there is significant variation between the numbers of persons indicating black race alone and those self-reporting West Indian or African ancestry. The Wealthy Suburbs have the largest ratios (.38:1) of persons indicating West Indian or African ancestry to persons reporting black-alone race.

Multiracial Individuals

An increasing percentage of U.S. residents consider themselves to be multiracial. Multiracial persons have been demonstrated to have different health experience and behaviors than "single race" persons. The patterns are complex. The health-risk rates for multiracial persons are not simply the "average" health risk rates of their single race "components."[24] Multiraciality is neither evenly distributed throughout the United States nor in Connecticut, as shown in Table 10.

TABLE 10: MULTIRACIAL IDENTIFICATION FOR NOT HISPANIC BLACK AND ASIAN RESIDENTS

AREA	Percentage of Persons Self-Identifying as Black and Also Some Other Race Category, U.S. Census 2000	Percentage of Persons Self-Identifying as Asian and Also Some Other Race Category, U.S. Census 2000
HRG 1 (3)-UC	6.2	16.2
Bridgeport	7.3	15.5
Hartford	6.4	25.8
New Haven	5.0	12.2
HRG 2 (10)-MC	9.1	12.1
HRG 3 (15)-DS	10.0	14.2
HRG 4 (27)-WS	16.5	13.1
HRG 5 (39)-MT	13.0	12.7
HRG 6 (75)-RT	16.0	15.7
Connecticut	8.6	13.7
Boston	8.5	7.0
Massachusetts	13.8	10.1
Windham County, VT	37.7	28.2
United States	4.8	13.9

Source: U.S. Census 2000, SF1: Table P4.

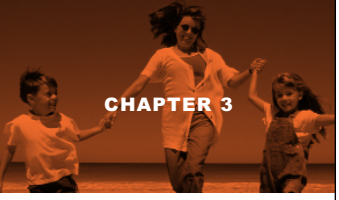


Table 10 illustrates that a significant number of Connecticut residents identify themselves in more than one racial category. This identification varies by HRG and by race. For example, 16.2 percent of persons with any Asian identification in the Urban Centers identify multiracially. Only 6.2 percent of persons with any black identification identify multiracially in the Urban Centers. In contrast, slightly larger percentages (16.5 percent) of blacks in the Wealthy Suburbs use multiple race identification than do Asians (13.1 percent). The black rate of multiracial identification in Connecticut as a whole is almost double that for the United States, while the Asian rate is similar to that for the United States. Both groups in Connecticut have far lower rates of multiracial identification than, for example, Windham County in southeastern Vermont, where 37.2 percent of blacks and 28.2 percent of Asians identify multiracially.

Same-Sex Unmarried Partners

Same-sex unmarried partner households are of increasing interest due to the political debates over "gay marriage" and "civil unions," especially in New England. In addition, research on the topic of intimate partner abuse has recently expanded to examine same-sex partnerships.[25] The U.S. Census Bureau for the first time in 2000 provided data on such households, as shown in Table 11.

TABLE 11: PERCENTAGE OF SAME-SEX UNMARRIED PARTNER HOUSEHOLDS

AREA	Same-Sex Unmarried Partner Households, as a Percentage of All Unmarried Partner Households	Same-Sex Unmarried Partner Households as a Percentage of All Households
HRG 1 (3)-UC	10.9	0.8
Bridgeport	11.1	0.8
Hartford	9.5	0.8
New Haven	12.2	0.8
HRG 2 (10)-MC	11.3	0.7
HRG 3 (15)-DS	12.4	0.7
HRG 4 (27)-WS	19.6	0.5
HRG 5 (39)-MT	10.9	0.5
HRG 6 (75)-RT	15.4	0.7
Connecticut	12.5	0.6

Source: U.S. Census 2000, SF3: Table PCT001.

The Wealthy Suburbs lead the state in same-sex unmarried partner households as a percentage of all unmarried partner households, followed by the Rural Towns. The differences among the other HRGs are not significant.

Demographic Conclusions

These results suggest that ancestry, countries of origin and circumstances of origin may make a significant difference in the "mix" of race and ethnicity groups in the cities and towns of Connecticut. The "broad brush" approach is insufficient to understand the complexities of race, ethnicity and ancestry. These more detailed factors should be taken into account in analyses of the health data for Connecticut's cities and towns, even where ancestry-specific health data may not be available.

EDUCATIONAL ATTAINMENT

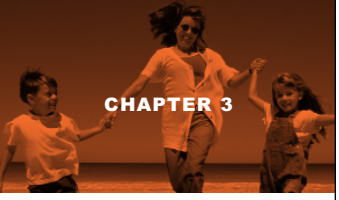
Educational attainment, income and home ownership sketch a picture of "social class" in Connecticut. These measures are important since they correlate highly with health risks and health outcomes.

Educational attainment has been shown to correlate with health. As a predictor of health, educational attainment may be preferred to alternatives such as income and occupation, since (1) educational attainment can be measured for all persons, whereas not everyone has income or occupation; and (2) "health impairments that emerge in adulthood rarely affect educational attainment since educational attainment is normally complete by the early adult years."[26] Table 12 shows significant HRG and race and ethnicity differences in educational attainment in Connecticut.

TABLE 12: PERCENTAGE OF PERSONS 25 YEARS AND OLDER WHO ARE COLLEGE GRADUATES

AREA	All Residents	White-alone	Black-alone	Asian-alone	Hispanic	White-alone, Not Hispanic
HRG 1 (3)-UC	17.0	24.7	9.6	51.0	6.2	28.9
Bridgeport	12.2	15.1	8.9	30.6	5.1	18.0
Hartford	12.4	22.2	7.7	38.3	5.1	27.8
New Haven	27.1	38.0	12.5	77.3	10.5	41.4
HRG 2 (10)-MC	24.1	26.3	13.3	53.9	8.4	27.9
HRG 3 (15)-DS	27.7	28.3	17.4	54.5	17.2	28.4
HRG 4 (27)-WS	57.0	57.2	29.6	71.1	36.0	57.5
HRG 5 (39)-MT	26.2	25.8	23.2	57.3	20.2	25.9
HRG 6 (75)-RT	36.6	36.6	22.4	61.6	28.4	36.7
Connecticut	31.4	33.5	13.7	57.7	11.3	34.2

Source: U.S. Census 2000, SF3: Tables P037, P148A, P148B, P148D, P148H, P148I.



Educational attainment results for residents 25 years and older show a complex pattern of differences by race and ethnicity and by HRG. Whites have a higher educational level than blacks and Hispanics in every HRG, but these differences are minimal in the Mill Towns. Blacks have a slightly higher rate of educational attainment statewide than Hispanics (13.7 percent versus 11.3 percent are college graduates). However, blacks have a much higher rate than Hispanics in the Manufacturing Centers and a lower educational attainment level than Hispanics in the Wealthy Suburbs. The latter patterns may be associated with the different origins of Hispanic residents in the HRGs, as the Wealthy Suburbs are home to mainly non-Puerto Rican Hispanics. Statewide data indicate that this group has higher educational attainment levels than Puerto Rican Hispanics.

Table 13 illustrates the differences that are demonstrable for subregions of the state and subgroups of Hispanic residents. In each area, Puerto Rican Hispanic residents have lower levels of educational attainment than non-Puerto Rican Hispanic residents. These differences are undoubtedly due to different migration and immigration histories.

TABLE 13: PERCENTAGE OF RESIDENTS 25 AND OVER WHO ARE COLLEGE GRADUATES, HISPANIC SUBGROUPS

AREA	All Residents	Not Hispanic	Hispanic, Not Puerto Rican	Hispanic, Puerto Rican
Bridgeport	12.8	15.4	8.7	4.6
Hartford	11.5	14.9	11.1	3.4
New Haven	26.9	30.4	17.9	5.5
Balance of Connecticut	33.7	34.6	19.1	11.9
Connecticut	31.2	32.7	17.4	7.4

Source: U.S. Census 2000, PUMA Database.

Overall, Asians 25 years and older have the highest educational attainment of any group — more than half have a college degree or more. Asians are by far the most highly educated group in each HRG. But there are significant differences by location. For example, Asians in Bridgeport and Hartford have lower educational attainment than in any other HRG. This is most likely due to subgroup differences within the Asian population who go to college or settle in these cities rather than in New Haven or the rest of the state, as shown in Table 14.

TABLE 14: PERCENTAGE OF RESIDENTS 25 AND OVER WHO ARE COLLEGE GRADUATES, ASIAN SUBGROUPS

AREA	All Residents	All Asian	Asian, Other	Asian, Cambodian	Asian, Laotian	Asian, Vietnamese
Bridgeport	12.8	32.2	53.4	NA	NA	25.9
Hartford	11.5	28.2	35.7	NA	18.6	9.7
New Haven	26.9	77.0	81.6	NA	NA	NA
Balance of Connecticut	33.8	57.0	66.3	NA	6.1	NA
Connecticut	31.2	55.0	65.6	1.5	5.8	22.6

Source: U.S. Census 2000, PUMA Data. Note: Asian, Other refers to not Cambodian, Laotian or Vietnamese.

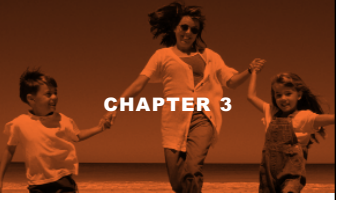
TABLE 15: PERCENTAGE OF RESIDENTS 25 AND OVER WHO ARE COLLEGE GRADUATES, BLACK SUBGROUPS

AREA	All Residents	Black, Not Hispanic	Black, Not Hispanic: African	Black, Not Hispanic: African American	Black, Not Hispanic: Haitian	Black, Not Hispanic: West Indian/ Caribbean	Black, Not Hispanic: Other
Bridgeport	12.8	9.7	12.8	9.2	23.7	9.7	7.3
Hartford	11.5	6.9	9.4	8.1	19.8	7.1	3.2
New Haven	26.9	13.4	7.3	13.5	NA	41.1	7.5
Balance of Connecticut	33.8	17.0	30.1	16.8	10.7	17.5	14.1
Connecticut	31.2	14.0	23.8	14.1	16.1	15.1	10.3

Source: U.S. Census 2000, PUMA Database.

The level of educational attainment among blacks is higher outside the Urban Centers, as shown in Table 15. There also are significant variations in educational attainment among different subgroups of black residents. For Connecticut as a whole, residents of African ancestry age 25 and over have a higher level of educational attainment (23.8 percent are college graduates or more) than do Haitians (16.1 percent), West Indians (15.1 percent), or African Americans (14.1 percent). But these patterns are different in the different locations. For example, 41.1 percent of West Indian/Caribbean Islanders in New Haven are college graduates.

It is important to note that the data on educational attainment show immigrant and migrant groups at a particular moment in history. Future changes in educational attainment will be driven by current trends in high school achievement, dropout and graduation rates, as well as the differentials in educational experiences prior to immigration and the differentials in in- and out-migration patterns.



HOUSEHOLD INCOME

Household income closely correlates with education, and both correlate with health risks and outcomes. Table 16 presents the percentage of households with income of $35,000 or more, showing the wide variation in household income by HRG and by race and ethnicity.

TABLE 16: PERCENTAGE OF HOUSEHOLDS WITH HOUSEHOLD INCOME OF $35,000 OR MORE IN 1999

AREA	All Households	White-alone Householder	Black-alone Householder	Asian-alone Householder	Hispanic Householder	White-alone, Not Hispanic Householder
HRG 1 (3)-UC	43.2	48.6	40.5	47.8	36.1	50.7
Bridgeport	49.6	51.2	47.6	68.6	44.4	53.2
Hartford	35.9	42.8	35.6	39.3	29.5	45.5
New Haven	43.4	49.2	39.3	37.3	35.3	50.8
HRG 2 (10)-MC	60.7	63.6	51.7	71.9	45.7	65.0
HRG 3 (15)-DS	66.6	67.4	60.6	74.7	60.6	67.4
HRG 4 (27)-WS	84.4	84.5	75.2	89.0	73.4	84.7
HRG 5 (39)-MT	71.0	71.0	74.5	73.0	69.7	71.0
HRG 6 (75)-RT	78.8	78.9	71.6	86.5	79.5	78.9
Connecticut	68.2	71.3	50.1	72.8	46.8	72.0

Source: U.S. Census 2000, SF3: Tables P052, P151A,B,D,H,I.

Data note: Most Hispanic/Latino respondents to the census list themselves as "Some Other Race." Hispanic/Latino respondents who also list themselves as white, black or Asian may be counted twice in this table, since black-alone non-Hispanic, and Asian-alone non-Hispanic data are not available in the Summary File 3 tables in the U.S. Census 2000. The difference for Bridgeport between white-alone (51.2 percent) and white-alone non-Hispanic (53.2 percent) is produced by those who classify themselves as white-alone Hispanic.

The income differentials in Connecticut are large. The Connecticut average of 68.2 percent of households with $35,000 or greater income obscures the fact that the Urban Centers are 25 percentage points lower at 43.2 percent. Hartford is still lower at 35.9 percent and the Wealthy Suburbs are more than 15 percentage points higher at 84.4 percent.

White and Asian household incomes are approximately equal in Connecticut (71.3 percent and 72.8 percent $35,000 and over, respectively). Asian households in the Wealthy Suburbs have the highest income of any group in the state (89.0 percent at $35,000 and over), and Asian household income is greater than white household income in every HRG but the Urban Centers. This may be due to the different intrarace composition of the Asian population in the Urban Centers as compared with the other HRGs. The Urban Centers are more heavily populated with Vietnamese, Cambodian and Laotian residents rather than more established Asian populations or immigrants who may have arrived under a different immigration status.

Asian households show extreme variation, from a low of 37.3 percent at $35,000 and more in New Haven to a high of 89.0 percent in the Wealthy Suburbs. This may be due partly to different groups among householders identifying as Asian, and in part to the low incomes of Asian student households in New Haven.

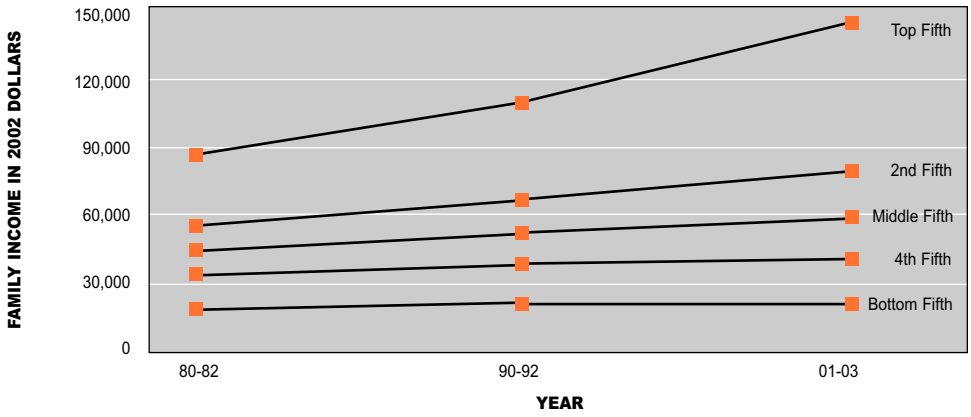
More generally, in examining the educational and economic status of immigrants, we must consider the influence of changes in immigration laws, particularly those targeted to refugees and those with special occupational skills.

Statewide, black household income trails (50.1 percent at $35,000 and over), and Hispanic income is still lower (46.8 percent at $35,000 and over). There are also very large HRG differences in income, not surprising since a correlate of income — poverty level — was one factor used to define the HRGs. But a complex pattern emerges when examining the cross-tabulation of HRG and race/ethnicity. Hispanic households show extreme variation, from 29.5 percent at $35,000 and higher in Hartford to 79.5 percent at $35,000 and higher in the Rural Towns. Hispanics are the only group to show higher household income in the Rural Towns than in the Wealthy Suburbs. These differences likely also arise from origin differences in the Hispanic population.

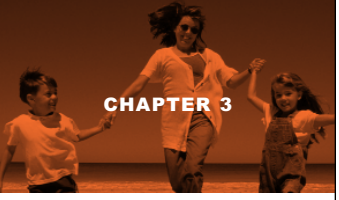
INCOME TRENDS

Income disparities are increasing, as demonstrated in a recent report by the Economic Policy Institute/Center on Budget and Policy Priorities. Analyzing each quintile (fifth) of the population, the institute finds the income changes shown in Figure 5. These data indicate that inequality in family incomes has accelerated during the past decade; the average income of the bottom fifth of families in Connecticut has actually decreased slightly. Increasing income inequality is a nationwide trend. Connecticut ranks 28th among states in income inequality. [27] The growth in income inequality may have social and political consequences. For example, rates of bankruptcy and divorce are highest in U.S. counties with the largest income disparities. The report also notes that as families are increasingly stressed by income disparity and loss, they may be less willing to pay for public services, including public health services.[28]

FIGURE 5: FAMILY INCOME TRENDS BY FIFTHS OF CONNECTICUT FAMILIES



Source: Economic Policy Institute/Center on Budget and Policy Priorities. Pulling Apart: A State-by-State Analysis of Income Trends, January 2006. Available at: http://www.epinet.org/studies/pulling06/pulling_apart_2006.pdf <http://www.epinet.org/studies/pulling06/pulling_apart_2006.pdf>. Accessed Jan. 27, 2006.



FEMALE-HEADED FAMILY HOUSEHOLDS WITH CHILDREN UNDER 18

There is much research indicating that single female-headed family households with children are very stressed,[29] making this an important indicator to consider in examining health-risk differences. Connecticut children growing up in single female-headed households are likely to experience poverty, across all types of communities and racial and ethnic groups.

TABLE 17: PERCENTAGE OF FAMILY HOUSEHOLDS THAT ARE FEMALE-HEADED, NO HUSBAND PRESENT AND WITH CHILDREN UNDER 18

AREA	All Family Households	White-alone Headed	Black-alone Headed	Asian-alone Headed	Hispanic Headed, Any Race	White-alone, Not Hispanic Headed
HRG 1 (3)-UC	32	16	44	9	39	10
Bridgeport	27	15	40	9	34	10
Hartford	38	20	45	18	45	10
New Haven	32	15	46	5	38	11
HRG 2 (10)-MC	16	10	37	5	31	9
HRG 3 (15)-DS	12	9	32	6	29	9
HRG 4 (27)-WS	5	5	20	4	11	5
HRG 5 (39)-MT	8	8	23	4	18	8
HRG 6 (75)-RT	6	6	14	4	10	6
Connecticut	12	8	37	5	32	7

Source: U.S. Census 2000, SF1: Tables P035, P035A,B,D,H,I.

Table 17 demonstrates both racial and ethnic differences. It also shows that these differences vary across different kinds of communities. There are large differences between Asian families — at 5 percent, they are least likely to be single female-headed households with children under 18 — followed by white families (8 percent), Hispanic families (32 percent) and black families (37 percent). But the rates are dramatically different for all racial/ethnic groups in the different HRGs. Asian and white-only non-Hispanic rates vary from 9 percent and 10 percent at their highest levels, respectively, to their lowest levels of 4 percent and 5 percent. The rate differences are much more dramatic for black-alone and Hispanic families. For example, rates of black-alone female-headed family households with no husband present and with children under 18 drops from 44 percent in the Urban Centers to only 14 percent in the Rural Towns. Similarly, Hispanic rates decline from 39 percent in the Urban Centers to 10 percent in the Rural Towns.

It is not known whether these rate differentials result from composition or context effects, or from differential migration of single female-headed families to the larger urban areas.

CHILD POVERTY

Poverty is clearly associated with single female-headed households and with health risk and health outcome. Therefore, the author has chosen poverty among children as a good "index" of poverty level. Table 18 indicates the overall level of child poverty, along with disparities in this indicator.

TABLE 18: PERCENTAGE OF CHILDREN IN POVERTY (AMONG FAMILY HOUSEHOLDS WITH RELATED CHILDREN UNDER 18 ONLY)

AREA	All Families with Related Children Under 18	White-alone Families with Related Children Under 18	Black-alone Families with Related Children Under 18	Asian-alone Families with Related Children Under 18	Hispanic Families, Any Race with Related Children Under 18	White-alone, Not Hispanic Families with Related Children Under 18
HRG 1 (3)-UC	32	26	31	10	41	14
HRG 2 (10)-MC	16	10	22	6	31	6
HRG 3 (15)-DS	8	6	15	7	19	5
HRG 4 (27)-WS	2	2	5	5	7	2
HRG 5 (39)-MT	4	4	12	7	13	4
HRG 6 (75)-RT	3	2	15	3	3	2
Connecticut	10	5	24	6	31	4

Source: U.S. Census 2000, SF3: Tables PCT076A,B,D,H,I.

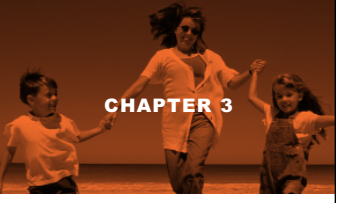
The percentages of children under 18 living below the poverty line are highly correlated with differences in family structure. For example, 31 percent of black children in the Urban Centers are below the poverty line. This is associated with 41.5 percent of black-alone single female-headed families in poverty in the Urban Centers (see Table 19) — a frequent family structure for black children in the Urban Centers (see Table 20).

TABLE 19: PERCENTAGE OF CHILDREN UNDER 18 BELOW POVERTY CRITERION, BY FAMILY TYPE

AREA	All Families with Related Children Under 18		White-alone Families with Related Children Under 18		Black-alone Families with Related Children Under 18		Asian-alone Families with Related Children Under 18		Hispanic Families, Any Race with Related Children Under 18		White-alone, Not Hispanic Families with Related Children Under 18	
	SF	M	SF	M	SF	M	SF	M	SF	M	SF	M
HRG 1 (3)-UC	47.0	13.7	48.8	11.6	41.5	11.6	22.3	8.2	56.8	18.6	30.2	8.8
HRG 2 (10)-MC	36.8	5.6	31.8	4.2	33.7	4.5	18.4	4.9	48.6	14.6	24.4	2.8
HRG 3 (15)-DS	25.4	2.6	20.9	2.3	28.0	3.1	11.9	7.0	39.3	4.7	19.3	2.1
HRG 4 (27)-WS	13.2	1.3	12.7	1.1	9.2	3.2	26.7	4.2	28.9	3.6	12.3	1.1
HRG 5 (39)-MT	18.6	1.9	18.0	1.6	16.8	9.1	1.9	6.8	35.9	4.2	16.9	1.5
HRG 6 (75)-RT	12.7	1.4	12.5	1.3	27.6	11.5	5.3	2.4	11.2	1.7	12.6	1.3
Connecticut	32.3	3.2	23.3	2.2	36.3	7.2	14.8	5.5	50.7	12.5	17.8	1.7

SF indicates single female-headed household **M** indicates married-couple family

Source: U.S. Census 2000, SF3: Tables PCT052; PCT076A,B,D,H,I.



The results in Table 19 show the association of family structure with poverty. For every racial and ethnic group, "single female-headed no husband present" families are more likely to be below the federal poverty criterion, which adjusts income for family size. The relative difference ranges up to a ratio of more than 10 to 1 (12.3 percent for single female-headed families to 1.1 percent for married-couple families for white-alone, non-Hispanic families in the Wealthy Suburbs).

TABLE 20: RATIO OF CHILDREN UNDER 18 IN MARRIED-COUPLE FAMILIES TO CHILDREN UNDER 18 IN SINGLE FEMALE-HEADED FAMILIES (with Related Children Under 18 Only)

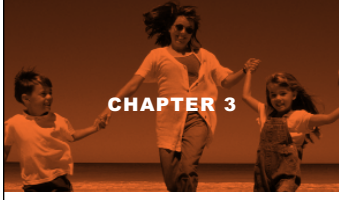
AREA	All Families with Related Children Under 18	White-alone Families with Related Children Under 18	Black-alone Families with Related Children Under 18	Asian-alone Families with Related Children Under 18	Hispanic Families, Any Race with Related Children Under 18	White-alone, Not Hispanic Families with Related Children Under 18
HRG 1 (3)-UC	0.8	1.7	0.5	8.0	0.7	3.2
HRG 2 (10)-MC	2.0	3.7	0.7	8.3	1.1	5.1
HRG 3 (15)-DS	3.3	4.6	1.2	8.6	1.5	4.8
HRG 4 (27)-WS	11.8	12.4	1.7	19.0	6.1	12.6
HRG 5 (39)-MT	5.5	5.9	1.5	15.9	2.5	6.0
HRG 6 (75)-RT	8.7	9.0	3.1	12.8	6.6	9.1
Connecticut	3.4	5.9	0.7	11.0	1.1	6.9

Source: U.S. Census 2000, SF3: Tables PCT076A,B,D,H,I.

Table 20 reveals the very different family structures for racial and ethnic groups in different HRGs. Statewide, Asian-alone children are least likely of all groups to be in single female-headed family households, and even more unlikely to be in such households in the Wealthy Suburbs. Children in the Wealthy Suburbs are most likely in married-couple families for all groups, except for Hispanics, for whom the Wealthy Suburbs and Rural Towns show approximately equal ratios. Black-alone race children are most likely to be growing up in "single female-headed, no husband present families" in every HRG. For black children, the likelihood of growing up in a married-couple family is greatest in the Rural Towns (3.1:1).

Table 18 indicates that there is a large percentage (32 percent) of children in poverty in the Urban Centers. Taking the results of Table 19 and Table 20 together, it is apparent that a major contributor to this level of poverty is the association of single female-headed, no husband present family structure and poverty, and the large representation of such families in the Urban Centers.

The Connecticut Department of Children and Families (DCF) monitors poverty among young people using Medicaid eligibility as an indicator. DCF notes that low-income families are overrepresented in the department's caseload, indicating that children and youth in poverty need more assistance with social/health, basic needs, and specific health, substance abuse and other critical areas.[30]



According to Kids Count, a national initiative sponsored by the Annie E. Casey Foundation, 10.4 percent of Connecticut residents age 18 and under lived in poverty in 1999, compared to a national rate of 16.6 percent during the same period. Approximately 12.1 percent of children 18 and under lived in "high-poverty neighborhoods" where 20 percent or more of the total population lives below the poverty line. This is significantly less than in the nation as a whole: 20.4 percent of all children in the United States live in high-poverty neighborhoods.[31]

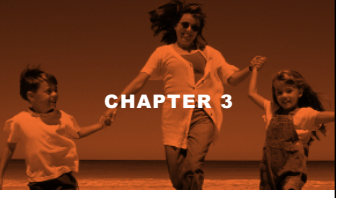
Additional "safety net" statistics can be found in Appendix E.

INCOME AND WEALTH

The larger disparities in wealth between blacks and whites, in comparison to the disparities in income, have been widely discussed in recent years. Since World War II, whites have accumulated wealth more than blacks because of such factors as access to good educational institutions; access to decent jobs and fair wages; accumulated retirement benefits through company programs, union membership and Social Security; and home ownership policies and programs allowing purchase of property in rising neighborhoods.[32]

There are likely to be underlying, long-term disparities in wealth even as disparities in access to education and jobs are addressed. Home ownership is a chief means of wealth accumulation by moderate-income families, providing a "platform" of support for succeeding generations. Although the post-World War II GI bill, for example, supported educational and home ownership benefits for black veterans, these veterans did not benefit to the same degree and with the same effect as for white veterans because the black veterans could not purchase property in many "rising" neighborhoods due to formal and informal color bars.[33]

Current differences in home ownership may reflect: different income-generated capacities to save or propensities to save; different amounts of family support in the form of inter-generational gifts; operations of the home mortgage market; increasing costs of home ownership for "new groups" in an era of rising home prices; different lengths of time required to accumulate the capital to purchase a home; or differences between generations in their desire to own a home rather than use income in other ways. Still another factor is that homes in white neighborhoods increase in value an average of 28 percent more than homes in black neighborhoods over the course of a 30-year mortgage.[34] Thus, homes in black neighborhoods provide less of a "cushion" of support in lean economic times, and black home owners are more at risk. Finally, there is conclusive evidence that black residents nationwide and in Connecticut are likely to live in segregated (and even in what are frequently called "hypersegregated") neighborhoods, as described in Appendix C.



Owner Occupancy — A Measure of Wealth

Home ownership is a key source of family and community stability. It is an indicator of commitment to community that may have other health-related consequences.

TABLE 21: PERCENTAGE OF OCCUPIED HOUSING UNITS THAT ARE OWNER-OCCUPIED

AREA	All Households	White-alone Householder	Black-alone Householder	Asian-alone Householder	Hispanic Householder, Any Race	White-alone, Not Hispanic Householder
HRG 1 (3)-UC	32.8	42.1	29.4	21.9	19.0	46.5
Bridgeport	43.2	52.6	37.2	38.3	27.7	58.5
Hartford	24.6	33.0	26.2	17.4	12.6	39.4
New Haven	29.6	36.0	26.0	12.0	17.1	38.4
HRG 2 (10)-MC	53.7	60.8	32.3	41.9	25.1	63.7
HRG 3 (15)-DS	64.2	66.7	52.5	43.6	40.3	67.1
HRG 4 (27)-WS	84.3	85.2	56.8	71.0	58.0	85.5
HRG 5 (39)-MT	74.6	75.7	50.9	51.4	51.4	76.0
HRG 6 (75)-RT	83.8	84.2	70.5	76.7	68.8	84.3
Connecticut	66.8	72.5	36.5	48.1	28.1	73.9

Source: U.S. Census 2000, SF1: Tables H16, H16A,B,D,H,I.

Since home ownership is a key vehicle for savings and wealth accumulation, one test of disparities is the percentage of home owners by race and ethnicity in Connecticut and for the HRGs, illustrated in Table 21. But the crude home ownership percentage by group is somewhat misleading since blacks, Asians and Hispanics are younger than whites in Connecticut, and home ownership is typically concentrated in somewhat older groups. However, even with statistical control for age, disparities still exist.

TABLE 22: PERCENTAGE OF OCCUPIED HOUSING UNITS THAT ARE OWNER-OCCUPIED, BY HOUSEHOLDER AGE AND RACE/ETHNICITY

RACE/ETHNICITY	All Households	Age 15-24	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65-74	Age 75-84	Age 85+
All Residents	66.8	12.3	43.6	67.3	76.1	79.3	78.8	73.8	61.5
White-alone Householder	72.5	14.8	50.7	73.5	80.7	83.4	81.9	75.5	62.5
Black-alone Householder	36.5	7.5	21.3	36.4	45.7	50.6	48.3	43.9	39.6
Asian-alone Householder	48.1	9.3	24.1	54.8	70.0	75.2	66.5	53.7	37.8
Hispanic Householder	28.1	6.5	20.5	33.1	38.2	39.1	34.6	29.9	20.9
White-alone, Not Hispanic Householder	73.9	15.7	52.6	75.0	81.9	84.5	82.6	75.9	62.8

Source: U.S. Census 2000, SF1: Tables H016, H016A,B,D,H,I.

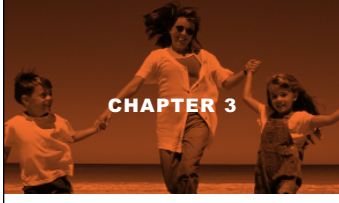


Table 22 illustrates that home ownership rises with age, and for each racial/ethnic group peaks between 55 and 64 years old. In the 55-64 age group, home ownership is highest among whites, followed closely by Asians. It is lowest among blacks and Hispanics. It is important to point out that this "broad brush" does not distinguish different rates for different types and ancestry groups among Asians, blacks and Hispanics. It is unknown why home ownership rates are lower among Asians even though their household income equals or even exceeds that of whites.

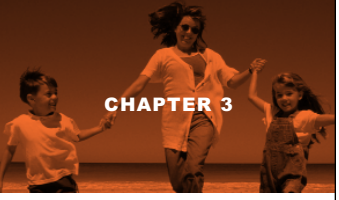
ENVIRONMENTAL JUSTICE AND HEALTH DISPARITIES

The principle of EJ began as a grassroots movement in the 1970s by activists who believed people were suffering disproportionately from illness because of where they lived. Environmental justice reflects a concern that neighborhoods with a high concentration of low-income, minority, immigrant, or limited English proficiency residents may be more exposed to adverse environmental conditions that would negatively affect residents' health. In 1994, President Bill Clinton signed Executive Order 12898, directing the federal government to consider the principles of environmental justice in its decision making.[35]

Environmental justice areas are identified from U.S. Census block group data in U.S. Census 2000. Environmental justice block groups include any areas that meet at least one of the following criteria:

- At least 25 percent minority residents
- Less than $30,515 in median household income in 1999
- More than 25 percent of residents not proficient in spoken English
- More than 25 percent foreign-born residents

Identifying these EJ block groups does not necessarily "prove" the presence of environmental hazards. In fact, the evidence is mixed for linking EJ block groups to the actual presence of environmental hazards. The causal patterns are complex even if correlation can be shown. Do potential environmental hazards get placed in low-income communities? Or do housing prices fall as a result of their placement, and make neighborhoods affordable for low-income persons? Or is the pattern even more complex? Regardless of the answers to such causal questions, the presence of EJ block groups should alert decision-makers to the possible connections in local community settings.



LINGUISTIC ISOLATION

Because the state's population distribution will age, the state will retard the "graying" tendency only to the extent that it welcomes young immigrants and migrants from other states and territories. This provides both an opportunity to maintain a growing economy as well as significant challenges — particularly the problem of linguistic isolation.

Linguistic isolation is a key measure, accessible from the U.S. Census 2000, with social, economic and health implications. The U.S. Census Bureau defines linguistic isolation as a household in which all members 14 years old and over speak a non-English language and also speak English less than 'very well' (have difficulty with English). All the members of a linguistically isolated household are tabulated as linguistically isolated, including members under 14 years old who may speak only English."[36] As shown in Table 23, Spanish language linguistic isolation varies considerably by HRG: It is of principal concern in the Urban Centers and somewhat less so in the Manufacturing Centers.

TABLE 23: PERCENTAGE OF HOUSEHOLDS THAT ARE LINGUISTICALLY ISOLATED

AREA	Total Percentage of Linguistically Isolated Households	Spanish Language Linguistic Isolation	Other Indo-European Language Linguistic Isolation	Asian/PI Language Linguistic Isolation	Other Language Linguistic Isolation
HRG 1 (3)-UC	12.3	7.8	3.3	0.9	0.2
Bridgeport	13.3	7.4	4.5	1.0	0.3
Hartford	15.9	11.2	3.9	0.7	0.2
New Haven	7.7	5.1	1.5	1.0	0.1
HRG 2 (10)-MC	8.4	4.2	3.4	0.5	0.1
HRG 3 (15)-DS	3.1	0.7	1.9	0.5	0.1
HRG 4 (27)-WS	1.6	0.3	0.8	0.4	0.1
HRG 5 (39)-MT	2.2	0.4	1.4	0.4	0.1
HRG 6 (75)-RT	1.1	0.1	0.7	0.2	0.1
Connecticut	4.4	2.0	1.9	0.5	0.1

Source: U.S. Census 2000, SF3: Table P020.

DISABILITY

Disability levels have a direct bearing on health and community development. The U.S. Census Bureau reports the following types of disability for the civilian noninstitutionalized population: mental disability, physical disability, sensory disability, self-care disability, "go-outside-the-home" disability, and employment disability. The indicators are available for various age groups, and relevant samplings of these data are reported in Tables 24-26.

TABLE 24: PERCENTAGE OF NONINSTITUTIONALIZED PERSONS 21-64 WHO REPORT A DISABILITY

AREA	All Residents	White-alone	Black-alone	Asian-alone	Hispanic	White-alone, Not Hispanic
HRG 1 (3)-UC	27.7	23.7	30.3	16.9	33.1	20.5
Bridgeport	28.1	27.0	28.9	22.8	32.4	24.1
Hartford	31.1	26.0	32.3	20.4	35.4	20.9
New Haven	24.1	18.7	29.4	10.3	30.5	17.0
HRG 2 (10)-MC	20.8	19.4	24.5	18.1	26.9	18.4
HRG 3 (15)-DS	18.1	17.4	24.2	15.0	23.1	17.2
HRG 4 (27)-WS	9.4	9.2	16.7	9.0	14.1	9.1
HRG 5 (39)-MT	15.2	15.0	18.2	12.0	19.0	14.9
HRG 6 (75)-RT	12.4	12.1	20.0	13.3	19.1	12.1
Connecticut	16.8	15.1	26.3	14.5	27.5	14.5

Source: U.S. Census SF3: Tables P042 and PCT068A,B,D,H,I.

These tables indicate that persons in the Urban Centers are most likely to report a disability, followed by the Manufacturing Centers, Diverse Suburbs, Mill Towns, Rural Towns, and Wealthy Suburbs. Disability rates for white-alone non-Hispanics and Asian-alone (almost entirely non-Hispanics) are similar (14.5 percent each), while rates for blacks and Hispanics are similarly higher (26.3 percent and 27.5 percent, respectively). The disability rates for those who self-report black-alone race and Hispanic ethnicity are nearly twice the rates for whites and Asians. The rates in the Wealthy Suburbs are the lowest of all HRGs, for all racial/ethnic groups.

The data can also be analyzed for specific disabilities among all racial/ethnic groups, such as employment-related disability. A familiar pattern emerges: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs, in order of decreasing percentage with an employment-related disability.

The results show that the Urban Centers have the highest rate of employment-related disabilities, but they account for less total employment-related disability than the Manufacturing Centers, which have a larger total population aged 21-64.

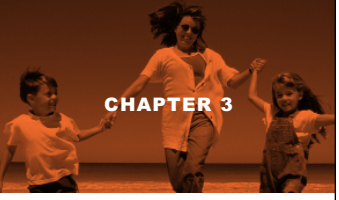


TABLE 25: PERCENTAGE OF NONINSTITUTIONALIZED PERSONS 21-64 WHO REPORT AN EMPLOYMENT-RELATED DISABILITY

AREA	Employment-Related Disability (Employed or Unemployed)	Population Aged 21 to 64	Percent of Persons With Employment-Related Disability	Percent of All Employment-Disability in State
HRG 1 (3)-UC	37,300	210,638	17.7	16.9
Bridgeport	13,976	76,648	18.2	6.3
Hartford	12,973	65,079	19.9	5.9
New Haven	10,351	68,911	15.0	4.7
HRG 2 (10)-MC	55,433	385,670	14.4	25.2
HRG 3 (15)-DS	40,457	322,748	12.5	18.4
HRG 4 (27)-WS	17,646	274,341	6.4	8.0
HRG 5 (39)-MT	41,076	412,241	10.0	18.6
HRG 6 (75)-RT	28,386	339,786	8.4	12.9
Connecticut	220,298	1,945,424	11.3	100.0

Source: U.S. Census 2000, SF3: Table PCT 032.

Employment-related disability also varies by both race/ethnicity and country of origin, a rough indicator of immigrant or migrant status, although not of how recently immigration occurred. For white and black residents, country of birth makes little difference. Puerto Rican Hispanics born in the continental United States have a slightly higher rate of employment-related disability than other Hispanic subgroups. For non-Puerto Rican Hispanics, disability rates for those born in the United States are lower than for all non-Puerto Rican Hispanics. The reasons for this discrepancy are not clear, although it may be due to the fact that non-Puerto Rican Hispanics born in the United States are younger than those born outside the United States and could, therefore, be expected to have lower disability levels.

TABLE 26: PERCENTAGE WITH EMPLOYMENT-RELATED DISABILITY BY RACE, ETHNICITY AND COUNTRY OF ORIGIN, RESIDENTS AGES 16-64

AREA	All	White Not Hispanic	White Not Hispanic Born in U.S.	Black Not Hispanic	Black Not Hispanic, Born in U.S.	Puerto Rican Born in Puerto Rico	Puerto Rican Born in Continental U.S.	Hispanic Not Puerto Rican	Hispanic Non-Puerto Rican, Born in U.S.
HRG 1	13.8	9.8	9.4	18.6	18.2	20.0	17.3	17.6	15.3
Balance of CT	10.6	9.6	9.5	15.4	14.8	20.2	13.8	16.4	8.6
CT	11.1	9.6	9.5	16.9	16.4	20.1	15.3	16.7	10.3

Source: U.S. Census 2000, PUMA Data.
Data Note: Due to the different sources and age definitions, there will be slight differences between tables.

UNEMPLOYMENT

Many communities with health problems have high rates of unemployment. Unemployment is a "wasted" resource of potential human productivity and can be a barrier to community organization for successful health intervention. Connecticut closely parallels the U.S. unemployment rate. The U.S. seasonally adjusted rate was 4.7 percent in August 2006 compared with 4.5 percent in Connecticut.[37]

Table 27 shows the significant variation in unemployment among Connecticut HRGs. The Urban Centers cities had the highest average rate of unemployment in 2005, followed in descending order by the Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs. Hartford has more than double the state rate of unemployment (10.1 percent versus 4.9 percent). These rates are likely underestimates of the true rates of unemployment since they do not take into account the "discouraged worker" who has stopped actively looking for work.

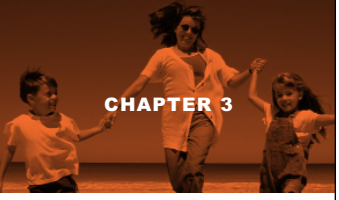
TABLE 27: LABOR FORCE PARTICIPATION AND UNEMPLOYMENT RATE AVERAGES FOR 2005[38]

AREA	Active Labor Force	Employed	Unemployed	Percentage Unemployed	Percentage of All Unemployed in Connecticut
HRG 1 (3)-UC	163,644	150,072	13,572	8.3	15.2
Bridgeport	61,791	56,913	4,878	7.9	5.5
Hartford	47,734	42,899	4,835	10.1	5.4
New Haven	54,119	50,260	3,859	7.1	4.3
HRG 2 (10)-MC	348,375	328,787	19,588	5.6	22.0
HRG 3 (15)-DS	312,253	296,340	15,913	5.1	17.8
HRG 4 (27)-WS	249,041	240,548	8,493	3.4	9.5
HRG 5 (39)-MT	396,326	377,834	18,492	4.7	20.7
HRG 6 (75)-RT	333,524	320,433	13,091	3.9	14.7
Connecticut	1,803,163	1,714,014	89,149	4.9	100.0

Source: Connecticut Department of Labor (DOL), Office of Research. Annual Average 2005, Not Seasonally Adjusted: Connecticut Towns. See reference note for complete reference.

TRANSPORTATION TO WORK

Access to and use of transportation are important aspects of public health and safety for several reasons. First, adequate transportation provides a means of travel to work and to health care providers. Second, it could provide a "denominator" useful in working with transportation-related injury data. Third, pollution is likely to increase and levels of physical exercise are likely to decline when many persons use private auto transportation. Fourth, those who depend upon local public transportation to work may have more circumscribed work possibilities, leading to lower levels of employment and employment in more racially and ethnically isolated settings. Finally, the connection between lack of transportation and public health problems was demonstrated in the summer 2005 floods in New Orleans, where poor people with high rates of disabilities and low rates of private car access were unable to evacuate. Emergency response agencies can be alerted to potential needs for transportation away from disaster areas by examining these data.



Tables 28, 29 and 30 illustrate that there are clear race and ethnicity differences for Connecticut and among the HRGs regarding transportation and use of public transportation.

The highest rates of public transportation use by white-alone residents are in the Urban Centers and Wealthy Suburbs, the latter due to the extensive use of rail transportation in the Fairfield County area. For black-alone workers, the greatest use of public transportation is in the Urban and Manufacturing Centers. The highest rates among Asian-alone workers are in the Wealthy Suburbs, again reflecting use of the rails, with a somewhat lower rate in the Urban Centers. For Hispanics, the highest rate is in the Urban Centers followed by the Wealthy Suburbs.

These results demonstrate that broad brush use of categories like "black," "Asian" and "Hispanic" obscures important differences within these groups. For example, the differences between the Asian-Indian computer entrepreneur taking the commuter rail from Darien to Manhattan and the Cambodian immigrant who relies on bus transportation to work in a service occupation locally in Hartford are not fairly captured by the simple labels "Asian" and "public transportation."

TABLE 28: PERCENTAGE USING PUBLIC TRANSPORTATION TO WORK

AREA	All Employed Persons, 16 and Over	White-alone	Black-alone	Asian-alone	Hispanic	White-alone, Not Hispanic
HRG 1 (3)-UC	12.2	6.5	18.3	9.5	13.9	5.0
Bridgeport	8.4	5.3	12.0	6.6	10.8	3.8
Hartford	18.6	9.5	24.7	18.8	18.8	6.2
New Haven	11.1	6.3	18.3	7.9	11.6	5.7
HRG 2 (10)-MC	5.6	4.3	11.6	7.4	8.6	3.8
HRG 3 (15)-DS	2.1	1.6	6.9	2.4	4.1	1.5
HRG 4 (27)-WS	7.6	7.4	8.1	13.4	9.3	7.4
HRG 5 (39)-MT	1.2	1.1	2.6	2.4	2.3	1.0
HRG 6 (75)-RT	1.0	1.0	1.8	1.2	1.5	1.0
Connecticut	4.0	2.9	12.4	6.1	9.1	2.7

Source: U.S. Census 2000, SF3: Tables P03, PCT065A,B,D,H,I.

TABLE 29 : PERCENTAGE OF WORKERS TRAVELING MORE THAN ONE HOUR TO WORK

AREA	Percent Traveling More Than 1 Hour to Work
HRG 1 (3)-UC	7.3
Bridgeport	8.3
Hartford	6.8
New Haven	6.7
HRG 2 (10)-MC	6.9
HRG 3 (15)-DS	4.7
HRG 4 (27)-WS	14.9
HRG 5 (39)-MT	5.7
HRG 6 (75)-RT	6.8
Connecticut	7.3

Source: U.S. Census 2000, SF3: Table P032.

Those in the Wealthy Suburbs appear to have the longest travel times to work. An examination of individual towns suggests that this is mainly a commuter suburb phenomenon. For example, over 20 percent of workers in Darien, Westport, Weston, Greenwich, Sherman, and New Fairfield travel more than one hour per day to work. Of these, only Sherman (a Rural Town) is not a wealthy suburban town, and it is within a long commute to New York City.

TABLE 30: PERCENTAGE OF HOUSEHOLDS WITH NO PRIVATE VEHICLE AVAILABLE

AREA	All Households	White-alone Households	Black-alone Households	Asian-alone Households	Hispanic Households	White-alone, Not Hispanic Households
HRG 1 (3)-UC	29.7	22.9	35.0	23.9	37.5	20.2
Bridgeport	23.8	19.3	28.9	17.0	31.4	16.7
Hartford	36.1	28.2	38.7	23.7	43.4	23.4
New Haven	29.7	23.8	36.5	29.5	36.1	22.1
HRG 2 (10)-MC	13.2	10.8	22.8	8.6	23.0	9.8
HRG 3 (15)-DS	8.4	7.6	12.3	7.1	14.5	7.6
HRG 4 (27)-WS	3.3	3.3	5.1	2.5	7.6	3.2
HRG 5 (39)-MT	5.7	5.6	10.4	3.9	10.3	5.5
HRG 6 (75)-RT	3.3	3.2	7.0	3.0	5.6	3.2
Connecticut	9.6	7.1	25.5	8.4	26.3	6.5

Source: U.S. Census 2000, SF3: Tables, H044, HCT033A,B,D,H,I.

The patterns in Table 30 suggest that race and ethnicity rates for the indicator "no private vehicle available" vary considerably by kind of community and by race/ethnicity. The rates of black and Hispanic households with no private transportation available are considerably higher and more variable than for other groups in the population.

BIRTHS

Birth rates are important for several reasons. First, fertility is a key process for maintaining population, especially a population of working age. So a low birth rate is of special concern in Connecticut and other states with a declining or flat population base. Second, however, a high birth rate may indicate large family size, which may correlate with lowered women's status and education.

A high birth rate may also indicate small spaces between births, with demonstrable health consequences. As noted by Population Services International (www.psi.org), children born at least three years apart are at significantly lower risk for illness and death in their first year of life and have a better chance of survival beyond their fifth year; and women who practice birth spacing are at lower risk of pregnancy- or childbirth-related death and illness.[39] Finally, the planning of pediatric health care requires knowledge of birth rates and their distribution. Table 31 shows birth rates for women in the state and the HRGs by race and ethnicity.

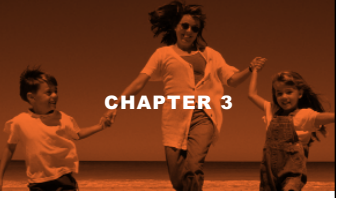


TABLE 31: ANNUALIZED BIRTH RATE PER 1,000 WOMEN 15-49, 1999-2003

RACE/ETHNICITY/ ORIGIN	HRG 1 (UC)	HRG 2 (MC)	HRG 3 (DS)	HRG 4 (WS)	HRG 5 (MT)	HRG 6 (RT)	State
All Races	48.1	44.7	38.4	41.6	34.6	35.9	40.1
White Not Hispanic	31.7	37.2	35.6	39.9	33.6	35.8	35.9
Black Not Hispanic	52.6	46.4	45.4	32.8	36.9	25.0	48.0
Asian Not Hispanic	64.8	78.6	88.2	70.9	83.1	80.9	78.1
Hispanic	60.2	63.6	54.2	46.1	47.9	41.2	58.9
Puerto Rican	59.9	62.3	54.5	52.9			59.7
Non-Puerto Rican Hispanic	61.2	65.2	53.6	42.2			57.8

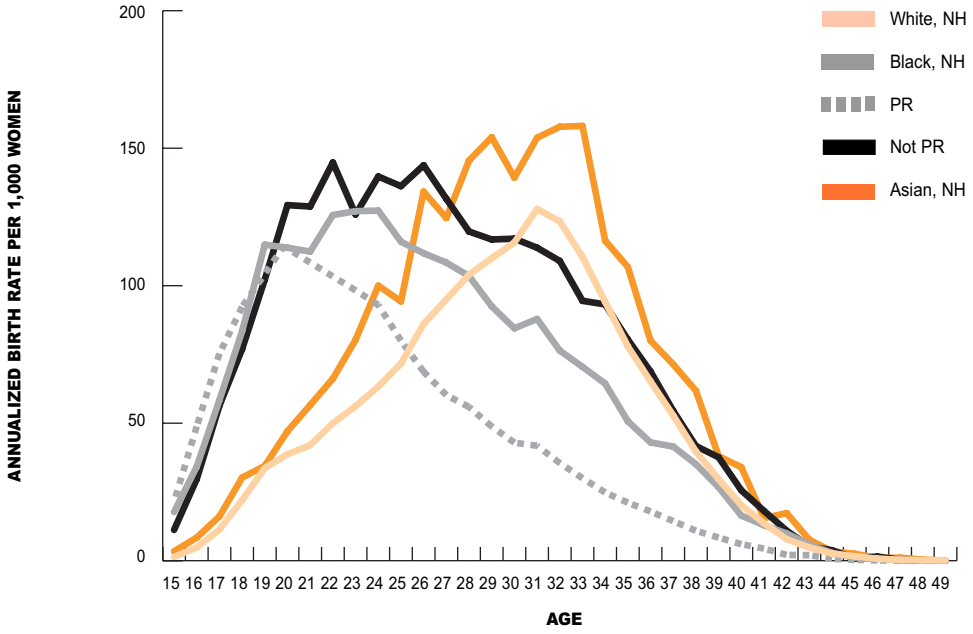
Source: Connecticut Department of Public Health (DPH), Vital Statistics; U.S. Census 2000, SF1: Tables PCTH,I,J,L and SF4: Tables PCT3.

The birth rates for Puerto Rican and non-Puerto Rican Hispanic mothers are similar in the Urban and Manufacturing centers and Diverse Suburbs. They are lower for non-Puerto Rican Hispanics in the Wealthy Suburbs, Mill and Rural towns. Black non-Hispanic birth rates are the lowest of any group in the Wealthy Suburbs and Rural Towns.

We conclude that controlling for HRG of residence, race and ethnicity differences are much smaller for all births than are observed for teen births alone (see Chapter 4, Health Risk and Health-Promoting Behaviors, for detailed data on teen births). The age-specific birth rate differences between race and ethnicity groups are shown in Figure 6. Hispanic and black women have very high birth rates at younger ages. Non-Puerto Rican Hispanic women maintain high birth rates longer than do Puerto Rican and black women. Asian women tend to have low birth rates in the teen years, similar to those of white women, and peak at a higher point than do white women. Asian subgroups appear to have very different birth rate patterns, but the data are currently too scanty and not well enough understood to provide reliable birth rate estimates of, for example, Chinese, Japanese, Vietnamese, and Cambodian women.[g]

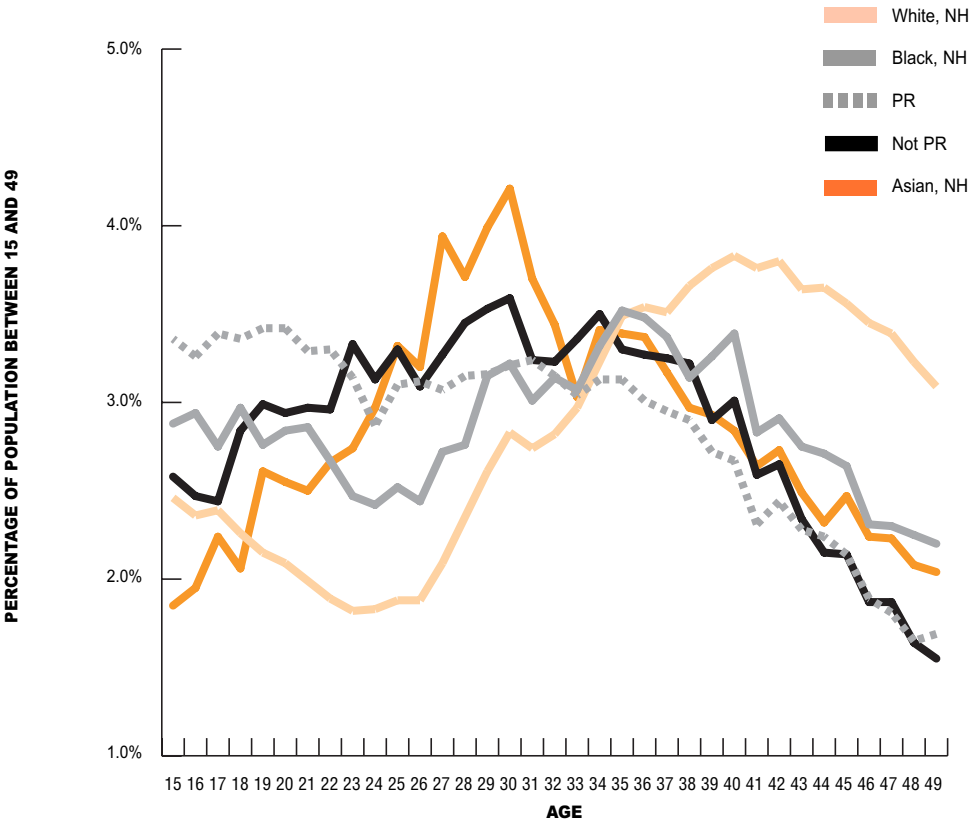
Figure 7 shows marked race and ethnicity differences in the female age distribution in the childbearing years, 15 to 49. White women have many years between generations because of the differences in age-specific birth rates, combined with differences in the age distribution, while the years between generations for black and Puerto Rican Hispanic women are much shorter and are slightly shorter for Asian women.

FIGURE 6: ANNUALIZED BIRTH RATES FOR WOMEN 15-49, 1999-2003

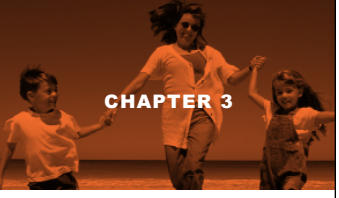


Source: DPH, U.S. Census 2000, SF2: Table PCT 3.

FIGURE 7: AGE DISTRIBUTION FOR WOMEN 15-49, U.S. CENSUS 2000



Source: U.S. Census SF2: Table PCT 3.



Birth Data – By Educational Attainment Level

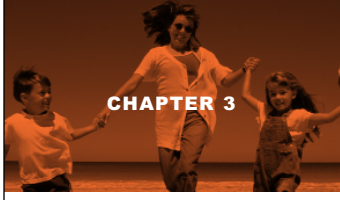
The U.S. Census Bureau provides educational attainment levels for persons 25 and over for a limited selection of communities, and DPH has provided the birth data, by educational level attained and race/ethnicity, for women 25 and over. Table 32 shows an inconsistent pattern of birth rates. Statewide, women ages 25-49 with higher educational levels appear to have a higher birth rate than women in this age range — the range for which educational attainment data are available — with a lower educational level. The discrepancy is particularly marked for white and Asian females outside of the Urban Centers.

The fact that women in some racial/ethnic groups with higher education also have higher birth rates may reflect a postponement of childbearing to complete at least some college and participate in the work force. Non-Puerto Rican Hispanics show such an effect, however, only within the Urban Centers. The educational level effects are minimal for black women. Further clarification of these trends will require additional analyses of racial/ethnic subgroups.

TABLE 32: ANNUALIZED BIRTH RATES PER 1,000 WOMEN 25-49, BY HRG AND RACE/ETHNICITY, 1999-2003

	Urban Centers		Balance of Connecticut		Connecticut	
	High School Graduate or Less	At Least Some College	High School Graduate or Less	At Least Some College	High School Graduate or Less	At Least Some College
White Not Hispanic	42.1	37.9	36.3	53.5	36.6	53.0
Hispanic Puerto Rican	34.4	43.5	39.7	50.5	37.0	48.0
Hispanic Non-Puerto Rican	64.0	82.5	64.2	64.2	64.2	66.6
Black Not Hispanic	45.1	50.1	43.6	47.8	44.4	48.7
Asian Not Hispanic	97.9	74.3	61.1	91.4	66.1	89.4

Source: DPH; U.S. Census 2000 PUMA Tables. Note: Cases where educational level was unknown were omitted from the table. Statewide, 0.8 percent of whites, 1.8 percent of Asians, 3.5 percent of blacks, 3.3 percent of Puerto Ricans, and 3.6 percent of non-Puerto Rican Hispanics omitted educational level. To the extent that there is omission, the birth rates are slightly underestimated.



COMMUNITY ASSETS

Voting Participation

In Bowling Alone: The Collapse and Revival of American Community, Robert Putnam shows the importance of social capital for health and how voting participation is one indicator of social capital correlated with health.[40] Thus, it is of interest to examine the voting participation rates in Connecticut.

TABLE 33: VOTING PARTICIPATION, PRESIDENTIAL ELECTION 2004

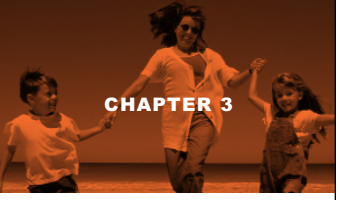
AREA	Registered	Voted	Percentage Voted
HRG 1 (3)-UC	166,999	106,162	63.6
Bridgeport	59,102	37,717	63.8
Hartford	49,803	28,987	58.2
New Haven	58,094	39,458	67.9
HRG 2 (10)-MC	338,620	242,502	71.6
HRG 3 (15)-DS	356,620	276,956	77.7
HRG 4 (27)-WS	329,234	282,891	85.9
HRG 5 (39)-MT	445,687	359,968	80.8
HRG 6 (75)-RT	407,021	339,329	83.4
Connecticut	2,044,181	1,607,808	78.7

Source: Connecticut Secretary of State, File as of Nov. 29, 2004.

As shown in Table 33, there is a large gap among the HRGs in voting participation by registered voters. There is a gap of more than 20 percent between the Wealthy Suburbs and the Urban Centers. Since denominators for these rates do not include unregistered residents, voting rates calculated as a percentage of all of those eligible to register who both register and vote is likely to be far lower than shown here.

Out-of-School Activity Participation

To the extent that youth are involved in adult-sponsored activities — such as Scouts, Jack and Jill Clubs, and youth athletic leagues — they observe a positive model of adult behavior and reap the benefits of learning teamwork as well as physical conditioning. Adult sponsored out-of-school activity participation has been shown to be health-promoting for youth.[41] It is also an indicator of adult willingness to volunteer time and thereby build social capital and invest in the future. Several indicators are available for Connecticut, including youth soccer, Boys and Girls Clubs, Boy Scouts of America, Girl Scouts of America, and Jack and Jill Clubs through their national, state or local offices.



Sports Participation

Membership in volunteer-staffed sports leagues — such as Pop Warner, Little League, youth hockey, and youth soccer — is one indicator of child sports participation. Data from the Connecticut Junior Soccer Association (Table 34) indicate large differences among HRGs in youth soccer participation. Participation increases from the very low rate of the Urban Centers, to a higher rate in Manufacturing Centers, and still higher in the Diverse Suburbs and Mill Towns. Wealthy Suburbs and Rural Towns have the highest rates. As the following sections show, this "shortfall" in the Urban Centers does not seem to be made up by alternative adult-sponsored out-of-school activities.

TABLE 34: YOUTH SOCCER PARTICIPATION, 2005

AREA	Number Participating, 2005	Number in Age Group 5-17, 2000	Participation Rate per 1,000
HRG 1 (3)-UC	1,426	77,424	18.4
HRG 2 (10)-MC	6,534	110,869	58.9
HRG 3 (15)-DS	10,732	98,505	108.9
HRG 4 (27)-WS	17,025	98,302	173.2
HRG 5 (39)-MT	14,509	119,935	121.0
HRG 6 (75)-RT	20,562	113,309	181.5
Connecticut Assignable to Town	70,788	618,344	114.5
Connecticut All Players	82,339	618,344	133.2

Source: Connecticut Junior Soccer Association; U.S. Census 2000, SF1: Table PCT 12.

Boy Scouts

As Table 35 shows, the major differences in Boy Scout participation are between Urban Centers (9.3 percent participation in Cub Scouts) Manufacturing Centers, (12.9 percent participation) and the rest of the HRGs. The Rural Towns have the highest participation rate. Although Wealthy Suburbs have the highest voting participation — an index of social capital — they are slightly lower than Rural Towns in Boy Scout participation, another measure of social capital. This may be due to the effects of recent boycotts, or other cultural differences.[h]

TABLE 35: PERCENTAGE OF BOYS AND YOUTH PARTICIPATING IN SCOUTING, 2004

AREA	Cub Scouts Ages — 7-10	Boy Scouts Ages — 11-17
HRG 1 (3)-UC	9.3	3.5
Bridgeport	13.4	5.2
Hartford	5.8	2.3
New Haven	8.2	2.8
HRG 2 (10)-MC	12.9	3.9
HRG 3 (15)-DS	20.2	6.5
HRG 4 (27)-WS	30.4	10.1
HRG 5 (39)-MT	26.0	7.5
HRG 6 (75)-RT	33.3	11.6
Connecticut	22.6	7.4

Source: Boy Scouts of America National Headquarters; U.S. Census 2000, SF1: Table PCT 12.

Girl Scouts

Girl Scout membership rates (Table 36) illustrate marked differences in both youth and adult volunteer participation. The participation rate for girls is lowest and the ratio of girls to adult volunteers is lowest in the Urban Centers.

This form of after-school activity is unlikely to succeed in the Urban Centers without more adult participation.

TABLE 36: GIRL SCOUT AND ADULT PARTICIPATION, 2005

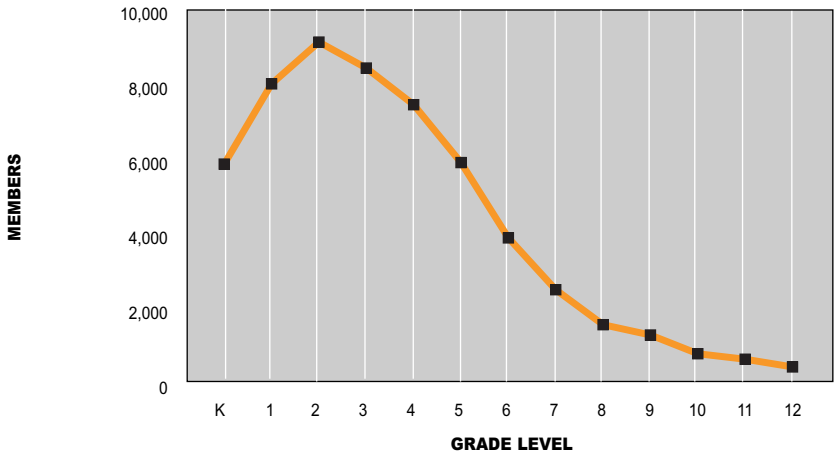
AREA	Total Girl Scouts	Total Adult Volunteers	Percentage of Girls Participating in Girl Scouts – All Age Groups	Ratio of Girl Scouts to Adult Volunteers
HRG 1 (3)-UC	3,650	294	9.7	12.4
HRG 2 (10)-MC	7,522	1,662	13.9	4.5
HRG 3 (15)-DS	8,050	2,370	16.6	3.4
HRG 4 (27)-WS	11,936	6,775	25.0	1.8
HRG 5 (39)-MT	10,713	3,979	18.4	2.7
HRG 6 (75)-RT	13,270	5,739	24.2	2.3
Connecticut	55,141	20,819	18.3	2.6

Source: Membership Department, National Office, Girl Scouts of America; U.S. Census 2000, SF1:PCT 12.

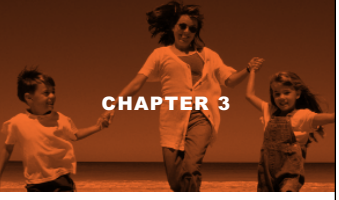
Age-Related Drop in Youth Membership

It is noteworthy that participation falls off dramatically between Cub Scouts (22.6 percent participation statewide) and Boy Scouts (7.4 percent participation statewide), as shown in Table 35. Connecticut girls show the same pattern (Figure 8). The Connecticut results are consistent with national patterns.[42]

FIGURE 8: CONNECTICUT GIRL SCOUT MEMBERSHIP, 2005



Source: Girls Scouts of America, with permission of all Connecticut Girl Scout Councils.



Boys and Girls Clubs and Jack and Jill Clubs

Boys and Girls Clubs mainly serve urban youth, though they actually serve fewer than an estimated one in 10 (8.8 percent) of all youth in the Urban Centers.[43] The Jack and Jill Clubs, an important mothers' volunteer program geared toward black and multiracial children and youth, have an estimated 456 members in Connecticut in chapters in Greater Hartford, New Haven, Bridgeport, and Stamford-Norwalk. Only about half the children reside in the cities; the other half reside in the suburban areas surrounding these cities.[44] Thus, the vast majority of black and Hispanic children and youth in the Urban Centers appear not to be adequately involved in adult-sponsored activities that are not associated with a church. The number involved in church-sponsored organizations is not known.

Adult Sports Participation

Adult sports participation — sometimes known as the "over-the-hill" leagues — improves cardiovascular health and maintains community connections. For example, the United States Adult Soccer Association lists 4,943 members in Connecticut as of October 2006.[45] Rates of non-association soccer participation and other forms of adult sports participation are unknown.

Large Differences in Social Capital

Connecticut communities exhibit significant differences in both demographics and social capital measures. The Wealthy Suburbs are strongest in social capital and the Urban Centers weakest, to the extent that these factors can be measured with publicly available data. The weaknesses of the Urban Centers will affect potential solutions to the health risks and health outcomes discussed in chapters to follow, and suggest needs for additional support.

CHAPTER 4

Health Risk and Health-Promoting Behaviors

CHAPTER 4

HEALTH RISK AND HEALTH-PROMOTING BEHAVIORS

This chapter considers a selection of health risk and health-promoting behaviors in Connecticut. These include:

- School performance, dropout and suspension data
- Child endangerment
- Crime data
- Travel safety
- Youth risk behavior
- Sexually transmitted diseases
- Teen births
- Obesity, diet and exercise
- Drug use and abuse — drinking and smoking

SCHOOL PERFORMANCE

School performance has been shown to correlate with health risk.[46] The Connecticut State Department of Education (SDE) has made available data on student performance on the Connecticut Academic Performance Test (CAPT) (Table 37); on high school graduation (Table 38); and school suspension and expulsion (Table 39). These data may identify groups of students "at risk" and disparities in risk.

TABLE 37: HIGH SCHOOL MATH PERFORMANCE ON CONNECTICUT ACADEMIC PERFORMANCE TEST (CAPT), 2006, BY HOME COMMUNITY HEALTH REFERENCE GROUP

Percentage Scoring Below Basic on CAPT, 2006, by Gender and Race/Ethnicity, For Students with Valid Test Scores Only								
Gender	Race/Ethnicity	HRG 1 (UC)	HRG 2 (MC)	HRG 3 (DS)	HRG 4 (WS)	HRG 5 (MT)	HRG 6 (RT)	State
Female	Asian	5.7	6.6	0.9	1.4	0.8	0.0	2.1
Male		18.9	6.3	3.4	2.1	2.3	2.2	4.1
Female	Black	26.9	24.9	14.6	13.7	17.9	16.7	22.5
Male		30.7	27.5	19.6	19.4	15.9	9.9	25.5
Female	Hispanic	23.0	23.6	15.5	5.4	18.6	7.8	20.5
Male		25.0	23.4	16.4	2.5	13.5	8.0	20.4
Female	White	10.4	8.2	3.9	1.4	4.1	1.9	3.4
Male		13.0	6.4	5.4	1.5	4.8	3.1	4.0
Percentage Without a Valid Test Score*								
Female	Asian	2.8	2.8	3.4	0.7	3.1	0.0	2.1
Male		7.5	3.1	3.3	1.4	2.2	2.1	2.7
Female	Black	10.2	4.3	5.1	3.8	6.4	3.2	6.9
Male		17.9	7.8	10.2	1.5	6.1	6.6	12.1
Female	Hispanic	13.8	8.0	4.6	1.5	2.3	3.8	8.5
Male		20.7	12.2	8.3	3.2	6.1	5.0	13.1
Female	White	5.5	3.4	2.4	1.4	2.0	1.6	2.0
Male		11.5	4.7	3.9	2.1	4.3	2.7	3.5

Source: SDE. Data are from a file supplied by SDE for 44,652 10th-grade students. Data in the table include 44,123 students (99 percent of all students) for whom gender, district and race/ethnicity could be identified and who were white, black, Asian, or Hispanic and who were not English Language Learners who took the math test with less than 10 months in a U.S. school.

**In Math, an invalid score includes: Absent, one or more sessions of Math, Special Modifications, Blank, (no responses and "blank" bubbled by the district administrator) Grade 10 retesters who previously met certification in Math, Medical Exempt and Skills Checklist (Special Education Only). (R. Mooney; SDE; e-mail communication; October 2006). Statewide, most invalid scores are due to absentees.*

The data in Table 37 show that the below basic rates for black and Hispanic students with valid test scores are higher than the parallel below basic rates for white and Asian students. For black and Hispanic students, the highest below basic rates are in the Urban and Manufacturing centers.

Black and Hispanic students in the Urban Centers show significantly higher rates of invalid (e.g., absent, blank and skills checklist) test scores than other groups. Their invalid test rates are lower in all other Health Reference Groups (HRGs). Black and Hispanic male students have invalid tests significantly more than black and Hispanic female students in the Urban and Manufacturing centers.

School Graduation and Dropout Rates

A measure of attachment to school is the high school graduation rate, and conversely, the school dropout rate, shown in Table 38 as calculated by the Connecticut State Department of Education (SDE) based on submissions by each school district. High school graduation rates for each HRG are in declining order: Wealthy Suburbs > Rural Towns > Mill Towns > Diverse Suburbs > Manufacturing Centers > Urban Centers. The Connecticut vocational-technical high school system shows a high graduation rate and a low dropout rate, according to the data reported to the SDE.

TABLE 38 : ACADEMIC HIGH SCHOOL GRADUATION PERCENTAGE AND CUMULATIVE DROPOUT RATE BY HEALTH REFERENCE GROUP

AREA	Graduation Percent, 2005	Cumulative Dropout Rate, Class of 2005
HRG 1 (3)-UC	74.1	16.4
Bridgeport	74.7	18.9
Hartford	72.3	14.3
New Haven	75.0	16.6
HRG 2 (10)-MC	85.8	10.9
HRG 3 (15)-DS	91.1	7.6
HRG 4 (27)-WS	97.5	1.9
HRG 5 (39)-MT	92.0	7.4
HRG 6 (75)-RT	95.3	4.4
Connecticut	90.1	8.3
CT Voc-Tech HS	97.3	1.8

Source: SDE, available at: http://www.csde.state.ct.us/public/cedar/cedar/grads/2005_Grad_Rate_by_Dist.xls and http://www.csde.state.ct.us/public/cedar/cedar/dropout/resources/ cumltve_dropout_rate_district.xls. Average graduation rates are shown for HRGs and Connecticut. Regional school districts assigned to an HRG according to the majority of towns in district. Most regional districts are comprised of Rural Towns. Only districts with both graduation rates, dropout rates and assignable to an HRG are included. Vocational-technical high schools not included in Connecticut total and are listed separately. The table accounts for 99.5 percent of Connecticut high school graduating students. The cumulative dropout rate is a class rate that reflects the proportion of students within a high school class who dropped out of school across four consecutive years. For example, the Class of 2004 Cumulative Dropout Rate = (2000-01 Grade 9 dropouts + 2001-02 Grade 10 dropouts + 2002-03 Grade 11 dropouts + 2003-04 Grade 12 dropouts), Grade 9 enrollment as reported on Oct. 1, 2000.

Suspension and Expulsion Rates

Another measure of school attachment is the suspension/expulsion rate, shown in Table 39, which varies significantly by HRG and by race/ethnicity.

TABLE 39: SUSPENSION AND EXPULSION (ALL TYPES) RATE PER 1,000 HIGH SCHOOL STUDENTS, FOR SCHOOL YEAR 2003-2004

AREA	White	Black	Hispanic	Asian	Total
HRG 1 (3)-UC	52	155	112	85	125
HRG 2 (10)-MC	47	150	119	32	90
HRG 3 (15)-DS	40	122	111	21	59
HRG 4 (27)-WS	30	64	39	28	32
HRG 5 (39)-MT	50	179	118	43	56
HRG 6 (75)-RT	52	113	62	15	53
Connecticut	45	143	110	31	65

Source: Analysis of files provided by the SDE, Summer 2005.

Asian students are least likely to be suspended or expelled, followed by white students, Hispanic students and black students, who are most likely to be suspended/expelled. Black and Hispanic students are least likely to be expelled in the Wealthy Suburbs. Black students are most likely to be suspended or expelled in the Mill Towns, Urban Centers and Manufacturing Centers. Asian students are most likely to be suspended/expelled in the Urban Centers.

The order of suspension/expulsion is Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs, although the rates for the Diverse Suburbs, Mill Towns and Rural Towns are virtually equal.

Three additional conclusions can be drawn from other available statewide suspension/expulsion data for all grades Pre-K – 12: Boys are much more likely to be sanctioned than girls; there are no significant race/ethnicity differences in the severity of sanction as indexed by the percent of students sanctioned who were expelled; and sanctioning rates and disparities in them are minimal in the primary years, maximal in the middle school years and decline again in the late high school years.

Table 40 indicates the relative segregation of schools in the Urban Centers — 89.3 percent of all public school students are black and Hispanic in these cities.

TABLE 40: BLACK AND HISPANIC STUDENTS AS A PERCENTAGE OF ALL STUDENTS, 2004

HRG 1 (UC)	HRG 2 (MC)	HRG 3 (DS)	HRG 4 (MT)	HRG 5 (MT)	HRG 6 (RT)
89.3	50.7	26.9	4.4	6.6	3.7

Source: SDE, CAPT Eligible Student File.

Summary of School-Based Indicators

To the extent that the bond between students and schools can be measured by the indicators of CAPT test-taking (valid scores), CAPT passing, suspension/expulsion, and graduation rates, there are significant disparities by race and ethnicity and by gender. These disparities are accentuated in communities characterized by a high density of black and Hispanic students in the schools, as shown in the Urban Centers, and to a lesser degree in the Manufacturing Centers.

To put it another way, the communities with the fewest black and Hispanic students — the Wealthy Suburbs and the Rural Towns — are the most "protective" of them in the sense of helping to maintain a positive school-student bond and fostering school achievement. The Mill Towns are somewhat anomalous since they have a relatively low number of black students in school yet have a high suspension/expulsion rate for black students.

CHILD ENDANGERMENT

Reports to the Connecticut Department of Children and Families

The frequency of child endangerment reported to and substantiated by the Connecticut Department of Children and Families (DCF) in various regions and the state overall is another indicator of the threats to Connecticut's children. The DCF considers an individual to be a "child" if s/he is under 18, or under 21 and a client of the DCF. It classifies "accepted reports" of child endangerment as those reports made to the child abuse/neglect hotline that contain "allegations that meet the operational definition of abuse and/or neglect."[47] "Substantiated reports" are the accepted reports in which an investigation "resulted in a finding of reasonable cause to believe that neglect and/or abuse has occurred."[48]

DCF's Child Protective Services Division is responsible for investigating all reports of alleged child maltreatment throughout the state and arranging follow-up services as necessary. In a 2004 needs assessment analysis, DCF reported 3,796 open investigations and 14,431 ongoing services cases within Child Protective Services, for a total of 18,227 cases.[49]

Table 41 shows the rates of accepted and substantiated cases for fiscal years 2001-2005 combined. Child abuse rates are, in decreasing order: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs.

TABLE 41: ACCEPTED AND SUBSTANTIATED CHILD ABUSE CASES, ANNUAL AVERAGE, FISCAL YEARS 2001-2005

AREA	Accepted Cases	Population 0-17	Accepted Cases Rate per 1,000	Substantiated	Substantiated Cases Rate per 1,000	Substantiation Percentage
HRG 1 (3)-UC	7,348	107,686	68.2	2118	19.7	28.8
Bridgeport	2,312	39,672	58.3	680	17.1	29.4
Hartford	2,897	36,568	79.2	676	18.5	23.3
New Haven	2,139	31,446	68.0	762	24.2	35.6
HRG 2 (10)-MC	8,314	156,315	53.2	2477	15.8	29.8
HRG 3 (15)-DS	5,913	134,837	43.8	1550	11.5	26.2
HRG 4 (27)-WS	1,304	133,604	9.8	326	2.4	25.0
HRG 5 (39)-MT	5,103	159,571	32.0	1253	7.9	24.6
HRG 6 (75)-RT	2,964	149,675	19.8	725	4.8	24.5
Connecticut	30,945	841,688	36.8	8450	10.0	27.3

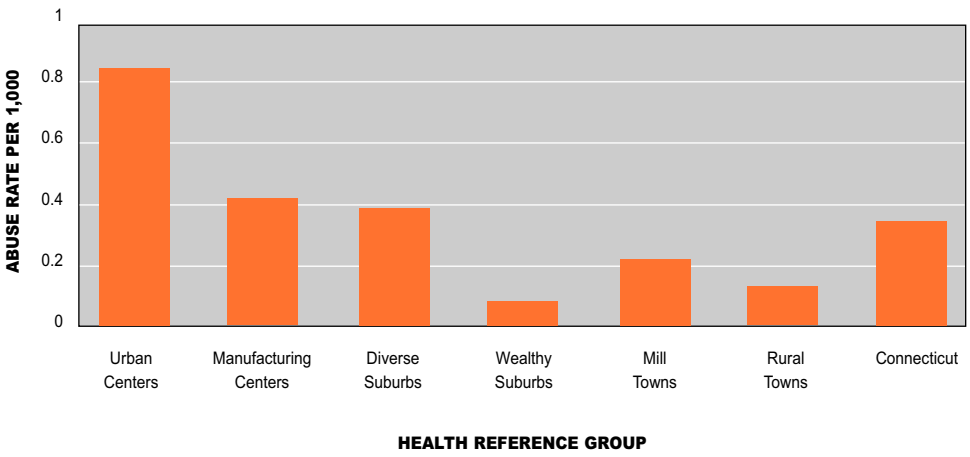
Source: DCF; U.S. Census 2000, SF1: Table PCT 12.

Abuse Rates Using an Emergency Department Visit Indicator

The author examined child and adult abuse rates by HRG, using 2002-2003 Connecticut Emergency Department (ED) data from the Connecticut Health Information Management and Exchange (CHIME) system. The full report is included as Appendix F. Abuse was identified using ICD-9-CM, E967 code, "perpetrator of child and adult abuse."

Adjusted for age and gender differences, the ED visit rate for abuse was highest in the Urban Centers and lowest in the Wealthy Suburbs (0.85 per 1,000 vs. 0.09 per 1,000: a ratio of 9.7 to 1) as illustrated in Figure 9. The highest rate among children was found for 10- to 14-year-old females in the Urban Centers (1.75 per 1,000) — a rate 16 times that for females the same age in the Wealthy Suburbs, as shown in Table 42.

FIGURE 9: CHILD AND ADULT ABUSE: ANNUAL RATES OF EMERGENCY DEPARTMENT VISITS PER 1,000, ADJUSTED FOR AGE AND GENDER



Source: CHIME Database, Connecticut Hospital Association (CHA); U.S. Census 2000, SF1: Table P1.

Many more cases are reported to DCF than those that appear in and are coded in emergency departments. But the HRG patterns are similar. It also appears that female children are at greater risk for abuse than male children. Clearly, children need better protection, especially those in the Urban Centers, Manufacturing Centers, Diverse Suburbs, and Mill Towns, as shown in Table 42.

TABLE 42: INDICES OF ABUSE FOR CHILDREN AND ADULTS

AREA	DCF Accepted Cases per 1,000 Children 0-17	Emergency Department "Abuse" Visits (ICD-9-CM Code E967) per 1,000		Emergency Department "Abuse" Visits for All Ages, Age-Adjusted Rate per 1,000
		Male, 10-14	Female 10-14	
Urban Centers	68.2	1.16	1.75	.85
Manufacturing Centers	53.2	0.36	0.65	.42
Diverse Suburbs	43.8	0.26	0.34	.39
Wealthy Suburbs	9.8	0.08	0.24	.09
Mill Towns	32.0	0.06	0.11	.22
Rural Towns	19.8	0.05	0.05	.13

Source: CHIME Database, CHA; U.S. Census 2000, SF1: Table PCT 12.
Data Note: The differences among the HRGs could be due to underreporting in the Wealthy Suburbs and Rural Towns. This seems an insufficient explanation for the observed differences in that: several data sources yield similar differences; the patterning of gender differences could not be explained in this way; and the reporting bias would need to be very extreme to account for the level of the differences observed.

CRIME RATES

Crime is a significant health risk in several ways. First, it is directly implicated in injury and fatality. Secondly, a high incidence of even low-level crime may send a message about anti-social behavior as suggested by Wilson, Kelling, and Coles' "broken windows" theory.[50] Crime will escalate in a community if low-level crime — broken windows or other forms of vandalism — is seen as being accepted in the community or impossible to deter.

There may also be community disinvestment as capital "flees," leading to further social disorder and increases in health-demoting behavior. Research has shown the connections of "broken windows" to health outcomes such as elevated sexually transmitted disease (STD) rates even after controlling statistically for poverty and race.[51]

Crime in Connecticut varies substantially by HRG, as shown in Table 43.

TABLE 43: ANNUALIZED CRIME REPORT RATE PER 1,000 RESIDENTS, 2002-2003

AREA	Population	Crimes Reported per 1,000 Residents
HRG 1 (3)-UC	384,733	76.1
Bridgeport	139,529	58.5
Hartford	121,578	92.6
New Haven	123,626	79.8
HRG 2 (10)-MC	662,398	39.5
HRG 3 (15)-DS	587,509	29.5
HRG 4 (27)-WS	487,620	13.0
HRG 5 (39)-MT	698,458	22.7
HRG 6 (75)-RT	584,847	12.1
Connecticut	3,405,565	30.0

Source: Crimes Analysis Unit, Connecticut State Police; U.S. Census 2000, SF1: Table P1. For some towns (e.g., New Haven) there may be several police organizations providing data, including New Haven police, Yale University police and Southern Connecticut State University police.

As with many other indicators, crime rates vary in decreasing order as follows: Urban Centers > Manufacturing Towns > Diverse Suburbs > Mill Towns. The Wealthy Suburbs and Rural Towns are lowest in overall crime rate. The HRG variation may be partly due to differences in age distribution, but this was not provable from the current data. Age-specific crime rate data are not available without considerable labor on the part of the Connecticut State Police unit responsible for the data, to bring together several databases.[52] Differences in age distribution cannot account for the vast disparity in crimes reported. The rate ratio of Urban Centers to Rural Towns is 76.1:12.1 = 6.3:1.

Related data are available on incarceration rates. According to analysis of U.S. Census 2000 data, there were 199 (white), 2,991 (black) and 1,669 (Hispanic) inmates per 100,000 residents, overall. The overall ratio of black to white confinement was 15.0:1 for Connecticut — ranking the state third in the nation — but just 6.6:1 for the United States as a whole. For Hispanic residents, the ratio was 8.4:1 for Connecticut but 2.4:1 for the United States as a whole.

For youth under 18 there were 56 (white), 334 (black) and 208 (Hispanic) residents confined per 100,000 residents. The overall ratio of black to white youth confinement was 6.0:1 for Connecticut — ranking the state eighth in the nation — but just 3.3:1 for the United States as a whole. For Hispanic youth, the ratio was 1.2:1 for Connecticut, but 1.5:1 for the U.S. as a whole.[53]

TRAVEL SAFETY

Several aspects of travel safety were examined for the *Data Scan*, including the use of seat belts, bicycle helmets, ED visits for bicycle injury, and the incidence of auto crashes with injury. These indicators show significant variation by HRG and race/ethnicity.

Seat Belt Use

Asian respondents have the highest overall rate of always or almost always wearing seat belts, as shown in Table 44. Their rates are significantly higher, being 10.2 percent above those of black respondents, 6.1 percent above those of white respondents and 6.6 percent higher than those of Hispanic respondents.

TABLE 44: SELF-REPORTED PERCENTAGE USING SEAT BELTS (ALWAYS OR ALMOST ALWAYS)

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	87.9	87.8	91.3	89.1	82.0	
Hartford	86.0	87.5	85.3	84.4	88.9	
New Haven	86.7	86.3	87.9	75.8	88.4	
HRG 1 (3)-UC	86.9	87.0	88.3	83.8	86.7	
HRG 2 (10)-MC	88.9	89.0	87.8	84.4	90.5	94.9
HRG 3 (15)-DS	89.1	89.0	89.0			
HRG 4 (27)-WS	92.6	92.1	92.2			
HRG 5 (39)-MT	87.3	86.8	86.7	81.3	88.1	96.1
HRG 6 (75)-RT	90.7	90.4	90.5			
Connecticut	89.3	89.1	89.2	85.1	88.7	95.3

Source: Behavioral Risk Factor Surveillance System (BRFSS) Survey Data; DPH 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

The data for the adult population are reasonably consistent for all groups — except black New Haven residents, of whom the sample size is small — falling within plus or minus eight points of the overall Connecticut average of 89.1 percent.

TABLE 45: USED A SEAT BELT NEVER OR RARELY, HIGH SCHOOL STUDENTS, 2005

GROUP	Total	Black	Hispanic	White
Total	11.4	18.0	15.1	9.1
Male	15.0	19.5	20.3	12.9
Female	7.5	16.6	10.9	4.9

Source: DPH, Planning Branch. Connecticut High School Survey, 2005. Available at: http://www.dph.state.ct.us/PB/HISR/CSHS.htm. Accessed Feb. 7, 2007.
Note: Percentages based on self-report of students who "never or rarely wore a seat belt when riding in a car driven by someone else." Students listed as "all other races" and "multiple races" are not included.

The youth data in Table 45 show some statistically significant differences in seat belt use rate between white students (9.1 percent never or rarely use) and black (18.0 percent rarely or never use) or Hispanic students (15.1 percent rarely or never use). There is also a statistically significant difference between Hispanic female and male use rates and white female and male use rates, but not between black female and male use rates. The data are reasonably consistent with the survey results presented below on bike helmet use.

Bike Helmet Use

Bike helmet use is another indicator of youth risk. Use of a helmet may indicate greater self-care or a greater degree of health-promoting parental supervision or differences in peer group norms.

TABLE 46: ADULT REPORT OF BICYCLE HELMET USE FOR CHILDREN AGES 5-16 WHO RIDE BICYCLES

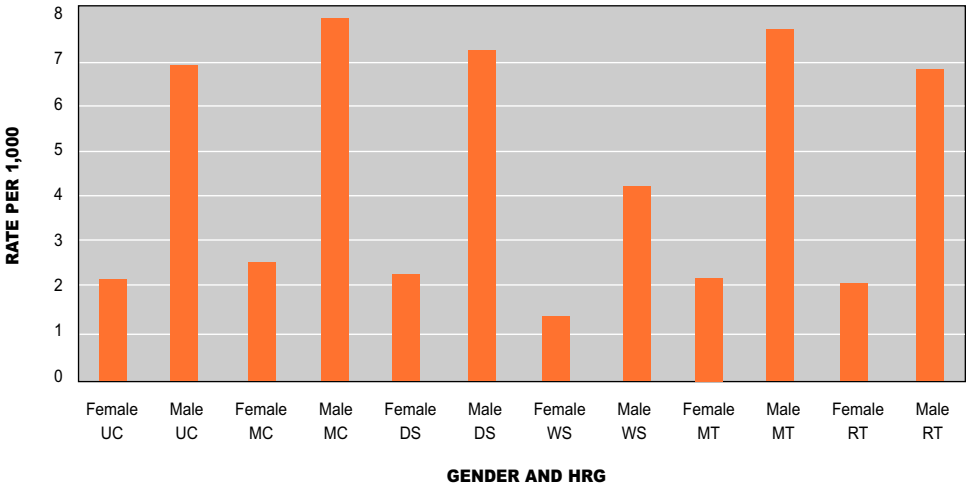
AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	53.7	44.5	70.9	44.3	42.0	
Bridgeport	66.9	64.8				
Hartford	45.4	46.2				
New Haven	49.0	43.4				
HRG 2 (10)-MC	66.3	60.9	69.6	59.3	48.3	
HRG 3 (15)-DS	73.9	66.3	76.8			
HRG 4 (27)-WS	86.8	77.1	76.7			
HRG 5 (39)-MT	76.2	77.0	74.9			
HRG 6 (75)-RT	82.4	83.4	84.2			
Connecticut	74.7	70.5	76.0	55.2	60.2	75.9

Source: BRFSS Survey Data; DPH 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

The results for bike helmet use reported by parents suggest relatively large and statistically significant differences in use rates by HRG and by race and ethnicity. Among children who ride bikes, black and Hispanic children show significantly lower use of bicycle helmets.

There are also bicyclist injury data for children and youth ages 5 to 19 developed from data in the CHIME emergency department database and shown in Figure 10. These data indicate highly significant gender differences for each HRG. They also indicate a significantly lower rate of ED visits for bicyclist injuries in the Wealthy Suburbs than for any other HRG. There are no significant differences among the other HRGs. These differences may be due to differences in helmet use, the "riskiness" of bicycle use, the overall level of bicycle use, and road conditions or other conditions of use.

FIGURE 10: ANNUALIZED EMERGENCY VISIT RATES FOR 5- TO 19-YEAR-OLD CYCLIST INJURIES NOT INVOLVING AUTOMOBILES 2002-2003, BY HEALTH REFERENCE GROUP



Source: CHIME Database, CHA; U.S. Census 2000, SF1: Table P12.

Car Crashes

Car crashes with injury can result from a number of factors, including road conditions and congestion; weather conditions; driving behavior; crash protection access and use, such as air bags and restraint devices; and insurance fraud. The Connecticut Department of Transportation (DOT) maintains a database of all crashes, but there is incomplete reporting of cases not involving injury. The following analyses are therefore, based solely on crashes involving injury. Table 47 shows annualized average results for 2003-2004.

TABLE 47: CRASHES INVOLVING FATALITY OR INJURY BY CRASH LOCATION, RATE PER 1,000 POPULATION, ANNUAL AVERAGES 2003-2004

AREA	Total Population	Average Total Crashes With Injury	Total Crash Rate per 1,000	Interstate Crash Rate per 1,000	U.S. Route Crash Rate per 1,000	State Road Crash Rate per 1,000	Local Road Crash Rate per 1,000
HRG 1 (3)-UC	384,733	5,530	14.4	2.2	1.3	2.8	8.2
HRG 2 (10)-MC	662,398	6,976	10.5	1.4	1.3	3.0	4.9
HRG 3 (15)-DS	587,509	5,056	8.6	0.7	0.7	4.1	3.1
HRG 4 (27)-WS	487,620	3,596	7.4	1.2	1.3	2.9	1.9
HRG 5 (39)-MT	698,458	5,720	8.2	1.0	1.1	4.0	2.1
HRG 6 (75)-RT	584,847	4,307	7.4	0.6	1.1	4.1	1.6
Connecticut	3,405,565	31,182	9.2	1.1	1.1	3.5	3.4

Source: DOT Accident Records Section; U.S. Census 2000, Table P1.

The data in Table 47 show that auto crash rates are significantly higher in the Urban Centers than in the other HRGs and that this difference is produced mainly by the difference in crash rates on local roads. This occurs despite that fact that Urban Center residents have far fewer vehicles per population than any other HRG and spend far less time commuting to work on nonpublic transportation (e.g., cars, vans and trucks) than residents of any other HRG. A caution in the interpretation of these crash injury statistics is that the DOT classifies crashes by the location of the crash, and the residential location of the driver is not available in electronic format.[54] This means that nonresidents of the Urban Centers, for example, may contribute to the crash rate in the Urban Centers because of a crash on an interstate highway in Hartford and that, conversely, residents of the Urban Centers may contribute to crashes in other HRGs. Whether these competing factors cancel out is unknown. The fact that the highest crash counts are on state or local roads and that national data indicates that "three out of four crashes causing death occur within 25 miles of home"[55] suggests that many accidents causing injuries are close to home and in the city or town of residence. But a statistical connection between crash site and residence cannot be absolutely demonstrated in the available data. "Miles-driven," a better denominator for crash rates than population, is also not available. Studies should be done to analyze the residential location and other characteristics of the drivers involved in injury-related crashes to ascertain whether there are significant differences among drivers residing in the various HRGs. This might lead to targeted driving safety campaigns.

Age is related to the frequency of being a driver in a car crash involving injuries or fatalities. Rates rise from the early teen years through the late teens and early 20s. For each of the years 18-22, annualized rates based on 2003-2004 are 40 per 1,000 or higher (18 = 40; 19 = 44; 20 = 42; 21 = 41; 22 = 40). Rates decline rapidly in the late 20s and are relatively low through age 95 when they begin to climb again (95 = 9; 96 = 19; 97 = 27; 98 = 29; 99 = 42; 100-104 = 75).[56] These results are consistent with a recommendation of greater attention to driving behavior and "progressive licensing" in the younger age group, and the possibility of relicensing requirements for the oldest old drivers.

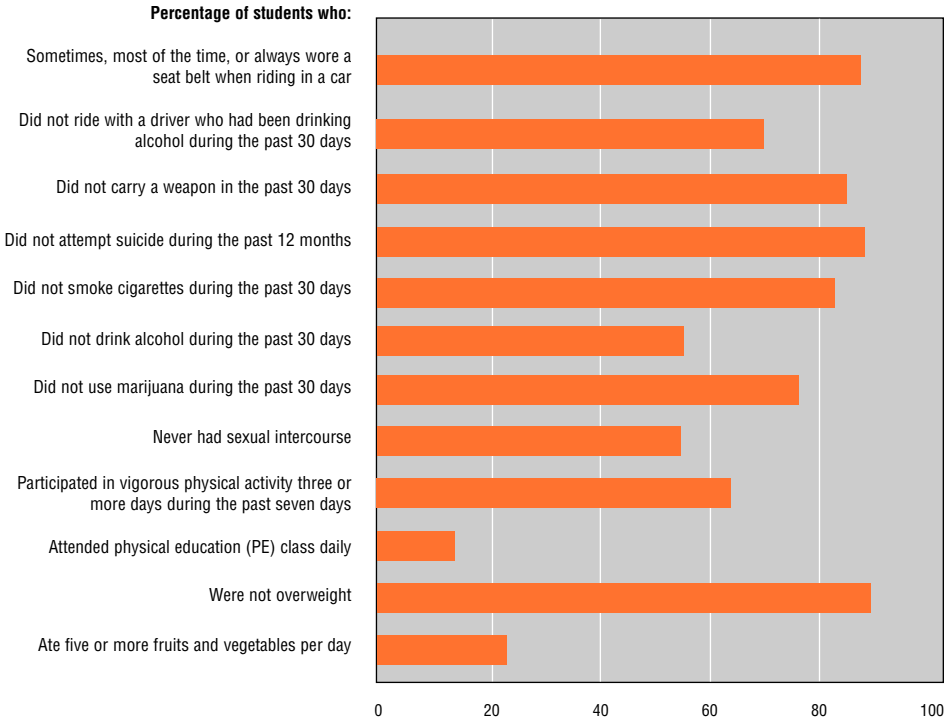
Age is also related to nonuse of seat belts among drivers in injury-present crashes. In the age group 15-24, 7.3 percent are classified as unbelted. The rate declines gradually with age to 5.5 percent for those age 40 and over.

Seat belt use varies somewhat by HRG crash site among drivers in crashes involving injury in 2003-2004. The Urban Centers (7.1 percent), Mill Towns (7.4 percent) and Rural Towns (7.5 percent) have nonuse rates significantly higher than the Manufacturing Centers (5.9 percent), Diverse Suburbs (5.5 percent) and Wealthy Suburbs (4.8 percent). To the extent that crash site and residence location are correlated, this may imply lower seat belt use rates for residents in the former three types of communities. This hypothesis can be checked only upon the possible future availability of the residential information in the DOT crash data.

YOUTH RISK BEHAVIOR SURVEY

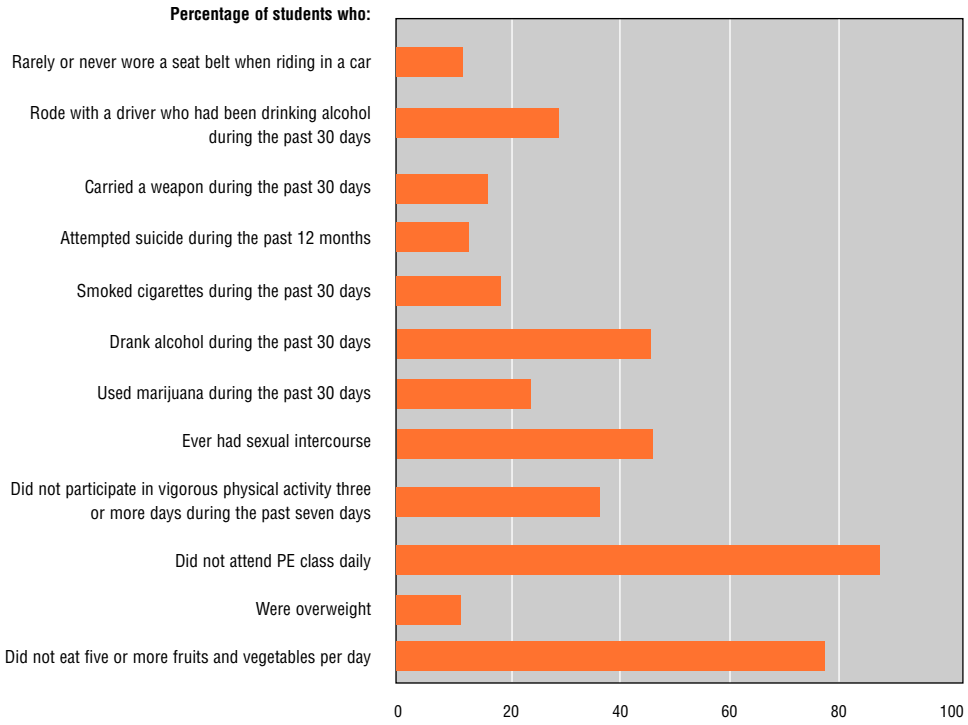
Every odd year, DPH conducts a "Youth Risk Behavior Survey" (YRBS) based on items constructed by the Centers for Disease Control and Prevention (CDC) in cooperation with the states. The survey, called the Connecticut High School Survey, is distributed to a limited number of schools on a sampling basis. Results are shown in Figures 11 and 12.

FIGURE 11: CONNECTICUT HIGH SCHOOL SURVEY, POSITIVE (HEALTH-PROMOTING) BEHAVIOR PERCENTAGES, 2005



Reproduced from DPH Connecticut High School Survey. Available at: http://www.dph.state.ct.us/PB/HISR/2005CT_Summary_Graphs.pdf. Accessed Feb. 3, 2007.

FIGURE 12: CONNECTICUT HIGH SCHOOL SURVEY, HEALTH RISK BEHAVIOR PERCENTAGES



Reproduced from DPH Connecticut High School Survey. Available at: http://www.dph.state.ct.us/PB/HISR/2005CT_Summary_Graphs.pdf. Accessed Feb. 3, 2007.

SEXUALLY TRANSMITTED DISEASES

Sexually transmitted diseases (STDs) are a good indicator of sexual risk-taking behavior (e.g., unprotected sex, having multiple sexual partners) in that they are reportable diseases and are eventually symptomatic. But sexual risk taking may have far different consequences in different contexts. Risk-taking behavior manifests itself in disease only in the context of a high incidence "pool" of disease. Thus, sexual risk taking in the Wealthy Suburbs is not as likely to manifest as disease as in the Urban Centers.

A possible reason for the STD rate differences demonstrated in Table 48 is differential reporting. This might occur if the large clinics in the Urban Centers report all cases while private physicians in the Wealthy Suburbs, for example, do not. Differential reporting would lead to differential rates and not recognize the underlying equality of disease rates. Although there are no data with which to test such a claim, it seems unlikely that this differential reporting could explain the observed rate differences. First, while persons from other communities may use the clinics in the Urban Centers, their cases are referred back to their towns of residence for rate calculation purposes. Reports also come in from STD testing labs as well as private physicians, meaning that unless the patient is treated without testing, and the physician does not report, a case will eventually be reported to DPH.

There would have to be a huge reporting differential to account for the large differences observed in Table 48, and for the race and ethnicity disparities noted within the HRGs. For example, such reporting differences could not account for the Asian/black difference in STD rates within the Urban Centers as shown in Table 49. Finally, these results are comparable to results in other states and nationally.[57]

TABLE 48: ANNUALIZED CRUDE CASE RATE OF SEXUALLY TRANSMITTED DISEASES PER 1,000 RESIDENTS, 2000-2004 AND CASES, 2005

AREA	Population	Annual Average Count, 2000-2004 and Count, 2005	Annual Average Rate per 1,000, 2000-2004	Percentage of Cases, 2000-2004
HRG 1 (3)-UC	384,733	4,970 (5,653)	21.5	42.2%
Bridgeport	139,529	1,437 (1,728)	17.2	12.2%
Hartford	121,578	2,147 (2,145)	29.4	18.2%
New Haven	123,626	1,387 (1,780)	18.7	11.8%
HRG 2 (10)-MC	662,398	3,016 (3,492)	7.6	25.6%
HRG 3 (15)-DS	587,509	1,617 (2,051)	4.6	13.7%
HRG 4 (27)-WS	487,620	235 (318)	0.8	2.0%
HRG 5 (39)-MT	698,458	697 (1,001)	1.7	5.9%
HRG 6 (75)-RT	584,847	378 (568)	1.1	3.2%
Unknown Residence		870 (761)		7.4%
Connecticut	3,405,565	11,782 (13,846)	5.8	100.0%

Source: DPH; U.S. Census 2000, SF1: Table P1.
Data note: These data are incident cases. Over the five-year period tabulated, a single individual may have many more than one case of an STD. Thus, the data should not be interpreted as the probability that a single individual will be infected.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Table 49 shows all cases for which race, ethnicity, HRG, and age could be ascertained in the age range 15 to 34.

TABLE 49: ANNUALIZED SEXUALLY TRANSMITTED DISEASE CASE RATE PER 1,000 FOR PERSONS 15 TO 34 YEARS OLD, 2000-2004

AREA	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	6.3	53.5	22.7	2.7
HRG 2 (10)-MC	3.3	29.7	11.1	1.6
HRG 3 (15)-DS	2.5	26.1	10.0	1.8
HRG 4 (27)-WS	0.6	9.0	3.7	0.4
HRG 5 (39)-MT	1.3	11.4	4.4	1.2
HRG 6 (75)-RT	1.0	6.9	3.3	2.1
Connecticut	2.2	39.3	15.1	1.9

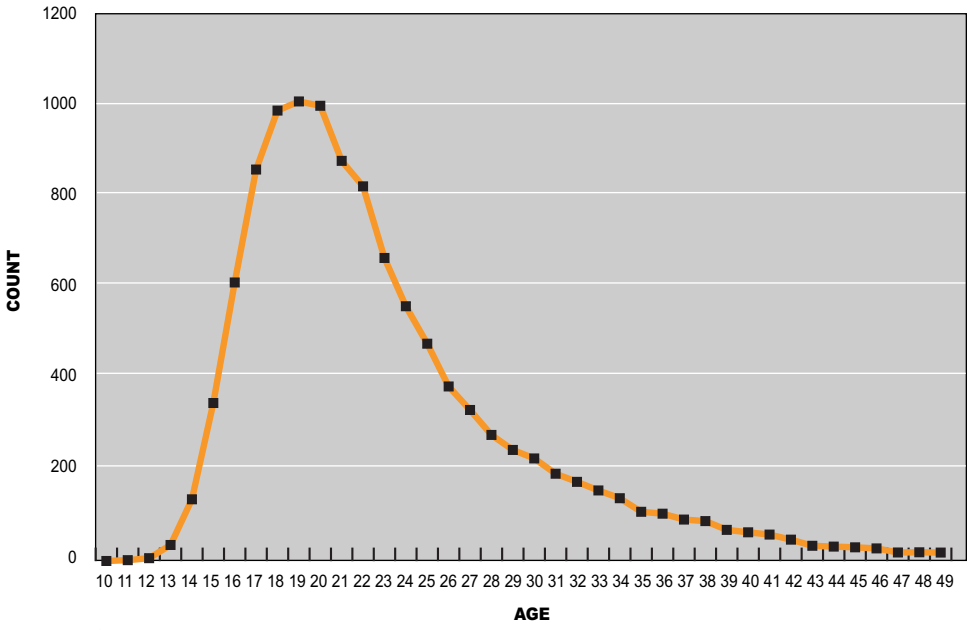
Source: DPH; U.S. Census 2000.

These results demonstrate significant effects for both race/ethnicity and for HRGs. Whites, blacks and Hispanics residing in the Urban Centers have double the STD rates as in the Manufacturing Centers. The Manufacturing Centers' and Diverse Suburbs' rates are similar, and higher than rates in Wealthy Suburbs, Mill Towns and Rural Towns. Asians have the lowest STD rate, except in the Rural Towns, but the base numbers here are very small, and the difference is of doubtful significance. Blacks consistently have a higher STD rate than Hispanics, whites or Asians, and an extremely high rate in the Urban Centers.

Recent data for 2005 indicate a modest increase from the average number of cases in 2000-2004. The increase appears in all HRGs and may not be accounted for by a reduction in the number of cases with unknown residence.

Residents between ages 15 and 34 account for 90.4 percent of all STD cases for which age could be ascertained. The modal age of incidence is 20 years old, as illustrated in Figure 13.

FIGURE 13: AVERAGE ANNUAL SEXUALLY TRANSMITTED DISEASE COUNTS, BY AGE, FOR PERSONS 10 TO 49 YEARS OLD, 2000-2004



Source: DPH.

HIV/AIDS

HIV/AIDS is an indicator related to STDs in some modes of transmission. Table 50 shows the number of adult AIDS cases, by gender and mode of transmission for 2006. These results indicate that men who have sex with men (MSM) predominate among white males. But for black and Hispanic males, the dominant mode of transmission is intravenous drug use (IDU). The mode of transmission for women also differs by race and ethnicity, as shown in Table 50.

The overall counts of AIDS cases declined for both men and women in 1998. For both groups AIDS counts have remained relatively constant since that time, at about 400 cases per year for adult men and about 200 cases per year for adult women, with some year-to-year variation for both genders. AIDS death rates have dropped markedly over the past decade, due in part to improved therapies. In 2006, approximately 50 percent of all AIDS cases were incident in the Urban Centers. An additional 25 percent of all AIDS cases were incident in the Manufacturing Centers.

TABLE 50: ADULT AIDS CASES IN CONNECTICUT, 2006

MODE OF TRANSMISSION	Race/Ethnicity	Adult Male	Adult Female
MSM	White	47	
	Black	16	
	Hispanic	27	
	Other	2	
IDU	White	31	19
	Black	28	12
	Hispanic	58	26
	Other	4	
MSM/IDU	White	2	
	Black	2	
	Hispanic	2	
	Other		
HETEROSEXUAL	White	3	16
	Black	12	23
	Hispanic	12	28
	Other	2	2
OTHER / UNKNOWN	White	23	10
	Black	27	19
	Hispanic	39	31
	Other	5	6

Data and Reference Note: HIV/AIDS data are continually updated, as case counts are de-duplicated, and as other new information, e.g., regarding transmission mode, becomes available, and data are reported from other states. Therefore, the counts reported here may be slightly different than those accessed from the DPH HIV/AIDS web site at another point in time. Access current data and historical series at: http://www.dph.state.ct.us/BCH/infectiousdise/2003/final%20pages/topic_index_X.htm.

TEEN BIRTHS

Teen childbearing is a serious problem with profound health, social and economic consequences. Infants of adolescent mothers are more likely to face adverse health outcomes, including low birth weight, preterm birth and infant mortality. Teen mothers are more likely to be unmarried, high school dropouts and living in poverty. Their children also are more likely to live in poverty years after birth.[58]

Table 51 illustrates that Connecticut's teen birth rate has fallen significantly between 1991 and 2002, as it has for the United States and all New England states.

TABLE 51: HISTORICAL CHANGE IN TEEN BIRTH RATE PER 1,000 TEENS AGES 15-19, 1991 TO 2002

STATE	1991	2002
CONNECTICUT	40.1	25.8
MASSACHUSETTS	37.5	23.3
RHODE ISLAND	44.7	35.6
MAINE	43.5	25.4
NEW HAMPSHIRE	33.1	20.0
VERMONT	39.2	24.2
UNITED STATES	61.8	42.9

Source: National Campaign to Prevent Teen Pregnancy, from data at CDC, National Center for Health Statistics. Web-based data accessed at: www.teenpregnancy.org, Sept. 16, 2005.

TABLE 52: ANNUALIZED TEEN (15-19) BIRTH RATE PER 1,000, BY RACE/ETHNICITY, 1999 TO 2003

RACE/ETHNICITY/ORIGIN	Teen Births	Teen Population	Rate per 1,000 Teens
All Races	12,644	105,336	24.0
White Not Hispanic	4,288	73,851	11.6
Black Not Hispanic	2,992	11,872	50.4
Asian Not Hispanic	269	2,731	19.7
Hispanic	4,969	13,918	71.4
Puerto Rican	3,946	9,303	84.8
Non-Puerto Rican Hispanic	1,023	4,615	44.3

Source: DPH; U.S. Census 2000.
Note: A small number (344) of births at ages younger than 15 were excluded from this table. Over half, 180 of these, were born to black non-Hispanic (79) and Puerto Rican Hispanic (101) teens. A small number of unknowns were also excluded from the table.

There are clear disparities in teen birth rates in Connecticut. Analysis of the rates shown in Table 52 illustrates the dangers in the broad brush approach. While Hispanic teens have the highest birth rates, the aggregation of all Hispanics together obscures important variation. The non-Puerto Rican Hispanic teen rate (44.3 per 1,000) is only slightly more than half the Puerto Rican teen rate (84.8 per 1,000). Very young teens giving birth, under age 15, are overwhelmingly black and Puerto Rican girls. Thus, teen pregnancy prevention programs could prioritize the key populations at risk: Puerto Rican Hispanic teens, followed by black and non-Puerto Rican Hispanic teens.

There are very large HRG differences in teen births, even after controlling for race and ethnicity, as shown in Table 53. For each group, teen birth rates in the Urban and Manufacturing centers are higher than for the remaining HRGs. The Wealthy Suburbs show the lowest rate for each group, except for black non-Hispanic teens whose rates are lowest in the Rural Towns. Teen birth rates by HRG are, in decreasing order: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs.

TABLE 53: TEEN (15-19) ANNUALIZED BIRTH RATE PER 1,000, BY RACE AND ETHNICITY, CONNECTICUT AND HRG, 1999-2003

RACE/ETHNICITY/ ORIGIN	HRG 1 (3)-UC	HRG 2 (10)-MC	HRG 3 (15)-DS	HRG 4 (27)-WS	HRG 5 (39)-MT	HRG 6 (75)-RT	State
All Races	57.3	39.9	22.2	2.9	13.0	7.3	24.0
White Not Hispanic	19.8	20.4	16.2	2.3	12.3	6.9	11.6
Black Not Hispanic	61.7	45.9	41.4	11.0	24.8	9.5	50.4
Asian Not Hispanic	31.0	32.0	27.4	5.2	8.5	7.1	19.7
Hispanic	83.5	79.7	52.3	14.6	30.4	19.0	71.4
Puerto Rican	90.8	95.5	63.1	29.3*			84.8
Non-Puerto Rican	55.9	53.8	32.1	18.8*			44.3

Source: DPH; U.S. Census 2000, SF4: Table PCT5.

**Separate HRG estimates for Puerto Rican and non-Puerto Rican Hispanic populations for HRGs 4-6 are not available due to the suppression rules of the U.S. Census Bureau. Many cities and towns in these HRGs had no denominator data for calculating rates due to small total numbers (e.g., fewer than 100) of Puerto Rican residents.*

In summary, the disparities for teens are very large — in contrast to the data for women age 25 to 49 presented in Chapter 3, Connecticut Community Profile, showing only small "broad" race and ethnicity birth rate differences. Puerto Rican teens are especially at risk for teen birth in the Urban and Manufacturing centers.

RISK FACTORS FOR METABOLIC SYNDROME AND DIABETES

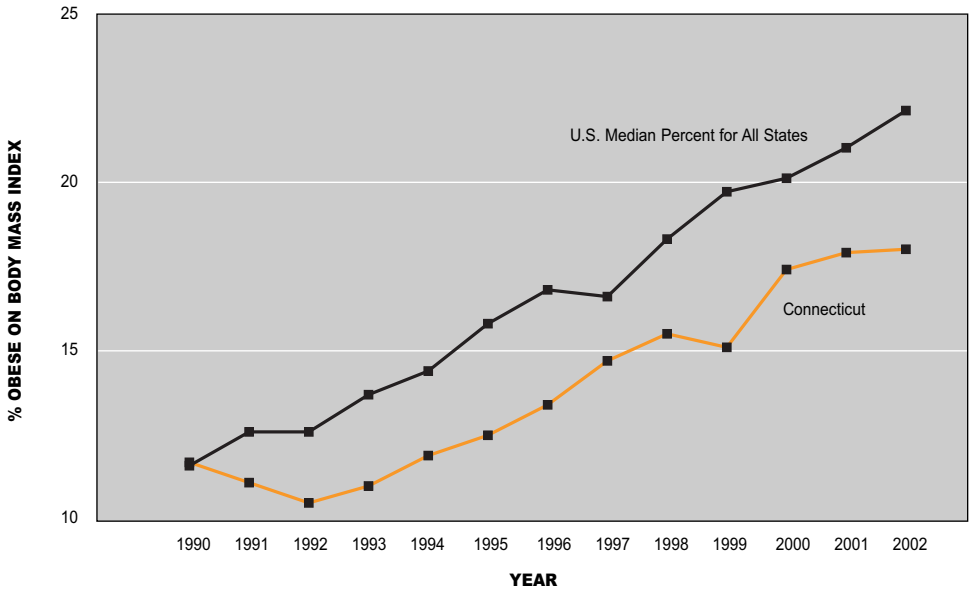
Poor diet and a lack of physical activity are responsible for a cluster of metabolic disorders — referred to as "metabolic syndrome" — including high blood pressure, high insulin levels, excess body weight, and abnormal levels of cholesterol. These disorders can cause such serious diseases as diabetes, heart disease and stroke. In combination, they dramatically boost a person's chances of premature mortality.

Overweight and Obesity

Overweight and obesity are defined by the body mass index (BMI), a ratio of body weight to height. An adult is overweight if s/he has a BMI of 25 to 29.9 (145 pounds for an adult 5'4") and obese if the BMI is 30 or higher (174 pounds for an adult 5'4").

Overweight and obesity are risk factors for a wide range of chronic diseases, including diabetes, hypertension, heart disease, gall bladder disease, and osteoarthritis.[59] The federal government's *Healthy People 2010* objective is to reduce the level of obesity among Americans to 15 percent or less.[60] But the percentage of adults who are overweight and obese has increased in recent years — making obesity a leading public health issue.

FIGURE 14: PERCENTAGE OBESE, CONNECTICUT AND UNITED STATES, 18 AND OLDER



Source: CDC BRFSS web site at: http://www.cdc.gov/brfss.

As of 2000, more than 53 percent of Connecticut adults were overweight and more than 17 percent were obese. There were marked differences among the HRGs in the percentage of overweight and obese adults, as presented in Table 54. The Urban Centers had more than twice the percentage of obese adults as the Wealthy Suburbs. There were also differences in overweight and obesity by city. Bridgeport had a particularly high percentage of overweight and obese adults: More than two-thirds of Bridgeport adult residents were overweight and one-quarter of them obese.

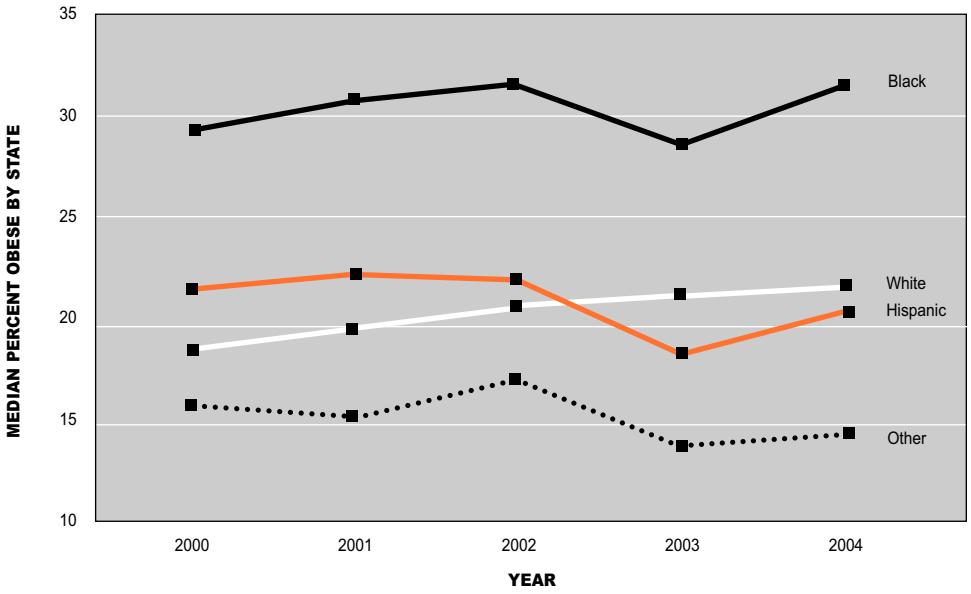
In Connecticut overall, overweight and obesity were highest among black and Hispanic residents. Although there was a higher prevalence of overweight and obesity among black adults in all HRGs (when sufficient data was available), the prevalence among Hispanics in the Diverse Suburbs, Mill Towns and Rural Towns was similar to that of whites. Asian adults have by far the lowest rates of obesity, and their rates do not vary significantly by type of community.

TABLE 54: PERCENTAGE OBESE BY BODY MASS INDEX (BMI)

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	25.3	26.2	20.7	34.2	24.4	
Hartford	24.1	25.4	17.8	29.4	36.5	
New Haven	21.2	22.6	16.6	35.1	24.1	
HRG 1 (3)-UC	23.5	24.6	18.1	33.8	29.7	
HRG 2 (10)-MC	18.2	18.6	17.2	30.0	21.0	3.2
HRG 3 (15)-DS	19.2	19.2	19.1	31.0	15.5	
HRG 4 (27)-WS	11.0	10.4	10.3		11.6	
HRG 5 (39)-MT	18.0	17.7	17.7	25.9	13.5	4.8
HRG 6 (75)-RT	15.1	14.5	14.4		14.8	
Connecticut	17.2	17.1	15.9	30.9	21.6	4.2
United States	21.0	21.0	19.8	30.2	20.3	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site at: www.cdc.gov/brfss. BMI calculated from self-reported height and weight.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

FIGURE 15: OBESITY BY RACE AND ETHNICITY: NATIONAL TRENDS



Source: CDC BRFSS web site at: http://www.cdc.gov/brfss.

There are no readily available longtime trend data on obesity by race and ethnicity. The available series of national medians[i] by year, shown in Figure 15, suggests that increases in obesity among whites over a period of five years have driven the increasing national levels of obesity. The lowest levels are in the "other" category, which includes Asians and all other groups, followed by whites and Hispanics.

Black residents show the highest percentage of obesity among those groups reported in the Behavioral Risk Factor Surveillance System (BRFSS) survey, 1999-2003. Within this group there are significant age and gender disparities such that black women have a higher percentage obese than black men in age group 18-29 (23.9:20.3 percent), 30-44 (36.1:27.4 percent), 45-59 (41.6:31.9 percent), and 60 and over (36.3:23.8 percent). The male-female differences are statistically significant except in the youngest age group. These results have significant implications for long-term health outcomes. No systematic data are available on environmental factors such as access to healthy foods and exercise venues. Also, there is no systematic data about cultural factors such as attitudes towards diet and exercise or ideal body type available to explain these age/gender trends and the broader race/ethnicity disparities reported here.

High Blood Pressure and High Blood Cholesterol

Both high blood pressure and high cholesterol are closely related to cardiovascular disease. The higher the blood pressure, the greater the chance of heart attack, heart failure, stroke, and kidney disease.[61] High levels of blood cholesterol, particularly low-density lipoprotein (LDL) cholesterol, increases the build up of cholesterol in the arteries and may block blood flow, leading to heart disease.[62]

Thirty-one percent (crude rate) of Connecticut adults self-reported high blood pressure, and 29 percent reported high cholesterol. The Wealthy Suburbs had the lowest prevalence of both high blood pressure and high cholesterol. The other HRGs did not vary much in prevalence of high blood pressure and cholesterol, and there were no significant differences between the cities of the Urban Centers.

A higher percentage of Connecticut black adults than white adults reported high blood pressure, as shown in Table 55. This pattern was also seen within the Urban and Manufacturing centers and the Diverse Suburbs. Although there were no differences for the state overall in reported high cholesterol by race/ethnicity, the percentage of Hispanics in the Diverse Suburbs reporting high cholesterol was lower than that reported by whites and blacks, as seen in Table 56.

The federal government's *Healthy People 2010* objectives are to reduce the rates of American adults with high blood pressure to 16 percent and those with high cholesterol to 14 percent.[63] For each of these indicators, Connecticut residents in all HRGs are far above the national objectives.

TABLE 55: PERCENTAGE WHO HAVE BEEN TOLD THEY HAVE HIGH BLOOD PRESSURE

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	33.5	33.1	32.0	38.2	35.7	
Hartford	23.7	25.2	21.3	27.3	28.7	
New Haven	29.3	30.0	26.6	45.1	26.7	
HRG 1 (3)-UC	28.9	29.6	26.6	36.1	30.7	
HRG 2 (10)-MC	29.1	28.6	28.3	35.2	32.3	24.7
HRG 3 (15)-DS	31.6	28.5	27.9	44.9	21.1	
HRG 4 (27)-WS	29.0	24.7	23.8			
HRG 5 (39)-MT	33.7	30.5	30.7	35.1	19.7	26.4
HRG 6 (75)-RT	29.8	27.0	27.0			
Connecticut	30.9	28.4	28.0	37.1	27.2	26.5

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 56: PERCENTAGE WHO HAVE BEEN TOLD THEY HAVE HIGH CHOLESTEROL

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	27.5	26.8	29.0	22.2	28.2	
Hartford	22.8	22.6	28.5	16.6	25.6	
New Haven	26.6	26.1	28.8	24.1		
HRG 1 (3)-UC	25.7	25.3	28.8	22.2	24.9	
HRG 2 (10)-MC	27.9	26.5	26.7	24.1	24.3	23.9
HRG 3 (15)-DS	31.2	28.2	28.7	28.5	18.5	
HRG 4 (27)-WS	28.0	24.8	24.6			
HRG 5 (39)-MT	30.5	27.8	27.9	22.2	29.3	24.7
HRG 6 (75)-RT	28.4	26.4	26.6			
Connecticut	28.9	26.6	27.0	24.0	25.2	26.1

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Physical Activity and Diet

Physical activity has been shown to reduce levels of obesity and improve cardiovascular health.

Table 57 and Table 58 show significant differences in levels of physical activity by HRG and race/ethnicity. There are only limited data for Connecticut on diet, another important indicator, as shown in Table 59. Black and Hispanic adults are far more likely than white adults to report no physical activity and less likely to report regular exercise. Asian adults are least likely to report consuming "five or fewer" fruits and vegetables per day as shown in Table 59, indicating a possibly healthier diet.

TABLE 57: PERCENTAGE WITH NO PHYSICAL ACTIVITY

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	37.4	37.8	30.8	35.6	46.1	
Hartford	37.5	36.9	23.6	38.8	48.7	
New Haven	27.5	27.7	19.8	31.8	45.3	
HRG 1 (3)-UC	34.0	34.0	24.0	36.2	46.9	
HRG 2 (10)-MC	29.6	29.8	24.1	39.0	44.6	24.6
HRG 3 (15)-DS	23.2	22.9	21.4	32.0	28.4	
HRG 4 (27)-WS	15.2	14.6	14.1		24.1	
HRG 5 (39)-MT	24.4	23.7	22.7	26.8	37.1	27.1
HRG 6 (75)-RT	19.6	19.2	18.4		36.6	
Connecticut	23.8	23.6	20.3	34.9	40.6	28.3
United States	25.6	25.6	23.1	32.2	32.3	

Source: DPH BRFSS Survey Data 1999-2003; CDC BRFSS Survey Data BRFSS at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 58: PERCENTAGE WHO GET REGULAR EXERCISE

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	41.6	41.4	42.4	40.2	32.8	
Hartford	38.2	36.7	39.5	32.7	40.5	
New Haven	44.8	42.3	49.0	37.1	25.8	
HRG 1 (3)-UC	41.7	40.0	45.8	36.1	31.9	28.4
HRG 2 (10)-MC	47.0	46.2	51.0	35.6	32.4	
HRG 3 (15)-DS	48.6	48.6	50.4	35.0	47.9	
HRG 4 (27)-WS	55.9	57.2	59.0	47.2	45.8	41.7
HRG 5 (39)-MT	48.9	49.7	50.9	30.4	42.1	
HRG 6 (75)-RT	54.1	54.5	55.5	31.3	51.3	
Connecticut	50.0	50.3	53.2	35.4	37.8	32.9
United States	44.4	44.4	46.2	36.5	42.5	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 59: PERCENTAGE CONSUMING FEWER THAN FIVE FRUITS AND VEGETABLES PER DAY

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	72.0	72.1	83.0	77.5	76.4	
Hartford	75.5	74.9	70.4	74.8	76.2	
New Haven	67.9	67.9	73.6	69.2	56.2	
HRG 1 (3)-UC	71.7	71.5	68.0	74.1	76.8	66.7
HRG 2 (10)-MC	71.6	71.7	71.9	72.0	70.8	
HRG 3 (15)-DS	71.5	71.8	71.6	78.3	75.1	
HRG 4 (27)-WS	67.4	67.9	68.3	66.5	72.1	64.0
HRG 5 (39)-MT	72.9	73.0	73.5	70.2	70.4	
HRG 6 (75)-RT	69.0	68.8	68.4	86.5	73.9	
Connecticut	70.8	70.9	70.7	74.3	73.7	66.2
United States	76.9	76.9				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

DRUG USE AND ABUSE: SMOKING AND ALCOHOL

According to a study published in the Journal of the American Medical Association (JAMA) about the causes of death in the United States, alcohol abuse has been associated with 60 percent to 90 percent of cirrhosis deaths; 40 percent to 50 percent of motor vehicle fatalities; 16 percent to 67 percent of home injuries, drowning, fire fatalities, and job injuries; and 3 percent to 5 percent of cancer deaths.[64]

Alcohol abuse is responsible for even more harm as it is implicated in child and intimate partner abuse; homicide; and loss of employment, family and community connection.

Findings and Analysis

Problem drinking, especially binge drinking (having five or more drinks on an occasion), is in many respects a "white" youth and young adult cultural problem. Among Connecticut adults 18 and over, 17.5 percent of whites report binge drinking, while this is true for only 9.0 percent of blacks, 14.5 percent of Hispanics and 8.2 percent of Asians. There are highly significant differences between whites and Hispanics on the one hand, and blacks and Asians on the other hand — and they are the same in every HRG for which comparative data are available. The problem is both statewide and nationwide.

TABLE 60: PERCENTAGE WHO ENGAGED IN CHRONIC (HEAVY) DRINKING IN PAST MONTH

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	6.3	5.8	6.7	2.6	5.2	
Hartford	3.6	3.1	4.3	1.1	5.0	
New Haven	3.5	3.3	4.5	3.3	2.7	
HRG 1 (3)-UC	4.4	4.0	5.2	2.1	4.0	
HRG 2 (10)-MC	3.7	3.7	4.4	1.7	3.6	0.8
HRG 3 (15)-DS	4.2	4.4	4.7	1.1	3.0	
HRG 4 (27)-WS	5.4	6.1	7.1		2.3	
HRG 5 (39)-MT	4.5	4.8	4.9	2.6	3.8	2.3
HRG 6 (75)-RT	4.2	4.5	4.5		3.5	
Connecticut	4.4	4.6	5.0	1.9	3.6	1.4

Source: DPH BRFSS Survey Data, 1999-2003. Heavy or chronic drinking is defined as more than 60 drinks per month for a man and more than 30 drinks per month for a woman.

Note: All race and ethnicity specific rates are age-adjusted.

Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

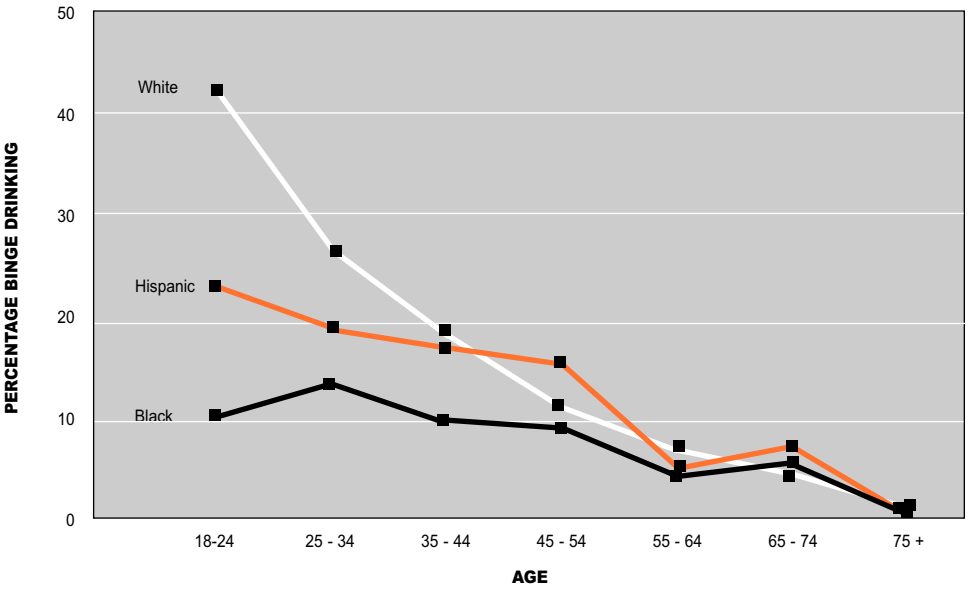
TABLE 61: PERCENTAGE WHO ENGAGED IN BINGE DRINKING IN PAST MONTH

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	13.4	12.5	14.5	9.3	12.5	
Hartford	14.3	13.3	19.3	11.4	12.0	
New Haven	15.3	13.8	18.5	10.0	11.4	
HRG 1 (3)-UC	14.4	13.0	17.5	9.7	11.5	
HRG 2 (10)-MC	15.0	14.7	17.4	8.4	14.2	6.1
HRG 3 (15)-DS	15.5	16.4	18.1	7.2	17.0	
HRG 4 (27)-WS	15.1	18.6	18.7		17.5	
HRG 5 (39)-MT	15.8	17.3	17.5	9.9	16.6	12.6
HRG 6 (75)-RT	14.7	16.4	16.5		15.9	
Connecticut	15.2	16.0	17.5	9.0	14.5	8.2
United States	15.6	15.6				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

The data in Figure 16 suggest that white binge drinking is particularly prevalent among 18- to 34-year-olds. By age 44, the Hispanic binge drinking rate is equal to the white rate and by age 54, the black binge drinking rate is equal to the white rate. There are no statistically significant differences among race/ethnicity groups after age 55, as all fall to a comparatively low level.

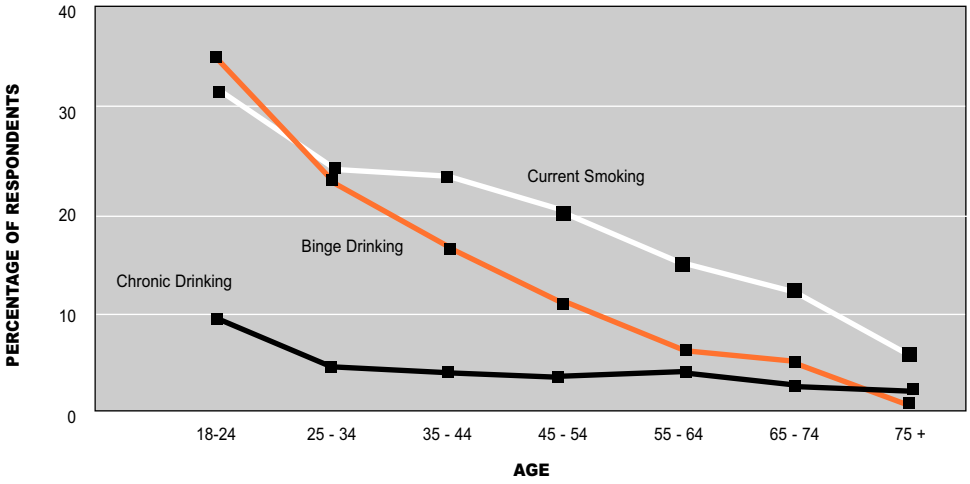
FIGURE 16: PERCENTAGE BINGE DRINKING BY AGE AND RACE/ETHNICITY, BRFSS, 1999-2003



Source: DPH BRFSS Survey Data, 1999-2003.

The disparities in rates for chronic drinking — more than two drinks on the average day for men; more than one drink per day for women — parallel the rates for binge drinking. Five percent of whites report chronic drinking, as compared with 1.9 percent of blacks, 3.6 percent of Hispanics and 1.4 percent of Asians. As illustrated in Figure 17, smoking and binge drinking are clearly related to age, while chronic drinking is not, except for a slightly higher rate in the youngest age group (18 to 24 years old).

FIGURE 17: PERCENTAGES REPORTING CURRENT SMOKING, BINGE AND HEAVY (CHRONIC) DRINKING, BRFSS,1999-2003



Source: DPH BRFSS Survey Data, 1999-2003.

Drinking and smoking "go together" in the sense that those who smoke are also more likely to abuse alcohol. As illustrated in Table 62, the "relative risk" ratio — the association between binge drinking and smoking — is significantly elevated above 1 for every category of educational attainment. This relationship is most pronounced for those at the lowest level of educational attainment.

TABLE 62: PERCENTAGE REPORTING CURRENT SMOKING AND BINGE DRINKING FOR CONNECTICUT RESIDENTS 25 AND OVER, BY EDUCATIONAL ATTAINMENT, 1999-2003

EDUCATION	Current Smoking	Binge Drinking	Both	Relative Risk*
LESS THAN HIGH SCHOOL GRADUATE	27.1	10.1	5.7	4.2
HIGH SCHOOL GRADUATE	26.5	13.6	6.1	2.7
1-3 YEARS COLLEGE	22.0	12.4	4.4	2.2
COLLEGE GRADUATE OR MORE	10.8	13.5	3.1	3.1

Source: DPH BRFSS Survey Data, 1999-2003.

**Table includes only those age 25 and older who answered all three questions: Educational Attainment, Current Smoking and Binge Drinking. Relative Risk would be 1 if there was no association between smoking and binge drinking.*

Note: All race and ethnicity specific rates are age-adjusted.

Advanced educational level (college graduate or more) is a strong independent predictor of reduced smoking but not of binge drinking (five or more drinks on one occasion in the past month). College graduates are least likely to be current smokers (10.8 percent), but they are not less likely to be binge drinkers (13.5 percent). There is a strong association for persons age 25 and over between binge drinking and smoking, regardless of educational level.

Smoking

Tobacco use is the leading cause of premature death in the United States. A JAMA article about the causes of death in the United States implicated tobacco use in 19 percent of all deaths nationally. "It contributes substantially to deaths from cancer (especially cancers of the lung; esophagus; oral cavity; pancreas; kidney; and bladder; and perhaps of other organs), cardiovascular disease (coronary artery disease, stroke, and high blood pressure), lung disease (chronic obstructive pulmonary disease and pneumonia), low birth weight; and other problems of infancy and burns."[65]

As shown in Table 63, the age-adjusted rate of 20.9 percent smokers among Connecticut adults 18 years old and older is far above the *Healthy People 2010* target of 12 percent current smokers. Whites, blacks and Hispanics do not differ significantly (21.3 percent of whites, 20.9 percent of blacks and 20.6 percent of Hispanics are smokers), but they are far more likely than Asians (7.4 percent) to be smokers.

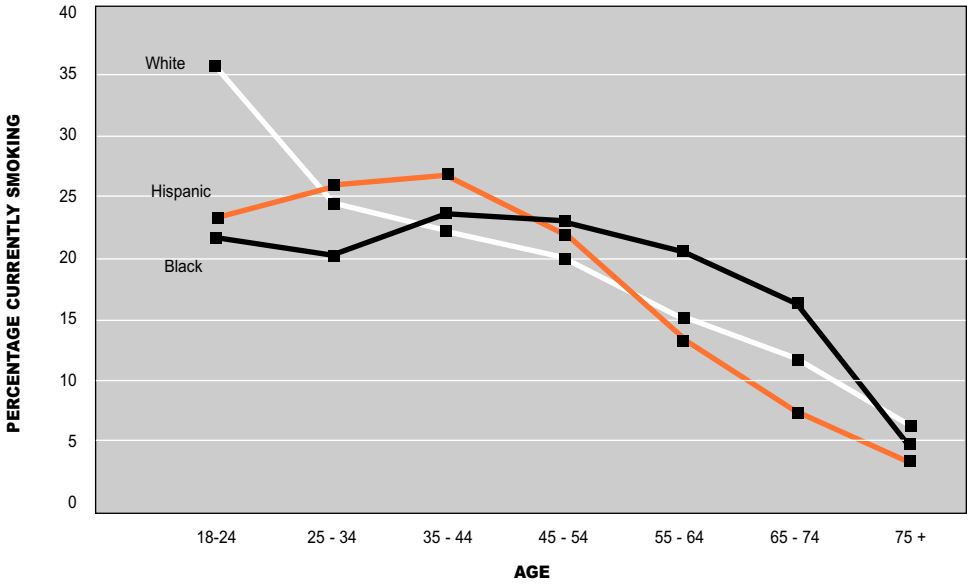
TABLE 63: PERCENTAGE CURRENTLY SMOKING

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	25.7	25.1	30.1	26.1	19.9	
Hartford	24.6	24.1	26.8	21.5	21.7	
New Haven	19.2	19.0	19.5	25.2	15.9	
HRG 1 (3)-UC	23.0	22.5	24.4	24.0	19.1	
HRG 2 (10)-MC	23.3	23.3	25.0	20.0	22.4	7.6
HRG 3 (15)-DS	21.8	22.3	23.4	17.0	23.7	
HRG 4 (27)-WS	14.3	16.6	16.1		19.3	
HRG 5 (39)-MT	22.0	22.9	23.2	17.8	21.2	7.3
HRG 6 (75)-RT	18.0	18.9	19.1		11.3	
Connecticut	20.4	20.9	21.3	20.9	20.6	7.4
United States	22.8	22.8	22.8	23.4	22.4	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Although the overall smoking rates for whites, blacks and Hispanics are not different, the age patterns are somewhat different. Whites between 18 and 24 years old show a significantly higher rate but then trend consistently downward by age. Black and Hispanic respondents show a different pattern: lower rates of smoking in the youngest age group, but no consistent downward age trend over the middle years. Black respondents who smoke continue smoking until relatively late in life. What is not currently known is whether these different patterns are due to older age at initiation, greater degree of addiction due to type of cigarette smoked or depth of inhalation, as some researchers have suggested,[66, 67] or to differential targeting or effects of smoking promotion or cessation messages in these groups.

FIGURE 18: PERCENTAGE SMOKING BY AGE AND RACE/ETHNICITY, BRFSS, 1999-2003



Source: DPH BRFSS Survey Data, 1999-2003.

Singh and Miller,[68] Diamond,[69] and others have demonstrated that formerly healthy immigrants suffer from prolonged exposure to American culture. Immigrants, particularly black and Hispanic immigrants, succumb to alcohol abuse and tobacco use with many negative consequences.[70]

Environmental Tobacco Smoke

Many studies have shown that environmental tobacco smoke (ETS), sometimes known as "secondhand smoke," affects the health of nonsmokers. ETS can cause developmental effects such as low birth weight and Sudden Infant Death Syndrome (SIDS); respiratory effects such as bronchitis, pneumonia, new or exacerbated asthma, and chronic respiratory symptoms and middle ear infections in children; eye and nasal irritation; lung cancer; nasal sinus cancer; heart disease mortality; and acute and chronic coronary heart disease morbidity in adults.[71]

One goal of the *Healthy People 2010* initiative is the establishment of smoke-free places such as school facilities, property, vehicles, and school events; private and public workplaces; restaurants; public transportation; day care centers; and retail stores.[72]

Connecticut's smoke-free law went into effect on Oct. 1, 2003, and expanded to bars in April 2004. But some businesses (e.g., those with fewer than five employees) have weaker coverage, and they rely on employee complaint to instigate change. A weakness in the law is that no agency has been charged with enforcement. There have also been no systematic studies of compliance. Some workers, such as nurses who escort psychiatric or nursing home patients outside to smoke, are at risk — and apparently not well protected in practice. The law also does not address the effects of ETS in apartment and condominium living situations.[73]

In summary, there are no Connecticut data to assess compliance with regulations related to ETS or exposures to it.


CHAPTER 4

CHAPTER 5

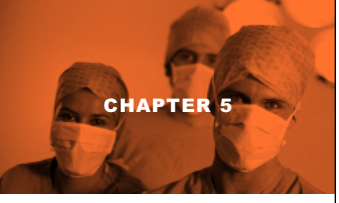
Access to Care

CHAPTER 5

ACCESS TO CARE

Several factors affect access to and use of health care in Connecticut, including:

- Health insurance status
- "Safety net" programs
- Availability of health care facilities and professionals
- Language compatibility between health care providers and residents
- Adequacy of prenatal care
- Access to community water fluoridation



HEALTH INSURANCE STATUS

Persons with no health insurance are less likely to have a regular source of health care or to receive preventive care, and experience worse health outcomes as compared to those with health insurance.[74] Having a regular health care provider is an important indicator as it increases use of ambulatory visits, prompt care when sick, and receipt of preventive health care.[75] The *Healthy People 2010* initiative aims for a goal of no adults under age 65 without health insurance, and 96 percent with a source of ongoing health care.[76]

The most current statistics on health insurance coverage are generated by the Current Population Survey of the U.S. Census Bureau. This survey documents a small but statistically significant annual increase in the percentage of U.S. residents who lack health insurance — defined as any type of insurance, public or private — 14.6 percent uninsured in 2001, 15.2 in 2002, 15.6 percent in 2003 and 2004, and 15.9 percent in 2005.

Connecticut remained essentially constant at 10.4 percent and 10.5 percent for the time periods 2001-2002 and 2002-2003, but increased in 2003-2004 to 11.0 percent uninsured. For the three-year average 2003-2005 Connecticut as a state ranks 11th in coverage, behind all other New England states. The uninsured rate nationally, in 2005, was 11.3 percent for white-alone non-Hispanic; 19.6 percent for black-alone non-Hispanic; 17.9 percent for Asian; and 32.7 percent for Hispanic (any race) residents.[77]

According to self-reports in the Behavioral Risk Factor Surveillance System (BRFSS) surveys, conducted between 1999 and 2003, almost 12 percent of Connecticut residents between the ages of 18 and 64 claimed that they did not have health insurance. Eighty-six percent of Connecticut residents age 18 and over reported having a regular source of medical care — a "medical home" — and 76 percent received a checkup in the past year during the time period 1999-2003. There were marked differences in access to care by HRG. Residents in the Urban and Manufacturing centers were less likely to have health insurance and less likely to have a regular source of care. However, they were not less likely to have had a checkup in the past year as compared with residents in other HRGs. Among the Urban Centers, a higher proportion of Hartford and Bridgeport residents reported having no health insurance than residents of New Haven, as shown in Table 64.

Hispanic and black adults were more likely than white adults to have no health insurance and less likely to have a regular source of medical care than white adults, as shown in Table 65. But the data indicate, paradoxically, that black adults were more likely to have had a checkup in the past year, as shown in Table 66.[j] These latter disparities were present within all HRGs. While Asians were no less likely than whites to have health insurance, they were less likely to report a regular source of medical care.

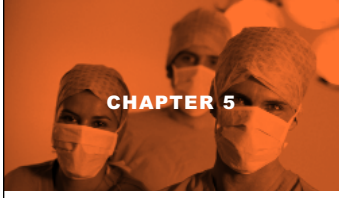


TABLE 64: PERCENTAGE WITH NO HEALTH INSURANCE

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	27.0	26.0	17.6	28.9	33.6	
Hartford	23.3	21.8	13.2	20.9	28.5	
New Haven	14.7	13.5	8.5	11.5	25.7	
HRG 1 (3)-UC	21.4	20.2	12.0	20.1	29.9	
HRG 2 (10)-MC	16.8	16.4	10.7	22.8	33.1	11.3
HRG 3 (15)-DS	10.7	10.8	10.1	14.2	18.4	
HRG 4 (27)-WS	6.0	6.6	5.3		22.8	
HRG 5 (39)-MT	10.0	10.3	9.5	9.0	26.5	12.0
HRG 6 (75)-RT	8.2	9.0	8.2		22.6	
Connecticut	11.7	12.0	9.0	18.4	29.1	11.5

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 65: PERCENTAGE WITH A REGULAR SOURCE OF MEDICAL CARE

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	73.0	74.3	80.4	75.5	71.9	
Hartford	73.5	75.4	81.7	79.8	68.2	
New Haven	71.3	74.6	80.6	76.4	58.5	
HRG 1 (3)-UC	72.5	74.7	81.0	77.9	66.8	
HRG 2 (10)-MC	80.7	80.9	85.4	75.4	67.2	82.6
HRG 3 (15)-DS	87.8	87.3	87.9	88.8	80.7	
HRG 4 (27)-WS	89.4	88.1	89.4			
HRG 5 (39)-MT	87.8	86.6	87.3	90.2	75.7	79.3
HRG 6 (75)-RT	89.7	88.8	89.1			
Connecticut	85.6	84.8	87.5	80.7	69.7	79.6

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

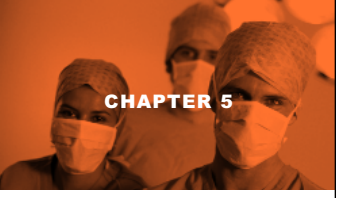


TABLE 66: PERCENTAGE WHO HAD A CHECKUP IN PAST YEAR

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	77.5	78.7	75.5	83.8	80.6	
Hartford	75.7	77.1	71.7	84.8	75.5	
New Haven	79.0	79.3	75.3	83.7		
HRG 1 (3)-UC	77.4	78.2	74.1	83.2	79.0	
HRG 2 (10)-MC	77.4	77.5	74.9	86.5	82.8	78.0
HRG 3 (15)-DS	76.4	75.6	74.7	80.1	77.8	
HRG 4 (27)-WS	75.0	74.0	73.3			
HRG 5 (39)-MT	76.1	75.8	76.1	88.0	78.3	74.2
HRG 6 (75)-RT	73.9	73.1	73.1			
Connecticut	76.1	75.6	74.4	84.3	79.2	76.8

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

DENTAL VISITS

Oral health is an essential component of overall health status. Poor oral health and untreated oral diseases, such as dental caries and periodontal diseases, can negatively affect quality of life and lead to more serious infections. Regular dental care is an important component of oral health. Many persons do not receive preventive dental services because of lack of insurance or fear of dental visits.[78]

Overall, 79 percent of Connecticut adults reported visiting a dentist in the past year. The Wealthy Suburbs and Rural Towns had the highest percentages of residents reporting a recent dental visit, and the Urban and Manufacturing centers had the lowest percentages, as seen in Table 67.

In all HRGs where there were sufficient sample sizes to make a determination, Hispanic and black adults were less likely than white adults to have had a recent dental visit.

TABLE 67: PERCENTAGE WITH DENTAL VISIT IN PAST YEAR

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	63.3	64.7	65.3			
Hartford	71.2	70.8	82.5	70.0	62.6	
New Haven	79.5	78.0	84.8	70.0		
HRG 1 (3)-UC	71.8	71.8	78.6	68.3	62.6	
HRG 2 (10)-MC	73.8	73.8	77.6	61.7	66.5	74.3
HRG 3 (15)-DS	77.3	77.3	78.7	61.8		
HRG 4 (27)-WS	85.7	85.8	87.3			
HRG 5 (39)-MT	80.7	80.5	81.8		71.8	
HRG 6 (75)-RT	83.7	83.6	84.0			
Connecticut	79.2	79.2	81.7	66.5	65.8	72.2

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

SAFETY NET: NEEDY INDIVIDUALS AND FAMILIES IN CONNECTICUT

Connecticut Department of Social Services

The Connecticut Department of Social Services (DSS) provides assistance to needy families and individuals to facilitate their access to needed medical care and help maximize their overall health. DSS tracks utilization of five major assistance programs by monthly caseload units and recipients. These DSS-tracked assistance programs are represented in Table 68 and Table 69. Appendix E includes a brief description of each of the five programs.

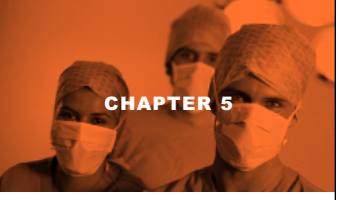


TABLE 68: AVERAGE MONTHLY CASES AND PERSONS ON FOOD STAMPS, TEMPORARY FAMILY ASSISTANCE AND STATE SUPPLEMENT (STATE FISCAL YEAR 2005)

AREA	Food Stamps		Temporary Family Assistance - Totals		State Supplement			
	Cases	Persons	Cases	Persons	Aged	Blind	Disabled	Total
HRG 1 (3)-UC	39,788	76,960	9,048	19,977	1,347	14	2,967	4,330
Bridgeport	9,837	19,630	2,274	4,787	383	4	787	1,174
Hartford	17,562	33,591	3,773	8,544	558	5	1,295	1,859
New Haven	12,389	23,739	3,001	6,646	406	5	885	1,297
HRG 2 (10)-MC	29,642	58,622	6,719	14,869	1,383	10	2,986	4,388
HRG 3 (15)-DS	14,429	26,978	3,351	7,230	1,005	16	1,928	2,959
HRG 4 (27)-WS	1,576	2,444	273	557	192	1	435	637
HRG 5 (39)-MT	9,947	17,418	1,916	4,090	598	12	1,806	2,436
HRG 6 (75)-RT	3,699	6,085	630	1,317	440	26	1,176	1,666
Unclassified			2					
Connecticut	99,160	188,591	22,073	48,174	5,028	93	11,370	16,492

Source: DSS, Central Office, Information Technology Services, Electronic file. E-mail communication from S. Colangelo. Sept. 25, 2006.
Note: The following program categories are not shown in the DSS tables: Refugee, Refugee Medical, State Funded Medical, and Connecticut AIDS Drug Assistance Program (CADAP). Statewide totals may not equal sums due to rounding. Due to rounding some towns may not display a case but will display recipients. This is due to most cases having more than one recipient and therefore when averaged, the recipient count will be .5 or higher, and be counted as 1. State Supplement is a state-financed cash assistance program to supplement the income of the aged, blind and disabled that have another source of income such as disability benefits or Supplemental Security Income (SSI).

TABLE 69: CASES AND PERSONS ON MEDICAID AND STATE-ADMINISTERED GENERAL ASSISTANCE, 2005

AREA	Total Medicaid (TFA & S. Supp & Medicaid Only (Excluding QMB/SLMB*) (December 2005 only)		State-Administered General Assistance (Average Monthly, SFY 2005)			
			Cash		Medical	
	Cases	Persons	Cases	Persons	Cases	Persons
HRG 1 (3)-UC	64,097	115,564	1,440	1,441	12,223	12,227
Bridgeport	20,007	35,986	365	365	2,865	2,866
Hartford	24,387	44,838	656	657	5,363	5,366
New Haven	19,703	34,740	419	419	3,995	3,995
HRG 2 (10)-MC	65,930	116,352	1,135	1,135	8,152	8,155
HRG 3 (15)-DS	38,536	65,733	631	637	4,035	4,044
HRG 4 (27)-WS	9,213	13,885	75	75	638	638
HRG 5 (39)-MT	34,644	57,617	525	525	3,213	3,214
HRG 6 (75)-RT	17,773	29,256	194	194	1,486	1,486
Unclassified	415	418	1	1	11	11
Connecticut	230,608	398,825	4,069	4,076	29,825	29,840

Source: DSS Central Office, Information Technology Services, Electronic file. E-mail communication from S. Colangelo. Oct. 1, 2006.
** Total Medicaid counts exclude Qualified Medicare Beneficiary (QMB) and Specified Low Income Medicare Beneficiary (SLMB) cases due to program overlap.*
The following program categories are not shown in the DSS tables: Refugee, Refugee Medical, State Funded Medical, and CADAP. State totals may not equal sums of HRGs due to rounding.

PROGRAMS FOR CHILDREN AND ADOLESCENTS

The state departments of Social Services (DSS) and Children and Families (DCF) provide health-promoting services to needy Connecticut youth, including:

- Health care services
- Child protective services (including telephone hotline) to process reports of child abuse and neglect
- Youth emergency assessment and respite services (YEARS), including emergency youth shelters
- Substance abuse and mental health services
- Youth safe homes
- Foster and adoption services
- Health care and residential treatment facilities

Below are brief descriptions of selected services and data on availability and utilization.

Healthcare for UninSured Kids and Youth (HUSKY)

The HUSKY program provides health care services for Connecticut's younger residents via coverage for preventive care, outpatient and in-hospital care, prescription drug coverage, and mental health/substance abuse services. The HUSKY A program, for children in households at or below 100 percent of the federal poverty level (FPL), had an enrollment of 304,633 during fiscal year 2004. The HUSKY-B program, for youth under age 19 in certain households with higher incomes enrolled 14,533 youth in fiscal 2004.[79]

Youth Emergency Assessment and Respite Services (YEARS)

The YEARS program makes available 101 beds in eight affiliated shelters to 11- to 17-year-old children who are in crisis due to abuse, neglect or abandonment. The eight YEARS-affiliated youth shelters are listed by HRG in Appendix G. Other youth emergency shelters operate within the state of Connecticut but are not officially affiliated with the YEARS program.

TABLE 70: CHILDREN SERVED BY YEARS PROGRAM: SNAPSHOT, JULY–SEPTEMBER 2004

AGE	PERCENTAGE	GENDER	PERCENTAGE	RACE/ETHNICITY	PERCENTAGE
< 5	2.2	Male	44.2	African American/Black	35.0
5-7	1.8	Female	55.8	Caucasian/White	31.4
8-12	11.9			Puerto Rican	25.2
13-17	84.1			Biracial	2.2
				Central American	1.8
				Other Spanish Speaking	1.8
				West Indies/Islander	1.3
				Other	0.9
				South American	0.4

Source: DCF, YEARS: Statistical Report, Performance-Based Contracting state fiscal year 2005 (Date Range: July 1, 2004 to Sept. 30, 2004).

During an assessment period between July and September 2004, the YEARS program served 226 youth. Of these, 57.6 percent stayed in the YEARS shelter for 45 days or less, while 42.4 percent stayed longer than 45 days. The demographic data in Table 70 reflects the 226 children served by the YEARS program in the 2004 assessment period.[80]

Other Youth Placement Services

DCF offers other treatment and placement services to needy children and adolescents besides the shelters affiliated with the YEARS program. DCF's Child Protective Services Division investigates reports of child maltreatment and arranges necessary follow-up. This can include in-home services to children and families or placement of children in temporary or permanent locations outside the home.

Child Protective Services' 2004 caseload included 18,227 cases. A needs assessment was conducted based upon a random, representative sample of 375 cases. DCF found an over-representation of black and Hispanic families in the Child Protective Services caseload. Black children also were removed from their homes as a result of Child Protective Services investigation at a higher rate than children from other race and ethnicity groups.

TABLE 71: SAMPLE CASELOAD FROM CONNECTICUT CHILD PROTECTIVE SERVICES BY RACE/ETHNICITY AND SERVICE PROVIDED, 2004

RACE/ETHNICITY	In-Home Services	Removal From Home
WHITE	26%	22%
HISPANIC	22%	24%
BLACK/AFRICAN AMERICAN	26%	34.5%
UNABLE TO DETERMINE/UNKNOWN	22%	14%
MULTI	3%	5%
OTHER (ASIAN, AMERICAN INDIAN, ALASKAN NATIVE, NATIVE HAWAIIAN, OTHER PACIFIC ISLANDER)	<1 %	.5%

Source: DCF Needs Assessment, 2004. Oct. 24, 2004. See reference note.
Source: DCF. Overview of Programs and Services: Child Welfare Services. See reference note.
Cases are children under 18 or under 21 and clients of DCF.

Preventive Oral Health Care for Children in HUSKY A

Oral health data are available from DSS for children ages 3 to 19 who were continuously enrolled during fiscal years 2000-2002 and during calendar years 2003-2005. In 2003, 140,728 children were continuously enrolled in HUSKY A; in 2004 there were 146,598, and in 2005 there were 146,046. There were virtually no changes in either oral preventive care (40 percent for 2003 and 2004, and 41 percent for 2005) or treatment (21 percent in 2003 and 2004, and 22 percent in 2005).

The preventive oral health care rate was highest for Hispanic children ages 3 to 19 (43 percent in 2004 and 45 percent in 2005), next for white (39 percent in both years) and black (38 percent in 2004 and 39 percent in 2005) children and youth. The percentage was highest in Hartford (47 percent in 2004, 48 percent in 2005) followed by Bridgeport (40 percent in both years). There was a statistically significant increase in New Haven (35 percent in 2004 and 43 percent in 2005).[81]

ELDERLY POPULATION

Connecticut Pharmaceutical Assistance Contract to the Elderly and Disabled (ConnPACE)

DSS provides multiple health-promoting programs to needy elders in the state. ConnPACE helps elderly and disabled residents finance the cost of prescription medications. Monthly enrollment in ConnPACE averaged 51,000 in fiscal year 2004, 10.8 percent of the state population over age 65 (470,183 according to U.S. Census 2000). The DSS's Older Americans Act Program served 57,830 elders and their caregivers in fiscal year 2004 via home-delivered and group-setting meals, transportation, homemaker services, and adult day care.[82]

Nursing Home Care

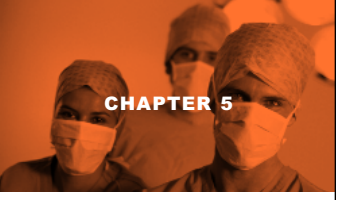
Connecticut has 246 Medicare/Medicaid-certified nursing homes, accounting for 29,927 beds. These are distributed as in Table 72.

TABLE 72: MEDICARE/MEDICAID-CERTIFIED LICENSED NURSING HOMES, 2005

AREA	Number of Licensed Nursing Home Facilities	Number of Available Beds	Beds Per 1,000 Residents Age 80 and Over
HRG 1 (3)-UC	18	2,793	231.8
Bridgeport	5	910	
Hartford	5	832	
New Haven	8	1,051	
HRG 2 (10)-MC	50	5,939	220.6
HRG 3 (15)-DS	48	6,279	214.6
HRG 4 (27)-WS	30	3,861	207.4
HRG 5 (39)-MT	64	7,690	250.7
HRG 6 (75)-RT	36	3,365	168.2
Connecticut	246	29,927	217.6

Source: Centers for Medicare and Medicaid Services (CMS): Nursing Home Compare. Available at: http://www.medicare.gov/NHCompare.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

The number and rate of nursing home beds is relatively large in the Mill Towns but much smaller in the Rural Towns. It seems likely that the Mill Towns, which are situated in relatively rural areas, provide a "catchment" to which elders from surrounding Rural Towns move for nursing home care.



INDIVIDUAL HEALTH CARE PROVIDERS

DPH tracks the status of service providers statewide via its Office of Licensure and Renewal. Table 73 shows the health-related service providers licensed at the end of calendar year 2004.

TABLE 73: CONNECTICUT LICENSED HEALTH CARE PROVIDERS, YEAR END, 2004

PROVIDER	COUNT
Physician/Surgeon	14,721
Physician Assistant	1,233
Licensed Practical Nurse	11,526
Advanced Practice Registered Nurse	2,580
Dentist	3,107
Dental Hygienist	3,230
Dietitian/Nutritionist	548
Licensed Alcohol and Drug Counselor	585
Licensed Clinical Social Worker	4,408
Licensed Midwife	1
Licensed Nurse Midwife	200

Source: DPH, Licensure and Renewal. Licensing Statistics: Numbers of Currently Licensed Practitioners, Calendar Year-End, 2004. Available at: http://www.dph.state.ct.us/Licensure/apps/apps/2004_Year_End_ActiveLicenses.pdf.

TABLE 74: CONNECTICUT LICENSED DOCTORS AND DENTISTS, AUGUST, 2005

Doctors and Dentists: Number and Rate per 1000*					
AREA	Total Population	Doctors	Doctors per 1000	Dentists	Dentists per 1000
HRG 1 (3)-UC	384,733	1,842	4.8	177	0.5
Bridgeport	139,529	225	1.6	56	0.4
Hartford	121,578	587	4.8	46	0.4
New Haven	123,626	1,030	8.3	75	0.6
HRG 2 (10)-MC	662,398	1,700	2.6	483	0.7
HRG 3 (15)-DS	587,509	2,074	3.5	518	0.9
HRG 4 (27)-WS	487,620	2,831	5.8	596	1.2
HRG 5 (39)-MT	698,458	1,242	1.8	486	0.7
HRG 6 (75)-RT	584,847	1,713	2.9	484	0.8
Connecticut	3,405,565	11,402	3.3	2,744	0.8

Source: DPH, Licensure File, generated Aug. 16, 2005, and U.S. Census 2000, Table P1.

**Includes addresses as given in licensure file. No claims are made as to whether these are home or business addresses. All out-of-state addressees are deleted from the file, although some may practice in Connecticut. Some residents may go out of state for care.*

Doctors and dentists are not evenly distributed among the different types of communities, as shown in Table 74. While it is unclear whether licensees use their home or office addresses — there is likely a mixture of practice in this regard — it appears that the Urban Centers and the Wealthy Suburbs are relatively advantaged. Yet, the high rate for the Urban Centers is due to Hartford and, especially, New Haven, home of a large medical teaching hospital. Bridgeport, on the other hand, is very much disadvantaged, with only 1.6 physicians per 1,000 residents. The Mill Towns also have a low rate: 1.8 doctors per 1,000 residents.

With the exception of the Wealthy Suburbs, the distribution of dental practitioners is much more even across the HRGs, with a rate of 1.2 dentists per 1,000 residents. The Urban Centers have only 0.5 dentists per 1,000 residents.

LINGUISTIC ISOLATION

Language mismatches between patients and health care professionals can impede effective care. Language is indexed in the U.S. Census Bureau by household "linguistic isolation" — defined as households in which all members 14 and over have at least some difficulty with English. Linguistic isolation is shown in Table 23. The figure for Spanish-language household linguistic isolation is 7.8 percent of all households in the Urban Centers and 4.2 percent in the Manufacturing Centers. For all other HRGs, Spanish-language linguistic isolation is negligible. In the Urban Centers 3.3 percent of "Other Indo-European language" households are linguistically isolated, while in the Manufacturing Centers 3.4 percent of "Other Indo-European language" households experience linguistic isolation. In general, Asian-language linguistic isolation is negligible. There is no readily available means to track the availability of medical professionals who share language with those persons living in linguistically isolated households, since medical licensing bodies do not track language proficiency.

PRENATAL CARE

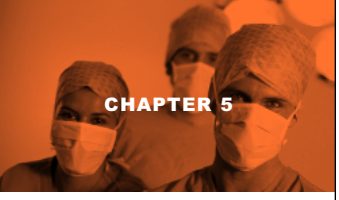
Prenatal care is another indicator of access to the "preventive" health care system. While the causal connections are complex, it appears that adequate prenatal care may assist in improving the health status and future reproductive health of mothers. There appears to be significant variation in access to and the timing of this care, as indicated in Table 75.

TABLE 75: PERCENTAGE OF BIRTHS WITH INADEQUATE, LATE OR NO PRENATAL CARE, 1999-2003

AREA	Total Population	White, Not Hispanic	Black, Not Hispanic	Hispanic	Puerto Rican	Hispanic, Non Puerto Rican	Asian
HRG 1 (3)-UC	37.0	29.0	34.1	43.5	39.8	54.4	
HRG 2 (10)-MC	31.1	21.4	39.0	44.5	43.7	45.5	
HRG 3 (15)-DS	22.5	19.5	29.1	32.6	32.3	32.9	
HRG 4 (27)-WS	11.8	11.4	22.7	24.9			
HRG 5 (39)-MT	19.9	18.6	29.8	33.7	24.6	31.9	
HRG 6 (75)-RT	17.5	16.8	31.8	25.4			
Connecticut	24.0	18.0	34.3	41.4	39.6	44.2	

Source: DPH, Vital Statistics.

Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.



In general, non-Puerto Rican Hispanics have the highest rates of inadequate, late or no care. It may be that these are immigrants who are not well attached to the health care system, or they are very recent immigrants without early prenatal care in their home countries. Next are Puerto Rican Hispanics, followed by black non-Hispanics and white non-Hispanics. No data were available for Asians.

ACCESS TO COMMUNITY WATER FLUORIDATION

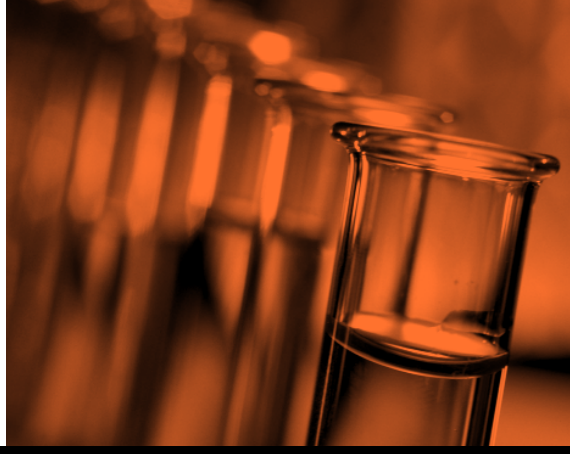
DPH has promoted and documented the benefits of water fluoridation as reducing tooth decay by 20 percent to 40 percent.[83]

Connecticut's Public Water Supplies (PWS) provide optimally fluoridated drinking water to an estimated 70 percent of the total population or 2.39 million state residents. The state requires those serving at least 20,000 people to fluoridate their water to a level of 0.8 mg/1 and 1.2 mg/1, with a level of 1.0 mg/1 considered to be most beneficial to oral health. Twenty-five PWSs serving a total of 2.18 million residents are required to fluoridate their water. Eight PWS's serving 90,364 voluntarily fluoridate their water to benefit their customers. Thirty-five PWSs serving 110,715 residents purchase fluoridated drinking water from other utilities. Thirty PWSs provide naturally fluoridated water to approximately 5,300 residents.[84]

The extent of community water fluoridation in Connecticut is mapped in Appendix H.

CHAPTER 6

Screening and Prevention



CHAPTER 6

SCREENING AND PREVENTION

Screening and prevention are closely related to health care access. They are critical aspects of a high quality health system, since they may prevent disease or alter the course of disease and prevent early mortality.

SCREENING TESTS

Breast Cancer Screening

Breast cancer is the most common form of cancer among women, and the second leading cause of cancer-related death among women. Regular screening increases the likelihood of early detection, treatment initiation and positive outcome. The American Cancer Society recommends annual mammograms for women 40 and over.[85] The federal *Healthy People 2010* initiative aims for at least 70 percent of women age 40 and older to have received a mammogram within the preceding two years.[86]

TABLE 76: PERCENTAGE WITH A MAMMOGRAM IN PAST TWO YEARS, WOMEN 40 AND OVER

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	81.7	82.1	83.0	77.0	81.9	
Bridgeport	82.5	83.1	85.4			
Hartford	82.6	83.2	82.6			
New Haven	79.9	79.7	81.7			
HRG 2 (10)-MC	80.6	81.9	81.3	80.8		
HRG 3 (15)-DS	81.2	82.1	81.9			
HRG 4 (27)-WS	84.2	84.9	85.2			
HRG 5 (39)-MT	80.9	80.8	81.5			
HRG 6 (75)-RT	84.4	84.5	84.1			
Connecticut	82.3	82.8	83.0	78.5	81.4	
United States	71.1	71.1	74.7	76.2	72.3	

Source: Behavioral Risk Factor Surveillance System (BRFSS) Survey Data, 1999-2003; Connecticut Department of Public Health (DPH); Centers for Disease Control and Prevention (CDC) BRFSS web site at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Nearly 83 percent of Connecticut women age 40 and older received a mammogram within the past two years, a higher rate than the U.S. population overall and the *Healthy People 2010* objectives. Recent mammogram testing was fairly consistent across HRGs and the large Connecticut cities, as shown in Table 76.

Although the percentage of black women in Connecticut who received a recent mammogram appears lower than that of white women, the sample size was too small to detect statistically significant differences or to examine race/ethnicity differences in mammogram tests among the HRGs or the Urban Centers' cities.

Cervical Cancer Screening

The American Cancer Society estimates that more than 10,000 women in the United States will be diagnosed with cervical cancer annually. Cervical cancer is curable if detected early. The Papanicolaou (Pap) smear test is a simple, routine screening that can detect early-stage disease and precancerous cells. It can be performed in a doctor's office as part of a routine gynecological exam. The American Cancer Society guidelines prescribe regular Pap smear tests for adult women.[87] The *Healthy People 2010* target is for at least 90 percent of adult women to have received a Pap smear within the past three years.[88]

Almost 88 percent of women in Connecticut received a Pap smear within the past three years, as shown in Table 77. The percentage varied somewhat by HRG, highest in the Wealthy Suburbs and the Rural Towns, lowest in the Urban Centers. Of the three Connecticut cities examined, the Pap smear test rate was lowest in Hartford and highest in New Haven.

TABLE 77: PERCENTAGE OF WOMEN WHO HAVE HAD A PAP SMEAR IN PAST THREE YEARS

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	85.5	85.3	87.9			
Hartford	77.0	79.6	84.4	81.1	71.3	
New Haven	89.0	89.9	90.8	91.5		
HRG 1 (3)-UC	83.8	84.7	88.1	86.6	77.6	
HRG 2 (10)-MC	86.5	85.6	86.9	83.8	88.1	76.6
HRG 3 (15)-DS	87.2	87.2	88.6			
HRG 4 (27)-WS	90.6	88.9	88.3			
HRG 5 (39)-MT	86.5	85.7	86.7		73.4	
HRG 6 (75)-RT	90.6	89.0	89.5			
Connecticut	87.8	87.3	88.5	85.6	80.1	76.9
United States	85.9	85.9	86.3	89.8	85.2	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss. Accessed Sept. 8, 2005. Includes all women 18 and over, excluding women who have had a hysterectomy.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Asian and Hispanic women are least likely to have had a recent Pap smear test. Hartford has a particularly low rate for Hispanic women, even on an age-adjusted basis, and has the lowest rate for black women as well.

Sigmoidoscopy/Colonoscopy/Blood Stool Tests

The sigmoidoscopy and colonoscopy (Table 78) and blood stool (fecal occult blood) tests (Table 79) are recommended for detecting colorectal cancer beginning at age 50 for both men and women of average risk.

TABLE 78: SIGMOIDOSCOPY/COLONOSCOPY TEST AGE 50 AND OVER

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	43.2	43.0	42.2	44.0		
Bridgeport	40.3	40.3	30.7			
Hartford	38.9	39.5	44.3			
New Haven	49.7	50.1	48.5			
HRG 2 (10)-MC	43.0	42.7	46.2			
HRG 3 (15)-DS	44.0	43.9	43.0			
HRG 4 (27)-WS	51.3	51.3	52.5			
HRG 5 (39)-MT	42.3	42.4	42.7			
HRG 6 (75)-RT	45.1	45.3	46.5			
Connecticut	44.9	45.6	45.9	46.1	41.1	
United States	35.7	35.7	37.0	36.4	29.9	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Connecticut has a significantly higher sigmoidoscopy/colonoscopy rate (45.6 percent) than the United States (35.7 percent). There appears to be little difference in the rates for white, non-Hispanics, and the overall rate suggesting little disparity on this measure. Similarly, for blood stool tests (Table 79) there are virtually no differences between the U.S. rates, and black and white rates. The rate for Hispanics appears to be slightly lower than for blacks or whites.

TABLE 79: BLOOD STOOL TEST IN PAST YEAR, AGE 50 AND OVER

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	25.7	25.6	24.2	27.3		
Bridgeport	23.0	23.6	19.0			
Hartford	19.2	20.5	18.1			
New Haven	33.9	34.3	32.2			
HRG 2 (10)-MC	26.4	26.2	26.8			
HRG 3 (15)-DS	26.2	26.1	26.3			
HRG 4 (27)-WS	32.5	32.5	33.8			
HRG 5 (39)-MT	28.7	28.8	29.1			
HRG 6 (75)-RT	28.3	28.4	29.3			
Connecticut	28.2	28.5	28.9	26.6	23.8	
United States	29.2	28.5	30.3	28.0	21.7	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Prostate Screening

An annual prostate-specific antigen (PSA) blood test to detect possible prostate cancer is recommended for men beginning at age 50 and with at least a 10-year life expectancy. Men at heightened risk — black men and men with a family history of prostate cancer — are advised to start testing at 45 or even 40 years old.[89]

TABLE 80: PSA TEST IN PAST YEAR, MEN AGE 50 AND OVER

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	57.4	58.5	59.7			
HRG 2 (10)-MC	55.3	57.9	60.6			
HRG 3 (15)-DS	57.5	58.8	62.8			
HRG 4 (27)-WS	58.3	59.7	59.9			
HRG 5 (39)-MT	56.2	57.6	57.8			
HRG 6 (75)-RT	58.2	60.2	60.6			
Connecticut	57.2	58.9	60.2			
United States	56.3	56.3				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

As shown in Table 80, close to 60 percent of Connecticut men age 50 and over report that they have had a PSA test in the past year.

HIV Tests

The number of people living with human immunodeficienty virus (HIV) infection in the United States continues to increase. Early detection is essential to reduce morbidity and mortality associated with HIV/AIDS. Some experts advocate routine HIV testing, although the Centers for Disease Control and Prevention (CDC) recommends testing based on risk assessment.[90]

HIV testing could be thought of as an indicator of physician practice in ordering tests for patients that they consider at high risk. It also could serve as protective behavior on the part of individuals who want the tests to protect themselves or others.

Overall, 45 percent of Connecticut adults age 18 to 64 reported ever being tested for HIV; 15 percent reported being tested in the past year. The Urban Centers had the highest percentage of reported HIV testing. There were no differences in HIV testing by city.

Black and Hispanic adults were more likely than white or Asian adults to have ever had an HIV test and to have had a test within the past year. There were higher HIV testing rates among blacks compared to whites in all HRGs with sufficient sample size to produce a reliable estimate. HIV testing among Hispanics as compared to whites was higher only in the Urban Centers and Diverse Suburbs. Asian adults were less likely than white adults to report ever being tested.

TABLE 81: EVER HIV-TESTED, AGES 18-64

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	55.3	53.7	46.4	64.1	53.4	
Hartford	57.0	55.8	42.9	65.0	58.5	
New Haven	52.5	52.1	50.6	64.0	53.4	
HRG 1 (3)-UC	54.9	53.9	47.8	63.9	55.2	
HRG 2 (10)-MC	48.5	47.4	44.9	60.5	48.9	34.9
HRG 3 (15)-DS	45.8	46.2	45.2	57.1	57.4	
HRG 4 (27)-WS	44.1	44.0	44.1		49.0	
HRG 5 (39)-MT	40.4	40.6	40.6	61.3	35.8	32.5
HRG 6 (75)-RT	41.9	42.5	41.7		57.9	
Connecticut	45.3	45.4	43.5	61.3	51.6	33.6
United States	45.4	45.4				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 82: HIV TEST IN PAST YEAR, AGES 18-64

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	23.5	22.0	14.9	29.2	22.8	
Hartford	24.4	23.7	13.7	22.7	33.1	
New Haven	21.7	20.5	17.2	31.9	25.0	
HRG 1 (3)-UC	23.1	22.0	15.8	27.1	27.2	
HRG 2 (10)-MC	17.5	16.8	14.0	23.5	21.7	11.8
HRG 3 (15)-DS	15.4	15.6	14.3	30.2	18.6	
HRG 4 (27)-WS	11.9	12.4	12.6		11.3	
HRG 5 (39)-MT	12.2	12.5	11.9	27.2	14.0	11.9
HRG 6 (75)-RT	10.7	11.4	10.9		15.9	
Connecticut	14.6	14.8	13.0	26.4	22.1	12.1
United States	12.4	12.4				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available online at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Cholesterol Tests

Cholesterol checks are particularly important in preventing cardiovascular disease. A finding of high cholesterol may lead to medication and recommendations for changes in diet and physical activity levels. The Behavioral Risk Factor Surveillance System (BRFSS) survey asks whether the respondent has received a cholesterol check in the past five years. Results are shown in Table 83.

TABLE 83: CHOLESTEROL CHECK IN PAST FIVE YEARS

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	75.6	76.6	77.8	79.5	76.2	
Hartford	68.8	70.9	73.5	75.1	64.7	
New Haven	68.7	72.7	79.1			
HRG 1 (3)-UC	71.0	73.4	76.7	75.3	67.2	
HRG 2 (10)-MC	74.6	75.1	79.3	66.6	65.1	60.1
HRG 3 (15)-DS	77.2	75.8	77.1	73.7	71.2	
HRG 4 (27)-WS	81.7	78.6	79.1			
HRG 5 (39)-MT	78.2	76.5	76.7	81.7	68.6	79.6
HRG 6 (75)-RT	79.1	77.3	77.5			
Connecticut	77.4	76.3	77.8	73.7	67.5	69.8
United States	71.5	71.5				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

These results indicate a lower level of cholesterol checks for black, Hispanic and Asian adults statewide than for white adults, but there are no statistically significant differences among HRGs.

CLINICAL PREVENTIVE MEASURES

Flu Vaccine

More than 36,000 people nationally die from influenza each year. Elderly adults, young children and people with certain health conditions are at high risk for complications. The CDC recommends that all adults 50 and older receive a yearly flu vaccine. Adults over age 65 are considered one of the groups at highest risk and are given priority status for influenza vaccine administration.[91] The *Healthy People 2010* initiative aims for 90 percent of adults age 65 and older to have received a flu vaccine within the past year.[92]

Overall, 70 percent of Connecticut adults age 65 and older reported receiving a flu shot in the past year as did 40 percent of adults aged 50-64. Receipt of flu shots in both age groups varied somewhat by HRG, though sample sizes were too small to detect significant differences. Sample sizes were also insufficient to detect city differences in flu shot receipt.

Hispanic adults in the 50-64 year age group were more likely to receive a flu shot than black and white adults. Among adults age 65 and older, blacks are significantly less likely than whites to have received a flu shot.

TABLE 84: FLU SHOT IN PAST YEAR AGES 50-64

AREA	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	39.7	39.6	32.3		
Bridgeport	35.5				
Hartford	46.0	49.2			
New Haven	38.7	36.9			
HRG 2 (10)-MC	34.9	32.1			
HRG 3 (15)-DS	38.1	37.5			
HRG 4 (27)-WS	43.0	41.9			
HRG 5 (39)-MT	43.3	43.1			
HRG 6 (75)-RT	38.9	39.1			
Connecticut	40.0	39.5	34.2	51.4	

Source: DPH BRFSS Survey Data, 1999-2003.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 85: FLU SHOT IN PAST YEAR, AGE 65 AND OVER

AREA	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	64.7	67.1			
Bridgeport	61.7	61.4			
Hartford	65.9				
New Haven	67.2	70.5			
HRG 2 (10)-MC	69.5	69.7			
HRG 3 (15)-DS	69.7	70.5			
HRG 4 (27)-WS	72.0	72.0			
HRG 5 (39)-MT	68.9	69.0			
HRG 6 (75)-RT	71.7	71.5			
Connecticut	70.0	70.5	58.5	66.5	

Source: DPH BRFSS Survey Data, 1999-2003.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Pneumonia Vaccine

The CDC estimates that 500,000 people nationwide contract, and 40,000 die from, pneumococcal pneumonia each year. The elderly are at greater risk than younger adults for serious illness and death from the disease. Pneumonia vaccine is recommended for all adults age 65 and older, as well as for younger adults with serious long-term health problems.[93] The *Healthy People 2010* initiative aims for 90 percent of adults age 65 and older to receive a pneumonia vaccine.[94]

TABLE 86: PNEUMONIA SHOT EVER, AGE 65 AND OVER, 1999-2003

AREA	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	54.3	61.4			
Bridgeport	53.4	56.5			
Hartford	49.2				
New Haven	60.8				
HRG 2 (10)-MC	58.0	59.4			
HRG 3 (15)-DS	61.4	62.0			
HRG 4 (27)-WS	60.2	60.8			
HRG 5 (39)-MT	63.2	63.4			
HRG 6 (75)-RT	60.6	61.1			
Connecticut	60.4	61.6	37.9	46.4	

Source: DPH BRFSS Survey Data, 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Overall, over 60 percent of Connecticut's adults age 65 and older report ever having had pneumonia vaccine, as presented in Table 86. The percentage varied slightly by HRG, from 54 percent receiving the vaccine in the Urban Centers to 63 percent in the Mill Towns. There were no statistically significant differences in pneumonia vaccine by city.

White Connecticut residents age 65 and older were more likely than their black and Hispanic counterparts to report ever receiving a pneumonia vaccine. In contrast, white residents ages 50 to 64 were less likely than their black and Hispanic counterparts to have received pneumonia shots, as shown in Table 87.

TABLE 87: PNEUMONIA SHOT EVER, AGES 50-64, 1999-2003

AREA	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	21.6	16.8	22.3		
Bridgeport	21.4				
Hartford	22.5				
New Haven	20.9	19.6			
HRG 2 (10)-MC	15.6	15.1			
HRG 3 (15)-DS	18.3	18.6			
HRG 4 (27)-WS	15.3	15.1			
HRG 5 (39)-MT	19.2	18.4			
HRG 6 (75)-RT	15.5	15.2			
Connecticut	17.3	16.6	22.5	24.2	

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

CHAPTER 7

Health Care Quality

CHAPTER 7

HEALTH CARE QUALITY

[I]n scarcely an instance have I been able to obtain hospital records fit for any purpose of comparison. If they could be obtained … they would show subscribers how their money was being spent, what amount of good was really being done with it, and whether the money was not doing mischief rather than good.[95]

— FLORENCE NIGHTINGALE, 1858

The *Data Scan* examines several aspects of health care quality:

- Physician quality
- Malpractice
- Adverse events
- Medical errors
- Ambulatory care sensitive conditions (ACSC)
- Emergency department (ED) visits
- Nursing home quality
- Home health quality
- Health care quality disparities

BACKGROUND

A 2003 Institute of Medicine (IOM) study, *Priority Areas for National Action: Transforming Health Care Quality*, commissioned by the federal Agency for Healthcare Research and Quality (AHRQ),[96] identified 20 diseases and clinical conditions "that may be significantly improved or effectively managed by using best-practice treatment guidelines."[97] These conditions suffer from what the IOM called a "quality gap." The IOM indicated that health care systems were frustratingly slow in adopting best practices to close the quality gaps.

HEALTH CARE QUALITY DEFINITIONS

The federal Quality Interagency Coordination Task Force (QuIC) recommended federal action to reduce medical errors and their impact. QuIC's 2000 review included several definitions that can help to inform the discussion about health care quality:

- **Adverse event:** an injury [harm] caused by medical management and that results in measurable disability.
- **Error:** the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim. Errors can include problems in practice, products, procedures, and systems.
- **Unpreventable adverse event:** an adverse event resulting from a complication that cannot be prevented given the current state of knowledge.
- **Medical error:** an adverse event or near-miss that is preventable with the current state of medical knowledge.
- **Near-miss:** an event or situation that could have resulted in an accident, injury or illness, but did not, either by chance or through timely intervention.
- **System:** a regularly interacting or interdependent group of items forming a unified whole.
- **Systems error:** an error that is not the result of an individual's actions, but the predictable outcome of a series of actions and factors that comprise a diagnostic or treatment process.[98]

Connecticut Department of Public Health (DPH) distinguishes between adverse events caused by medical errors and medical errors that do not result in adverse events. For example, if a patient who has no known allergies develops an allergic reaction to a drug, that reaction would be an adverse event but not a medical error. On the other hand, if a patient with a documented allergy to a drug has an allergic response to the drug, the adverse response would have been caused by a medical error. If a drug was prescribed to a patient with a documented allergy to it, but the physician changed the prescription after being alerted to the error by the pharmacist, there was a medical error but no adverse event. By focusing on the National Quality Forum (NQF) list of serious reportable events, "those reported are more likely to be preventable."[99]

PHYSICIAN QUALITY

DPH's listing of licensed but inactive physicians notes whether a physician is inactive because of a suspended license. DPH also notes whether a physician's license was formerly suspended but reinstated in its file of active physicians. The file does not provide the cause of license suspension nor the reason for the lapse among those reinstated.

MEDICAL MALPRACTICE

Although there is ongoing debate nationally and in Connecticut regarding medical malpractice awards, the number of malpractice claims filed appears to be a weak measure of actual medical error on a number of grounds.

Using claims filed as a measure may lead to overestimates of actual medical error since not all claims filed are actually awarded. On the other hand, claims filed may be only the "tip of the iceberg" regarding actual medical error, leading to underestimates. An historical series of counts of medical malpractice claims filed was tabulated in an Office of Legislative Research (OLR) report in 2002.[100] The original source of the data in the OLR report is not clear. It appears to be taken from rate increase filings from the medical malpractice insurance companies, including Connecticut Medical Insurance Company (CMIC), accounting for about 55 percent of the market; American Healthcare; Truck Insurance Exchange; Proselect; and MIIX. Besides these problems, the filings cover only regulated companies. They do not include "risk retention groups" or "captives," such as Vermont Captive, which insured a substantial number of practices in the state at the date of the report.

The data in Table 88 suggest that medical malpractice claims have not changed appreciably since 1987-88.

TABLE 88: MEDICAL MALPRACTICE CLAIMS FILED IN CONNECTICUT, 1986-2002

Year	Number of Medical Malpractice Cases Filed
1986-1987	512
1987-1988	377
1988-1989	312
1989-1990	298
1990-1991	262
1991-1992	272
1992-1993	331
1993-1994	337
1994-1995	385
1995-1996	384
1996-1997	382
1997-1998	337
1998-1999	389
1999-2000	369
2000-2001	366
2001-2002	368

Source: Harleston, J. OLR Report: Medical Malpractice. 2003-R-0218. Feb. 19, 2002.
See Harleston reference in reference notes.

Another source of medical malpractice data is the National Practitioner Data Bank of the Bureau of Health Professions, part of the U.S. Department of Health and Human Services (HHS). Statewide and national data from 1990 through 2003 are available for more detailed studies. National and state-level statistical data are available — such as the 2,280 medical malpractice reports in Connecticut between 1990-2003. The statistical summaries do not identify individual practitioners and institutions.[101]

MEDICAL ERROR DATA

A 1999 report by the IOM's Committee on the Quality of Health Care in America, *To Err is Human: Building a Safer Health System,* estimated that between 44,000 and 98,000 Americans die each year from preventable medical errors.[102] This indicates that between 1.8 percent and 4 percent of all deaths in the United States are attributable to medical error. Although there have been claims that the IOM report inflated the level of medical errors,[103] the study authors have rebutted these claims.[104]

The IOM report was preceded by the classic 1977 "California" study of adverse events[105] and a Harvard Medical Practice Study based on 1984 data.[106] The IOM report has led to many federal and state research studies and policies to respond to the systemic problems revealed.[107,108,109] Some work has been done using different methodologies to compare New York, Wisconsin, Colorado, Utah, and Australian rates.[110] International surveys have suggested that U.S. health care quality is particularly problematic, at least as reported by patients.[111] The IOM study also spawned numerous state-level studies and documents distributed by citizen organizations, including Ralph Nader's Public Citizen Health Care Research Group.[112]

MEDICAL ERRORS IN CONNECTICUT

The IOM range of medical error estimates would translate into 542 to 1,208 of the 30,122 total deaths in Connecticut in 2002. Thus, the range of medical error fatalities based on the IOM study could account for a number of deaths in the range of ninth-ranked nephritis (554 deaths) or fifth-ranked "unintentional injuries" (1,182 deaths).[113]

ADVERSE EVENTS

According to the DPH, hospitals and outpatient surgical facilities are required to report adverse events. DPH defines these as "a discrete, auditable, and clearly defined occurrence with a negative consequence of care that results in unintended injury or illness, which may or may not have been preventable."[114]

The adverse events used as indicators by the NQF include surgical events (five types); product or device related events (three types); patient protection events (three types); care management events (seven types); environmental events (five types); and criminal events (four types). Six Connecticut-specific events have been added, including nosocomial (hospital-acquired) infections resulting in death or serious injury.

The NQF list adopted for Connecticut is "a nationally agreed upon list of events that should never occur."[115] It includes things like performing surgery on the wrong body part or wrong patient; discharging a baby to the wrong family; or an assault that causes significant injury or death of a patient or staff member on the grounds of a health care facility.

The current Connecticut adverse event reporting system went into effect in July 2004. In the months between July 1, 2004, and Sept. 14, 2005, 239 adverse event reports were recorded. The most frequent events were falls (98 cases), perforations during surgery (59 cases), and stage 3 or 4 pressure ulcers (21 cases); 25 deaths were recorded.[116] Only three infections resulting in death or serious injury were counted in this same series.

HOSPITAL-ACQUIRED INFECTIONS

The Centers for Disease Control and Prevention (CDC) and other agencies, such as the National Nosocomial Infections Surveillance System, have indicated that hospital-acquired infections are a main source of preventable death in hospital environments. Increased hand-washing by medical professionals is an important practical way to avoid nosocomial infections.[117]

Healthy People 2010 contains baseline statistics and goals for nosocomial infections in hospital intensive care units. These are typically expressed in units of infections per 1,000 patient days. For example, the 1998 baseline for "central line-associated bloodstream infection" is 5.3 infections per 1,000 patient-days, and the *Healthy People 2010* target is 4.8 infections per 1,000 patient-days.[118]

Connecticut's small number (three) of reported hospital-acquired infections is in marked contrast to the 2004 figures for Pennsylvania, estimated at 7.5 per 1,000 hospital admissions by the Pennsylvania Health Care Cost Containment Council. Of these patients, 15.4 percent died — compared to 2.4 percent of patients who died without having a hospital-acquired infection. These rates are considered likely to be underestimates.[119,120] If the Pennsylvania rates were applied to Connecticut, approximately 426 Connecticut residents each year would die of hospital-acquired infections. There is a major discrepancy between this estimate and the number actually reported (three deaths in 14.5 months).

DPH has suggested that the marked difference in reported and expected rates of adverse events may be due to: (1) fear of malpractice litigation; (2) fear of adverse publicity; (3) inability to identify incidents; (4) reporting burden; (5) lack of perceived usefulness; and (6) unclear adverse event definitions.[121]

In 2004, DPH, together with the Connecticut Hospital Association (CHA), surveyed hospital administrators to ascertain some of the reasons for poor reporting by hospitals. While the response rate was low (25 percent), those responding mentioned "the nature of the follow-up DPH investigation as a disincentive to reporting." The report suggested that the ways to improve the adverse event reporting system included:

- Clarifying reporting requirements to reduce variability.
- Reviewing the present reporting timeframe to allow for thorough investigation and comprehensive corrective action plans.
- Providing confidentiality to encourage reporting while still promoting public accountability.[122]

HOSPITAL PERFORMANCE MEASURES

Comparing hospital clinical performance beyond the obvious measures (e.g., operating on the right limb, protecting patients from nosocomial infection) has proven to be a difficult task. This occurs for three fundamental reasons: (1) there may be disagreement among clinicians regarding the utility of particular types of care; (2) the type of care may not be applicable to certain classes of patients, and therefore, hospitals who have more of that type of patient will be "unfairly" graded in the performance comparisons; and (3) the numbers of certain types of patients in some hospitals may be so small that the performance rates are statistically unreliable.

Much effort has gone into defining measures on which there is broad agreement, determining appropriateness for classes of patients, and assuring that the numbers of patients are sufficient to provide reliable estimates.

There is broad agreement that certain measures of care for heart attack, heart failure and pneumonia meet these three criteria. The measures include:

For heart attack:

- Giving aspirin within 24 hours of arrival
- Giving a prescription for aspirin upon discharge
- Giving an angiotensin-converting enzyme (ACE) inhibitor if heart function is impaired
- Giving a prescription for a beta-blocker upon discharge
- Giving a beta-blocker within 24 hours of arrival

For heart failure:

- Performing a left ventricular function (LVF) assessment
- Giving an ACE inhibitor if heart function is impaired

For pneumonia:

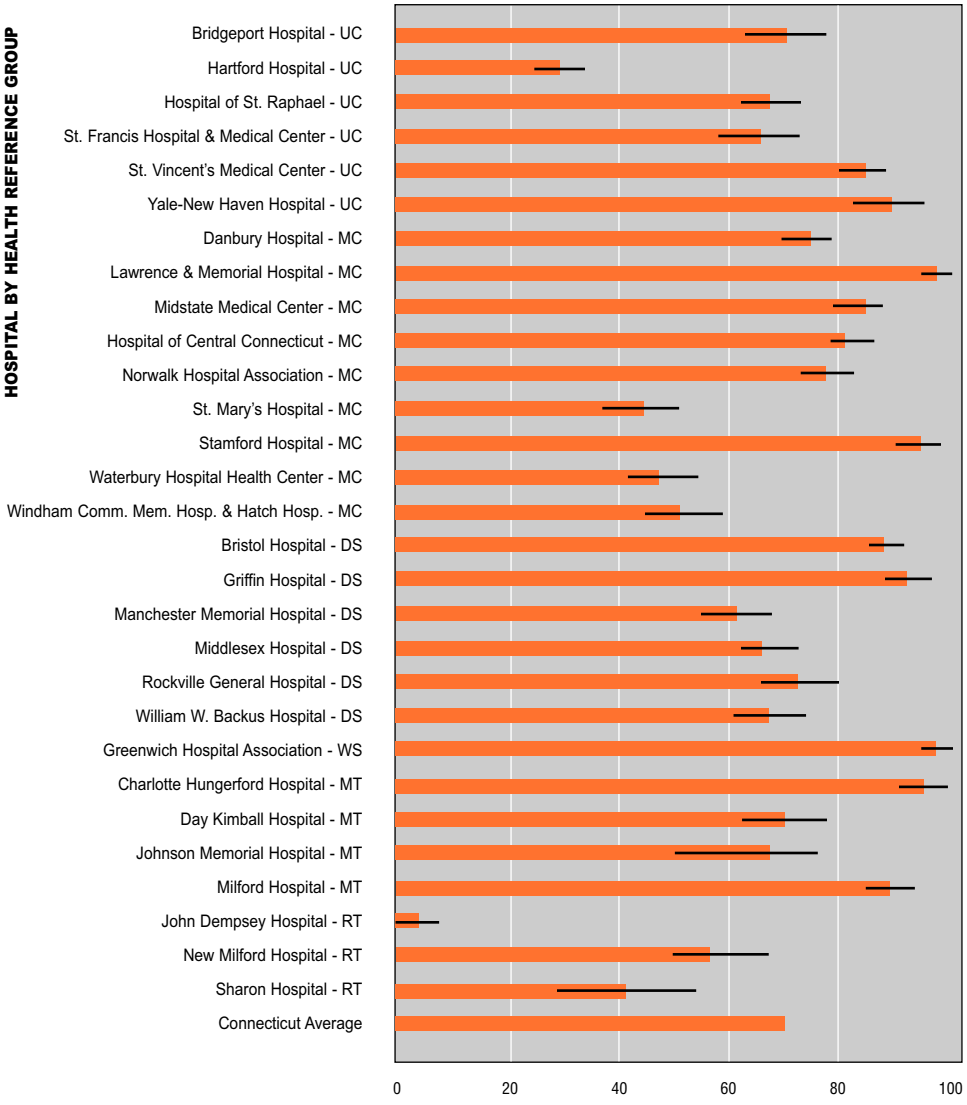
- Oxygenation assessment within 24 hours of arrival
- Screening for and/or giving a pneumonia vaccination before discharge
- Giving an antibiotic within four hours of arrival

DPH has published reports on variation among Connecticut hospitals in the extent to which these widely accepted care standards are accomplished.[123]

Hospital Quality — Data from Hospital Compare

"Hospital Compare," an interactive quality tool operated by the HHS, reports data on 20 indicators similar to the NQF derived measures used by the DPH. These measures identify variation among hospitals, but they do not allow for population-based estimates of disparity based on patient residence or other characteristics. Figure 19 presents a sample of the data available in Hospital Compare, for hospitals reporting a sufficient number of cases. These data suggest that there is significant variation among Connecticut hospitals on some measures. Year-to-year comparisons, however, indicate significant variation in the number of cases for each hospital, suggesting possible data collection problems.

FIGURE 19: PERCENTAGE OF PNEUMONIA PATIENTS ASSESSED AND GIVEN PNEUMONOCOCCAL VACCINE, IF APPROPRIATE, APRIL 2005-MARCH 2006



Source: HHS Hospital Compare. Available at: http://www.hospitalcompare.hhs.gov.
Note: Whiskers on bars indicate 95 percent confidence intervals. If the whiskers do not overlap, then the difference between two rates is statistically significant.

Hospital Quality — Patient Satisfaction

Hospitals for many years have used patient satisfaction surveys, such as the Picker and Press-Ganey surveys. The federal government has worked with associations of hospitals, quality organizations and survey experts to develop a standardized survey. The survey will be voluntary, but it is widely believed that all or almost all hospitals will take part since results will be put on a federal web site — where lack of participation will be prominently noted. The AHRQ's Consumer Assessment of Healthcare Providers and Systems (CAHPS) is developing patient satisfaction surveys for nursing homes, ambulatory, and managed care settings.[124]

MANAGED CARE QUALITY — HEDIS® MEASURES

"HEDIS® (Health Plan Employer Data and Information Set) is a set of performance measures developed by the National Committee for Quality Assurance (NCQA) to let independent reviewers evaluate managed-care programs on five major areas of performance: (1) access and service, (2) qualified providers, (3) staying healthy, (4) getting better, and (5) living with illness.[125]

Six of the nine health maintenance organizations (HMOs) operating in Connecticut and listed on the NCQA web site had been evaluated as of Nov. 8, 2005, all with summary accreditation scores of excellent. The HEDIS® measures in use did not discriminate well among the health plans. The remaining three health plans had not yet been evaluated. Another problem with the review is that it does not specify the geographic location of the patient or other relevant variables, so that health care disparities may not be evaluated. Such data are typically available within the individual plan's databases, and individual organizations could use (and have used) them for systematic quality improvement efforts.

One Midwestern managed care plan provided an example of this kind of quality analysis in its quality improvement research review of comprehensive diabetes care, specifically the percentage of cases in which foot exams were performed. The rates were approximately 82 percent for whites, 55 percent for blacks, 52 percent for Hispanics, and 33 percent for Asians. The differences between whites and all other groups taken together were statistically significant.[126] Such analyses of disparities could be encouraged in Connecticut managed-care plans, and followed up with improvement efforts.

NURSING HOME QUALITY

Several types of quality information are available for long-term care facilities: counts of deficiencies on federally mandated and state-conducted nursing home inspections, done approximately yearly, and health status indicators and changes in health status of the residents, as reported quarterly by each facility.

Those measures are available at www.medicare.gov/NHCompare/home.asp for all Medicare and/or Medicaid-certified facilities in Connecticut, which includes virtually all licensed facilities. The results indicate Health Reference Group (HRG) differences in quality of care as measured by the percentage of those with 20 or fewer deficiencies. Facilities in the Mill Towns and Rural Towns have fewer deficiencies than those in the Urban Centers. This finding is due primarily to the poor performance of Bridgeport facilities: only one of five Bridgeport facilities had 20 or fewer deficiencies.

Another measure of quality is the percentage of residents experiencing severe pain. This indicator shows a lower percentage experiencing severe pain in the Urban Centers than in the Mill Towns and Rural Towns. No explanation is available for the observed differences between the state-conducted inspections and the facility-reported pain quality measures. No data are reported by race or ethnicity.

TABLE 89: NURSING HOME DEFICIENCIES ON INSPECTION AND PERCENTAGE OF NURSING HOME RESIDENTS EXPERIENCING PAIN, 2005

AREA	Number of Licensed Nursing Home Facilities	Number with 20 or Fewer Deficiencies at Latest Inspection Round	Percentage with 20 or Fewer Deficiencies	Average Number of Deficiencies per Facility	Average Percentage of Residents Experiencing Severe Pain
HRG 1 (3)-UC	18	8	44	23.8	3.06
Bridgeport	5	1	20	35.6	
Hartford	5	3	60	19.0	
New Haven	8	4	50	19.4	
HRG 2 (10)-MC	50	27	54	20.9	3.54
HRG 3 (15)-DS	48	28	58	20.7	4.33
HRG 4 (27)-WS	30	15	50	20.3	4.63
HRG 5 (39)-MT	64	41	64	16.6	4.68
HRG 6 (75)-RT	36	23	64	19.2	4.69
Connecticut	246	142	58	20.0	

Source: Nursing Home Compare. Information on Medicare/Medicaid-certified nursing homes, resident and inspection information available at: http://www.medicare.gov/NHCompare.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

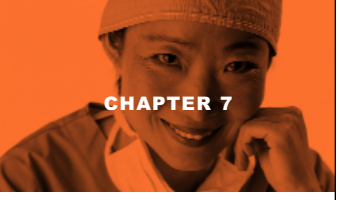
HOME HEALTH CARE QUALITY

Home health quality measures come from information collected by Medicare- and Medicaid-certified home health agencies and are publicly available through the Home Health Compare web site www.medicare.gov/HHCompare/. There are 93 agencies on the Home Health Compare list for Connecticut, of which 10 are owned or managed out of state. They collect information about Medicare and Medicaid patients who receive skilled care.

Information is collected about patients' health; how they function; the skilled care and social, personal, and support services they need; and their living conditions. This information set is called the Home Health Outcome and Assessment Information Set. Skilled home health staff gather the information by observing the patient and the patient's home and situation. They also gather information by talking with the patient and caregivers. The broad quality measurement areas are:

- Improvement in getting around
- Patient's activities of daily living
- Patient medical emergencies
- Improvement in mental health

Detailed measures are presented in Appendix I.



Outlier agencies, thus, could be identified for further investigation and work on quality improvement. As with the nursing home quality data, summaries by provider town, region and HRG could be produced. But they have little meaning in analyzing population-based quality because home health agencies are multi-town in scope. No data are publicly available to assess home health care disparities.

RECOMMENDED IMPROVEMENT STRATEGIES

The IOM followed the *To Err* report with *Crossing the Quality Chasm* and offered several findings, aims and rules for quality improvement. First, "errors occur because of system failures" and "preventing errors means designing safer systems of care." Second, the aims of improvement efforts should be that health care will be more "safe, effective, patient-centered, timely, efficient, and equitable." Finally, the IOM suggested new rules for health care quality improvement, as shown in Table 90.[127]

TABLE 90: 10 SIMPLE RULES FOR HEALTH CARE QUALITY IMPROVEMENT

Current Approach	New Rule
Care based on visits	Continuous healing relationships
Professional autonomy	Customized care for patients
Professionals control care	Patient is source of control
Information is a record	Information flows freely
Decision making is based on training and experience	Decision making is based on evidence
Safety is individual responsibility	Safety is a system property
Secrecy is necessary	Transparency is necessary
The system reacts to needs	Needs are anticipated
Cost reduction is sought	Waste is continuously decreased
Professional roles trump the system	Cooperation is a priority

Source: IOM Committee on the Quality of Health Care in America. Summary of, Crossing the Quality Chasm: A New Health System for the 21st Century. See endnote for full reference.

The IOM followed its early reports on quality by identifying 20 priority areas thought to be prime targets for improvement in health care delivery, as indicated in Table 91.

TABLE 91: 20 KEY TARGET AREAS FOR TRANSFORMING THE HEALTH CARE SYSTEM

Key Target Areas		
Asthma	Frailty associated with old age	Pain control in advanced cancer
Care coordination (cross-cutting)	Hypertension	Pregnancy and childbirth
Children with special health care needs	Immunization	Self-management/health literacy
Diabetes	Ischemic heart disease	Severe and persistent mental illness
End of life with advanced organ system failure	Major depression	Stroke
Evidence-based cancer screening	Medication management	Tobacco-dependence treatment in adults
	Nosocomial infections	
	Obesity	

Source: The National Academies News Office: Publication Announcement "Officials Should Target 20 Key Areas to Transform Health Care System." Jan. 7, 2003.

One of the target conditions the IOM evaluated was diabetes care. The report stated that many patients cannot control their blood sugar, and others are not receiving an adequate level of overall care — including annual glycosylated hemoglobin checks, retinal eye screening and foot screening, annual influenza immunizations, and blood lipid testing every two years.[127]

The IOM suggested quality improvement strategies for diabetes and others of the 20 conditions it examined, including:

- Using reminder systems for physicians and patients.
- Transmitting patient data from outpatient specialty clinics to the patient's primary physician via telephone, fax or e-mail.
- Continuing education for physicians and patients.[128]

PRIMARY CARE QUALITY: AMBULATORY CARE SENSITIVE CONDITIONS

The Connecticut Office of Health Care Access (OHCA) has identified several conditions as ambulatory care sensitive conditions (ACSC), conditions in which hospitalization can be avoided through good primary care. A high rate of ACSC is an indicator that the illness is not being handled well in the primary care setting for any of several reasons: the patient had inadequate access to primary care; the patient did not make use of primary care, even when it was available, until late in the disease process, and then required hospitalization; the patient used primary care, but did not follow the prescribed medical regimen; and the underlying condition may be frequent in the underlying population (e.g., rates of diabetes among blacks) and might still be higher even with equal access to and utilization of primary care. Thus, ACSC rates are "flags" for further investigation, not conclusions about cause.

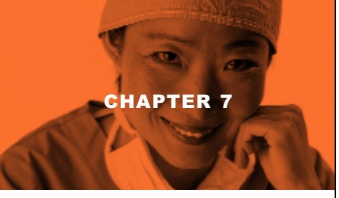


TABLE 92: ANNUALIZED AGE- AND GENDER-ADJUSTED RATES OF HOSPITALIZATION PER 100,000 FOR AMBULATORY CARE SENSITIVE CONDITIONS, 2000-2004

AREA	Total Population	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic*
HRG 1 (3)-UC	2,070	1,507	2,648	2,568	
HRG 2 (10)-MC	1,692	1,450	2,491	2,294	
HRG 3 (15)-DS	1,315	1,248	2,047	1,419	
HRG 4 (27)-WS	871	865	1,473	626	
HRG 5 (39)-MT	1,292	1,287	1,976	1,146	
HRG 6 (75)-RT	1,046	1,037	1,449	691	
Connecticut	1,348	1,191	2,397	2,087	

Source: OHCA; U.S. Census SF1 PCT 12.

**Not reported due to standard methodology used by Connecticut Office of Health Access. Age adjustment by gender and age groups 0-44, 45-64, 65-74 and 75+. Denominators used are white-alone non-Hispanic, black-alone non-Hispanic, and Hispanic, any race.*

Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Table 92 indicates that ACSC rates are highest in the Urban Centers, followed by the Manufacturing Centers, Diverse Suburbs, Mill Towns, Rural Towns, and Wealthy Suburbs. ACSC rates are highest for blacks — double the rates of whites — followed by Hispanics.

But the statewide results hide a more subtle pattern within the HRGs. In the Wealthy Suburbs and Rural Towns, the rate for Hispanics is actually less than for whites and is virtually the same in the Diverse Suburbs and Mill Towns. Hispanic ACSC rates are much higher than for whites only in the Urban and Manufacturing centers. In these cities, the Hispanic and black ACSC rates are similar.

Although there are no data on subpopulations for this table, the dominant Hispanic group within the Urban Centers is Puerto Rican. So a reasonable hypothesis is that the high ACSC rates among Hispanics within these communities are due largely to the Puerto Rican Hispanic population. The HRG with the lowest Puerto Rican Hispanic population is the Wealthy Suburbs, which also has the lowest ACSC rate for Hispanics.

The remaining differences could be due to composition effects or subtle differences among the Hispanic populations not picked up in the ACSC data. Or they also may be due to "context" effects — for example, residence in the Rural Towns may have a protective effect for persons of Puerto Rican background, since a fairly high proportion of Hispanic residents in the Rural Towns (45.5 percent) are Puerto Rican, yet their age-adjusted ACSC rate (691 per 100,000) is one of the lowest in the entire table of ACSC results. Further work is needed to test the hypothesis of disparities within the Hispanic population.

HEALTH CARE ACCESS AND QUALITY: EMERGENCY DEPARTMENT VISITS

Variation in the rates of ED use can indicate problems with access to care or continuity of care. The primary role of the ED is to stabilize persons with injuries and acute conditions. But the ED is often used for unscheduled care because of inadequate capacity to provide timely care in other parts of the health care system. Evaluating ED use rates in Connecticut provides an indicator to track disparities in access to and use of the health care system.

ED visits increased nationally from 90.3 million in 1993 to 113.9 million in 2003. Statistics for 2003 ED use indicate that only 15 percent of ED visits in the United States were emergent (requiring treatment within 15 minutes of arrival). Thirty-five percent were urgent (15-60 minutes), 20 percent semi-urgent (1-2 hours), 13 percent nonurgent (2-24 hours), and 17 percent unknown or not triaged.

Blacks had a higher proportion of nonurgent ED visits (16.5 percent) compared with whites (11.9 percent). This may indicate that black residents are relatively underserved in or underutilize the primary care system. Higher proportions of nonurgent ED use were also reported for younger age groups (under 15 and 15-24) and for persons covered by Medicaid or Self-Pay. A significant proportion of the U.S. population reports that the hospital emergency department, and not a physician, is their usual source of care.[129]

A study was conducted for the *Data Scan*, based on hospital ED record data from the CHA's CHIME Database for fiscal years 2002 and 2003 combined. More recent data were not used since coverage of Connecticut hospitals was not complete for fiscal year 2004. For 2002-2003, there were 2,638,562 ED visits for Connecticut residents. Connecticut residents treated outside of the state and non-Connecticut residents treated in Connecticut were not included.

Of the 2,638,562 visits over the two-year interval, 15.1 percent resulted in an inpatient admission. Individual city and town data were not available, due to privacy restrictions, but HRG-level data were released for analysis. The complete report is online at www.cthealth.org. The results are summarized below:

- The crude annual ED visit rate per 1,000 Connecticut residents was 387.4, and the age and gender-adjusted rate was 388.0.
- The highest ED rates were in the Urban Centers (Bridgeport, Hartford, New Haven), while the lowest rates were in the Wealthy Suburbs. The age- and gender-adjusted rate in the Urban Centers (608.1) was 2.7 times the rate in the Wealthy Suburbs (222.0).
- The results indicate that HRG-to-HRG variation in the use of the ED for treatment of such medical conditions as asthma, otitis media, acute upper respiratory infections, abdominal pain, and back and neck strains was greater than HRG-to-HRG variation in ED use for treatment of injuries.
- Comparing ED rates between the Urban Centers and the Wealthy Suburbs, diagnoses with the largest variance were asthma (18.6 vs. 2.6, a ratio of 7.2 to 1), otitis media (12.2 vs. 2.3, a ratio of 5.3 to 1), and acute upper respiratory infections (26.3 vs. 5.5, a ratio of 4.8 to 1).

The results suggest that the populations living in Urban Centers are most likely to use the hospital ED for treatment of conditions that could easily be treated in a physician's office or clinic.

Table 93 shows the overall crude and age-adjusted rates of ED visits, those that led to hospital admission, and demonstrates the large HRG differences: the Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs. These differences may have significant policy implications.

TABLE 93: EMERGENCY DEPARTMENT VISITS BY HRG, FISCAL YEARS 2002 AND 2003

AREA	2000 Population	Total ED Visits 2002-2003	ED Visits, Patient Admitted 2002-2003	ED Visits, Patient Not Admitted 2002-2003	Annual Crude ED Visit Rate	Annual Age-Adjusted ED Visit Rate	Age and Sex Adjusted ED Visit Rate, Patient Admitted	Age and Sex Adjusted ED Visit Rate, Patient Not Admitted
TOTAL	3,405, 565	2,638,562	398,980	2,239,582	387.4	388.0	54.5	333.4
HRG 1 (3)-UC	384,733	467,560	59,600	407,960	607.6	608.1	85.8	522.3
HRG 2 (10)-MC	662,398	660,143	90,460	569,683	498.3	492.7	64.6	428.2
HRG 3 (15)-DS	587,504	475,430	73,022	402,408	404.6	398.3	54.0	344.3
HRG 4 (27)-WS	487,620	209,322	41,253	168,069	214.6	222.0	39.1	182.8
HRG 5 (39)-MT	698,517	480,080	82,816	397,264	343.6	341.2	51.9	289.3
HRG 6 (75)-RT	584,793	346,027	51,829	294,198	295.9	306.6	43.2	263.4

Source: CHIME Database, CHA.

Given the large HRG differences in ED visit rates, it would be useful to determine whether these rates also vary by race and ethnicity and which specific conditions show the largest disparities. ED visit rates by race and ethnicity have been estimated according to a procedure available in the full ED report at www.cthealth.org.

TABLE 94: EMERGENCY DEPARTMENT VISITS BY HRG AND RACE/ETHNICITY, FISCAL YEARS 2002 AND 2003

AREA	Annual Age- and Sex-Adjusted ED Visit Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	608.1	423.9	745.4	743.3	117.8
HRG 2 (10)-MC	492.7	394.3	720.8	724.1	76.8
HRG 3 (15)-DS	398.3	379.1	564.3	498.7	126.7
HRG 4 (27)-WS	222.0	217.3	392.4	264.0	95.1
HRG 5 (39)-MT	341.2	340.9	554.6	319.1	99.3
HRG 6 (75)-RT	306.6	308.0	412.0	203.4	114.8
Connecticut	388.0	329.4	674.1	640.5	100.0

Source: CHIME Database, CHA.
Note: Race and ethnicity specific rates are age and sex adjusted.

Table 94 demonstrates several important lessons. First, there are clear HRG differences when controlling for race and ethnicity. The order of the HRGs is similar for all groups except for Asians: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs.

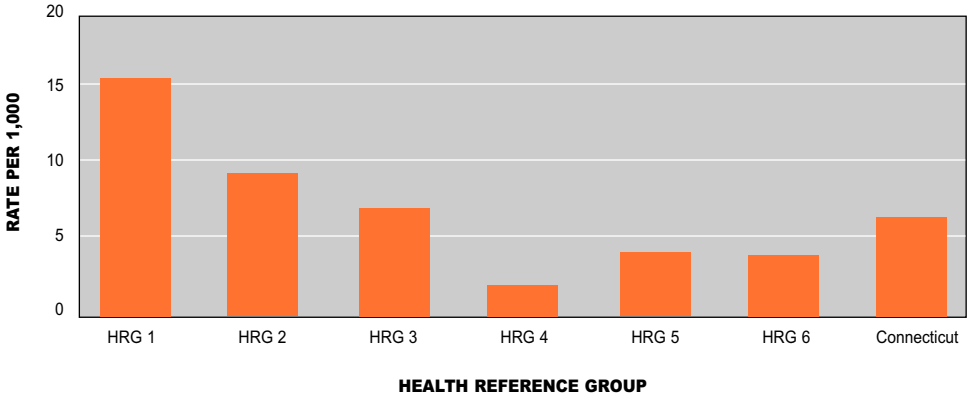
Second, there are clear race and ethnicity differences when controlling for HRG. Within each HRG, black residents show the highest rate of ED visits, followed by Hispanics (in the Urban Centers, Manufacturing Centers, Diverse Suburbs, and Wealthy Suburbs) and then by whites (in the Mill Towns and Rural Towns). Asians have uniformly the lowest ED visit rates.

Third, the pattern of HRG/race and ethnicity differences varies considerably. For example, HRG makes virtually no difference for Asians but a great deal of difference for Hispanics [the ratio of the highest rate in the Urban Centers to the lowest in the Rural Towns is 743.3: 203.4 (= 3.7:1). For blacks, the largest rate is 745.4 in the Urban Centers compared with 392.4 in the Wealthy Suburbs (= 1.9:1); for whites, 423.9 in the Urban Centers compared with 217.3 in the Wealthy Suburbs (= 2.0:1); and for Asians 126.7 in the Diverse Suburbs compared with 76.8 in the Manufacturing Centers (= 1.6:1)].

These results are consistent with both composition effects — the people in the HRGs may be different and context effects — some HRGs may exert protective effects on their residents while other HRGs may exert health-demoting effects. Based on the current data, disentangling these two types of effects is not possible. Further, differences may exist in access to and utilization of alternatives to emergency care. What does seem clear is that based on this and other indicators, some groups of Asian residents may be relatively and uniquely impervious to the health-demoting aspects of American urban culture.

Some types of ED visits show extreme variation as illustrated in Figure 20 for asthma-related ED visits. This variation points to great opportunities to target the Urban Centers to improve access to and utilization of primary care, the quality of patient-provider communications and, therefore, the results of the primary care system, as a means of avoiding unnecessary emergency care.

FIGURE 20: ASTHMA AGE- AND GENDER-ADJUSTED ANNUAL RATES OF EMERGENCY DEPARTMENT USE PER 1,000 RESIDENTS BY HEALTH REFERENCE GROUP, STATE FISCAL YEAR 2002-2003



Source: CHIME Database, CHA; U.S. Census 2000, SF1: Table P12.

HEALTH CARE QUALITY DISPARITIES

There is a growing research literature on health care quality disparities focused on the differential treatment of, or outcomes for, patients based on race and ethnicity. Although there are no state-specific disparities data for Connecticut, the research is still worth examining to develop hypotheses and suggest directions for investigation.

The recent IOM report — *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* — summarized the current situation: "[R]acial and ethnic minorities tend to receive a lower quality of care than non-minorities, even when access-related factors, such as patient's insurance status and income are controlled."[130] The report states that a large body of research underscores the existence of disparities — such as the lower likelihood that minorities will be given appropriate cardiac medications, undergo bypass surgery, or receive kidney dialysis or transplants, and the greater likelihood they will receive other less-desirable procedures, such as lower limb amputations for diabetes and other conditions."[131]

Many additional aspects of such disparities have been investigated since the publication of the IOM report. A Kaiser Family Foundation study found that among 81 studies of racial/ethnic differences in cardiac care, 68 showed differences in favor of white patients, 11 studies found no differences, and two studies found differences in favor of minority patients.[132] Other organizations have developed initiatives to address health care quality disparities, such as the Commonwealth Fund's Program on Quality of Care for Underserved Populations,[133] and the AHRQ's National Healthcare Disparities Report, which provides a summary health care disparity measure based on race, ethnicity, and income.[134]

A 2005 report in the *New England Journal of Medicine* on trends in quality of care for racial minorities showed small but statistically significant reductions over time in disparities in HEDIS® measures. These include breast cancer screening, diabetes care and two indicators of cardiovascular care. On one measure of cardiovascular care, control of LDL cholesterol level, the report found low levels (68 percent for white patients, 51 percent for black patients), and no statistically significant improvement between 1999 and 2002. [135]

Other studies of surgical procedures in a Medicare population found no evidence of disparity reduction nationwide. They found significant reductions in certain geographic regions, but no *elimination* of disparity in any region.[136]

Analyses based on the National Registry of Myocardial Infarction (NRMI) similarly showed no significant reduction in crude rates of disparities, but noted that some disparities become not significant after multivariate rate adjustment.[137]

Recent research has pointed to the role of comorbidities in accounting for some of the breast cancer survival time difference between black and white women. Black women have significantly shorter survival time than white women, but they are also more likely to have co-morbidities. As these are factored out, most of the disparity in all-cause survival time disappears, though not the disparity in cancer-specific survival.[138]

A 2005 presentation[139] at the Harvard University School of Public Health's annual Symposium on Racial and Ethnic Health Disparities in the United States suggested that the higher prevalence of co-morbidities (e.g., hypertension and diabetes) among minorities should be considered in analyzing disparities in health outcome:

- As mediators of treatment choices or of treatment effectiveness.
- As predictors of survival or other health outcomes, independent of treatment for primary conditions being studied.

The presenter provided an instructive list of possible explanations for disparities, illustrated in Table 95.

TABLE 95: POSSIBLE EXPLANATIONS FOR DISPARITIES[140]

Environmental Factors	Individual Factors
Income/Poverty	Cultural beliefs and preferences
Insurance coverage	[Lack of] trust in providers and organizations
Geographic access	Literacy
Poor-quality facilities and providers in minority neighborhoods	Biased clinical decision making
Cultural competence of providers and systems	Some possible biological differences
Language barriers	
Institutional racism	

Source: See Nerenz endnote for full reference.

Quality improvement work, dedicated to understanding and reducing disparities in the primary care setting, might focus on the operational quality of the networks serving primarily "minority" patients and on problems of follow-up that may have significant effects on "minority" patient outcomes.[141]

Health care quality improvement work can productively focus on disparities. This work ultimately needs to happen within and among health care institutions, supported by larger quality-promoting entities, working with adequate quality metrics that include disparity measures and which adequately account for the roles of patient treatment choices and of co-morbidities.

SUMMARY OF HEALTH CARE QUALITY

Health care quality embraces many different aspects of the system, but we suggest a focus on the quality of care and networking in the primary care system. Poor quality primary care process leads to unnecessary hospitalization and reliance on emergency departments, often putting patients at further risk. Focusing on the primary care part of the system is likely to affect the most patients and address the most significant disparities.

The quality of care in the primary care setting relies heavily on adequate networking with specialists and following best-practice guidelines. Focused initiatives are likely to be most successful. Two promising ways to focus are: (1) on disease categories for which best practices can be defined, e.g., diabetes and the broader category of metabolic syndrome disease; and (2) on improving access to and the quality of physician-patient interaction in the "medical home" — a setting in which issues of prevention, screening, and treatment can and should be initiated.

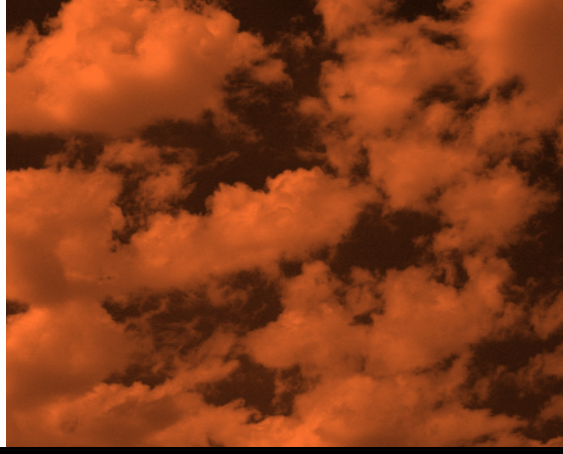
These issues are discussed further in Chapter 11, Findings and Recommendations, Focus Area 2: Diabetes and Metabolic Syndrome Conditions, and Focus Area 3: The Medical Home Concept.

Connecticut lacks an agreed-upon overall "index" that would assist the public in knowing whether health care quality is improving or not improving. Developing such an index could be an important, although a long-term priority. Subparts of the index could indicate sectors that are leading or lagging in improvement. The index also could be constructed to reveal disparities in the quality of care, with adequate controls for appropriateness of care, patient choice, and co-morbidities. The AHRQ has investigated use of this concept on the national level.[142]

Finally, there are major discrepancies between adverse event results reported by law to DPH and estimates based on other research. Part of the work of developing a broadly accepted index should be to understand better the reasons for these differences, and to make appropriate adjustments.

CHAPTER 8

Environmental Health



CHAPTER 8

ENVIRONMENTAL HEALTH

ENVIRONMENTAL HEALTH

Air Quality

- Outdoor air quality
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Human health is directly related to the quality of our air and water. Poor air quality can exacerbate respiratory conditions, especially in vulnerable populations. Poor water quality can lead to water-borne illnesses or cancer. This chapter discusses the human health issues of air and water quality in Connecticut.

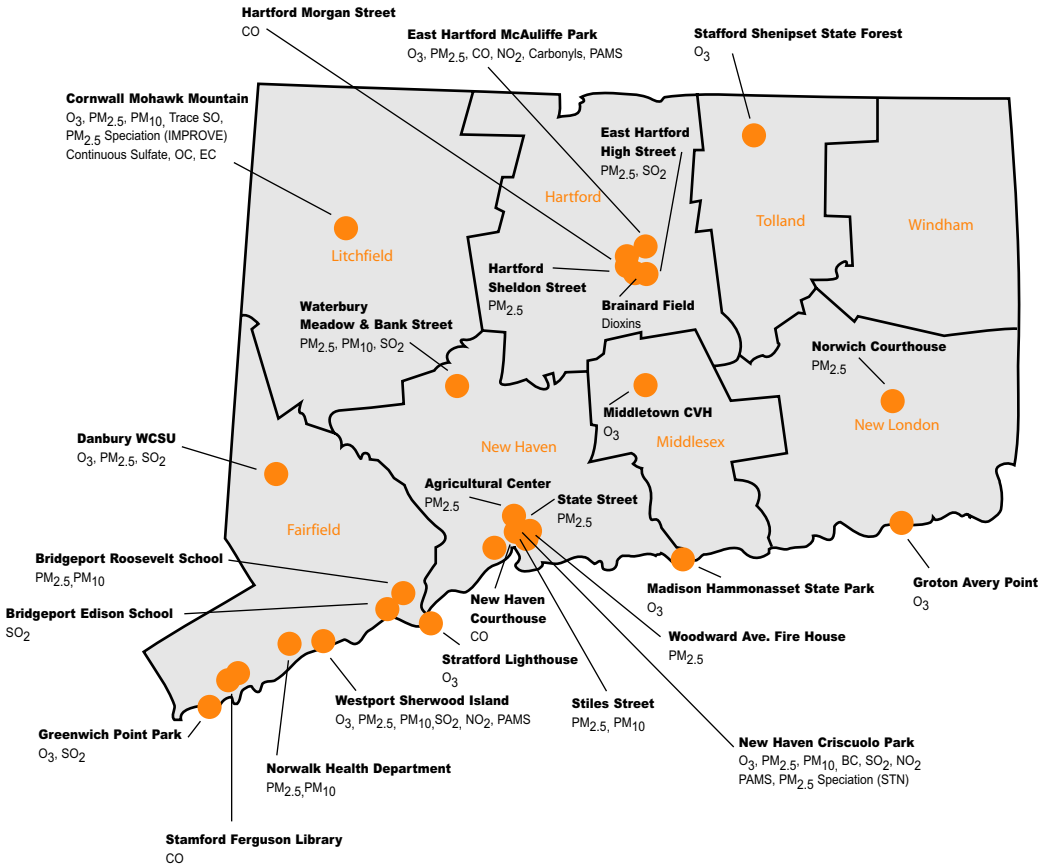
OUTDOOR AIR QUALITY

Air quality is threatened by a variety of pollutants emitted from vehicles, factories, power plants, fires, and tobacco smoke. Pollutants that are considered harmful to human health and the environment are regulated by the Clean Air Act, which is administered by the U.S. Environmental Protection Agency (EPA). The EPA sets National Ambient Air Quality Standards (NAAQS) to protect public health. Primary standards protect healthy citizens as well as vulnerable populations such as children, asthmatics, and the elderly.[143]

Under the Clean Air Act, states are mandated to monitor their ambient air quality and determine whether it meets the EPA's standards for the following criteria air pollutants: ground-level ozone (O_3), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (including PM_{10} and $PM_{2.5}$ — see definitions under the Particulate Matter section). If air quality does not meet a particular standard, states are mandated to develop and implement pollution control strategies to attain the standard.

Connecticut began monitoring particulate matter in the 1950s, even before the Clean Air Act. In the 1970s, the state initiated a computerized network for daily monitoring. Today, the Connecticut Department of Environmental Protection (DEP) monitors air pollutants at 26 permanent monitoring stations.[144]

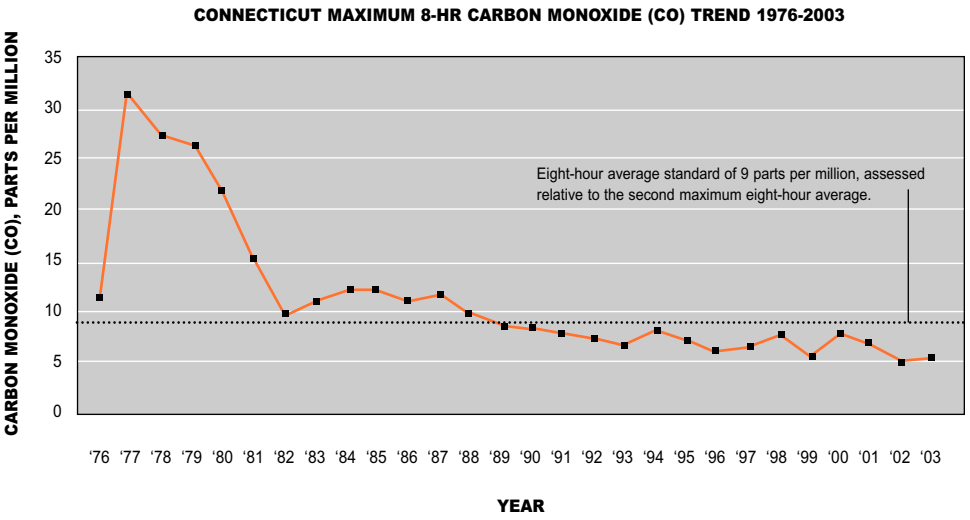
FIGURE 21: CONNECTICUT 2005 AIR MONITORING NETWORK

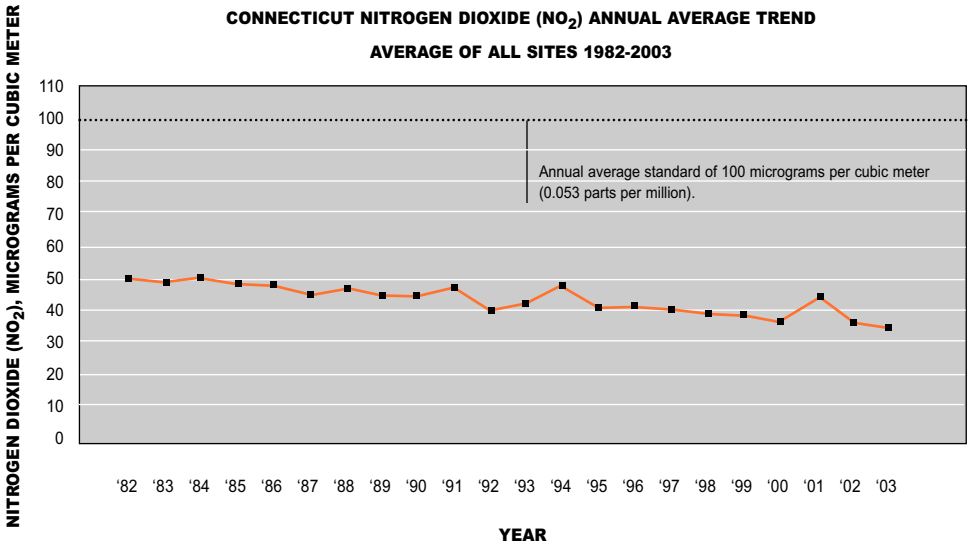


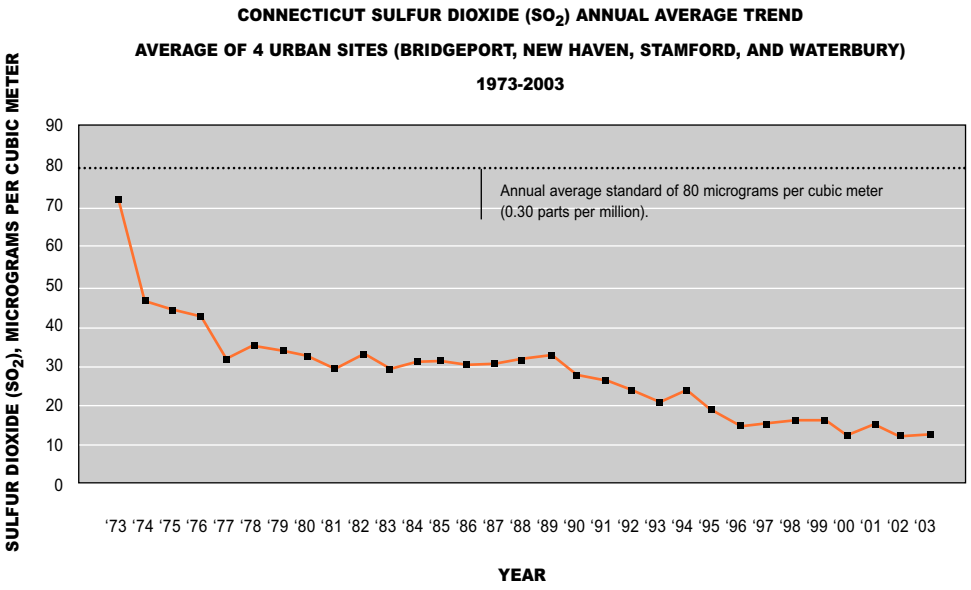
Source: DEP. Available at: http://www.ct.gov/dep/lib/dep/air_monitoring/networkmap.pdf.

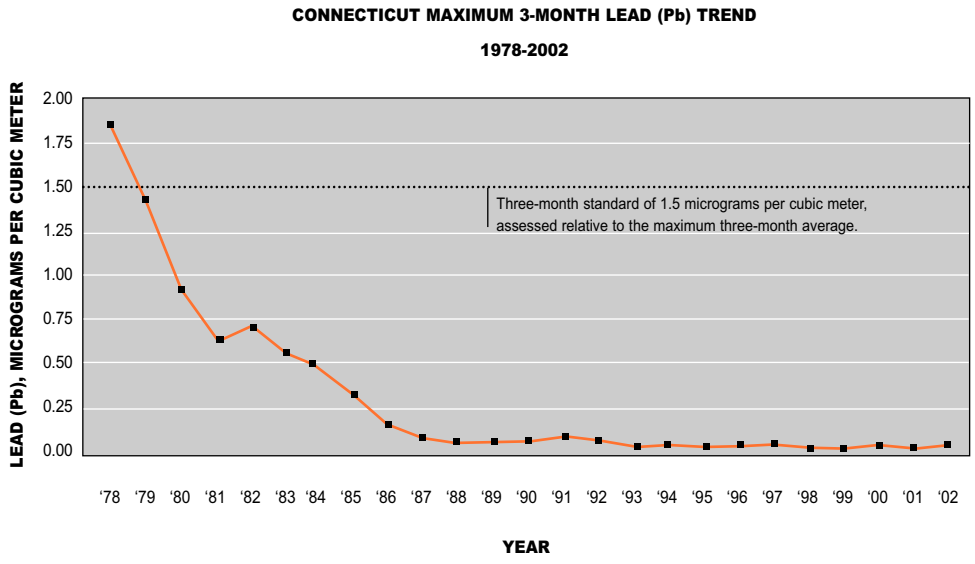
Air pollutants have decreased significantly in Connecticut over the last 20 years. The greatest success story has been a 93 percent decline in ambient levels of lead resulting from the phasing out of leaded gasoline by the EPA in 1973.[145] The 1980s introduction of catalytic converters in automobiles, the state vehicle inspection program and new air pollution control technologies for factories significantly reduced ambient levels of air pollutants. Since 1975, sulfur dioxide and carbon monoxide levels have decreased by 66 percent, nitrogen dioxide levels have fallen by 45 percent, ozone levels have declined by 60 percent, and particulate matter (PM_{10}) has declined by 93 percent.[146]

FIGURE 22: CONNECTICUT AIR QUALITY TRENDS (THROUGH 2003)









Source: DEP. Available at: http://dep.state.ct.us/airmonitoring/trends.htm.

Connecticut today is in compliance with NAAQS for all criteria pollutants except ozone level for the entire state and particulate matter level for Fairfield and New Haven counties.

Ozone

Ground-level ozone ("smog") is more difficult to regulate than other air pollutants because it is formed when volatile organic compounds (VOCs), or hydrocarbons, and nitrogen oxides interact in the presence of sunlight on hot days. Exhaust — from automobiles, trucks, aircraft, and construction equipment — is a major contributor of VOCs and nitrogen oxides to the atmosphere. Chemical manufacturers and power plants burning fossil fuels are also major sources.[147] High ozone concentrations in Connecticut typically occur on hot summer days, as surface winds blow in from mid-Atlantic urban areas and power plants in the Ohio Valley. When these sources combine with more localized emissions from vehicles, industry, and commerce, smog reaches an unhealthy level.[148]

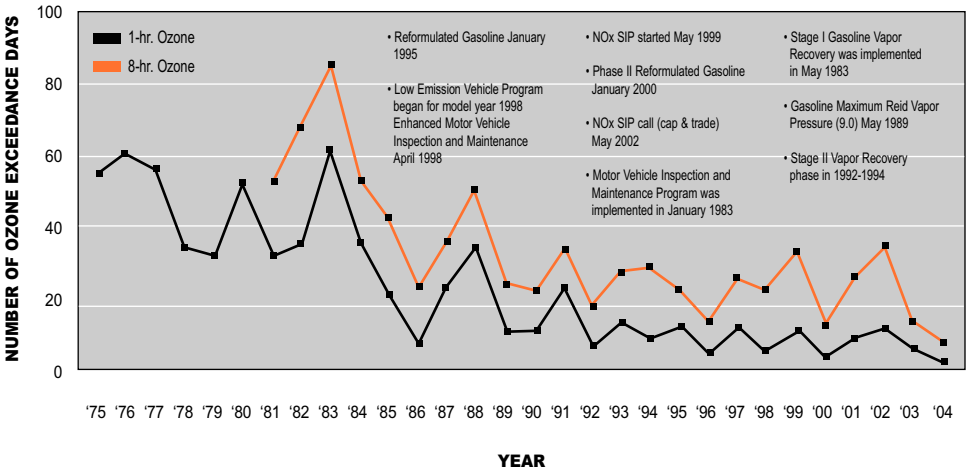
Smog can cause a variety of respiratory ailments from irritation to permanent lung damage. By irritating the respiratory system, ozone can cause coughing, throat irritation or uncomfortable chest sensations. Prolonged exposure to ozone through outdoor physical activity can cause shortness of breath. Ozone can also aggravate asthma attacks because it makes people more sensitive to allergens.

People with chronic lung illness, children and elders are particularly susceptible to elevated ozone levels. Individuals with chronic lung diseases, such as emphysema and bronchitis, who are exposed to high ozone levels are less capable of fighting off bacterial infections in the respiratory system. Consistent ozone damage to children's lungs, which are still developing, can lead to decreased lung function in adulthood. Among elders, ozone exposure can accelerate lung dysfunction.

The effects of ozone can be deceiving because there may be prolonged lung damage even though symptoms of irritation often disappear within several days of exposure.[149]

Connecticut has exceeded the EPA's smog standards less and less often over the past 30 years. Since implementing statewide emission reduction programs for automobiles, fuels and stationary sources of ozone's ingredients, the state has reduced the number of days it exceeds these standards to fewer than 10 over the past two years. Warm, dry summer weather conditions and stagnant air patterns are mainly to blame for violations of ozone standards. This explains why there is large variability from year to year, as weather patterns vary.[150]

FIGURE 23: CONNECTICUT 1-HR AND 8-HR OZONE EXCEEDENCE DAYS TREND (1975-2004)



Source: DEP. Available at: http://dep.state.ct.us/airmonitoring/trends/ozonetrends.htm.

Particulate Matter

Particulate matter is the mixture of solid particles and water droplets in the air. Coarse particles (PM_{10}) are larger than 10 micrometers in diameter and are derived from wind-caused erosion or industry. Fine particles ($PM_{2.5}$) are less than 2.5 micrometers in diameter and are produced from fuel combustion in power plants, vehicles and industrial processes.

Fine particles are a particular health concern even at levels below existing air quality standards because they can penetrate deep into the lungs and cause long-term damage. Long-term exposure to elevated levels of particulate matter can cause such chronic health problems as reduced lung function, bronchitis and even early death. Short-term exposures can cause asthmatic attacks, respiratory infections, acute bronchitis, and heart attacks in people with heart disease.[151]

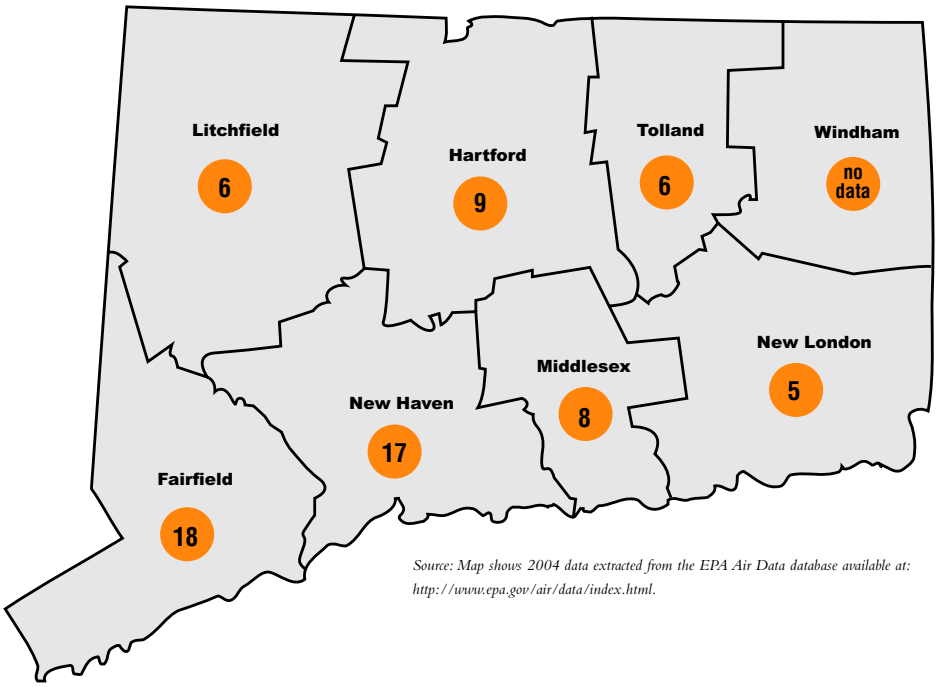
Air Quality Index

The EPA has established an overall index, called the Air Quality Index (AQI), to report daily air quality conditions and their associated health effects. The AQI is a comprehensive indicator of overall air quality because it evaluates air quality based on five criteria air pollutants: ground-level ozone (smog), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide, sulfur dioxide, and nitrogen dioxide. The AQI ranges from 0 to 500, where values up to 50 represent good air quality. Values greater than 100 are harmful to sensitive populations, and those over 150 are unhealthy for all populations. The air is very unhealthy when the index exceeds 200.[152]

The AQI can vary from one season to another. Typically, the higher smog levels of summer produce the highest AQI values. But air quality in the winter also can be unhealthy because cold weather affects car emission control systems, which raises carbon monoxide levels. Particulate matter can cause unhealthy air conditions during any season.

Larger cities typically have more severe air pollution problems. Most communities typically have AQI values below 100 and experience levels above 100 only a few times a year. There are not many values above 200, and those over 300 are very rare.[153]

FIGURE 24: AVERAGE NUMBER OF DAYS WITH UNHEALTHY AIR QUALITY 2000 TO 2005



Source: Map shows 2004 data extracted from the EPA Air Data database available at: http://www.epa.gov/air/data/index.html.

Between 2000 and 2005, New Haven and Fairfield counties had on average 17 and 18 days, respectively, with an AQI above 100. In 2005 the AQI reached unhealthy levels for the general public (AQI > 150) in four out of the seven counties reporting data for one to five days: — Fairfield, New Haven, Middlesex, and Tolland. Between 2000 and 2003, very unhealthy air quality conditions (AQI ≥ 200) occurred with a frequency of one to three days each year.[154] These few occurrences stand out as being extraordinarily poor air conditions when compared with nationwide statistics.

Causes of Poor Air Quality

The EPA's air quality data for 2005 show that particulate matter ($PM_{2.5}$) is more frequently responsible for causing the AQI to reach moderate levels, between 50 and 100, in New York counties close to New York City,[155] and in Fairfield, Hartford, and New Haven counties in Connecticut.[156] Ground-level ozone (smog) was responsible for 100 percent of the unhealthy air conditions in both Middlesex and Tolland counties. It caused most of the poor air quality in New London and Litchfield counties. During the last six years, for every case where the AQI reached unhealthy conditions for the general public (AQI > 150), ground-level ozone (smog) was the cause.[157]

TABLE 96: PERCENTAGE OF DAYS PARTICULAR AIR QUALITY CRITERIA VIOLATED, BY COUNTY, 2005

COUNTY	Percentage of days that a particular Criteria Air Pollutant was responsible for high Air Quality Index					
	CO	NO_2	O_3	SO_2	$PM_{2.5}$	PM_{10}
Fairfield	4	0	34	0.3	61	0.3
Hartford	3	0	19	0	78	0
Litchfield	0	0	59	0	41	0
Middlesex	0	0	100	0	0	0
New Haven	0	0	22	0	78	0
New London	0	0	70	0	30	0
Tolland	0	0	100	0	0	0

Source: EPA Air Quality System (AQS). Data extract for Connecticut, 2004.

WATER QUALITY

Safe Drinking Water Act

The EPA administers the 1974 federal Safe Drinking Water Act to ensure that public (and potential) drinking water supplies meet standards that are safe for public health. All public water systems that provide water to at least 15 connections, or 25 people, for at least 60 days of the year, are required to meet the EPA's water quality standards.[158]

The Connecticut Department of Public Health's (DPH) Drinking Water Section (DWS) is responsible for overseeing state and federal drinking water regulations by monitoring water quality, protecting drinking water sources to ensure adequate supply and quality, and providing educational outreach to citizens.[159]

Public Water Systems

Connecticut has 2,956 public water systems that must meet the EPA's water quality standards. There are two types of public water systems: community and noncommunity. Connecticut has 583 community water systems, which are residential systems that supply at least 25 people throughout the year. Community systems serve about 79 percent of Connecticut's population.[160]

The remaining 21 percent of the population relies on private water supplies, such as wells. In comparison, 15 percent of all Americans rely on private drinking water supplies.[161] More than 66 percent of Connecticut's population on community public water supplies receive water from surface waters. Groundwater serves the rest of the community water supplies and nearly all of the noncommunity water systems.[162]

Noncommunity water supplies that are regulated by the DWS are classified into nontransient and transient systems. Nontransient water systems supply water to at least 25 people on a regular basis for at least six months of the year — including day care centers, schools and businesses that employ more than 25 people. Connecticut has 653 nontransient, noncommunity public water systems.

Transient water systems supply water to at least 25 people, other than year-round residents, for at least 60 days of the year. Transient systems include restaurants, state parks, highway rest areas, and gas stations. Connecticut has approximately 1,720 establishments that fall in this category. [163,164]

The EPA has set health-based standards, called Maximum Contaminant Levels (MCL), for more than 90 different water contaminants.[165] The DWS requires all owners of public water systems to submit water samples for testing on a regular basis and report the results to assess compliance. The frequency and types of contaminants that are tested vary according to how many people are served, the contaminant group and whether the water supply comes from surface or groundwater.

Community public water systems must test for all microbial, chemical, and radionuclide contaminants that are regulated by EPA.[166] Community water systems also test for contaminants that are not currently regulated by the EPA to help EPA develop new standards.[167] Nontransient, noncommunity systems are required to test for all microbial and chemical contaminants. Transient, noncommunity systems are only required to test for microbial contaminants in addition to nitrates and nitrites.[168]

Public Water Supply Violations

Most public water system violations in Connecticut occur in small systems that serve fewer than 1,000 people. DWS is devoting more attention to identifying and regulating noncommunity public water systems. Consequently, they are finding more maximum contaminant level violations than they have in the past in these newly-regulated small systems.

In 2004, 241 public water systems (roughly 8 percent of the public water systems) received 406 violation notices for exceeding maximum contaminant levels. Fifty-five community systems and 186 noncommunity systems were responsible for the violations. When violations occur, DWS works with water suppliers to help bring them back into compliance.[169]

Approximately 82 percent of the 406 violations were caused by high levels of total coliform bacteria, which occur naturally and are not necessarily harmful to human health. But high total coliform counts often indicate a problem with the purification system that needs to be corrected. Nearly 6 percent of the violations were identified as acute total coliform violations because fecal coliform (E. coli) bacteria were detected. These bacteria indicate contamination from sewage or animal wastes.[170]

The remaining 12 percent of the public water system violations in 2004 were caused by high levels of chemical contaminants that could cause significant health risks with prolonged exposure.[171] Table 141 in Appendix J provides details on MCL violations.

Several chemical violations in 2004 were caused by high levels of radium and uranium. In Connecticut, uranium can occur naturally in groundwater when it dissolves bedrock, causing deep water wells to be contaminated with uranium and radium. For the most part, uranium is eliminated from the body when it is ingested, but it can cause kidney damage. Radium is a byproduct of uranium when it breaks down in the environment.[172]

Lead

Lead is known to be harmful to human health when ingested or inhaled. Its effects are especially serious in children, causing irreversible damage to mental and physical development. At high exposure levels, lead can cause severe neurological damage and even death to children or adults. Lead absorption occurs much faster in children than in adults.[173]

The EPA recommends that citizens take action when the level of lead contamination is 15 parts per billion (ppb) or higher, which is equivalent to 15 micrograms per liter. At this level, EPA recommends reducing exposure to lead in drinking water, especially if there are children in the household.[174]

Ten to 20 percent of lead exposure in adults is believed to come from drinking water. As much as 60 percent of total exposure to lead for infants is from drinking water because an infant's diet is composed primarily of water-based liquids.

Private wells

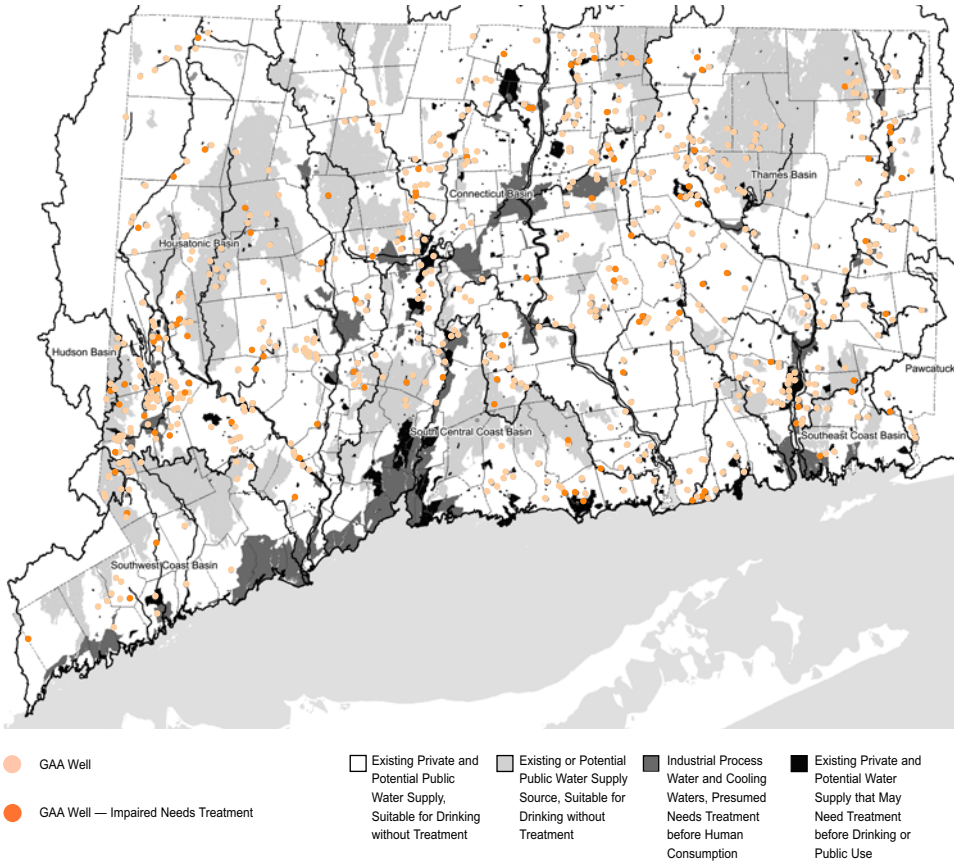
As much as 21 percent of Connecticut's population relies on private drinking water supplies. Private drinking water wells are at the most risk from hazardous sites and contamination because their water is usually not regularly tested. This is why residents with private water supplies are urged to test their drinking water wells periodically for contaminants. These include total coliform bacteria, nitrate, and volatile organic compounds, which include gasoline and MtBE, a gasoline additive.

Surface and groundwater protection

The quality of drinking water depends on the surrounding land uses and maintenance of drinking water source areas. Connecticut has recognized that it must protect source waters from pollution to protect drinking water over the long term. In 2003, DWS and the DEP completed a statewide assessment of all public drinking water supply sources to determine their susceptibility to possible contamination sources.

Connecticut has more than 150 reservoirs and more than 4,000 groundwater wells that supply drinking water. Identifying and mapping source water areas is an extraordinary achievement for the state, because it enables local government and public health officials to create drinking water source protection initiatives such as protective zoning, land acquisition of source areas, and best practices for managing hazardous materials.[175]

FIGURE 25: GROUNDWATER CLASSIFICATIONS WITH MAJOR BASINS



Source: DEP: Major Basins Groundwater Quality Classification adopted in 1997 and last updated November 2004; UCONN Libraries Map and Geographic Information Center: Town Boundaries.

Source areas for large community wells in sand and gravel aquifers are subject to Aquifer Protection Program regulations,[176] whereas the source areas for smaller bedrock wells are defined by a radius around the well that is proportional to its pumping rate. Connecticut has inventoried all potential contaminant sources within the source areas for each public water supply and has found low to moderate susceptibility to contamination for most public drinking water systems.

The inventory found that contamination susceptibility decreased in source water areas with less urbanization and more preserved land. Most (over 60 percent) of the potential hazards to surface and groundwater supplies for drinking water come from automotive sources, such as underground fuel storage tanks, automobile repair, and sales facilities, and facilities that generate hazardous waste. Potential contamination of drinking water source areas can also come from pesticides and herbicides, agricultural animal wastes, industrial manufacturing of chemicals, hazardous and solid waste sites, highways, oil or chemical pipelines, and failing septic systems.[177] A list of contaminated or potentially contaminated sites in Connecticut is available at http://www.dep.state.ct.us/wst/remediation/sites/sites.htm.

WATER QUALITY CLASSIFICATIONS

Groundwater

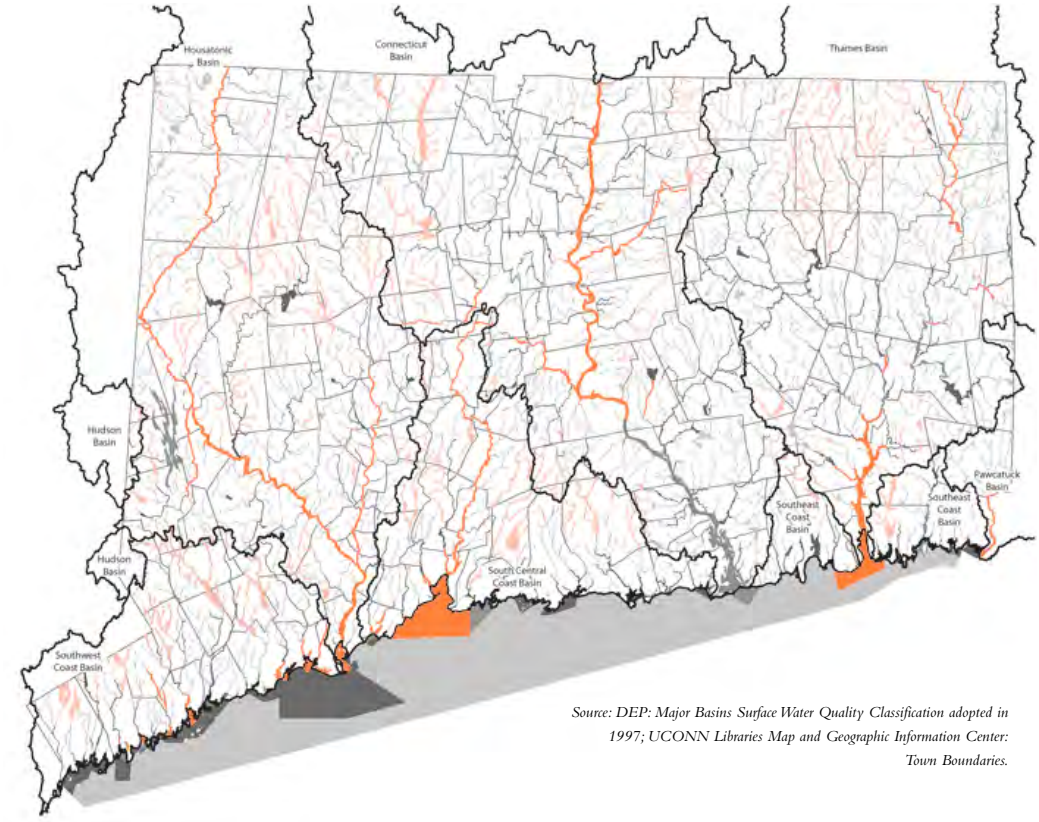
Figure 25 shows that approximately 90 percent of the state has groundwater quality (GA — existing private and potential public or private supplies of water or GAA — groundwater used or which may be used for public supplies) that is suitable for drinking without treatment. About 6 percent of the land area is classified as GB, presumed to need treatment before human consumption, because, historically, water in these areas was used in industrial processes and for cooling industrial plants.[178]

Only a few areas are classified as GA Impaired or GAA Impaired, meaning there is a private or potential water supply in these regions that would need treatment prior to being used for a public water supply. A few of the towns that stand out as having impaired groundwater classifications and public wells are: Montville, East Lyme, Clinton, Coventry, Enfield, and Plainville.[179]

Surface water

Most of Connecticut's smaller streams have water quality levels that meet their targeted usage. Several of the state's larger rivers have reaches where the water quality does not meet its targeted classification (see Figure 26). These rivers are classified as either Class C or D. Class C surface waters experience intermittent problems with water quality such as problems associated with overflows from combined sewer systems. Class D surface waters have persistent problems such as the polychlorinated biphenyl (PCB) contamination that occurs in the Housatonic River sediments.[180] The rivers with unacceptable water quality include the Housatonic, lower reaches of the Quinnipiac, upper reaches of the Connecticut, the Hockanum, the lower reaches of the Thames, and the headwaters of the Quinebaug. Water quality at the outlet of the Quinnipiac and the Thames is not acceptable enough to support shellfish harvesting.[181]

FIGURE 26: SURFACE WATER QUALITY



Source: DEP: Major Basins Surface Water Quality Classification adopted in 1997; UCONN Libraries Map and Geographic Information Center: Town Boundaries.

A, SA - Potential Drinking water supply, Fish & Wildlife Habitat, Recreation, and Shellfish Harvesting Areas for Human Consumption

AA, A/AA - Existing or Proposed Drinking Water Supply; Fish and Wildlife Habitat; Recreational Use and Not Meeting Criteria for Target Use

B, B*,SB - Water Use Intended for Fish and Wildlife, Recreation, or Navigation and is meeting Target Use

B/A, B/AA, C/A, SB/SA, SC/SA, SD/SA - Water Use Intended for Fish and Wildlife, Recreation, or Navigation and is not Meeting Criteria for Target Class; Shellfish require processing prior to consumption

C/B, D/B, SC/SB, SD/SB - Indicates Unacceptable Quality and Shellfish Harvesting Not Supported where the Goal is Class B or A

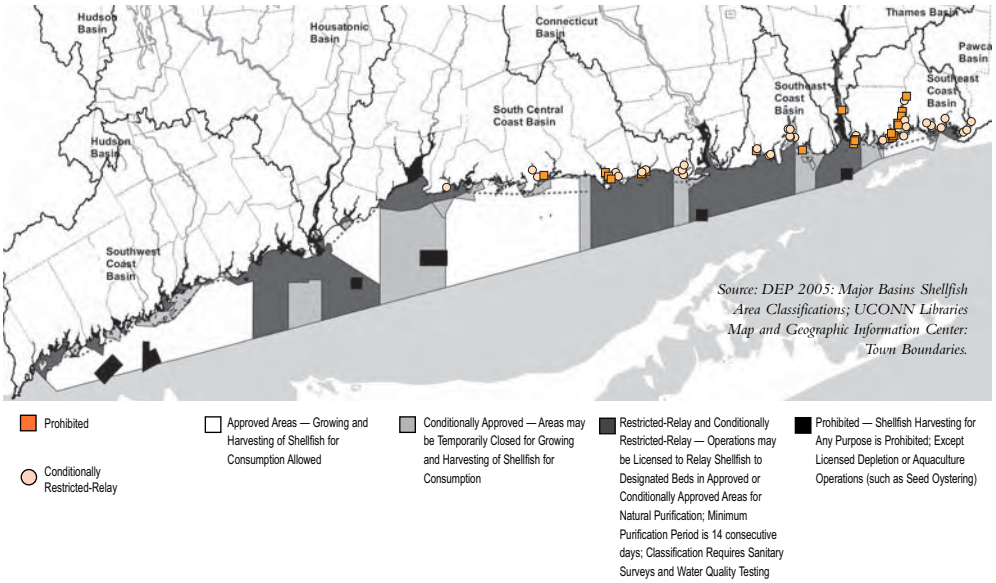
Coastal water

One indicator of coastal water quality is its ability to sustain shellfish that are safe for human consumption. The Connecticut Department of Agriculture (DOA) Bureau of Aquaculture oversees the classification of shellfish harvesting areas to minimize health risks from eating contaminated shellfish. A shellfish growing area is any area that supports, or could support, the production of mollusks, which include mussels, oysters, scallops, and clams. Shellfish areas are at risk from a variety of contaminants such as sewage, chemicals, petroleum spills, or hazardous algal blooms.[182]

Figure 27 shows that shellfish harvesting is prohibited in several of Connecticut's small bays and major river outlets, including the outlets of the Housatonic, Quinnipiac, Connecticut, and Thames rivers. Many other areas are classified as Restricted-Relay and Conditionally Restricted-Relay, which means that shellfish may be relocated to other areas to undergo a natural purification process prior to marketing them for human consumption.[183]

Several coastal areas close to shore and farther offshore from the towns of Fairfield, Bridgeport, Stratford, West Haven, East Haven, Branford, Clinton, Westbrook, Old Saybrook, Old Lyme, East Lyme, New London, Groton, and Stonington have Restricted-Relay classifications for shellfish areas. There are fully approved shellfish harvesting areas off the coasts of Stonington, Madison, Guilford, Branford, Milford, Stratford, and farther offshore from Westport, Norwalk, Darien, Stamford, and Greenwich.

FIGURE 27: SHELLFISH AREA CLASSIFICATIONS



FISH ADVISORIES

Impaired surface waters directly affect the flora and fauna in these waters and can thereby indirectly impact human health. Some fish that live in contaminated waters have a tendency to take up hazardous chemicals, such as mercury and polychlorinated biphenyls (PCBs). Repeated consumption of contaminated fish has bioaccumulative effects on humans, meaning that the chemicals can build up in body tissue and cause damage to the nervous system or increased risk of cancer. Pregnant women, nursing mothers, women planning on a pregnancy within a year, and children under age 6 are particularly at risk, because these chemicals can affect brain development in fetuses, infants, and children.[184]

Most freshwater fish in Connecticut warrant an advisory on consumption due to high levels of mercury. Individuals who are in a high-risk category are advised not to eat freshwater fish from Connecticut's water bodies more than once per month, and low risk individuals are advised not to eat more than one meal per week. For the most part, the only freshwater fish in Connecticut that are safe to eat are freshwater trout, with the exception of trout from the Housatonic River above Derby Dam and Furnace Brook in Cornwall due to high levels of PCBs.[185]

DPH recommends that even low-risk individuals should not eat fish at all from the following water bodies: Housatonic River above Derby Dam (PCBs), Quinnipiac River above Quinnipiac Gorge (PCBs), Eight Mile River in Southington (PCBs), Brewster Pond in Stratford (Chlordane), and Union Pond in Manchester (Chlordane). There are fish advisories for the saltwater species striped bass and bluefish from Long Island Sound and its connected rivers, because of PCB contamination. [186]

CHAPTER 9

Health Outcomes: Health Status, Disease Incidence, Hospitalization, and Mortality

CHAPTER 9

HEALTH OUTCOMES: HEALTH STATUS, DISEASE INCIDENCE, HOSPITALIZATION, AND MORTALITY

Of the many possible indicators of health outcome, the following are included in this report:

- Health status
- Disease incidence
- Hospitalization
- Emergency department utilization (ED)
- Mortality

SELF-REPORTED HEALTH STATUS

Self-reported health status is a strong predictor of future illness, death, and use of health care.[187] Physical and mental health are both important components of health status.

Twelve percent of state residents reported their health to be fair or poor, according to the Behavioral Risk Factor Surveillance System (BRFSS) surveys of adults 18 years old and older that were conducted between 1999 and 2003, reported in Table 97. Eight percent reported having 15 or more days of poor physical health in the past month, and 8 percent reported 15 or more days of poor mental health in the past month.

There were differences in self-reported health status by Health Reference Groups (HRGs), adjusted for age differences. Although more than one-fifth of residents in the Urban Centers reported that their overall health was fair or poor, only 8 percent of residents in the Wealthy Suburbs and 9 percent of residents in the Rural Towns reported fair or poor overall health.

Residents in the Urban Centers were also much more likely to report poor physical health (Table 98) and poor mental health (Table 99) than residents in the Manufacturing Centers and Wealthy Suburbs. Self-report of poor physical health was also high in the Manufacturing Centers, while poor mental health was relatively high in the Diverse Suburbs.

Hispanic respondents were more likely than white or black respondents to report fair or poor health. This difference was most evident for residents in the Urban and Manufacturing centers. Asian respondents were the least likely to report fair or poor overall health. They were also least likely to report 15 or more days of poor physical health or poor mental health.

TABLE 97: PERCENTAGE REPORTING FAIR OR POOR OVERALL HEALTH

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	22.6	23.8	18.9	18.4	35.2	
Hartford	18.8	20.3	14.0	16.2	35.8	
New Haven	17.6	19.3	13.4	21.7	33.2	
HRG 1 (3)-UC	19.6	21.0	14.9	19.0	35.0	
HRG 2 (10)-MC	15.1	15.3	12.0	19.0	30.4	7.0
HRG 3 (15)-DS	13.1	12.5	11.8	18.1	16.9	
HRG 4 (27)-WS	7.1	6.6	5.7		22.8	
HRG 5 (39)-MT	11.9	11.3	11.1	12.8	17.6	5.0
HRG 6 (75)-RT	8.9	8.7	8.4		15.6	
Connecticut	12.3	12.0	10.1	18.0	28.3	6.2
United States	14.0	14.0				

Source: Connecticut Department of Public Health BRFSS Survey Data, 1999-2003; Centers for Disease Control and Prevention BRFSS web site. Available at: www.cdc.gov/brfss. Average of medians of states — 1999-2003.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 98: PERCENTAGE REPORTING POOR PHYSICAL HEALTH 15 OR MORE DAYS IN PAST MONTH

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	9.6	10.2	9.7	9.5	9.7	
Hartford	8.8	9.5	8.5	11.2	8.1	
New Haven	7.6	8.6	7.3	8.2	12.8	
HRG 1 (3)-UC	8.6	9.4	8.2	10.0	9.4	
HRG 2 (10)-MC	9.7	9.9	8.9	8.5	17.2	4.3
HRG 3 (15)-DS	8.4	8.1	8.0	9.8	8.2	
HRG 4 (27)-WS	5.3	5.0	4.9		7.4	
HRG 5 (39)-MT	8.4	8.0	7.9	10.5	12.9	4.7
HRG 6 (75)-RT	7.1	6.8	6.5		10.1	
Connecticut	8.0	7.8	7.3	9.6	12.0	5.1
United States	8.8	8.8				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 99: PERCENTAGE REPORTING POOR MENTAL HEALTH 15 OR MORE DAYS IN PAST MONTH

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	12.1	12.1	9.8	12.8	13.4	
Hartford	8.8	8.5	8.6	5.4	8.9	
New Haven	9.2	9.5	9.7	9.8	15.3	
HRG 1 (3)-UC	10.0	10.0	9.4	10.0	11.3	
HRG 2 (10)-MC	8.6	8.6	9.6	6.9	10.2	2.7
HRG 3 (15)-DS	9.2	9.2	9.1	13.9	10.0	
HRG 4 (27)-WS	6.1	6.1	6.1		8.4	
HRG 5 (39)-MT	8.5	8.6	8.6	6.2	9.5	5.5
HRG 6 (75)-RT	6.8	7.0	6.8		9.3	
Connecticut	8.1	8.2	8.1	9.2	10.3	4.6
United States	9.1	9.1				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss.
Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Self-Reported Health Summary

Self-reported overall health and physical health is lowest in the Urban Centers, as summarized in Table 100. Poor mental health shows a more variable pattern. The communities in the Wealthy Suburbs group have the most favorable self-reported health on all three indicators.

TABLE 100: AGE-ADJUSTED PERCENTAGES OF PERSONS 18 AND OVER WITH SELECTED SELF-REPORTED HEALTH LEVELS, BY HRG, BRFSS SURVEYS 1999-2003

AREA	Fair or Poor Overall Health	Poor Physical Health 15 or More Days in Past Month	Poor Mental Health 15 or More Days in Past Month
Urban Centers (3)	21.0	9.4	10.0
Manufacturing Centers (10)	15.3	9.9	8.6
Diverse Suburbs (15)	12.5	8.1	9.2
Wealthy Suburbs (27)	6.6	5.0	6.1
Mill Towns (39)	11.3	8.0	8.6
Rural Towns (75)	8.7	6.8	7.0
Connecticut (169)	12.0	7.8	8.2

Source: DPH BRFSS Survey Data, 1999-2003.

DISEASE INCIDENCE

ASTHMA

Asthma is the seventh-ranked chronic health condition in the United States, causing almost 500,000 hospitalizations and 5,000 deaths per year. Asthma-related health care costs are estimated at $14.5 billion a year. The incidence of asthma, asthma-related health care costs, and deaths due to asthma increases each year.[188]

Overall, 12.4 percent of Connecticut adults report ever being diagnosed with asthma (Table 101), and 8.3 percent report currently having asthma, as shown in Table 102. Prevalence of both lifetime and current asthma was highest in the Urban Centers and lowest in the Wealthy Suburbs. Sample sizes were insufficient to detect differences in asthma prevalence by city.

Prevalence of lifetime and current asthma was similar among white, black and Hispanic respondents, but it was somewhat lower among Asian respondents. While the asthma prevalence among Hispanics was similar to that of whites and blacks in the Urban and Manufacturing centers and Diverse Suburbs, the prevalence of lifetime and current asthma was lower among Hispanics in the Wealthy Suburbs than among whites.

TABLE 101: PERCENTAGE EVER TOLD THEY HAD ASTHMA

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	14.9	14.4	18.9	7.5	16.2	
Hartford	15.5	15.3	14.8	16.6	17.7	
New Haven	14.9	15.2	16.1	21.1	8.1	
HRG 1 (3)-UC	15.1	14.8	16.3	14.4	15.2	
HRG 2 (10)-MC	12.6	12.7	12.3	14.0	14.8	6.1
HRG 3 (15)-DS	13.2	13.5	13.6	13.4	13.8	
HRG 4 (27)-WS	10.1	11.1	11.8		4.3	
HRG 5 (39)-MT	11.5	11.8	11.7	12.6	18.6	9.3
HRG 6 (75)-RT	11.6	12.2	11.9		15.9	
Connecticut	12.1	12.4	12.4	13.9	14.1	8.1
United States	11.3	11.3				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss. Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

TABLE 102: PERCENTAGE WHO CURRENTLY HAVE ASTHMA

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	8.5	8.2	11.2	5.3	7.9	
Hartford	10.5	10.6	10.2	11.7	12.1	
New Haven	9.3	9.4	10.7	13.4	5.5	
HRG 1 (3)-UC	9.4	9.3	10.6	9.6	9.2	
HRG 2 (10)-MC	8.9	9.0	8.7	11.5	9.9	2.9
HRG 3 (15)-DS	9.1	9.3	8.9	11.4	12.0	
HRG 4 (27)-WS	5.9	6.2	6.6		1.8	
HRG 5 (39)-MT	8.3	8.6	8.9	6.3	10.2	5.3
HRG 6 (75)-RT	7.6	7.7	7.9		12.7	
Connecticut	8.1	8.3	8.3	10.1	9.0	4.7
United States	7.5	7.5				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss. Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

ARTHRITIS

Arthritis refers to a variety of disorders, the most common of which is osteoarthritis, or degenerative joint disease. Osteoarthritis, affecting mostly older people, results from the wearing away of the cartilage that covers the ends of bones in a joint, causing pain, swelling and loss of motion. Osteoarthritis affects more than 20 million people in the U.S., and is one of the most frequent causes of physical disability among adults.[189]

TABLE 103: SELF-REPORTED DIAGNOSIS OF ARTHRITIS, AGE 50 AND OVER

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	41.4	41.8	41.1	34.5		
Bridgeport	43.6	45.2				
Hartford	39.0	40.6				
New Haven	41.0	42.0	39.8			
HRG 2 (10)-MC	43.3	43.0	43.8			
HRG 3 (15)-DS	41.2	40.8	40.3			
HRG 4 (27)-WS	37.3	37.4	39.1			
HRG 5 (39)-MT	42.1	41.7	43.1			
HRG 6 (75)-RT	37.9	38.6	39.5			
Connecticut	40.4	41.1	40.9	41.2	43.6	41.9

Source: DPH BRFSS Survey Data, 1999-2003. Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

Overall, 40 percent of Connecticut adults age 50 and older reported being diagnosed with arthritis (Table 103). There were no statistically significant differences in the prevalence of arthritis by HRG or city. A similar percentage of white, black, Hispanic, and Asian respondents age 50 and older reported being diagnosed with arthritis.

OSTEOPOROSIS

Osteoporosis involves deterioration of bone tissue, leading to bone weakness and increased risk of fractures of the hip, spine and wrist. Although the disease affects both sexes, 68 percent of those with osteoporosis are women. This difference may be due in part to the older age distribution of women. Risk of osteoporosis is reduced among individuals with a lifetime diet high in calcium and vitamin D. Other risk factors for the disease include cigarette smoking and lack of exercise.[190]

Overall, almost 9 percent of women age 40 and older reported being told by a doctor that they had osteoporosis (Table 104). Although the prevalence of osteoporosis in this group appeared to vary by HRG, sample sizes were too small to detect statistically significant differences. Sample sizes were also insufficient to examine racial and ethnic differences in the prevalence of osteoporosis.

TABLE 104: SELF-REPORTED OSTEOPOROSIS, WOMEN 40 AND OVER

AREA	All Race and Ethnicity, Crude Rate	All Race and Ethnicity, Age-Adjusted Rate	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
HRG 1 (3)-UC	7.2	7.9				
Bridgeport						
Hartford						
New Haven						
HRG 2 (10)-MC	8.7	8.6	9.4			
HRG 3 (15)-DS	6.7	6.5	6.1			
HRG 4 (27)-WS	9.3	9.7	10.0			
HRG 5 (39)-MT	13.4	12.4	12.7			
HRG 6 (75)-RT	5.9	6.0	6.1			
Connecticut	8.6	8.6	8.9		7.7	

Source: DPH BRFSS Survey Data, 1999-2003. Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

DIABETES

Diabetes is a disease in which the body does not produce or properly use insulin. Type 2 diabetes, the most common type, may result in serious complications including heart disease, blindness, nerve damage, and kidney damage.[191] The *Healthy People 2010* initiative sets a target level of no more than 2.5 percent diabetic in the adult population.[192]

Over 5 percent of Connecticut residents reported having diabetes (Table 105). Diabetes prevalence varied by HRG. Residents in the Urban Centers had the highest prevalence of diabetes, more than twice that of residents living in the Wealthy Suburbs.

In the Urban and Manufacturing centers, the prevalence of diabetes was higher among black and Hispanic adults than among white adults. Sample sizes were insufficient to detect statically significant race and ethnicity differences in diabetes between the other HRGs and between the cities of the Urban Centers.

TABLE 105: PERCENTAGE TOLD THEY HAVE DIABETES

AREA	All Race and Ethnicity, Crude Percentage	All Race and Ethnicity, Age-Adjusted Percentage	White, Not Hispanic	Black, Not Hispanic	Hispanic	Asian, Not Hispanic
Bridgeport	8.7	9.9	10.1	8.8	9.8	
Hartford	7.6	8.7	7.6	10.4	8.4	
New Haven	7.2	8.5	4.8	16.3	10.5	
HRG 1 (3)-UC	7.8	9.0	7.2	12.2	9.1	
HRG 2 (10)-MC	5.8	6.0	5.3	10.3	9.5	6.4
HRG 3 (15)-DS	5.8	5.5	5.5	4.6	4.9	
HRG 4 (27)-WS	3.3	2.8	2.7		2.4	
HRG 5 (39)-MT	5.8	5.4	5.4	8.1	4.9	4.7
HRG 6 (75)-RT	4.6	4.4	4.2		11.5	
Connecticut	5.4	5.2	4.7	9.8	7.5	5.3
United States	6.3	6.3				

Source: DPH BRFSS Survey Data, 1999-2003; CDC BRFSS web site. Available at: www.cdc.gov/brfss. Note: All race and ethnicity specific rates are age-adjusted.
Blank cells indicate that data were not available due to small survey numbers or otherwise not calculated or available.

BIRTH WEIGHT

Birth weight is an important predictor of neonatal mortality and future health problems. Low birth weight (LBW) is less than 5 pounds, 8 ounces (2,500 grams) at birth. Very low birth weight (VLBW) is less than 3 pounds, 5 ounces (1,500 grams). There are two different forms of low birth weight: "preterm births" and "small-for-date babies." The latter are full-term babies who are below the weight guidelines.

Low birth weight affects about one in every 13 babies born each year in the United States, and it is a factor in 65 percent of infant deaths. Low birth weight babies may face serious health problems as newborns and are at increased risk of long-term disabilities.

The factors influencing low birth weight are only partly understood, and they include genetic or environmental conditions that limit normal development, as well as mothers' medical problems. Mothers' substance use and abuse has also been correlated with low birth weight.[193]

TABLE 106: PERCENTAGE LOW OR VERY LOW BIRTH WEIGHT, 1999-2003

AREA	All Race and Ethnicity	White, Not Hispanic	Black, Not Hispanic	Hispanic	Puerto Rican	Non-Puerto Rican Hispanic
HRG 1 (3)-UC	13.2	9.0	17.0	11.7	13.2	7.2
HRG 2 (10)-MC	9.8	8.0	16.7	9.7	12.6	6.3
HRG 3 (15)-DS	8.9	7.8	14.4	9.9	11.5	7.4
HRG 4 (27)-WS	6.6	6.8	14.8	5.4		
HRG 5 (39)-MT	8.2	8.1	15.0	9.3	12.5	5.5
HRG 6 (75)-RT	7.3	7.1	8.9	9.2		
Connecticut	9.1	7.6	16.3	10.3	12.8	6.5

Source: DPH.

Black non-Hispanics have the highest rate of low or very low birth weight, followed by Puerto Rican Hispanics, whites, and non-Puerto Rican Hispanics, whose rates for LBW or VLBW are slightly lower than those for whites in every HRG.

MORTALITY

Any health planning effort requires an examination of mortality patterns, but since mortality often reflects behavioral risks and chronic diseases developed over many years, mortality should be examined along with the risk behaviors and environmental conditions presented in other chapters of the *Data Scan*.

Since the populations being compared in the *Data Scan* are very different in age distribution (Hispanic and Asian populations are younger than the black population, which in turn is younger than the white population), crude mortality rates make for "unfair" comparisons. Age adjusting allows for fair comparisons among Connecticut mortality rates, as shown in Tables 107-111.

TABLE 107: ANNUALIZED CRUDE AND AGE-ADJUSTED MORTALITY PER 100,000 FROM ALL CAUSES, 2000-2004

AREA	Average Deaths Each Year	Crude Rate	Age-Adjusted Rate*
HRG 1 (3)-UC	3,250.4	844.8	945.9
Bridgeport	1,227.6	879.8	923.8
Hartford	987.0	811.8	971.7
New Haven	1,035.8	837.8	945.9
HRG 2 (10)-MC	5,913.0	892.7	792.0
HRG 3 (15)-DS	5,774.8	982.9	755.4
HRG 4 (27)-WS	3,653.4	749.2	655.7
HRG 5 (39)-MT	6,696.2	958.6	779.5
HRG 6 (75)-RT	4,418.6	755.6	727.7
Connecticut	29,733.0	873.1	763.7

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1:Table P12.
**Standardized to the U.S. Population, 2000.*

TABLE 108: ANNUALIZED WHITE-ALONE, NOT HISPANIC ALL-CAUSE MORTALITY RATE PER 100,000, 2000-2004 — CRUDE RATE, AND AGE-ADJUSTED RATE

AREA	Average Deaths Each Year	Crude Rate	Age-Adjusted Rate
HRG 1 (3)-UC	1,792.0	1,646.8	912.0
Bridgeport	769.4	1,782.8	925.2
Hartford	410.2	1,892.3	944.6
New Haven	612.4	1,392.5	885.0
HRG 2 (10)-MC	5,026.6	1,206.7	789.0
HRG 3 (15)-DS	5,343.0	1,133.4	755.6
HRG 4 (27)-WS	3,551.6	785.0	658.0
HRG 5 (39)-MT	6,529.6	1,018.6	785.4
HRG 6 (75)-RT	4,330.6	789.4	732.9
Connecticut	26,573.6	1,007.0	750.3

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1:Tables PCT012I. Standardized to the U.S. Population, 2000.
Note: White crude mortality rate is much higher than the age-adjusted rate because the white population is much older. Age adjusting makes comparisons "fairer."

TABLE 109: ANNUALIZED BLACK-ALONE, NOT HISPANIC ALL-CAUSE MORTALITY RATE, PER 100,000, 2000-2004

AREA	Average Deaths Each Year	Crude Rate	Age-Adjusted Rate
HRG 1 (3)-UC	988.8	764.5	1,135.2
Bridgeport	282.8	690.2	1,108.8
Hartford	366.4	837.0	1,139.5
New Haven	339.6	761.5	1,162.2
HRG 2 (10)-MC	519.0	620.6	973.7
HRG 3 (15)-DS	319.8	566.7	874.4
HRG 4 (27)-WS	33.6	655.5	788.8
HRG 5 (39)-MT	74.4	591.8	968.6
HRG 6 (75)-RT	40.2	474.4	876.6
Connecticut	1,975.8	668.5	1,017.1

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1: Tables PCT012J. Standardized to the U.S. Population, 2000.
Note: The black crude mortality rate is much lower than the age-adjusted rate because the black population is much younger. Age adjusting makes comparisons "fairer."

TABLE 110: ANNUALIZED ASIAN-ALONE NOT HISPANIC ALL-CAUSE MORTALITY RATE PER 100,000, 2000-2004

AREA	Average Deaths Each Year	Crude Rate	Age-Adjusted Rate
HRG 1 (3)-UC	18.6	167.1	635.0
HRG 2 (10)-MC	36.4	174.4	445.1
HRG 3 (15)-DS	26.6	178.2	481.3
HRG 4 (27)-WS	17.2	138.0	361.9
HRG 5 (39)-MT	22.0	160.4	425.7
HRG 6 (75)-RT	17.4	205.9	552.4
Connecticut	138.2	169.4	463.3

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1: Tables PCT012L. Standardized to the U.S. Population, 2000. City specific rates are excluded due to small denominator numbers and wide margins of error.

TABLE 111: ANNUALIZED HISPANIC ALL-CAUSE MORTALITY RATE PER 100,000, 2000-2004

AREA	Average Deaths Each Year	Crude Rate	Age-Adjusted Rate
HRG 1 (3)-UC	431.0	358.6	790.6
Bridgeport	158.2	355.7	780.5
Hartford	200.0	406.0	817.2
New Haven	72.8	275.3	765.5
HRG 2 (10)-MC	291.4	237.5	626.1
HRG 3 (15)-DS	68.0	215.3	608.6
HRG 4 (27)-WS	24.2	191.6	419.8
HRG 5 (39)-MT	53.6	251.1	617.4
HRG 6 (75)-RT	21.4	180.0	452.5
Connecticut	889.6	277.7	668.6

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1: Table PCT012H. Standardized to the U.S. Population, 2000.

Data note on mortality counts and rates

An average of about 150 deaths per year are from Other Races, American Indian or Unknown and are excluded from the race-specific tables. The race-specific tables include a small number of persons of mixed race in the numerators who may be listed as black, white or Asian. U.S. Census Bureau denominator data excludes these persons, producing slightly smaller denominators and a slight elevation in crude and age-adjusted race-specific rates. In 2000, of 30,140 deaths, 1,249 or 4.1 percent were missing the Hispanic identifier. Persons for whom the Hispanic identifier was missing were assigned by DPH to non-Hispanic race specific categories in data made available for this study. The overall white non-Hispanic, black non-Hispanic and Asian non-Hispanic rates may be slightly elevated due to the assignment of "Hispanic missing" cases to these non-Hispanic groups. In the test year of 2000, the white non-Hispanic crude death rate was 984.0 per 100,000 population without the white missing Hispanic ethnicity and 1023.7 when white missing Hispanic ethnicity cases were reassigned to white non-Hispanic ethnicity. Similarly, black non-Hispanic crude rates were 649.3 and 681.4 and Asian non-Hispanic crude rates were 134.9 and 144.7 per 100,000 population.

The mortality rates produced for the *Data Scan* differ slightly from the rates available from some state and federal government sources. The federal rates are for whole states. Detailed estimates of state populations for age by sex by race and ethnicity groups are updated each year to provide denominators to calculate age-adjusted rates. In the *Data Scan*, age by sex by race and ethnicity data at the town level were required to produce mortality rates for HRGs. These required population estimates were not available for the years 2001-2004. While the numerator mortality count data were from the period 2000-2004, denominator population data from the 2000 U.S. Census only were used in the mortality rate calculations. Since the Connecticut population increased slightly from 2000-2004, the overall mortality rates reported here may be slightly higher than mortality rates reported elsewhere, because the *Data Scan* rates are based on slightly smaller denominators than those used elsewhere.

The Asian mortality rates are extremely low, consistent with those in other areas of the United States. The relative youth of this population does not account for the crude mortality differences. For example, the percentages under 35 years old for the black and Asian populations are relatively similar — 57.7 percent and 59.3 percent, respectively — yet the crude mortality rates are vastly different — 657.8 and 160.2 per 100,000 population.

The black population has a large discrepancy between crude and age-adjusted mortality. On the basis of crude rates, for example, black mortality is markedly lower than white mortality for each HRG and for Connecticut as a whole. But this occurs because of the large difference in age distribution. Taking age structure into account, the age-adjusted mortality rates for blacks are much higher than for whites as shown in Table 112.

There is also a large discrepancy between the crude and age-adjusted rates for Hispanics because the Hispanic population is much younger than the U.S. population used for age adjustment. Correcting for differences in the age distribution, the Hispanic death rate remains higher in the Urban Centers than in any of the other HRGs. It is lowest in the Wealthy Suburbs. Thus, there is a marked discrepancy among Hispanics depending on their HRG of residence.

Since residential locations differ for various Hispanic subgroups, e.g., Puerto Rican versus non-Puerto Rican Hispanics, this mortality difference may be related to Hispanic subgroup differences between HRGs. But this suggests more fundamental questions about differences in life circumstances and lifestyles *within* broad race and ethnicity categories that cannot be answered with the available data.

TABLE 112: RATIO OF RACE/ETHNICITY SPECIFIC ALL-CAUSE MORTALITY RATE TO WHITE NOT HISPANIC AGE-ADJUSTED MORTALITY RATE, 2000-2004

AREA	Asian Not Hispanic Rate to White Not Hispanic Rate	Black Not Hispanic Rate to White Not Hispanic	Hispanic Rate to White Not Hispanic
HRG 1 (3)-UC	69.6%	124.5%	86.7%
HRG 2 (10)-MC	56.4%	123.4%	79.3%
HRG 3 (15)-DS	63.7%	115.7%	80.5%
HRG 4 (27)-WS	55.0%	119.9%	63.8%
HRG 5 (39)-MT	54.2%	123.3%	78.6%
HRG 6 (75)-RT	75.4%	119.6%	61.7%

Source: Data Scan Tables 108-111. All rates are age-adjusted.

Conclusions from All-Cause Mortality Data

After the data is age-adjusted, Asian and Hispanic death rates are lower than white and black death rates (Table 112). This major finding also may be due in part to the so-called "Healthy Immigrant Effect" or, for Latinos/Hispanics, the "Latino Paradox."[194] The basic finding is that recent black and Latino/Hispanic immigrants are healthier despite having lower incomes and less health insurance. But their health worsens as they acculturate to U.S. lifestyles. Some of this affect, for Hispanics, may be due to the recently discovered "born Hispanic, died white" effect, where some Hispanics may be identified on death certificates by funeral directors as white, without information about their Hispanic status.[k] Thus, Hispanic deaths may be slightly underreported relative to their numbers in the population.

Overall, black death rates are significantly higher than white death rates after age adjustment. This pattern exists in each HRG.

Specific Causes of Mortality

Table 113 provides major cause rates for all ages; Table 114 provides them for persons dying before age 75; and Table 115 provides Years of Potential Life Lost (YPLL). Appendix K provides a complete list of deaths by cause.

TABLE 113: STATEWIDE SELECTED CAUSE OF MORTALITY BY MAJOR CAUSE, AGE-ADJUSTED RATES PER 100,000, 2000-2004

CAUSE AND ICD-10 CODE	All Groups	White-alone, Not Hispanic	Black-alone, Not Hispanic	Asian-alone, Not Hispanic	Hispanic
All Causes	763.7	750.3	1017.1	463.3	668.6
All Cancers	186.4	187.6	237.5	106.8	134.6
Lung	49.7	50.9	57.7	22.3	26.6
Colorectal	19.0	18.8	27.2	10.1	13.5
Breast*	28.3	28.6	33.7	17.0	18.6
Prostate**	20.8	20.0	47.2	2.9	20.1
Cardiovascular I00-I78	278.3	275.7	366.6	187.9	222.9
Diabetes E10-E14	18.3	16.6	46.4	11.8	29.9
HIV B20-B24	5.3	1.0	30.9	0.6	20.4
Pneumonia J12-J18	20.9	21.0	20.9	16.7	19.8
Accidental Injury Deaths	31.8	32.0	35.2	14.1	32.1
Motor Vehicle Deaths	5.0	5.3	4.6	3.2	4.5
Suicide X60-X84	8.0	8.8	4.8	2.8	6.2
Homicide X85-Y09, Y87, 1	3.2	1.3	14.1	1.5	6.0

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1: Tables P12, PCT012H,I,J,L. Standardized to the U.S. Population, 2000.

**Female only, rate denominator is the female population.*

***Male only, rate denominator is the male population.*

TABLE 114: STATEWIDE SELECTED CAUSE AGE-ADJUSTED MORTALITY PER 100,000 FOR DEATHS BEFORE AGE 75, 2000-2004

CAUSE AND ICD-10 CODE	All Groups	White-alone, Not Hispanic	Black-alone, Not Hispanic	Asian-alone, Not Hispanic	Hispanic
All Causes	329.7	311.6	553.9	167.1	352.7
All Cancers	105.9	106.5	142.3	54.3	80.5
Lung	31.0	32.1	37.2	8.4	14.2
Colorectal	9.6	9.4	15.2	4.9	9.0
Breast*	18.6	18.8	24.7	12.7	12.1
Prostate**	6.1	5.7	15.5	1.3	4.3
Cardiovascular I00-I78	86.9	82.3	161.5	52.4	90.8
Diabetes E10-E14	8.6	7.4	23.0	2.7	14.3
HIV B20-B24	5.6	2.0	32.9	0.6	20.8
Pneumonia J12-J18	3.8	3.6	6.7	2.0	5.4
Accidental Injury Deaths	24.2	24.3	30.1	8.0	27.3
Motor Vehicle Deaths	4.8	5.0	4.7	2.5	4.1
Suicide X60-X84	7.9	8.8	4.8	2.9	5.7
Homicide X85-Y09, Y87, 1	3.2	1.3	14.4	1.6	6.1

Source: DPH Supplementary Table 9; U.S. Census 2000, SF1:Tables P12, PCT012H,I,J,L. Standardized to the U.S. Population, 2000.

**Female only, rate denominator is the female population.*

***Male only, rate denominator is the male population.*

TABLE 115: STATEWIDE SELECTED CAUSE MORTALITY: ANNUAL YEARS OF POTENTIAL LIFE LOST BEFORE AGE 75, 2000-2004

CAUSE AND ICD-10 CODE	All Groups	White-alone, Not Hispanic	Black-alone, Not Hispanic	Asian-alone, Not Hispanic	Hispanic
All Causes	202,933	147,617	31,055	2,170	18,874
All Cancers	49,679	41,691	5,104	539	2,230
Lung	12,744	11,232	1,168	59	264
Colorectal	4,232	3,450	467	41	259
Breast	5,436	4,495	613	96	216
Prostate	889	734	134	1	19
Cardiovascular I00-I78	41,522	32,162	6,373	418	2,434
Diabetes E10-E14	4,027	2,844	786	16	355
HIV B20-B24	5,638	1,629	2,381	24	1,581
Pneumonia J12-J18	1,981	1,451	317	16	191
Accidental Injury Deaths	27,178	20,209	3,225	236	3,394
Motor Vehicle Deaths	5,731	4,386	540	74	711
Suicide X60-X84	8,167	6,882	529	64	639
Homicide X85-Y09, Y87, 1	4,280	1,162	2,038	50	989

Source: See Table 114.

Conclusions from the Mortality Cause Data — All Ages

As the data show, the black population has the highest age-adjusted mortality rate — except for suicide, pneumonia and motor vehicle deaths — whether one considers all mortality or mortality before age 75.

The rate ratios for blacks compared with the overall population rate are especially elevated for HIV/AIDS (30.9:5.3 = 5.8:1), homicide (14.1:3.2 = 4.1:1), diabetes (46.4:18.3 = 2.5:1), and cardiovascular disease (366.6:278.3 = 1.3:1). Their rate for suicide is lower than the overall population rate (4.8:8.0 = 0.6:1). Black males show a significantly elevated death rate before age 75 from prostate cancer (15.5:6.1 = 2.5:1).

The Asian population shows a lower rate on all indicators and on many indicators their rate is less than half the all-group rate.

The Hispanic population shows a mixed pattern. There are higher mortality rates for HIV/AIDS (20.8:5.6 = 3.7:1), homicide (6.1:3.2 = 1.9:1) and diabetes (14.3:8.6 = 1.7:1). They have lower rates for suicide (5.7:7.9 = 0.7:1).

Years of potential life lost are greatest for cancer, particularly lung cancer. The next greatest YPLL is for cardiovascular disease, and then accidental injury. These causes have relevant community-level interventions.

The complex pattern of differential causes of death for different race and ethnicity groups requires explanation. At least four explanations have been advanced:

- Differential access to and use of quality health care
- Cultural differences in behaviors that have health consequences
- Biohistorical differences that affect susceptibility to specific diseases in the modern U.S. culture
- The "healthy immigrant" theory

These competing hypotheses cannot be resolved with the information available in the *Data Scan*.

CHILD MORTALITY

The state Connecticut Department of Children and Families (DCF) reports that Connecticut has the third-lowest overall rate of child fatalities in the United States. The state was the fourth lowest in the nation in 2002 fatalities due to accident, suicide, or homicide in youth ages 15-19, at a rate of 34 per 100,000.[195] The 2002 report was DCF's last comprehensive annual report on child fatalities. According to the National Center for Health Statistics, the 2000 mortality rate for children 0-19 years old in Connecticut was 52.2 deaths per 100,000 population. The infant mortality rate (ages 0 to 1 year) was 6.6 per 1,000 live births.[196] The state Department of Public Health reports that the leading cause of death among children ages 1 to 19 in 2003 was unintentional injury, and among these motor vehicle incidents were the greatest number. Table 116 provides the leading causes of child mortality.

TABLE 116: 10 LEADING CAUSES OF DEATH IN CHILDREN (AGES 0-19) IN CONNECTICUT, 2003

AGE GROUP	Cause	Count
< 1	Short Gestation and Low Birth Weight Congenital Anomalies	40 34
1 - 4	Accidents (unintentional injury) Motor Vehicle Heart Disease	9 4 3
5 - 9	Accidents (unintentional injury) Motor Vehicle Malignant Neoplasms	6 5 4
10 - 14	Malignant Neoplasms Accidents (unintentional injury) Motor Vehicle	8 7 2
15 - 19	Accidents (unintentional injury) Motor Vehicle Poisoning Homicide By Firearm	48 29 11 11 8

Source: DPH Connecticut Resident Deaths, 2003: Top Five Leading Causes of Death by Age and Sex. Available at: http://www.dph.state.ct.us/OPPE/RR2003/RR2003_T10.xls. Accessed Feb. 3, 2007.

In cases of child mortality in which abuse may have been a possible cause of death, DCF conducts an investigation independent of medical examiner findings. DCF also notes that some deaths are ruled as homicides by the police, although medical and judicial findings may differ. According to DCF, 3 percent of child deaths reported in 2002 were the result of abuse — including skull fractures, intentional suffocation, and shaken baby syndrome.[197]

EMERGENCY DEPARTMENT UTILIZATION (ED)

Several types of emergency department (ED) utilization fall within the general heading of health outcomes. Two of these are assaults and suicide attempts. The data for these two indicators show very different patterns, by HRG.

TABLE 117: EMERGENCY DEPARTMENT UTILIZATION PER 100,000, 2002-2003

AREA	Assaults	Suicide Attempts
HRG 1 (3)-UC	10.1	1.8
HRG 2 (10)-MC	5.6	1.5
HRG 3 (15)-DS	3.9	1.6
HRG 4 (27)-WS	1.3	0.9
HRG 5 (39)-MT	2.7	1.5
HRG 6 (75)-RT	2.0	1.3
Connecticut	3.9	1.3

Source: Connecticut Health Information Management and Exchange (CHIME) Database, Connecticut Hospital Association (CHA).

The HRG rates for ED visits for assaults shown in Table 117 follow a familiar pattern from highest to lowest: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs. Suicide shows a less clear pattern, except that the Urban Centers have twice the rate of suicide-related ED visits as the Wealthy Suburbs (1.8:0.9 = 2:1). The assault rate ratio between the Urban Centers and the Wealthy Suburbs is 10.1:1.3 = 7.8:1, a rate ratio for assault-related visits that is more than triple that of suicide-related visits.

These data do not suggest a clear reason for this difference in pattern for violent impulses turned outward (assault) versus inward (suicide), but the topic is worth further investigation.

CANCER INCIDENCE

Cancer incidence is reportable to the Connecticut Tumor Registry, within DPH. Cancer incidence data for this study have been aggregated into HRGs and reported by race and ethnicity. The cancer incidence rate data may, therefore, be analyzed by HRG to develop hypotheses about potential environmental and lifestyle risk factors and then design interventions.

TABLE 118: AVERAGE ANNUAL AGE-ADJUSTED CANCER INCIDENCE RATES PER 100,000 FOR CONNECTICUT, 1998-2002

RACE AND ETHNICITY	HRG 1 (UC)	HRG 2 (MC)	HRG 3 (DS)	HRG 4 (WS)	HRG 5 (MT)	HRG 6 (RT)	State
Colorectal Cancer							
White-alone, Not Hispanic	70	65	65	57	64	61	63
Black-alone, Not Hispanic	64	59	53	38L	72	58	60
Hispanic	38L	43	37L	37L	80	74	44
All race/ethnicity	61	61	63	57	63	61	61
Lung Cancer							
White-alone, Not Hispanic	91	77	79	56	77	64	72
Black-alone, Not Hispanic	75	68	63	55	60	80	70
Hispanic	38L	33L	38L	54	52	61	39L
All race/ethnicity	72	69	74	55	75	63	68
Prostate Cancer (Male)							
White-alone, Not Hispanic	162	150	155	193	148	161	160
Black-alone, Not Hispanic	216H	218H	243H	364H	219H	191	224H
Hispanic	102L	113L	117L	277H	177	138	122L
All race/ethnicity	155	148	159	197	150	162	161
Breast Cancer (Female)							
White-alone, Not Hispanic	161	162	166	190	161	174	169
Black-alone, Not Hispanic	122L	115L	131	206H	140	131L	124L
Hispanic	73L	77L	115L	120L	120L	181	87L
All race/ethnicity	118	140	157	188	158	172	157

Source: Counts of cancers were obtained from the Connecticut Tumor Registry (CTR), DPH; Rates were calculated by the author using cancer counts as numerators and U.S. Census 2000, SF1:Tables PCT12, PCT12H,I,J as denominators.

Notes: (1) Invasive cancers only are included in the table. (2) Since Connecticut populations of interest have very different age distributions, all incidence rates are age-adjusted. Cancer incidence counts for three broad age categories (60; 60-79; 80+ years) were available from the CTR without the need to seek approval from the DPH Human Investigations Committee. Therefore, the age-adjusted rates reported here are slightly different than those computed using five-year age groups. (3) According to the CTR, some errors in coding of "Hispanic" occur because hospitals do not ascertain Hispanic ethnicity for all cancer patients. The CTR, along with many other U.S. cancer registries performs Spanish-surname matching in an attempt to improve identification of patients who might identify themselves as Hispanic/Latino. These results were included in the numerator data used in the table. (4) Race and ethnicity specific rates significantly below the total rate for the state are labeled "L" and those significantly above the state rate are labeled "H." (5) Certain data used in this study were obtained from the CTR, located in DPH. The author assumes full responsibility for analyses and interpretation of these data.

The most significant findings in Table 118 are that black males are significantly high in prostate cancer incidence in every HRG but the Rural Towns, where the difference is not large enough to be statistically significant given the small underlying population. Blacks have a lower rate for colorectal cancer in the Wealthy suburbs; and a lower rate for breast cancer in the Urban and Manufacturing centers and Mill Towns.

Hispanics are below the overall Connecticut rates on several cancer indices, including: colorectal cancer in the Urban Centers and Diverse and Wealthy suburbs; lung cancer in the Urban and Manufacturing centers and Diverse Suburbs; and breast cancer in all but the Rural Towns.

Some of the differences for Hispanics are possibly due to difficulties in age adjustment. The age categories used for the data provided for this study by the Tumor Registry were "under 60," "60-79," and "80 and over." These broad categories were used so as to preserve confidentiality. Since the Hispanic population is very young, these age categories may not have yielded a sensitive enough age adjustment. Another factor producing lower Hispanic rates may be the potential undercounts suggested in the Table 118 notes.

Some persons may be included in the rate numerators (e.g., multiracial black non-Hispanic residents) but excluded from rate denominators (black-alone non-Hispanic residents). Therefore, the rates reported here, as all rates, should be treated as estimates only, with some potential for bias.

Asian cancer incidence rates are not available due to small counts and preservation of confidentiality.

CHAPTER 10

Connecticut Data Infrastructure Issues

CHAPTER 10

CONNECTICUT DATA INFRASTRUCTURE ISSUES

INTRODUCTION

In the course of investigating many datasets for this *Data Scan*, strengths and opportunities for improvement were noted and are described in the observations to follow.

One of the strengths in the Connecticut state agencies is the existence of a core of well-trained and competent analytic staff. Publications and presentations attest to this strength. Without their cooperation much of this *Data Scan* could not have been written. Thus, the conclusions about the state of community health data represent a judgment about the lack of a well-supported *system*, rather than about these key analytic staff.

SIGNIFICANT DATA REPORTING ISSUES

- There are problems with data access and coordination "infrastructure" in Connecticut that were studied in the Cornerstone Report.[198] For example, there is no query-driven system allowing easy access to data for the public such as exist in Massachusetts (Mass-CHIP), Utah (IBIS-PH), South Carolina (SCANDHEC), and Missouri (MICA).[l, m]

- Requests for anything other than standard web-based reports must be fulfilled separately by Connecticut state agency personnel. A query-driven system would simplify analysis of health disparities, for example, and make the data more easily available, leading to a more engaged and informed citizenry and possibly reduce staff time spent in producing individual reports.

- The Cornerstone analysis of the state of community health data in Connecticut listed a number of structural weaknesses, resulting in delayed release of the data — such as the 2003 posting of only preliminary vital statistics from 1999, a "symptom of serious resource and infrastructure problems." New data responsibilities, such as monitoring of health services quality, have been added to the Connecticut Department of Public Health (DPH) responsibilities through legislation but without additional resources.[199]

- Public agencies are frequently said to be "behind" in their reporting of data. This may true to some extent, and these delays may indicate "systems problems." For example, as of August 2005, Connecticut mortality data were available on the DPH web site only through 2002. As of November 2006, data for 2003 were similarly available on the public web site, and 2004 data were available upon special request. In comparison, query-based web sites contained mortality data for South Carolina (2004), Utah (2005), Missouri, (2005) and Massachusetts (2004) as of November 2006. A systematic understanding of the process of collecting such data, necessary quality checks on it, and assembly for analysis and dissemination to the public would suggest why this delay might occur and plan process improvements.

- As of December 2006, no population estimates or population projections existed beyond the U.S. Census 2000, specific to race/ethnicity and age for Connecticut cities and towns. These are expected in 2007.[200] State data collectors and analysts have voiced concerns with reporting city- and town-level health rates based on population counts that may have changed, and whose age or race/ethnicity composition has shifted in the mid-Census years.[n]

- No easy-to-access and up-to-date mapping capability exists in the Connecticut health data "system." Again, the comparison with Mass-CHIP and some other state data query systems is instructive. In Mass-CHIP, and in other state data query systems, data can be graphed and mapped, allowing for great flexibility in analysis and presentation.

- Certain issues can be studied only in the context of parallel geo-coded datasets. For example, to test the hypothesized connections between race, ethnicity, asthma, and waste disposal sites, one would need to obtain and geocode the home addresses of asthma patients and in parallel geocode waste disposal sites. This is theoretically possible, given that home addresses of patients are taken upon admission to the emergency department (ED) or hospital.[q] There is apparently insufficient infrastructure to regularly geocode and analyze health data. There are also confidentiality issues to be addressed in studies of this kind.

- Web-based health data are typically, but not always, available in portable document format (PDF) or Microsoft Word files. Although PDF files have certain advantages — such as being downloaded and printed on a variety of platforms — they cannot be manipulated for analytic purposes without conversion of the data into other database formats such as Microsoft Access or Excel. A variety of download options should be made available.

- Despite the widely recognized importance of youth out-of-school program participation, there is no comprehensive dataset on this key indicator. Nor is there any way to systematically estimate it. A survey report of elementary- and middle-school parents and school administrators, conducted for the Connecticut Office of Planning and Management (reported in 2002), did not ask for the frequency or percentage of participation, and promised the school administrators responding that school district-specific data would not be reported. One method used in Massachusetts is to add items onto the Massachusetts equivalent of the Connecticut Academic Performance Test (CAPT), asking each child about their type and frequency of out-of-school program participation. This data can be used to estimate town-wide participation in out-of-school activities as well as race and ethnicity disparities in participation.

- While data are plentiful on car crashes involving injury, such data are produced for the location of the crash, not by driver characteristics such as residence location and age. It would be useful to create access to these latter indicators. Studies could better inform policy recommendations regarding graduated licenses by age or community-level interventions.

- Access to mental health data is problematic. Mental health data are of uneven quality and lack documentation that would assist in access and understanding.

- There are a variety of datasets for health care quality — including Hospital Compare, Nursing Home Compare and Home Health Compare — and for adverse event reporting and malpractice lawsuits. A Connecticut Health Care Quality Index could include subindicators that can be updated regularly to show whether or not health care quality is improving, which areas are lagging and which are leading. This is a long-term project since the capability of health systems to deliver timely data, agreements on what constitutes "quality" and the numbers of indicators available are currently inadequate to support such an effort.

- There is no agreed-upon method to "index" health disparities in a way that would suggest overall progress or lack of progress. This will be a difficult index to construct, but worth the effort since it will summarize overall trend data, as well as identify "lagging" and "leading" indicators within the index. A science-based dialogue about such an index would in and of itself be a step forward.

- There is no continually updated logically coherent list of available datasets for all relevant Connecticut state agencies. Each researcher or activist attempting to locate data must start at the beginning with calls to state agency personnel. A one-time expense to set up such a database of datasets, and a requirement that state agencies update the list as new data are added, would provide a valuable resource. DPH produced such a list in 2003, but it does not appear to have been updated since that time.

- The agency web sites are not well organized to provide easy access to data by subject matter. The alphabetical ordering of data, reports and forms is not "user friendly." Several "data rich" agencies have virtually none on their web sites.

- There is a serious lack of "meta-data," documentation about the data themselves, on the datasets accessed. For example, one report cites data by "urban" and "suburban" areas but does not define these terms. Another example is the complete lack of readily available information about data quality-control procedures. Meta-data are easy to include when datasets are created, but typically difficult to reconstruct at a later point in time. A standard for meta-data could be established with the clear expectation that state agency reports will follow the standard.

CHAPTER 11

Summary and Recommendations

CHAPTER 11

SUMMARY AND RECOMMENDATIONS

Six focus areas are suggested to improve the health of the people of Connecticut by: increasing access to high quality care; promoting disease prevention, wellness, and active management of chronic health problems; and securing improvement of health outcomes and wise use of resources. Additional factors considered in selecting these areas were that they: show a significant amount of racial/ethnic disparity; involve risk factors that are likely to produce significant future health problems; or be health risks and conditions that are elevated above the *Healthy People 2010* national targets.

The focus areas are:

- Health Reference Groups (HRGs), and race and ethnicity groups in greatest need
- Diabetes and other conditions in the metabolic syndrome
- The medical home
- The binge drinking and smoking culture
- Youth risks and opportunities
- The health data system

The following sections explore each of these focus areas in detail.

FOCUS AREA 1 — FOCUS ON THE HEALTH REFERENCE GROUPS (HRGs) AND RACE AND ETHNICITY GROUPS IN GREATEST NEED

Many methods could be used in setting priorities and determining focus areas for future effort. These are discussed in Appendix L.

Findings and Analysis

Most of the data in the *Data Scan* are organized according to the HRGs previously described. On almost all measures of health risk and outcome, the ordering of HRGs is, from most to least risk and from poorest to best health outcomes: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs.

The rates for black residents show significantly greater risk or poorer outcomes on more indicators than other race/ethnicity groups, even after controlling for HRG of residence. The rates for Asian residents, where available, show the lowest rates of risk and the best outcomes. Rates for Hispanic residents are mixed. On some indicators they show higher health risks and poorer health outcomes than other groups, but on other indicators they show better outcomes, if not better risk status. This pattern may be due to significant variation within the Hispanic ethnicity group, particularly between Puerto Rican and non-Puerto Rican Hispanics.

Quantitative Data on Health: Selected Measures

The full *Data Scan* includes more than 170 tables and figures showing health and related indicators for individual cities and towns, HRGs and Connecticut as a whole. Table 119 illustrates the rates for a selection of these measures, which were used to estimate needs in each of the HRGs. The indicators were selected to represent a wide variety of aspects of health. This was done so that no one area would be overrepresented in the needs analysis.

The rates shown in Table 119 follow a pattern similar to self-reported overall poor health: Urban Centers > Manufacturing Centers > Diverse Suburbs > Mill Towns > Rural Towns > Wealthy Suburbs.

TABLE 119: SELECTED INDICATORS OF HEALTH, BY HEALTH REFERENCE GROUP

INDICATOR	Connecticut	3 Urban Centers	10 Manufacturing Centers	15 Diverse Suburbs	27 Wealthy Suburbs	39 Mill Towns	75 Rural Towns
Population, 2000	3,405,565	384,733	662,398	587,504	487,620	698,517	584,793
Accepted Child Abuse Cases per 1,000, 2001-2005	36.8	68.2	53.2	43.8	9.8	32.0	19.8
Crimes Reported per 1,000, 2002-2003	30.0	76.1	39.5	29.5	13.0	22.7	12.1
Car Crashes with Injury per 1,000, 2002	9.4	15.8	10.7	8.5	7.8	8.3	7.2
STD Rate per 1,000, 2000-2004	5.8	21.5	7.6	4.6	0.8	1.7	1.1
Teen Births 15-19 per 1,000, 1999-2003	24.0	57.3	39.9	22.2	2.9	13.0	7.3
Percentage Self-Reported Employment Related Disability for Persons 21-64, 2000	11.3	17.7	14.4	12.5	6.4	10.0	8.4
Percentage Obese: Calculated from Self-Reported Height and Weight, 18 and Older, 1999-2003	17.2	23.5	18.2	19.2	11.0	18.0	15.1
Emergency Department (ED) Visits per 1,000, 2002-2003	387.4	607.6	498.3	404.6	214.6	343.6	295.9
Deaths Before Age 75 per 100,000, 2000-2002	350.3	444.0	381.1	366.4	244.2	372.3	300.0

Source: See "Data Scan" text tables.

There is a large difference in the size of the differentials for the various indicators. For example, the rate ratio of sexually transmitted disease (STD) case rates for the Urban Centers to the Wealthy Suburbs is 21.5:0.8 = 26.9:1. The rate ratio between Urban Centers and Wealthy Suburbs for overall mortality before age 75 is only 444.0:244.2 = 1.8:1. Thus, HRG of residence makes a much greater difference for STD rates than for mortality rates. The differences cannot be accounted for by age distribution differences between the HRGs.

Community Need Calculations

One approach to estimating comparative need in each of the HRGs is to estimate the percentage of the total need in the state attributable to each HRG.

Table 120 converts the rates from Table 119 into percentages for each HRG, based on relevant population size, and then summarizes the need in each HRG by averaging all of the selected indicators.

A summary of the results in Table 120 indicates that half (49.1 percent) of the total need in the state is attributable to the 13 communities in the Urban and Manufacturing centers, compared with their 31.8 percent of the total population for the state. Conversely, 50.9 percent of the need exists in the remaining 156 communities with 68.2 percent of the total population.

Recommendations

Resources could be allocated among HRGs, approximating the percentage distribution of need, over the broad set of indicators: 24.0 percent to the three Urban Centers; 25.1 percent to the 10 Manufacturing Centers; 17.3 percent to the 15 Diverse Suburbs; 6.8 percent to the 27 Wealthy Suburbs; 16.4 percent to the 39 Mill Towns; and 10.4 percent to the 75 Rural Towns, as shown in Figure 28.

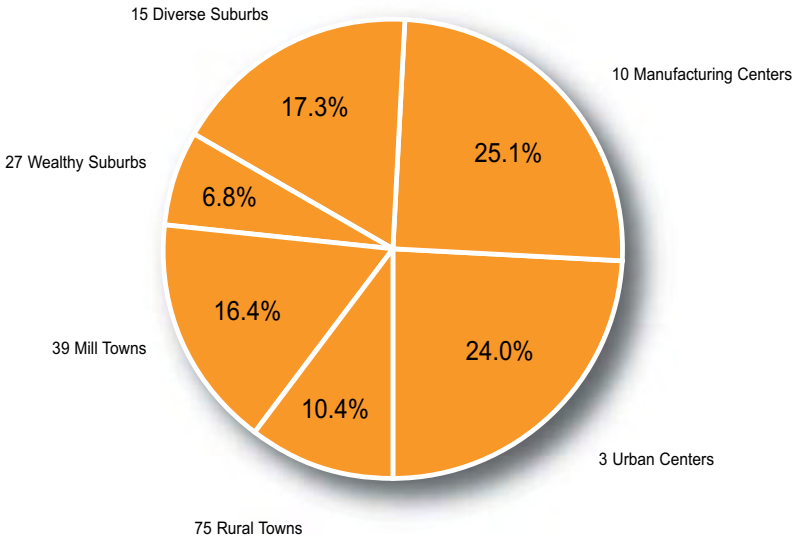
TABLE 120: PERCENTAGES OF TOTAL CONNECTICUT ESTIMATED NEED, FOR SELECTED INDICATORS, BY HEALTH REFERENCE GROUP

INDICATOR	3 Urban Centers	10 Manufacturing Centers	15 Diverse Suburbs	27 Wealthy Suburbs	39 Mill Towns	75 Rural Towns
Accepted Child Abuse Cases	23.7	26.9	19.1	4.2	16.5	9.6
Crimes	28.7	25.6	17.0	6.2	15.5	6.9
Car Crashes with Injury	19.0	22.2	15.6	12.0	18.1	13.2
Sexually Transmitted Disease/Known Residence	45.5	27.6	14.8	2.2	6.4	3.5
Teen Births 15-19	35.5	31.6	15.5	1.6	10.9	4.9
Self-Reported Employment Related Disability for Persons 21-64	16.9	25.2	18.4	8.0	18.6	12.9
Obesity: Calculated Self-Reported Height and Weight, 18 and Older	14.6	20.7	19.5	8.7	21.8	14.7
ED Visits	17.7	25.0	18.0	7.9	18.2	13.1
Average Deaths < 75	14.6	21.1	17.8	10.0	21.6	14.9
Average, All Measures	24.0	25.1	17.3	6.8	16.4	10.4
Population (Percentage)	11.3	19.5	17.3	14.3	20.5	17.2

Source: See "Data Scan" text tables.

Somewhat greater weight beyond the crude percentages could be given to health risks in the Urban and Manufacturing centers since their populations are generally younger, and these risks represent significant future problems. Key populations at risk are the black and Puerto Rican Hispanic residents in the three Urban Centers and in the 10 Manufacturing Centers, as they have the largest health risks beyond those that would be predicted based on their HRG residence alone. The concentration of black and Hispanic residents in these areas is discussed in Chapter 3, Connecticut Community Profile, and in Appendix C.

FIGURE 28: PERCENTAGE DISTRIBUTION OF ESTIMATED NEED BY HRG



FOCUS AREA 2 — FOCUS ON DIABETES AND OTHER CONDITIONS IN THE METABOLIC SYNDROME

Findings and Analysis

Type 2 diabetes may lead to serious complications, including heart disease, blindness, nerve damage, and kidney damage.[201] There are clear racial and ethnicity disparities in risk factors, incidence, hospitalization, and mortality due to diabetes.

Diabetes Incidence

Age-adjusted rates of Connecticut residents "ever told they have diabetes" are 4.7 percent for the white population age 18 and over, 8.8 percent for the black population, 7.5 percent for the Hispanic population, and 5.3 percent for the Asian population.

In contrast, the *Healthy People 2010* objective is for no more than 2.5 percent of the adult population with a diagnosis of diabetes.[202] Thus, diabetes is a problem for all racial and ethnic groups, but it is particularly for black and Hispanic residents.

Diabetes Mortality Disparities

The age-adjusted diabetes mortality rate before age 75 for Connecticut overall (2000-2004) is 8.6 per 100,000. For whites, the age-adjusted rate is 7.4 per 100,000 residents, while it is 23.0 per 100,000 for black residents, 14.3 for Hispanics, and 2.7 for Asians. Thus, blacks have almost triple the "premature" diabetes mortality of whites.

Diabetes is not only a prevalent condition, but it is also a good "index" for examining chronic disease disparities, since there are data at each level in the causal chain. Diabetes can also be understood as part of a larger concept of the "metabolic syndrome" — a group of related conditions including diabetes, heart disease and stroke.

Diabetes and Ambulatory Care Sensitive Conditions

Diabetes and metabolic syndrome care are particularly important markers for understanding health disparities.

Of the 16 conditions tracked by the Office of Healthcare Access (OHCA), the hospitalization ratio of rates for blacks to rates for all races is highest for hypertension (rate ratio of 89.1:24.7 = 3.6:1); next highest for uncontrolled diabetes (rate ratio of 26.1:7.4 = 3.5:1); followed by diabetes short-term complications (rate ratio of 143.5:42.5 = 3.4:1); and diabetes long-term complications (rate ratio of 263.2:105.8 = 2.5:1). One additional condition potentially related to diabetes, lower extremity amputation, ranks seventh in this rate-ratio comparison at 83.2:38.0 = 2.2:1.

Ambulatory care sensitive conditions (ACSCs) are conditions for which hospitalization could be avoided through appropriate ambulatory care. ACSC conditions are good markers for how well the health care system provides, and residents utilize preventive services and care in appropriate settings. The ACSCs are discussed more broadly in the section of this chapter on the "Medical Home," as well as in Chapter 7: Health Care Quality.

The high rate ratios for these metabolic syndromes and ACSC conditions for the black population, even utilizing crude rates that underestimate the age-adjusted rates, are cause for serious concern about this health disparity.

Risk Factors: Obesity and Lack of Physical Exercise

Obesity and lack of physical exercise are key modifiable risk factors for diabetes and metabolic syndrome diseases. There has been a significant increase in obesity in the past decade, both nationally and in Connecticut. There are also significant disparities that could worsen if they are not addressed. The black population is especially at risk.

Behavioral Risk Factor Surveillance System (BRFSS) data for Connecticut demonstrate that 15.9 percent of the age-adjusted 18 and over white population is considered obese under national guidelines; 30.9 percent of the black population; 21.6 percent of the Hispanic population; and 4.2 percent of the Asian population. Within the black population females are more likely obese than males in all age groups 30 and over.

High blood pressure is another aspect of metabolic syndrome. According to self-report, this condition affects 28.0 percent of the white population 18 and over; 37.1 percent of the black population; 27.2 percent of the Hispanic population; and 26.5 percent of the Asian population.

Self-reported rates of "no physical activity" are 20.3 percent of the white population; 34.9 percent of the black population; 40.6 percent of the Hispanic population; and 28.3 percent of the Asian population.

These rates suggest a looming future problem of metabolic syndrome diseases among all populations, but particularly among blacks and Hispanics.

Obesity: The Special Case of Immigrants

Although immigrants are less obese than native-born residents of the United States, this comparative advantage disappears the longer they are in the country. In one survey, immigrant respondents "were less likely to be overweight or obese" than the U.S.-born respondents (16 percent vs. 22 percent). Eight percent of those who had lived in the United States for less than one year were obese. But 19 percent of those who had lived in the country for at least 15 years were obese. This relationship between body mass index (BMI) and years of residence held true for all racial/ethnicity groups except foreign-born blacks.[203]

This research has led to several studies aimed at finding the roots of the apparent tendency for immigrants to adopt less healthy lifestyles the longer they reside — and presumably the more they acculturate — in the United States. Women in one focus group study suggested that limited time for family, cooking, and food shopping, as well as such obstacles as lack of transportation and child care, influenced the diets of long-term immigrant residents — rather than scarcity of food or physical access to grocery stores.[204]

Metabolic Syndrome Disparities Develop Early

The Youth Risk Behavior Survey (YRBS) at the state and national levels, as well as the National Health and Nutrition Surveys (NHANES), contain data on key indicators for youth adopting lifestyles that may lead to metabolic syndrome conditions later in life. Both surveys show that high school students are at increasing risk due to increased rates of overweight and decreased rates of physical activity.

The risks are especially acute among black and Hispanic teens.[205] According to the Connecticut School Health Survey (available at: http://www.dph.state.ct.us/PB/HISR/CSHS.htm), 9.2 percent of white high schoolers in Connecticut were overweight (at or above the 95th percentile for body mass index) in 2005. By comparison, 15.4 percent of black and 17.9 percent of Hispanic high schoolers were overweight. The difference between white and Hispanic students is statistically significant.

The survey also found that white students (67.2 percent) were more likely to have engaged in vigorous physical activity than black (53.6 percent) or Hispanic (52.1 percent) students. The white-Hispanic differences are statistically significant.

These differences were consistent with the rates of those who "watch TV three or more hours per day." The self-reported percentages were significantly lower for white students (27.9 percent) than for black students (59.1 percent), and Hispanic students (42.6 percent).

The race/ethnicity differences for Connecticut are consistent with data from national surveys and similar states (e.g., Massachusetts and Rhode Island). Further detailed data are available in Chapter 4, Health Risk and Health-Promoting Behaviors.

Prevention Is the Key

The Mayo Clinic's "Tools for Healthier Living" suggest that the primary goal for metabolic syndrome is to *prevent* the development of type 2 diabetes, heart attack and stroke. This can usually be accomplished with an aggressive regimen of self-care strategies focusing on diet and exercise.

Mayo recommends: eating a healthy diet with fruits, vegetables, beans and other fiber foods, white meat or fish; avoiding processed or deep fried dinners, eliminating table salt; participating in at least 30 minutes of moderately strenuous activity most days of the week; undergoing regular screenings for blood pressure; and stopping smoking.[206]

The Connecticut Medicaid Managed Care Council's Quality Assurance Subcommittee has developed recommendations regarding childhood obesity. Rather than the traditional view that obesity reflects a lack of discipline in choosing an appropriate diet and adequate physical activity, this "ecological model" assumes a complex interaction of individual physiology, family, social environment in communities, cultural influences, and larger social influences on the development of obesity. Interventions based on this model emphasize systematic changes of the factors that promote obesity, including the influence of family, community, and social circumstances (worksite, school, and health care), cultural factors, and the larger social policy environment.[207]

Recommendations

Diabetes and its complications are a significant problem for the black/African American population in Connecticut and nationwide. The causal factors for diabetes, such as obesity, are becoming more prevalent in all age groups and in the whole population. This is a "ticking time bomb" for the current and future adult population.

Addressing metabolic syndrome and its causes will require significant additional prevention-focused support for organizations, that serve youth and adults, such as better primary care access, utilization and focus on the key metabolic syndrome issues in the primary care encounter.

It will also require further public policy development regarding diets available, opportunities for exercise and information about both. These efforts could be focused especially to benefit the black population, which suffers the most from metabolic syndrome diseases and premature death from them.

FOCUS AREA 3 — THE "MEDICAL HOME" CONCEPT: AVOIDABLE EMERGENCY DEPARTMENT (ED) AND HOSPITAL UTILIZATION AND UNDER-USE OF PRIMARY CARE

Findings and Analysis

Health services researchers and policy-makers increasingly realize the importance of a "medical home" — where people can regularly obtain care. Unfortunately for many people, this medical home is often a costly and inappropriate one — the hospital emergency department (ED).

This section examines the self-report data on having a regular source of care, hospitalization for ACSCs, emergency department utilization, linguistic isolation, and preventive care and screening.

Age-adjusted BRFSS survey data for Connecticut reveals that Urban Center adult residents (age 18 and over) are least likely to report a regular source of medical care: only 74.7 percent report such a "medical home." This compares with 80.9 percent in the Manufacturing Centers and values above 87 percent in all of the other HRGs.

These differences are partly due to the low rates for Hispanic residents (66.8 percent in the Urban Centers and 67.2 percent in the Manufacturing Centers) and black residents (77.9 percent in the Urban Centers and 75.4 percent in the Manufacturing Centers). Statewide, white residents are more likely to report having a regular source of medical care (87.5 percent age-adjusted), compared with black and Asian residents (80.7 percent and 79.6 percent, respectively) and Hispanic residents (only 69.7 percent).

These rates to some extent parallel the results for the BRFSS item on who has health insurance: 91 percent of white residents (age-adjusted rate for residents over 18) and 88.5 percent of Asian residents versus 81.6 percent of black residents and 70.9 percent of Hispanic residents. As Table 121 demonstrates, white, black and Hispanic residents having medical homes parallel their having medical insurance, but Asian respondents have a significantly higher rate of health insurance than they have a regular source of care.

TABLE 121: PERCENTAGES OF CONNECTICUT RESIDENTS 18 AND OVER CLAIMING A REGULAR SOURCE OF CARE AND HEALTH INSURANCE, BRFSS SURVEY, 1999-2003

RACE/ETHNICITY GROUP	Percentage with a Medical Home	Percentage with Health Insurance
White, Not Hispanic	87.5	91.0
Black, Not Hispanic	80.7	81.6
Hispanic	69.7	70.9
Asian, Not Hispanic	79.6	88.5

Source: DPH; BRFSS 1999-2003. Note: All race and ethnicity specific rates are age-adjusted.

Hospitalization for Ambulatory Care Sensitive Conditions

OHCA has identified several ambulatory care sensitive conditions for which hospitalization can be avoided through adequate primary care. A high rate of ACSCs is an indicator that disease is not being handled well or at all in the primary care setting, the medical home. This situation could occur for several reasons:

- Patients have inadequate access to primary care or do not use primary care, even when available, until late in the disease process, and then require emergency care and/or hospitalization;
- Poor communication between providers and patients;
- Patients use primary care, but do not follow prescribed medication;
- Inadequate follow-up systems; or
- The underlying condition may be frequent in the population, and even with equal access to and utilization of primary care, the ACSC rate might still be higher (e.g., rates of diabetes for blacks).

Thus, ACSC rates are a "flag" for further investigation, not a conclusion about principal causes. Table 92 in Chapter 7, Health Care Quality, indicates that ACSC rates are highest in the Urban Centers, followed by the Manufacturing Centers, Diverse Suburbs, Mill Towns, Rural Towns, and Wealthy Suburbs, in that order.

ACSC rates are highest for blacks — double the rate for whites — followed by Hispanics and then by whites.

Emergency Department (ED) Utilization

Variation in the rates of ED use can be an indicator of problems with access to primary care or lack of utilization of primary care or poor continuity of care. Although the ED's primary role is immediate treatment and/or stabilization of seriously ill and injured patients, the ED is often used for unscheduled care because of inadequate capacity or underutilization in other parts of the health care system. A study was conducted for the *Data Scan*, based on hospital ED record data from the Connecticut Health Information Management and Exchange (CHIME) database for fiscal years 2002 and 2003 combined. Chapter 7, Health Care Quality, discusses this study — results reproduced in Table 122 — suggesting that Connecticut's urban area populations are most likely to use the hospital ED for treatment of conditions that can be treated more appropriately in a practitioner's office or clinic.

TABLE 122: ANNUALIZED AGE- AND SEX-ADJUSTED EMERGENCY DEPARTMENT VISITS PER 1,000 BY HRG AND RACE/ETHNICITY, FISCAL YEARS 2002-2003

AREA	All	White	Black	Hispanic	Asian
HRG 1 (3)-UC	608.1	423.9	745.4	743.3	117.8
HRG 2 (10)-MC	492.7	394.3	720.8	724.1	76.8
HRG 3 (15)-DS	398.3	379.1	564.3	498.7	126.7
HRG 4 (27)-WS	222.0	217.3	392.4	264.0	95.1
HRG 5 (39)-MT	341.2	340.9	554.6	319.1	99.3
HRG 6 (75)-RT	306.6	308.0	412.0	203.4	114.8
Connecticut	388.0	329.4	674.1	640.5	100.0

Detailed data and sources are included in Chapter 7, Health Care Quality, and online at www.cthealth.org.

Summary of ACSC and ED Visit Data

There is a significant problem of hospitalization for ACSC and ED utilization for conditions that could be seen in other less expensive, usually more effective settings. This problem is particularly prevalent in the more urbanized settings, and among black and Hispanic residents within these settings, and may be due partly to differential rates of health insurance coverage. However, the differences in insurance rates do not account for the extreme differences in ED utilization. Therefore, fully understanding disparities in the existence or utilization of the medical home is a task still to be accomplished.

Linguistic Isolation

The areas of high ED utilization overlap somewhat with areas of household "linguistic isolation." Among all households, 7.8 percent in the Urban Centers and 4.2 percent in the Manufacturing Centers are Spanish-language linguistically isolated. For all other HRGs, Spanish-language linguistic isolation is negligible. Among households in the Urban Centers, 3.3 percent are linguistically isolated for "other Indo-European language"; among households in Manufacturing Centers, 3.4 percent. In general, Asian-language linguistic isolation is negligible.

The Hispanic population is of particular concern because of higher rates without health insurance, lower rates with a regular source of medical care, and significantly higher rates of linguistic isolation.

Prevention and Screening

Rate disparities are mixed for preventive care and screening, suggesting that although such care is received, it may be in settings other than a "private" medical home. For example, despite differences in health insurance, the BRFSS survey shows negligible differences in self-reported mammogram rates "in the past two years": 74.7 percent for white women over 40, 76.2 percent for black women and 72.3 percent for Hispanic women; the rate for Asian women is not available. Age-adjusted Pap smear rates are 88.5 percent for white women, 85.6 percent for black women, 80.1 percent for Hispanic women, and 76.9 percent for Asian women. Health programs such as the Connecticut State Breast and Cervical Cancer Early Detection program may act to reduce disparities. Chapter 6, Screening and Prevention, includes detailed data for additional screening tests.

What Is the Value of a Medical Home?

A primary care "medical home" is a place where prevention, screening and guidance regarding causes of metabolic syndrome diseases, problems of alcohol use and abuse, child and youth safety, and other health-related issues can be addressed. Follow-up testing and care can be managed through discussion between practitioners, patients and their families.

But there are cultural and systems constraints to developing a medical home, where time can be taken for these discussions and true patient-provider continuity established. For example, practitioners and patients may have very limited time for dialogue. Language barriers may impede communication. Finally, the meaning of the term "medical home" may be problematic for some immigrants who travel frequently to their "home" countries and who may have multiple medical homes.

Recommendations

Unnecessary ED and hospital utilization are both stressors for the health care system and may result in less effective care. Policies could focus on encouraging greater and earlier use of primary care.

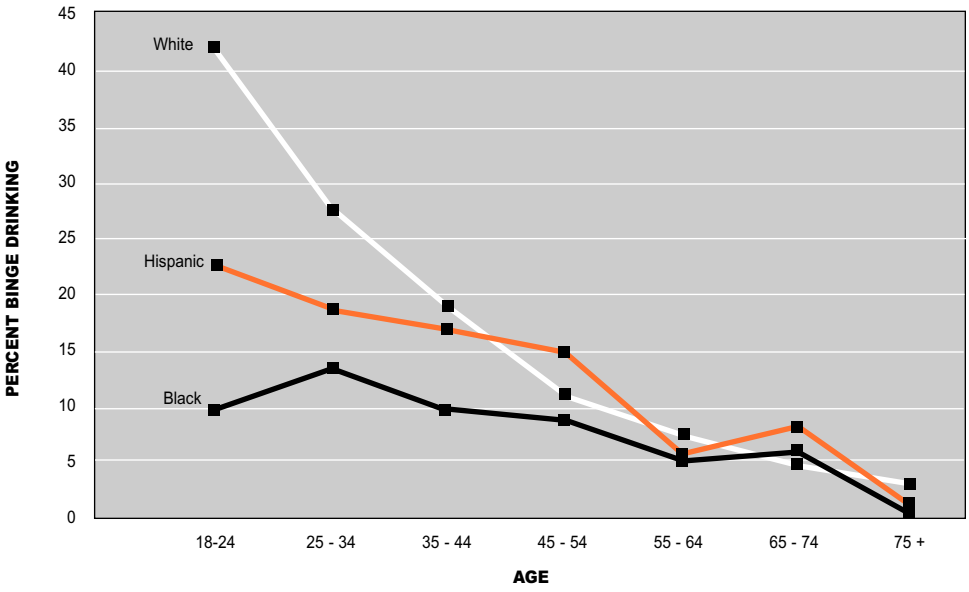
A whole systems approach will be required to reduce avoidable ED and hospital utilization, especially in the Urban and Manufacturing centers. Such an approach would focus on increasing access and comfort with the language and cultural surroundings of the medical home; utilizing the medical home to discuss issues of health risk, chronic disease, and issues of child and youth safety; and promoting adherence to medical regimens prescribed in the primary care setting. In short, a systems approach will need to support and enhance the role of community health centers.

FOCUS AREA 4 — FOCUS ON THE BINGE DRINKING AND SMOKING CULTURE

Findings

Data from the BRFSS surveys demonstrate significant age, race/ethnicity and educational level differences for smoking; considerable race/ethnicity differences were also noted for youth and youth adult binge drinking. These differences are particularly pronounced for the population ages 18-24. Reproduced below is a key figure from Chapter 4, Health Risk and Health-Promoting Behaviors, to illustrate the patterns noted in the data.

FIGURE 29: PERCENTAGE BINGE DRINKING BY AGE AND RACE/ETHNICITY, BRFSS, 1999-2003



Source: Connecticut Department of Public Health (DPH); BRFSS Survey, 1999-2003.

The high school youth population demonstrates significant race/ethnicity differences in smoking and drinking. As in other similar states and nationally, the young white population is more "at-risk" for alcohol abuse and smoking than the black or Hispanic population. One possibility is that this is a cultural phenomenon, buttressed by tobacco and alcohol industry marketing.

Recommendations

Changing binge drinking and smoking will require a broad effort to change both the level of information about the signs and consequences of alcohol abuse and tobacco use, changing cultural norms regarding alcohol and tobacco use, and the penalties for alcohol abuse, e.g., drunken driving and teen access to tobacco.

Additional programming in this area could be partly funded by greater disbursements from tobacco settlement money. Connecticut is currently far below the Centers for Disease Control and Prevention (CDC) minimum recommendation for tobacco prevention funding. In FY 2007, Connecticut was at 9.4 percent of the CDC recommendation, 36th of 45 states reporting.[208]

FOCUS AREA 5 — YOUTH RISKS AND OPPORTUNITIES

Findings and Analysis — Selected Indictors

Numerous investigations have examined youth risk behavior from the sociological, behavioral and even brain development perspectives. While the assumption had been that adolescent brain development was, like adolescence itself, a transitional stage between childhood and adulthood, research now indicates that changes in different areas of the brain play critical roles in memory, voluntary motor behavior, impulse control, decision making, planning, and other higher cognitive functions.[209]

Several measurable aspects of youth- and young-adult safety and behavior were selected as "indicator variables," including: child abuse; Connecticut Academic Performance Test (CAPT) participation and passing rates; high school graduation; school suspension and expulsion; sexually transmitted diseases; teen births; seat belt use; and bicycle helmet use, all presented in Chapter 4, Health Risk and Health-Promoting Behaviors. Also, implications of the statistics on membership in adult-sponsored, youth-promoting out-of-school organizations were presented in Chapter 3, Connecticut Community Profile.

Sexually Transmitted Disease and Teen Births

There are marked disparities in sexual risk-taking behavior among youth and young adults, as indicated in the sexually transmitted disease (STD) incidence rates and teen birth statistics.

Overall, the rate of STDs for black, non-Hispanic persons age 15 to 34 is 39.3 per 1,000; for Hispanics, 15.1 per 1,000; for white non-Hispanic 2.2 per 1,000; and for Asian non-Hispanic, 1.9 per 1,000. The rates are highest for black non-Hispanic persons in the Urban Centers — 53.5 per 1,000. In general, STD incidence rates peak in the late teens and decline after age 20. Further details are available in Chapter 4, Health Risk and Health-Promoting Behaviors.

Teen birth rates also show a marked disparity. Although the overall rate for Connecticut is 24.0 per 1,000, the rate climbs to 50.4 for black teens statewide, and 71.4 per 1,000 for Hispanic teens statewide. Within this group, Puerto Rican teens have an 84.8 per 1,000 rate, while non-Puerto Rican Hispanic teens have a rate of 44.3 per 1,000. Teen birth rates are generally elevated for all race and ethnicity groups in the Urban and Manufacturing centers. The highest rate is that of Puerto Rican Hispanic teens in the Urban Centers: 90.8 per 1,000.

Youth Seat Belt and Bicycle Helmet Use

Another indicator of risk taking is vehicle use without adequate protection. There are also marked disparities in these indicators. According to the 2005 Connecticut High School Survey (available at: http://www.dph.state.ct.us/PB/HISR/CSHS.htm) 73.1 percent of white male students statewide used a seat belt "all or most of the time," but only 46.1 percent of black male students and 56.0 percent of Hispanic male students did so. Rates for female students were higher for each group: 77.3 percent for white female students, 67.9 percent of black female students and 59.0 percent of Hispanic female students.

Self-reported bicycle helmet use, for students riding a bike during the past 12 months, was significantly lower for black (92.3 percent reporting never or rarely used) and Hispanic (89.9 percent) than for white students (70.6 percent). Similar race and ethnicity differences are noted on adult reports of their children's use of bicycle helmets as shown in Table 46. The rate of helmet use for all race and ethnicity groups is markedly too low.

Child Abuse

Abuse is a health risk for a significant number of Connecticut children. Reports of cases to Connecticut Department of Children and Families (DCF) and ED visits offer two types of data on the problem of child abuse. There is a large discrepancy between reports to DSS and ED visits because many more cases are reported to DCF than are coded in emergency departments. But the HRG patterns are similar, as they are for all age-adjusted ED-reported abuse rates.

Female children appear to be more at risk than male children. All children need better protection, especially those in the Urban Centers, Manufacturing Centers, Diverse Suburbs, and Mill Towns, as shown in Table 41 and Table 42 in Chapter 4, Health Risk and Health-Promoting Behaviors. The highest rates of DSS-reported abuse are for black and Hispanic youth.

Youth-Serving Organizations

Many community resources are available to help prevent health risks and poor health outcomes. These can include active out-of-school programs, such as Scouts and youth soccer and other sports.

Data on soccer and scouting participation by both boys and girls show a markedly lower rate of participation in the Urban and Manufacturing centers than in the state as a whole. This becomes problematic when data also show that other types of adult-sponsored activities for youth do not have high enough participation rates to make up the difference. For example, Boys and Girls Clubs serve primarily urban youth, yet they are estimated to serve fewer than one in 10 (8.8 percent) of all youth in the Urban Centers.

The Jack and Jill Clubs, an important mothers' volunteer program geared toward black and multiracial children and youth, have a membership estimated at 456 children in Connecticut, but only half of these members may reside in the Urban or Manufacturing centers. Thus, the vast majority of black and Hispanic children and youth appear not to be adequately involved in adult-sponsored, non-church-related organizations. The number involved in church-sponsored organizations is not known.

Recommendation

Broad initiatives on child and youth risk taking and safety could be focused especially on the Urban and Manufacturing centers, and on black and Hispanic children and youth, who are most at risk regarding a variety of safety and risk issues. These initiatives could include making available well-focused, out-of-school health promoting activities to youth in the neighborhoods in the Urban and Manufacturing centers, where such activities currently neither enroll many school-age children and youth nor attract sufficient adult volunteers. In addition, better data on youth out-of-school participation is a vital need.

FOCUS AREA 6 — IMPROVE THE HEALTH DATA SYSTEM

In preparing the *Data Scan*, the author had an opportunity to evaluate some aspects of the Connecticut "data system." It is actually not a system, but a series of separate "pots" of data in varied formats, each with its own strengths and weaknesses. This section is organized as a series of findings and recommendations.

Data Access

Finding

There are problems with the data access and coordination "infrastructure" in Connecticut that have been previously studied. Each request for other-than-standard web-based reports must be fulfilled separately by Connecticut state agency personnel — a time-consuming and costly process. Web-based reports are frequently presented only in portable document format (PDF) format, which makes secondary analyses and display of data more difficult.

Recommendation

A query-driven system would make the data more widely and easily available. A hypothesized pattern of health disparities would be less conjecture and more clearly demonstrated or refuted. More fine-tuned analyses below the state level — such as by HRG — would be possible and would not require state personnel to fulfill individual data requests.

Departmental Web Sites

Finding

Connecticut does not have a "one-stop shopping place" for broad community health data, in contrast to other states such as Florida, Utah, Missouri, and Massachusetts. At best, each Connecticut state department operates a separate "silo" for data. Each department's data is in a different format, with different and often inadequate access and search procedures. This produces great difficulty in searching for data and developing a broad picture of community health.

Recommendation

Provide a single community health web "portal" through which data and information about that data can be shared with the public. This will ease access problems, encourage standardization of procedures and data formats, and assist in more fruitful data search strategies. Encourage state agencies to take part in this "one-stop" effort.

Mapping

Finding

There is no accessible mapping capability for community health data in Connecticut. By comparison, in Massachusetts' Mass-CHIP system and in several other state systems data can be queried, graphed and mapped. This allows for great flexibility in analysis and presentation. It makes data available quickly to concerned citizens and policy-makers, as they need to analyze and display the information.

Recommendation

Encourage the inclusion of a mapping option in a query-based data system.

Data Delays

Finding

A previous analysis of the state of community health data in Connecticut indicated a number of structural weaknesses, culminating in delays in the release of data.[210]

State agencies and the public may not have a shared sense of what is reasonable. Frustration borne out of unshared expectations may occur because of time lags between when central authorities receive data and perform the necessary quality control on the data before publication. In addition, resource and infrastructure issues may lead to delay.

Recommendation

Interested organizations could work with state policy-makers to establish clear policies and standards based on reasonable expectations regarding the collection and release of data. Since timetables will be specific to different types of data, the public data consumer would further be helped by having lists of data items and realistic expectations of the time required to release data. For example, three years may be reasonable for Cancer Registry data to be issued in report format, but it may be unreasonably long for the reporting of infectious disease data. In addition, as practiced at the federal level, "preliminary data" could be released early and "final data" later in time.

Meta Data — Documentation about Data

Finding

There is a serious lack of "meta-data"— documentation about the data themselves — on the datasets accessed from many Connecticut agencies. For example, a particular dataset might use race and ethnicity as a variable to "group" health observations. Meta-data would be information about how race and ethnicity are defined for that particular dataset. For many indicators, the author had to piece together meta-data in preparing this report.

Recommendation

Support the establishment of a standard for meta-data with the clear expectation that all state agency reports will follow it. This would be easy to do when creating new datasets because much less labor is required to create meta-data as new datasets are being created — rather than to find the information at a much later date.

Youth Data

Finding

Despite the recognized importance of out-of-school program participation, there is neither a comprehensive dataset on this key indicator nor a way to systematically estimate it. There has also been a serious weakness in the collection of YRBS data in the recent past. For several iterations of the YRBS, data were not collected or the CDC has not "weighted" the Connecticut data, due apparently to a lower than acceptable response rate. Data collection for the 2005 YRBS was sufficient for CDC weighting — allowing for statistical inferences from the data.

Recommendation

The Connecticut departments of Public Health and Education could investigate and help strengthen the capacity to collect youth data. One method used in Massachusetts is to add items to that state's equivalent of the Connecticut Academic Performance Test (CAPT), asking about the type and frequency of out-of-school program participation by each child.

The departments could choose noncontroversial items about students' after-school activities, including homework, clubs, sports, and TV watching and make them an addendum to the CAPT testing, so that universal coverage for the relevant grades could be obtained. Doing so will allow for population-based estimates by school district, by HRG, and/or by race and ethnicity group. The data would also be useful to individuals districts in diagnosing student performance.

Health Observations

Finding

Observation-based health data are lacking in many areas — such as youth safety that includes seat belt use; bicycle helmet use; the prevalence of violence promoting graffiti in a neighborhood; the availability, conditions, use of public spaces for exercise; and the amount of smoking on school property and at school-sponsored events. Observation would be useful, but expensive, if done in the traditional manner — hiring observers. There appears to be no current capability to collect such data on a systematic basis.

Recommendation

Support community-based research partnerships such as those pioneered by the Youth Action Research Institute of Hartford's Institute for Community Research[211] to work with public school students and other youth to collect community-oriented data as part of a larger statewide project.

This kind of data collection and analysis falls completely within the requirements of the Connecticut Mathematics Curriculum Frameworks Content Standards and Expected Performances. For example, one framework requires collecting, organizing, and displaying data help to analyze information and make reasonable predictions and informed decisions.[212]

With its connection to required school work, this innovative strategy offers the advantages of:

- Collecting needed health data;
- Encouraging student interest in learning about their communities in a prosocial way and taking action based on their findings;
- Raising students' interest in their own health; and
- Fulfilling school curriculum requirements.

Partnerships among community agencies, universities, and schools would "improve teachers' and students' understanding of sampling, surveys, and observational strategies,"[213] as well as obtain vital data for health assessments.

Race and Ethnicity Categories

Finding

The broad-brush approach to race and ethnicity identification misses significant variation. For example, in this report the Puerto Rican Hispanic teen birth rate appears to be more than double the non-Puerto Rican Hispanic teen birth rate. Yet most datasets do not include this subgroup code. There may be similar disparities within broad race and ethnicity groups, such as between Chinese, Vietnamese and Cambodian Asians. Given most current practices in subgroup data collection and reporting, there is no way to verify whether these subgroups are at particular risk. Finally, most datasets do not include biracial reporting categories. Yet, biracial individuals on many indicators have different health profiles than either of their "monoracial" components.[o, 214] Biracial individuals are becoming numerically more important as residents increasingly insist on reflecting all parts of their heritages and as the rate of biracial marriages increases.

Recommendation

Encourage agencies, wherever possible, to obtain more specific race and ethnicity identification, including biracial identification, consistent with federal Office of Management and Budget (OMB) Directive 15 (1997 Revision) and U.S. Census Bureau practice, and make the results available in more fine-tuned analyses. Doing so will permit better targeting of interventions.

Health Care Quality

Finding

There are significant problems in conceptualizing and operationalizing health care quality data in Connecticut. The current method of obtaining hospital adverse event data leads to what appear to be significant underestimates. There also are no broad and agreed-upon standards for "adjusting" data for patient acuity.

Recommendation

Support development of an agreed-upon overall quality "index" that would help the public to know whether or not health care quality is getting better. Subsections of the index could indicate which sectors are leading and which are lagging in improvement. The index also could be constructed to reveal disparities in the quality of care, with adequate controls for appropriateness of care, patient choice and co-morbidities. Given anticipated difficulties, this could be a long-term project.

Mental Health Data

Finding

The mental health data system remains problematic despite efforts to improve it and to implement the Center for Mental Health Services (CMHS) Uniform Reporting System (URS) dataset and standards. Some data in the federal submissions under URS seem contradictory or beg further explanation. But the format of the reporting tables does not contain enough helpful explanatory documentation (meta-data).

There is a fragmentation of data reporting, lack of online data capability, and a lack of readily accessible information about the agencies' data definitions and the connection of particular datasets to specific programs. Information exists in the historical memories of individual staff but is not documented adequately to guide outside researchers.

Recommendation

Support the development of better organized mental health data — and make the data and information documentation about it available online to promote an educated citizenry about this important area.

A NOTE ABOUT ADDITIONAL ISSUES

Many important issues are not a focus of this report's recommendations. This is generally because, although there may be disparities, there are not clear science-based interventions of proven efficacy for reducing these rates or disparities.

This report did not focus specifically on investigating oral health and mental health due to Connecticut Health Foundation's (CHF) current investments in these areas. Some data were obtained that are pertinent to these issues and are reported here.

Mental Health

The BRFSS indicates that 8.2 percent of Connecticut residents 18 and over self-report poor mental health 15 or more days in the past month. There is little variation by HRG on this indicator: 10.0 percent (age-adjusted) for the Urban Centers; 8.6 percent for the Manufacturing Centers; 9.2 percent for the Diverse Suburbs; 6.1 percent for the Wealthy Suburbs; 8.6 percent for the Mill Towns; and 7.0 percent for the Rural Towns. There do not appear to be significant race- and ethnicity-specific differences in mental health status, except for Asians, whose statewide rate — 4.6 percent — is significantly lower on the poor mental health indicator.

The federal government publishes estimates of adults' and youths' need for mental health treatment. The 2004 Connecticut estimate for "serious mental illness" was 143,493.

Recent national data indicate that, on interview, 6.3 percent of parents thought that a son in the age range, 4 to 17 years old had "definite or severe difficulties with emotions, concentration, behavior, or being able to get along with others." This was true for only 3.3 percent of girls in the same age range.

The data show statistically significant race and ethnicity differences: 8.3 percent of black boys were assessed by a parent to have such difficulties, as compared with 6.6 percent of white boys, and 4.7 percent of Hispanic or Latino boys.

The comparable — but not statistically different — rates for girls the same age were: 3.8 percent of white girls, 2.7 percent of black girls, and 2.6 percent of Hispanic or Latino girls.

The family structure "mother present, no father in the household" was also associated with higher rates of perceived difficulties.[215]

See Appendix M for further discussion of mental health in Connecticut and www.cthealth.org for selected data.

Oral Health

Overall, 79.2 percent of Connecticut residents reported a "past year" dental visit in the previous year. This rate varies by HRG in that only 71.8 percent of the Urban Center residents 18 and over reported a visit, 73.9 percent of Manufacturing Center residents, 77.3 percent of Diverse Suburbs residents, 85.8 percent of Wealthy Suburb residents, 80.5 percent of Mill Town residents, and 83.6 percent of Rural Town residents.

Dental visits varied significantly by race and ethnicity: 81.7 percent of white residents, 72.2 percent of Asian residents, 66.5 percent of black residents, and 65.8 percent of Hispanic residents.

There are no overall data about oral health for children in Connecticut. Recent 2005 data prepared by Connecticut Voices for Children regarding children 3 to 19 continuously enrolled in HUSKY A, Connecticut's Medicaid managed care program, indicate that approximately 41 percent of the children involved in that program received preventive oral health care, and 22 percent received treatment. Both of these rates were virtually unchanged from 2004.

The child's age was the chief variable in preventive care and treatment, from a low of 38 percent in the 3- to 5-year-old age group to 51 percent in the 6- to 8-year-old group, 49 percent between 9 and 11 years old, 42 percent age 12-14, and 28 percent age 15-19. These percentages were virtually unchanged from 2004.

Hispanic children in HUSKY A had the highest rate of preventive care (44 percent), while black and white children each had a 39 percent rate. "Other" children had a 44 percent rate. These rates were unchanged from 2004. Treatment rates showed a slightly different pattern: 26 percent of "other" children were treated, followed by 23 percent of Hispanic children, 21 percent of white children, and 20 percent of black children.[216]

Additional data obtained from Connecticut Voices for Children have demonstrated expected differences by HRG in the percentage of children enrolled in HUSKY A, but only slight differences among HRGs in the percentages of participation of HUSKY A enrollees in dental care.[217]

TABLE 123: CHILDREN AGE 3-19 CONTINUOUSLY ENROLLED IN HUSKY A, 2004

AREA	Population		Percentage Enrollment	Any Dental Care		Preventive Dental Care		Treatment Dental Care	
	Enrolled, 2004	Population 3-19, 2000		N	%	N	%	N	%
HRG 1 (3)-UC	45,966	104,469	44.0	23,594	51.3	19,002	41.3	10,094	22.0
HRG 2 (10)-MC	43,263	146,266	29.6	19,829	45.8	17,108	39.5	8,649	20.0
HRG 3 (15)-DS	23,440	127,728	18.4	10,621	45.3	9,090	38.8	4,788	20.4
HRG 4 (27)-WS	4,141	122,050	3.4	1,795	43.3	1,553	37.5	886	21.4
HRG 5 (39)-MT	18,776	153,571	12.2	8,731	46.5	7,651	40.7	3,998	21.3
HRG 6 (75)-RT	10,333	140,805	7.3	4,523	43.8	3,984	38.6	2,098	20.3
Unknown	679	-	-	326	48.0	296	43.6	163	24.0
Total	146,598	794,889	18.4	69,419	47.4	58,684	40.0	30,676	20.9

Source: Connecticut Voices for Children; U.S. Census 2000, SF1: Table P12.

OVERALL COMMENT ON THE FINDINGS AND RECOMMENDATIONS

Some of the findings and recommendations in this report may be more difficult than others to embrace and implement. This is partly because they locate the problem at all levels of the "system": state, health provider, corporate, community, family, peer group and individual. Each level may require work for the health outcome to change. Changing cultural norms will be important as well.

Focusing on diabetes, for example, and more generally on the metabolic syndrome, will require changes in how primary care providers counsel patients about issues of obesity, diet and exercise. It will require changes in how parents understand and implement their responsibilities regarding their children's diet, exercise and TV-watching.

Focusing on metabolic syndrome diseases will also require changing community-specific cultural norms about food and exercise, as well as limiting the "selling" of residents and their children on unhealthy diets. The state will need to expand its capacity to collect population-based data on children and youth to make better estimates of the extent of their out-of-school activities and risk behaviors.

The effort will require policy changes — such as school bus and school lunch policies — and providing more opportunities and support for safe walking, rollerblading and biking to school, to work and for recreation. Transportation policy has a significant role to play.

In summary, a systems view will require supporting investigations and action in each part of the causal chain to improve health outcomes for current and future residents of Connecticut.

APPENDICES

APPENDIX A

LIST OF CITIES AND TOWNS AND ASSOCIATED HEALTH REFERENCE GROUPS

TABLE 124: LIST OF CITIES AND TOWNS AND ASSOCIATED HEALTH REFERENCE GROUPS

TOWN	HRG	TOWN	HRG	TOWN	HRG
Bridgeport	1	Avon	4	Bethel	5
Hartford	1	Bridgewater	4	Branford	5
New Haven	1	Brookfield	4	Brooklyn	5
Danbury	2	Fairfield	4	Griswold	5
East Hartford	2	Greenwich	4	Lisbon	5
Meriden	2	New Canaan	4	North Canaan	5
New Britain	2	Old Lyme	4	Plainville	5
New London	2	Redding	4	Plymouth	5
Norwalk	2	Ridgefield	4	Putnam	5
Stamford	2	Simsbury	4	Seymour	5
Waterbury	2	Weston	4	Southington	5
West Haven	2	Wilton	4	Stafford	5
Windham	2	Woodbridge	4	Sterling	5
Ansonia	3	Darien	4	Cromwell	5
Bloomfield	3	Easton	4	East Haven	5
Bristol	3	Essex	4	East Windsor	5
Derby	3	Glastonbury	4	Killingly	5
Enfield	3	Guilford	4	Mansfield	5
Groton	3	Killingworth	4	Milford	5
Hamden	3	Lyme	4	Montville	5
Manchester	3	Madison	4	Newington	5
Middletown	3	New Fairfield	4	North Haven	5
Naugatuck	3	Newtown	4	Plainfield	5
Norwich	3	Roxbury	4	Rocky Hill	5
Stratford	3	Trumbull	4	Shelton	5
Vernon	3	Washington	4	Somers	5
West Hartford	3	Westport	4	Sprague	5
Windsor	3			Stonington	5
				Thomaston	5
				Thompson	5
				Torrington	5
				Wallingford	5
				Waterford	5
				Watertown	5
				Wethersfield	5
				Willington	5
				Winchester	5
				Windsor Locks	5
				Wolcott	5

Note: Health Reference Groups (HRGs): (1) Urban Centers, (2) Manufacturing Centers, (3) Diverse Suburbs, (4) Wealthy Suburbs, (5) Mill Towns, (6) Rural Towns.

(CONTINUED)

TABLE 124: LIST OF CITIES AND TOWNS AND ASSOCIATED HEALTH REFERENCE GROUPS

TOWN	HRG	TOWN	HRG
Andover	6	Harwinton	6
Ashford	6	Hebron	6
Barkhamsted	6	Kent	6
Beacon Falls	6	Lebanon	6
Berlin	6	Ledyard	6
Bethany	6	Litchfield	6
Bethlehem	6	Marlborough	6
Bolton	6	Middlebury	6
Bozrah	6	Middlefield	6
Burlington	6	Monroe	6
Canaan	6	Morris	6
Canterbury	6	New Hartford	6
Canton	6	New Milford	6
Chaplin	6	No. Stonington	6
Cheshire	6	Norfolk	6
Chester	6	North Branford	6
Clinton	6	Old Saybrook	6
Colchester	6	Orange	6
Colebrook	6	Oxford	6
Columbia	6	Pomfret	6
Cornwall	6	Portland	6
Coventry	6	Preston	6
Deep River	6	Prospect	6
Durham	6	Salem	6
East Granby	6	Salisbury	6
East Haddam	6	Scotland	6
East Hampton	6	Sharon	6
East Lyme	6	Sherman	6
Eastford	6	South Windsor	6
Ellington	6	Southbury	6
Farmington	6	Suffield	6
Franklin	6	Tolland	6
Goshen	6	Union	6
Granby	6	Voluntown	6
Haddam	6	Warren	6
Hampton	6	Westbrook	6
Hartland	6	Woodbury	6
		Woodstock	6

Note: Health Reference Groups (HRGs): (1) Urban Centers, (2) Manufacturing Centers, (3) Diverse Suburbs, (4) Wealthy Suburbs, (5) Mill Towns, (6) Rural Towns.

APPENDIX B

HISTORICAL GEOGRAPHY OF CONNECTICUT CITIES AND TOWNS AND HEALTH REFERENCE GROUPS

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INTRODUCTION

The cluster analysis of Connecticut towns reveals six types of towns that are consistent with the economic and demographic development of the state. For ease of discussion, the six clusters are labeled as follows (number of towns in parentheses): Cluster 1: Urban Centers (3); Cluster 2: Manufacturing Centers (10); Cluster 3: Diverse Suburbs (15); Cluster 4: Wealthy Suburbs (27); Cluster 5: Mill Towns (39); and Cluster 6: Rural Towns (75). These labels are explained in the following discussion by first reviewing the general patterns of economic and demographic change since the late 1700s. These patterns are then discussed with respect to each kind of community.

HISTORICAL OVERVIEW

The geographic pattern seen in the Health Reference Group (HRG) map in the Executive Summary Appendix and at www.cthealth.org is the result of historical patterns of demographic change and regional economic development since the end of the colonial period (ca. 1790). The initial economic and population geography of preindustrial Connecticut was that of a predominantly rural state of small nucleated villages driven by its physical geography.[218] The largest population concentrations were in the external trading port cities along the coast (e.g., New London, Bridgeport and New Haven) and the internal trading cities along the Connecticut River (e.g., Hartford and Middletown). The first significant change to this pattern was agricultural depopulation. Throughout the entire 19th century population pressures on the relatively poor agricultural land of Connecticut caused large numbers of people to migrate either to better agricultural land in the west or toward job opportunities in emerging industrial cities.

Agricultural out-migration affected every town in Connecticut but is most evident today in the large number of towns that were not significantly affected by any of the subsequent events discussed below. In many cases these towns have populations that are smaller than they were in 1800. Union, in northeastern Connecticut, and Norfolk, in northwestern Connecticut are two good examples: According to the U.S. Census Bureau, Union had a population of 767 in 1800 but only 693 in 2000, and Norfolk had a population of 1,649 in 1800 but only 1,660 in 2000. The 75 Rural Towns identified in the HRG analysis generally fall into this category.

The physical landscape of Connecticut was most dramatically altered after 1790 with the diffusion of the Industrial Revolution from England via Rhode Island.[219] The first industries were based on water-powered mills placed along the many fast-moving streams throughout the region. Numerous mill towns sprang up throughout Connecticut between 1800 and 1820, especially in the Quinebaug and Willimantic river valleys of eastern Connecticut. All of the Manufacturing Centers and Mill Towns identified in the cluster analysis were significantly influenced by early industrialization.

By 1830 the primary power source for industry was steam power and the need to locate factories along streams declined. This had several effects: First, the existing large population centers along the coast and the Connecticut River saw an influx of industry and population growth. Up to about 1910 most of the population growth in these industrial cities came from rural to urban migration within Connecticut or from European immigrants. After 1910, population growth in the industrial centers came largely from the influx of rural, southern blacks. Even later, Puerto Rican migrants, by way of New York City, also began to move to industrial job opportunities in Connecticut's larger cities. Second, only those original mill towns which had established large, nationally dominant industries were able to make the transition to the new energy source (e.g., Windham and New Britain). These towns also experienced the in-migration of blacks after 1910 and Hispanics in the mid-1900s. While these cities became more demographically diverse, economic health was later hindered by their lack of a diverse economic base. Third, the remaining older, smaller mill towns that were less successful suffered a severe economic decline from which they have yet to emerge (e.g., Killingly and Brooklyn). Also, without a growing demand for workers in the 20th century, these original mill towns never experienced the large scale in-migration of black and Hispanic workers.

By 1900 the populations of the larger cities both within and bordering Connecticut began to suburbanize.[220] The suburbanization trend intensified after World War II because of transportation technology improvements, federal government policies, increasing incomes, and demographic changes. Suburbanization was especially prevalent in Fairfield County and around Hartford and New Haven. Suburban sprawl continues to transform Connecticut's demographic landscape.

The final process that dramatically changed the Connecticut landscape since the 1950s is deindustrialization.[221] The industrial decline hit the three Urban Centers hard, the less diversified Manufacturing Centers harder and the Mill Towns hardest. The Urban Centers were not affected as much because they had a more diverse economic base. The more specialized and smaller Manufacturing Centers and Mill Towns have been unable to recover from the loss of their basic industries.

SUMMARY OF HEALTH REFERENCE GROUP HISTORICAL GEOGRAPHY

The three Urban Centers are traditionally large population centers that benefited after 1830 from the movement of industry from small mill towns to larger population centers. These towns were initially large enough, however, that the growth of industry merely added to the economic mix. Their populations became more diverse throughout the 20th century with the in-migration of blacks first and then Hispanics later. Post-World War II suburbanization and deindustrialization, however, have helped create large concentrations of poor "persons of color" within these Urban Centers.

The 10 Manufacturing Centers are the most successful of the early-1800s mill towns. Early industries in these towns became highly specialized, dominated national markets and flourished in the 1800s and even into the 1900s.

For example, Danbury was synonymous with hats, Waterbury with precision manufacturing, Windham with thread, and New Britain with hardware. As the white population became better educated, demand for manufacturing labor in the 20th century was met through the in-migration of blacks and Hispanics. With suburbanization and deindustrialization these cities and their populations have suffered. Their poverty and economic development problems are much more significant than those of the three Urban Centers because they have a less diverse economic base.

The 15 Diverse Suburbs are not as readily defined and may be thought of as a set of relatively dense, medium-sized towns with diverse populations. Some of these towns, such as Manchester and Vernon, were medium-sized mill towns. Their stories would be similar to those of other such towns except that these towns are located close enough to large population clusters that they have benefited by becoming suburban communities. Another subset of the Diverse Suburbs is more properly labeled as inner-ring suburbs. Hamden and West Hartford, for example, experienced the first wave of suburbanization after 1900. They have an older housing stock and an increasingly diverse population, but their stability is ensured through demand for their housing and good educational opportunities. In any event, the Diverse Suburbs are quite similar in the age of their housing stock, density, population size, and population diversity.

The 27 Wealthy Suburbs were largely untouched by industrialization and retained their rural character well into the 1900s. Improvements in transportation, increasing incomes, demographic change, and federal government policies all contributed to their suburbanization after World War II. These towns are generally located in Fairfield County adjacent to New York City, around the two traditional population clusters of Hartford and New Haven or along the Long Island Sound. These are generally the wealthiest suburban communities in the state.

The 39 Mill Towns are generally the smaller and earlier mill towns that never succeeded on a national scale. Their industrial base was retained until recently, but their slow growth in the 1900s meant they never experienced large black or Hispanic immigration. Thus, these cities face many of the same problems of entrenched poverty as the larger Manufacturing Centers, but these towns are not as large and their populations are predominately white.

Finally the 75 Rural Towns were largely untouched by industrialization, suburbanization, or deindustrialization. Their populations consist of people whose families have lived in town for generations (if not centuries). For various reasons (e.g., distance and lack of transportation infrastructure), the Rural Towns have escaped large-scale suburbanization. This is not to say that suburbanization has not influenced their character. Many of these towns have seen the development of low density, high-end housing by wealthy in-migrants. Thus the Rural Towns are facing some degree of conflict over the loss of their rural character and over the provision of town services. However, these towns remain relatively rural, low-density, residential communities with a traditional New England landscape.

APPENDIX C

AN ANALYSIS OF SEGREGATION AND "HYPERSEGREGATION" IN CONNECTICUT

INTRODUCTION

There is an extensive literature on segregation and health, mainly focused on black residential segregation and health. This research literature indicates that black residents typically have larger health risks and poorer health outcomes than any other large race or ethnicity group. Reviewing a substantial number of studies, Acavedo-Garcia et al have concluded that "black mortality is positively associated with residential segregation … and with residence in predominately black areas."[222] The causal linkages are complex. Black-headed households are more likely to be below the federal poverty criteria and more "single female headed" than white-headed households, and poverty, family structure and health risk and outcome are all associated.

Health risk and outcome appear to be predicted by race beyond what would be expected on the basis of poverty differences alone.[223, 224] This raises significant questions about the effects of neighborhood context — specifically, whether the observed health rate disparities are due to some consequence of black residents' living in neighborhoods that are overwhelmingly black. Conversely, do black residents who live in more racially diverse neighborhoods have better health? Or do black residents of a neighborhood that is largely black but adjacent to nonblack neighborhoods do better or worse than if they lived in a largely black neighborhood surrounded by other largely black neighborhoods?

In response to such questions, researchers have defined many different indicators of racial segregation, and they have focused especially on black segregation because black-white differences in health have been the starkest (although black-Asian differences are even larger, as reported in the *Data Scan*). It also appears that black-white patterns of segregation are the most resistant to change.

Connecticut has neighborhoods with large percentages of black and Hispanic residents. This appendix provides a map of black and Hispanic neighborhoods — it is also available at www.cthealth.org — to examine whether there is evidence of differing degrees of race and ethnicity segregation.

INDICATORS OF SEGREGATION

The word "segregation" requires further definition. The literature defines several distinct aspects of segregation: dissimilarity, isolation, clustering, centralization, and concentration.[225, 226, 227, 228, 229, 230, 231, 232]

Dissimilarity: The percentage of a group's population that would have to change residence for each neighborhood in a metropolitan area to have the same percentage of that group as in the metropolitan area as a whole. In a simple illustration: If the total population in census tract 1 in the Hartford metropolitan area were 5,000 and the black population were 4,000, then they provide 80 percent of this population. If the overall population in the Hartford Standard Metropolitan Statistical Area (SMSA) were 10 percent black,

then all but 500 of the black residents in census tract 1 would have to move to other areas to "even out" the population, so that census tract 1 would contain a 10 percent black population as well.

There have been objections about a subtle bias in this definition in that it focuses all of the moving on black residents.[233, 234] Yet health deficits are typically found in highly segregated black neighborhoods, not in highly segregated white or Asian neighborhoods. In addition the pattern of segregation does not represent only individual choice, but rather entrenched patterns of "steering" (or, less often according to the literature, self-steering) black residents primarily to majority black neighborhoods. Therefore the concern should be with white-black patterns of segregation and on policies that either reduce segregated housing and/or ameliorate the effects of these housing patterns.

Isolation: Where the average member of a "minority group" in question lives. This value would be one if all members of a particular minority group within a metropolitan area lived only in census tracts with other members of the same group. The assumption underlying this criterion is that there would be little opportunity for cross-racial interaction, and minority group persons would be isolated from majority, e.g., white, interaction.

Concentration: The amount of physical space taken up by members of a minority group, relative to other groups. For example, if 1,000 black residents take up one square mile of space in a metropolitan area, while 100,000 white residents take up 500 square miles, then the density of blacks is 1,000 per square mile and the density of whites in 100,000/500 = 200 per square mile. The relative concentration is, therefore, 1,000/200 = 5:1.

Centralization: The extent to which black residents live in the "central city" as opposed to outlying (suburban) areas. For example, if all black residents of the Hartford SMSA resided in the central area of Hartford, the black population would be highly centralized. To the extent that some live outside of central Hartford (e.g., West Hartford) but within the Hartford SMSA, the black population in the SMSA is less centralized.

Clustering: The extent to which the census tracts (or other small enumeration areas) with a large proportion of black residents are adjacent to or close to other census tracts also with a high proportion of black residents.

Each of these indicators has subindicators of slightly different definition.

Hypersegregation: The extent to which dissimilarity, isolation, concentration, centralization, and clustering occur simultaneously in a given environment.

The five indicators are theoretically independent. That is, it would be possible for an area to be high on one indicator and low on another. Blacks might be isolated, in the sense that they were totally segregated into one census tract. Yet their density within this tract might be much lower than that of whites in surrounding all-white tracts. So in this example, black residents would be high on the isolation scale but low on the concentration scale and low on the clustering scale. However, the analysis of real data shows that, over the entire country, black residents are more likely than any other group to be segregated on any one index, and are virtually alone in being simultaneously segregated on all five indicators. This phenomenon of multiple indicator segregation has become known as "hypersegregation."

Hypersegregation refers to the intersection and cumulative effect of different aspects of segregation that may influence the lives of black and Hispanic residents in the Urban Centers. For example, hypersegregated areas appear to have higher crime rates than would be expected based on race and other demographic factors alone.[235]

There is only one standard metropolitan statistical area — Hartford SMSA — in Connecticut for which a segregation analysis has been reported in the published literature. Hartford SMSA covers more than 40 towns with almost 1.2 million in population. The most recent analysis shows that for black segregation as measured by the dissimilarity or "D" index, Hartford SMSA is ranked 56th of 331 SMSAs nationwide. The Hartford SMSA is ranked 25th among 61 SMSAs with at least one million total population. For Hispanic segregation, Hartford SMSA is seventh of all 331 metropolitan areas and fourth of 61 metropolitan areas over one million total population.[236] It appears that Hispanic segregation in the Hartford SMSA is more intense, at least according to the D index, than black segregation. Of course the ranking is relative to that experienced by blacks and Hispanics in other cities.

Nationwide, black segregation is more intense than Hispanic segregation. Asian segregation is least prevalent. But there are complexities when considering race and ethnicity sub-categories in Connecticut. In particular there appear to be differences within the Hispanic population, e.g., for Puerto Rican versus non-Puerto Rican Hispanics. In addition, not all Connecticut cities and towns may follow the pattern of the Hartford SMSA. An alternative method for assessing segregation has been constructed, one that takes into account all areas of Connecticut.

ALTERNATIVE MEASURES OF SEGREGATION

Dissimilarity

An alternative and simple test of the relative degree of segregation for black, Hispanic and Asian residents is the number of census tracts that must be cumulated to arrive at 50 percent or, alternatively, 75 percent or 90 percent of all residents of a particular race/ethnicity. This index functions somewhat like the D or dissimilarity index reported in the published literature. It will be referred to as the D_X index.

The range of population sizes in Connecticut census tracts is from less than 100 to more than 11,000. Ninety percent of Connecticut's 815 census tracts have between 1,723 and 7,173 total population. The expected numbers of census tracts to account for a specified percentage of each race/ethnicity/ancestry group are based on the cumulative population in all race and ethnicity groups. That is, 50 percent of the total Connecticut population reside in the top 284 census tracts, 75 percent reside in the top 489, and 90 percent reside in the top 647 census tracts for population size. If all race/ethnicity/ancestry groups were evenly distributed throughout the state, the number of census tracts required to account for their populations would be the same.[P]

Results in Table 125 indicate the observed distributions of D_X for each selected race/ethnicity/ancestry group. Under these tests, black residents statewide are most segregated, followed by Hispanic residents and, lastly, by Asian residents. This stands in some contrast to the results reported by Wilkes (see endnotes 225 and 236 for reference) for the Hartford SMSA, where Hispanic residents appeared more segregated — but Wilke's results are based on five indicators of segregation, not one, and apply only to the Hartford SMSA, not the entire state.

White-alone, non-Hispanic residents are least segregated on D_X, since 246 census tracts must be cumulated to account for 50 percent of the white population, whereas the expected number is 284 census tracts, if all groups were evenly distributed. These results are portrayed in Table 124. Polish and English ancestry persons have been added for comparison.

TABLE 125: POPULATION SEGREGATION ON D_X BY RACE AND ETHNICITY, BY CENSUS TRACT

RACE/ETHNICITY/ANCESTRY	Number of Tracts Aggregated to Account for 50 percent of Resident Population (Expected # is 284)	Number of Tracts Aggregated to Account for 75 percent of Resident Population (Expected # is 489)	Number of Tracts Aggregated to Account for 90 percent of Resident Population (Expected # is 647)
Black-alone, Not Hispanic	77	179	316
Hispanic Ethnicity	98	218	414
Puerto Rican	76	168	326
All Non-Puerto Rican	101	268	476
South American	75	223	423
Asian-alone, Not Hispanic	151	330	516
Chinese	120	274	446
Indian	117	276	449
Vietnamese	67	180	317
Polish First Ancestry	183	351	502
English First Ancestry	203	374	526
White-alone, Not Hispanic	246	430	579

Source: U.S. Census 2000, SF1: Tables P1,P4,DP-1; SF3: PCT 16.

Puerto Rican residents are more segregated on D_X than are non-Puerto Rican Hispanic residents as a whole, and they are segregated about equally with black residents. Vietnamese residents are more segregated than other Asian residents. Further analysis of U.S. Census Bureau ancestry tables (from census "long form" sample estimates in U.S. Census file SF3), indicate that Polish "first ancestry" segregation is higher than English "first ancestry" segregation on D_X.

Concentration

The "concentration index" used by Wilkes and others suggests an additional test of segregation. This is the density per square mile of a particular "minority" group relative to white residents. The *Data Scan* version — C_X — of this index shows the average density per square mile for various percentages of each population group. Table 126 shows the population concentration (C_X) for major race and ethnicity groups in Connecticut. The results are clear: Hispanic residents are more concentrated, on average, than black residents, and black residents live in far more crowded conditions than Asian or white residents.

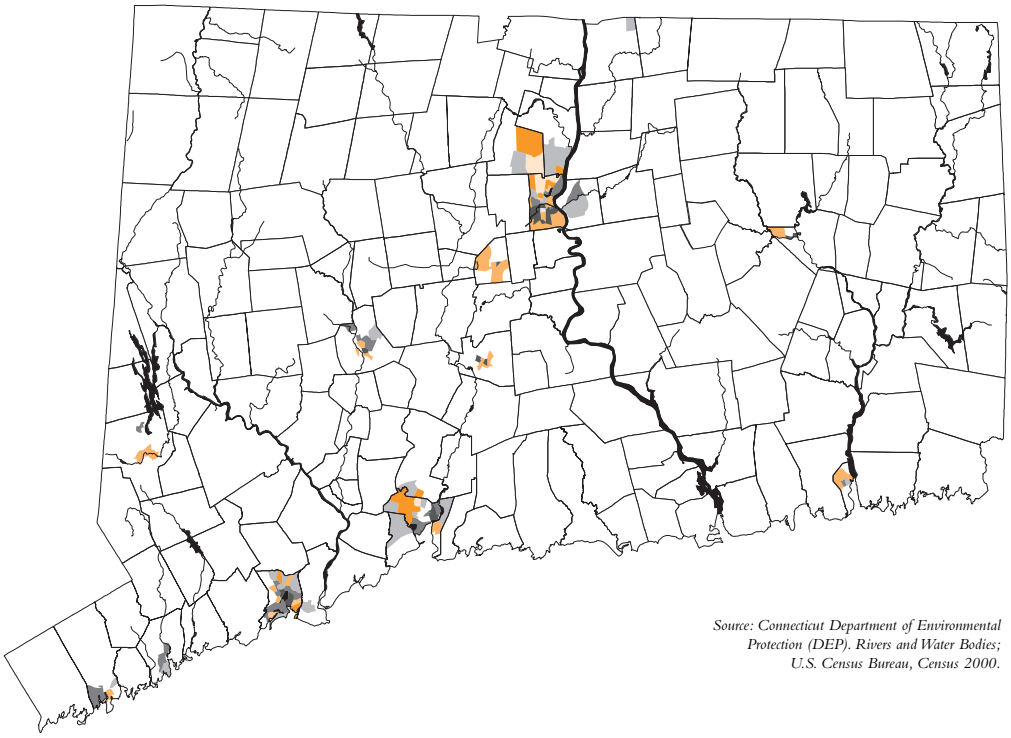
TABLE 126: POPULATION CONCENTRATION, Cx BY RACE AND ETHNICITY, BY CENSUS TRACT

RACE/ETHNICITY GROUP	Average Density per Square Mile of Total Population in Census Tracts Accounting for First 50 percent of Group Population	Average Density per Square Mile of Total Population in Census Tracts Accounting for Last 5 percent of Group Population
Black-alone, Not Hispanic	9,217	1,286
Hispanic Ethnicity	11,460	958
Puerto Rican	12,304	1,245
Asian-alone, Not Hispanic	4,587	3,890
White-alone Not Hispanic	1,576	8,434

Source: U.S. Census 2000, SF1: Tables DP-1, GCT-PH1.

Fifty percent of white residents live in census tracts that have, on average, only 1,576 total population density per square mile. The last 5 percent of census tracts accounting for the white, non-Hispanic population have on average 8,434 persons per square mile. Thus, most white, non-Hispanic persons have relatively spacious living, and only a small percentage (5 percent) occupy census tracts that come close to the crowded conditions of half of the black and Hispanic residents of Connecticut. The concentration of black and Hispanic residents is mapped in Figure 30.

FIGURE 30: CONCENTRATION OF BLACK RACE ALONE, NOT HISPANIC, AND HISPANIC RESIDENTS



Source: Connecticut Department of Environmental Protection (DEP). Rivers and Water Bodies; U.S. Census Bureau, Census 2000.

For a full color map go to www.cthealth.org.

APPENDIX D

FIRST ANCESTRY DISTRIBUTION FOR CONNECTICUT

TABLE 127: FIRST ANCESTRY REPORTED, NUMBER AND PERCENTAGE, U.S. CENSUS 2000

ANCESTRY GROUP	Number Reporting	Percent
Other groups	589,521	19.9
Italian	536,498	18.1
Unclassified or not reported	448,800	15.2
Irish	367,892	12.4
English	215,482	7.3
Polish	199,883	6.8
German	188,047	6.4
French (except Basque)	130,655	4.4
United States or American	110,615	3.7
French Canadian	86,986	2.9
West Indian: (excluding Hispanic groups)	49,435	1.7
Russian	46,058	1.6
Scottish	39,424	1.3
Swedish	38,555	1.3
Portuguese	36,255	1.2
Scotch-Irish	27,844	0.9
Hungarian	25,208	0.9
Greek	21,968	0.7
Lithuanian	19,762	0.7
Sub-Saharan African: all subgroups	17,462	0.6
Ukrainian	16,162	0.5
European	14,456	0.5
Norwegian	14,008	0.5
Slovak	13,907	0.5
Dutch	13,721	0.5
British	12,818	0.4
Arab: (all subgroups)	11,448	0.4
Canadian	10,952	0.4
Brazilian	9,366	0.3
Austrian	8,519	0.3
Danish	7,935	0.3
Welsh	7,029	0.2
Albanian	6,583	0.2
Eastern European	6,407	0.2
Czech	5,849	0.2
Lebanese	5,830	0.2
Czechoslovakian	5,657	0.2
Swiss	5,606	0.2
Finnish	4,236	0.1
Romanian	4,124	0.1
Armenian	3,862	0.1
Yugoslavian	2,970	0.1

Source: U.S. Census 2000, SF3: Table PCT16.

APPENDIX E

SAFETY NET DATA

TABLE 128: DEMOGRAPHIC INDICATORS OF CHILD WELL-BEING, CONNECTICUT, 2000

KEY INDICATOR OF CHILD WELL-BEING	Connecticut		United States	
	Number	Percentage	Number	Percentage
Population under age 18 below poverty	85,908	10.4	11,746,858	16.6
Own children in single-parent households	192,938	22.9	16,812,254	23.3
Population ages 16-19 who are high school dropouts	12,580	7.4	1,566,039	9.8
Children ages 5 to 17 who have difficulty speaking English	31,705	5.1	3,493,118	6.6
Children ages 5-15 with one or more disabilities	28,990	5.5	2,614,919	5.8
Children living in high-poverty neighborhoods (where 20% or more of the population is below poverty)	101,951	12.1	14,746,918	20.4

Source: "KIDS COUNT Census Data." Population Reference Bureau analysis of data from the U.S. Census Bureau, for The Annie E. Casey Foundation. 2000. Available at: http://www.aecf.org/cgibin/aeccensus.cgi?action=profileresults&area=09S.

TABLE 129: CHILD AND INFANT MORTALITY DATA FOR CONNECTICUT, 2000

Connecticut Population, Ages 0-19	Total Deaths, Ages 0-19	Child Mortality Rate (Deaths/100,000 population)
884,330	462	52.2
Number of Live Births	**Number of Infant Deaths, Ages 0-1**	**Infant Mortality Rate (Deaths/1,000 Live Births)**
43,026	282	6.6

Source: U.S. Department of Health and Human Services (HHS) – National Maternal and Child Health Bureau. "National MCH Center for Child Death Review – Connecticut Child Mortality Data, 2000 from National Center for Health Statistics." Available at: http://www.childdeathreview.org/statisticsCT.htm.

CONNECTICUT DEPARTMENT OF SOCIAL SERVICES: DESCRIPTION OF MAJOR ASSISTANCE PROGRAMS

Food Stamps

The Food Stamp Program, designed to help households buy and eat nutritious foods, is paid for primarily via federal funding. Eligibility varies by household size and income, with maximum monthly benefits limited according to household size.

Temporary Family Assistance (TFA)

Temporary Family Assistance is an employment-focused assistance program for needy families consisting of at least one dependent child under age 18 and an adult relative caretaker. The program offers time-limited assistance (on a 21-month scale with possible extensions) for adults with the requirement that they actively seek/retain employment or education/training to obtain employment. Recipients must participate in the Employment Services portion of the program to receive full assistance. Families are eligible if their earned income does not exceed the federal poverty level, and they become ineligible if their earned income exceeds the federal poverty level (FLP).

State Supplement (For Aged, Blind and Disabled)

For individuals 65 and older (with other source of income, such as Social Security, Supplemental Security or Veteran's Benefit), who meet the Social Security Disability program, or the State Board of Education and Services for the Blind definition of being blind or are disabled according to the federal definition are entitled to state financial assistance. Eligible recipients' liquid assets cannot exceed $1,600 per person or $2,400 per couple. Recipients eligible for the state supplement are automatically eligible for Medicaid benefits.

Medicaid

The Medicaid program provides for remedial, preventive and long-term medical care for income-eligible aged, blind or disabled individuals, and families with children. The Connecticut Department of Social Services (DSS) makes direct payment to health care providers for services delivered to eligible individuals. The program complies with federal Medicaid law (Title XIX of the Social Security Act) and regulations so as to receive 50 percent reimbursement from the federal government.

State Administered General Assistance (SAGA)

This program provides cash or medical assistance for unemployable because of medical or other reasons, on shorter term individuals or families who do not meet "blood relative" requirements for TFA. "Employable" people are ineligible, unless they qualify for substance use assistance through the Connecticut Department of Mental Health and Addiction Services (DMHAS).[237]

CONNECTICUT AGE AND DISABILITY DEMOGRAPHICS BY HEALTH REFERENCE GROUP

TABLE 130: TOTAL CONNECTICUT POPULATION AGE 65 AND OLDER, BY HEALTH REFERENCE GROUP

AREA	Total Population 65+
HRG 1 (3)-UC	40,271
Bridgeport	16,012
Hartford	11,588
New Haven	12,671
HRG 2 (10)-MC	91,166
HRG 3 (15)-DS	91,891
HRG 4 (27)-WS	67,333
HRG 5 (39)-MT	103,284
HRG 6 (75)-RT	76,238
Connecticut	470,183

Used to determine eligible population for DSS State Supplement for Aged. Source: U.S. Census, 2000. Dataset: Census 2000 Summary File 1 (SF 1) 100-Percent Data, Table P12. Sex by age, Universe: Total population. Available online: www.census.gov.

TABLE 131: TOTAL CONNECTICUT NONINSTITUTIONALIZED POPULATION, AGE 16-64, CLAIMING EMPLOYMENT-RELATED DISABILITY BY HEALTH REFERENCE GROUP

AREA	Disabled Population
HRG 1 (3)-UC	39,404
Bridgeport	12,287
Hartford	13,564
New Haven	13,553
HRG 2 (10)-MC	47,302
HRG 3 (15)-DS	38,342
HRG 4 (27)-WS	26,959
HRG 5 (39)-MT	41,501
HRG 6 (75)-RT	33,669
Connecticut	227,177

Used to determine eligible population for DSS State Supplement for Disabled, Source: U.S. Census 2000, SF3: Table P125. Imputation of Employment Disability for the Civilian Noninstitutionalized Population 16 to 64 Years. Available at: www.census.gov.

TABLE 132: FAMILIES WITH RELATED CHILDREN UNDER 18 YEARS AND WITH INCOME BELOW POVERTY LEVEL

AREA	Families Below Poverty Level, 1999
HRG 1 (3)-UC	15,492
Bridgeport	4,411
Hartford	6,522
New Haven	4,559
HRG 2 (10)-MC	11,089
HRG 3 (15)-DS	5,176
HRG 4 (27)-WS	1,516
HRG 5 (39)-MT	3,779
HRG 6 (75)-RT	1,963
Connecticut	39,015

Source: U.S. Census 2000 Summary File 3 (SF3): Table P90.

TABLE 133: TOTAL POPULATION WITH INCOME BELOW POVERTY LEVEL

AREA	Total Below Poverty Level, 1999
HRG 1 (3)-UC	88,274
Bridgeport	24,920
Hartford	35,741
New Haven	27,613
HRG 2 (10)-MC	160,257
HRG 3 (15)-DS	37,133
HRG 4 (27)-WS	12,437
HRG 5 (39)-MT	31,271
HRG 6 (75)-RT	18,416
Connecticut	259,514

Used to determine eligible population for DSS Temporary Family Assistance "Recipients." Source: U.S. Census, 2000, SF3: Table P89. Poverty Status in 1999 By Age By Household – All Household Types.

APPENDIX F

EMERGENCY DEPARTMENT VISITS FOR CHILD AND ADULT ABUSE

TABLE 134: CHILD AND ADULT ABUSE (E CODE=E967). ANNUAL RATES OF EMERGENCY DEPARTMENT VISITS PER 1,000 RESIDENTS BY AGE AND GENDER. CONNECTICUT FISCAL YEAR 2002-2003

AGE GROUP	Gender	2000 Population	FY2002-2003 Emergency Department Visits	Annualized ED Visit Rate per 1,000 Residents
TOTAL		3,405,565	2,216	0.33
	Female Total	1,756,246	1,848	0.53
	Male Total	1,649,319	368	0.11
0-4	F	109,215	92	0.42
0-4	M	114,129	65	0.28
5-9	F	119,141	74	0.31
5-9	M	125,003	72	0.29
10-14	F	117,881	107	0.45
10-14	M	123,706	69	0.28
15-19	F	105,336	209	0.99
15-19	M	111,291	34	0.15
20-24	F	92,468	284	1.54
20-24	M	95,103	23	0.12
25-29	F	101,487	223	1.10
25-29	M	99,980	11	0.06
30-34	F	127,440	226	0.89
30-34	M	122,733	18	0.07
35-39	F	148,386	229	0.77
35-39	M	142,480	18	0.06
40-44	F	147,434	185	0.63
40-44	M	142,749	24	0.08
45-49	F	128,882	108	0.42
45-49	M	123,872	8	0.03
50-54	F	117,812	43	0.18
50-54	M	110,241	7	0.03
55-59	F	91,340	25	0.14
55-59	M	85,621	5	0.03
60-64	F	69,243	11	0.08
60-64	M	62,409	4	0.03
65-69	F	63,506	10	0.08
65-69	M	54,050	3	0.03
70-74	F	64,057	3	0.02
70-74	M	49,952	3	0.03
75-79	F	59,882	4	0.03
75-79	M	41,214	1	0.01
80-84	F	46,395	7	0.08
80-84	M	26,854	1	0.02
85+	F	46,341	8	0.09
85+	M	17,932	2	0.06

Source: CHIME Database, CHA.

TABLE 135: CHILD AND ADULT ABUSE (E CODE=E967). ANNUAL RATES OF EMERGENCY DEPARTMENT VISITS PER 1,000 RESIDENTS BY HRG. CONNECTICUT FISCAL YEAR 2002-2003. ADJUSTED FOR AGE AND GENDER.

AREA	2000 Population	Total ED Visits	Annual Crude ED Visit Rate	Annual Adjusted ED Visit Rate
TOTAL	3,405,565	2,216	0.33	0.34
HRG 1 (3)-UC	384,733	716	0.93	0.85
HRG 2 (10)-MC	662,398	555	0.42	0.42
HRG 3 (15)-DS	587,504	440	0.37	0.39
HRG 4 (27)-WS	487,620	74	0.08	0.09
HRG 5 (39)-MT	698,517	289	0.21	0.22
HRG 6 (75)-RT	584,793	142	0.12	0.13

Source: CHIME Database, CHA.

TABLE 136: CHILD ABUSE (E CODE=E967). ANNUAL RATES OF EMERGENCY DEPARTMENT VISITS PER 1,000 RESIDENTS BY HRG, AGE AND GENDER. CONNECTICUT FISCAL YEAR 2002-2003.

AGE GROUP	Gender	HRG	2000 Population	FY2002-2003 Emergency Department Visits	Annualized ED Visit Rate per 1,000 Residents
0-4	F	UC	14,753	39	1.32
0-4	F	DS	17,804	20	0.56
0-4	F	MC	22,258	18	0.40
0-4	F	MT	19,242	8	0.21
0-4	F	RT	17,899	4	0.11
0-4	F	WS	17,259	3	0.09
0-4	M	UC	15,509	29	0.93
0-4	M	DS	18,528	14	0.38
0-4	M	MC	23,188	12	0.26
0-4	M	MT	20,394	7	0.17
0-4	M	RT	18,467	2	0.05
0-4	M	WS	18,043	1	0.03
5-9	F	UC	15,356	36	1.17
5-9	F	MC	22,047	15	0.34
5-9	F	DS	18,901	10	0.26
5-9	F	MT	22,053	8	0.18
5-9	F	RT	20,958	4	0.10
5-9	F	WS	19,826	1	0.03
5-9	M	UC	15,930	33	1.04
5-9	M	MC	23,194	23	0.50
5-9	M	MT	23,027	11	0.24
5-9	M	DS	19,443	2	0.05
5-9	M	WS	21,076	2	0.05
5-9	M	RT	22,333	1	0.02
10-14	F	UC	14,306	50	1.75
10-14	F	MC	20,849	27	0.65
10-14	F	DS	18,917	13	0.34
10-14	F	MT	23,357	11	0.24
10-14	F	WS	18,457	4	0.11
10-14	F	RT	21,995	2	0.05
10-14	M	UC	15,141	35	1.16
10-14	M	DS	19,608	14	0.36
10-14	M	MC	21,465	11	0.26
10-14	M	MT	24,657	4	0.08
10-14	M	RT	23,167	3	0.06
10-14	M	WS	19,668	2	0.05

Source: CHIME Database, CHA.

Note: Sorted in descending order by HRG rate within age and gender category.

APPENDIX G

YOUTH SHELTERS OVERVIEW OF CONNECTICUT STATE YEARS (YOUTH EMERGENCY ASSESSMENT AND RESPITE SERVICES) AND OTHER YOUTH SHELTERS BY HEALTH REFERENCE GROUP

TABLE 137: YOUTH SHELTERS

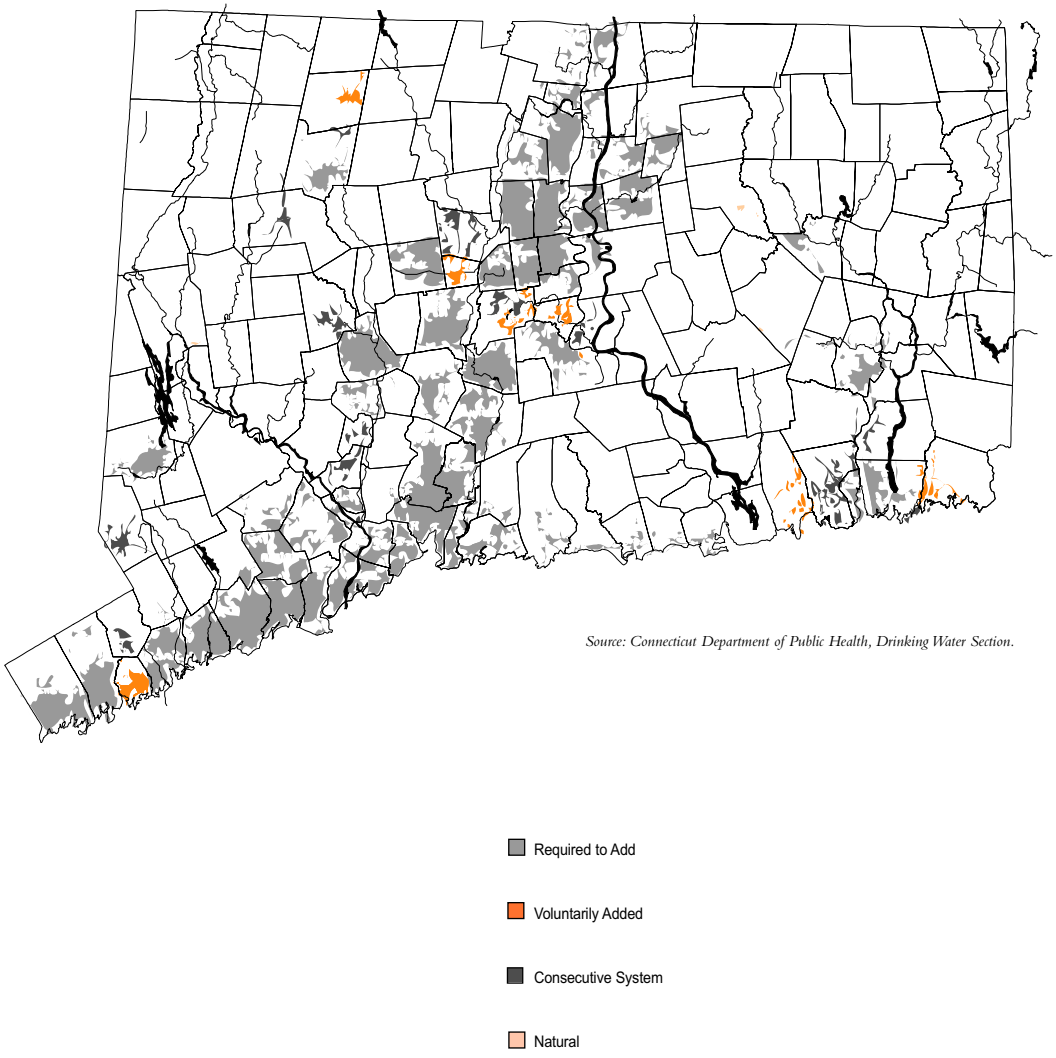
HRG	City/Town	Shelter	Total Licensed Beds	Age Range
UC	Hartford	The Salvation Army Marshall House	14	11-17
UC	Hartford	The YMCA – Jewell House	12	11-17
UC	Bridgeport	Council of Churches of Greater Bridgeport	(Not licensed YEARS shelter)	N/A
UC	Bridgeport	Janus House	12 (Not licensed YEARS shelter)	N/A
UC	New Haven	Douglas House	(Not licensed YEARS shelter)	N/A
UC	New Haven	Youth Continuum, Inc. www.kidscounsel.org/placement/index.6.html	(Not licensed YEARS shelter)	N/A
MC	Norwalk	Community Solutions, Inc. – The Norwalk Shelter	12	11-17
MC	Waterbury	The Salvation Army Youth Emergency Shelter	15	11-17
MC	Waterbury	Salvation Army Youth Shelter www.kidscounsel.org/placement/index.6.html	(Not licensed YEARS shelter)	N/A
DS	West Hartford	The Bridge Family Center	9	11-17
DS	Rockville	Community Solutions, Inc. – Kellogg House	8	11-17
WS	Cos Cob	Kids In Crisis, Inc. – Nursery and Adolescent Programs	16	0-17
MT	Quaker Hill	Waterford Country School – Thomas Bent and Rita Shelters	20	11-17
MT	Wauregan	Quinebaug Valley Youth & Family Services, Inc. www.kidscounsel.org/placement/index.6.html	(Not licensed YEARS shelter)	N/A
RT	Deep River	Mount Saint John, Inc. www.kidscounsel.org/placement/index.6.html	(Not licensed YEARS shelter)	N/A

Source: DCF YEARS: Youth Emergency Assessment and Respite Services (Emergency Youth Shelters) Statistical Report, Performance Based Contracting state fiscal year 2005 (July 1, 2004, to Sept. 30, 2004).

APPENDIX H

CONNECTICUT FLUORIDATED POPULATIONS

FIGURE 31: CONNECTICUT FLUORIDATED POPULATIONS, 2005



Source: Connecticut Department of Public Health, Drinking Water Section.

Appendix I

HEALTH CARE QUALITY INDICATORS

HEALTH CARE QUALITY

Health care quality can be categorized in two ways: functionally, such as preventive care, curative care and rehabilitative care; and by provider, such as physicians, primary care, hospitals, managed care, home health, and nursing homes. Functionally, a physician may deliver preventive care and also curative care. A physical therapist may provide preventive care and also rehabilitative care.

HOSPITAL-BASED PERFORMANCE INDICATORS

Connecticut Hospital Association (CHA) has a hospital performance reporting system comparing acute care providers on the following indicators:

- **Heart attack Acute Myocardial Infarction (AMI) care:** percentage of patients who receive aspirin at arrival; percentage of patients prescribed aspirin at discharge; Angiotensin-Converting Enzyme (ACE) inhibitor, Beta blocker at arrival and discharge.
- **Heart failure care:** percentage of patients who have a left ventricular function — LVF — assessment; percentage who receive an ACE inhibitor at discharge.
- **Pneumonia care:** percentage of patients who receive an oxygen assessment; percentage who are screened for and receive pneumonia vaccination as appropriate; percentage who receive an antibiotic within four hours of arrival.

These measures are available in six-month intervals for all Connecticut hospitals (except Sharon Hospital). They are available on CHA's web site at www.chime.org/Quality/HPR.html. No other quality data are available from CHA. In addition, these data are not available in any other format, e.g., by town or race/ethnicity of patient, although theoretically the data could be aggregated in this manner.

Many conditions do not — at least should not — lead to hospitalization. Certain conditions, e.g., hospitalization for diabetes complications and asthma, have been used as markers for the quality of primary care and disparities in primary care, since these problems should be treated and controlled in the primary care setting and not allowed to develop to the point that they require hospitalization. This is an important issue since avoidance of hospitalization is positive for both patients and payors. Treated preventively in the primary care setting, the patient remains in better health, and the cost is lower.

PRIMARY/AMBULATORY CARE

The state Office of Health Care Access (OHCA) issued a databook on preventable hospitalizations (ambulatory care sensitive conditions — ACSC) in Connecticut, including an extensive analysis of 16 target conditions, covering 2000-2004.[238] Table 137 shows results for fiscal year 2004.

TABLE 138: HOSPITALIZATION FOR SELECTED AMBULATORY CARE SENSITIVE CONDITIONS

ACSC AND AGE RANGE	Discharges, FY 2004
Bacterial Pneumonia – All	12,236
Congestive Heart Failure – 18+	11,048
Chronic Obstructive Pulmonary Disease – 18+	4,563
Urinary Tract Infection – All	4,278
Adult Asthma – 18+	3,002
Dehydration – All	4,176
Low Birth Weight – All Births	2,754
Diabetes Long-Term Complication – 18+	2,803
Diabetes Short-Term Complication – 18+	1,126
Diabetes Uncontrolled – 18+	196
Pediatric Asthma – <18	1,406
Lower Extremity Amputation – 18+	1,008
Perforated Appendix – Persons with Appendicitis	970
Angina – 18+	853
Pediatric Gastroenteritis – <18	486
Hypertension – 18+	654
Total	50,948

Source: Preventable Hospitalizations in Connecticut: Assessing Access to Community Health Services, FY 2000-2004, Databook. OHCA, 2005.

The table illustrates that a sizeable, expensive and health-threatening portion of all hospital discharges are potentially preventable, given accessible and timely ambulatory care. OHCA reports that the total volume of ACSC conditions rose 7.4 percent between fiscal years 2000 and 2004, and that the 50,948 discharges in 2004 were associated with total charges of almost $900 million.[239] Furthermore, "nearly two-thirds were hospitalized previously, most were admitted through the ED (80 percent) and nearly half required additional care after discharge (25 percent transferred to other facilities and 20 percent to home health services)." Blacks and Hispanics were more likely to be hospitalized for ACSCs, and accounted for more than half of the recent increase in ACSC hospitalizations.[240]

NURSING HOME QUALITY

Measures of nursing home quality are available from the Centers for Medicare & Medicaid Services (CMS) web site at www.medicare.gov.

There are two sources of nursing home quality data:

- CMS' Online Survey, Certification, and Reporting (OSCAR) database. Includes nursing home characteristics and health deficiencies issued during the three most recent state inspections and recent complaint investigations.
- The Minimum DataSet (MDS) Repository. The MDS is collected on regular intervals for every resident in a Medicare- or Medicaid-certified nursing home. Information is collected on the resident's health, physical functioning, mental status and general well-being.

MDS Quality Measures Based on Observation (Days in Parentheses)

Long-Term Measures

- Percentage of residents whose need for help with daily activities has increased (over past 7 days).
- Percentage of residents who have moderate to severe pain (7).
- Percentage of high-risk residents who have pressure sores (7).
- Percentage of low-risk residents who have pressure sores (7).
- Percentage of residents who were physically restrained (7).
- Percentage of residents who are more depressed or anxious (30).
- Percentage of low-risk residents who lose control of bowels or bladder (14).
- Percentage of residents who have/had a catheter inserted and left in their bladder (14).
- Percentage of residents who spent most of their time in bed or in a chair (7).
- Percentage of residents whose ability to move about in and around their room got worse (7).
- Percentage of residents with a urinary tract infection (30).
- Percentage of residents who lose too much weight (30).

Short-Stay Measures

- Percentage of short-stay residents with delirium (7).
- Percentage of short-stay residents who had moderate to severe pain (7).
- Percentage of short-stay residents with pressure sores (7).

HOME HEALTH QUALITY MEASURES

The home health quality measures come from information collected by Medicare and Medicaid-certified home health agencies available from the CMS web site at www.medicare.gov/HHCompare. They include:

Improvement in getting around

- Percentage of patients who get better at walking or moving around.
- Percentage of patients who get better at getting in and out of bed.
- Percentage of patients who get better at getting to and from the toilet.
- Percentage of patients who have less pain when moving around.

Patient's activities of daily living

- Percentage of patients who get better at bathing.
- Percentage of patients who get better at taking their medicines correctly (by mouth).
- Percentage of patients who get better at getting dressed.
- Percentage of patients who stay the same or don't get worse at bathing.

Patient medical emergencies

- Percentage of patients who had to be admitted to the hospital.
- Percentage of patients who need urgent, unplanned medical care.

Improvement in mental health

- Percentage of patients who are confused less often.

APPENDIX J

MAXIMUM CONTAMINANT LEVEL (MCL) VIOLATIONS

TABLE 139: MCL VIOLATIONS, 2004

CONTAMINANT	Number of MCL Violations[241]	Health Risks from prolonged exposure to high levels	Source
Total Coliform	334	No known health risks; used to indicate whether other harmful bacteria are present.[242]	Occurs naturally.
Total Coliform Acute (fecal coliform and E. coli)	23	E. coli can cause severe illness; abdominal cramps and bloody diarrhea; 2-7 percent of infections can cause kidney failure in elderly and children.[243]	Runoff from human and animal waste.
Nitrate	10	Can cause illness or death in infants under the age of six months; a syndrome known as "blue baby" with symptoms of shortness of breath.[244]	Runoff from fertilizers; septic tank leakage; sewage; or can occur naturally.
Gross Alpha	1	Indicates high levels of radioactive materials and requires further testing to identify the species.[245]	Occurs naturally in Connecticut bedrock.
Radium 226 & 228	12	Known human carcinogen.[246]	Occurs naturally in Connecticut bedrock and results from decay of uranium.
Uranium	16	Known human carcinogen.[247] Can affect the kidneys.[248]	Occurs naturally in Connecticut bedrock.
Dibromochloropropane (DBCP)	1	Probable human carcinogen/with sufficient evidence in animals but inadequate evidence in humans[249] and reproductive difficulties.[250]	Runoff from soil fumigant used on orchards.
Di (2-ethylhexylphthalat e)	1	Probable human carcinogen/with sufficient evidence in animals but inadequate evidence in humans[251] and reproductive difficulties and liver problems.[252]	Released from rubber and chemical manufacturing.
Antimony	1	Not a carcinogen.[253] Causes increase in blood cholesterol and decrease in blood sugar.[254]	Released from petroleum refineries, electronics, fire retardants, solder, and ceramics.
Dichloromethane	1	Suggestive evidence that it is a carcinogen but inadequate evidence in humans[255] and liver problems.[256]	Released from drug and chemical manufacturing.
Trichloroethylene	4	Probable human carcinogen/with sufficient evidence in animals but inadequate evidence in humans[257] and liver problems.[258]	Released from factories and metal degreasing sites.
Flouride	1	Could cause pain and tenderness in bones and mottled teeth in children.[259]	An additive to water; can also occur naturally or come from fertilizer and aluminum manufacturing.

Source: in table endnotes.

APPENDIX K

MORTALITY COUNT DETAILS

TABLE 140: AVERAGE MORTALITY COUNTS, FOR SPECIFIC DISEASES AND CONDITIONS WITH AT LEAST 200 AVERAGE DEATHS PER YEAR, 2000-2004

ICD 10 CODE AND CONDITION	Average Annual Deaths
Total, All Causes	29,733
C00-C97 Malignant neoplasms	7,087
C18-C21 Colorectal cancer	730
C25 Pancreatic cancer	420
C33-C34 Trachea, bronchus and lung	1,867
C50 Breast cancer	553
C61 Prostate cancer	398
C80 Cancer without specification	395
C82-C85 Non-Hodgkin's lymphoma	287
C91-C95 Leukemia	274
I00-I78 Major cardiovascular	11,090
I00-I09,I11,I13,I20-I51 Heart Disease	8,487
I10,I12 Essential hypertension	269
I11 Hypertensive heart disease	212
I20-I25 Ischemic heart disease	5,789
I50.0 Congestive heart failure	632
I60-I69 Cerebrovascular disease	1,864
I64 Stroke, not infarction	992
I71 Aortic aneurysm and dissection	205
E10-E14 Diabetes mellitus	708
V01-X59,Y85-Y86 Accidents (unintentional injuries)	1,139
X40-X49 Accidental poisoning & exposure to noxious substances	271
X60-X84,Y87.0,X85-Y09,Y87.1,Y35,Y89.0 Intentional Injuries	382
X60-X84,Y87.0 Suicide	279
Drug-induced deaths	342
F03 Unspecified dementia	590
G20-G21 Parkinsons's disease	214
G30 Alzheimer's disease	593
A40-A41 Septicemia	551
J10-J18 Pneumonia and Influenza	869
J12-J18 Pneumonia	855
J40-J47 Chronic lower respiratory diseases (COPD)	1,468
J69 Pneumonitis due to solids	359
K55 Vascular disorder of intestine	291
K70,K73-K74 Chronic liver disease and cirrhosis	309
N00-N07,N17-N19,N25-N27 Nephritis, nephrotic syndrome, nephrosis	304
N19 Unspecified renal failure	261

Source: Connecticut Department of Public Health (DPH) Supplemental Table 9 for 2000-2004, Accessed Oct. 12, 2006.

APPENDIX L

PRIORITY SETTING METHODS

POSSIBLE CRITERIA FOR PRIORITY-SETTING

A *Data Scan* should focus on several goals: (1) provide useful data for further reflection; (2) aid grant-seeking agencies; (3) help the funding agent and actors on the political scene to set priorities; and (4) help active citizens to better understand health, health risk and health care issues.

The purpose of a *Data Scan* is to provide a systematic and quantitative approach to health-related issues. But how can data be translated into priorities? There are several approaches:

(1) Focus on mortality

A common approach to the question of priority is to focus on mortality: For which conditions do the highest mortality rates exist? With this approach, one answer will always emerge: heart failure, since many elderly persons die of heart failure. This rate overwhelms all others. Clearly, very little guidance about prevention is provided by this fact.

(2) Focus on deaths before age 65 and years of potential life lost

A different approach is to ask two different questions: How many deaths occur before age 65? 75? Years of life lost before age 65 or 75 are called "years of potential life lost" (YPLL).[q] Somewhat different answers may emerge, depending upon whether the focus is on death, or YPLL. For example, for Connecticut in 2002, there were 6,413 deaths before age 65. Of these 1,866 (29.1 percent) were from malignant neoplasms; 1,226 (19.1 percent) were from heart disease; and 733 (11.4 percent) were from unintentional injuries. If we calculate YPLL (before age 65), malignant neoplasms account for 18.7 percent of all YPLL, heart disease for 13.0 percent, and unintentional injury for 18.4 percent.[260] Therefore, unintentional injury is a larger cause of YPLL than it is of death. Of course this occurs because unintentional injury is a relatively frequent cause of death for the young, and therefore accounts for many years of potential life lost.[261]

YPLL analysis is available for the United States and for Connecticut, and for certain gender and race/ethnicity specific groups through the federal government's WISQARS web site: webappa.cdc.gov/sasweb/ncipc/ypll.html. Since leading causes of death for the population under 65 are highly variable for different gender and race/ethnicity groups, this could be an important feature of the priority-setting analysis, particularly for one that is focused on understanding disparities.

(3) Focus on relative risk — excess or deficit in events

Another approach is to calculate an estimate of excess of events for persons of color versus whites. This approach has the advantage of putting the issue of disparities in numerical terms, without the complexity of the YPLL calculation, and it can apply to morbidity as well as mortality.

This approach will tend to give a lower estimate of health disparities than will the YPLL calculation, when applied to mortality. This occurs because the excess events method does not consider the number of years of life lost by those who die, only the death numbers in the selected populations — and black and Hispanic persons tend to die at an earlier age than whites. Therefore the excess years of life lost by black and Hispanic persons, who tend to die at an earlier age, may not be considered.

(4) Focus on morbidity

Focusing on morbidity (disease rather than death) is another possible approach, although weighing different kinds of morbidity is difficult. For example, how does one weight the impact of diagnosis and ongoing treatment for HIV/AIDS against diagnosis and treatment for diabetes, or against nonfatal injuries from intentional knife or gunshot wounds? What about inherited conditions, such as Huntington's Chorea, which are serious and always lead to early death and significant decline in quality of life before death, but which have no known cures? Should such diseases "count" in setting priorities for health care policy?

(5) Focus on preventable disease conditions

A still different approach is to focus on conditions that have known causes and preventive methods. This approach has the advantage of putting resources where they might make a large difference, e.g., smoking relative to preventing lung cancer; oral screening and dental sealant application relative to preventing dental caries; diet and exercise relative to type 2 diabetes.

(6) Use the "common ground" approach

The preceding approaches take a disease-specific or categorical perspective. An alternative is to find a "common ground" where a single intervention or behavior change might result in multiple positive health outcomes. Three examples include: (a) ridding schools of "junk food" vending machines to attack root causes of obesity and poor oral health by removing highly refined high-sugar foods and drinks; (b) providing more adult-sponsored out-of-school programs that may have an impact in many areas of youth behavior, reducing youth violence and teen pregnancy and reducing youth obesity and early onset of diabetes by increasing physical activity; and (c) focusing on medical errors, creating across-the-board medical system improvements that reduce hospital-related infection and death.

(7) Focus in areas where success can be measured and attributed to intervention

This is a difficult criterion to meet because it involves two logical steps, both of which much be satisfied: (a) did the health condition improve, and (b) can that improvement be attributed to specific policies or interventions. Even the first part of this — whether the health condition improved — may be difficult to demonstrate in anything but a long-term sense. Each of these measures in the causal sequence may have a long cycle time between developing a baseline measure, making a change, collecting data about the change, and analyzing and reporting data about the change.

APPENDIX M

MENTAL HEALTH

INTRODUCTION

The U.S. Center for Mental Health Services (CMHS) Uniform Reporting System (URS) contains data relevant to several problems, including that of repeat psychiatric hospitalization and residential treatment. "The URS data tables are available beginning with the year 2002. Repeat admissions refers to repeat admissions to Riverview Hospital located in Middletown. The definition of children's Residential Treatment Facility is as follows: Children and Youth Residential Treatment Facilities (RTF's) provide fully integrated mental health treatment services to seriously emotionally disturbed children and youth. An organization, not licensed as a psychiatric hospital, whose primary purpose is the provision of individually planned programs of mental health treatment services in conjunction with residential care for children and youth. The services are provided in facilities that are certified by state or federal agencies or through a national accrediting agency. Children are placed in a specific facility based on presenting issues and expertise of provider as well as availability."[262]

Child mental health data are produced by the Connecticut Department of Children and Families. These data are transmitted to the Connecticut Department of Mental Health and Addiction Services and then submitted by them to CMHS for use in the URS tables.

Based on previous critical analyses of child mental health care in Connecticut, the state instituted KidCare with the aim of improving the coordination of care through the development of "Community Collaboratives."[263] See www.cthealth.org for additional data. There is keen interest in documenting whether this has led to changes in (1) the rate of out-of-state placements, (2) repeated hospitalizations of children and (3) hospitalizations with long stays.

OUT-OF-STATE PLACEMENTS

There are not, to this point, publicly available and reliable data on out-of-state placement rates.

REPEATED PSYCHIATRIC HOSPITALIZATION

The number of repeat hospitalizations is shown in Table 141.

TABLE 141: PERCENTAGE OF PATIENTS WITH REPEAT STATE PSYCHIATRIC HOSPITAL ADMISSIONS, WITHIN 180 DAYS

AGE	2002	2003	2004	2005
0-12	NA	-	4.7%	8.3% (60)
13-17	NA	-	9.5%	5.4% (167)
18-20	NA	22.1	3.3%	22.1% (104)

Source: http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2002.asp. Accessed Jan. 23, 2007;
http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2003.asp. Accessed Jan. 23, 2007;
http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2004.asp. Accessed Jan. 23, 2007;
http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2005.asp. Accessed Jan. 23, 2007.
Data note: Base denominator number of discharges provided for 2005.

The percentages are based on very small numbers, lack data documentation, are subject to changes in definition, and are, therefore, of limited reliability. They should be examined from the perspective that the system should be capable of producing reliable statistics, rather than that these reflect any reliable trends in themselves.

TREATMENT LENGTH OF STAY

Data exist for average length of stay and are presented in Table 142.

TABLE 142: AVERAGE LENGTH OF STAY IN DAYS FOR CHILDREN IN CONNECTICUT PSYCHIATRIC FACILITIES

		2002	2003	2004	2005
Average LOS, State Hospital	Discharged Clients	205	166	172	157 (123)
	Resident Clients	151	302	171	136 (93)
Average LOS, Residential Treatment Centers for Children	Discharged Clients	NA	342	256	206 (132)
	Resident Clients	NA	357	250	227 (178)

Source: http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2002.asp. Accessed Jan. 23, 2007; http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2003.asp. Accessed Jan. 23, 2007; http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2004.asp. Accessed Jan. 23, 2007; http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2005.asp. Accessed Jan. 23, 2007. Data note: median length of stay provided for 2005. This is a better measure than average length of stay.

These data suggest that the average length of stay in residential treatment settings has declined in the past three years. It is not clear what has contributed to this decline. One problem is that the data submitted and available online does not contain the documentation (meta-data) that would allow a user to understand the changes in reporting specifications so as to properly interpret the data. This problem is discussed further in the Data Recommendations section of Chapter 11, Summary and Recommendations.

The mental health data system remains problematic despite efforts to improve it and to implement the CMHS Uniform Reporting System (URS) dataset and standards. There is a fragmentation of data reporting, lack of online data capability to access more detailed state data, and a lack of readily accessible information about data definitions in use in the agencies.

Outside analysts cannot generate carefully defined data requests to the appropriate state agencies without the backup documentation that would make such specific requests possible or meaningful. For example, while data dictionaries and "pick lists" exist for some data, there does not exist any publicly available documentation relating the data to specific program delivery modes and changes in those modes. There is neither documentation on data quality nor on basic "numbers" that would permit planful requests.

Recommendation

Support an effort to develop better organization of data and meta-data about the mental health data in Connecticut. Make data and meta-data available online to promote an educated citizenry in this important area.

ACRONYMS, ENDNOTES AND REFERENCE NOTES

ACRONYMS

ACSC	ambulatory care sensitive conditions
AHRQ	Agency for Healthcare Research and Quality (federal agency)
AIDS	acquired immune deficiency syndrome
AJPH	American Journal of Public Health
AQI	Air Quality Index
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CAPT	Connecticut Academic Performance Test
CDC	Centers for Disease Control and Prevention (federal agency)
DPH	Department of Public Health (Connecticut state agency)
CHA	Connecticut Hospital Association
CHF	Connecticut Health Foundation
CHIERS	Connecticut Health Information and Electronic Reporting System
CHIME	Connecticut Health Information Management and Exchange
CMHS	Center for Mental Health Services (federal agency)
CMIC	Connecticut Medical Insurance Company
CMS	Centers for Medicare and Medicaid Services (federal agency)
ConnPACE	Connecticut Department of Social Services Pharmaceutical Assistance Contract to the Elderly and Disabled
CVD	cardiovascular disease
DCF	Department of Children and Families (Connecticut state agency)
DEP	Department of Environmental Protection (Connecticut state agency)
DHHS	Department of Health and Human Services (federal agency)
DMHAS	Department of Mental Health and Addiction Services (Connecticut state agency)
DOA	Department of Agriculture (Connecticut state agency)
DOL	Department of Labor (Connecticut state agency)
DOT	Department of Transportation (Connecticut state agency)
DS	diverse suburb(s)
DSS	Department of Social Services (Connecticut state agency)
DWS	Drinking Water Section (of the Connecticut Department of Public Health)
ED	emergency department
EMSR	emergency medical services region
EPA	Environmental Protection Agency (federal agency)
EPSDT	Early and Periodic Screening, Diagnosis, and Treatment
ERG	Education Reference Group
ETS	environmental tobacco smoke
FPL	federal poverty level
HEDIS®	Health Plan Employer Data and Information Set
HIV	human immunodeficiency virus
HMO	health maintenance organization
HRG	Health Reference Group
HUSKY	Healthcare for UninSured Kids and Youth
IDU	intravenous drug use
IOM	Institute of Medicine (of the National Academies)
JAMA	Journal of the American Medical Association

LBW	low birth weight
Mass-CHIP	Massachusetts Community Health Information Profile
MCHB	Maternal and Child Health Bureau (federal agency)
MC	manufacturing center(s)
MCL	maximum contaminant level
MDS	minimum dataset (for CMS)
MSM	men who have sex with men
MT	mill town(s)
NAAQS	National Ambient Air Quality Standards
NCES	National Center for Education Statistics
NCQA	National Committee for Quality Assurance
NEJM	New England Journal of Medicine
NHANES	National Health and Nutrition Examination Survey
NQF	National Quality Forum
NRI	National Association of State Mental Health Program Directors Research Institute, Inc.
OASIS	Outcome and Assessment Information Set
OHCA	Office of Healthcare Access (Connecticut state agency)
OMB	Office of Management and Budget (federal agency)
OSCAR	Online Survey, Certification, and Reporting (for CMS)
PDF	portable document format
PWS	public water supply
QALYs	quality-adjusted life-years
QuIC	Quality Interagency Coordination Task Force (federal agency)
RT	rural town(s)
RTF	residential treatment facilities
SAGA	State-Administered General Assistance
SDE	Connecticut State Department of Education (Connecticut state agency)
SFY	state fiscal year
SIDS	Sudden Infant Death Syndrome
SMSA	standard metropolitan statistical area
STD	sexually transmitted disease
TFA	Temporary Family Assistance
UC	urban center(s)
URS	Uniform Reporting System
USR	uniform service region
VCHB	Virtual Children's Health Bureau (Connecticut state agency)
VLBW	very low birth weight
WISQARS	Web-based Injury Statistics Query and Reporting System (via the CDC web site)
WS	wealthy suburb(s)
YEARS	Youth Emergency Assessment and Respite Services
YPLL	years of potential life lost
YRBS	Youth Risk Behavior Survey

ENDNOTES

a A similar strategy has been suggested in the work of Nancy Krieger in the Public Health Disparities Geocoding Project. It encourages the use of socioeconomic strata as a way to identify potential health risks — referred to as "context effects" — that may useful in monitoring patterns of health disparities. Krieger recommends using a census tract level of analysis and the "percent of persons below poverty" as a key indicator. A description of the project can be found at: http://www.hsph.harvard.edu/thegeocodingproject/.

b Discussion of the historical geography of Health Reference Groups (HRGs) was developed by Thomas J. Cooke, Ph.D., Associate Professor, Department of Geography; and Coordinator, Urban and Community Studies Program, University of Connecticut, Storrs. Additional detail is available in Appendix B.

c Note that this "healthy immigrant effect"may dissipate with time. Immigrants, particularly black and Hispanic residents, tend to have higher mortality rates as they acculturate to U.S. patterns. In the case of Hispanics, this pattern is known as the "Latino Paradox" and is discussed in Chapter 9, Health Outcomes: Health Status, Disease Incidence, Hospitalization, and Mortality.

d See for example: Ellis Y. Clustering of Twenty-Eight Sample Areas in the Ethnographic Evaluation of the Behavioral Causes of Census Undercount for the 1990 Decennial Census (1995). Available at: http://www.census.gov/srd/www/byyear.html. Accessed June 1, 2006. Updated Feb. 6, 2007.

e There are some serious low-incidence infectious diseases, such as tuberculosis (TB), that are more prevalent in certain immigrant populations. Recent state and Centers for Disease Control and Prevention (CDC) reports show that a majority of new TB cases are found in foreign-born individuals. These reports suggest greater case-finding efforts in immigrant communities. Available at: http://www.cdc.gov/nchstp/tb/notes/TBN_2_06/changingepidemiology.htm.

f Because of limitations in U.S. Census 2000 reporting, some detailed tables, such as the median age tables, give white alone values that include persons who identify as of Hispanic ethnicity and white alone race, and similarly, Hispanic ethnicity and black-alone race or Hispanic ethnicity and Asian-alone race. Tables are provided by the U.S. Census Bureau for white alone race, non-Hispanic, but not for black-alone race, non-Hispanic ethnicity or for Asian-alone race, non-Hispanic ethnicity.

g A caution in analyzing both Hispanic and Asian subgroup rates is that the U.S. Census 2000 population values used as denominators may be deficient in three important respects: (1) Since these groups appear to be increasing in numbers, using their 1999-2003 birth-count numbers as numerators but dividing by year 2000 population denominators may slightly bias them to a high rate. (2) New, possibly undocumented, immigrants may avoid the census process yet claim their race/ethnicity status on the birth certificate, resulting in denominators too small relative to numerators, leading to inflated birth rates. (3) The numerator data may be deficient to the extent that some of the reporting of births may be to major groups only (e.g., Hispanic or Asian) and not to subgroups (e.g., Puerto Rican or Chinese). These problems could explain differences in group-specific birth rates, but not the differences in age-patterning of birth rates.

h Recent controversies over Boy Scouts because of policies regarding gay Scouts may have had an effect on recruitment and retention of Scouts and leaders. To the extent that other clubs have not made up this shortfall, it means a net decrease in youth participation in adult-sponsored activity.

i The nationwide median percentage is the median of all state prevalence estimates for a particular category, which are not age-adjusted, but which are weighted to the state's population. Avaliable at: http://www.cdc.gov/brfss/technical_infodata/weighting.htm for more weighting information. Source: Michele Sussman Walsh, Certified Health Education Specialist (CHES) Technical Writer/Communication Specialist, Northrop Grumman Contractor, Behavioral Surveillance Branch, Division of Adult and Community Health, Centers for Disease Control and Prevention (CDC). E-mail communication, Jan. 13, 2006.

j In at least one other state (Massachusetts) the "check-up" item has been dropped from the Behavioral Risk Fact Surveillance Survey (BRFSS) survey due to the possibly ambiguous wording or interpretation of the item (Karen Clements, Massachusetts Department of Public Health, personal communication, September 2005).

k One recent analyst has stated that "after adjustment, Hispanic [mortality] advantage is minor." See Arias E (Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, CDC). Race and Hispanic origin, reporting on death certificates: Evaluation and applications. Presentation to NCHS Data Users Conference, July 10-12, 2006, Washington, DC.

l Massachusetts (MassCHIP): http://masschip.state.ma.us Illinois (IPLAN); http://app.idph.state.il.us/Resources/IPLANProcess.asp?menu=3 Utah (IBS-PH); http://ibis.health.utah.gov/home/welcome.html South Carolina (SCANDHEC); http://scangis.dhec.sc.gov/scan Tennessee (HIT); http://hit.state.tn.us Washington State (VISTA); http://www.doh.wa.gov/EHSPHL/CHS/Vista/default.htm New York State; http://www.health.state.ny.us/statistics/chip/index.htm Texas (TALHO); http://www.dshs.state.tx.us/chs/talho/talho.shtm. Missouri (MICA): http://www.dhss.mo.gov/MICA/.

m "The Connecticut Department of Public Health (DPH) began a pilot project to adapt the Missouri MICA system for Connecticut health data late in 2005. The Connecticut MICA-derived system is being called 'CHIERS,' the Connecticut Health Information and Electronic Reporting System. The collaborative participation of staff from several program areas, coordinated though the DPH Virtual Child Health Branch (VCHB), has allowed DPH to pilot test a few database modules." (Mueller L, DPH. E-mail communication. June 12, 2006.)

n "DPH is working with staff at UConn to develop detailed town-level annual population estimates for 2001 forward. DPH expects to begin releasing this information by the Fall of 2007. The future annual production of these detailed estimates will be contingent upon the availability of federal grant funds." (Mueller L, DPH. E-mail communication, Feb. 13, 2007).

o See *American Journal of Public Health*, 2000;90(11), for several articles on health differences discovered through use of more detailed race and ethnicity classification, including health risks of biracial individuals.

p This simplification assumes that there is no systematic difference in the population size of census tracts by race/ethnicity. Differences are small: A median split of census tracts relative to the white non-Hispanic percentage of the population indicates that those tracts that have 89.1 percent and below white non-Hispanic percentage have an average population size of 3,932. census tracts with more than 89.1 percent white non-Hispanic population have an average population size of 4,435. Therefore, white residents live in slightly more populated census tracts than all others do. This does not imply that they live in more densely populated areas; they do not.

q Years of potential life lost (YPLL) may also be defined as years of life lost before age 75 or 85. The point is to base decision making not on counts of lives lost, but on years of life lost. This approach assumes that equity demands a focus on years of life lost not simply on persons. More complex analyses focus on "Quality-adjusted life-years" (QALYs) that typically assume that the years immediately preceding death may be of lower quality, compromised by disease states. These are complex value judgments. Standard federal web site reports do not use the concept of QALYs.

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ABOUT THE CONNECTICUT HEALTH FOUNDATION (CHF)

The Connecticut Health Foundation (CHF), which was established in July of 1999, is the state's largest independent, non-profit grantmaking foundation dedicated to improving the health of the people of Connecticut through systemic change and program innovation.

After meeting with state agencies, community leaders and health care professionals, the foundation selected three program areas to focus its resources:

- Improving Access to Children's Mental Health Services
- Reducing Racial and Ethnic Health Disparities
- Expanding Access to and Utilization of Oral Health Services

Aside from directly supporting community-based and institutional grant proposals, CHF fosters discussions surrounding public health issues by convening meetings, conferences, educational briefings, grantee technical assistance workshops, etc.

The foundation also invests resources into conducting objective, nonpartisan policy research on issues important to the public health care debate, such as the state budget spending cap, the state's Medicaid system, and expanding oral health care for publicly-insured children throughout the state.

The foundation was created when health maintenance organization, ConnectiCare, Inc., converted to a for-profit entity. Under an agreement approved by the Connecticut Attorney General, CHF received 100 percent of the equity in ConnectiCare, thereby, creating the Connecticut Health Foundation. The foundation became officially endowed in June 2001, upon approval of the sale of its shares to private investors, which resulted in an initial endowment of $132 million.

The foundation's 15-member board of directors made a commitment to examine the underlying causes of barriers to health care among the unserved and underserved by directing 5 percent of its endowment toward grant making operations each year.

For more information about CHF, please click onto www.cthealth.org, or contact Maryland Grier, Public Affairs Officer, at 860.224.2200 or Maryland@cthealth.org.

Additional detailed data illustrated in a series of charts, maps, tables and notes is available on the Connecticut Health Foundation's website, www.cthealth.org. Data on a new web page, which will also feature electronic copies of the *Community Health Data Scan for Connecticut* and a four-page executive summary, will be updated periodically. To be notified of data updates via email, please send your contact information to databriefing@cthealth.org.

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