One Coast, One Future

SOUTHWEST CONNECTICUT
ECONOMIC INTEGRATION INITIATIVE

Health Care Industry Cluster Study

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Business Council of Fairfield County

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One Coast, One Future

One Coast, One Future is a consortium formed by the Bridgeport Regional Business Council and The Business Council of Fairfield County. The initiative is funded by a nearly $1,000,000 federal grant secured by Congressman Christopher Shays (R-CT).

One Coast seeks to spark new and renewed growth through cooperative, yet locationally appropriate efforts. The goal is to stimulate economic growth, job creation and individual economic opportunity by linking the Southwest Connecticut region's business centers in a new and stronger alliance for their mutual benefit.

One Coast's long-term plan consists of six key objectives, including a Comprehensive Economic Development Strategy (CEDS); development of a marketing campaign focused on development and housing opportunities; development of a marketing campaign focused on cultural and entertainment opportunities; creating a growth strategy for jobs in healthcare; linking employer needs with available employee skills through a JobsNet; and creating a wi-fi network in city centers.

The Business Council of Fairfield County

The Business Council of Fairfield County (formerly known as SACIA) was formed in 1970 by business leaders engaged in the effort to build more livable, workable communities. The Business Council is governed by a board of directors comprised of senior business executives and served by a professional staff.

For over three decades, The Business Council has mobilized Fairfield County's business, political and community leadership around issues critical to the region's viability as a business destination. As we navigate in this new millennium, The Business Council's leadership and expertise continue to be put to work in the areas of transportation planning, legislative advocacy, higher education, economic data collection and analysis, professional development, business leadership and non-profit capacity building.

The Business Council is the coordinating body for the One Coast, One Future Health Care Industry Cluster Study.

One Coast, One Future Health Care Industry Cluster Study Steering Committee

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One Coast, One Future

Health Care Industry Cluster Study

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Executive Summary

I. Background and General Findings

Purpose – The One Coast, One Future effort aims to create stronger economic linkages among Southwest Connecticut's business centers of Bridgeport, Norwalk, and Stamford. The One Coast, One Future Health Industry Cluster Study assists municipal governments, regional organizations, and economic development leaders in their efforts to include health care services, facilities, providers and related businesses in their respective planning processes. This study represents Phase I of the Health Industry Cluster initiative; the details of Phase II will be planned based on the findings of this study.

Methodology – The Business Council of Fairfield County retained Holt, Wexler & Farnam, LLP to work with a Steering Committee composed of regional leaders in health care, higher education, business, and economic development. The Steering Committee developed recommendations based on a review of extensive demographic and health services data, a literature search of national and regional trends in health care, and opinions of leaders in health care and related industries and economic development fields.

The One Coast Region – For the purposes of this study, the "One Coast region" is comprised of 15 of Fairfield County's 23 municipalities and 5 towns and cities in New Haven County. The One Coast region is best understood economically, however, as part of the larger New York metropolitan area stretching from New Haven, Connecticut to Princeton, New Jersey. The One Coast region had an estimated 2005 population of 775,412. Key demographic trends impacting the future of the regional health care industry include an aging population and increasing foreign immigration. Two underlying infrastructure issues that must be addressed by appropriate state, regional, and local leadership to improve the prospects of the One Coast region's health care industry and general economic future are the serious congestion in the transportation system and the high cost of housing and living.

The Health Care Industry - Increasing costs and the growing number of uninsured are among the most important factors driving changes in the national and regional health care industry. Other significant industry trends include the following:

- Uncompensated care – As the number of uninsured people grows, hospitals find themselves, on average, providing charity care equivalent to 5% of net operating income.[1]
- Preventive programs – Roughly 60% of U.S. employers now use wellness and other preventive programs to improve the health of their workers and contain their health insurance costs.[2]
- Pay-for-performance – The number of health care organizations with pay-for-performance incentive plans – designed to reward physicians for positive patient outcomes – is growing significantly.
- Health IT – Despite research showing that digitally advanced hospitals have better quality, larger declines in average length of stay, and larger increases in operating revenues, information technology adoption has been slower in health care than in other industries.
- Transparency – Patients (both individuals and employers) are demanding more information about health care pricing, safety, and quality from health care providers.
- Ambulatory care – Health care delivery is being decentralized away from larger urban hospitals as satellite ambulatory care centers are developed.
- Mental health – Demand for mental health services has been increasing in recent years, but the capacity of the mental health system has been diminished by reductions in funding.

[1] "How Health Executives can Respond to the Issues that Confront them in 2006," PricewaterhouseCoopers, 2006.
[2] "Pressure on Your Health Benefits," *Time Magazine*, November 6, 2006.

- Workforce shortages – Nursing shortages are reaching crisis levels nationwide, and other occupations are headed towards severe shortages as the baby boomers begin to reach retirement age.
- Nationally, overall demand for health care services is projected to continue to increase as a result of a growing and aging population, but several factors are serving to dampen increases in demand.

National and regional health care employment have increased over the last several years despite flat or negative job growth in the rest of the economy, and projections suggest that health care jobs will continue to grow faster than jobs in most other industry sectors. Health care delivery (ambulatory health care services, hospitals, and nursing and residential care facilities) is the central component of the regional health care industry, accounting for almost 70% of the One Coast region's health care industry employment of over 45,000 workers.[3] Industry-wide health care employment in Fairfield County (a proxy for the One Coast region) is slightly more concentrated than it is nationally. The sub-industries with the highest regional employment concentrations are surgical and medical instrument manufacturing and direct health and medical insurance carriers.

II. Key Findings and Recommendations

The Health Care Workforce – The One Coast, One Future Health Cluster Steering Committee has identified growing workforce shortages as the most important issue affecting the prospects for the region's health care industry. Regional and statewide shortages across several health care occupations are threatening the capacity of health care providers to offer the level of service needed by the region's population.

To address the region's workforce shortages, the Steering Committee recommends the creation of the ***Southwest Connecticut Health Workforce Initiative***, a public/private partnership to implement specific strategies with measurable goals to address current and projected health care occupational shortages. The partnership must include representation from the region's six hospitals, the region's colleges and universities, The Workplace, Inc. (Southwest Connecticut's workforce investment board), K-12 school systems, the technical high school system, the adult education system, and statewide groups already involved in healthcare workforce initiatives. Strategies should address four priorities:

1. **Increase the annual, regional production of registered nursing program graduates from 350 to 700 by 2012. Similar goals should be set for other health care occupations.** This will require building the capacity of the regional higher education system to graduate more qualified nursing and allied health professionals. The Steering Committee recommends strategies, aligned with statewide efforts, to address teaching faculty shortages, increase the use of clinical simulations, improve coordination of clinical placements, and coordinate the expansion of teaching facilities.
2. **Increase worker access to health occupations and increase mobility within the health care field**. Strategies to support this priority include defining health care career ladders, increasing financial aid for shortage occupations, strengthening state science and math high school graduation standards and instruction, and improving health care career guidance throughout the K-12 system.
3. **Improve services to bring more English-proficient, immigrant workers into the health care field**. This can be accomplished by customizing services for immigrants with foreign health care credentials and supporting English as a Second Language (ESL) providers and employers in efforts to expand ESL capacity and accessibility.
4. **Address "Brain Drain" with steps to make the region more attractive as a location for nurses and other health workers**. The Steering Committee recommends financial and non-financial incentives to retain graduates of in-demand occupational programs, as well as incumbent workers, marketing the region as an attractive place to live and work, and supporting efforts to make housing more accessible for health care workers of all wage levels.

[3] For the purposes of this study, our health care industry definition includes health care delivery as well as research and development, manufacturing and wholesale, and ancillary services such as health insurance, fitness centers, and retail.

Creating a Healthier Coast – Despite a general consensus that a greater emphasis on prevention would benefit both individuals and the economy, most residents of Southwest Connecticut – along with most Americans – continue to forego small investments in prevention. A lack of investment in prevention and wellness is partially to blame for increases in preventable chronic diseases and for spiraling health care costs that are becoming progressively more burdensome for the overall economy. The root of this short-sighted approach to prevention is a compensation system that discourages people from pursuing preventive care.

A growing national movement promoting prevention, wellness, and chronic disease management seeks to improve health and lower health care costs, often by working through employers to provide incentives and programs to influence employee behavior. The One Coast Health Cluster Steering Committee believes, however, that a successful regional effort to promote wellness must engage health care providers, employers, insurance companies, and public payors to create incentives for providing preventive and wellness services.

We recommend the mobilization of a ***Southwest Regional Wellness Task Force*** to be charged with creating a pilot, collaborative program to restructure the compensation system, adjust practices, and engage employers to encourage wellness, prevention, and chronic disease management for one or a limited number of selected health conditions, such as asthma, obesity or diabetes, for a targeted population. Developing incentives for individuals, employers, providers, and payors to encourage wellness and prevention has the potential to not only advance the health of our regional population, but also bolster the competitiveness of the region's businesses and the vitality of the regional economy.

Economic Development Opportunities – It is important to distinguish between two distinct components of the health care industry when considering health-related economic development opportunities in the One Coast region. Health care delivery entities (e.g., hospitals) play an important role is any region's economic vitality, but classic economic development opportunities related to health care delivery are limited by the fact that health care delivery markets are primarily regional – hospitals, physicians, and long-term care facilities serving the population of a limited geographic catchment area.

The second health care industry component contains the firms that provide products and services for a national and global health care marketplace. Successful economic development strategies appear more likely to come out of specific health care markets within this industry component:

- **Medical Devices and Instruments** – Fairfield County has a high concentration of medical device industry employment to build upon, with a 2005 location quotient of 3.37.[4] The One Coast region should be attractive to medical device companies because it offers easy access to a customer base, a technically-skilled workforce, access to firms with precision manufacturing capabilities, proximity to New York City, and access to a high level of venture capital and private funding. Due to cost and transportation factors, the greater Bridgeport and lower Naugatuck Valley are the logical areas to target for medical device manufacturing.

- **Health-Related Insurance and Finance** – The One Coast region contains a high concentration of venture capital and hedge funds. It also has the workforce and infrastructure to support further development in specialized markets such as health care finance. The finance industry's ability to support the region's high cost of business operations and housing make it a strong candidate for increased investment. The region has an opportunity to "brand' itself as a center of health related finance and attract additional firms active in this niche market.

[4] A location quotient compares the density of the health care sector and its sub-industries in Fairfield County to the reference economy of the United States, and is calculated by dividing the percentage of total Fairfield County employment in a given sector or sub-industry by the corresponding percentage of total U.S. employment. A quotient greater than 1.0 indicates that a given sector or sub-industry has a higher employment concentration in Fairfield County than it does in the rest of the nation. Location quotient data comes from the U.S. Bureau of Labor Statistics.

- **Bioscience/Biotechnology** – Regions to the North (New Haven) and South (New York City) of the One Coast region feature prospering bioscience clusters, but Southwest Connecticut has yet to establish a strong bioscience presence, in large part due to the lack of a major research university in the region. However, the region should attempt to highlight cheap lab space, easy access to capital, and a highly skilled labor force. If research activity can be brought into the region, bioscience would immediately become an area on which to concentrate economic development efforts.

Health Care Policy – While the Health Cluster Steering Committee is not directly involved in advocating for policy changes, it did identify a number of key policy issues in the course of the study:

- Universal coverage – Connecticut currently lacks universal, continuous health coverage that is affordable to individuals and families, and affordable and sustainable for society.
- Medicaid – Connecticut has low Medicaid reimbursement rates, making access to physicians and hospitals more difficult for the low-income population due to the financial strain on providers of serving patients covered by Medicaid.
- Malpractice/tort reform – Connecticut had the third highest average malpractice settlement rate in the nation in 2003. High claim settlements directly and indirectly affect the cost of providing care.
- Certificate of Need process – Connecticut's Certificate of Need process keeps state costs down and controls utilization, but concerns have been raised about the costs associated with the process itself, as well as its negative effect on innovation.
- Universal electronic medical records – Through the eHealth initiative, the state is examining incentives for technological innovations thought to bring cost savings and quality improvements.
- Mandatory outcomes reporting – The literature suggests that increased transparency in reporting medical outcomes and prices will drive up service quality.
- Public college/university faculty pay – Community college faculty salaries are consistent throughout the state, ignoring differences in the cost of living between different regions for the state. This puts high-cost areas such as the Southwest at a disadvantage in terms of hiring faculty.
- Adult Education funding system – This is a critical, underfunded resource for strengthening the health care workforce, especially in view of the growing immigrant population and the persistence of low literacy levels in urban areas. .
- Tax incentives – Creating tax incentives could help attract more businesses to the region.

Conclusion

By moving ahead to address the critical health workforce shortages, piloting innovative approaches to prevention, and working to grow the health-related economy, the One Coast region can capitalize on the projected growth in the health care sector.

Background & General Findings

I. Introduction

a. The One Coast, One Future Health Care Industry Cluster Study

The Health Industry Cluster Study was conceived as part of the larger One Coast, One Future effort, led by the Business Council of Fairfield County and the Bridgeport Regional Business Council with support from Congressman Christopher Shays, that aims to create stronger economic linkages among the region's business centers.

The rapidly evolving health care industry is a driver of the regional and national economy. This study analyzes demographic and health industry trends to identify emerging and future health services needs and assesses likely market and regulatory responses to those needs. The study examines the implications for the health industry of the aging population, increasing immigration, and the changing demographics of the workforce. Additionally, it considers the economic impact of these emerging trends in the areas of health care employment, new business opportunities, and higher education program expansion. These findings and associated recommendations will assist municipal governments, regional organizations, and the economic development leaders of Bridgeport, Norwalk and Stamford in their efforts to include health care services, facilities, providers and related businesses in their respective economic development plans.

This study represents Phase I of the One Coast, One Future Health Care Industry Cluster Project. Phase II of the Project is expected to build on the findings and recommendations of this report. Phase II activities will be integrated with related efforts occurring in the region, including planning for a pending U.S. Department of Labor "Workforce Innovation in Regional Economic Development" (WIRED) grant that will focus heavily on health care workforce issues.

b. Methodology

The Business Council of Fairfield County retained Holt, Wexler & Farnam, LLP to work with a Steering Committee composed of regional leaders in health care, higher education, business, and economic development. The Steering Committee developed recommendations based on a review of extensive demographic and health services data, a literature search of national and regional trends in health care, and opinions of leaders in health care and related industries and economic development fields (a list of interviewees is attached in Appendix E). This report synthesizes and builds on a substantial body of recent work in the areas of health care trends and nursing and allied health workforce development.

c. Framework

Health care is a critical determinant of the success of the regional economy in Southwest Connecticut. Health care drives economic development across the following dimensions:

1. Health care is a major source of employment – It is the locus of approximately 15% of all jobs in the One Coast One Future region.
2. Health care is a key to worker productivity – A healthy workforce is more productive and is therefore a competitive advantage for a region due to lower absenteeism.
3. Health care costs affect regional competitiveness – A December 2004 survey of CEOs found that employee health care costs represent the most significant cost concern for America's business leaders.[5]

[5] Business Roundtable. December 2004 CEO Economic Outlook Survey: http://www.businessroundtable.org/newsroom/Document.aspx?qs=5866BF807822B0F1AD7468422FB51711FCF50C

4. Health care affects individual and family economic security – Rising health care expenses are a major cause of personal financial problems as health risks and costs gradually shift from employers to employees. Higher taxes are needed to support public sector health care programs.
5. Health care is a major input for local economies – Hospitals and other health care providers, as well as the workers they employ, are major purchasers of goods and services produced locally.
6. Health care is a locus of innovation and entrepreneurship – New approaches to care and new technologies for both treatment and management are fueling entrepreneurial activity.[6]

Other regional, state and national efforts focus on addressing the questions of health care costs and federal and state health care policies. Both the Business Council of Fairfield County and the Bridgeport Regional Business Council have Health Care Councils grappling with policy issues.

Based on the proposed scope of this study and discussions with the Steering Committee, research has focused on three interrelated dimensions of the health care cluster:

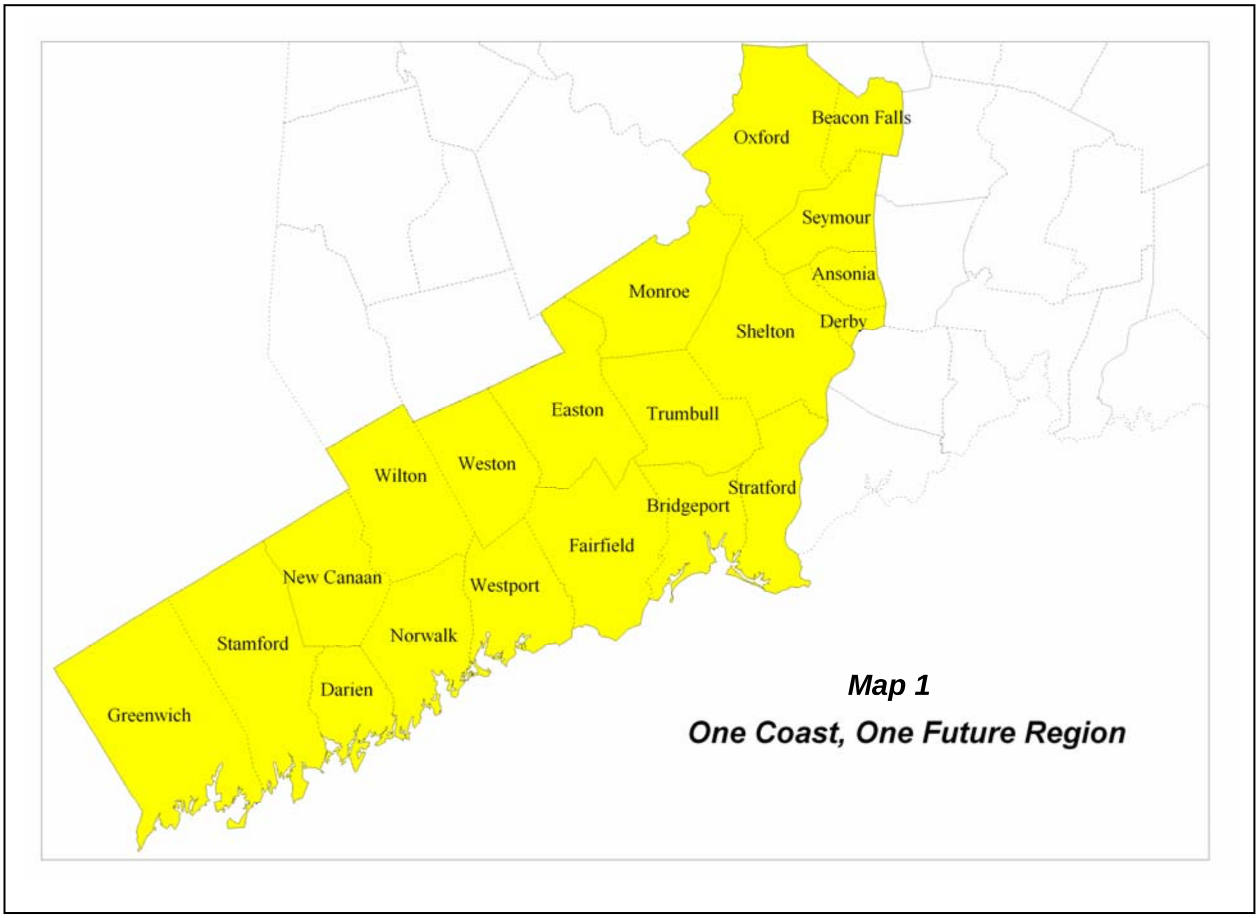
- Addressing nursing and allied health workforce shortages to support the growth and strength of the industry,
- Working with all players in the health care system to create incentives for wellness, prevention, and chronic disease management to improve the population's health, lower costs, and create a competitive advantage for the region, and
- Supporting a regional effort to capture new economic activity associated with the health care industry.

II. The One Coast Region

For the purposes of this study, the One Coast region is comprised of 20 municipalities covering 462.3 square miles, including 15 of Fairfield County's 23 towns and cities and 5 municipalities in New Haven County (Map 1). The region has been defined to be coterminous with the Southwest Connecticut Workforce Investment Area, the service area of The WorkPlace, Inc., due to this study's emphasis on workforce development.

Although this narrow geographic definition has been chosen for research purposes, the One Coast region is best understood in relation to the larger New York-New Jersey Metropolitan Area, which stretches in more expansive definitions from New Haven, Connecticut to Princeton, New Jersey. The Connecticut Economic Resource Center (CERC) describes the One Coast region as a satellite urban-suburban center linked to the greater New York Metropolitan Area. In terms of labor market, firm location decisions, and economic development opportunities, this perspective changes the view about individual and firm behavior. As has been the case with the finance industry, the region's location within the New York metropolitan health-related economy presents significant opportunities.

[6] Ross DeVol and Rob Koepp. August 2003."America's health care economy." Milken Institute. URL: http://www.milkeninstitute.org/publications/publications.taf?function=detail&ID=286&cat=PBriefs



Demographic Trends

The One Coast region had an estimated 2005 population of 775,412. From 2000 to 2005, the population of the One Coast region grew by 1.9%, slowest among the five Connecticut workforce investment areas.[7] In fact, if not for the over 35,000 foreign immigrants who came to Fairfield County during the first half of the decade, the County population would have dropped by over 15,000 people.[8] The region's flat population growth has primarily been attributed to an aging population and a shortage of affordable housing.

According to the 2005 American Community Survey, Connecticut is the eighth oldest state in the United States, with a median age of 39.3, almost three years higher than the national median. The median age in Fairfield County is similar to that of Connecticut, but population projections show that Fairfield County's population is aging at a faster rate than that of the state. From 2005 to 2010, the County population over 45 is expected to grow by over ten percent, while the population under 45 is projected to decline.[9] The continued aging of the One Coast region's population will fuel an increasing demand for health care services while also affecting the ability of health care providers to find the workforce needed to expand and replace retiring workers.

[7] Connecticut Department of Labor, "Information for Workforce Investment Planning 2006."
[8] Population Division, U.S. Census Bureau.
[9] Solucient data, 2006.

According to Internal Revenue Service tax filing data, Fairfield County experienced an exodus of 7,378 taxpaying households with $241 million in income over the two-year period from 2002 to 2004, representing a loss of 86% of Connecticut's taxpaying households (Table 1). Sixty-three percent of these households moved within Connecticut, with many most likely leaving Fairfield County in search of more affordable housing.

Table 1: Household Migration, 2002-2004

	Fairfield County	Connecticut
In-migration	29,607	134,277
Out-migration	36,985	142,842
Net migration	-7,378	-8,565
% of 2004 Households	-2.2%	-0.7%
% Moving within CT	63%	n/a
Total Net Income Leaving Area (in millions of $)	-241	-398
Moving In from Another State	22,178	71,913
Moving Out of State	25,095	81,952
Net migration	-2,917	-10,039
% of 2004 Households	-0.9%	-0.8%

Source: Internal Revenue Service, Tax Filing Data

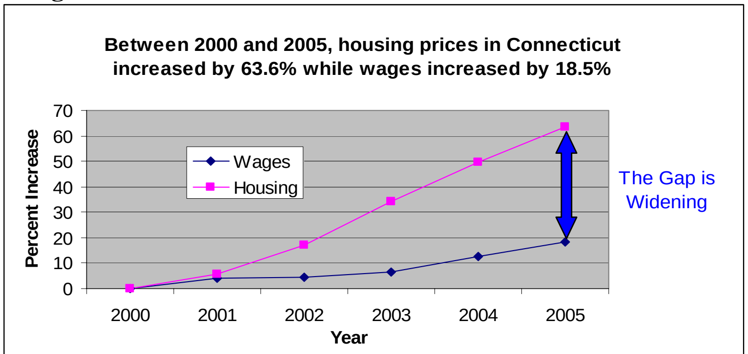
Infrastructure Issues

Two underlying issues affecting the One Coast region's health care industry and general economic future are the serious congestion in the transportation system and the high cost of housing and living. These issues represent significant barriers to drawing new businesses to the region and attracting and retaining the workers needed to stimulate the economy.

Transportation – Southwest Connecticut's overburdened transportation infrastructure is a serious and growing concern for the region's economy and workforce. In the 2005 Fairfield County Business Survey, 43% of Fairfield County executives polled identified transportation as the most daunting challenge facing Fairfield County businesses in the next five years.[10]

Housing/Cost of Living – High and rapidly increasing housing costs and a high cost of living in the Southwest pose significant workforce challenges for regional health care industry employers. Sixty-seven percent of Fairfield County business executives polled by CBIA believe there is a "housing bubble" in the County. When asked to name the primary reason for difficulty in finding qualified workers, 32% of executives identified high cost of living and another 24% named high housing costs.[11] Figure 1 at right shows that recent wage growth across Connecticut lags well behind increases in housing costs, making it difficult for low-wage workers (e.g., nursing aides) and moderate-wage workers (e.g., registered nurses) to live in the communities where they work. Interviews conducted for this study reveal that high housing and living costs are negatively affecting hospitals' ability to hire and retain even high-wage workers such as physicians.

Figure 1



Source: DataCore Partners and Partnership for Strong Communities econometric study, December 2005

[10] 2005 Fairfield County Business Survey, Connecticut Business & Industry Association, page 4.
[11] 2005 Fairfield County Business Survey, Connecticut Business & Industry Association, page 16.

III. The Health Care Industry

a. Quantifying its Economic Potential

Health Affairs estimates that current per capita national health expenditures are $7,110.[12] Applying this figure to the One Coast region population would yield total health expenditures of approximately $5.5 billion for the region. This figure is likely even higher, since previous studies have indicated that Connecticut is one of the higher spending states.[13]

The health care industry's payor mix determines the leverage points for affecting the future of the industry. In 2004, The Connecticut Office of Health Care Access (OHCA) estimated that 51% of hospital revenue was financed by the government (41% Medicare, 8% Medicaid, and 2% other medical assistance), 48% was financed through private insurance payments, and 1% from the uninsured.[14] The six hospitals in the One Coast region had total revenues of $1.3 billion in 2005, up 18% from 2003.[15]

These expenditures help drive the local economy as health industry workers spend their salaries and health care providers purchase goods and services. Federal funding of Medicare and half the cost of Medicaid also brings substantial new revenue into the local market.

As a cost saving measure, hospitals do most of their purchasing through purchasing groups, like the Voluntary Hospital Association, that negotiate preferred prices with national vendors. This limits the ability of local companies to capture spending in the local economy through supplier relationships. The region's potential to serve many of these purchasing needs is thus determined by its locational advantages nationally and globally as a home for these supply industries. Many national, medical-related supply firms are clustered in Tennessee and the Chicago area. Medical device manufacturing is clustered in the Minneapolis area but has a strong presence in New England as well. Health information technology (Health IT) firms are distributed across the country but reportedly cluster in existing IT and health care centers.

b. Global Trends in Health Care

According to U.S. Department of Labor statistics, the overall cost of health care in the United States has risen more than 60% in the last five years, and the cost of health care increased almost three times as quickly as salaries from June 2005 to June 2006.[16] Family health insurance premiums for Connecticut workers rose by 77% from 2000 to 2006 while their median earnings increased by only 13.2%.[17] Perhaps the most significant impact of rising costs has been an increase in the number of Americans without health insurance. From 2000 to 2005, the percentage of Americans with no coverage rose from 14.2% to 15.9%, representing an increase of 6.8 million people.[18]

Increasing costs and the growing number of uninsured are among the most important factors driving changes in the national and regional health care industry. The following industry trends were highlighted in a literature review and interviews conducted for this study:

- Uncompensated care – A PricewaterhouseCoopers national survey of hospitals found that, on average, hospitals provide charity care equivalent to 5% of net operating income. Eighty-three percent of industry leaders polled said that equal access to care is "important" or "very important" to a sustainable health system. The five largest hospitals in Southwest Connecticut had a total of $44 million in uncompensated

[12] Congressional Research Service Report to Congress. Congressional Research Service. March 31, 2006. http://www.house.gov/berry/crs/RL32545.pdf
[13] Connecticut Coalition for Universal Health Care Fact Sheet. http://cthealth.server101.com/
[14] Connecticut Office of Health Care Access.
[15] Connecticut Office of Health Care Access.
[16] "Pressure on Your Health Benefits," *Time Magazine*, November 6, 2006.
[17] "Premiums vs. Paychecks: Cost of Health Insurance Rose 5.8 Times Faster than Earnings," Office of the Healthcare Advocate, November 15, 2006.
[18] "Income, Poverty, and Health Insurance Coverage in the United States: 2005," U.S. Census Bureau, August 2006.

care in fiscal year 2005, up 20% from 2003.[19] An added cost pressure for health care providers in Connecticut is the low rate of reimbursement for services financed through the Medicaid program, with rates ranging from 62%-82% of cost across the region's hospitals.

- Preventive programs – Employers are increasingly making use of wellness and other preventive programs as a way to contain their health insurance costs. The roughly 60% of U.S. employers that offer wellness programs[20] generally have lower premiums because insurance companies reward them for encouraging their employees to engage in preventive behaviors. Additionally, many of these employers are self-insured, meaning that they have direct financial incentives to reduce health care costs.
- Mental health – Demand for mental health services has been increasing in recent years, but the capacity of the mental health system has been diminished by reductions in funding.
- Pay-for-performance – Designed to increase quality and reduce costs, pay-for-performance schemes are incentive plans that reward providers for positive patient outcomes. While health care administrators disagree about the effectiveness and significance of the pay-for-performance movement, the number of health care organizations with pay-for-performance initiatives is growing significantly. Physicians argue that pay-for performance metrics remain crude and may not accurately measure quality.
- Health IT – Research has shown that digitally advanced hospitals, compared with those that are not digitally advanced, have better quality and have seen a larger drop in average length of stay and a larger increase in operating revenues.[21] Despite these findings and the general belief that health IT has great potential to improve patient safety, information technology adoption has been slower in health care than in other industries. Broad-based public/private partnerships will likely be needed to mobilize the capital, interoperability, standard-setting, and cross-sector adoption required to create a "digital backbone" in the health care industry.[22]
- Transparency – Health IT also plays a major role in the increased transparency being demanded of health care providers by patients (both individuals and employers) wanting more information about health care pricing, safety, and quality. The federal government recently joined the transparency movement with an August 22, 2006 Executive Order ensuring that all federal agencies and those who do health care business with the government incorporate the "cornerstones of health care transparency."
- Ambulatory care – Health care delivery is being decentralized away from larger urban hospitals as satellite ambulatory care centers are developed closer to residential communities and smaller hospitals expand service offerings. This trend increases the need for integrated care along the health care delivery continuum as more services are offered outside of major surgical hospitals.
- Workforce shortages – Occupational shortages are not new to the health care industry, but nursing shortages are now reaching crisis levels nationwide, and other occupations are headed towards severe shortages as the baby boomers begin to reach retirement age. A PricewaterhouseCoopers report states simply, "a scarcity of clinical, technical, and management talent is affecting organizations across all sectors of the health industry."[23]

Demand for Health Care Services

Overall demand for health care services nationally is projected to continue to increase as a result of a growing and aging population. A major demographic trend contributing to increased demand during the next decade is the aging of the baby boomers. Demographic trends are the most significant driver of increased demand, but other major factors growing demand are higher obesity rates and increasing incidences of chronic diseases such as diabetes and asthma.

Ten-year projections of demand for hospitals services reflect smaller increases than demographic trends and

[19] Office of Health Care Access Web Site, http://www.ct.gov/ohca/taxonomy/ct_taxonomy.asp
[20] "Pressure on Your Health Benefits," *Time Magazine*, November 6, 2006.
[21] "How Health Executives can Respond to the Issues that Confront them in 2006," PricewaterhouseCoopers, 2006.
[22] "How Health Executives can Respond to the Issues that Confront them in 2006," PricewaterhouseCoopers, 2006.
[23] "How Health Executives can Respond to the Issues that Confront them in 2006," PricewaterhouseCoopers, 2006.

chronic disease rates would indicate, however, due to several factors dampening demand. These factors include advances in technology and care delivery, payment and economic factors such as cost sharing and disease management, and a general shift towards outpatient services.

Forecasts of inpatient demand based only on demographic trends indicate a 14-17% increase in national discharges over the next ten years, but factors leading to reduced use of services dampen this discharge increase to 10-14%. Looking at demand in terms of patient days reveals even lower increases in overall demand, as average length of stay is expected to drop by almost 10% during the next decade, causing an increase in total patient days of between 2% and 9% from 2006 to 2016.[24] Within these trends, particular procedures and lines of business will grow or shrink more significantly, opening up opportunities in the marketplace. Demand for endocrinology services is projected to grow by 45% during the next ten years, for example, while demand for vascular services is actually projected to shrink by 29%.[25]

The trends driving demand up (population growth and aging, increasing obesity and chronic disease incidence) and down (technology, payment and economic factors, and the outpatient shift) nationally can also be observed in varying degrees in the One Coast region.

A large and growing proportion of health services is expended on the last six months of a person's life as conditions leading to death are manifested, a phenomenon that will fuel continued increases in costs as more baby boomers near the end of life, limiting the degree to which cost containment is possible under current approaches to care.

Looking at potential drivers of cost trends, one can identify both drivers likely to push cost trends higher and others likely to lower costs. Advances in medical technology are always the "wild card," since short-term changes in their contribution to rising costs cannot even be measured, let alone predicted.

Two key factors will tend to drive costs higher:

- The rapid expansion of specialty facilities, including hospital inpatient and outpatient facilities, freestanding centers, and additional ancillary service capability in physician offices. The combination of supply creating demand and the effects of increased physician self-referral could mean that these expansions will increase spending.
- The continuing growth of obesity throughout the U.S. – Kenneth Thorpe and his colleagues estimate that 27% of real per capita growth in spending from 1987 to 2001 is attributable to increased obesity rates and higher relative spending by those who are obese.[26]

Two factors stand out as having great potential to lower cost trends. First, in the pharmaceutical sector, a number of important blockbuster drugs have either recently lost patent protection (e.g., Zocor) or are scheduled to lose patent protection in the near future (e.g., Zoloft). Second, the trend toward increased patient cost sharing has accelerated, providing incentives to use lower-cost providers or treatment alternatives.

Other factors cited in health policy literature as having longer-term implications for cost reduction include the potential for (a) health IT to save money by increasing the quality of care and curbing duplication of diagnostic procedures, (b) medical liability reform to reduce defensive medicine, (c) quality improvements motivated by pay-for-performance, and (d) increased price transparency to lower health services prices.

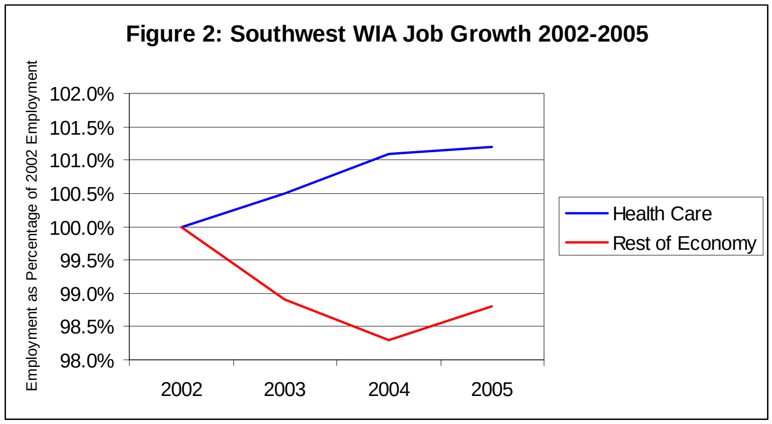
c. Regional Employment

Despite the many changes and challenges facing the global health care industry, the industry continues to be an engine for economic growth as the population grows and ages. A recent analysis of job growth in the U.S.

[24] Health Care Advisory Board, "Demand for Hospital Services," 2006 and SG2, "National 10-Year Forecast," 2006.
[25] Health Care Advisory Board, "Demand for Hospital Services," 2006.
[26] Thorpe, Kenneth et al. "Trends: The Impact Of Obesity On Rising Medical Spending." Health Affairs. October 2004. http://content.healthaffairs.org/cgi/content/abstract/hlthaff.w4.480

revealed that, from July 2001 to July 2006, the health care industry added 1.7 million jobs to the U.S. economy. Job growth in the rest of the U.S. economy was flat during that time period.[27]

Using a traditional definition of the health care industry (ambulatory health care services, hospitals, and nursing and residential care facilities), we see similar employment patterns in Southwest Connecticut. From 2002 to 2005, health care employment in the 20-town One Coast region increased by 1.2%. This modest growth becomes more impressive when it is noted that non-health care jobs in the region actually decreased by 1.2% during that time.[28] (Figure 2)



Source: Connecticut Department of Labor

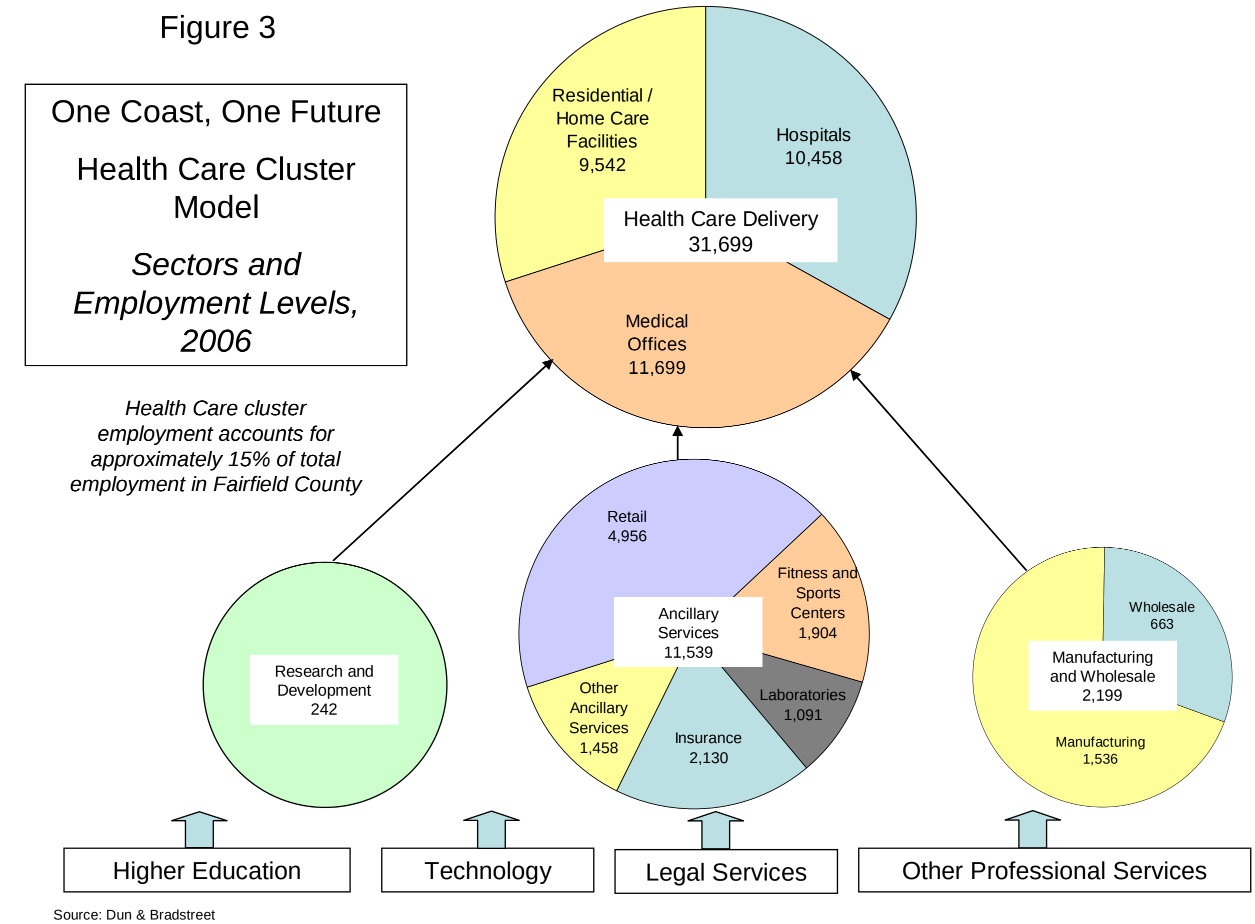
The most recent regional occupational projections from the Connecticut Department of Labor indicate that job growth in the One Coast region's health care industry is expected to continue to outpace job growth in the rest of the economy: From 2002 to 2012, health care practitioners and technical occupations are projected to grow by 13.9% and health care support occupations by 16.1%, far exceeding the 8.5% projected job growth for the rest of the regional economy.[29] (Table 2 below)

Table 2: Projected One Coast Region Employment by Occupation, 2002-2012

			Change in Employment		
Occupational Title	**2002**	**2012**	**Net**	**%**	**Annual Openings**
Healthcare Practitioners and Technical Occupations	18,380	20,930	2,550	13.9%	596
Healthcare Support Occupations	9,910	11,500	1,590	16.1%	320
Rest of the Economy	350,850	380,780	29,930	8.5%	11,791

Source: "Connecticut Employment Forecast: 2002-2012," Connecticut Department of Labor

[27] "What's Really Propping Up the Economy," *Business Week*, September 25, 2006.
[28] Connecticut Department of Labor, Labor Market Information.
[29] "Connecticut Employment Forecast: 2002-2012," Connecticut Department of Labor.



For the purposes of this study, a broader definition of the health care industry has been used to ensure that all economic and health-related opportunities are considered (Figure 3). Health care delivery (ambulatory health care services, hospitals, and nursing and residential care facilities) remains the central component of the health care cluster, accounting for over 69% of the One Coast region's 2006 health care industry employment. Our health care industry definition includes research and development, manufacturing and wholesale, and ancillary services such as health insurance, fitness centers, and retail (i.e., drug stores). See Appendix A for additional Dun & Bradstreet employment data.

Overall health care industry employment in the 20-town One Coast region is over 45,000 workers, employed at more than 3,000 health sector firms.[30] Industry-wide health care employment in Fairfield County (a proxy for the One Coast region) is slightly more concentrated than it is nationally, as the region's health care industry has a location quotient[31] of 1.09. From 2001 to 2005, Fairfield County's health care industry became slightly more concentrated relative to the health care industry nationally, as the regional location quotient increased from 1.06 to 1.09 during that time.

[30] Dun & Bradstreet data.

[31] Location quotient analysis compares the density of the health care sector and its sub-industries in Fairfield County to the reference economy of the United States. A location quotient is calculated by dividing the percentage of total Fairfield County employment in a given sector or sub-industry by the corresponding percentage of total U.S. employment. A quotient greater than 1.0 indicates that a given sector or sub-industry has a higher employment concentration in Fairfield County than it does in the rest of the nation. All location quotient data comes from the U.S. Bureau of Labor Statistics.

Although the One Coast region has six surgical and general hospitals (Bridgeport, Greenwich, Griffin, Norwalk, Stamford, and St. Vincent's Medical Center), hospital employment in Fairfield County is actually slightly less concentrated (location quotient of 0.91) than the national average. The regional sub-industries with the highest location quotients are surgical and medical instrument manufacturing (location quotient of 3.37) and direct health and medical insurance carriers (2.59). Because they have a high level of existing activity in the region, these sub-industries may enjoy locational advantages in Southwest Connecticut, and could be strong candidates for continued growth. The regional concentration of the surgical and medical instrument manufacturing sub-industry grew faster than that of any other health care regional sub-industry from 2001 to 2005.

The sub-industries with the lowest regional concentrations are miscellaneous ambulatory health care services (0.20), physical, engineering, and biological research (0.39), and other residential care facilities (0.40). Under the current conditions, stimulating economic activity in areas related to these sub-industries would likely be challenging, as any efforts to grow these areas would have to start almost from scratch. See Appendix C for more location quotient data.

Looking at employment levels by sub-region and municipality reveals that employment concentrations are not evenly distributed throughout the One Coast region. Fitness and recreational sports centers, for example, are highly concentrated, with a 2005 location quotient of 2.42. Closer analysis, however, shows that physical fitness centers in Stamford employ over 600 people, while those in Bridgeport (the region's largest city) employ only 12. Fitness facilities serving the Bridgeport area may tend to locate outside the city, where household incomes are higher. This is significant on two levels: first, it demonstrates that Bridgeport residents are underserved in terms of fitness facilities; second, it suggests that economic development opportunities may exist to fill this gap.

Key Findings & Recommendations

IV. The Health Care Workforce

a. Findings

The One Coast, One Future Health Cluster Steering Committee has identified growing workforce shortages as the most important issue affecting the prospects of the region's health care industry. Reports done by other groups[32] and interviews conducted for this study confirm that regional and statewide shortages across several health care occupations threaten the capacity of health care providers to offer the increasing level of service needed by the region's aging population. Registered nursing, which faces a projected statewide shortage of 57% (22,400) by the year 2020,[33] has rightfully received the most attention across the state. If this projected shortage is distributed evenly by hospital patient volume, the Southwest will see a shortage of close to 5,000 nurses by 2020. Although a recent state report indicates that the nurse shortage may be less severe than this,[34] the nurse shortage remains a pressing concern of all health industry leaders interviewed and will remain a serious challenge even at half the level projected by HRSA. Shortages are also growing in numerous other health care occupations. In addition to the shortage occupations shown in Table 3, health care employers interviewed for this study mentioned difficulty hiring radiologic technologists, CT and MRI technicians, pharmacists and pharmacy technicians, physical therapists and physical therapist assistants, medical assistants, and occupational therapists. Some regional hospitals are even beginning to warn that a severe physician shortage may be on the horizon. Hospitals report that these shortages result in financial strain due to the need to offer special incentives and higher salaries. In some cases, hospitals have been forced to reduce services when they have been unable to staff all beds.

Table 3: CT Health Care Vacancies by Occupation, 2004

Occupation	# of Vacancies
Registered Nurse	1,677
Nurse aides, orderlies, & attendants	476
Medical assistants	402
Dental hygienist	387
Licensed practical nurse	305

Source: CT DOL Vacancy Survey, 2004

Workforce shortages, which are projected to become far more serious in the coming years, are the result of several factors:

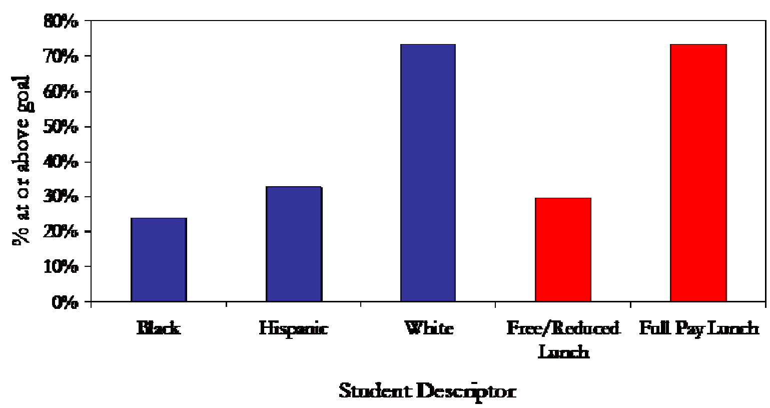
- **Faculty shortages –** One major factor limiting the capacity of the One Coast region's colleges and universities to produce the quantity and quality of health care workers needed by employers is a lack of teaching faculty. Over 2,000 qualified candidates have been turned away from Connecticut nursing programs in the last two years due to lack of capacity to train them. There are two major explanations for faculty shortages: First, teaching faculty are required to have a Master's degree, which few Registered Nurses have; second, wages for teaching faculty are not competitive with the wages Master's level professionals can earn providing direct care, particularly in high cost areas like Southwest Connecticut. As an illustration, community college nursing faculty possessing a Masters degree start at $50,000 while Masters-level nurses in non-teaching positions can expect to earn between $65,000 and $100,000.[35] The Connecticut Office for Workforce Competitiveness has commissioned a study of this issue which is due to be completed in January 2007.
- **Lack of clinical placements –** A second factor limiting the training capacity of the One Coast's higher education infrastructure is a lack of sites available for students to complete their clinical requirements and underutilization of existing clinical sites. The Office for Workforce Competitiveness has also

[32] *Toward Solving Connecticut's Health Care Workforce Shortages,* CT Dept. of Public Health, May 2002; Connecticut Department of Labor, "Connecticut's Industries and Occupations: Forecast 2014," Summer 2006;
[33] What is Behind HRSA's Projected Supply, Demand, and Shortage of Registered Nurses?" September 2004. ftp://ftp.hrsa.gov/bhpr/workforce/behindshortage.pdf
34 Connecticut Department of Higher Education, 2005-06 Degrees Conferred by Connecticut Institutions of Higher Education," December 2006, p. 9. http://www.ctdhe.org/info/pdfs/2006/2006DegreesConferred.pdf
[35] Connecticut Community College System.

commissioned a study of this issue by the Connecticut Hospital Association which is due to be completed in June 2007. Issues that led to the study include reports of difficulty securing clinical placements and hospital-based capacity challenges with multiple schools seeking placements in one health facility (e.g., one hospital hosts eight different clinical programs).

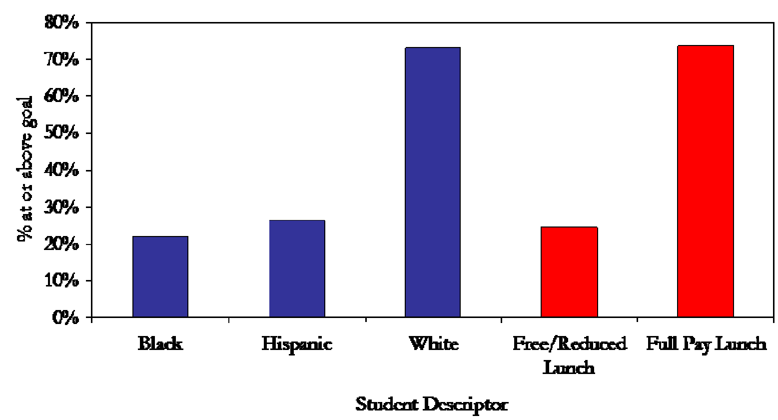
- **Classroom and Laboratory Space –** If nursing programs were able to attract additional faculty for expansion, they would soon run into a serious space constraint in existing facilities. This has led Norwalk Community College to plan construction of a new allied health and sciences building on its campus. The Bridgeport Hospital School of Nursing is in dire need of updated and additional classroom space, and other programs will also need additional space as they become able to attract more faculty.
- **Lengthy academic program approval process –** Interview subjects representing regional community colleges stated that the process for a college to obtain state approval for a new program area does not allow colleges to quickly respond to the changing hiring needs of health industry employers. The process for getting a new program up and running can take two to three years from start to finish, although it can be shorter under certain circumstances.
- **Inadequate student preparation –** Many students emerging from the region's K-12 public school systems lack the science, math, and English skills needed to succeed in college and university nursing and allied health programs. A recent Housatonic Community College assessment found that the least successful students at the College were recent high school graduates. Approximately 50% of entering community college students require remedial coursework in basic mathematics or English, and only 52% of students pass their developmental courses.[36] The K-12 system must better prepare students for post-secondary education. Low student academic readiness often results in low retention rates and a smaller pool of candidates to complete the credentialing process and enter the health care workforce. This also means that a significant proportion of scarce public educational resources are expended on students who do not complete their course of study while others who might complete are denied access due to lack of program capacity, suggesting a need for better counseling and screening for entry.
- **The achievement gap –** The persistence of a dramatic achievement gap between predominantly white suburban students and poorer, predominantly minority urban students restricts the One Coast region's ability

Figure 4: One Coast Region 8th Graders Achieving State Mastery Goal in Math, 2006



Source: CMTreports.com

Figure 5: One Coast Region 8th Graders Achieving State Mastery Goal in Reading, 2006



Source: CMTreports.com

[36] Connecticut Community College System.

to produce a qualified, diverse health care workforce. Across the region, 32% of eighth graders do not achieve at goal in reading - 63% of those not meeting goal are Black and Hispanic students from nine communities. Figures 4 and 5 document the regional disparity in academic achievement by race, ethnicity, and household economic status.[37] Black and Hispanic eighth graders and those receiving free or reduced price meals are less than half as likely as white eight graders to achieve goal in reading.

- **"Brain Drain"** – Exacerbating these problems with training capacity and student preparation is the difficulty health care employers face in hiring graduates of One Coast region nursing and allied health programs. A lack of affordable housing and a high cost of living are most often cited by employers as the factors that make it difficult to retain and attract health care workers to the region.
- **An aging workforce –** Underscoring the importance of keeping qualified, young workers in the One Coast region is the fact that older health care workers are beginning to retire in large numbers. Even four years ago, the average age of a registered nurse in Connecticut was 46 years old.[38] There are concerns that, as occupational shortages continue to grow, hospitals and other providers will be forced to ask their employees to work longer hours, leading older workers to retire earlier due to burnout.
- **Lack of infrastructure to train immigrants –** As of 2000, the two Connecticut municipalities with the largest number of foreign immigrants were Stamford (35,000) and Bridgeport (29,000),[39] both of which are located in the One Coast region. Many immigrants arrive in the region with very limited education, but the number of college-educated immigrants in Connecticut increased by close to 70% from 1990 to 2000.[40] Immigrants of all skill levels can help to fill gaps in the regional health care workforce, but many of them require customized training such as English as second language (ESL) courses and assistance in obtaining Connecticut licenses within their professions.
- **Underrepresented demographic groups** – Student recruitment is not currently a problem across most health care professions, but more men, blacks, and Hispanics will eventually need to be drawn into the health care workforce if the One Coast region hopes to avoid long-term shortages, particularly in nursing. In 2003, 7.9% of American RN's were male, 9.9% were African American, and 3.9% were Latino.[41] Attracting more bilingual nurses will be particularly important as the region's Spanish-speaking population continues to grow.

The One Coast region clearly faces numerous, serious challenges to solidifying its health care workforce. Several local, regional, and statewide efforts are already underway to attempt to address many of these challenges.

State Level

- The Governor's Office for Workforce Competitiveness (OWC) created an Allied Health Workforce Policy Board in 2004 to deal exclusively with Connecticut's health care work force challenges. It is tasked with developing recommendations for allied health career development in the state, and has issued reports to the legislature on the nature and size of allied health workforce shortages. The Board has catalogued numerous efforts by Workforce Investment Boards and higher education to address allied health workforce needs.[42] Many states are mobilizing to address the nursing shortage in particular, increasing competitive pressure on Connecticut's health employers.[43]

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[37] Economic status is measured by eligibility for free or reduced meals, a level that is 185% of the federal poverty level, $30,710 for a family of three.
[38] HealthNet press release, May 2002.
[39] Immigrants in Connecticut: Labor Market Experiences and Health Care Access, The Urban Institute, November 2005.
[40] "Immigrant Populations and Health Care Access in Connecticut," Urban Institute, November 2005.
[41] U.S. Department of Labor, Bureau of Labor Statistics, Current Population Survey, 2003.
[42] Inventory of Health Workforce Initiatives, Connecticut Allied Health Policy Board, 2006.
[43] American Association of Colleges of Nursing, "State Legislative Initiatives to Address the Nursing shortage," October 2006

- The Connecticut Community College System has secured two rounds of U.S. Department of Labor grant funding to expand the capacity of the System's 12 colleges to attract, retain and support nursing and allied health students in both degree programs and continuing education programs. This initiative aims to produce higher program completion rates through investments in advising, instructional supports, and distance learning, and strengthened partnerships with employers.
- The Connecticut Hospital Association has studies and planning efforts underway to address the issues of shortages of clinical sites.
- A major goal of the State Science, Technology, Engineering and Math (STEM) Initiative and the Governor's STEM Council is to better prepare Connecticut's K-12 students to pursue degrees in nursing and allied health.

Regional Level

- Each of the One Coast region's major hospitals has developed partnerships with regional colleges and universities to increase the region's capacity to train nurses and other health care workers. These partnerships have taken many forms. For example, St. Vincent's Health Center has its own college (St. Vincent's College); The Bridgeport Hospital School of Nursing graduates roughly 75 students per year (2005), with a portion also receiving associates degrees through Housatonic Community College; and several hospitals support college training programs by subsidizing training faculty and providing clinical sites.
- The WorkPlace, Inc., Southwest Connecticut's workforce investment board, targets health careers in its funding, in the dispensing of Individual Training Accounts, and in the work of the CT Works One-Stop Career Centers. Health workforce shortages are a central focus of the WorkPlace, Inc.'s "WIRED" proposal to USDOL which, if successful, will provide substantial resources for addressing the issue.
- A new inter-district medical magnet high school at Harding High School in Bridgeport and a new science magnet in Bridgeport are expected to reinforce the pipeline of students prepared to succeed in college nursing and allied health programs.

b. Workforce Strategy: "A Southwest Connecticut Health Workforce Initiative"

The One Coast, One Future Health Cluster Steering Committee believes that a coordinated, regional approach will be crucial to finding solutions to the region's workforce challenges. Our recommendation is the creation of a formal, public/private partnership **to implement specific strategies to address current and projected health care occupational shortages based on setting specific production objectives.** A collaborative "Southwest Connecticut Health Workforce Initiative" would integrate and bring to scale isolated initiatives while adding new priorities to the One Coast region's workforce development agenda.

To be an effective, regional collaboration, this partnership must include representation from the following groups:

- Each of the region's six major hospitals (Bridgeport Hospital, Greenwich Hospital, Griffin Hospital, Norwalk Hospital, Stamford Hospital, St. Vincent's Medical Center);
- Each of the region's colleges and universities (Fairfield University, Gibbs College, Housatonic Community College, Norwalk Community College, Sacred Heart University, St. Vincent's College, University of Bridgeport, University of Phoenix – Fairfield County Campus);
- The WorkPlace, Inc. (Southwest Connecticut's workforce investment board);
- K-12 systems, including representatives from the One Coast region's three urban school districts (Bridgeport, Norwalk, Stamford);
- The Connecticut Technical High School System (Bullard-Havens Technical High School, J.M. Wright Technical High School);

- Adult Education systems, including representatives from the One Coast region's three urban Adult Ed systems;
- Statewide groups already involved in health care workforce initiatives (Allied Health Workforce Policy Board, Connecticut Hospital Association, The Connecticut League for Nursing, Governor's Office for Workforce Competitiveness, Governor's STEM Council).

Creation of this partnership will build on the participation of many of these groups, which are currently on the One Coast, One Future Health Cluster Steering Committee. Based on the urgency that exists for a comprehensive solution to the Southwest's health care workforce challenges, we believe there will be considerable support for a sustained, regional workforce development initiative. One challenge will be to define which issues are best addressed at a statewide level through existing statewide collaboratives or association efforts and which lend themselves to effective action at the regional level. As much of the training, infrastructure and labor market is regional in nature, most of the required partnerships and specific interventions are best developed at the regional level. Program components requiring changes in state policy or development of new approaches affecting institutions statewide are best pursued at the statewide level.

This initiative can draw on extensive national experience in collaborative efforts to address health workforce issues. Multi-partner efforts in Pittsburgh, Baltimore, Seattle and other regions have been successful in bringing employers and the workforce development system together to solve workforce shortages and expand opportunities for underemployed residents.[44] The One Coast region can learn from the experiences and concrete results of these efforts. See Appendix D for a description of the Pittsburgh model.

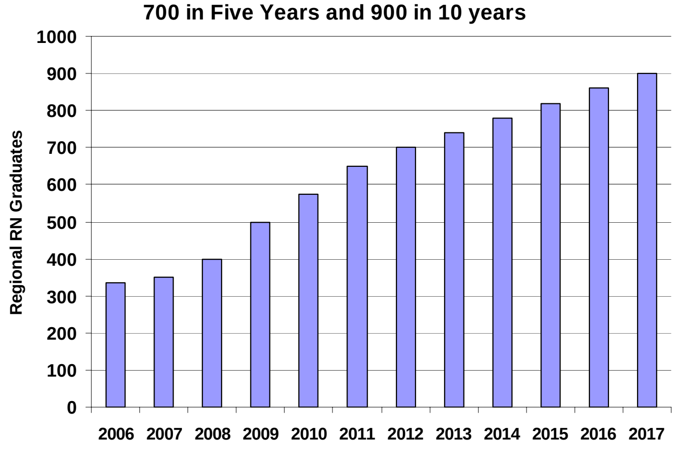
With a modest amount of resources and coordination, the Southwest Connecticut Health Workforce Initiative should be able to exert significant pressure as it develops specific plans to address the following four priorities and associated strategies:

1. **Build the capacity of the regional higher education system to double the number of registered nurses graduating from the region's programs, to 700 per year in five years (by 2012) and 900 per year in 10 years (by 2017).** This ambitious goal would produce a cumulative increase of 800 RN graduates by 2012, addressing only part of the projected need. If 75% of these enter the direct care labor pool in the Southwest, this will reduce the projected RN shortage from 2,900 to 2,100. The 10-year goal would decrease the projected shortage in 2017 from 4,200 to 1,500. **The initiative should set similar numerical goals in other allied health professions.**

   Achieving this goal will require concerted action in the following areas:

   - **Address the nursing faculty shortage –** While this is a statewide issue, a regional initiative could support implementation of the strategies that emerge from the work of the OWC-led task force on faculty shortages. Specific recommendations emerging from

Figure 6
Proposed Goal for Increase in Regional RN Graduates:
700 in Five Years and 900 in 10 years



[44] See extensive work of Jobs for the Future on this subject at www.jff.org. Including: Megson , James D. and Amy F. Robins, "Creating Pathways to Advancement: A Manual for Project Developers," Jobs for the Future, November 2004 and Wilson, Randall, "Invisible No Longer: Advancing the Entry-level Workforce in Health Care," Jobs for the Future, May 2006.

interviews include:

- Support an increase in salaries for nursing faculty at community colleges by negotiating greater flexibility to adjust compensation based on differences in regional living costs. The issue of faculty incentives must be approached carefully and creatively, as strict salary regulations exist for many of the region's teaching faculty (e.g., community college faculty salaries result from a statewide collective bargaining agreement). The state could allow regional community colleges to offer more competitive faculty salaries in high demand occupations when workforce shortage areas have been identified by the regional workforce board.
- State support for nurses to attain their Masters degree, a strategy that has been effectively employed in other states.
- Collaboration with hospitals to allow more flexibility for experienced nursing staff to gain Master's credentials and teach part time and/or move more easily back and forth between clinical work and teaching based on professional interests.

- **Increase use of clinical simulations and improve coordination of clinical placements –** Simulations are increasingly used to provide nursing and allied health students with clinical experiences to supplement field placements in areas where clinical sites are lacking. Simulations prepare students to be more successful in clinical placements. This Initiative should investigate models for the regional use of clinical simulations, focusing on areas that have achieved economies of scale by sharing clinical facilities. One strategy proposed by the Connecticut Hospital Association is the development of a common database of all clinical sites and schedules to facilitate coordination across programs and sites to ensure that existing clinical sites are fully utilized. The OWC Clinical Sites study now underway will inform this work.
- **Expansion of facilities –** As the faculty issue is addressed, many programs will bump into another constraint **–** the availability of classroom and educational laboratory facilities needed to deliver instruction. Norwalk Community College is planning a new allied health and science building to house its expanding programs. The Bridgeport Hospital School of Nursing faces this constraint as well. This requirement will need to be addressed at the regional level as part of the overall plan. The possibility of creating facilities that are shared by multiple hospitals, colleges, and universities should be explored as a way to reinforce collaboration and maximize the benefit of facilities investments. We recommend securing a State bond appropriation to support expansion of facilities required to train nursing and allied health students in the region. Increased investments in distance learning technologies should also be considered as a strategy for increasing training capacity with limited resources to expand facilities.

2. **Implement measures to increase worker access to health occupations and increase mobility within the field.** This will involve three directions:

- **Articulation of Career Ladders –** Extensive work nationally to define career ladders in allied health careers can be adapted for application in Southwest Connecticut. Critical success factors include effective counseling, student support, employer buy-in and willingness to change, and flexible educational programming to meet varied student needs.

  Examples include programs to move Licensed Practical Nurses (LPN) into RN positions. Career ladders are a significant component of the Connecticut Community College nursing and allied health initiative and an interest of The WorkPlace, Inc. A regional effort to engage all major health employers in this work through the Health Workforce Initiative can expand the number of people benefiting. This can help fill the pipeline of qualified candidates for nursing and allied health professions while providing opportunity and economic mobility to underemployed urban residents and new immigrants.
- **Increased financial aid for shortage occupations –** Most hospitals offer tuition reimbursement programs for their own workers, but many employers do not. Currently,

incumbent workers are not eligible for state financial aid for higher education if they return to school part-time. This clearly discourages incumbent health care workers in low- and moderate-wage jobs from pursuing the advanced degrees needed to attain high-wage jobs and teaching positions. The Health Workforce Initiative should ask the state to make part-time students in programs tied to health care occupational shortages eligible for state financial aid, and should request more financial aid for health care shortage occupations across the board.

- **Improve student preparation to increase nursing and allied health program success rates and reduce completion times.**
  - **Strengthened state science and math high school graduation standards and instruction** – The Connecticut State Department of Education (SDE) currently requires students to complete three years of high school mathematics and two years of high school science to graduate from high school. Many students entering college nursing and allied health programs after graduating from high school have thus received no math or science instruction for over 15 months before enrolling. This issue is frequently blamed for college students' high need for math and science remediation; additionally, high attrition rates from nursing and allied health programs are attributed to this issue. Isolated efforts have sought to address this issue with some success,[45] but the impact of these efforts is limited. The Health Workforce Initiative should:
    - Mobilize other statewide groups to advocate to SDE for increased science and math high school graduation requirements, including adding a third year of required science and a fourth year of required mathematics. Additionally, the initiative should recognize that poor achievement is not limited to math and science; many high school students require remediation in reading, and attention must be paid to the reading achievement gap as well.
    - Support efforts to improve math and science instruction, particularly in urban schools, through teacher professional development, data-driven instruction, and curricular enrichment. Specifically, work with Bridgeport, which has the region's highest dropout rate, to support implementation of the city's educational blueprint, which is currently under development.
  - **Improved K-12 health care career guidance** – Many One Coast region hospitals participate in middle school and high school career fairs and other sporadic career awareness events, but K-12 students do not receive a consistent message that health care careers a) offer competitive wages and opportunities for advancement, b) have many job openings, and c) can be interesting and rewarding.
    - Initiative participants should pool and/or seek resources to (a) train the One Coast region's middle and high school career counselors about health care careers and the academic requirements for pursuing these careers, (b) develop and expand career awareness programs across multiple employers involving internships, job shadowing, and mentoring of K-12 students.

3. **Improve services to bring more English-proficient immigrant workers into the field.**
   - **Customized services for immigrants with foreign health care credentials –** Immigrants who hold professional health care credentials in their home countries could benefit from case management-style services that help them connect to the training needed to gain accreditation in their profession in Southwest Connecticut.

[45] The Housatonic Community College (HCC) "Middle College" pilot program brings seniors from two Bridgeport high schools to HCC to take college-level math and/or English classes. The goals of the program are to fill in the senior year math gap, prepare students for college English, and help students make the transition to college by teaching them what is expected of them in college.

  - The Initiative should create a central resource for immigrants with foreign health care licenses to gain assistance navigating local credentialing and employment opportunities to increase utilization of this portion of the immigrant population to fill gaps in the regional health care workforce.

- **Expand English as a Second Language (ESL) capacity and accessibility –** Publications and interviews reveal that One Coast region health care employers have a strong need for qualified workers with improved English proficiency. The presence of waiting lists for ESL classes at regional Adult Education providers shows that there is demand for these classes among the large number of recent immigrants.
  - The Initiative should advocate for increased funding for and coordination among Adult Education, Community Colleges, and other ESL providers to support an expansion of the Southwest's capacity to deliver ESL classes while pushing to make offerings more accessible through better scheduling, transportation, and marketing.
  - The Initiative should work with the State Department of Education's Workbased Learning initiative to support employer-sponsored, health care-specific ESL at regional hospitals and long-term care facilities. Having employers offer ESL classes to their own employees addresses several of the barriers that recent immigrants face in terms of accessing English skills training. Holding classes on site eliminates transportation problems; classes can be scheduled to avoid conflicts with work schedules; employers can offer classes to their employees for free, and immigrants avoid the challenge of locating and enrolling in outside classes. Employer-sponsored ESL courses have the added benefit of enabling employers to develop curricula that focus on the specific language needs of workers in the health care industry. Industry-specific ESL classes have been effective at attracting and retaining workers when combined with job training.

4. **Address "Brain Drain" with steps to make the region more attractive as a location for nurses and other health workers.**

- **Financial incentives to retain graduates of in-demand occupational programs** – One Coast region hospitals report losing local health care program graduates – particularly nurses – to other states that offer loan forgiveness and hiring bonuses. To compete for talent in a time of growing national health care occupational shortages, Connecticut must be willing to compensate nursing and allied health graduates. This is particularly true in a high-cost area such as the One Coast region. The Health Workforce Initiative should ask the state government to offer loan forgiveness and/or hiring bonuses to graduates of Connecticut allied health and nursing programs that remain in the state to work.
- **Creative incentives to retain incumbent health care workers** – Many health care occupations have high burnout rates due to long or irregular hours, challenging working conditions, and less-than-extraordinary wages. The Health Workforce Initiative should work with employers, business associations, and government agencies to develop financial and non-financial incentives (e.g., more flexible hours) to keep health care workers in the field and to lure those who have retired or changed careers back into service.
- **Marketing support** – The Southwest Connecticut Health Workforce Initiative should support the One Coast, One Future Marketing Campaign, which is producing materials to raise awareness of the region's restaurants and attractions, by providing input that will sell potential health care workers on the One Coast region as a desirable place to live and work.
- **Housing assistance –** The One Coast Health Study Steering Committee believes that the issue of affordable housing is beyond its scope and the scope of its members, but the high cost of housing in the One Coast region undeniably hurts the ability of regional health care employers to hire and retain workers. The Health Workforce Initiative should always keep affordable housing in mind, even if it does not pursue specific initiatives related to affordable housing.

Implementation

A working group drawn from the partners listed should be convened with staff or consultant assistance to prioritize these strategies and develop specific implementation plans over a six to nine month period; the planning should integrate this work with the USDOL WIRED initiative and the Higher Education component of the next phase of the One Coast One Future effort and articulate the relationship between regional and statewide efforts carefully so as not to duplicate efforts. The plan must address targeting specific occupations and student populations, employer commitment, program design, funding, and responsibilities for implementation. A strategic plan should be developed which lays out the region's funding needs for programs and facilities and identifies sources of funds. The Initiative should incorporate a strong measurement and evaluation component to support continuous improvement planning and fund development efforts. Metrics should include numbers of employers and students participating, credentials obtained, job mobility, increases in wages attained, and impact on targeted occupational shortages.

V. Creating a Healthier Coast

a. Wellness & Chronic Disease Management Findings

According to the Department of Health and Human Services, approximately 95% of the $1.4 trillion the United States spends on health care goes to direct medical services; only 5% is spent on disease prevention and health promotion, despite the fact that 50%-70% of diseases are associated with potentially preventable health risks that may be addressed through wellness programs.[46]

This lack of investment in prevention and wellness is partially to blame for a population that is increasingly troubled by preventable chronic diseases (most notably obesity) and for spiraling health care costs that are becoming progressively more burdensome for the overall economy. Despite a general consensus that greater emphasis on prevention would benefit both individuals and the economy, Americans continue to forego small investments in prevention, which often leads to serious health problems and expensive acute care.

The root of this short-sighted approach is an incentive system that discourages people from pursuing preventive care. The One Coast Health Cluster Steering Committee believes that a successful regional effort to promote wellness must engage health care providers, employers, insurance companies, and public payors to alter the way in which providers are compensated for preventive and wellness services. Developing a compensation system that creates incentives for individuals, employers, providers, and payors to encourage wellness and prevention has the potential to advance the health of our regional population, the competitiveness of our region's businesses, and the vitality of our overall regional economy. While the larger questions of health care finance are debated with growing intensity at the state and federal level, there is room for creative action at the regional level where health care is delivered. A number of promising practices in prevention and chronic disease management are emerging and could be brought to much more significant scale through a pilot initiative at the regional level to change the incentive and payment structures. This direction could also inform policy discussions at the state and federal level.

Table 4: CT Health Indicators (National Rank)
(Lower number indicates more favorable position)

Indicator	Rank
Percent of Adults who have visited a Dentist in the past Year	1
Percent of Adults who are Smokers	4
Percent of Adults who are Obese	5
Percent of Adults with Diabetes	11
Percent of Adults with 14 of more mentally unhealthy days	12
Cancer Death Rate per 100,000	14
Heart Disease Death Rate per 100,000	20
Percent of Adults with Hypertension	22
Percent of Children with Asthma	25
Percent of Adults with Asthma	47

Source: Business Council of Fairfield County – Connecticut Health Scorecard 2006.

Before delving into the details of what an effective

[46] Center for Prevention and Health Services. Issue Brief, November 2004.

regional wellness initiative would look like, it is important to first take stock of the One Coast region's current health indicators and the economic factors that impact the health of the population.

State and Regional Health Trends

Across many health indicators, Connecticut is relatively healthy compared to the rest of the nation (Table 4 above). For many of these, however, the comparison merely indicates that the health of Connecticut's population has worsened less rapidly than in many other states. In terms of both health and health care costs, not all trends in the state and the One Coast region are positive:

- The percentage of Fairfield County adults who are obese has increased by roughly 20% since 2002. Obesity leads to other chronic diseases and higher health care costs; in 2003, it is estimated that obesity cost Connecticut residents $856 million.[47]
- Thirty-four percent of Connecticut adults have high cholesterol. Over 50% of adults with income less than $15,000 suffer from high cholesterol.[48]
- Connecticut's diabetes rate (6.0%) is less than the national average (7.0%), but it is more than twice the goal (2.5%) of Healthy People, a federal framework for prevention.
- As of December 2005, 1,773 of the 7,020 Connecticut residents living with AIDS resided in Fairfield County.[49]
- The region's population and workforce are aging (page 4), forcing the collective management of increasing levels of age-related medical conditions. A large and growing proportion of health services are expended on the last six months of life as conditions leading to death are manifested.
- As of the 2000 Census, the mean travel time to work in Fairfield County was 28.0 minutes, compared to 24.4 minutes for Connecticut. Long commutes make it more difficult for people to engage in wellness activities.
- As stated earlier, the One Coast region has a high concentration of fitness centers, but certain parts of the region are dramatically underserved compared to other areas.
- A growing number of residents, especially in the urban areas, lack insurance and thus have difficulty accessing health care of any type.[50]

Health Care Costs

High and rising health care costs are a significant impediment to the competitiveness of regional businesses. Fairfield County business executives listed health care costs as one of the six most daunting challenges facing the regional economy in the Connecticut Business and Industry Association *2005 Fairfield County Business Survey*. This challenge is certainly not limited to Southwest Connecticut, as the cost of health insurance nationwide constituted 58% of businesses' after-tax profits.[51] Statistics show, however, that costs are higher in Connecticut than in most other parts of the country:

- In 2003, the average cost of single coverage in Connecticut was $3,676, 12th highest among the 50 U.S. states.

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[47] Connecticut Department of Public Health. "Connecticut's Plan for Health Promotion through Healthy Eating and Active Living." December 2004.
[48] Connecticut Department of Public Health.
[49] Connecticut Department of Public Health. http://www.dph.state.ct.us/BCH/infectiousdise/2003/data/Fairfieldcountyplwa.htm
[50] America's Health Report Card, United Health Foundation, 2006. The percentage of Connecticut's residents without health care coverage went from 6.3% in 1990 to 11.4% in 2005.
[51] Partnership for Prevention. www.prevent.org

- The average rate for family coverage in 2003 was the 6th highest in the nation at $10,119.[52]
- Family health insurance premiums in Connecticut rose 5.8 times faster than earnings from 2000 to 2006, increasing from $7,762 to $12,904.[53]

Many inputs factor into the rising cost of health insurance. In addition to an incentive system that does not emphasize prevention, Connecticut has the third-highest average medical malpractice claims paid in the country[54] and a high overall cost of living. National trends contributing to increasing costs include the rising cost of many acute care treatments and a research and development infrastructure focused primarily on acute care.

High health insurance costs force One Coast region companies into difficult decisions about insuring their employees. Employers that offer health benefits hurt their margins, and employers that do not provide health insurance damage their ability to attract and retain talented workers – competitiveness suffers in either case. Despite these many challenges, the news is not all bad: In 2003, Connecticut had the 12th highest level of insurance coverage of any state; 11.6% of the state's residents are uninsured compared to 15.7% nationally.

Efforts to address negative health trends and rising health care costs have been numerous and varied. These initiatives have generally fallen into two categories: 1) wellness and prevention and 2) chronic disease management, although a few have worked to address both of these issues.

> *There's no question that workplace wellness is worth it. The only question is whether you're going to do it today or tomorrow. If you keep saying you're going to do it tomorrow, you'll never do it. You have to get on it today.*
>
> *- Warren Buffet*
> *- Chairman*
> *- Berkshire Hathaway*

Wellness and Prevention

Wellness and prevention initiatives encourage behaviors that reduce individual participants' risk of developing certain health conditions before these conditions exist. A variety of regional, state, and national wellness and prevention initiatives have emerged to reduce the incidence of preventable health conditions and cut down on our reliance on expensive acute care. Well-executed wellness and prevention strategies have been proven to improve health and reduce costs. In addition to the many municipal community wellness programs that have been created, examples of current wellness and prevention efforts in Connecticut and nationwide include:

- Be Healthy Connecticut is a statewide group committed to keeping Connecticut's prevention and wellness needs at the top of the public policy agenda.[55] Be Healthy Connecticut represents a consortium of advocacy organizations, educational institutions, and private businesses seeking to re-orient the health care system to encourage lifestyle changes, prevention, and wellness.
- The Healthy Workplaces Best Practices Recognition 2006 is a Business Council of Fairfield County program which invites organizations from Connecticut and six other Northeastern states to nominate their corporate wellness programs for awards. This program seeks to develop and highlight employer wellness best practices to help businesses develop successful new and expanded wellness programs.
- Connecticare is a Connecticut-based health plan that offers workplace wellness workshops. Program offerings address issues including smoking cessation, educated health care consumerism, exercise planning, nutrition, and prenatal education.
- Cardium Health is a Farmington-based portfolio company of Connecticut Innovations which provides resources to self-insured companies trying to help their employees manage chronic diseases and develop healthier lifestyles. Cardium Health has found that investments in their services yield a positive return on

[52] "Connecticut Health Scorecard 2006," The Business Council of Fairfield County, March 2006.
[53] Families USA.
[54] According to the "Connecticut Health Scorecard 2006," (Business Council of Fairfield County, March 2006) Connecticut has an average claims payment of $486,759 in 2003. The national average was $291,236.
[55] Description taken from the Be Healthy Connecticut website: www.behealthyct.org.

acute incidence prevention alone, before even considering the indirect benefits of reduced absenteeism and increased productivity.

- The Partnership for Prevention is a national membership organization dedicated to building evidence of sound disease prevention and health promotion policies and practices and advocating their adoption by public and private sectors.[56] Partnership for Prevention members include businesses, government agencies, and advocacy organizations.
- The Wellness Councils of America (WELCOA) is a national non-profit membership organization dedicated to promoting healthier life styles, especially through health promotion initiatives at the worksite.[57] WELCOA provides business leaders with a blueprint to help their organizations build results-oriented wellness programs, organizes local Wellness Councils, and awards "Well Workplaces" and "Well Cities" designations to members with innovative prevention approaches.
- The National Business Group on Health and The Leapfrog Group are two consortia of Fortune 500 companies that focus on a broad spectrum of health care issues including wellness, disease management, and health care cost reduction.

Chronic Disease Management

Like wellness and prevention, chronic disease management seeks to improve an individual's health and reduce costs. As its name indicates, chronic disease management intervenes after a chronic disease has already manifested itself. Chronic disease management focuses on preventing complications from the condition. This depends on effective community programs, a responsive health care system, and educated and engaged patients. The health and economic benefits of chronic disease management have made it an increasingly important component of health care. Some experts estimate that chronic diseases are responsible for 83% of all U. S. health care spending and a similar percentage of Medicaid spending.[58] In Connecticut as elsewhere, chronic disease management leadership has typically come from the public health infrastructure:

- The Connecticut Department of Public Health (CT DPH) works collaboratively with statewide and local agencies to develop priority areas for prevention intervention in AIDS; has developed comprehensive plans to address asthma, cancer, diabetes and obesity, and is currently working with local Health Departments to develop a plan for Heart Disease and Stroke prevention. Recognizing the links among these diseases, CT DPH is promoting a chronic disease model in which prevention and care are integrally linked.
- Local health departments are taking a proactive approach to educating communities on health related issues in prevention and health services access.
- The Center for Chronic Care Management at Middlesex Hospital uses the Chronic Care Model, a "comprehensive system of care and prevention," to manage chronic diseases such as asthma and diabetes. The Middlesex Chronic Care Model has shown powerful outcomes for diabetics who participate in the program.

Employer Programs

As the economic benefits of wellness and chronic disease management programs have become clearer, more and more businesses have instituted wellness programs. In fact, WELCOA found that 81% of U.S. businesses with 50 or more employees now have some form of health promotion program. Programs vary significantly in terms of their extensiveness; more comprehensive programs tend to be operated by larger employers that are self-insured and can afford to invest in benefits managers and other infrastructure required

[56] Description taken from the Partnership for Prevention website: www.prevent.org.
[57] Description taken from the WELCOA website: www.welcoa.org.
[58] Partners for Solutions, a Robert Woods Johnson Foundation and Johns Hopkins University initiative to improve care for people with chronic diseases (see the partnership's website at http: //www. partnershipforsolutions.org/statistics/index. html)

to maintain a robust wellness program. In Connecticut, self-funded health plans cover approximately 50% of its privately insured citizens.[59] Examples of businesses with particularly comprehensive and successful employer wellness and chronic disease management programs are:

> *Managing health also includes removing barriers to effective treatment. As such we have addressed high-cost areas, specifically diabetes and asthma, and have reduced co-insurance for specific medications. The bottom line? An overall reduction in prescription medication costs, better adherence, and fewer adverse events within this group.*
>
> *- Michael J. Critelli*
> *Chairman and CEO,*
> *Pitney Bowes*

- Pitney Bowes – This global Stamford-based company created Health Care University, a program that allows employees to earn points based on achieving healthy lifestyles. Pitney Bowes management believes the company saves approximately $1 million per year on diabetes and asthma care alone, and that health care costs for participating members are 10% less than those of non-participating members.[60]
- Dow Chemical Company – This worldwide corporation employs over 43,000 individuals. In 2005, it estimated that chronic health conditions were adversely impacting the company's bottom line by $750 million. As a result, it instituted smoking cessation programs, lifestyle counseling programs, fitness centers, immunizations, and preventive health coverage. Dow tailored compensation for health staff by tying bonuses to health goals. Initial evaluation results indicate that prevention program participants file fewer health-related claims than non-participants.
- Northeast Utilities – The owner of Connecticut Light and Power estimated savings of $1.4 million in the first two years of operation from WellAware, its corporate wellness program.[61]

Economic Benefits

Improving the health of the population has clear public health implications, but it can also provide competitive advantages to businesses and regions. Several bottom-line benefits to participating businesses have come out of employer wellness and chronic disease management programs:

- Increased operating margins through reduced costs – The National Business Group on Health (NBGH) reports that corporations that have instituted wellness and healthy living programs have higher return on investment (ROI) than companies without such programs. Comprehensive surveys of workplace health promotion initiatives conclude that participating companies have experienced average ROIs of $3.48 from reduced health care costs and $5.82 from lower absenteeism costs for every dollar invested in prevention. Overall, NBGH found that businesses that invest in employee wellness experience ROIs of between $3 and $8 per dollar invested within five years of program implementation.[62]
- A more satisfied and productive workforce – Eighty percent of Union Pacific Railroad workers reported that the company's exercise programs helped increase their productivity, and 75% stated that exercise helped them concentrate at work.[63]
- Fewer on-the-job injuries, workers' compensation claims, and disability claims.
- Less absenteeism – Travelers' Insurance reduced sick days by 19% over four years after adding a corporate fitness center.[64]

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[59] See CT Office of the Healthcare Advocate website, http://www.ct.gov/oha/cwp/view.asp?a=2261&q=299792
[60] Managed Care Magazine. July 2006. http://www.managedcaremag.com/archives/0607/0607.wellness.html
[61] Fairfield County Business Journal.."ElderCare and the Economics of Aging."
[62] National Business Group on Health. "Health Improvement: A Comprehensive Guide to Designing, Implementing and Evaluating Worksite Programs."
[63] Preventdisease.com. http://preventdisease.com/worksite_wellness/worksite_wellness.html.
[64] Preventdisease.com. http://preventdisease.com/worksite_wellness/worksite_wellness.html.

- Lower turnover – After instituting a wellness and prevention program, the Canada Life Insurance Company found that program participants' annual turnover rate was 1.8%, compared to the company average of 18%.[65]

Regional investments in wellness and chronic disease management can also be expected to lead to broader economic development benefits for the One Coast region:

- A healthier workforce – Because businesses are attracted to regions with healthy workforces, a regional wellness initiative would improve the One Coast region's potential to recruit and retain businesses of all sizes to the area.
- A reputation as a healthy region – The perception of the One Coast region as a dynamic and healthy place would make it easier for employers to recruit and retain younger workers, in the process easing the effects of the region's aging workforce.
- More competitive businesses – Companies with lower health care costs are more competitive in the global marketplace. Pitney Bowes estimates that it has saved 10% in overhead expenditures by decreasing its health care costs.
- Growth in wellness businesses – Increased regional investments in wellness will create opportunities for new businesses and business expansion in areas such as fitness, preventive testing, and technical assistance to employers implementing wellness programs.

b. Wellness & Chronic Disease Management Strategy – "Healthy Coast Connecticut"

Wellness, prevention, and chronic disease management activities in Connecticut have taken a variety of forms and have achieved positive results in terms of improved health and reduced costs. The One Coast Health Cluster Steering Committee believes that the positive results of such activities will be limited, however, until providers, employers, and individuals are rewarded for preventive behaviors and effective chronic disease management. To be successful, any attempt at systemic change must significantly involve insurance companies, public payors, employers, and providers – both hospitals and physicians.

We recommend that The Business Council of Fairfield County and The Bridgeport Regional Business Council work together to mobilize a **Southwest Regional Wellness Task Force** to be charged with creating a pilot, collaborative program to reform the incentive structure, adjust medical practices, and engage employers to encourage wellness, prevention, and chronic disease management for one or a limited number of selected health conditions such as asthma,

The Columbus Program:

Building a Community Model of a 21st Century Intelligent Health System Columbus, Georgia

A consortium of employers (led by the local Chamber of Commerce), hospitals, health administrators for private practices, and physicians has targeted a transformation in diabetes prevention and treatment. Key program elements include:

- Mobilizing individuals to take control of their health and health care, challenging them to know three simple numbers – their A1C, blood pressure, and cholesterol – to arm them with a baseline to better understand their health and provide an incentive to begin the behavioral changes to modify the real drivers of health care costs.
- Engaging mass media outlets and employers, as well as targeted communications to reach the monitory community.
- Improving inpatient care through the standardization of insulin therapy protocols.
- Rewarding physicians for quality care through a statewide employer-provider pay-for-performance diabetes initiative called "Bridges to Excellence." This establishes outcomes goals for physicians' practices and rewards physicians who obtain those goals. A companion effort will
- Facilitating the movement to electronic prescribing, to reduce errors and improve the efficiency of physicians' practices by reducing staff time spent with pharmacists.
- Motivating Columbus to "take the next step" through a communitywide program to encourage and facilitate walking as a form of exercise.

[65] Preventdisease.com. http://preventdisease.com/worksite_wellness/worksite_wellness.html.

obesity, a behavioral health condition, or diabetes for a targeted population. We believe that a pilot program with discrete, measurable goals is appropriate as a first step towards wider systemic change due to the daunting nature of this challenge and the trepidation likely to be felt by some of the parties involved in the Task Force. The design of the specific changes in current practices will be the responsibility of the Task Force. The pilot will need to research and apply evidence-based practices in the delivery of integrated care and in motivating patients to change their behavior.

In one example of this model, a multi-sector community effort in Columbus, Georgia, organized through the leadership of the business community has taken on the challenge of improving diabetes prevention and care as a strategy to improve health outcomes and reduce costs.[66] (See text box for details)

The Task Force must be comprised of regional insurance companies, employers, and providers, as well as public payors (Medicare and Medicaid). Every major insurance company operating in the One Coast region should be recruited to make certain that the restructured incentives are felt universally across the region. Southwest Connecticut's largest employers should be invited to assist in the design of the revised incentives in their health care plans. Regional employers that have established successful wellness programs should be included in these discussions. Finally, the region's six major hospitals and every significant physician organization should be involved in selecting the health conditions on which the pilot should focus, designing the new incentive system, establishing the performance and success measures, and strengthening communication systems among providers to ensure that care is integrated.

One important question the Task Force will need to address is whether to focus its initial efforts on private or public insurance (i.e. Medicare and Medicaid), or a combination of both. The receptiveness of private insurance companies and the state coverage system to participating in a pilot should be considered in making this decision, as should the likely impact of the pilot program on the privately and publicly insured populations.

Ultimate responsibility for designing the pilot program will fall to the Task Force. While the primary focus should be on adjustments to the incentive and payment structure to shift the focus to prevention and disease management, there are a number of supporting components that can be explored including:

<u>Incentives</u>

- Encourage employers to provide incentives to employees to undergo health risk assessments (HRAs) – a number of larger companies provide stipends to employees who undergo this assessment. Employees are then referred to wellness and prevention benefits based on their scores. One company reported experiencing increases in claims costs at half the national rate, and saw costs decline in 2004.[67]

- Encourage or require insurance companies to reimburse for non-traditional services. For instance, the Michigan state legislature passed a law allowing insurance companies to create financial incentives for employers offering healthy living programs. The bill targets small businesses, as larger businesses often self-insure.[68]

<u>Technical Assistance</u>

- Work with physicians to incorporate best practices such as through encouraging enrollment in the Diabetes Physician Recognition Program of the National Committee for Quality Assurance. [69]

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[66] "The Columbus Program: Building a Community Model of a 21st Century Intelligent Health System," Steven B. Leichter, MD, FACP, FACE, Newt Gingrich, PhD, Laura Linn, RN, MN, Barbara Butler, MNM and Sheree Griggs. Clinical Diabetes 24:149-152, 2006. http://clinical.diabetesjournals.org/cgi/content/full/24/4/149#FIG1#FIG1

[67] Deloitte Center for Health Solutions, "Reducing Corporate Health Care Costs."

[68] Partnership for Prevention, "Leading by Example: Improving the Bottom Line through a High Performance, Less Costly Workforce."

[69] Sponsored by the National Committee for Quality Assurance (NCQA)(http://www.ncqa.org/dprp)

- Business associations can sponsor seminars and "how to" toolkits to encourage smoking cessation,[70] nutrition, exercise, and chronic disease management. Associations can provide low-cost and low-effort alternatives for small businesses, for which heavy investments in workplace wellness programs and on-site facilities would not otherwise be financially viable.
- Educate managers about the benefits of a healthy workforce. Managers should be encouraged to consider the indirect costs of poor health, such as absenteeism and low productivity. When businesses understand the hidden costs of poor health, the case for wellness becomes clearer.

The three major expected outcomes of this pilot program will be reduced costs, less utilization of acute care, and a healthier population and workforce. Each of these outcomes will benefit the One Coast region's individual businesses and broader economic vitality.

A successful pilot program will result in substantial health benefits for residents of the One Coast region, but it is important to note that restructuring wellness and chronic disease management incentives and health care practice represents only one piece of a comprehensive public health effort. The Steering Committee recommends that local, regional, and state legislators also support community wellness by advocating for public infrastructure that encourages healthy lifestyles. Possible public health investments include:

- Tax incentives and other investments that facilitate the creation of farmers markets – Healthy eating is sometimes prevented by lack of access to healthy foods during the working day, a problem that can be alleviated by downtown farmers markets. New Haven-based CitySeed is an example of an organization that operates farmers markets throughout the city.
- More greenspaces and areas for physical activity – Enhancing walking options in urban centers creates healthier communities and adds to the vitality of cities. Existing brownfield sites can convert to recreational greenspaces as well as commercial spaces.
- An emphasis on health in public schools – According to the 2005 Youth Risk Behavior Survey, 15% of Connecticut high school students were at risk for becoming overweight, and 30% did not attend physical education classes.[71] Physical education in schools must be a priority, and incentives should be created for schools to choose healthy eating options. School health curricula can also emphasize healthy nutrition and physical activity.

Implementation

A working group drawn from the Steering Committee and health insurers should be charged with facilitating the formation of the Task Force and the process to make the decisions that will be critical to designing a successful initiative. Given the complexity of interests involved, the leadership to move this from concept to implementation must come from the business community. The working group should set an objective of having the pilot ready for implementation within nine months.

VI. Economic Development Opportunities

a. Economic Development Findings

Preliminary work on the One Coast **Comprehensive Economic Development Strategy (CEDS)** points to several factors that will play key roles in determining the economic future of the region. The net result of these positive and negative forces (text box on page 27) has been flat business and job growth in recent years.

There are two distinct components of the health care industry cluster. The first component is comprised of enterprises involved in the **delivery of care** which is affected by:

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[70] According to the Center for Disease Prevention, smoking costs $80 billion per year nationally in lost productivity from sickness, disability, and death.

[71] Centers for Disease Control and Prevention. "The Obesity Epidemic and Connecticut Students.

- Regional demographic patterns, most notably the projected rise in the elderly population, an influx of immigrants, and the divide between the region's urban poor and wealthier suburban residents.
- Trends in the delivery of care as described in Section III of this report.
- Changing methods of health care service financing and regulation.

The second health care industry component contains the firms that provide products and services for a national and global health care marketplace, including health-related information technology, medical and surgical devices, biomedical research and development, and health-related consulting and financial services.

Key Factors Determining the Economic Future of the One Coast Region

Competitive Advantages

- Strong linkages to the metropolitan New York and Northeastern U.S. economy
- A highly educated labor force
- A burgeoning finance industry and access to capital
- High quality of life

Challenges

- High cost of doing business
- Limitations within the transportation and energy infrastructure
- Labor force shortages related to the high cost of housing and living
- A skills mismatch in the current labor force

Health Care Delivery

Economic development opportunities related to health care delivery are limited in any region by the fact that health care delivery markets are primarily regional – hospitals, physicians, and long-term care facilities serving the population of a limited geographic catchment area. Additional factors limiting economic development opportunities related to health care in the One Coast region include high housing costs, traffic congestion, low Medicaid reimbursement rates, high malpractice rates and claim settlements, and workforce shortages. Connecticut's Certificate of Need process has also resulted in the proliferation of non-profit hospitals, which face greater barriers to accessing capital than do their for-profit counterparts.

Economic development opportunities associated with health care delivery include growth and adaptation of the existing complex of care providers (hospitals, long term care facilities, home health providers, and offices of practitioners) and new enterprises and services arising to respond to the changing nature of health care and to the aging population. Both of these have significant workforce implications, and mechanisms must be in place to communicate these implications to the workforce development system.

Opportunities that could be realized within existing organizations and new enterprises include:

- New and expanded home health services, with unlicensed providers to the private pay customer constituting a growing market;
- Expansion of assisted living facilities to serve the growing elderly population;
- Chronic disease management services;
- Expanded ambulatory care centers either as satellites of hospitals or independent operations;
- "Lifestyle" treatments such as alternative therapies and wellness and prevention services;
- Expanded fitness and nutritional services to promote a greater emphasis on wellness;
- Patient information and counseling.

Other Health Care Markets

Medical Devices and Instruments

The biomedical device industry is projected by analysts to see double-digit annual growth for the foreseeable future based on the pace of invention, the increasing demand associated with the aging of the population, and the U.S. leadership position in the global market.

Fairfield County has a high concentration of medical device industry employment, with a 2005 location quotient of 3.37. The Biomedical Engineering Alliance Consortium (BEACON), a Hartford-based organization established to facilitate the development of biomedical equipment, recently completed a thorough analysis of the medical device industry along the I-91 Corridor from New Haven to Springfield on behalf of the "Knowledge Corridor" project.[72] This study concluded that, in 2003, New England attracted the second largest amount of medical device venture capital, behind only Silicon Valley. Overall, New England employs more than 36,000 individuals in the manufacturing and development of medical devices.

Many of the factors cited in the study related to the I-91 Corridor (with the possible exception of cost of living issues) apply equally to the One Coast region.[73] Based on the BEACON research, the One Coast region should be attractive to medical device companies because it offers:

- Easy access to a customer base. As noted above, the medical schools between Boston and Philadelphia attract over 20% of NIH funding, and many of the world's best hospitals are in the region.
- An educated and technically-skilled workforce. The region has highly-skilled workers, and also has the potential to re-train many more who have worked in other technical or traditional manufacturing sectors.
- Access to firms with precision manufacturing capabilities, and available space for further conversion.
- Access to New York City.
- A high level of venture capital and private funding.

Additionally, the region already possesses leaders in the field, which could help to create a critical mass. The largest such firm is Lacey Manufacturing in Bridgeport, with 400 employees and sales of more than $56 million. Lacey President and CEO Robert Werner has indicated that the region's highly skilled workforce and proximity to a customer base outweigh the area's cost pressures for his firm, and potentially for other medical device manufacturers.

Given the higher cost profile and transportation issues in lower Fairfield County, the target area for medical devices should be greater Bridgeport and the lower Naugatuck Valley areas.

Health-Related Insurance and Finance

The One Coast region has one of the highest concentrations of venture capital and hedge funds in the nation. The region thus has the workforce to support further development in finance – an industry with the ability to support the region's high cost of doing business and housing costs. The finance industry's regional momentum, in addition to access to the financial capital of New York City, suggests that it is a strong candidate for increased economic development investment. With the recent location in the region of firms specializing in health care finance, the region could work to "brand" itself as a center for health-related finance activities as one niche within the finance sector.[74]

Regional headquarters of several insurance companies are located in Westchester County. Fairfield County's strong base and workforce in insurance and financial services, along with its high quality of life, makes it a potentially attractive location for regional offices of health-related insurance and finance firms. Additional business development opportunities exist within insurance companies looking for ways to transform themselves and raise their profile in new areas such as information management, wellness, and disease management.

Bioscience/Biotechnology

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[72] Biomedical Engineering Alliance and Consortium, "The Medical Device industry in Southern New England's I-91 Corridor: Potential for Growth," 2004.

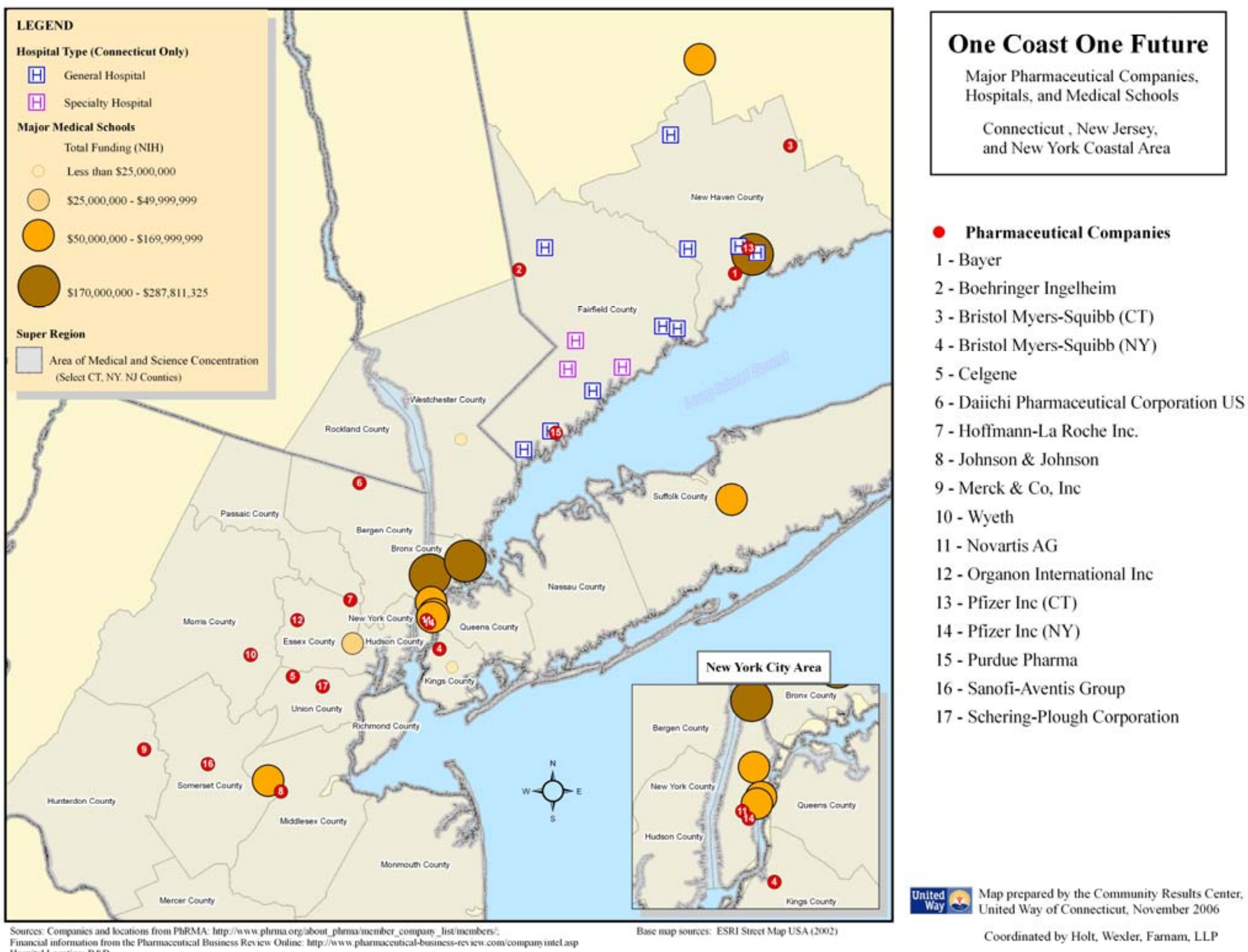
[73] The criteria that influence site selection were identified by BEACON through a review of industry literature and through communication with medical device company executives and biomedical engineering experts.

[74] "Too Big for the Big Apple: Business Growth at Galen Prompts Move to Stamford," *Stamford Advocate*, October 17, 2006.

Regions to the North (New Haven) and South (New York City) of the One Coast region feature prospering bioscience clusters, but Southwest Connecticut has yet to establish a strong bioscience presence. Emerging biotechnology companies invested over $530 million in Connecticut-based research and development in 2004 and 2005. A recent study by CURE (the organizing body for Connecticut's bioscience cluster) showed that every bioscience job in Connecticut supports 3.30 other jobs in the state.[75] The insurance and manufacturing industries, by comparison, have employment multipliers of 2.38 and 2.90, respectively.

The One Coast region currently has a handful of pharmaceutical and bioscience companies, including Purdue Pharma and Boehringer Ingelheim (just outside the immediate region in Ridgefield). The region possesses several qualities that make it potentially attractive to bioscience businesses, including its highly skilled labor force, access to venture capital, high quality of life, and particularly its location within a larger New York metropolitan area rich in medical and bioscience research (See Map 2). The 12 medical schools in the region from Princeton to New Haven receive over $1.3 billion in annual NIH research funds, fully 10% of all NIH research grants. If extended north to Boston and south to Philadelphia, that percentage goes up to 21%.[76] In addition, CURE has worked with state officials to make Connecticut attractive to entrepreneurial bioscience start-ups, implementing favorable tax policies and providing venture and capital financing.

Map 2



[75] An independent analysis based on the CURE data, performed by Mark A. Thompson, Ph.D., Dean of the School of Business at Quinnipiac University. Cited at www.curenet.org

[76] National Institute of Health.

Despite the many factors indicating that the One Coast region has the potential to develop a robust bioscience cluster, it is generally believed that the lack of a major research presence in the region is a significant barrier to bioscience growth. According to a study prepared for the Biotechnology Industry Association, a "deep research base (is) needed to sustain the biosciences…it may not be enough to have one university and/or one medical center."[77] With this in mind, it is encouraging that preliminary discussions with officials from local hospitals and Columbia University suggest an opening to consider well-conceived proposals to accommodate new Columbia research facilities in the One Coast region. The announced departure of Bayer Pharmaceuticals from Orange, although attributed to a corporate restructuring with many dimensions, has raised concerns about the role of bioscience in the region's future.

Other concerns about the regional economic development potential of the bioscience industry are that early-stage bioscience companies will face a barrier in the region's high housing costs, and that the state is unlikely to provide substantial support for bioscience activity in the Southwest because it is already heavily invested in growing a bioscience cluster in New Haven.

b. Economic Development Strategy – "Health Industries Economic Development Initiative"

The continuing, rapid growth and change in the health care system under the forces detailed in Section III of this report create a number of economic development opportunities for the region. Industry leaders and economic development officials confirm that the fundamental elements of an overall economic development strategy are needed to create a fertile environment for growth in health-related sectors. The One Coast, One Future Comprehensive Economic Development Strategy (CEDS) must address the "nuts and bolts" of a regional strategy to create the economic environment in which health-related enterprises can thrive, including:

- Improved workforce preparation, especially the challenges facing urban K-12 systems.
- An enhanced transportation infrastructure, including expanded and improved train links to New York City and other Connecticut communities.
- Increased affordable housing options for low- and moderate-wage workers.
- Support for entrepreneurs in accessing land, labor and capital to grow their small and large businesses, closely coordinated with the economic development efforts of the Connecticut Department of Economic and Community Development, Connecticut Development Authority, and Connecticut Innovations, Inc.
- Stronger economic linkages between Bridgeport and lower Fairfield County.
- An effort to market the region's strengths to employers.

The CEDS implementation will support economic growth in general, but the region can take measures to aid the development of the health care industry cluster specifically:

<u>Economic Development Related to Health Care Delivery and Population Needs</u>

- **Advocate for increased Medicaid reimbursement rates.** Physicians and hospitals employ a large share of the region's health care workforce. Downward pressures on reimbursement rates are leading to a shortage of providers and shifting costs to private payors, exacerbating the increase in health care costs for employers. Medicaid also has a multiplier effect by bringing new federal revenue into the region (50% of total Medicaid cost).
- **Encourage larger providers, particularly hospitals and long term care facilities, to increase local purchasing** through measures to advertise and develop relationships with local vendors, especially if more local services are outsourced. Although most hospital purchases are made through national purchasing groups, local companies could grow to compete and meet some of these needs.

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[77] "Growing the Nation's Bioscience Sector: State Bioscience Initiatives 2006," Battelle, April 2006.

- **Explore tax incentives for the services addressing prevention and wellness** (e.g. fitness centers). This will create jobs and lead to a healthier population.
- **Support businesses and development projects that are responding to the changing needs of the aging population and to the shifts in emphasis within the health care field.** These will include increases in assisted living, expansion of home health and personal care (both licensed and unlicensed) to moderate the need for more long term care facilities, and businesses responding to the demand for wellness services.

Economic Development Related to Other Health Care Markets

- **Encourage a general culture of entrepreneurship in the region.** Since health care is a growing sector nationally and the region has a highly skilled workforce, efforts to improve the entrepreneurial environment can result in attracting and growing startup and second stage health-related companies. The initiative should support the creation of publicly-supported and/or private facilities and services that encourage entrepreneurs in the health area to start and grow new companies in the region.
- **Work to brand Fairfield County as a locus of the health-related finance industry.** Health-related finance is a large and growing sector that will be critical to the projected growth, innovation and change in the national and global health care marketplace. The region can build on its strength as a center of investment banking and hedge funds to develop a national market for health finance. Activities could include sponsorship of conferences and meetings with high profile health finance experts and political leaders and convening hedge funds and investment interests with a concentration in the health sector to assist in building a market awareness of the region's leadership in this area.
- **Support a marketing campaign for Bridgeport highlighting the availability of lab space and manufacturing labor.** Bridgeport has considerable assets that can play a role in developing the cluster, including a significant amount of unused land that could be utilized if incentives, such as remediation variances, were offered. It is anticipated that the permitting review process for health industry-related land use in Bridgeport will accelerate in the coming years due to increased reliance on updated city land use policies and regulations that highlight the health industry as an opportunity area. Bridgeport also has the capacity to accommodate back office space requirements at a competitive price and substantial housing in the pipeline at affordable sales and rental prices to support increased employment levels.
- **Explore local tax abatements and secure state tax incentives for health cluster firms**. Explore land use incentives or public improvements for non-profit firms.
- **Promote the region as a location for medical device manufacturing and related firms.** This would involve convening the regional firms in this sector to understand their needs more specifically and working with BEACON to expand its activities to the Southwest. BEACON's goal is to "facilitate the development and commercialization of innovations born from the interactions between academia, medicine and industry."[78] It does this by facilitating collaborative research, encouraging industrial partnerships, and facilitating incubating companies. Its members include hospitals, universities, bioscience companies, pharmaceutical companies, insurance companies, and government agencies.
- **Pursue opportunities to bring research operations into the region.** As noted earlier, the One Coast region will likely need to attract at least one major researcher into the region if it is to create a strong bioscience cluster. Opportunities to bring research activity into the region through connections with Columbia University or other means should be explored.

Implementation

Realization of these opportunities for the region will rely on the coordinated implementation of the Comprehensive Economic Development Strategy (CEDS) under development through the One Coast, One Future initiative. Local and regional economic development officials are focused on improving the regional

[78] "Potential for Growth: The Medical Device Industry in Southern New England's I-91 Corridor," Biomedical Engineering Alliance & Consortium (BEACON), June 2004.

business environment; the areas of housing, urban schools, and transportation are recognized as the keys to realizing many of the opportunities identified here. Several discrete actions (e.g., initiating a partnership with BEACON in the medical devices area and organizing a health industry finance conference) can also be pursued in the short term.

VII. Health Care Policy Statement

In setting its priorities for action, the One Coast, One Future Health Cluster Steering Committee agreed that developing national and state policies that support the health care industry will be critical to addressing industry challenges such as workforce shortages, unreimbursed care, health IT adoption, and economic development. A scan of current state and regional initiatives reveals that numerous efforts are underway to influence health policy. Statewide and Southwest Connecticut groups involved in health policy reform efforts include:

- Allied Health Workforce Policy Board – A group established by statute acting in coordination with the Connecticut Career Ladder Advisory Committee. It is charged with monitoring data and trends, and developing recommendations for bolstering the competitiveness of the state's health care workforce.
- eHealth Connecticut – A non-profit organization devoted to creating a statewide health information exchange to improve the quality and safety of health care in the state. The group was organized by Representative Nancy Johnson and Governor Jodi Rell and includes hospitals, insurance companies, and advocacy organizations.
- Business Council of Fairfield County (BCFC) – An advocacy group formed by Fairfield County businesses, BCFC organizes business and political leadership to address issues impeding the economic health of the region and market the area as an appealing destination for private enterprise. The BCFC has an active Health Leadership Council that puts forward an agenda for health care reform.
- Bridgeport Regional Business Council (BRBC) – An advocacy group formed by the businesses in Greater Bridgeport, the BRBC is dedicated to attracting businesses, creating an environment that supports business recruitment and retention, and increasing the overall economic opportunities for the people of the Greater Bridgeport region. The Council has recently formed a Health Council to advocate for health policy change at the state level.
- CURE (bioscience focus) – Connecticut's educational and business support network for bioscience. CURE is charged with growing the bioscience cluster by working with entrepreneurs, venture capitalists, real estate developers, pharmaceutical companies, and research universities.
- One Coast, One Future CEDS Project – As part of the One Coast, One Future initiative introduced by Congressman Shays, the CEDS project is an effort of regional chambers of commerce and planning agencies to build a Comprehensive Economic Development Strategy for Southwest Connecticut.

In light of the high level of policy reform activity already underway, the Steering Committee has determined that it can maximize its impact by focusing on the three initiatives outlined in Sections IV, V, and VI of this report rather than by launching a full-scale policy reform initiative. The Steering Committee has, however, identified the following health-related policy issues as important to improving patient care, reducing costs, and stimulating economic activity:

- Universal coverage – Connecticut currently lacks universal, continuous health coverage that is affordable to individuals and families, and affordable and sustainable for society. Expanded access to health care can only achieve the goal of enhancing health and well being if it is coupled with improvements in the quality and safety of the health care system. Poor quality care has undermined patient outcomes and added billions of dollars of unnecessary costs to the health care system.

  The issues of increasing health care costs and decreasing coverage feed off of each other – higher costs lead to higher insurance rates. Currently, the region's hospitals must provide uncompensated care for individuals without insurance. This care gets indirectly recouped through raising negotiated contracts with managed care organizations, raising rates to all consumers. Universal coverage would spread the risk pool out among all residents and payors, creating a more competitive health insurance landscape. Additionally, the uninsured typically visit hospital emergency departments for acute episodes, thus increasing total health care costs. An important aspect of the Committee's vision of universal coverage is universal access to preventive services.

- Medicaid – Connecticut has low Medicaid reimbursement rates, making access to physicians and hospitals more difficult for the low-income population due to the financial strain on providers of serving patients covered by Medicaid. Generally, physicians and hospitals lose money on the care of every Medicaid patient, and must rely on other services and procedures to subsidize care for the poor. The burden of low Medicaid rates, combined with stagnant reimbursement rates from managed care organizations, could contribute to an expected physician shortage in the region.
- Malpractice/tort reform – Connecticut had the third highest average malpractice settlement rate in the nation in 2003 ($486,759 compared to the national average of $291,759).[79] The litigious medical climate leads to direct costs (increased costs of malpractice insurance) and indirect costs (defensive medicine, unnecessary tests). Reforming Connecticut's malpractice climate and jury award system could lead to reduced costs and greater efficiency.
- Certificate of Need process – Connecticut's Certificate of Need process is believed to keep state costs down and control utilization, but concerns have been raised about the costs associated with the process itself, as well as its negative effect on innovation. The validity and impact of these concerns will need to be better understood before changes to the Certificate of Need process are considered.
- Universal electronic medical records – eHealth Connecticut is taking the lead on this issue. It is critical to examine potential cost savings and quality improvements that may be achieved through electronic medical records and computerized physician order entry. Currently, these innovations are generally not possible for individual physicians to implement because of massive startup costs.
- Mandatory outcomes reporting –The literature suggests that increased transparency in reporting medical outcomes and prices will drive up service quality. Hospitals report that transparency is also necessary from a competitiveness standpoint, as consumers are demanding more outcome and cost information before selecting their health care providers. Existing initiatives[80] that advocate for increased transparency should be researched.

Workforce Policy Issues

- Public college/university faculty pay is not competitive – Due to statewide union contracts, salaries for community college faculty are consistent throughout the state. Uniform pay ignores differences in the cost of living among different regions of the state, putting high-cost areas such as the Southwest at a disadvantage in terms of hiring faculty. To recruit and retain nursing and allied health faculty, the state and community college system must explore creative methods of increasing faculty salaries for health care occupations facing current or projected shortages. As noted in section IV of this report, Masters-level registered nurses can earn $15,000-$50,000 more in the field than they can as community college teaching faculty. Among the policy options identified as possible pieces of the solution to this issue are:
    - Restructuring the collective bargaining agreement such that higher salaries may be paid to faculty who instruct occupational programs that face shortages. This strategy has previously been employed effectively to recruit information technology faculty.
    - Restructuring the collective bargaining agreement to account for differences in regional cost of living when determining pay scales. This would allow state colleges and universities to offer higher wages to professors in high-cost regions like the Southwest.

[79] "Connecticut Health Scorecard 2006," The Business Council of Fairfield County, March 2006.

[80] The Leapfrog Group is a consortium of Fortune 500 companies that is pushing hospitals to improve quality by sharing data and outcome, and reducing medical errors through improved technology.

  - Creating increased flexibility to hire new faculty in high-cost regions at higher steps on the pay scale than new faculty in lower-cost areas.
  - Offering loan forgiveness for individuals who pursue their Master's degree and become teaching faculty.
- Adult Education funding system – There is little cooperation among local Boards of Education in terms of how Adult Education is funded and delivered, and state financial support for this essential service is very limited. The Adult Ed system can be a critical resource for strengthening the health care workforce, especially in view of the growing immigrant population and the persistence of low literacy levels in urban areas. The State Department of Education and Office for Workforce Competitiveness must work to create a more integrated system with a stronger role and expectations for outcomes. This will require increased state and local investment and a higher level of state coordination and planning, working closely with the regional workforce development system led by The WorkPlace, Inc.
- K-12 curriculum reform – The region must improve science and math education in order to produce a competitive health workforce. More stringent science and math graduation standards (as discussed in workforce section) would help prepare students emerging from the region's K-12 system to succeed in nursing and allied health programs.

Economic Development Policy Issues:

- Tax incentives – Creating tax incentives could help attract more businesses to the region. While there do not appear to be incentives that are specific to health-related businesses, tax incentives available to all businesses could attract companies from all sectors, including health care.
- A business climate friendly to entrepreneurship – Efforts to encourage overall entrepreneurship in the region could help bring bioscience and other businesses to the area. The region's strength in financial services could help to market the region as an appealing area to investors and tax incentives for entrepreneurs could attract health industry startups.

VIII. Conclusion

By moving ahead to address its critical health workforce shortages, pilot innovative approaches to prevention and cost containment, and grow its health-related economy, the One Coast region can capitalize on the projected growth of the health care industry. Working with the Steering Committee, this study has identified a number of short term opportunities which can be realized through regional, collaborative leadership and action.

Appendix A - Total 2006 Health Care Sector Employment in the 20-Town One Coast Region

Sector	# of employees
General medical and surgical hospitals	9,166
Offices and clinics of medical doctors	7,331
Skilled nursing care facilities	3,619
Drug stores and proprietary stores	2,834
Home health care services	2,256
Offices and clinics of dentists	2,081
Physical fitness facilities	1,904
Residential care	1,894
Drugs, proprietaries, and sundries	1,764
Nursing and personal care	1,278
Hospital and medical service plans	1,087
Accident and health insurance	997
Medical laboratories	983
Surgical and medical instruments	944
Offices of health practitioner	878
Specialty hospitals, except psychiatric	856
Specialty outpatient clinics	809
Medical and hospital equipment	567
Health and allied services	511
Intermediate care facilities	495
Local passenger transportation	484
Psychiatric hospitals	436
Electromedical equipment	360
Offices and clinics of chiropractors	342
Optical goods stores	238
Help supply services	196
Offices and clinics of optometrists	161
Dental equipment and supplies	153
Miscellaneous retail stores	120
Dental laboratories	108
Commercial physical research	98
Kidney dialysis centers	94
Offices and clinics of podiatrists	87
Pharmaceutical preparations	80
Repair services	72
Vocational schools	69
Noncommercial research organizations	64
Surgical appliances and supplies	64
Professional equipment	43
Medical equipment rental	31
Insurance agents, brokers, and service	27
Miscellaneous personal service	23
Catalog and mail-order houses	22
Pension, health, and welfare funds	19
Fabricated rubber products	15
Offices and clinics of osteopathic physicians	10
Automobiles and other motor vehicles	5
Air transportation, nonscheduled	4
Grand Total	**45,679**

Source: Dun & Bradstreet

Appendix B: Health Care and Related Businesses with at least 150 Employees in Dun and Bradstreet Database

Business Name	Municipality	Sector	Number of Employees
Direct Care			
Bridgeport Hospital Inc	Bridgeport	General medical and surgical hospitals	2,029
St Vincent's Medical Center	Bridgeport	General medical and surgical hospitals	1,900
Norwalk Hospital	Norwalk	General medical and surgical hospitals	1,660
Greenwich Hospital	Greenwich	General medical and surgical hospitals	1,500
Stamford Hospital	Stamford	General medical and surgical hospitals	1,200
Griffin Hospital	Derby	General medical and surgical hospitals	651
United Visiting Nurse Assn*	Trumbull	Home health care services	540
Priority Care Inc	Stratford	Home health care services	168
Connecticut Home Health Care	Trumbull	Home health care services	150
Lord Chamberlain Healthcare Facility	Stratford	Nursing and personal care	380
Gardener Heights Inc	Shelton	Nursing and personal care	290
Hilltop Health Center	Ansonia	Nursing and personal care	175
Smith House Skulled Nursing Facility	Stamford	Nursing and personal care	175
Greenwich Psychiatric Care	Greenwich	Offices and clinics of medical doctors	1,000
Primed	Shelton	Offices and clinics of medical doctors	310
Oxford Health Plans (ct) Inc	Trumbull	Hospital and medical service plans	765
MetLife	Westport	Hospital and medical service plans	250
3030 Park	Bridgeport	Intermediate care facilities	250
Silver Hill Hospital Inc	New Canaan	Psychiatric hospitals	234
Hall-Brooke Hospital	Westport	Psychiatric hospitals	200
Northbridge Health Care Center Inc	Bridgeport	Residential care	461
Norwalk Rehabilitation Services	Norwalk	Residential care	180
Whole Life, Inc.	Stratford	Residential care	152
Bridgeport Health Care Center	Bridgeport	Skilled nursing care facilities	500
Saint Josephs Manor Home For Aged	Trumbull	Skilled nursing care facilities	450
Shelton Lakes Health Care Center	Shelton	Skilled nursing care facilities	290
Village At Waveny Care Center	New Canaan	Skilled nursing care facilities	250
Greenwich Woods Health Care Center	Greenwich	Skilled nursing care facilities	217
Honey Hill Care Center	Norwalk	Skilled nursing care facilities	200
Shady Knoll Health Care	Seymour	Skilled nursing care facilities	200
William & Sally Tandat Center	Stamford	Skilled nursing care facilities	200
Edgehill Retirement Community	Stamford	Skilled nursing care facilities	175
Courtland Gardens Health Center	Stamford	Skilled nursing care facilities	150
Hewitt Memorial Hospital	Shelton	Skilled nursing care facilities	150
St Camillus Health Center	Stamford	Skilled nursing care facilities	150
Wilton Meadows Health Care Center	Wilton	Skilled nursing care facilities	150
Renfrew Center of Connecticut	Wilton	Specialty hospitals, except psychiatric	350
Tully Health Center	Stamford	Specialty hospitals, except psychiatric	250
Other Health-related Employers			
Nac Re Corp	Greenwich	Accident and health insurance	300
Odyssey American Reinsurance Corp	Stamford	Accident and health insurance	227
Beiersdorf Inc	Norwalk	Drugs, proprietaries, and sundries	500
Beiersdorf North America Inc.	Wilton	Drugs, proprietaries, and sundries	425
Retail Service Associates Inc	Bridgeport	Drugs, proprietaries, and sundries	255
Elizabeth Arden Inc	Stamford	Drugs, proprietaries, and sundries	170
Home Diagnostics Corp	Trumbull	Electromedical equipment	200
Fujifilm Medical Systems USA	Stamford	Medical and hospital equipment	190
Euromed	Trumbull	Medical and hospital equipment	180
Dianon Systems Inc	Stratford	Medical laboratories	650
Profitness Health Solutions LLC	Shelton	Physical fitness facilities	350
Norwalk Y M C A	Norwalk	Physical fitness facilities	160
Noelle Spa For Beauty & Wellness	Stamford	Physical fitness facilities	150
Lacey Manufacturing Company	Bridgeport	Surgical and medical instruments	400
Acmi Corporation	Stamford	Surgical and medical instruments	340

*United VNA in Trumbull merged with Visiting Nurse Services of CT after this data was published

Source: Dun & Bradstreet

Appendix C: Health Care Cluster Industries, sorted by 2005 Fairfield County Location Quotient[81]

Industry	2005 Fairfield County Location Quotient	Location Quotient Growth, 2001-2005
Surgical and medical instrument manufacturing	3.37	.43
Direct health and medical insurance carriers	2.59	*n/a*
Fitness and recreational sports centers	2.42	(.17)
Psychiatric and substance abuse hospitals	1.75	(.13)
Home health care services	1.47	(.13)
Nursing care facilities	1.45	(.03)
Offices of podiatrists	1.37	(.05)
Medical laboratories	1.37	(.35)
Ophthalmic goods merchant wholesalers	1.32	(.48)
Offices of specialty therapists	1.28	(.55)
Druggists' goods merchant wholesalers	1.25	(.24)
Offices of physicians, except mental health	1.22	.00
Optical goods stores	1.21	.03
Offices of dentists	1.15	(.02)
Cluster Total	**1.09**	**.03**
Pharmacies and drug stores	1.08	(.02)
Offices of mental health physicians	1.08	.08
Voluntary health organizations	1.06	.15
Residential mental retardation facilities	1.00	(.09)
Testing laboratories	0.95	(.27)
Offices of chiropractors	0.91	(.11)
Offices of optometrists	0.91	(.03)
General medical and surgical hospitals	0.91	.06
Residential mental and substance abuse care	0.89	(.10)
All other outpatient care centers	0.79	(.19)
Homes for the elderly	0.78	.08
Ambulance services	0.64	(.04)
Offices of miscellaneous health practitioners	0.60	(.03)
Continuing care retirement communities	0.60	.30
Diet and weight reducing centers	0.59	(.03)
Dental laboratories	0.57	(.02)
Medical equipment merchant wholesalers	0.48	(.21)
Surgical appliance and supplies manufacturing	0.46	(.26)
Diagnostic imaging centers	0.44	.12
Offices of mental health practitioners	0.42	.07
Other residential care facilities	0.40	(.06)
Physical, engineering and biological research	0.39	(.08)
Miscellaneous ambulatory health care services	0.20	*n/a*

Source: U.S. Bureau of Labor Statistics

Industries for which location quotient data was not available or not disclosable in 2005:
Optical instrument and lens manufacturing; Electromedical apparatus manufacturing; Laboratory apparatus and furniture manufacturing; Dental equipment and supplies manufacturing; Ophthalmic goods manufacturing; Ophthalmic goods manufacturing; Family planning centers; Outpatient mental health centers; Kidney dialysis centers; Freestanding emergency medical centers; HMO medical centers; HMO medical centers; Blood and organ banks; Other hospitals

[81] The Bureau of Labor Statistics defines location quotients as "ratios that compare the concentration of a resource or activity, such as employment, in a defined area to that of a larger area or base."

Appendix D: Pittsburgh Health Careers Futures

Health Careers Futures: The Southwestern Pennsylvania Healthcare Industry Partnership (IP) Coordinator (http://www.hcfutures.org/index.asp)

HEALTH CAREERS FUTURES
Ensuring the future of Southwestern Pennsylvania's healthcare industry

In 2002, **Health Careers Futures** (HCF), a 501(c)(3) supporting organization of the Jewish Healthcare Foundation (JHF) was formed as a follow-up to a Pittsburgh Region Health Workforce Summit in 2001. HCF was founded to support long-term local and regional economic development by aligning the region's supply of and demand for health workers. HCF now serves as the healthcare industry's workforce development cluster coordinator for Southwestern Pennsylvania. **Health Careers Futures'** mandate is to:

- Identify and strengthen health careers and job search pathways
- Improve attraction, training, placement, and retention of quality health workers
- Incorporate patient safety principles in regional health careers curriculum
- Incorporate Magnet principles into regional health work design
- Convene relevant stakeholders to improve the alignment of training programs and employer requirements
- Investigate the efficacy of the health workforce system's response to technological change
- Investigate ways to improve the cost-effectiveness of the health workforce system
- Develop, gather, and share health workforce data

An Executive Advisory Board, drawn from the healthcare workforce and industry sectors as well as regional non-profits and training institutions, guides Health Careers Futures' (HCF) strategic direction.

Examples of Projects:

- Assisted in the development and implementation of a U.S. Department of Labor Incumbent Training Project that trained healthcare workers for higher paying healthcare jobs.
- Sponsored the 2003 and 2005 Magnet Summits to show regional hospitals how to achieve Magnet Certification, a designation of the American Nurses Credentialing Center of the American Nursing Association.
- Worked with the Three Rivers Workforce Investment Board (TRWIB), employers and training organizations to provide an in-service to educate teachers about health careers literacy and pathways.
- **Health Careers Web Portal**. The Health Careers Web Portal is a web site built to inform middle and high school students about health careers, improve students' perceptions of health careers and help students prepare for a health career in Southwestern Pennsylvania. The site provides health careers exploration and match, resources to pursue a health career and tangible outcomes for student users.
- **Incumbent Worker Training Project**. Health Careers Futures has convened and surveyed industry members to assess the incumbent workforce challenges facing employers. Based on survey results, employers requested that Health Careers Futures develop a training program targeting incumbent workers in high priority and high turnover occupations and reflecting the Perfecting Patient Care™ principles.

Appendix E: List of Persons Interviewed

- **Michael Apkon**, *Vice-President, Performance Management*, Yale-New Haven Health System
- **Cindy Banks**, *Director, Planning Strategy & Market Development*, Stamford Hospital
- **Barbara Belon,** *Independent Consultant to the Office of Workforce Competitiveness*
- **Chris Bruhl,** *President,* Business Council of Fairfield County
- **Elizabeth Beaudin**, *Director of Nursing and Workforce Initiatives*, Connecticut Hospital Association
- **Amy Cole,** *Director of Governmental Affairs & Community Relations*, Fairfield County Medical Association
- **Frank A. Corvino**, *President & CEO*, Greenwich Hospital
- **Susan Davis**, *President & CEO*, St. Vincent's Medical Center
- **Brian Ellsworth,** *President/CEO,* Connecticut Association for Home Care
- **Peter R. Farina, Ph.D.,** Vice President, *Development,* Boehringer Ingelheim Pharmaceuticals, Inc.
- **Pat Fennessey**, *Consultant to Health Programs*, Connecticut Technical High School System
- **Meredith Ferraro***, Executive Director,* Southwest Area Health Education Center
- **Mary Franco**, *President*, Norwalk Hospital Foundation
- **Michael Friedman**, *President and Chief Executive Officer*, Purdue Pharma
- **Michael Freimuth,** *Director of Economic Development,* City of Stamford
- **Robert Galvin,** *Director of Global Health,* General Electric Company
- **Anita Gliniecki**, *Acting President*, Housatonic Community College
- **Sheree Griggs**, *Executive Director,* Columbus Research Foundation (Columbus, Georgia)
- **Brian Grissler**, *President & CEO*, Stamford Hospital
- **Phyllis Gutowski**, *Program Director, Clinical Laboratory Sciences*, Housatonic Community College
- **Nancy Hadley**, *Director, Office of Planning & Development*, City of Bridgeport
- **Kim Hostetler**, *Vice President and Chief of Staff,* Connecticut Hospital Association
- **Randy Johnson**, *Managing Director*, Randolph Johnson Associates
- **David Levinson**, *President*, Norwalk Community College
- **Stephen Monroe,** *Editor,* Healthcare Corporate Finance News
- **Gary Nelson**, *Director, Student Health Center*, Fairfield University
- **Wayne Osten**, *Vice President, System Development and Acting Director,* New York Presbyterian Health
- **Paul Pescatello,** *President & CEO,* CURE
- **Alice Pritchard**, *Co-Chair*, Allied Health Workforce Policy Board
- **Keith Ryan,** *Chief Information Officer,* Stamford Hospital
- **Lyn Salsgiver**, *Senior Vice President, Planning & Marketing,* Bridgeport Hospital
- **Mary Schuler**, *Director of Nursing and Allied Health*, Norwalk Community College
- **Stephen Shea**, *Associate Dean*, Columbia Medical School
- **Jo Shute,** *Director of Marketing, Communications & Planning,* The WorkPlace, Inc
- **Beth Seigel,** *Principal,* Mount Auburn Associates
- **David Smith**, *Senior Vice President, Planning Strategy & Market Development*, Stamford Hospital
- **Paul Timpanelli,** *President & CEO,* Bridgeport Regional Business Council
- **Bob Trefry**, *President & CEO,* Bridgeport Hospital
- **Bob Werner**, *President & CEO,* Lacey Manufacturing Company, Inc.
- **Arthur White**, *Home Health Technology Initiative*, Stamford, CT
- **Terri Wilson**, *Assistant Executive Director*, Biomedical Engineering Alliance Consortium (BEACON)