Policy Brief

Connecticut's Healthcare Workforce: Under Construction

Briefing Paper

Sustinet Healthcare Workforce Taskforce

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FINAL

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"The source of America's prosperity, then, has never been merely how ably we accumulate wealth, but how well we educate our people. This has never been more true than it is today. In a 21st century world where jobs can be shipped wherever there's an internet connection; where a child born in Dallas is competing with children in Delhi; where your best job qualification is not what you do, but what you know – education is no longer just a pathway to opportunity and success, it is a prerequisite."

President Barack Obama, Speech on Education Reform, U.S. Hispanic Chamber of Commerce's 19th Annual Legislative Conference, March 10, 2009.

Introduction

The purpose of the United States health care system is to reduce continually the burden of illness, injury, and disability, and to improve the health status and functioning of the people of the United States.[1] The health care and public health sector are part of the Nations' critical infrastructure that consists of the assets, systems, and networks, whether physical or virtual, so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, public health or safety, or any combination thereof.[2]

The health care industry also serves as an important economic engine for the state. In 2006, the healthcare industry employed some 228,000 persons in the Connecticut, or 12.7 percent of the total jobs statewide (1,789,910). Between 2006 and 2016, the Connecticut Department of Labor projects the healthcare sector will generate 39,540 new jobs, an increase of 17.3 percent.[3]

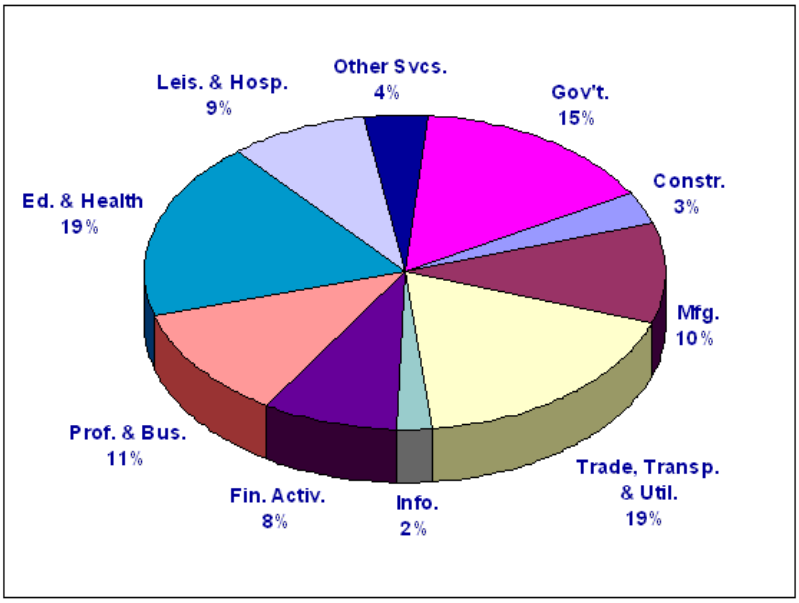
A sustainable healthcare workforce is essential to providing quality healthcare services and it is in the public's interest to assure that there is an adequate supply and distribution of culturally competent health care practitioners to meet the needs of the population. A number of efforts have been undertaken to address persistent healthcare workforce shortages in Connecticut.

> *The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.*
>
> (World Health Organization Constitution)

[1] Institute of Medicine, *To Err is Human: Building a Safer Health Care System*, November 1999, http://www.iom.edu/file.asp?id=4117.
[2] United States Department of Homeland Security, The National Infrastructure Protection Plan-Snapshot, http://www.dhs.gov/xlibrary/assets/nipp_consolidated_snapshot.pdf.
[3] Connecticut Department of Labor, Connecticut Statewide Forecast by Industry, 2006-2016, http://www.ctdol.state.ct.us/lmi/misc/fc2016_industry.htm.

Most recently, the Connecticut General Assembly established a new entity, the Sustinet Board of Directors, in 2009 Legislative Session. The board is charged with creating a plan that will improve the health of state residents, improve the quality of healthcare and access to healthcare, provide health insurance coverage to Connecticut residents who would otherwise be uninsured, increase the range of health insurance coverage options to residents and employers, and slow the growth of per capita health care spending both in the short term and in the long term. The legislation also created three task forces and four advisory committees to provide guidance to the Sustinet Board of Directors in a number of areas. The Sustinet Healthcare Work Force Task Force, one of three task forces, is charged with developing a comprehensive plan for preventing and remedying state-wide, regional and local shortage of necessary medical personnel, including, physicians, nurses and allied health professionals by July1, 2010. For purposes of this briefing paper and as part of Task Force deliberations, health care workforce includes community health workers, behavioral health professionals, EMS workforce and public health workers.[4]

Connecticut Statewide Employment by Industry
Employment Distribution
November 2009



Source of graph: Connecticut Department of Labor, Office of Research, December 17, 2009, http://www.ctdol.state.ct.us/lmi/glan/glandist.htm

The intent of this report is to identify Connecticut's health care workforce issues that should be addressed in the Sustinet Healthcare Workforce Taskforce July 2010 plan:

- What entities have a role in health care workforce development?
- What efforts are currently underway that will have an impact
- What are the factors that inhibit growth of Connecticut's healthcare workforce?
- What best practices could Connecticut replicate to ensure an adequate supply of health care workers, particularly sectors that focus on primary care and prevention?

[4] This definition is utilized in the Patient Protection and Affordable Care Act, Sec. 5101. ASTHO, 2010. Summary of Public Health Workforce Provisions in the Patient Protection and Affordable Care Act.

The size and characteristics of the future health workforce are determined by the complex interaction of the health care operating environment, economic factors, technology, regulatory and legislative actions, epidemiological factors, the health care education system and demographics.[5]

Economic factors

The downturn in the U.S. economy that started in March 2008 has led to a temporary easing of the nursing and allied healthcare workforce shortage in some parts of the country.[6] In some areas, hospitals have seen a drop in elective surgeries. Potential patients are either delaying procedures or not seeking care due to the loss of insurance and the high cost of health care.[7] Health care workers are delaying retirement or returning to the workforce after retirement due to a spouse's loss of employment, working extra shifts, or increasing the number of hours worked to become full time employees.[8]

Experts warn that the health care workforce shortage is far from over.[9] As the economy begins to recover, demand for health care services will likely re-emerge as more individuals gain access to either employer sponsored or publicly funded health insurance and have more disposable income available to spend on health care.

Demographics

The aging of Connecticut's population will have profound implications for the future healthcare workforce. Between 2000 and 2030, the population 65 years of age and over is expected to increase 69 percent. An aging population will place greater demands on the health care system at the same time that many health professionals will be retiring.[10] Also, as the population ages, there will be a continuing shift in the type and setting of health care services provided.[11]

Between 2000 and 2006, Connecticut's population grew by only 2.9 percent.[12] During this same time period Connecticut's population 25 to 34 years of age decreased 9.6 percent or by 43,459 persons. Only one state, Massachusetts lost a higher percentage of the young adult population during this time frame.
Connecticut's population is becoming more racially and ethnically diverse. Concerns that minorities are underrepresented in the health workforce have both equity implications for people who need health care services and efficiency implications for the health care system.

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[5] U.S. Department of Health and Human Services, Health Resources and Services Administration, http://www.dhs.gov/xlibrary/assets/nipp_consolidated_snapshot.pdf.
Bureau of Health Professions, National Center for Health Workforce Analysis, Changing Demographics: Implications for Physicians, Nurses, and Other Health Workers, Spring 2003, ftp://ftp.hrsa.gov/bhpr/nationalcenter/changedemo.pdf
[6] American Association of Colleges of Nursing, Talking Points: Impact of the Economy on the Nursing Shortage, http://www.aacn.nche.edu/Media/pdf/TalkingPoints.pdf
[7] Ibid.
[8] Ibid.
[9] Ibid.
[10] U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Analysis, Changing Demographics: Implications for Physicians, Nurses, and Other Health Workers, Spring 2003, ftp://ftp.hrsa.gov/bhpr/nationalcenter/changedemo.pdf.
[11] Ibid
[12] Gittell, Ross and Timothy Lord, Demographic Alert Update- Mid-Decade Population Trends in New England, continued Concern about the Decline of the Young Population. Fall 2007, Carsey Institute, University of New Hampshire, www.carseyinstitute.unh.edu.

Connecticut Population 2000-2030

AGE	2000		2030		Change 2000-2030	
	Number	% of Population	Number	% of Population	Number	Percent
65+	470,183	13.8	794,405	21.5	324,222	+69.0
45-64	789,420	23.2	852,893	23.1	63,473	+8.0
25-44	1,032,689	30.3	935,506	25.4	-97,183	-9.4
18-24	271,585	8.0	282,390	7.7	10,805	4.0
Under 18	841,688	24.7	823,436	22.3	-18,252	-2.2

Source: U.S Bureau of Census, http://www.censusscope.org/

As minorities constitute a larger proportion of persons entering the workforce, the U.S. population will increasingly rely on minority health workers for their care.[13]

Connecticut has a growing immigrant population. Individuals who are leaving the state are being replaced with immigrants from other countries. Immigrants of all skill levels can help to fill gaps in the health care workforce, but many require customized training and case management-style support. According to the Census Bureau, 12.9 percent of Connecticut's population is foreign born.[14] Nationally, 12.5 percent of the population is foreign born.

Cumulative Estimates of the Components of Population Change for Counties of Connecticut April 1, 2000 to July 1, 2006

Geographic Area	Total Population Change	Natural Increase			Net Migration		
		Total	Births	Deaths	Total	Net International Migration	Net Internal Migration
Connecticut	**99,207**	**70,748**	**256,735**	**185,987**	**39,510**	**92,635**	**-53,125**
Fairfield County	17,873	29,633	72,788	43,155	-8,925	43,811	-52,736
Hartford County	19,744	14,143	63,711	49,568	8,608	21,111	-12,503
Litchfield County	7,907	1,397	11,760	10,363	7,049	1,278	5,771
Middlesex County	8,703	2,618	10,959	8,341	6,540	1,736	4,804
New Haven County	21,236	13,080	61,852	48,772	10,996	19,566	-8,570
New London County	4,187	5,082	19,092	14,010	-123	1,957	-2,080
Tolland County	11,776	3,086	8,653	5,567	8,984	1,968	7,016
Windham County	7,781	1,709	7,920	6,211	6,381	1,208	5,173

Note: The April 1, 2000 estimates base reflects changes to the Census 2000 population resulting from legal boundary updates as of January 1 of the estimates year, other geographic program changes, and Count Question Resolution actions. All geographic boundaries for the July 1, 2006 population estimates series are defined as of January 1, 2006. Dash (-) represents zero or rounds to zero.

Source: Population Division, U.S. Census Bureau, March 22, 2007, Table 4: Cumulative Estimates of the Components of Population Change for Counties of Connecticut: April 1, 2000 to July 1, 2006 (CO-EST2006-04-09)

[13] Ibid.
[14] United States Bureau of Census, 2006 American Community Survey, Percent of Population Who Are Foreign Born: 2006, http://factfinder.census.gov/servlet/GRTTable?_bm=y&-geo_id=01000US&-_box_head_nbr=R0501&-ds_name=ACS_2006_EST_G00_&-_lang=en&-redoLog=false&-format=US-30&-mt_name=ACS_2006_EST_G00_R1603_US30&-CONTEXT=grt

A Connecticut Legislative and Program Review and Investigation Committee study found the need for adult basic services and English as a Second Language (ESL) services far exceeds the current program capacity.[15] Based upon U.S. census data 12.1 percent of Connecticut's population, or 324,349 persons, 18 years age and over do not have a high school diploma, an essential credential to gain access to post secondary training. Approximately 8 percent of Connecticut's population or 260,916 people over 5 years of age and over speak English "less than well". An individual's language proficiency will impact their integration into the workforce.

Legislative and regulatory actions and healthcare operating environment

Federal and state legislation also have an impact on the health care workforce by determining scope of practice for various health care professions, licensing and sanctioning of health care practitioners, and developing standards and approval of health care practitioner educational/training programs to name a few.

The table below summarizes the roles and responsibilities of various entities that are involved in Connecticut's healthcare workforce development system and are indicative of Connecticut's long standing public policy interest in healthcare education, safety, practitioner competency and availability of health care services.

Connecticut Healthcare
Workforce Development Entities and Stakeholders

Entity	Membership	Role	Website
CT Career Ladder Advisory Committee	13 members: • OWC director • commissioners of SDE, DHE, DPH, DOL (or designees) • 9 public members with expertise in early childhood education, health care, labor market analysis, health care employees, early childhood education employment, and 3 members with workforce development expertise	The Committee was charged with developing a three-year plan for the creation or enhancement of career ladder programs for occupations with projected workforce shortages for the next five years and to report to committees of the General Assembly having cognizance of matter related to higher education and employment advancement.	http://www.cwealf.org/resources/publications
Area Health Education Centers	Affiliated with the University of Connecticut	Their mission is to enhance access to quality health care, particularly primary and preventive care, by improving the supply and distribution of health care professionals through facilitating community/academic educational partnerships.	http://ctahec.uchc.edu/

[15] Program Review and Investigations Committee, Coordination of Adult Literacy Programs-Findings and Recommendations, December 14, 2006.

CT Allied Health Workforce Policy Board	13 members: • OWC director • commissioners of DPH, SDE, DHE (or designees) • chairs and ranking members of Public Health, and Higher Education and Employment Advancement Committees (or designees) • a member of the State Board of Examiners for Nursing • Connecticut Conference of Independent Colleges • Various recognized experts in field of allied health, finance, economics or health facility management appointed by the leaders of the General Assembly.	Purpose is to conduct research and planning activities related to the allied health workforce: 1.Monitoring data and trends in the allied health workforce including but not limited to: a. The state's current and future supply and demand for allied health professionals; and, b. The current and future capacity of the state system of higher education to educate and train students pursuing allied health professions. 2. Developing recommendations for the formation and promotion of an economic cluster for allied health professions. 3. Identifying recruitment and retention strategies for public and independent institutions of higher education with allied health programs. 4. Developing recommendations for promoting diversity in the allied health workforce including but not limited to racial, ethnic and gender diversity and for enhancing the attractiveness of allied health professions. 5. Developing recommendations regarding financial and other assistance to students enrolled in or considering enrolling in allied health programs offered at public or independent institutions of higher education. 6. Identifying recruitment and retention strategies for allied health employers. 7. Developing recommendations about recruiting and utilizing retired nursing faculty members to teach or train students to become licensed practical nurses or registered nurses. 8. Examining nursing programs at public and independent institutions of higher education and developing recommendations about the possibility of streamlining the curricula offered in such programs to facilitate timely program completion.	http://www.cwealf.org/resources/publications
Connecticut Employment and Training Commission	24 members with the majority of its membership from business and industry, and the remainder representing state and local government, organized labor, education, and community based organizations. Transferred to OWC effective July 1, 2000.	The Connecticut Employment and Training Commission (CETC) was created in 1989 by P.A. 89-292 with a mandate to plan, coordinate, and evaluate state sponsored job training programs. It was designated as the state-level Workforce Investment Board, required by federal law under the Workforce Investment Act of 1998 (WIA). The Connecticut Employment and Training Commission (CETC) is the governor's principal policy board for workforce investment – the education, training and retraining of the current and future workforce – so that Connecticut is prepared for the 21st century.	http://www.ctdol.state.ct.us/rwdb/cetc.htm
The Connecticut Commission for the Advancement of 21st Century Skills and Careers	The order requires the The Commissioners of Education and Higher Education to co-chair and shall appoint others to the Commission, including the Executive Director of the Office for Workforce Competitiveness and the Commissioners of Economic and Community Development and Labor.	The Connecticut Commission for the Advancement of 21st Created under Executive Order No. 2A and is informally called the P-20 Commission. Its role is to develop strategies and make recommendations to the Governor to ensure that Connecticut's workforce possesses the skills necessary to succeed and prosper in the 21st century workplace; to advance innovation through research and development, product development and new venture development; to enrich existing talent by retraining existing workers for occupations experiencing skill shortages and providing structured 21st century career pathways; and to promote the development of training programs for green collar jobs.	http://www.ctdhe.org/p20/
Connecticut Department of Labor	State agency	The Department is committed to protecting and promoting the interests of Connecticut workers. In order to accomplish this in an ever-changing environment, we assist workers and employers to become competitive in the global economy. We take a comprehensive approach to meeting the needs of workers and employers, and the other agencies that serve them. We ensure the supply of high-quality integrated services that serve the needs of our customers.	http://www.ctdol.state.ct.us/gendocs/about.html

The Connecticut Career Resource Network (CCRN)	Department of Labor program	Its objective is to acquaint users with resources that keep the education community connected to the workforce community, and informed on issues relevant to career guidance and decision-making. The goal of the CCRN is to promote improved career decision-making by students and other individuals, and to support life-long learning. This is accomplished by improving access to career and occupational information for individuals and those who assist those individuals. Information is provided through publications, workshops and conferences, web-based information systems, training, and marketing of career-related materials.	http://www.ctdol.state.ct.us/ccrn/ccrn-over.htm
Connecticut Employment and Training Commission (CETC)	24 members representing business and industry, state and local governments, organized labor, education and community-based organizations and the general public.	Established in 1989 as Connecticut's highest workforce development policy body, is charged with overseeing and improving the coordination of all education, employment and training programs in the state. The CETC has been designated as Connecticut's state-level Workforce Development Board for the purposes of implementing WIA.	http://www.ctdol.state.ct.us/rwdb/cetc.htm
The Office for Workforce Competitiveness (OWC)	State agency	Established by Executive Order No. 14 on April 12, 1999. Recognizing a link between business needs and higher education, and that a skilled workforce is essential to the state's economic viability, the order created OWC (along with the Governor's JOBS Cabinet) to focus on the need to prepare the state's workforce for the new century. OWC was made a statutory agency within the Office of Policy and Management for administrative purposes only under P.A. 00-192. The office is headed by a director who reports directly to the governor. The office serves as the governor's principal workforce development policy advisor. It is charged with providing advice to the governor on workforce investment matters, serving as liaison between the governor and various federal, state, and local entities, and coordinating the workforce development activities, including WIA, of all state agencies. The office also provides staff support to the Connecticut Employment and Training Commission (CETC) and The Connecticut Commission for the Advancement of 21st Century Skills and Careers. Statutorily, OWC is required to provide the governor and legislature, with the assistance of DOL, necessary reports, information, and assistance to any state agency.	http://www.ctdol.state.ct.us/rwdb/workforce.htm
Workforce Investment Boards (formally called Regional Workforce Development Boards)	Connecticut created Workforce Development Boards in 1992. Membership includes representatives of community-based organizations, state and local organized labor, state and municipal government, human service agencies, economic development agencies, community-technical colleges and other educational institutions, including secondary and post-secondary institutions and regional vocational technical schools.	Boards administer employment and training activities at the local level in five regions of the state, working in partnership with local elected officials. Under the Workforce Investment Act, Boards are given increased authority for oversight, strategic planning, and policy-making at the local level (in continuing close collaboration with local elected officials). • Capital Workforce Partners • Workforce Alliance • The Workplace, Inc. • Eastern CT Workforce Investment Board • Northwest Regional Workforce Investment Board, Inc	http://www.ctdol.state.ct.us/rwdb/workforce.htm
Connecticut State Board of Education	Consists of eleven members appointed by the Governor with the advice and consent of the General Assembly	Responsible for "... general supervision and control of the educational interests of the state, which interests shall include preschool, elementary and secondary education, special education, vocational education and adult education..." The Board establishes education policy, prepares legislative proposals, sets academic standards for teachers and students, administers a $2.109 billion annual general fund budget and	http://www.sde.ct.gov/sde/cwp/view.asp?a=2683&q=322228

		provides leadership and support services to Connecticut's 149 local and 17 regional school districts. It also serves as the board of education for the 17 regional technical high schools.	
Connecticut State Department of Education	State agency	SDE is the administrative arm of the Connecticut State Board of Education. Through leadership, curriculum, research, planning, evaluation, assessment, data analyses and other assistance, the Department helps to ensure equal opportunity and excellence in education for all Connecticut students. The Department is responsible for distributing funds to the state's 166 school districts. The Department also operates the Connecticut Technical High School System.	http://www.sde.ct.gov/sde/site/default.asp
The Board of Governors for Higher Education	11 members, seven are appointed by the Governor, and four by legislative leadership	It is the statewide coordinating and planning authority for Connecticut's public and independent colleges and universities. Created in 1983 by the Governor and General Assembly, the Board of Governors is charged by statute to: • Maintain standards of quality • Assure the fullest possible use of available resources • Promote responsiveness to economic, societal and student needs • Apply higher education's resources to the problems of society • Offer learning and training opportunities keyed to the state's development • Protect academic freedom • Ensure educational opportunity The Board makes higher education policy, reviews public college and university missions and budgets, recommends system-wide budgets to the Governor and General Assembly, licenses and accredits academic programs and institutions (both public and independent), evaluates institutional effectiveness and coordinates programs and services between the public and independent sectors.	http://www.ctdhe.org/BOG/bogmission.htm
Advisory Council on Student Transfer and Articulation	The statutes require the higher education commissioner, in consultation with the Higher Education Coordinating Council, to establish an ACSTA. ACSTA is made up of the chief academic officers of each constituent unit, teaching faculty, institutional transfer coordinators, and students of the public colleges and universities, as well as two representatives of independent colleges and universities who serve as nonvoting ex-officio members. The commissioner convenes and chairs the council.	Required to develop a plan for coordinating the creation of articulation agreements in specific areas among public institutions of secondary and higher education, and report its progress to the General Assembly. Articulation agreements are written arrangements among educational institutions to ensure students a successful transition between them.	http://www.cga.ct.gov/2001/SUM/2001SUM00165-R00SB-01366-sum.htm
Connecticut Department of Higher Education	State agency	Under the Board's leadership, the Department of Higher Education carries out Board policy, administers statewide student financial aid programs, oversees private occupational schools and conducts research and analysis on issues important to legislators and the public.	http://www.ctdhe.org/BOG/dheOverview.htm
Office of Health Care Access (OHCA)	State agency	The mission of the OHCA is to ensure that the citizens of Connecticut have access to a quality health care delivery system. The Agency will fulfill its mission by advising policy makers of health care issues; informing the public and the industry of statewide and national trends; and designing and directing health care system development.	http://www.ct.gov/ohca/site/default.asp

Connecticut Department of Public Health	State agency	To protect and improve the health and safety of the people of Connecticut by: • Assuring the conditions in which people can be healthy; • Promoting physical and mental health, and • Preventing disease, injury, and disability. DPH has several programs that address health workforce development: 1) regulates access to the health care professions and provides regulatory oversight of health care facilities and services thereby ensuring competent and capable health care service providers; 2) implementing state licensure and federal certification programs; 3) investigate and take disciplinary action against providers, which are in violation of the law or otherwise pose a risk to public health and safety; 4)Working with stakeholders to develop health workforce policy and address shortages; 6) promote diversity and cultural competence; 5) HPSA/MUA designations; 7) implement National Health Service Corp program and 8) assists international medical graduates to practice in shortage areas through the J-1 Visa Program; 9) CT Nurse Aide Registry; and 10) Physician Profile Program	http://www.ct.gov/dph/cwp/view.asp?a=3115&q=387178&dphNav_GID=1601
State Board of Chiropractic Examiners	Consists of seven members, four must be practicing chiropractors and CT residents and must have practiced chiropractic continuously in this state for at least three years, and three public members. The governor shall appoint a chairman from among the members of the board.	Said board shall (1) hear and decide matters concerning suspension or revocation of licensure (2) adjudicate complaints against practitioners and (3) impose sanctions where appropriate. Annually files, a list of accredited chiropractic colleges or institutions approved by said board with the consent of the commissioner of public health. No person shall receive a license until he has passed an examination prescribed by the department of public health, with the advice and consent of the Board of Chiropractic Examiners.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388880&dphNav_GID=1830
Connecticut State Dental Commission	Consists of nine appointed members, six must be practitioners in dentistry residing in CT who are in good standing in their profession and three public members.	The Commissioner of Public Health, with advice and assistance from the Dental Commission, may issue regulations to implement the provisions of this chapter, and to insure proper dental care and the protection of public health, considering the convenience and welfare of the patient, methods recommended by the canon of ethics of the Connecticut State Dental Association and the American Dental Association and accepted health standards as Said commission shall (1) hear and decide matters concerning suspension or revocation of licensure, (2) adjudicate complaints filed against practitioners and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388884&dphNav_GID=1830
Board of Examiners of Embalmers and Funeral Directors	Consists of five members, who are CT residents, three of whom shall be practical arterial embalmers, actively engaged in the practice of embalming at the time of their respective appointments and are licensed embalmers; and two public members.	The Board of Examiners of Embalmers and Funeral Directors shall (1) hear and decide matters concerning suspension or revocation of licensure (2) adjudicate complaints filed against practitioners licensed under this chapter and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388894&dphNav_GID=1830
State Board of Natureopathic Examiners	Consist of three members, two must be practicing natureopathic physicians in CT and one public member	Said board shall (1) hear and decide matters concerning suspension or revocation of licensure (2) adjudicate complaints against practitioners and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388906&dphNav_GID=1830
Board of Examiners for Opticians	Consists of three members appointed by the governor: Two practicing licensed opticians in good standing who reside in CT and one public member.	The Board of Examiners for Opticians shall (1) hear and decide matters concerning suspension or revocation of licensure (2) adjudicate complaints filed against practitioners licensed under this chapter and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388922&dphNav_GID=1830

Connecticut Board of Examiners in Podiatry	Consists of five members appointed by the Governor; three members must be CT residents practicing podiatrists of good standing in their profession and graduates of approved colleges or schools of chiropody or podiatry and two public members.	Approves accredited school or college of chiropody or podiatry; files with the DPH a list of the practitioners of podiatry; may take disciplinary action against a licensee.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388936&dphNav_GID=1830
Board of Examiners of Psychologists	Consist of five CT residents appointed by the Governor, three must be practicing psychologists in good professional standing and licensed and two public members.	The Board of Examiners of Psychologists shall (1) hear and decide matters concerning suspension or revocation of licensure (2) adjudicate complaints filed against practitioners licensed under this chapter and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388938&dphNav_GID=1830
Board of Examiners for Optometrists	Seven members appointed by the Governor; four practicing licensed optometrists in good professional standing who are CT residents and three public members.	Shall (1) hear and decide matters concerning suspension or revocation of licensure, (2) adjudicate complaints filed against practitioners licensed under this chapter, and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388924&dphNav_GID=1830
Board of Examiners for Physical Therapists	Consists of one physician, two physical therapists and two public members, appointed by the Governor	The board shall (1) hear and decide matters concerning revocation or suspension of licensure, (2) adjudicate complaints against practitioners and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388934&dphNav_GID=1830
State Board of Examiners for Nursing	Twelve CT residents appointed by Governor: • two members who shall be graduates of an approved school for licensed practical nursing; • five members who shall be registered nurses, three of whom shall, at the time of appointment, be connected with an institution affording opportunities for the education of nurses, and at least two of whom shall hold master's degrees in nursing from a recognized college or university and one of whom shall be at the time of appointment an instructor in an approved school for licensed practical nurses; • one member who shall be an advanced practice registered nurse • four public members	• Adopts regulations, permitting and setting standards for courses for the training of practical nurses to be offered in high schools and vocational schools for students who have not yet acquired a high school diploma. • Keeps a list of all nursing programs and all programs for training licensed practical nurses that are approved by it, with the consent of the Commissioner of Public Health, as maintaining the standard for the education of nurses and the training of licensed practical nurses as established by the commissioner. • shall (1) hear and decide matters concerning suspension or revocation of licensure, (2)adjudicate complaints filed against practitioners licensed under this chapter and impose sanctions where appropriate. • Designated as the state agency to receive and administer federal funds that may become available for nursing education. • Shall prescribe examinations for applicants for licensure as registered nurses and licensed practical nurses under the provisions of this chapter, to determine their qualifications for the practice of nursing.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388910
Connecticut Homeopathic	Consists of three homeopathic physicians	Said board shall (1) hear and decide matters concerning suspension or revocation of licensure, (2) adjudicate	http://www.ct.gov/dph/cw

Medical Examining Board.	and two public members appointed by the governor	complaints against practitioners and (3) impose sanctions where appropriate.	p/view.asp?a=3143&q=388900&dphNav_GID=1830
Connecticut Medical Examining Board.	Consists of fifteen members appointed by the governor, as follows: Five physicians practicing in CT; one physician who shall be a full-time member of the faculty of The University of Connecticut School of Medicine; one physician who shall be a full-time chief of staff in a general-care hospital in the state; one physician who shall be registered as a supervising physician for one or more physician assistants; one physician who shall be a graduate of a medical education program accredited by the American Osteopathic Association; one physician assistant ; and five public members.	Said board shall (1) hear and decide matters concerning suspension or revocation of licensure, (2) adjudicate complaints against practitioners, and (3) impose sanctions where appropriate.	http://www.ct.gov/dph/cwp/view.asp?a=3143&q=388902&dphNav_GID=1830
HealthFirst Connecticut Authority	Composed of the following members: Two appointed by the speaker of the House of Representatives, one of whom is a health care provider and one of whom represents businesses with fifty or more employees; two appointed by the president pro tempore of the Senate, one of whom has experience in community-based health care and one of whom represents businesses with fewer than fifty employees; one appointed by the majority leader of the House of Representatives who represents consumers; one appointed by the majority leader of the Senate who represents the interests of labor; one appointed by the minority leader of the House of Representatives who represents health insurance companies; one appointed by the minority leader of the Senate who represents hospitals; and two appointed by the Governor, one of whom advocates for health care quality or patient safety and one with experience in	The HealthFirst Connecticut Authority must: 1. Examine and evaluate different alternatives for providing Connecticut residents with quality, affordable, and sustainable health care, including a single payer health care system and employer-sponsored health plans; 2. Recommend ways to contain the cost and improve the quality of health care, including health information technology, disease management, and other initiatives to coordinate and improve the quality of care for people with chronic diseases; and 3. Recommend ways to finance quality, affordable health care coverage, including ways to (1) maximize federal health care subsidies and contributions from employers, employees, and individuals and (2) finance the state's share of such coverage	http://www.cga.ct.gov/ph/HealthFirst/default.asp

	information technology. The Commissioners of Public Health and Social Services or their designees and the Comptroller or Comptroller's designee shall be ex-officio, nonvoting members.		
State-Wide Primary Care Access Authority	Consists of the Commissioners of Public Health and Social Services, the Comptroller, the chairpersons of the HealthFirst Connecticut Authority established under section 30 of this act and the following members: One each appointed by the Connecticut Primary Care Association, the Connecticut State Medical Society, the Connecticut Chapter of the American Academy of Pediatrics, the Connecticut Nurses Association, the Connecticut Association of School Based Health Centers and the Weitzman Center for Innovation In Community Health and Primary Care.	The State-Wide Primary Care Access Authority must: (1) determine what constitutes primary care services; (2) inventory the state's existing primary care infrastructure, (3) by December 31, 2008, develop a universal system, which maximizes federal financial participation in Medicaid and Medicare, to provide primary care services, including prescription drugs, to state residents; and (4) by July 1, 2010, develop a plan for implementing the system.	http://www.cga.ct.gov/ph/PrimaryCare/default.asp
SustiNet Health Partnership Board of Directors	Consists of 9 members: The Comptroller; the Healthcare Advocate; one appointed by the Governor, who shall be a representative of the nursing or allied health professions; one appointed by the president pro tempore of the Senate, who shall be a primary care physician; one appointed by the speaker of the House of Representatives, who shall be a representative of organized labor; one appointed by the majority leader of the Senate, who shall have expertise in the provision of employee health benefit plans for small businesses; one appointed by the majority leader of the House of Representatives, who shall have expertise in health care economics or health care policy; one appointed by the minority leader of the Senate, who shall have expertise in health information technology; and one appointed by the	The SustiNet Health Partnership board of directors shall design and establish implementation procedures to implement the SustiNet Plan. The SustiNet Plan shall be designed to (1) improve the health of state residents; (2) improve the quality of health care and access to health care; (3) provide health insurance coverage to Connecticut residents who would otherwise be uninsured; (4) increase the range of health care insurance coverage options available to residents and employers; (5) slow the growth of per capita health care spending both in the short-term and in the long-term; and (6) implement reforms to the health care delivery system that will apply to all SustiNet Plan members, provided any such reforms to health care coverage provided to state employees, retirees and their dependents shall be subject to applicable collective bargaining agreements.	http://www.ct.gov/sustinet/lib/sustinet/legislation/ctpa_09-148.pdf

	minority leader of the House of Representatives, who shall have expertise in the actuarial sciences or insurance underwriting. The Comptroller and the Healthcare Advocate shall serve as the chairpersons of the board of directors.		
SustiNet Health Care Workforce Task Force	(1) One appointed by the speaker of the House of Representatives, representing a consumer group with expertise in health care; (2) One appointed by the president pro tempore of the Senate, who is an academic expert on the health care workforce; (3) One appointed by the majority leader of the House of Representatives, representing the business community with expertise in health care; (4) One appointed by the majority leader of the Senate, who is a health care practitioner; (5) One appointed by the minority leader of the House of Representatives, who shall be a representative of the business community with expertise in health care; (6) One appointed by the minority leader of the Senate, who shall be a primary care physician; (7) One appointed by the Governor who shall be an academic expert in health care; and (8) The Commissioners of Public Health, Social Services and Economic and Community Development, the president of The University of Connecticut, the chancellor of the Connecticut State University System, the chancellor of the Regional Community-Technical Colleges, and a representative of the SustiNet board of directors shall be ex-officio, nonvoting members of the task force.	Section of P.A. 09-148 establishes a task force to study the state's health care workforce. The task force shall develop a comprehensive plan for preventing and remedying state-wide, regional and local shortage of necessary medical personnel, including, physicians, nurses and allied health professionals.	http://www.ct.gov/sustinet/cwp/view.asp?a=3822&q=450070
CT Public Health Association	Non-profit organization	Connecticut Public Health Association works to improve the quality of the public health profession and advocating for policies and programs that promote health and prevent disease. Members represent a wide variety of disciplines and are united in the goal of protecting and promoting the public's health. Key areas for CPHA advocacy and education resources	http://cpha.infor.org/mentoring

		include Public Health Infrastructure, Racial and Ethnic Health Disparities, Health Literacy, Universal Health Care, Environmental Health, and Disease Prevention. The Mentoring Organization Registry is comprised of 23 organizations that form a coalition to work with middle and high school educators, guidance counselors and youth to promote public health concepts and career awareness.	
CT Partnership for Public Health Workforce Development	9 partners including CT DPH, Yale School of Public Health, UConn MPH program, SCSCU MPH program, CT Association of Public Health Nurses, CT Environmental Health Association, CT Association of Directors of Health, and the CT Public Health Association	The Connecticut Partnership for Public Health Workforce Development promotes and facilitates collaborative education and training programs among academic institutions, state and local public health agencies and organizations to enhance the quality of public health services, especially for underserved areas and populations in the region. The Connecticut Partnership was formed in 2000, and is one of six partnerships in the New England states and a member of the New England Alliance for Public Health Workforce Development, established in 1999 as a part of a HRSA Public Health Training Center grant to Boston University and the accredited schools of public health in New England. The regional training centers work to improve the Nation's public health system by strengthening the technical, scientific, managerial and leadership skills and abilities of the current and future public health workforce.	http://publichealth.yale.edu/ctpartnership/
Governor's Health Care Reform Advisory Board	Consist of fifteen members: a. The Comptroller, or her designee; b. the Secretary of the Office of Policy and Management, or his designee; c. a member appointed by the Governor, who shall be a representative of the nursing or allied health professions; d. a member appointed by the Governor, who represents the health insurance industry; e. a member appointed by the Governor, who represents the business community; f. a member appointed by the Governor, who represents the hospital industry; g. a member appointed by the President Pro Tempore of the Senate, who is a primary care physician; h. a member appointed by the Speaker of the House of Representatives, who is a representative of organized labor; i. A member appointed by the Majority Leader of the Senate, who shall have expertise in the provision of employee health benefit plans for small businesses; j. a member appointed by the Majority Leader of the House of Representatives, who shall have expertise in health care economics or health care policy; k. a member appointed by the Minority Leader of the Senate, who shall have	The Board shall prepare a set of proposed health care policies in response to federal health care reforms. Such policies shall emphasize cost containment, maximizing federal matching funds, best practices designed to enhance access to preventive care, and assuring health care coverage for all children entering the primary and secondary school system.	http://www.ct.gov/ohca/cwp/view.asp?a=3837&q=450846

	expertise in health information technology; l. a member appointed by the Minority Leader of the House of Representatives, who shall have expertise in the actuarial sciences or insurance underwriting; and m. the Commissioners of the Departments of Social Services and Public Health and the Office of Health Care Access, or their designees.		

Source:
Program Review and Investigations Committee, Staff Briefing: Alignment of Postsecondary Education and Employment, http://www.cga.ct.gov/2009/pridata/Studies/PDF/PS_Education_and_Employment_Briefing.PDF, October 6, 2009.
State of Connecticut Agency and Department websites, www.ct.gov.

One of the goals of health care reform is to eliminate the number of uninsured individuals. Legislation that improves access to health care services will likely result in a pent up demand for health care services as more individuals become insured. Connecticut must ramp up its efforts to train its healthcare workforce to address both current and projected needs for talent.

Current federal and state health care reform efforts are placing an emphasis on primary health care and prevention services. However, current insurance reimbursement policies are at cross-purposes with this objective by providing higher reimbursement to specialists and encouraging more services to be provided through "fee for service" reimbursement policies. A GAO report on primary care trends concluded that the nation's over reliance on specialty care services at the expense of primary care leads to a health care system that is less efficient.[16] At the same time, research shows that preventive care, care coordination for the chronically ill, and continuity of care—all hallmarks of primary care medicine—can achieve improved outcomes and cost savings. Conventional payment systems tend to undervalue primary care services relative to specialty services. A statewide survey of Connecticut physicians has identified a number of areas of growing concern. One of the ominous findings in this report is that the supply of physicians in Connecticut appears to be shrinking with widespread recruitment difficulties.[17] Long, erratic hours, the high cost of malpractice insurance and competition with the private sector for talent all contribute to healthcare workforce shortages.

[16] Government Accounting Office, Primary Care Professionals: Recent Supply Trends, Projections, and Valuation of Services. Report # GAO-08-472T, February 12, 2008, http://www.gao.gov/new.items/d08472t.pdf.
[17] Aseltine, Robert, et. al.,Connecticut Physician Workforce Survey 2008: Final Report on Physician Perceptions and Potential Impact on Access to Medical Care, 2008, http://www.csms.org/upload/files/Workforce%20Survey/2008%20CSMS%20WF%20survey%2009-16-08.pdf

Technological innovations impact the healthcare workforce by creating occupations that did not previously exist. Sixty-five percent of current preschoolers will work in jobs or careers that do not yet exist.[18] Therefore it is critical that educators move beyond basic competency in core subjects to 21st Century interdisciplinary themes including global awareness, financial, economic, business and entrepreneurial literacy, civic literacy and health literacy.[19] The days where a high school diploma or a college degree signaled the competition of formal learning are over. Individuals and institutions must embrace the concept of life long learning to be competitive in the future. For individuals this means constantly upgrading career related skills. Post secondary institutions will need to respond quickly to develop and deploy training programs to insure a properly trained future workforce.

> *"Sixty-five percent of current Preschoolers will work in jobs or careers that do not yet exist."*
>
> College Board, Toward Higher Ground-New Visions, New Voices for the 21st Century: A Report on the College Board Colloquium, January 12-14, 2009, Delray Beach, Florida.

A good first step would be to streamline the Connecticut Board of Governors' Academic Approval process that requires a nine month lead time to complete its approval process.[20] Workforce training will need to be delivered in a variety of formats to accommodate today's learner.

Human Capital Challenges

Today's education system faces many challenges. Simply put, too many individuals are not adequately prepared at each stage in the talent development pipeline. Out of every 100 Connecticut 9th graders, only 24 will earn a college degree. Connecticut must do a better job educating its students so that they will be college ready and have the skills needed to attain post-secondary educational goals.[21] Connecticut has joined "Complete College America", a nonprofit organization working to increase the number of young adults with a college degree. As a participating entity, Connecticut must pledge to make college completion a top priority and commit to: Setting state-and campus-specific degree and credential completion goals; developing and implementing aggressive state- and campus- level action plans for meeting the state's completion goals; and collecting and reporting common measures of progress toward the state's completion goals.

[18] College Board, *Toward Higher Ground-New Visions, New Voices for the 21st Century: A report on the College Board Colloquium,*January 12-14, 2009, Delray Beach, Florida.
[19] Partnership for 21st Century Learning. Framework for 21st Century Learning, 4/22/09.
[20] Connecticut Department of Higher Education, Regulations for Licensure and Accreditation of Institutions and Programs of Higher Learning, www.ctdhe.org/Regs/RegsAcad.htm.
[21] Commission for the Advancement of 21st Century Skills and Careers, QUICK FACTS: Summary of Important Data from April 28, 2009 Briefing Document, http://www.ctdhe.org/P20/pdfs/BriefingSummary042809.pdf

The Talent Pipeline

Early Childhood	K-12 Education	Post Secondary Education	Workforce Training System
A high-quality preschool education is essential to each child's future success both in school and as an adult. The percentage of kindergartners who entered kindergarten with a pre-kindergarten experience was 79 percent in 2006–07.	**CMT Test Results:** Grade 4- 2009 63.8 % of 4th graders scored at or above state goal in mathematics 60.7 % of 4th graders scored at or above state goal in reading. 64.2 %of 4th graders scored at or above state goal in writing. Children who do not read by the end of third grade are less likely to have academic success. Grade 8- 2009 64.7 % of 8th graders scored at or above state goal in mathematics. 68.5 % of 8th graders scored at or above state goal in reading. 66.5 % of 8th graders scored at or above state goal in writing. 60.9 % of 8th graders scored at or above state goal in science Many students are not prepared for the rigors of high school. **CAPT Tests:** Grade 10-2009 48.0 % of 10th graders scored at or above state goal in mathematics. 43.0 % of 10th graders scored at or above state goal in science. 47.5 % of 10th graders scored at or above state goal in reading. 55.1 % of 8th graders scored at or above state goal in writing. Students who score at or above state goal on the CAPT exam should be an indicator of students who will be prepared to succeed in college. **Drop Out Rate** Cumulative Dropout Rates (Four-Year Cohort) % The Graduating Class of 2007 was 6.2 % statewide. Youth who do not complete high school will have a difficult time finding employment or advancing beyond lower-paying jobs.	First year college students who have graduated from high school but are not ready for college-level academic work: • 80% of community college students test as needing remediation in either math or English • 50+% of CSU students test into either remedial or developmental math National studies show that these students are not likely to graduate. • At UConn, 71% graduate within six years • CSU six year graduation rate: 43% • Community colleges three year graduation rate: 10%	34.7% of Connecticut's adults have a four-year degree, up from 27.2% in 1990. Despite the rise, Connecticut's ranking fell from first to fourth behind Massachusetts, Colorado and Maryland. 11.8 % of the population 25 years of age and over lacks a high school diploma. The New England 2020 report forecasts a 3% decline in Connecticut's 25-30 year old population holding a baccalaureate degree or higher. For the first time in 50 years, we will not replace our retirees with a more educated workforce. Employers report hiring a substantial number of new entrants who are poorly prepared, requiring additional company investment to improve workforce readiness skills.

Source: Connecticut Department of Education, The Condition of Education in Connecticut, August 2008, http://www.sde.ct.gov/sde/lib/sde/pdf/publications/condition_of_ed2008.pdf., Connecticut Department of Education, 2009 CMT and CAPT results, http://www.ctreports.com/, Connecticut Department of Education, Cumulative Drop Out Rates for the Class of 1988-2007, http://www.csde.state.ct.us/public/cedar/cedar/dropout/resources/DistrictCumulativeDropoutRates-97-98to07-08.pdf Commission for the Advancement of 21st Century Skills and Careers, **QUICK FACTS:** Summary of Important Data from April 28, 2009 Briefing Document, http://www.ctdhe.org/P20/pdfs/BriefingSummary042809.pdf., Meotti, Michael, Connecticut Department of Higher Education, Collaboration across Educational Systems: the Challenge and the Opportunity, April 28, 2009. The Conference Board, The Ill-Prepared U.S. Workforce: Exploring the Challenges of Employer Provided Workforce Readiness Training, www.conference-board.org.

The cost of post secondary education including tuition and related expenses are important factors affecting access to post secondary education and career choice. The cost of post secondary education in Connecticut is among the highest in the nation. In 2006, Connecticut earned an "F" in terms of affordability of college education.[22] The University of Connecticut ranks among the top ten most expensive state universities in terms of tuition and fees on a national (9th) and regional (6th) basis while, the Connecticut State University system ranked among the top 20 most expensive state universities in terms of tuition and fees a national (13th) and regional (6th) basis. Similar results were reported for the Connecticut Community Technical College (CTC) system; the CTC system ranked among the 8th most expensive regionally and 22nd most expensive nationally in terms of tuition and fees. Families rely on student loans to cover the rising cost of tuition, books, and living expenses. Connecticut ranks 4th nationally for high average student debt at $23,469. The District of Columbia, New Hampshire, and Vermont ranked 1st, 2nd, and 3rd respectively.[23]

Prior Studies and Recommendations

Connecticut's healthcare workforce shortages have been the subject of numerous studies by various task forces, organizations, and commissions. A list of some of those studies and major recommendations are shown in the following table.

Recent Connecticut Health Care Workforce Studies

Study	Recommendations
Governor's Hospital Strategic Task Force, Findings and Recommendations, January 8, 2008, http://www.ct.gov/ohca/lib/ohca/taskforce/hospitaltaskforce/hospital_task_force_master_version_1-17-08.pdf	**Related to work force issues:** 13. Designate one state agency to coordinate all programs designed to increase the training, recruitment and retention of health care workers in conjunction with other work force initiatives such as Connecticut's Mental Health Transformation initiative and its Behavioral Health Workforce project. 14. All programs designed to enhance recruitment and retention of healthcare professionals in Connecticut should include a mechanism for monitoring and evaluation to determine program effectiveness, with an appropriate funding allocation. 15. Expand the capacity of the on-line licensure system approved during the 2007 legislative session to include all healthcare professionals by 2010 and establish a comprehensive database of licensed healthcare professionals that includes, but is not limited to, the following information about the licensee: type of license held, whether the licensee is working, position held, how long at current position, name of employer, employer's type of industry, highest level of education, number of hours providing direct patient care per week. 16. Prior to January 1, 2009, the Department of Public Health should complete a survey of all health care professionals licensed in Connecticut to initially populate the comprehensive database. 17. The State Health Plan should include a health care workforce planning component that includes analyzing projected trends in the health care workforce, identifying demographics of the health care workforce and

[22] The National Center for Public Policy and Higher Education, Measuring Up-2006 The State Report Card on Higher Education, www.highereducation.org.
[23] The Project on Student Debt, The Project on Student Debt-Student Debt and the Class of 2006, September 2007, http://projectonstudentdebt.org.

	the patient population, establishing priorities for allocation of resources and development of a strategic workforce plan that includes an evaluation by DMHAS and DPH of mental health services and access to such services as they relate to hospital EDs and the availability of inpatient, intermediate, residential, outpatient and other levels of care. 18. Expand current loan repayment and forgiveness programs for physicians in the following ways: i) Create a loan forgiveness program that links loan forgiveness to the number of years that a physician is "on- call" at a hospital; ii) Create a loan forgiveness program for physicians at the residency level. If a physician accepts a residency in a defined geographic or physician specialty shortage area, loan forgiveness will be linked to the number of years of post-residency, in-state practice in the defined shortage area. 19. Provide funding to medical schools for scholarships to physicians who are willing to practice in a defined geographic or physician specialty shortage area in the state for at least 5 years after completing their residency programs. 20. Create a pilot program, including loan forgiveness, for a community-based physician residency focusing on primary care to support FQHCs. The loan forgiveness component of such pilot program should require that the physician remain in a community-based primary care practice in Connecticut in collaboration with a FQHC for at least five years after completing the residency program. The purpose of this program is to train physicians in community-based primary care, to improve access to primary care and to alleviate pressure on hospital emergency departments. 21. Evaluate and make necessary adjustments to the Connecticut definition of a health care professional shortage area (contained in DPH regulations) to better reflect specific geographic, demographic and physician specialty shortages. 22. Expand current loan repayment and forgiveness programs for 1) nursing students and 2) advanced practice registered nurses in a primary care residency program. 23. Work with the joint standing committee having cognizance of higher education and employment advancement to ensure an adequate number of slots for nursing students in schools of nursing. 24. Establish a pilot nursing residency program to provide mentoring to first-year hospital-based nurses in order to increase nurse retention rates and to smooth their transition from school to clinical practice. 25. The University of Connecticut and the Connecticut State University System should establish Masters level programs to prepare baccalaureate nurses to serve as educators in nursing schools to address the shortage of nursing faculty. • Nurses who become educators under this program may be eligible for loan forgiveness programs if they remain members of the nursing faculty in Connecticut for at least five years. • Provide methods to increase compensation and/or the availability of nurse educators consistent with applicable state laws and collective bargaining agreements. 26. To increase the availability of health care services for persons covered by public health insurance programs or who are uninsured, we recommend the establishment of a pilot program to address the problem of recruiting and retaining physicians practicing at FQHCs. 27. Establish a working group consisting of representatives of physicians, hospitals, insurance industry, other stakeholders, state legislators and regulators to develop a comprehensive tort reform proposal for submission by January 1, 2009 to the Governor and the joint standing committees having cognizance of public health, judiciary, and insurance matters. This proposal would complement the review of professional liability insurance rates for physicians and surgeons,

	hospitals, advanced practice registered nurses and physician assistants in Connecticut to be conducted by the Insurance Commissioner pursuant to Public Act 05-275. 28. For each fiscal year from 2009 through 2013, allocate $500,000 to OHCA to provide matching grants to hospitals and FQHCs, not to exceed $50,000 per hospital or FQHC in any year, to be used to implement national "best practices" relating to recruitment and retention of staff. Such grants should be awarded on a competitive basis and should require that each hospital or FQHC awarded a grant provide matching funding equal to the amount of the state grant. 29. Review the composition and membership of the Connecticut Allied Health Workforce Policy Board to ensure that the work force needs of the entire health care field are represented. At a minimum, membership should be expanded to include physicians and representatives of organized labor. The new board should 1) assist the Office of Workforce Competitiveness (OWC) in developing and evaluating programs to increase training, recruitment and retention of physicians, nurses and other health care workers providing care in hospitals in Connecticut; 2) monitor employment satisfaction and attrition rates of all health care professionals in Connecticut; 3) provide support to DPH in its development of the hospital-based health care workforce planning component of the State Health Plan; 4) work with the State Department of Education (DOE) to develop programs at the middle school and high school levels to increase student enrollment in mathematics and science courses necessary to pursue a bachelor or post-graduate degree in health care fields; and (5) collaborate with the State DOE to develop programs aimed at middle school and high school students to encourage an understanding of and promote careers in health care.
Allied Health Workforce Policy Board, Annual Legislative Report, February 2009, http://www.cwealf.org/resources/publications/allied-health-workforce-policy-board-february-2009-annual-legislative-report	The AWHPB studies have pointed out that Connecticut's talent pipeline for health care careers is in particularly poor shape because: • Many applicants to certificate and degree programs lack fundamental skills in literacy, math, science and English and require substantial developmental education to enter a post-secondary allied health program. • High school students have only a limited understanding of the availability of and range of opportunities in allied health careers and do not connect their high school experience to their college plans. • There is a significant under-representation of minorities pursuing careers in allied health professions Recommendations include: 1: Provide Student Support Services & Academic Remediation; 2: Coordinate Statewide Allied Health Outreach Campaign;3: Improve Articulation Between Secondary, Post-Secondary and Graduate Allied Health And Nursing Programs; 4: Invest In New Faculty; 5: Expand Allied Health and Nursing Programs; 6: Improve Clinical Contracting Process; and 7: Support Employer-sponsored Training.
Allied Health Workforce Policy Board, Annual Legislative Report, 2010	The Allied Health Workforce Policy Board has identified three critical talent pipeline issues: deficient skills readiness, lack of career awareness and readiness, and low representation of minority students. Recommendations: 1. Develop a state Strategic Health Care Workforce Plan; 2. Provide Student Support Services and Academic Remediation; 3. Coordinate Statewide Allied Health Outreach Campaign; 4. Invest in New Faculty; 5. Expand Allied Health and Nursing Programs; and 5. Support Employer-sponsored training.
CT Career Ladders Advisory Committee, 2009 Legislative Report, http://www.cwealf.org/files/media/Resource/career_ladders_09.pdf	Recommends replication of past initiatives to additional sites and students. With continued Career Ladder funding, the Advisory Committee will work with state agency and community partners to support the following initiatives: 1. Most individuals who participated in Career Ladder Initiatives are already working in the health care field and need the support of their

	employer to increase their skills. It is recommended that incumbent worker training funds continue to be available through the Department of Labor and Workforce Investment Boards (WIBs) to help employers actively engage in the career advancement of their employees. This investment, which is matched by employer partners, would allow the WIBs to serve. individuals interested in career ladders in health care. 2. The Community Colleges have demonstrated the effectiveness of Learning Communities on their campuses. This model should be scaled up to provide all students, particularly those needing developmental education, with the holistic academic and support services necessary to be successful. In addition, the community college Heath Career Advisor positions have proven successful and resources should be found within college budgets to sustain these positions. 3. It is also recommended that the legislature authorize the use of state financial aid provided to the state's public and private colleges and universities for students who are pursuing noncredit certificate programs in our state's training programs. Currently, no state funding is available for training in these short-term occupational areas that support the state's health care infrastructure.
Connecticut Hospital Association, Averting Crisis: Ensuring Healthcare for Future Generations, http://www.chime.org/	Increase the number of nurses and other healthcare professionals by expanding the number of nursing and other healthcare faculty. • Raise public awareness of healthcare careers. • Enhance recruitment and support for qualified health professions Candidates through enhanced state funding for career and academic counseling, scholarship, and loan forgiveness programs. • Create career ladders and other career "growing" initiatives that build the pipeline of healthcare workers. • Increase retention and employee engagement of current caregivers. • Establish a comprehensive healthcare workforce database.
Connecticut Hospital Association, Clinical Placement Capacity Project Report, July 2007, http://www.chime.org/	1. Augment Nursing Faculty Resources By: •Promoting the development of joint appointments such that qualified nurses currently practicing on staff at hospitals/agencies serve as faculty members of schools of nursing. •Developing a recruitment and information campaign for nurses who are already qualified or interested in becoming qualified to become faculty members. •Proposing and supporting long-term initiatives to build the nursing faculty pipeline. 2. Strengthen Preceptorship in Nursing By: •Developing statewide programs to educate new staff registered nurse preceptors and to support and recognize experienced nurse preceptors. •Promoting initiatives to prepare more nurses at the baccalaureate level. 3. Balance the Clinical Placement Distribution Schedule Where Possible By: •Encouraging schools and hospital/agency partnerships to further explore scheduling alternative regarding shifts, days of the week, and semesters. 4. Establish Additional Mechanisms for the Exchange of Information Between Hospitals/Agencies and Schools By: •Considering the convenience of regional or statewide programs in which representatives from hospital/agencies and schools meet to discuss goals, needs, and opportunities related to the education of the future nursing and allied health workforce. •Creating a statewide resource such as a handbook and/or website in which hospitals/agencies describe the nature of clinical placement opportunities at their organizations and provide contact information. 5. Enhance Clinical Placement Processes By: •Identifying best practice models for: faculty orientation, student orientation, planning and coordination, and school/hospital/agency

	partnership. 6. Simplify and Streamline the Clinical Affiliation Contracting Process By: • Developing a standard, "core" affiliation agreement and creating mechanisms that enable the completion of the contracting process within a reasonable timeframe. As described above, an initiative to resolve the currently problematic clinical affiliation contracting process is under way. 7. Consider Enhancement of Simulation Resources By: Exploring the development of a simulation center and its potential benefit as a supplement to laboratory resources and to healthcare education for schools and hospitals/agencies.
Holt, Wexler, & Farnam, LLP prepared for the Business Council of Fairfield County, Healthcare Industry Cluster Study, December 2006 http://www.businessfairfield.com/webpdf/OneCoastHealthStudy.pdf	Recommendations: 1. Advocate for increased Medicaid reimbursement rates. 2. 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. 3. Explore tax incentives for the services addressing prevention and wellness (e.g. fitness centers). 4. 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. 5. Encourage a general culture of entrepreneurship in the region. 6. Work to brand Fairfield County as a locus of the health-related finance industry. 7. Support a marketing campaign for Bridgeport highlighting the availability of lab space and manufacturing labor. 8. Explore local tax abatements and secure state tax incentives for health cluster firms. 9. Promote the region as a location for medical device manufacturing and related firms. 10. Pursue opportunities to bring research operations into the region.
Holt, Wexler, & Farnam, LLP prepared for the Business Council of Fairfield County, Health Care Workforce Initiative, December 2007, http://www.businessfairfield.com/webpdf/OCOF_Workforce_Report_123107.pdf	Recommendations: 1. Create 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. 2. Implement a regional pilot of a web-based centralized clinical placement system. 3. Create a regional pilot of a scholarship for service program to produce nursing and/or allied health teaching faculty. 4. Develop a central resource for immigrants with foreign health care experience to help them gain employment in the regional health care industry. 5. Expand employer-sponsored, on-site, basic skills programs (including English as a Second Language) 6. Expand the availability of nursing and/or allied health distance learning courses. 7. Create an online student-transfer information system for nursing and allied health coursework 8. Support increased salaries for community college nursing faculty 9. Support increased salaries for community college nursing faculty 10. Develop a broad scholarship for service program.

Initiatives to Address Healthcare Workforce Shortages

A number of initiatives have been undertaken to address factors that act as a barrier to increasing the size of Connecticut's health care workforce. A summary of recent initiatives are listed in the following table.

Recent Initiatives to grow Connecticut's Healthcare Workforce

Partners	Project Summary
Charter Oak State College (COSC) in collaboration with the Connecticut League for Nursing (CLN) and the Connecticut Hospital Association (CHA)	Developed an online perioperative nursing course for nurses who want to move into this field.
Eastern Connecticut Health Network (ECHN), Manchester Memorial, and Rockville General Hospitals	Summer Internship Program. The summer interns spend two weeks of intensive orientation and then begin functioning in their student nurse role in areas such as operating rooms, cardiac units and pediatrics under the supervision of their preceptor.
Charter Oak State College (COSC)	Grant in the fall of 2008 to undertake a curriculum alignment initiative with partners from the state's comprehensive high schools, technical high schools, community colleges and other educational and technical assistance organizations.
Northwestern Allied Health Education Center (AHEC), Office for Workforce Competitiveness (OWC), the Department of Economic and Community Development (DECD), and Regional Education Service Centers (RESCs).	Next Generation Careers Project: The goal of this project was to provide professional development exposure to educators that will enhance their capacity to guide students' career preparation efforts.
Charter Oak State College in collaboration with the Connecticut League for Nursing	RN Refresher Course: This grant supports two initiatives to revise the course: 1. Charter Oak State College has been working with Danbury Hospital to pilot the revised online course that will provide a model for staff development that any hospital can use in the future and 2. Charter Oak State College worked with employers and the CT League for Nursing to improve the feasibility and efficiency of the preceptor model currently in use with students.
Charter Oak State College	Licensed Practical Nurse and Nurse Aide Curriculum Review: Charter Oak State College was given a career ladder grant to: 1) review Licensed Practical Nurses (LPN) programs offered through Connecticut's Technical High School System (CTHSS) to determine if general education college credit can be awarded for part of the curriculum and if there is a need for additional college level courses to assist their graduates in transitioning to RN degree programs. 2) Review the current Certified Nurse Aide (CNA) programs offered in the state. Currently there are approximately 165 State of Connecticut approved nurse aide programs. These programs are offered by community colleges, health centers, and training centers.
Western Connecticut State University and Eastern Connecticut State University	Collegiate Health Service Corp: This project is designed to increase enrollment, retention and success in the allied health and nursing professions by targeting students early in their educational careers by developing a Collegiate Health Service Corps (CHSC). The CHSC is an extension from the Area Health Education Center's (AHEC's) high school program Youth Health Service Corps (YHSC). These programs combine teaching students about health information and requiring students to perform community service.

Connecticut Department of Public Health with Department of Consumer Protection	Implemented an on-line licensing renewal system for physicians, nurses, and dentists. Plans to expand to other licensed professions.
CT Public Health Association	Mentoring Committee received mini-grant and held two educator trainings on public health concepts and careers.
Connecticut Community Colleges	With a grant from the Department of Labor, provided a health career advisor in each of the 5 Workforce Investment Board regions. Developed a virtual Health Career Academy. Student advising services.
University of Connecticut	Master's Entry in to Nursing-allows individuals with a bachelor's degree into Master's program to prepare for RN licensure in 11 months. Offered Doctorate program for Nursing in 2008

Source:
Connecticut Career Ladders: Healthcare, Early Child Care, and Information Technology—Piloting strategies to address workforce shortage areas 2009 Legislative Support, http://www.cwealf.org/files/media/Resource/career_ladders_09.pdf.
Allied Health Workforce Policy Board, Annual Legislative Report, February 2009, http://www.cwealf.org/files/media/Resource/ahwpb%20report%202-2009.pdf

Healthcare Workforce Data and Information

Healthcare workforce data management responsibilities are shared by numerous public and private entities at both the federal and state level. While a wealth of health data and information is collected, data is not easily shared between partner agencies or with the public potentially resulting in missed opportunities for joint data collection and cost savings.

The lack of a centralized health data system to inform decision-making is not a new issue. The need for better data and information has been raised in a number of reports dating back to the 1994 CT Program Review and Investigations Committee Health Cost Containment Study and others such as:

- Connecticut Department of Public Health, *Health Workforce Shortages A Review of Available Data and Measures for Selected Professions*, May 2001;
- Connecticut Department of Public Health, *A Study Concerning the Shortage of Nurses and Quality of Patient Care in Connecticut: Phase I and II*, 2000, 2001;
- Connecticut Department of Public Health, *Adolescent Health Strategic Plan*, May 2005;
- Connecticut Environmental Public Health Tracking Consortium*, A Plan to Implement Environmental Public Health Tracking in Connecticut*, May 2005;
- Connecticut Voices for Children, *The State of Connecticut's Youth 2003: Data, Outcomes, and Indicators*, August 2003

Students, workforce partners, and researchers seeking information on specific health care occupations will have to search multiple websites in order to obtain a complete picture of the occupation of interest. Expansion of Connecticut's on-line licensing program to other allied health care occupations should yield promising data for healthcare workforce planning.

The Connecticut Community College Virtual Health Careers Academy begins to address the issue of lack of awareness of health careers and pathways; however the Health Career Academy is listed under U.S. DOL funding subheading making it difficult to find. Also, the Health Career Academy is limited to only the community college system, and is not a stand alone student advising tool.

Articulation agreements between post secondary institutions need to be provided as part of a stand-alone student advising system. "Articulation" is defined as the intentional planning and coordination of educational programs so that a program at one level serves as the foundation for the next educational level. The goal of an articulation agreement is to help students make transitions that are smooth, seamless, and educationally sound and do not require revalidation.[24] NJ Transfer and California ASSIST are examples of web based tools that demonstrate how coursework taken at one post secondary education institution can be used to satisfy requirements at another post secondary institution.

The State of Oregon has developed a template and set of design standards for their Student Pathways Website and Career Pathway Common Roadmap Template to serve as effective collaboration and communication tools for students, employers, and educators:

- Are effective on a stand alone basis without the need for additional explanations or legends

[24] Office of Legislative Research, Maryland Articulation Agreement for health care workers, Report #2001-R-0474, May 8, 2001.

- Facilitate the development of Career Pathways statewide by community colleges and educational institutions
- Use database as foundation of roadmap and website infrastructure
- Use a content management system to assure ease and cost-effectiveness of maintenance and updating
- Focus on needs of students in making their career decisions and employers' workforce needs
- Include entry and exit points are included on the map for opportunities in both education and employment. Define entry points prerequisite sets of competencies or credentials.
- Are user-friendly; data is not more than two "clicks" away
- Use Oregon Skill Sets used as an organizing framework to assure that high school students users see the link to community college roadmaps
- Use OLMIS data as source of labor market information (so don't have to continually update labor market information)
- Include for seven common elements: occupations, wage information, labor market information, competencies/outcomes/skills, college courses, industry-recognized credential or standard (if applicable), participating employers (this seventh element is required for program approval; not required for user roadmap)
- Build on best practice from Southwestern, Lane, PCC, Clackamas roadmap design
- Be descriptive; not prescriptive. [25]

A number of healthcare occupations that are anticipated to be in demand over the next decade have been identified by the Connecticut Department of Labor. The majority of the projected "in demand" healthcare occupations will require some level of post-secondary education or training. Further, in order to fully advance an individual's career in the healthcare sector, it will be necessary for an individual to eventually acquire a college degree.

[25] Worksource Oregon, Career Pathways Roadmap Common Element and Design, http://www.worksourceoregon.org/index.php/career-pathways/156-career-pathways-roadmaps.

Healthcare Workforce
Planning Information and Websites

Responsible Entity	Type of information
Connecticut Department of Public Health	Licensing database: The "License Look Up" assists consumers in verifying a license holder. DPH posts a static list indicating the number of active licenses on its website. There is currently no searchable database features on line for workforce planning purposes. http://www.ct.gov/dph/cwp/view.asp?a=3121&q=389538&dphNav=|
American Medical Association	The Health Care Careers Directory provides a description and educational requirements for 81 healthcare occupations. http://www.ama-assn.org/ama/pub/education-careers/careers-health-care.shtml
Area Health Education Centers	HOT Jobs provides a description and educational requirements for healthcare occupations in Connecticut. http://www.healthcareersinct.com/health-career-listings.php
Bureau of Labor Statistics	Occupational Handbook 2010-2011: Description and educational requirements for healthcare occupation as well as employment projections. http://www.bls.gov/oco/
Connecticut Department of Labor	Connecticut Statewide Forecast 2006 – 2016- The Connecticut Department of Labor provides employment projections for occupations, including healthcare occupations http://www.ctdol.state.ct.us/lmi/misc/fc2016_statewide.htm#life
Connecticut Department of Labor	Training and Education Planning System (TEPS)-is a tool designed to aid the analysis and discussion of the demand and supply of talent in Connecticut's workforce. It is intended to help identify where there may be skill shortages or surpluses in the labor market, and thereby guide investments in education and training programs by program planners and administrators, as well as by individuals considering career options. http://www1.ctdol.state.ct.us/TEPS/default.aspx
Connecticut Department of Higher Education	Degree Completions Database- The Connecticut Department of Higher Education provides a database containing all of the collegiate degrees conferred in Connecticut by academic years for programs approved by the CT Board of Governors for Higher Education. By using the search engine, it is possible to produce a Degrees Conferred Report that contains the following information: Institution name, CIP number, DHE number, Program Name, Degree Type, Grand Total, Total Men, Total Women, Total Minorities, Total Non-minorities, total for page and total for the query. By checking the detail box, the report will also break down the degrees conferred by ethnic grouping. http://www.ctdhe.org/database/default.htm
Connecticut Department of Higher Education (CT DHE)	The Connecticut Department of Higher Education provides a database containing Headcount and Full-Time Equivalent (FTE) enrollments for all Connecticut Institutions of Higher Education. By using the search engine, it is possible to produce an Enrollment Report that contains the following information: Institution name, College Type, Total Enrollment for Year, and total for the query. It is possible to select Headcount enrollment or Full-Time Equivalent (FTE) enrollment or both Headcount and FTE for one year, a selection of years, or for all years in the database.
CT DHE	Current Approved Training providers- a list of approved health occupation training providers. http://www.ctdhe.org/edinfo/pdfs/HealthOccupationTrainingInCT.pdf
CT DPH	List of health care occupations that require some form of licensure from the CT DPH http://www.ct.gov/dph/lib/dph/practitioner_licensing_and_investigations/plis/statistics/2008_year_end_activelicenses.pdf Comprehensive State Health Plans and Assessments. http://www.ct.gov/dph/cwp/view.asp?a=3130&q=442436 Healthy Connecticut 2010 and 2020 Information. http://www.ct.gov/dph/cwp/view.asp?a=3130&q=458600
CT colleges, university	Articulation agreements: Must search individual college websites to determine what courses will transfer between institutions.

HEALTH CARE OCCUPATIONS IN DEMAND MINIMUM EDUCATION OR TRAINING REQUIREMENTS (SORTED by ANNUAL OPENINGS)

Occupational Title	Employment		Change		Annual
	2006	2016	Net	Percent	Openings
Occupations requiring a bachelor's degree or higher					
Rehabilitation Counselors	4,370	5,220	850	19.4%	172
Child, Family, and School Social Workers	5,200	5,700	504	9.7%	160
Mental Health/Substance Abuse Social Workers	2,640	3,280	642	24.4%	120
Social and Community Service Managers	2,780	3,340	560	20.1%	109
Medical and Health Services Managers	3,690	4,070	379	10.3%	107
Pharmacists	2,760	3,280	520	18.8%	100
Mental Health Counselors	2,010	2,600	584	29.0%	98
Physical Therapists	3,200	3,780	585	18.3%	98
Medical and Public Health Social Workers	2,220	2,680	461	20.8%	93
Medical Scientists, Except Epidemiologists	1,750	2,060	312	17.9%	85
Health Specialties Teachers, PS	2,490	2,890	403	16.2%	82
Clinical, Counseling, and School Psychologists	2,950	3,270	326	11.1%	78
Substance Abuse/Behavioral Disorder Counselors	1,210	1,640	430	35.5%	67
Chemists	1,820	1,950	136	7.5%	62
Family and General Practitioners	2,070	2,280	216	10.4%	59
Medical and Clinical Laboratory Technologists	2,150	2,390	238	11.1%	57
Biological Technicians	990	1,180	189	19.1%	54
Internists, General	1,750	1,930	186	10.6%	51
Occupations requiring post-secondary training or an associate's degree					
Registered Nurses	32,840	38,560	5,722	17.4%	1,114
Nursing Aides, Orderlies, and Attendants	24,660	27,590	2,924	11.9%	513
Licensed Practical and Licensed Vocational Nurses	8,020	9,070	1,050	13.1%	324
Fitness Trainers and Aerobics Instructors	3,970	4,620	658	16.6%	140
Dental Hygienists	3,160	3,790	625	19.8%	123
Radiologic Technologists and Technicians	2,970	3,410	437	14.7%	84
Emergency Medical Technicians and Paramedics	2,800	3,150	346	12.3%	67
Medical Records and Health Information Technicians	1,570	1,760	192	12.3%	61
Surgical Technologists	1,060	1,250	184	17.3%	50
Occupations requiring work experience or moderate to long-term on-the-job training					
Social and Human Service Assistants	8,350	9,670	1,322	15.8%	229
Medical Assistants	4,990	6,520	1,529	30.7%	215
Pharmacy Technicians	2,880	3,710	826	28.7%	171
Medical Secretaries	5,690	6,440	753	13.2%	166
Dental Assistants	3,390	4,060	671	19.8%	126
Insurance Claims and Policy Processing Clerks	6,150	5,820	-332	-5.4%	74
Occupations requiring only short-term on-the-job training					
Home Health Aides	10,590	13,280	2,694	25.4%	364
Personal and Home Care Aides	6,340	8,450	2,109	33.2%	319

Source: Connecticut Department of Labor, www.ct.gov/dph.

Health Career Ladders and Lattices

Career ladders and lattices consist of a group of related jobs that comprise a career. [26] Career ladders and lattices may include a pictorial representation of job progression in a career as well as detailed descriptions of the jobs and the experiences that facilitate movement between jobs.[27] Career ladder/lattices may be specific to an organization or may span multiple organizations.

Uses of career ladders and lattices include the following:

- attract individuals to an industry by showing potential career progression beyond entry points,
- focus workforce development efforts,
- show workers how different jobs interconnect within careers in an industry, and
- inform workers about the training, education, and developmental experiences that would enable them to accomplish their career objectives.[28]

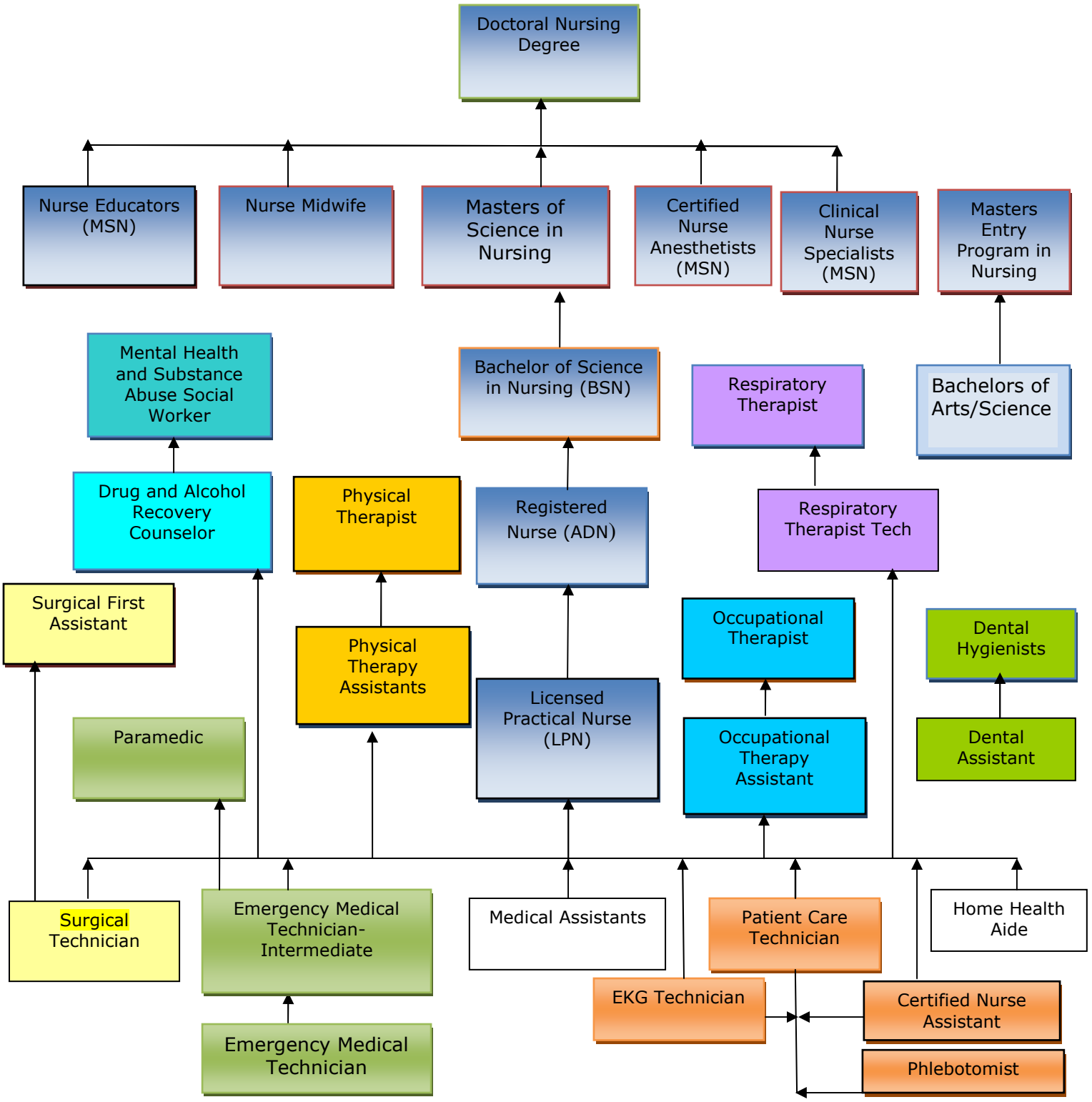
A study in California, prepared by the Shirley Ware Education Center, evaluated and mapped career pathways for 60 healthcare occupations. The goal of the project was to identify, map, and develop career pathways into and through health care specialties that could be used to aid and encourage career advancement for incumbent workers in the health care industry.[29]

Using the pathways identified in the California study as a guide, we looked at similar pathways and training opportunities for several healthcare occupations in Connecticut. By doing so, areas where there may be significant educational gaps between occupations along a potential career path could be identified.

We looked at three careers: nursing, emergency medical services and physical therapy to illustrate where progression between jobs was well defined as well as areas where there are huge hurdles to overcome. A mapping project should be undertaken of all health care occupations in Connecticut.

[26] O-Net Resource Center, Career Ladders and Lattices, http://www.onetcenter.org/ladders.html
[27] Ibid.
[28] Ibid.
[29] The Career Ladder Mapping Project, Shirley Ware Education Center, Oakland, California, December 2002.

Direct Patient Care Career Pathways



Source: The Career Ladder Mapping Project, Shirley Ware Education Center, California, December 2002.

Nursing Career Ladder

Nursing has been the focus of considerable attention by both educators and workforce professionals in Connecticut as well as nationally. Demand for entry level as well as mid-to senior-level nurses is high. There are multiple points along the nursing career pathway where individuals may enter to pursue a career in nursing.

The recent suspension of the Licensed Practical Nurse program offered at Connecticut technical high schools in response to the current and future state budget deficit has eliminated an important rung on the nursing career ladder. Students that are presently enrolled in the day and evening programs will have the opportunity to complete their programs, but all future programs are suspended.

The suspension of the LPN program has been the subject of much discussion as LPNs have been identified as a high growth occupation. Additionally, significant effort had been undertaken to modify the LPN curriculum so that LPNs would be able to receive full credit for the first year of the RN programs offered at community colleges and fill second year RN slots where the attrition rate is high.

Nursing Pathway Occupations Projections 2006-2016

Occupation	Employment		Annual Openings		Growth Rate
	2006	2016	Total	Growth	
Home Health Aides	10,588	13,282	364	269	25.4%
Nursing Aides, Orderlies, and Attendants	24,661	27,585	513	292	11.9%
Medical and Clinical Lab Technicians	1,532	1,691	39	16	10.4%
Medical and Clinical Lab Technologists	2,150	2,388	57	24	11.1%
Medical Assistant	4,987	6,516	215	153	30.7%
Licensed Practical Nurses	8,017	9,067	324	105	13.1%
Registered Nurses	32,835	38,557	1,114	572	17.4%
Nursing Instructors/Teachers, Post Secondary	451	531	16	8	17.7%

Legend: Hot Job, High growth rate or annual openings

Source: Connecticut Department of Labor, Employment Projections 2006-2016, www.ct.gov/dol.

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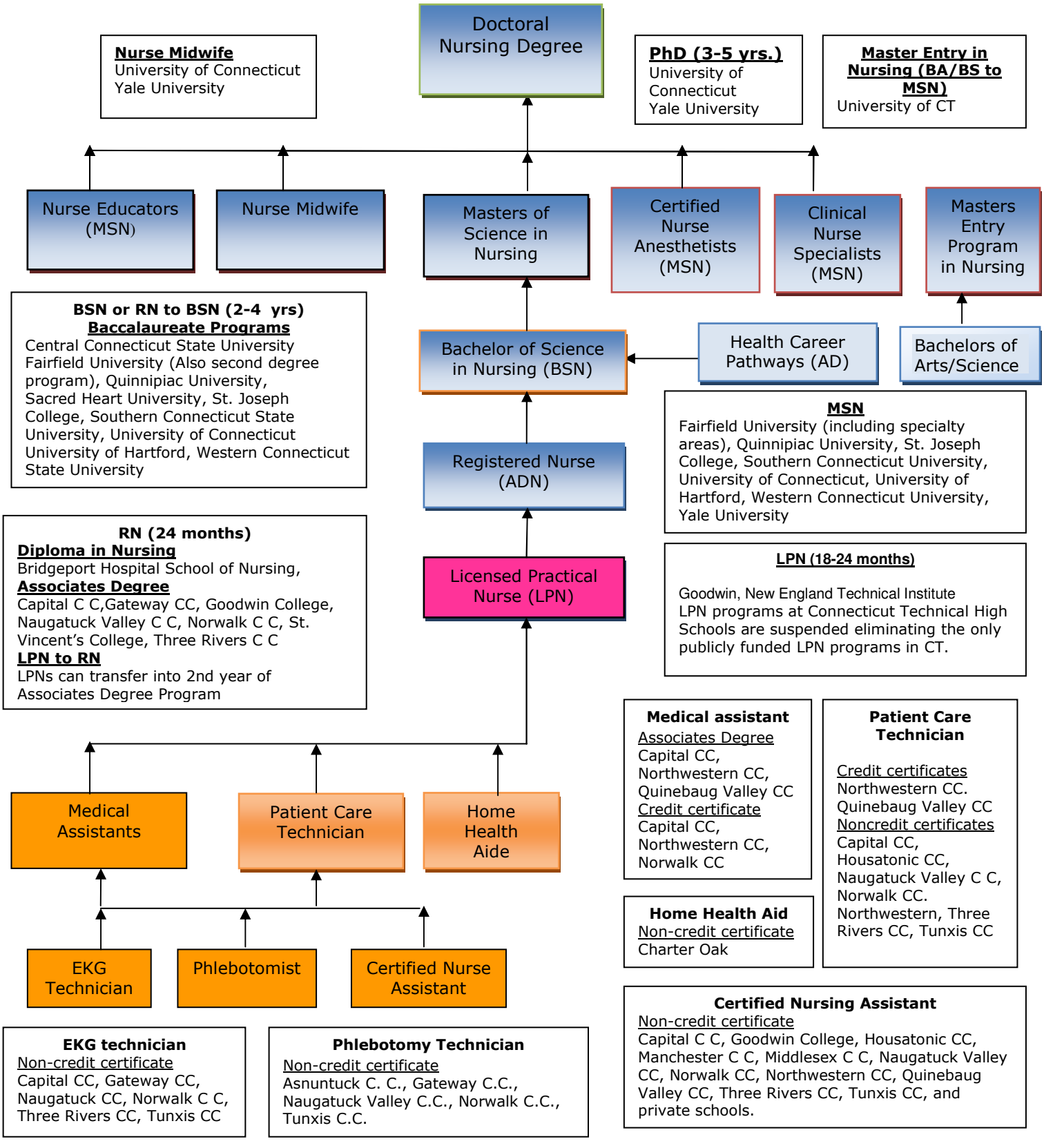
Nursing Career Ladder



Emergency Medical Services Career Ladder

Emergency medical services, while not designated as a high growth occupation or "hot job" by the Connecticut Department of Labor is an excellent example of progressive training levels *(e.g. MRT, EMT-B, EMT-I, EMT-Paramedic) with certification provided at each level. Training in Connecticut is provided on both a credit and noncredit basis.

Graduates of the Goodwin's Paramedic Program can apply credits earned towards an Associate Degree in either Health Science or Homeland Security. Students interested in pursuing a Bachelor of Science in Health Science can also apply the majority of their credits toward this degree.

In order to increase the applicant pool for registered nurses, the feasibility of a Paramedic to Associates Degree in Nursing in Connecticut should be studied. Such programs are offered in California as well as in several mid-western states.

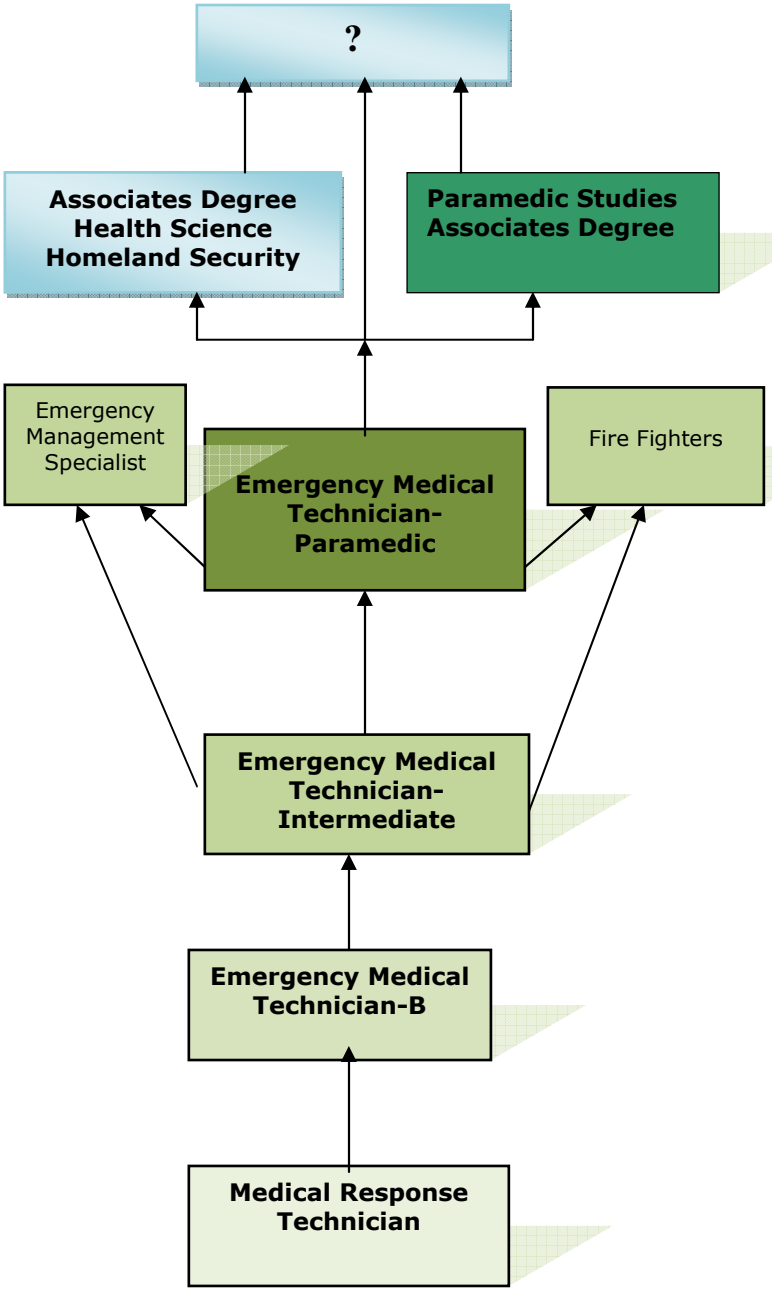
Emergency Medical Services Occupations
Projections 2006-2016

Occupation	Employment		Annual Openings		Growth Rate
	2006	2016	Total	Growth	
EMT/Paramedics	2,803	3,149	67	35	12.3%
Emergency Management Specialists	103	109	2	1	5.8%
Fire Fighters	3,967	4,314	180	35	8.7%

Legend: Hot Job, High growth rate or annual openings

Source: Connecticut Department of Labor, Employment Projections 2006-2016, www.ct.gov/dol

Emergency Medical Services Career Ladder



Associate in Science Degree in Paramedic Studies
Associates Degree: Capital C C

Emergency Management Response
Credit certificate
Capital CC

EMT-Paramedic
Credit Certificate: Capital C C, Goodwin*
Non-credit certificate: Northwestern C C, Danbury Hospital

Fire Fighters

Emergency Management Specialists

EMT-Intermediate
Non-credit certificate: Asnuntuck C C; Capital C C; Gateway C C Manchester C C; Northwestern C C; Norwalk C ; Quinebaug Valley CC; Tunxis C C,Danbury Hospital

Emergency Medical Technicians (EMT)-Basic
Non-credit certificate: Asnuntuck, Capital, Gateway, Manchester, Northwestern, Norwalk, and Quinebaug Community Colleges, Tunxis
Danbury Hospital

Medical Response Technician
Danbury Hospital

Physical Therapy Career Ladder

Demand for physical therapy related occupations is expected to increase in the future. Physical therapy aides, physical therapy assistants and physical therapists are all designated as high growth occupations. A major issue is the huge education gap between rungs on the ladder from physical therapy assistant to physical therapist.

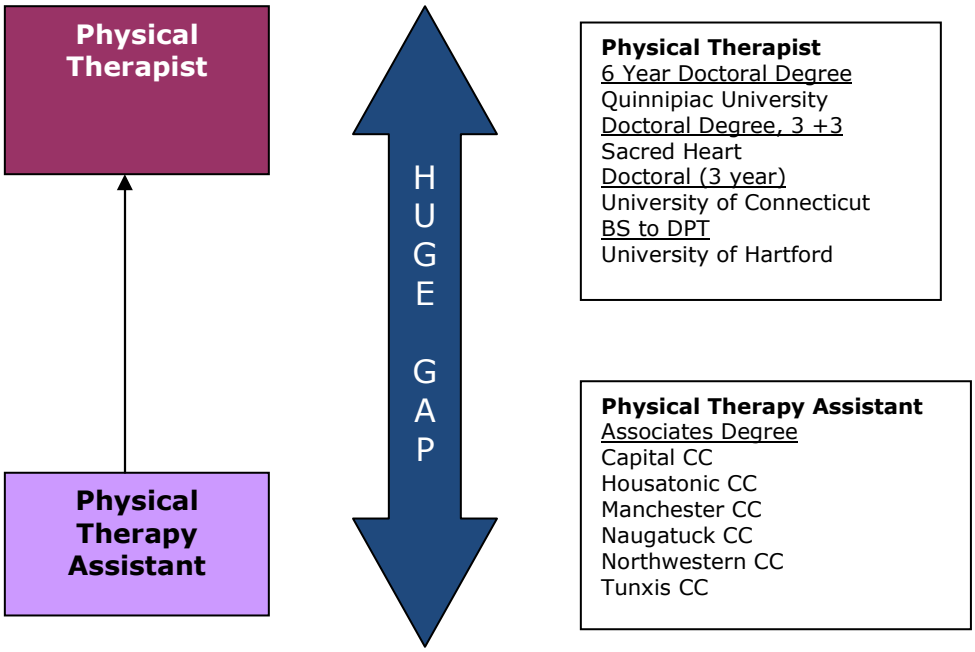
Physical Therapy Occupations Projections 2006-2016

Occupation	Employment		Annual Openings		Growth Rate
	2006	2016	Total	Growth	
Physical Therapy Aides	434	518	14	8	19.4%
Physical Therapy Assistants	665	818	24	15	23.0%
Physical Therapists	3,197	3,782	98	59	18.3%

Legend: Hot Job, High growth rate or annual openings

Source: Connecticut Department of Labor, Employment Projections 2006-2016, www.ct.gov/dol

Physical Therapy Career Ladder



Impediments to Growing Connecticut's Health Care Workforce

A number of factors have been identified that inhibit Connecticut's ability to grow its healthcare workforce. Many of these factors have been identified in previous studies.

Impediments to growing Connecticut's Healthcare Workforce

Individual Factors	Institutional Factors	Systemic Factors
Lack of awareness of health care occupations.	Faculty salaries in public nursing and allied health academic settings are not competitive with salaries offered in non-academic settings or private post-secondary institutions causing faculty shortages.	There is no coherent statewide healthcare workforce plan. • No specific annual targets have been set for each healthcare occupation. • Annual completion numbers not reported for each health care occupation.
Lack of a credential such as a GED or high school diploma.	Not enough clinical placements to meet the demand in certain areas of the state and lack of awareness of clinical slots that may be open.	Lack of career ladders (Progression gaps too large, articulation agreements between higher education institutions may not exist for certain courses of study).
Need for remedial education and English as a second language.	Data on the number of students wait listed for field of study due to lack of faculty, classroom space, clinical placements, etc. is not routinely collected or reported masking unmet needs.	No entity in the Executive Branch is accountable for meeting specific production targets.
Cost of post secondary education (e.g. tuition, books, etc.) is too high.	Cumbersome clinical placement contracting process between colleges and hospitals.	Lack of centralized health care workforce database for planning purposes.
High student indebtedness may steer students to specialty areas that will command higher salaries to pay off student loans.	Need for additional certifications and multiple certifying bodies and options; employer preferences are not known.	Cumbersome program approval process for post-secondary institutions to modify or implement new education programs.
Work-School-Life conflicts. Class schedule/training delivery format does not accommodate working adults.	Inadequate deployment of technology in academic settings (e.g. distance learning, on-line clinical placement scheduling, simulation labs, etc.).	Lack of full system wide transparency among Connecticut's healthcare workforce development entities and stakeholders resulting in missed opportunities for collaboration or sharing of research • no website/ minimal web presence for several public healthcare workforce entities that posts meeting notices/agendas, policy reports, etc. (e.g. OWC, AHWPB, Committee on Employment and Training, etc.). • no online student transfer information system supplying articulation agreements.

		Government entities that impact size of healthcare workforce subject to: • budget crisis/hiring freezes • rigid job classifications and bureaucratic processes in selection and hiring of qualified candidates • lack of visibility, defined career ladders, and in some occupations non-competitive salaries.

Recommendations

It is clear that a number of actions will be required to resolve Connecticut's health care workforce shortages. Indeed, there is no silver bullet and the solution will require that multiple entities work in concert.

As the economy improves, health care reform moves through the legislative process and Boomers begin to retire, current healthcare workforce shortages will be exacerbated. Connecticut will need to get moving quickly on a comprehensive strategic plan to insure that there is an adequate supply and distribution of culturally competent health care practitioners to meet the needs of the population.

Recommendations

Recommendation	**#1. Establish a Healthcare Workforce Data Center and website to support better workforce planning.**	**#2. Develop health care workforce plan that identifies specific annual targets and production for each in-demand health care occupation. Post annual healthcare workforce scorecard on Governor's website.**	**#3. Develop an on line student transfer information system.**
Issue or problem that proposal addresses	• Fragmented data collection efforts. • Missed opportunities for joint data collection. • Data needed for planning is not collected or is not available. • Lack of awareness of data and information/research studies undertaken in CT.	There is no coherent statewide healthcare strategic workforce plan that identifies: • Specific numerical annual production targets and results for each in demand health care occupation [recommend use of CTDOL annual openings as production target until more refined goal can be developed]; • Projected statewide post secondary institution capital needs; • Projected post secondary institution operating needs; • Faculty staffing plan; • An entity responsible for implementation/execution of the plan; and • An evaluation framework.	• On-line student-transfer information system would provide an electronic platform for academic planning, supplying articulation information to students and advisors. • Increased transparency and improved decision making. • Helps students avoid having to repeat coursework.

Exemplars	• Arizona Health care workforce center, http://www.azhha.org/workforce/arizona_healthcare_workforce_data_center.aspx • California Health Workforce Clearinghouse http://www.oshpd.ca.gov/HWDD/HWC/RS-HWCFactSheet.pdf • Virginia department of health professions, http://www.dhp.state.va.us/hwdc/default.htm • Michigan Health Care Workforce Center, http://www.michigan.gov/healthcareworkforcecenter • Oklahoma Health care workforce center, http://www.okhealthcareworkforce.com/ • South Dakota Health Care Workforce Center, http://doh.sd.gov/RuralHealth/workforce/ • Texas Department of Health Services, http://www.dshs.state.tx.us/chs/hprc/	• Developing California's Health Care Workforce For Tomorrow http://www.oshpd.ca.gov/HWDD/HWC/RP-Developing.pdf • Healthcare Workforce Planning Assessments in ten states http://www.mass.gov/Eeohhs2/docs/dph/com_health/workforce_assessment_and_planning.pdf • Complete College America, http://www.ct.gov/governorrell/cwp/view.asp?A=3872&Q=456388 • Healthcare Personnel Shortage Task Force, http://www.wtb.wa.gov/HCTFAbout.asp	• California www.assist.org • New Jersey www.njtransfer.org • Arizona www.aztransfer.com • Pennsylvania College Credit Transfer system www.pacollegetransfer.com • Arkansas Course Transfer System (ACTS) www.adhe.edu • u.select- is used throughout the U.S. to help students explore their educational options, http://pdx.transfer.org/
Lead Agency	Connecticut Department of Labor and Connecticut Department of Higher Education	Connecticut Department of Higher Education, post-secondary institutions, and Allied Health Workforce Policy Board.	Statewide Advisory Council on Transfer and *A*rticulation, State Department of Higher Education, post-secondary institutions.
Other Stakeholders	Connecticut Department of Public Health, Connecticut Department of Education, allied health non-profit organizations, post secondary educational institutions, regional workforce boards	Connecticut Department of Public Health, Connecticut Department of Labor, Regional Workforce Investment Boards, employers, and nursing and allied health non-profit organizations.	
Pros	• Improved health care workforce planning. • Facilitates identification of opportunities for joint data collection that could result in cost savings or collection of better data.	"What gets measured gets done." Improved transparency and accountability: By developing an annual health care workforce scorecard, the public and policy makers will have a better understanding of health care	• Students will be able to save time and money by understanding how coursework earned at one institution will be treated by another institution. • Memorializes articulation agreements between post secondary institutions.

	• Enhances inter-agency understanding and cooperation. • Increased awareness of health care occupations. • Healthcare workforce data provided online will ensure accessibility of the information and findings among healthcare decision makers and stakeholders.	workforce issues, entities accountable for achieving results and how well the state is meeting its goals.	• Provides an effective tool for guidance counselors and advisors that should improve their productivity.
Cons	• Some entities may be resistant to sharing data and to changes in data collection procedures. • Requires funding to implement and to sustain the effort.	Will require funding to implement and to sustain the effort.	Will require funding to implement and to sustain the effort.
Expected outcome	Improved healthcare workforce planning and data collection.	A coherent plan identifying strategies that will result in an increased supply of nursing and allied health workers.	Students will be able to make seamless transitions from one institution to another avoiding the need to repeat courses.
How do you measure success?	Website developed. • Number of hits on website • Survey of customers using website. Data and research findings become more accessible for use by researchers, planners, etc. • Number of databases and reports posted on website. Improved data collection •Number of collaborations on data collection. •Cost savings achieved.	Annual report card identifying targets/goals for each healthcare profession benchmarked to actual completion rates: • enrollment; • number of students requiring remediation, • retention rate, • completion rate, • licensing exam pass rate • number of qualified students who could not be admitted • number of faculty vacancies.	• Website developed that includes coursework for nursing and allied health program of study. • Number of participating post secondary institutions. • Improved productivity of counselors/advisors. • Number of transferring students having to repeat coursework • Customer surveys
Cost	Order of magnitude cost: minimal. Resources needed to develop an on-line portal and to identify data sets needed by stakeholders.	Order of magnitude cost: Resources would be needed to develop the on-line platform. Other states have implemented transfer systems so Connecticut would not have to break new ground	Order of magnitude cost: Resources would be needed to develop the on-line platform. Other states have implemented transfer systems so Connecticut would not have to break new ground.

Recommendation	#4. Develop career maps for each "in-demand" healthcare occupation and identify how coursework will be treated as an individual moves up the career ladder in a chosen field.	#5. Implement an on-line centralized clinical placement scheduling system.	#6. Increase awareness of Connecticut Adult Virtual High School and other methods of obtaining a high school diploma. Explore how this tool could be used for tutoring students enrolled in high school who need extra help.

Issue or problem that proposal addresses	• Many incumbent workers are not aware of the different positions in the health care industry and how they are related.
	• High turn over in entry-level positions.
	• Career ladders and lattices help people visualize and learn about the job options that are available as they progress through a career.[30]
	• Career ladder/lattices may be organization specific or may span multiple organizations.
	• Formalize nursing career maps to take advantage of extensive work done in area of nursing.
	• Develop career maps/paths for all other health care occupations.
	• Develop new map/paths; recommend:
	  • Long term care career path in direct patient care as well as in behavioral health.
	  • Map behavioral health care career paths for several speciality areas.
		• Lack of clinical placements has been cited a barrier to increasing enrollment in nursing and allied health programs of study.
		• Fragmented and time consuming clinical placement process.
		• Lack of awareness of open clinical placement slots.
		
		The goals of CCP systems are to: a) Increase the overall number of available clinical sites; b) Decrease the faculty and staff clinical hours needed to arrange clinical site time; c) Decrease the cost to schools and clinical facilities of placing students; d) Provide an early alert system when clinical sites become available; and e) Provide a forum to increase communication about issues facing education and workforce development.
			• Lack of a high school diploma is a barrier to post secondary training programs and many occupations.
			• Lack of awareness of options available to adult learners to earn a high school diploma.

Exemplars	• Connecticut Charts a Course, http://www.ctcharts-a-course.org/index.cfm?module=8&navID=nav41 •Statewide career pathways http://www.statewidepathways.org/about.html •Career paths in California- http://www.calmis.ca.gov/file/occmisc/HealthCareCareers.	Web-based centralized clinical placement (CCP) systems use online scheduling systems to match students from participating schools with clinical placement opportunities at participating clinical sites. • Alabama http://www.studentmax.org/clients.php,	The Connecticut Adult Virtual High School program, funded by the state Department of Education's Bureaus of Adult Education, has developed and implemented a web-based learning model, an online orientation course, and online credit courses for

[30] O-Net Resource Center, Career Ladders and Lattices, http://www.onetcenter.org/ladders.html

	pdf •O-Net Resource Center http://www.onetcenter.org/ladders.html •Oregon Worksource Career Pathways http://www.worksourceoregon.org/index.php/career-pathways	• California http://www.bayareanrc.org/, • Colorado http://www.coloradonursingcenter.org/placement/index.htm • Florida http://www.floridanrc.org/, • Georgia http://www.studentmax.org/clients.php, • Illinois http://www.studentmax.org/clients.php, • Massachusetts http://www.mass.edu/currentinit/documents/NursingClinicalPlacementReport.pdf, • Michigan http://www.studentmax.org/clients.php' • Minnesota http://www.studentmax.org/clients.php • Mississippi http://www.studentmax.org/clients.php • Missouri http://www.studentmax.org/clients.php • Ohio http://www.studentmax.org/clients.php • Oregon http://www.studentmax.org/clients.php • Rhode Island http://ccpr.hari.org/ • Texas http://www.studentmax.org/clients.php • Tennessee http://www.studentmax.org/clients.php	students enrolled in the Adult Credit Diploma Program in Connecticut. The program offers the central delivery of student registration; course development; staff development; and program management, and represents a statewide improvement in learning outcomes, cost efficiencies, and program equity. CT Adult virtual high school (http://www.ctvhs.org.)
Lead Agency	State Department of Higher Education, Statewide Advisory Council on Transfer and Articulation, CT Career Ladder Advisory Committee, State Department of Labor	State Department of Higher Education, post secondary institutions, organizations offering clinical sites	Connecticut Department of Education
Other Stakeholders	AHWPB, post secondary institutions, Workforce Investment Boards	Connecticut Hospital Association, allied health nonprofit organizations, State Attorney General's office regarding contracting procedures	Adult literacy Board, Local Boards of Education, Workforce Investment Boards, one stop centers.

Pros	• Effective recruitment and retention tool • Individuals will become aware of career options and hopefully reduce turnover in entry-level positions.	• Improved productivity by decreasing time spent arranging clinical placements. • Efficient placement of students and early notification of open slots. • Expansion of clinical placement sites	Awareness of another tool to help individuals attain a high school diploma.
Cons	Will require funding and time to develop pathways and to sustain the effort.	• Some organizations may fear that existing relationships will be compromised by participating in system. • Strategy was not recommended by Connecticut Hospital Association in recent study; no reason given	Will require funds to market this program.
Expected outcome	• Improved awareness of health career pathways. • Improved career mobility and reduced turnover.	Improved contracting and scheduling will reduce time spent and increase throughput.	Should improve awareness of GED options as well as increase enrollment.
How do you measure success?	• Number of career maps prepared for in-demand health care occupations. • Surveys of students completing training programs to determine career mobility. • Reduced turnover rate.	• Time spent scheduling clinical placements. • Number of clinical placement slots available • Number of clinical placements filled • Number of waitlisted students.	• Decrease the number of persons without a high school diploma. • Enrollment in CT Adult Virtual High School. • Number of students completing program. • Surveys of students
Cost	Order of magnitude cost: minimal. Some of this work is already being performed by other state agencies and/or commissions. Resources needed to pull information together in a coherent fashion.	Order of magnitude cost: minimal. Other states have implemented on line clinical placement scheduling systems so Connecticut would not have to break new ground.	Order of magnitude cost: minimal.

Recommendation	#7. Establish a pilot program involving community colleges, feeder high schools, health care employers and high school students to increase awareness of health careers, identify student academic deficiencies, and develop a student academic improvement plan that will remediate deficiencies while the student is still in high school.	#8. Internships for college students enrolled in a health career program of study.	#9. Offer Merit based scholarships to Connecticut residents.
Issue Addressed	• Lack of awareness of health careers. • Lack of skills to be successful in post secondary education or work. • An Analysis of Available Data on Remediation Activities at Connecticut's Public Institutions of Higher Education, http://www.ctdhe.org/info/oldreports/rptremediation.htm#TABLE%20ELEVEN • New England Resource Center and Institute for Higher Education Policy, Developmental Education and College Opportunity in New England, http://www.nerche.org/IHEP/Dev_Ed_Working_Paper.pdf	• Increase ties to Connecticut to stem "brain drain". • Interns gain practical experience while earning an income. Note: There is a lot going on in this area – public heatlh agencies – state and local and ecuational institutions routinely take in interns although payment is not always an option.	• Cost of tuition and other expenses act as a barrier to post secondary education. • Provides a financial incentive for students to remain in Connecticut to pursue post secondary education. • Levels playing field with other states who offer merit scholarships. • Stems "brain drain" in Connecticut.
Exemplars	• Area Health Education Centers have medical camps of a shorter duration. http://ctahec.uchc.edu/programs/pdfs/Connecticut%20AHEC%20program%20list%20updated%20October%2009.pdf • Connecticut Central AHEC Summer Medical Camp http://www.centralctahec.org/summer.html • Community Colleges offer summer remediation programs for incoming freshman Housatonic Community College, http://www.hcc.commnet.edu/academics/midColl/index.asp • Connecticut State University System, College readiness program, http://www.ct.edu/initiatives/readiness/	• Hartford Hospital Student Internship Programs http://www.harthosp.org/ResidenciesFellowships/StudentInternshipsShadowingPrograms/default.aspx • Yale-New Haven Internship in Hospital Administration http://www.ynhh.org/general/Internship.pdf	• Alaska Scholars Award http://www.alaska.edu/scholars/2010Booklet.pdf • Florida Bright Futures Scholarship http://www.floridastudentfinancialaid.org/ssfad/bf/ • Georgia HOPE Scholarship http://www.gacollege411.org/Financial_Aid_Planning/HOPE_Program/Georgia_s_HOPE_Scholarship_Program_Overview.aspx • Kentucky Educational Excellence Scholarship http://www.kheaa.com/website/kheaa/kees?main=1 • Louisiana TOPS Scholarships http://www.osfa.la.gov/schgrt6.htm • Massachusetts John and Abigail Adams Scholarship http://www.osfa.mass.edu/default.asp?page=adamsScholarship • Michigan Merit Award Scholarship

			http://www.michigan.gov/mistudentaid/0,1607,7-128-38193_39284_39285-99427--,00.html • Mississippi Eminent Scholars Program http://www.mississippi.edu/riseupms/search-results.php?article_id=228 • Missouri Higher Education Academic Scholarship Program http://www.dhe.mo.gov/brightflight.shtml • Nevada Millennium Scholarship https://nevadatreasurer.gov/MillenniumScholarship.htm • New Mexico Legislative Lottery Success Scholarship http://fin.hed.state.nm.us/content.asp?CustComKey=194781&CategoryKey=194782&pn=Page&DomName=fin.hed.state.nm.us • South Carolina LIFE Scholarship http://www.che.sc.gov/New_Web/GoingToCollege/LIFE_Hm.htm • Tennessee Education Lottery Scholarship Program http://www.tn.gov/CollegePays/mon_college/lottery_scholars.htm • West Virginia PROMISE Scholarship http://wvhepcnew.wvnet.edu/index.php?option=com_content&task=view&id=65&Itemid=0/home.aspx
Lead Agency	Area Health Education Centers, Community Colleges, feeder High Schools, Hospitals, clinics and other health care worksites	Worksites that provide the internship.	Connecticut Department of Higher Education, Office of State Treasurer
Other stakeholders	Workforce Investment Boards, Foundations, local community nonprofits	Connecticut Department of Higher education, Post Secondary Education Institutions, foundations, community nonprofits	Post Secondary Education Institutions, high school guidance departments.
Pros	• Students will learn soft skills/job readiness training, how to take vital signs, first aide/CPR/AED, intake, and a general health assessment. • Exposes students to a multitude of health care professions by shadowing health care professionals. • Students will be assessed to	• Internships expose students to academic, cultural, and social opportunities in Connecticut and strengthen ties to the area. • Provides real world learning experience. • Provides source of	Provides an incentive for Connecticut students to stay in Connecticut to pursue a degree. Reduce Connecticut brain drain. Removes cost as a barrier to post secondary education. Levels playing field with other states that provide merit scholarships. **Benefits to Individuals**

	identify academic deficiencies and to develop a remediation plan so that the student can address these issues while in high school. • Facilitates collaboration and partnerships between feeder higher schools, post-secondary education institutions, and healthcare worksites.	income for students while learning. • Provides an opportunity for students and employers to assess "fit" over a short period of time.	• higher earnings • More likely than others to enjoy employer-provided health insurance and pension benefits. • Positive return on investment. • Better health and greater opportunities for the next generation. **Societal Benefits** • Lower unemployment and poverty rates. Increased tax revenues, less likely to depend on social safety-net programs. • Lower smoking rates, more positive perceptions of personal health, and healthier lifestyles, higher levels of civic participation, including volunteer work, voting, and blood donation, as well as with greater levels of openness to the opinions of others.[31]
Cons	Funding support needed	Funding support needed	Requires funding to implement and to sustain effort.
Expected outcome	• Students better prepared to enter college. • Reduce the number of students requiring remediation. • Increase number of students pursuing health careers.	• Students better prepared and gain practical experience. • Strengthen ties to Connecticut.	• Increased number of students pursuing post secondary education in Connecticut. • Increased educational attainment levels in Connecticut.
How do you measure success?	• More interest in health careers. • Enhanced readiness for college- number of students requiring remediation. • Better ties between AHEC, high schools, community colleges, and worksites.	• Increased number of paid internships offered in Connecticut. • Number of students completing an internship. • Survey of interns regarding post graduation plans.	• Number of students pursuing education. • Number of students staying in Connecticut to pursue education. • Number of scholarships issued. • Graduation rate.
Cost	Order of magnitude cost: minimal. Framework for program has already been developed by other entities. Funding needed for student stipends, teacher/guidance counselor salaries, coordination/ outreach/evaluation.	Order of magnitude cost: minimal. Funding for be needed for student stipends, teacher salaries, coordination and outreach.	Order of magnitude cost: Substantial. However, research indicates that the return on investment is significant in terms of wages earned and income taxes paid.

[31] College Board, Education Pays: The Benefits of Higher Education for the Individual and Society, http://www.trends-collegeboard.com/education_pays/pdf/2009_Trends_Education_Pays.pdf

Recommendation	#10. Implement and fund a nurse residency program to take the novice learner from new graduate to more competent provider.	#11. Expand Distance Learning Offerings in nursing and allied health field.	#12. Create Regional Partnerships of healthcare workforce stakeholders.
Issue Addressed	• Newly licensed RNs are not fully prepared to perform common tasks in a basic practice setting.	Distance learning expands the state's capacity to produce nursing and allied health graduates without significant investments in physical infrastructure. Provides another method to deliver training to adult learners.	• Fragmented efforts to align the region's supply of and demand for health workers and address specific opportunities for action.
Exemplars	• University HealthSystem Consortium (UHC) and the American Association of Colleges of Nursing (AACN), http://www.aacn.nche.edu/Education/pdf/NurseResidencyProgramExecSumm.pdf • University of Colorado Hospital, http://www.uccc.info/find-a-job/nursing-program/Graduate-Nurse-Residency-Program/graduate-nurse-residency-program.aspx • Wisconsin Nurse Residency Program, http://wnrp.org/ • Middlesex Hospital Nurse Residency Program, http://www.midhosp.org/go/2383EE83-9096-AC88-6019AB4074925D5D/ • Nurse Practitioner Residency Program, Connecticut Community Health Centers, http://www.npresidency.com/	• Duke University School of Nursing, http://nursing.duke.edu/modules/son_academic/index.php?id=127 • Indiana State University Masters in Nursing, http://www.indstate.edu/distance/nursing-masters.html • Charter Oak College, http://www.charteroak.edu/prospective/online/	• Baltimore Alliance for Careers in Health Care, http://www.baltimorealliance.org/ • Austin Health Industry Steering Committee, http://www.wfscapitalarea.com/index.php?option=com_content&task=category&sectionid=11&id=47
Lead Agency	Hospitals, Post Secondary Institutions, Connecticut Department of Higher Education	State Department of Higher Education, Charter Oak College,	Workforce Investment Boards, Connecticut Department of Labor, Connecticut Department of Higher Education
Other Stakeholders	Allied Health Workforce Policy Board, CT Nursing Board of Examiners.	Post secondary education institutions, applicable licensing boards.	Hospitals, Post Secondary Institutions, Clinics, applicable nonprofit nursing and allied health entities, etc.
Pros	Enhance the expertise of the nursing workforce, to reduce practice errors, and to minimize the burnout caused	Provides another option for adult learners to gain access to higher education.	a) Coordinate efforts among key stakeholders (employers, the workforce development system, and

	by stress in under prepared professional nurses.[32]		education institutions), identify and prioritize employer needs and specific opportunities to meet them efficiently through joint actions and advocacy; b) spearhead projects intended to produce tangible outcomes; c) develop capacity, including pursuing funding opportunities to fill gaps in services; d) coordinate attraction, training, placement, and retention of quality health workers through marketing and awareness strategies, including an interactive website; and e) Develop, gather, and share regional health workforce data.
Cons	Will require funding to implement.	• Funding will be required to translate curriculum to an on-line format. • Approval may be required by the Connecticut Board of Governors, Connecticut Department of Higher Education delaying implementation of training. • Some post-secondary institutions may resist distance learning.	Will require funding to support operation of the group.
Expected outcome	• Raise competency of newly licensed nurses in clinical setting. • Increased retention of newly licensed nurses.	• Increase supply of health care workers.	• Enhanced working relationships between entities, improved coordination.
How do you measure success?	• Retention rate of nurses who completed residency versus those did not complete a residency. • Survey of nurses who participated in residency program.	• Enrollment numbers • Retention rate • Completion rate • Licensing exam pass rate.	• Participation in Regional partnerships. • Number of joint actions undertaken
Cost	Order of magnitude cost: Moderate. Program has already been developed. Funding needed for implementation and evaluation.	Order of magnitude cost: Moderate. Funding required to translate curriculum to on line platform. Connecticut has in-house expertise.	Order of magnitude cost: minimal to moderate. Funding needed to staff regional partnerships and to undertake initiatives.

[32] American Association of Colleges of Nursing, http://www.aacn.nche.edu/Education/pdf/NurseResidencyProgramExecSumm.pdf

Recommendation	#13. Centralized faculty resource center indicating faculty openings and information on how to become a faculty member.	#14. Central Resource for Immigrants with foreign health care experience to help them gain employment in the regional health care industry.	#15. Promote use of Simulation in nursing and allied health education by developing a statewide plan documenting its current and future use, faculty development needs, and a build out plan.
Issue Addressed	• Increase awareness of open faculty positions. • Increase awareness of the process on becoming a faculty member.	• lack of English language proficiency • Non-recognition of foreign professional credentials resulting in under-employment of documented immigrants. • need for linguistically and culturally competent workforce. • Addresses issue of racial and ethnic health disparities by providing a diverse workforce.	• No statewide plan or long term vision on use of simulation in education. • Provides a supplemental learning experience to better prepare students for clinical placements. • Exposes students to situations that they may not experience in clinical placement.
Exemplars	• Bay Area Nursing Resource Center http://www.iteachnursing.org/, • Massachusetts Nursing Center, http://www.nursema.org/become_faculty.html.	• Boston's Welcome Back Center for foreign-born nurses http://www.bhcc.mass.edu/inside/18 • San Francisco Welcome Back Center, http://welcomebackinitiative.org/sf/who/ • San Diego Welcome Back Center, http://www.welcomebackcenter.org/ • Puget Sound Welcome Back Center, http://gateway.highline.edu/index.htm • Providence Rhode Island Welcome Back Center, http://www.ride.ri.gov/adulteducation/Rhode%20Island%20Welcome%20Back%20Center.aspx • New York Welcome Back Center, http://welcomebackinitiative.org/wb/WBcenters/new-york.html • Suburban Maryland Welcome Back Center, http://welcomebackinitiative.org/wb/WBcenters/suburban-maryland.html • Workforce Investment Board (WIB)Tool Kit Case Study: The Welcome Back	• Bay Area Simulation Collaborative: http://www.bayareanrc.org/Default.aspx?alias=www.bayareanrc.org/RSC. This project involves faculty development for nursing faculty and hospital educators in the Bay Area over a two year period. • University of Connecticut, Simulation lab in Stamford, CT, http://today.uconn.edu/?p=8862 • Fairfield University Simulation Lab, http://www.fairfield.edu/son/son_lrc.html • Simulated Teaching and Learning Initiative (STLI), funded by a grant from the State of Connecticut Allied Health Education Initiative, http://www.ctleaguefornursing.org/PDF/CLN_Newsletter-March2010.pdf • Creating Simulation Communities of Practice, http://nln.allenpress.com/doi/pdf/10.1043/1536-5026-030.002.0121 • Yale University Patient Simulation, http://www.yale.edu/its/media/av/patient_simulation.html • Hartford Hospital simulation training in cardiology, http://www.harthosp.org/nursing/Education/CardiovascularEducation/default.aspx

		Initiative, http://wibtoolkit.net/resources/documents/CSwelcome.pdf	
Lead Agency	State Department of Higher Education, post secondary education institutions	Department of Higher Education, Department of Public Health, Department of Labor	State Department of Higher Education, post secondary education institutions, hospitals
Other Stakeholders	Allied Health Workforce Policy Board, nonprofit allied health organizations	Workforce Investment Boards, post secondary education institutions, licensing boards, CT Area Health Education Centers	Allied Health Workforce Policy Board, nonprofit allied health organizations
Pros	Increased awareness of available faculty positions and credentials needed to become a faculty member.	•Increase the number of health care workers by assisting foreign workers obtain needed credentials. •Increases diversity of the health care workforce.	• Provides an assessment of current and future use of simulation in higher education in nursing and allied health in Connecticut. • Identifies opportunities for collaboration.
Cons	Funding is needed to develop and maintain website.	Funding is required to develop, implement, and sustain the program.	Funding is required to develop, implement, and sustain the program.
Expected outcome	Increase awareness of faculty positions and how to become an educator in Connecticut.	Increased supply of linguistically and culturally competent workforce.	Develop of a statewide plan identifying needs.
How do you measure success?	Reduce faculty vacancy rate in nursing and allied health field.	• Harvard Kennedy School Award Commentary regarding Welcome Back Centers in California, http://www.innovations.harvard.edu/awards.html?id=117071 • Track the number of participants entering the health workforce, the number of participants passing licensing exams and obtaining licenses to practice their profession and the number of participants entering alternative health career programs, Sixth National Conference on Quality of Health Care for Culturally Diverse Populations, http://dx.confex.com/dx/8/webprogram/Paper1210.html	Development of the plan. Implementation of the plan.
Cost	Order of magnitude cost: minimal.	Order of magnitude cost: minimal. Funding needed to replicate model and to staff a center in Connecticut.	Order of magnitude cost: minimal. Funding needed to pull together list of needs from post secondary institutions and on-going coordination. Cost to build out may be substantial.

Recommendation	#16. Develop pilot apprenticeship programs in healthcare field.	#17. Create a health tutorial website for nursing and allied health care students.
Issue Addressed	• Allows student to "earn while they learn" thus expanding the pool of potential health care workers • Expands post secondary educational options. • Incumbent workers have the challenge of finding post secondary training opportunities that can be successfully incorporated into their work-life schedules. • Dislocated workers face the twin challenges of acquiring new skills and replacing lost wages.	• Resource for student who need extra help understanding a concept. • Many students entering post secondary education need remediation. • Students needing remediation are most likely to drop out.
Exemplars	• United States Department of Labor/ETA, http://www.doleta.gov/OA/pdf/Apprenticeship_Build_HealthCare_Paths.pdf • USDOL/ETA, http://www.doleta.gov/OA/pdf/HIT_HealthCare_Report.pdf • Northwest Michigan Health Care Apprenticeship and Career Pathway Credentialing, http://www.nwm.org/downloads/healthcareapprenticecareercredentialingpathway.pdf	• University of Minnesota's Web Anatomy, http://msjensen.cehd.umn.edu/WEBANATOMY/ • Health Tutorials, http://www.khake.com/page92.html • Explore use of YouTube as a tutoring tool.
Lead Agency	Connecticut Department of Labor, State Department of Higher Education, and employers.	Department of Higher Education, Department of Labor, Charter Oak College
Other Stakeholders	Workforce Investment Boards, Connecticut Allied Health Workforce Policy Board, Post secondary education institutions	Post secondary institutions
Pros	To employers • Effective recruitment tool to select and train workers to meet their industries' needs. • Provides employers with a pipeline of skilled workers with industry-specific training and hands-on experience. • Professionalizes entry-level healthcare occupations and prepares individuals for the challenge of higher level career specific skilled needs. • Some states provide tax benefits for certain occupations. • Workforce development grants might be available in some states. • Registered Apprenticeship programs are customizable to match employers' needs and highly flexible to always meet employers' changing requirements. • It is a cost effective method of training (apprentices produce while they learn) • Reduces turnover (apprentices know they have jobs with a future);	Provides 24/7/375 access to students needing remediation.

	• Healthcare professionals trained through Registered Apprenticeship gain knowledge, hands-on experience and confidence, which in turn improves the quality of patient care. • The model is helping to increase diversity, according to healthcare providers, not only for the entry-level occupations but also as a pipeline and career ladder to higher level jobs. A goal of many of the providers is to create a workforce that approximates the composition of the patients they serve. To employees • Apprentices receive income while training that is guaranteed to increase as their training progresses. • Apprentices benefit from real-world application of theory-based instruction as they work in their own job settings. The subject content and time requirements of an apprenticeship program depend on the occupation and the needs of the employer and are designed to ensure increased job competency over time. • Apprentices receive highly skilled technical training in the apprenticeable occupation. Instruction is often provided onsite by the employer, at local training centers or at local community colleges and, increasingly, through distance and computer-based learning. • Apprentices work and learn under the direction of qualified personnel, or mentors, who are experienced and proficient in their field. Mentors are not necessarily supervisors, but coaches who help apprentices learn skills they need to do their jobs successfully. • Upon completion of an apprenticeship program, apprentices receive a Certificate of Completion from DOL (or State Apprenticeship Agency recognized by DOL) that is accepted throughout the industry and the country.[33]	
Cons	Will need funding to develop health care related apprenticeships and to sustain the effort.	Will need funding to develop and maintain website.
Expected outcome	Increase health care talent pipeline	Improved graduation rate for students enrolled in nursing/allied health programs.

[33] U.S. Department of Labor, Registered Apprenticeship to Build and Fill Career Paths in Health Information Technology, http://www.doleta.gov/OA/pdf/HIT_HealthCare_Report.pdf
U.S. Department of Labor, Using Registered Apprenticeship Programs to build and fill health care paths, http://www.doleta.gov/OA/pdf/Apprenticeship_Build_HealthCare_Paths.pdf

How do you measure success?	• Enrollment • Retention rate • Number Completing apprenticeships • Licensing exam pass rate • Follow up surveys with employers and apprentices	• Student retention rate • Student graduation rate • Number of students passing licensing exams. • Customer surveys
Cost	Order of magnitude cost: Moderate to substantial. Some costs could be offset by DOL grants	Order of magnitude cost: Minimal to moderate depending on scale.

Appendix A
American Medical Association
Listing of Healthcare Occupations

The AMA's Health Care Careers Directory

The AMA's *Health Care Careers Directory* lists information about 81 careers in health care and more than 8,000 accredited educational programs in those fields, listed in the following categories:

Allied health

- Anesthesiologist assistant
- Anesthesia technologist/technician
- Athletic trainer
- Cardiovascular technologist
- Electroneurodiagnostic technologist
- Emergency medical technician-paramedic
- Exercise science (personal fitness trainer, exercise physiologist, and exercise science professional)
- Kinesiotherapist
- Medical assistant
- Medical illustrator
- Orthotist and prosthetist
- Perfusionist
- Polysomnographic technologist
- Respiratory therapist
- Surgical assistant
- Surgical technologist

Complementary and alternative medicine and therapies

- Chiropractic
- Massage therapist

Communication sciences

- Audiologist
- Speech-language pathologist

Counseling

- Counselor
- Genetic counselor
- Rehabilitation counselor

Dietetics

- Dietitian/nutritionist
- Dietetic technician

Dentistry and related fields

- Dental assistant
- Dental hygienist
- Dental laboratory technician
- Dentist

Expressive/creative arts therapies

- Art therapist
- Dance/movement therapist
- Music therapist

Health information and communication

- Cancer registrar
- Health information administrator
- Health information technician
- Medical coder
- Medical librarian
- Medical transcriptionist

Laboratory science

- Blood bank technology-specialist
- Clinical assistant
- Clinical laboratory scientist/medical technologist
- Clinical laboratory technician/medical laboratory technician
- Cytogenetic technologist
- Cytotechnologist
- Diagnostic molecular scientist
- Histotechnician
- Histotechnologist
- Pathologists' assistant
- Phlebotomist

Medical imaging

- Diagnostic medical sonographer
- Magnetic resonance technologist
- Medical dosimetrist
- Nuclear medicine technologist
- Radiation therapist
- Radiographer
- Registered radiologist assistant

Nursing

- Nurse

Pharmacy

- Pharmacist
- Pharmacy technician

Physician assisting

- Physician assistant

Physician

- Doctor of medicine and Doctor of osteopathic medicine

Podiatry

- Podiatrist

Psychology

- Psychologist

Therapy and rehabilitation

- Occupational therapist
- Occupational therapy assistant
- Physical therapist
- Physical therapist assistant
- Therapeutic recreation

Veterinary medicine

- Veterinarian
- Veterinary technologist and technician

Vision-related professions

- Ophthalmic assistant/technician/technologist
- Ophthalmic dispensing optician
- Optometrist
- Orientation and mobility specialist
- Orthoptist
- Teacher of the visually impaired
- Vision rehabilitation therapist

Source: American Medical Association, Health Careers, http://www.ama-assn.org/ama/pub/education-careers/careers-health-care/directory.shtml, downloaded December 22, 2009.

Appendix B
Articulation Agreements

Existing Transfer/Articulation Agreements

Attached for review is a compendium of the existing system, institutional and program level agreements between the CSUS, and its universities, with the Connecticut Community College (CCC) System, and its colleges.

The agreements are (in chronological order):

General System to System Agreements

Resolution and excerpt from the minutes of the January 15, 1973 minutes of the BOT for Regional Community Colleges meeting concerning transfer students between institutions in the State System of Higher Education; 6/4/1973

Resolution and text of the Joint Statement on Transfer and Articulation between CSU and the Community and Technical College System; 4/5/1991

Connecticut State University System Transfer Policy for Associate Degree Graduates of the CC-TC System, 3/29/1996

Resolution and text of the Guaranteed Admissions Agreement between CC-TC System and CSU, 4/4/1997

Articulation and Transfer Agreement between the Connecticut State University System and the Connecticut Community College System for a Pathway to Teaching Careers, 9/2004
Memorandum of Understanding between CCC and CSU, 3/29/2007

Individual University/College(s) Agreements

General Articulation Agreement between CC-TC and **Eastern** Connecticut State University, 8/11/1993

Articulation Agreement for Transfer of Selected Associate's Degree Programs as Minors for Degree Programs in the School of Arts and Sciences between **Central** Connecticut State University and CC-TC System, 8/1993

Articulation Agreement for Transfer of Associate Degree Programs in Industrial and Engineering Technology to Degree Programs in the School of Technology between **Central** Connecticut State University and the CC-TC System, 8/1993

Articulation Agreement for Human Services Programs and the B.A. major in social work between CC-TC and **Central** Connecticut State University 12/22/1993

Southern Connecticut State University Transfer Articulation for Selected Associate's Degree Programs as Minors for Degree Programs in the School of Arts and Sciences, 6/2/1994

Articulation Agreement for Transfer of Associate Degree Programs in Business at Community and Technical Colleges to Bachelor of Science degree programs in business at **Central** Connecticut State University, 6/7/1995

Articulation Agreement for the Hospitality Management Program at Manchester Community Technical College and BA in Special Studies International Hospitality and Tourism Studies at **Central** Connecticut State University, 2/10/1998

Articulation Agreement between Tunxis Community College and **Central** Connecticut State University, 4/14/2005

Articulation Agreement between **Central** Connecticut State University and Northwestern Community College regarding Northwestern's Liberal Arts and Studies: Biology Concentration and Central's B.S. in biomolecular Sciences, 8/30/2005

Naugatuck Valley Community college and **Western** Connecticut State University Transfer Compact, 6/19/2007

Norwalk Community College and **Western** Connecticut State University Transfer Compact, 6/19/2007

Southern Connecticut State University School of Nursing Articulation Agreement between Associate's Degree in Nursing/Diploma programs and the BSN Program at SCSU, unsigned and undated

Articulation Agreement between Department of Communication **Central** Connecticut State University and Interpreting for the Deaf Program, Northwestern Connecticut Community College, undated

The Transfer Compact between **Eastern** Connecticut State University and the CC's of Asnuntuck, Capital, Manchester, Quinebaug, and Three Rivers, brochure

Source: Connecticut Department of Higher Education, Report to the Joint Standing Committee of the General Assembly Having Cognizance on Matters relating to Higher Education and Workforce Enhancement on Special Act 07-07, AN ACT CONCERNING PUBLIC INSTITUTIONS OF HIGHER EDUCATION SYSTEM TRANSFER AND ARTICULATION PROCESS,

Appendix C

Apprenticeships in Healthcare

Apprenticeships in the Healthcare Setting

Since the beginning of the recession in March 2008, Connecticut has hemorrhaged over 100,000 jobs. Many of these jobs will not return as industry restructures to stay competitive. One possible approach to this issue is to develop apprenticeships in the health care industry.

Apprenticeships combine paid on the job training with classroom instruction. The United States Department of Labor has identified a number of "apprenticeable occupations in the health care industry. Given the current state of the economy, the "earn while you learn" model represents a possible solution for individuals who need to replace wages and simultaneously acquire new skills. Apprenticeship programs in the state of Connecticut are administered by the Connecticut Department of Labor, Office of Apprenticeship Training.

Apprenticeable Healthcare Occupations		
Ambulance Attendant (EMT) Biomedical Equipment Technician Certified Nursing Assistant Lattice Certified Nursing Assistant I Certified Nursing Assistant Advanced Certified Nursing Assistant Geriatric Certified Nursing Assistant Restorative Certified Nursing Assistant Dementia Certified Nursing Assistant Mentor Contour Wire Specialist, Denture Dental Assistant Dental Equipment Installation and Service Dental Laboratory Technician Electro-medical Equipment Repairer Emergency Medical Technician Embalmer Health Care Sanitary Technician Health Support Specialist	Health Unit Coordinator Home Health Aide Home Health Director Laboratory Assistant Laboratory Technician Long-term Care Nurse Manager Medical Assistant Medical Laboratory Technician Medical Secretary Medical Transcriptionist Nurse, Licensed Practical Optical Instrument Assembler Optician Optician (optical goods) Orthotics Technician Orthotist Orthodontic Technician Paramedic Pharmacist Assistant Pharmacy Support Lattice	Pharmacy Service Associate Level I Pharmacy Support Technician Level II Lead Pharmacy Technician Level Podiatric Assistant Prosthetics Technician Senior Housing Manager Surgical Technologist Veterinary and Laboratory Animal Technician **Health Information Technology Occupations** Health Unit Coordinator Medical Coder Medical Transcriptionist Information Assurance Specialist Information Management IT Project Manager IT Generalist

Source: U.S. Department of Labor, Registered Apprenticeship to Build and Fill Career Paths in Health Information Technology, http://www.doleta.gov/OA/pdf/HIT_HealthCare_Report.pdf. U.S. Department of Labor, Using Registered Apprenticeship Programs to build and fill health care paths, http://www.doleta.gov/OA/pdf/Apprenticeship_Build_HealthCare_Paths.pdf

Appendix D

Connecticut's
Public Higher Education System

Excerpts:

University of Connecticut, Program Approval Process,
http://provost.uconn.edu/policies_procedures/

Community College System, Program Approval and modification process,
http://www.commnet.edu/academics/

Connecticut State University System, Outline of Academic Program Approval Process,
www.southernct.edu/.../New_**process**_for_**program**_**approval**_092008.doc

Academic Program Approval or Modification Process

Academic Degree Program Approval Process

The Provost's office has defined the following process to be followed for the approval of a new academic program:

- Academic Department institutes program proposal [Notification of Intent of a New Academic Degree Program (WORD File)];
- Department and school/college approves program proposal;
- Proposal forwarded to either the Vice Provost for Research and Graduate Education for a graduate program or the Vice Provost for Undergraduate Education for an undergraduate program;
- Approved program forwarded to Vice Provost for Academic Administration for circulation to the Council of Deans and placement on the UConn Board of Trustees agenda;
- Academic Affairs Committee of the UConn Board of Trustees approves program;
- Board of Trustees approves program;
- Provost's Office submits BOT approved program for Department of Higher Education (DHE) approval. This includes circulation of the program summary to all institutions of higher education in Connecticut. The two step approval is as follows:
  - Evaluation of the program by DHE Advisory Committee on Accreditation (This Committee is comprised of academic officers/faculty representatives from institutions of higher education in the state)
  - Recommendations of Licensure of the program by the DHE Board of Governors Academic Affairs Committee; followed by the DHE Board of Governors approval of the program
- Two years after Licensure, program is reconsidered for final Accreditation. Programs generally come up for Accreditation two years after they were granted Licensure. Note: program cannot award degrees unless it has been Accredited.

If you have any questions about this process, please contact the Vice Provost for Research and Graduate Education (for a graduate program) or the Vice Provost for Undergraduate Education (for an undergraduate program).

Updated: April 2010

CONNECTICUT STATE UNIVERSITY SYSTEM
Outline of Academic Program Approval Process

The process of creating or modifying academic programs is generally initiated by faculty action at the department level at each CSUS university. Local governance processes and procedures are followed, involving approvals at several levels such as department, school, curriculum committee and faculty senate. The office of the Provost/Academic Vice President (AVP) approves and prepares the final proposal which should follow the guidelines of the Board of Governors of Higher education:

- Application for Licensure of a Program of Higher Learning Within an Accredited Connecticut Institution of Higher Learning http://www.ctdhe.org/Regs/PDFs/ProgramApplication.pdf
- Application for the Approval or Reapproval of Institutions and Programs of Higher Learning http://www.ctdhe.org/Regs/PDFs/InstitutionApplication.pdf

Once a proposal has been prepared by the university the following review steps take place:

1. The University Provost, Vice President for Academic Affairs submits program proposal with his/her endorsement to the Sr. Vice Chancellor for Academic and Student Affairs for review.

2. The Sr. Vice Chancellor recommends to the Chancellor after review and agreement with the university.

3. The Chancellor, after review and agreement with the Sr. Vice Chancellor, approves that the proposal may go forward and be considered at a Council of Academic Vice Presidents (COAVP) meeting.

4. The Sr. Vice Chancellor recommends that the program be presented for discussion with the COAVP, and the COAVP may make suggestions for strengthening or modifying. University representatives able to address the details of the program are present, typically the Dean of the school, the department head and/or a group of faculty generating the proposal.

5. After this review (and having taken suggestions for revision and vetting the proposal through the university and the Chancellor), the Sr. Vice Chancellor recommends it for submission to the Board of Trustees Academic Affairs (BOTAA) Committee. The BOTAA Committee discusses the proposal and may also make suggestions for modifications. If they approve the program, the committee moves a resolution recommending the program to the Board of Trustees (BOT) for approval. The committee may make further suggestions for

revision, or the proposal may be sent back to the university to address concerns and incorporate revisions, in which case the proposal must be resubmitted to the Committee. University representatives able to address the details of the program are present, typically the Dean of the school, the department head and/or a group of faculty generating the proposal.

6. The proposal is reviewed by the BOT and a resolution is passed authorizing CSUS to seek approval of the program to be offered at the university from the Board of Governors of Higher Education (BOGHE). The BOT may also make suggestions for modification which must be vetted through the university and the Academic Affairs department of the System office before proceeding.

7. Once a signed copy of the BOT resolution is available, the Academic Affairs department of the System Office generates a transmittal letter to the Provost/AVP communicating the BOT authorization. The Sr. Vice Chancellor will then begin the process to seek BOGHE approval on behalf of the University.

8. The university generating the proposal shares a summary of the program via e-mail for comments with Presidents and Chief Academic Officers at all Connecticut colleges and universities. A compilation of responses is generated and attached to the proposal. This is shared with the system office.

9. The Sr. Vice Chancellor sends a letter and all materials to the Commissioner of the Department of Higher Education (DHE) on behalf of the university (with a copy to the Provost of the university) requesting review of the program. **This step should be completed at least nine months in advance of the date for which authorization to operate is requested.**

Once the proposal is at DHE, the following steps take place:

1. The proposal is reviewed by the Commissioner of DHE through a Planning Assessment which includes conformance with institution's role and mission, need for the program, unnecessary duplication, cost effectiveness and availability of resources. If the finding is positive, the Commissioner proceeds with the review, otherwise the Commissioner offers the institution an option of withdrawing.

2. DHE does a preliminary Quality Assessment which includes an evaluation of compliance to program approval standards. DHE Planning and Quality assessments can occur concurrently.

3. The proposal undergoes comprehensive review by the Advisory Committee on Accreditation (ACA), a 12 member committee with representation from all constituent units of higher education, using the program approval standards. The proposal is approved for consideration at the full BOGHE meeting or recommendations are made for modifications and further review.

4. Upon ACA approval, the proposals are typically placed in the Commissioner's Consent Agenda. In cases that required further discussion, or on request by a BOGHE member, proposals are placed as action items for the board. Final approval is granted through BOGHE resolution.

As Recommended By:

COAVP	DATE: 9/9/08
COP	DATE: 9/10/08

COMMUNITY COLLEGES OF CONNECTICUT
ACADEMIC PROGRAM
PLANNING AND APPROVAL PROCESS

Karen Sue Grosz, Academic Officer

February 21, 1998
Revised September 14, 1999
Revised April 18, 2000

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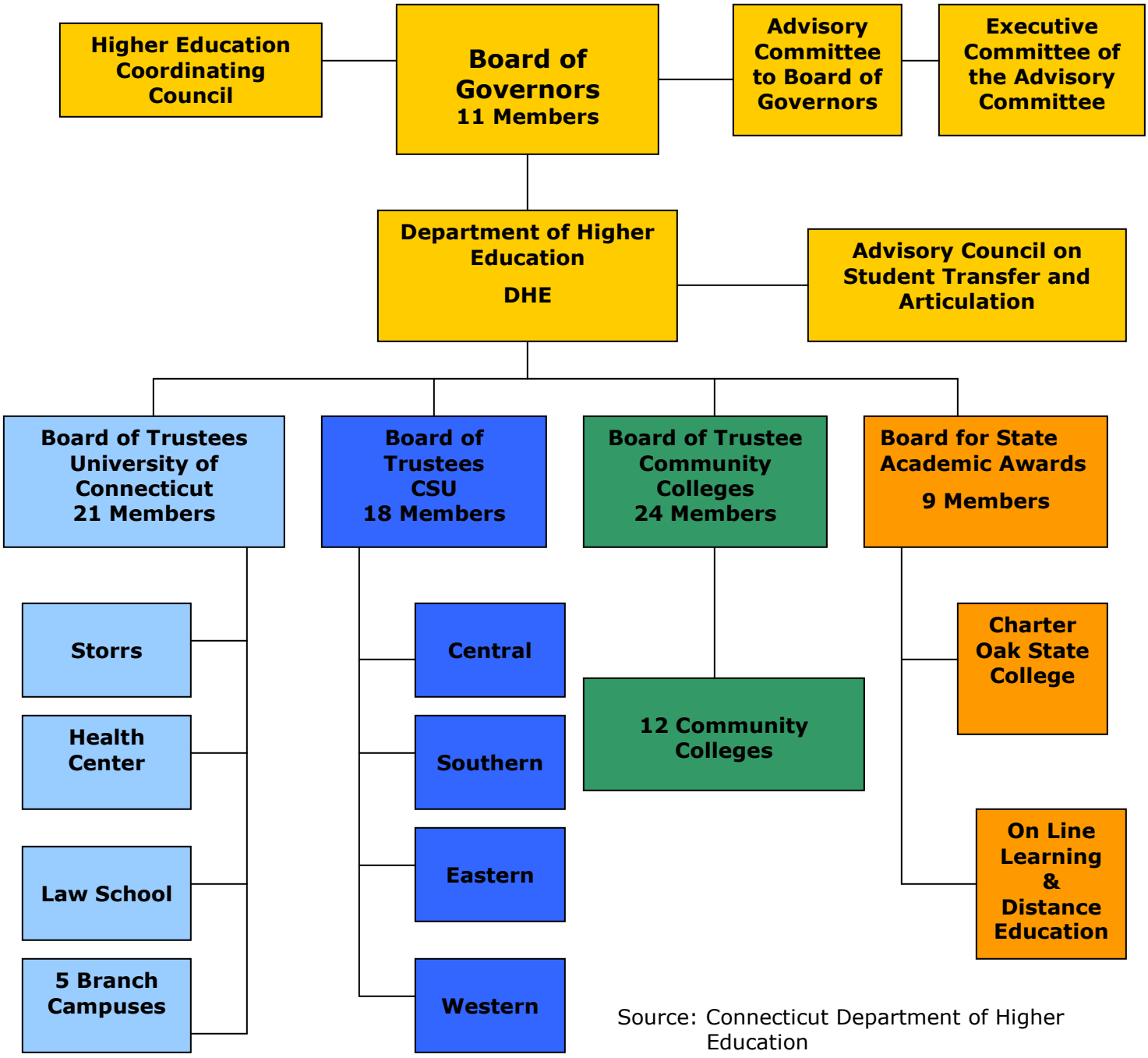
Connecticut
Public Higher Education System Structure



Source: Connecticut Department of Higher Education