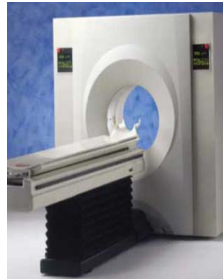


# Allied Health Workforce Policy Board

## Annual Legislative Report

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February 2009



## Acknowledgements

The Office of Workforce Competitiveness would like to thank the following members of the Connecticut Allied Health Workforce Policy Board for their support of this effort.

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Dr. Alice Pritchard, Executive Director of the Connecticut Women's Education and Legal Fund serves as a consultant to the Board and is responsible for the production of this report. For more information on the Board's activities, contact Dr. Pritchard at 860.247.6090 or [apritchard@cwealf.org](mailto:apritchard@cwealf.org).



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## Introduction

The Connecticut Allied Health Workforce Policy Board was established in Public Act 04-220 (*An Act Concerning Allied Health Workforce Needs*) to conduct research and planning activities related to the allied health workforce. PA 04-220 stated that “allied health workforce” and “allied health professionals” means *professionals or paraprofessionals who are qualified by special training, education, skills and experience in providing health care, treatment and diagnostic services, under the supervision of or in collaboration with a licensed practitioner, and includes but is not limited to, physician assistants, registered nurses, licensed practical nurses, certified nurse assistants, home health aides, radiological technologists and technicians, medical therapists and other qualified technologists and technicians.*

According to the legislation, the responsibilities of this board include:

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.

The Board began meeting in March 2005 and issued its first report to the legislature in February 2006, followed by reports in February 2007 and 2008. Throughout its tenure, the Board has met regularly to discuss current initiatives in allied health in the state, gaps in workforce data, issues related to educational programming, and recruitment and retention of the workforce, as well as researching and developing solutions to allied health workforce shortages. This report provides a review of current labor market shortage areas, an overview of public and private initiatives to address these shortages as well as recommendations for legislative consideration.

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## Data and Trends in Allied Health Workforce

### *CT Department of Labor Data*

Increases expected in jobs from 2006 - 2016

**30.7%** Medical Assistants

**28.7%** Pharmacy Technicians

**25.4%** Cardiovascular Technologists and Technicians

**25.4%** Home Health Aides

**18.1%** Physician Assistants

**17.4%** Registered Nurses

**17.3%** Surgical Technologists

**13.1%** Licensed Practical Nurses

**12.3%** Medical Records and Health Information Technicians

**11.9%** Nurses' Aides and Orderlies

Data from the Connecticut Department of Labor (CT DOL) indicates that the total estimate of employment levels for health-related occupations, including doctors and dentists, for 2006 was 147,230, while the employment level for 2016 is expected to be 170,900, which is a 16.1% increase for the ten-year period. The allied health occupation with the highest employment level is registered nurses (RNs) with 32,840 jobs in 2006, and a projected 38,560 jobs for 2016 (17.4% increase). The Connecticut Department of Labor projects that the state will need to average 1,114 new registered nurses each year through 2016 to fill expected job openings.

Licensed Practical Nurses (LPN) had 8,020 jobs in 2006 and are expected to increase by 13.1% to 9,070 in 2016. Nurse aides, orderlies and attendants had 24,660 jobs in 2006, and a projected number of 27,590 for 2016 (11.9% increase). Medical assistants with 4,990 jobs in 2006 are expected to increase to 6,520 by 2016, which is a 30.7% increase over the ten-year period. Other occupations show significant projected increases in employment during the period from 2006-2016: cardiovascular technologists and technicians 25.4%; pharmacy technicians 28.7%; physician assistants 18.1%; home health aides 25.4%; surgical technologists 17.3%; and medical records and health information technicians 12.3%.

Shortages in these occupations are not unique to Connecticut. According to the Health Resources and Service Administration (HRSA), the adequacy of nurse supply varies geographically throughout the nation, with a general consensus that at the national level currently a moderate shortage of registered nurses (RN) exists. The findings of their analysis suggests that the current RN shortage will continue to grow in severity during the next 20 years if current trends prevail and that some states face a more severe shortage than do others. The growth and aging of the population, along with the nation's continued demand for the highest quality of care, will create a surging demand for the services of RNs over the coming two decades.

## ***Faculty Staffing Plan Data***

In the February 2006 report to the legislature, the AHWPB identified the need for a comprehensive state faculty staffing plan to address workforce shortages in all allied health professions. The plan was intended to determine the faculty necessary to meet current and projected labor market training needs in all areas, across all public and private institutions and outline the current and needed resources for allied health programs to meet the workforce shortages. The AHWPB contracted with Belón Research and Practice to conduct the study. Working with an Advisory Committee, the consultant undertook both quantitative and qualitative data analysis to formulate the report findings.

Interview data from faculty having program oversight and management of over 20 discrete allied health program areas, coupled with Department of Higher Education graduation data and CT DOL ten year occupational projections, and online student registration data showed an allied health worker shortage in 15 (44%) of the 34 identified career areas *or clusters* for which demand and graduation statistics was available. Looked at from a surplus perspective, Connecticut schools produced more workers than needed for 19 areas (approx. 56%). Other career areas, such as licensed practical nurse, appear to produce an adequate supply of professionals on an 18-month rather than 12 month cycle. According to the report, the full extent of the allied health worker shortage remains unclear because of the increased need for employees within allied health, high projected levels of retiring 'baby boomers', the aging allied health workforce, and the lack of detailed workforce data.

The area of nursing presents the largest challenge, both with sustaining the number of annual graduates and producing even greater numbers for specific positions. With an annual need of over 1,100 new nurses (the highest across all allied health programs), it is imperative that the state continues, and in fact, expands its investment in the undergraduate and graduate education at public and private colleges and universities. As of 2006, Connecticut nursing schools have increased production to roughly 1,100 registered nurses annually. It is unclear however, how many of these nurses are new to the field versus advancing in their degrees. In addition, because of past shortages, the state still finds itself in a deficit position that the current graduate numbers cannot alleviate.

According to the 2007 report, Connecticut must produce sufficient numbers of allied health workers if it is to have a functional health infrastructure within its borders. Expansion of both degree and non-degree programs for shortage areas was recommended in both the short and long term. However, qualified faculty to teach these programs that possess the requisite degrees are in short supply across the allied health spectrum, compounding the problem. Additionally, the number of at-risk programs (i.e., those that are managed by only one full-time faculty) is significant.

## ***Clinical Placement Assessment Data***

In the February 2006 report to the legislature, the AHWPB also recommended that the Office for Workforce Competitiveness identify and contract with an appropriate entity to conduct an assessment of the clinical placement capacity for all allied health occupations in the state in order

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to assist in tracking and developing worksites for allied health program expansion. The AHWPB commissioned the CT Hospital Association to conduct the study.

Survey and focus group results from the study indicate that the “clinical placement problem” in Connecticut stems from exhaustion of opportunities in some clinical specialties and an unbalanced distribution of opportunities to a small extent. A key factor in utilization of clinical sites for student experiences is the match between educational philosophy and learning experiences offered by healthcare institutions.

When school needs for registered nursing students’ clinical practica were matched with clinical placement opportunities offered by hospitals, capacity was more than sufficient for critical care experiences, adequate for medical-surgical experiences, just meeting sufficiency for maternity and behavioral health experiences and insufficient for pediatric, perioperative and senior/capstone student experiences.

For licensed practical nurse students, clinical opportunities were sufficient although experiences were becoming increasingly difficult to secure in acute care hospital settings. For rehabilitation services, students’ preference was a significant driver in clinical placement with hospitals and specialty hospitals preferred but opportunities appear to be sufficient. In the radiology and diagnostic imaging professions, the study found some indication of an unbalanced distribution and limited opportunity for some specialties.

### ***New Occupational Areas Explored in 2008***

Throughout 2008, the AHWPB assembled experts from allied health fields, both practitioners and educators, to inform the Board about the professions which are experiencing shortages, but often are overshadowed by more publicized shortages. Many of these professions were identified in the Faculty Staffing Plan as areas for expansion due to ongoing workforce shortages. These presentations provided insight into the professions, workforce shortages, education and training needs, and earning potential. The areas explored were: medical laboratory, physical therapy, occupational therapy, radiology, respiratory therapy, emergency services and public health. Below is a review of these occupational areas.

#### ***Medical Laboratory: Medical Technologist/Clinical Laboratory Scientist & Medical Laboratory Technician/Clinical Laboratory Technician***

A **medical technologist** or a **clinical laboratory scientist (MT/CLS)** performs complex chemical, biological, hematological, immunologic, microscopic, and bacteriological tests. A **medical laboratory technician** or a **clinical laboratory technician (MLT/CLT)**, works under the supervision of a medical technologist or physician and performs tests on tissue, blood and body fluids to help physicians diagnose and treat diseases. Areas of specialty include chemistry, hematology, cytotechnology, immunology, virology, blood banking or microbiology.

*Education & Training:* The requirement for an entry-level position as a MT/CLS is a bachelor’s degree. Universities and hospitals offer medical technology programs. A MLT/CLT generally

has either an associate degree from a community college, or a certificate from a hospital, a vocational or technical school, or the Armed Forces.

*Programs in Connecticut:*

MT/CLS programs:

- Hartford Hospital (CLEP)
- Danbury Hospital
- University of Hartford

MLT/CLT programs:

- None

Histology programs:

- Goodwin College certificate program

Cytogenetics/Molecular programs:

- University of Connecticut

On-line programs:

- Weber State University BSMT
- George Washington University BSMT
- Numerous MLT/CLT to MT/CLS articulation programs

A major impact on this workforce is that numerous programs have closed, limiting access to necessary education and training to this career path. An example of an innovative strategy to address this has been implemented by Hartford Hospital. The hospital began a new initiative to form collaborative partnerships and become the premier provider of MT/CLS education in the New England region. Hartford Hospital/College Level Examination Program (CLEP) developed an academic affiliation with UConn for MT/CLS training. As student numbers began exceeding the hospital's capacity, a new collaborative approach was created: Clinical Laboratory Education Consortium (CLEC). Then laboratory partners, to provide the necessary additional clinical site placements were recruited. Participating CLEC sites are Waterbury Hospital, Bridgeport Hospital, and Quest Diagnostics/Yale-New Haven Hospital. Hartford Hospital/CLEP provides 7 months of "student lab" experience and didactic and practical training. The CLEC sites then provide a 19-week clinical internship with hands on training and one-on-one experience. They also reimburse Hartford Hospital/CLEP \$5000 per student to cover didactic costs.

*Job outlook:* Employment of medical laboratory technologists is expected to grow 11.1% (240 jobs) between 2006 and 2016 with 57 annual openings. Medical laboratory technicians are expected to gain 160 jobs (10.4% increase) or 39 job openings per year. The volume of laboratory tests continues to increase with both population growth and the development of new types of tests. Although hospitals are expected to continue to be the major employer of medical laboratory workers, employment is expected to grow faster in medical and diagnostic laboratories, offices of physicians, and all other ambulatory health care services.

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*Earnings:* Nationally, MT/CLT median annual earnings were \$49,700 in May 2006. The middle 50 percent earned between \$41,680 and \$58,560. The lowest 10 percent earned less than \$34,660, and the highest 10 percent earned more than \$69,260. For MLT/CLT median annual earnings were \$32,840 in May 2006. The middle 50 percent earned between \$26,430 and \$41,020. The lowest 10 percent earned less than \$21,830, and the highest 10 percent earned more than \$50,250.

***Physical Therapist (PT) & Physical Therapist Assistant (PTA)***

**Physical therapists** provide services that help restore function, improve mobility, relieve pain, and prevent or limit permanent physical disabilities of patients suffering from injuries or disease. They restore, maintain, and promote overall fitness and health. Their patients include accident victims and individuals with disabling conditions such as lower-back pain, arthritis, heart disease, fractures, head injuries, and cerebral palsy. Physical therapists practice in hospitals, clinics, and private offices that have specially equipped facilities.

**Physical therapist assistants** assist the physical therapist in implementing treatment programs, training patients in exercises and activities of daily living, conducting treatments, and reporting to the physical therapist on the patient's responses. Physical therapist assistants' work may occur in a hospital, in a school system, in an orthopedic or sports rehabilitation clinic, in the patient's home through a home health agency, or in a hospital that specializes in rehabilitating patients after serious injury or disease. The majority of the jobs are in offices of physical therapists or in hospitals. Others work primarily in nursing care facilities, offices of physicians, home health care services, and outpatient care centers.

*Education & Training:* Initially the degree requirement to work as a PT was a bachelor's degree, which later shifted to a master's degree. Many programs are also offering a doctorate (DPT). Most programs are 4 years + 3 years (essentially seven years at the same school). Connecticut private colleges are offering joint MS/DPT degrees. The educational requirement to become a PTA is an associate's degree. There is a challenge for master's prepared PTs who are educators to decide if they should go back and get their DPT, to close the educational gap between themselves and their students.

There is now an enormous gap between an AS and a DPT, and only 2.7% PTAs go on for their DPT. The PTA program is extremely rigorous and it takes most students 3 years to complete the 2-year program. Shortages of PTs in clinics, impacts the availability of clinical sites and therefore the time in which to graduate these professionals.

*Programs in Connecticut:*

DPT programs:

- Quinnipiac University, Sacred Heart University, University of Connecticut and University of Hartford

PTA programs:

- Naugatuck Valley Community College (Consortium led by Naugatuck Valley where PTA major courses are offered. Students may take general education courses at Northwestern, Capital, Housatonic, Tunxis and Manchester Community Colleges. The degree is conferred at all six colleges.)
- Norwalk Community College (Program is approved and will enroll students Fall 2009).

*Job outlook:* Employment of physical therapists in Connecticut is expected to grow 18.3 percent (580 jobs) from 2006 to 2016 with 98 annual openings. Physical therapist assistants are expected to grow by 23 percent (150 jobs) with 24 annual openings. The impact of proposed federal legislation imposing limits on reimbursement for therapy services may adversely affect the short-term job outlook for physical therapists. However, the long-run demand for physical therapists should continue to rise as new treatments and techniques expand the scope of physical therapy practices. For students graduating with their PTA, there are 100% placement rates.

*Earnings:* Median annual earnings of physical therapists were \$66,200 in May 2006. The middle 50 percent earned between \$55,030 and \$78,080. The lowest 10 percent earned less than \$46,510, and the highest 10 percent earned more than \$94,810. Generally the starting salary in Connecticut is \$44,000 for a PT. Median annual earnings of physical therapist assistants were \$41,360 in May 2006. The middle 50 percent earned between \$33,840 and \$49,010. The lowest 10 percent earned less than \$26,190, and the highest 10 percent earned more than \$57,220. Because of the advanced degree requirement to be a PT (doctorate), there is a discrepancy between what the new graduate thinks s/he should make versus the reality.

### ***Occupational Therapy: Occupational Therapists and Occupational Therapist Assistants***

**Occupational therapists** work with individuals who suffer from a mentally, physically, developmentally, or emotionally disabling condition. Occupational therapists use treatments to develop, recover, or maintain the daily living and work skills of their patients. The therapist helps clients not only to improve their basic motor functions and reasoning abilities, but also to compensate for permanent loss of function. The goal is to help clients have independent, productive, and satisfying lives. The most likely place of employment is (in order): public schools, early intervention programs, hospitals, long-term care facilities and outpatient clinics.

**Occupational therapist assistants** develop, administer and modify treatment plans based on the assessment and recommendation of registered occupational therapists. The purpose of this profession is to assist people in maximizing independence after illness, trauma, disability, or injury has altered their physical, emotional, or mental abilities.

*Education & Training:* To enter the field as an occupational therapist, a master's degree is the educational requirement. Individuals interested in being an occupational therapy assistant must pursue an associate's degree or a certificate from an accredited community college or technical school.

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### *Programs in Connecticut:*

#### OT programs:

- Sacred Heart University and Quinnipiac University – When the program was at a BS level, Connecticut used to graduate hundreds of students each year. Now that the program has shifted to a master’s degree, Connecticut has only graduated 92 students since 2003- 2004.

#### OTA programs:

- Manchester and Housatonic Community Colleges

*Job outlook:* Employment of OTs in Connecticut is expected to increase 14.9 percent (240 jobs) between 2006 and 2016 (47 annual openings) and occupational therapist assistants are expected to grow 13.5 percent (50 jobs) with 12 annual openings. The increasing elderly population will drive growth in the demand for occupational therapy services. In the short run, the impact of proposed federal legislation imposing limits on reimbursement for therapy services may adversely affect the job market for occupational therapists. However, over the long run, the demand for occupational therapists should continue to rise as a result of the increasing number of individuals with disabilities or limited function who require therapy services.

There is a significant need in early childhood (birth to 3) as well as long-term care settings, which require specialized training beyond the degree. This is a seven-day a week profession and one in ten OTs have more than one job.

*Earnings:* Nationally, the median annual earnings of occupational therapists were \$60,470 in May 2006. The middle 50 percent earned between \$50,450 and \$73,710. The lowest 10 percent earned less than \$40,840, and the highest 10 percent earned more than \$89,450.

Median annual earnings of occupational therapist assistants were \$42,060 in May 2006. The middle 50 percent earned between \$34,130 and \$50,230. The lowest 10 percent earned less than \$26,050, and the highest 10 percent earned more than \$58,270.

### ***Radiology***

Radiology is comprised of several different specialty areas: radiologic technologists and technicians, diagnostic medical sonographers, nuclear medicine technologists, and radiation therapists.

**Radiologic technologists and technicians (RT)** process and evaluate film, and educate patients on procedures. RTs work under the direction of radiologists or other physicians. RTs are employed in hospitals, clinics, physician offices, and public health departments.

*Education & Training:* Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, an associate’s degree, or a bachelor’s degree. There is now a move toward a master’s program for a radiologist assistant. Two-year associate degree programs are most prevalent.

Some 1-year certificate programs are available for experienced radiographers or individuals from other health occupations, such as medical technologists and registered nurses, who want to

change fields. A bachelor's or master's degree in one of the radiologic technologies is desirable for supervisory, administrative, or teaching positions.

*Programs in Connecticut:*

- Certificate: four hospital-based programs, University of Hartford and Quinnipiac University
- Associate Degree: Four community colleges, St. Vincent's College
- Bachelor of Science: University of Hartford, Quinnipiac University
- Master of Science: Quinnipiac University (1 of 4 programs *in the country*)

Quinnipiac University has developed a radiologist assistant program due to the shortage of radiologists. This is a stopgap between radiographer and radiologist.

*Job outlook:* Employment of radiologic technologists & therapists is expected to increase by about 14.7 percent (440 jobs) from 2006 to 2016 with 84 annual openings. Although hospitals will remain the principal employer, a number of new jobs will be found in offices of physicians and diagnostic imaging centers. As the technology changes, so do the demands on professionals in the field. For example, it takes fewer staff to operate the equipment than in the past. Additionally, more private practitioners have the equipment in their offices and have become competitive with the hospitals since they pay more and staff is not required to work weekends or holidays.

*Earnings:* Nationally, median annual earnings of radiologic technologists were \$48,170 in May 2006. The middle 50 percent earned between \$39,840 and \$57,940. The lowest 10 percent earned less than \$32,750, and the highest 10 percent earned more than \$68,920.

**Diagnostic medical sonographers** use specialized equipment to create images of structures inside the human body, which are used by physicians to make a medical diagnosis. Ultrasound technology produces high frequency sound waves (e.g. sonar) that are reflected by internal organs in varying patterns. These are then converted by a computer into a moving picture, or image, which sonographers are trained to examine for subtle signs of problems. Sonographers prepare patients physically and mentally, explain procedures, position patients, and obtain medical images used for diagnosis. Sonographers can work in clinics, hospitals, private practice physicians' offices, public health facilities, laboratories, and other medical settings performing examinations in their areas of specialization. They may perform ultrasonic examinations at the bedside or in surgery.

*Education & Training:* Programs range in length from 1 to 4 years and lead to a certificate, an associate's degree, or a bachelor's degree.

*Programs in Connecticut:*

- Certificate: St. Vincent's College, Quinnipiac University, and Yale New Haven Hospital
  - Associate's degree: Gateway Community College
  - Bachelor's degree: Gateway Community College has an articulation agreement with 4 year schools
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*Job outlook:* Employment of diagnostic medical sonographers is expected to increase in Connecticut by about 21.4 percent by 2016 (150 jobs/24 annual openings).

*Earnings:* Nationally, median annual earnings of diagnostic medical sonographers were \$57,160 in May 2006. The middle 50 percent earned between \$48,890 and \$67,670 a year. The lowest 10 percent earned less than \$40,960, and the highest 10 percent earned more than \$77,520.

The **nuclear medicine technologist** is a highly specialized health care professional who works closely with the radiologist. Nuclear medicine technology uses radiopharmaceuticals to "see" organ images (i.e., heart, lungs, liver, kidneys), body functions, and assist in the diagnosis and treatment of diseases. Skilled in patient care, nuclear medicine technologists instruct patients before medical procedures. Under the direction of a physician, they calculate dosages and administer appropriate radioactive drugs. Technologists also must document the use and disposal of radioactive materials. Nuclear medicine technologists are usually employed in hospitals, clinics, and outpatient imaging centers.

*Education & Training:* Nuclear medicine technology programs range in length from 1 to 4 years and lead to a certificate, an associate's degree, or a bachelor's degree. By 2010 there is a baccalaureate curriculum mandate.

*Programs in Connecticut:*

- Certificate: Briarwood College and Gateway Community College
- Associate Degree: Briarwood College and Gateway Community College

*Job outlook:* Employment of nuclear medicine technologists in Connecticut is expected to increase by 14 percent from 2006 to 2016. This represents a total of 50 new jobs with 10 openings per year.

*Earnings:* Nationally, median annual earnings of nuclear medicine technologists were \$62,300 in May 2006. The middle 50 percent earned between \$53,530 and \$72,410. The lowest 10 percent earned less than \$46,490, and the highest 10 percent earned more than \$82,310. Median annual earnings of nuclear medicine technologists in 2006 were \$61,230 in general medical and surgical hospitals.

**Radiation therapists** deliver the course of radiation, give support and information to the patient, and work closely with oncologists to weigh treatment options and monitor patient progress. Radiation therapists work in hospitals, clinics, research facilities, cancer centers, physicians' offices, equipment sales, technical applications and education.

*Education & Training:* Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, an associate's degree, or a bachelor's degree. Two-year associate's degree programs are most prevalent.

Some 1-year certificate programs are available for experienced radiographers or individuals from other health occupations, such as medical technologists and registered nurses, who want to change fields. A bachelor's or master's degree in one of the radiologic technologies is desirable for supervisory, administrative, or teaching positions.

*Programs in Connecticut:*

- Certificate: Hartford Hospital
- Associate Degree: Gateway Community College

*Job outlook:* Employment of radiation therapists in Connecticut is expected to increase by 33 percent (260 jobs) from 2006 to 2016 with 38 annual openings.

*Earnings:* Median annual earnings of wage-and-salary radiation therapists were \$66,170 in May 2006. The middle 50 percent earned between \$54,170 and \$78,550. The lowest 10 percent earned less than \$44,840, and the highest 10 percent earned more than \$92,110.

***Respiratory Therapy***

**Respiratory therapists** assess, treat, and care for patients with heart and lung problems. A respiratory therapist performs assessment, therapeutic, and diagnostic procedures such as oxygen and medication administration, blood gas analysis, lung function, or cardiac function tests. Respiratory therapists also provide life support to patients by providing mechanical ventilation, physiologic monitoring of blood, airway control, and CPR if necessary. Respiratory therapists may specialize in: Cardiopulmonary Diagnostics, Critical Care, Neonatal Care, Pulmonary Rehabilitation, and Sleep Laboratories.

*Education & Training:* An associate's degree is the minimum educational requirement, but a bachelor's or master's degree may be important for advancement.

*Programs in Connecticut:*

- Associate degree: Goodwin College and Manchester, Naugatuck Valley and Norwalk Community Colleges
- Bachelor degree: University of Hartford

*Job outlook:* Employment of respiratory therapists in Connecticut is expected to grow 17.8 percent (220 jobs) from 2006 to 2016 with 40 annual openings. Vacancy rates were around 8.5% from 2003 – 2007. Based on hospitals' experiences (13 hospitals were looking for 31 RTs, and it takes three and a half months to fill the position) it is expected that actual job growth will be greater than projected.

*Earnings:* Nationally, median annual earnings of respiratory therapists were \$47,420 in May 2006. The middle 50 percent earned between \$40,840 and \$56,160. The lowest 10 percent earned less than \$35,200, and the highest 10 percent earned more than \$64,190.

Median annual earnings of respiratory therapy technicians were \$39,120 in May 2006. The middle 50 percent earned between \$32,050 and \$46,930. The lowest 10 percent earned less than \$25,940, and the highest 10 percent earned more than \$56,220.

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## *Emergency Medical Services*

**Emergency medical technicians (EMTs) and paramedics** assess the nature of the patient's condition while providing patient care in the out-of-hospital setting. Following medical protocols and guidelines, they provide appropriate emergency care and transport. Emergency treatment is carried out under the medical direction of physicians.

*Education and Training:* Training is offered at progressive levels: Medical Response Technician, EMT-Basic, EMT-Intermediate, and EMT-Paramedic. Certification or licensure is required at every level.

### *Programs in Connecticut:*

- EMT – Asnuntuck, Capital, Gateway, Manchester, Naugatuck, Northwestern, Norwalk, and Quinebaug Community Colleges (all non-credit except for Naugatuck Valley)
- Paramedic Certificate: Capital Community College (credit course offered every year), Northwestern Connecticut Community College (noncredit, offered every other year) and Goodwin College
- Paramedic Associate Degree: Capital Community College
- Training and certification for EMS can also be received in a variety of other, non-academic, settings

*Job outlook:* Employment of emergency medical technicians and paramedics in Connecticut is expected to grow 12.6 percent (350 jobs) from 2006 to 2016 with 67 annual openings. Attrition rates are high for all levels of licensure and certification, and it is becoming increasingly difficult for emergency medical services to recruit and retain unpaid volunteers because of the amount of training, costs of the programs and the large time commitment these positions require. The National Rural Health Association research reports that the aging population in rural areas has increased emergency calls by 25-35%. The need for a well-trained work force to meet the rising call volume for Emergency Medical Service care is likely to increase for the foreseeable future. In 2008 there were approximately 20,000 licensed/certified individuals in EMS. However, this only reflects the number certified, not the number of EMS professionals who are practicing in the profession because some may be in medical school, are high school students, or are from other allied health professions and use EMS certification for other professional objectives.

*Earnings:* Earnings of EMTs and paramedics depend on the employment setting and geographic location of their jobs, as well as their training and experience. Nationally, median annual earnings of EMTs and paramedics were \$27,070 in May 2006. The middle 50 percent earned between \$21,290 and \$35,210. The lowest 10 percent earned less than \$17,300, and the highest 10 percent earned more than \$45,280. Median annual earnings in the industries employing the largest numbers of EMTs and paramedics in May 2006 were \$23,250 in general medical and surgical hospitals and \$20,350 in ambulance services.

## ***Public Health***

Careers in public health concern the physical, mental, social and environmental health of communities and populations at risk for disease and injury. Public health professionals focus on entire populations rather than on individual patients—and on the prevention of illness and the promotion of health, rather than treatment of existing illness. Public health is a wide-ranging field encompassing medicine, nursing and dentistry, in addition to law, education and the biological, social and behavioral sciences.

*Job outlook:* In Connecticut, there were 3,384 state and local public health employees in 2006 compared to 3,656 in 2000. Since 2002, the size of the government-employed public health has decreased in absolute numbers and relative to the population (34% below the national average). At the CT Department of Public Health there are 851 personnel. Of that number, only 3 are public health physicians, 99 are public health nurses and 87 are laboratory scientists and technicians. The average age of DPH personnel is 46.6 and 33% are eligible for retirement within 2 years. In addition to shortages in these key areas, there are insufficient personnel in epidemiology, environmental health, lab science, planning and public health leaderships. The workforce is also challenged by new expectations post-9/11 and the need for additional skills.

*Education and Training:* Formal training differs for each of the professions within the public health field ranging from associate's degree to a doctorate.

### *Programs in Connecticut:*

Southern Connecticut State University (SCSU) -- SCSU houses the state's only bachelor's degree program in public health. SCSU's 48-credit Master of Public Health program uses a cohort system that admits 32 students per year. Annually, 40% of graduate students are minorities, and their average age is 33. They are largely female and about half go to school part time rather than full time. The B.S. program has a minority representation of around 25%. They have 1,300 bachelor's degree graduates and 400 master's degree graduates with 90% staying in Connecticut after graduation. The graduate program experiences a 20% attrition rate from the initial cohort, with many of those departing students from minority backgrounds.

All students, graduate and undergraduate complete a core curriculum that exceeds the accreditation standards of the Council on Education for Public Health, including coursework in epidemiology, biostatistics, health behavior, research, public health administration, health policy, environmental health, public health education, and program planning and evaluation. Both programs include cultural competency training, and emphases on health inequities and primary prevention.

SCSU is also the only the school in the state to offer a master of public health degree with a concentration on community health education and a graduate certificate in emergency management, and they provide a environmental health training program in collaboration with the Department of Public Health for local environmental health specialists. Southern has the only program in the state that trains public health majors to work in environmental health at the local level. They also offer a minority scholars program, continuing education, an EMT training program, international field studies in health and an international online mentoring program.

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University of Connecticut's Center for Public Health and Health Policy -- The Center's role is to enable collaboration across University campuses, encourage regional and state partnerships; and integrate and consolidate University resources. Its educational mission is to improve existing graduate, undergraduate, and community education in public health and collaborate with community partners to provide the educational enhancements needed by our public health workforce. The university launched interdisciplinary doctoral programs with concentrations in the social and behavioral health sciences and occupational and environmental health in the last two years. These crosscutting programs partially fill the leadership gaps in the state's public health workforce. There are currently 10 students in the program with an additional eight students expected to enroll in September 2009. All of the ten have advanced graduate training and public health work experience. Half of the students are from under-represented minority or disabled populations. The Master of Public Health Program (MPH) received CEPH accreditation in 1984 and has prepared over 650 public health professionals for positions in State and municipal government, as well as Connecticut's health care delivery, education, pharmaceutical and health insurance sectors. Based at the UCONN Health Center, its curriculum is designed for both working professionals and recent graduates through a competency-based program of study that has considerable emphasis and opportunity for collaborative, experiential learning. Each year, the program enrolls 30-35 new students who are among its 126 current registrants. Three-quarters of students attend the program part-time with expectation to complete our 48-credit requirement within 4 years; full-time students generally require two years to earn their degree. Two-thirds of students are women, one-third identify themselves as members of under-represented race/ethnic groups, and 95% are residents of Connecticut. Students in the schools of medicine, dental medicine, social work, law, and nursing can complete a dual degree. To help direct undergraduate students into careers in public health and the allied health work force, UCONN will open a signature Living/Learning Community in Public Health and Public Service in fall 2009. All UCONN public health programs maintain active outreach initiatives that engage community partners in public health service activities that complement the education and research of students and faculty alike.

Yale School of Public Health, Master's in Public Health -- Yale offers an advanced professional degree for those with an undergraduate health care related degree. Their program is comprised largely of women (73%) and the average age of students is 25. Eighteen percent (18%) of their students are international and 15% already have advanced degrees. Their program focuses on 5 areas: biostatistics, epidemiology, health policy, environmental health and social/emotional health. Thirty percent (30%) of students continue on to their doctorate or medical school after getting their MPH. Many leave the state after graduation (students in current class come from 27 different states) and most have significant debt and need private sector salaries. Yale's *Office for Community Health* is trying to build connections to the health care industry and offer practical experience through internships and courses that build core competencies in public health. Their goal is to expand the public health workforce including the government sector. In addition they are working to increase their diversity with currently 18% of students from minority backgrounds.

## Current Initiatives to Address Workforce Shortages & Pipeline

The AHWPB plays a critical role in convening stakeholders who are conducting a variety of initiatives to address workforce shortages. These initiatives have been implemented through federal grants and resources in addition to state funding. In order to inventory those activities and promote greater coordination and collaboration, the AHWPB conducted meetings throughout the year to gather information from Workforce Investment Boards, institutions of higher education, high schools, professional associations and state agencies. This section of the report shares a sample of health care workforce initiatives taking place across the state.

### *State Agencies*

*Connecticut has a number of state agencies that work independently and collaboratively to promote health care careers. Their focus is on supporting the infrastructure necessary to provide education, training and licensure in health care professions.*

#### **Department of Higher Education**

The Department of Higher Education continues to encourage pathway programs and transfer and articulation in allied health fields in response to specific workforce needs. Those efforts include the expanded transfer and articulation model for nurse educational mobility, which provides clearer and better pathways for skill development and professional advancement for all nursing students, beginning with CNA and LPN, moving to ADN and BSN programs, and culminating in MSN and Ph.D. preparation. Also of note is the Department's work with the Connecticut Community College System, the Connecticut State University System, and the University of Connecticut in the development of transfer and articulation agreements, including guaranteed admission agreements in the health sciences and health-related fields.

The Department of Higher Education worked with public and independent colleges and universities last year on the review and approval of 31 new degree and certificate programs in the health sciences: 13 certificate programs, 7 associate degree programs, 3 baccalaureate degree programs, 6 master's degree programs, and 2 doctoral programs. That is an increase of three new programs in health-related fields over the preceding year.

The state legislature allocated \$550,000 to the Department of Higher Education in each of the two years of the biennial budget to support investments in allied health, nursing and education programs in the state's colleges and universities. These resources are being combined in a unified *Higher Education Health and Education Initiative* Request for Proposals with those allocated to the Department of Public Health and career ladder resources at the Office for Workforce Competitiveness to promote programs that alleviate workforce shortages in these areas. The CT Women's Education and Legal Fund monitored the first round of 13 grants (12 grantees) and provided technical assistance and guidance during project implementation. A second round of grants has been awarded in December 2008 to 11 public and private educational institutions in the state. Both rounds of grants were awarded for youth and adult programming

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which expands the pipeline of interested and qualified students in nursing, allied health and education.

### **Department of Public Health**

The Department of Public Health has several ongoing programs funded through state and federal allocations that support nursing and allied health professions. The funding and programs include:

- \$375,000 was allocated in each year of the two years of the biennial budget to support nursing and allied health workforces including: faculty scholarship programs, recruitment initiatives, student loans, and support for the AHWPB. These funds are included in the *Higher Education Health and Education Initiative* noted above.
- \$1.2 million was allocated to develop an online licensing program for physicians, nurses, and dentists by July 1, 2008. The project is moving forward with anticipated implementation in FY 2010.
- \$240,000 federal grant matched by \$118,747 state funds for the Connecticut State Loan Repayment Program focusing on health professional shortages that cause disparities in access to health care.

### ***High School Initiatives***

*High school programs are focused on preparing young people for careers in allied health and nursing. They provide the foundation courses in English, math and science necessary to pursue higher education as well as offering exposure to health careers.*

### **Connecticut Technical High School System**

The CT Technical High School System offers a Health Tech career track for high school students as well as an array of health care training programs for adults. Currently there are six high schools offering the Health Tech program with 316 students enrolled. The system's adult programs (dental assistant, dental laboratory, licensed practical nurse, medical assistant, nursing assistant, and surgical technology) have enrolled 490 adult students for the 2008 training cycle.

In collaboration with Charter Oak State College, the CT Technical High School System undertook a process to strengthen their LPN program to ensure student success and create clear pathways to advanced health care professions. The revised entrance requirements (English and intermediate algebra at the college level) and the enhanced curriculum is being implemented with the present class that will graduate in January 2010. Data will be consistently collected beginning with the class of 2010 to determine the impact of these changes on student attrition. These significant changes in the LPN program will allow graduates to obtain 16 college credits in general course work and after completing an on-line bridge course they will also obtain credit for the first year of the nursing courses. Data will also be collected to determine the number of graduates of the LPN program who pursue an associate's degree.

## Connecticut Comprehensive High Schools

The State Department of Education has three student readiness programs which operate in comprehensive high schools throughout the state: *Developing Tomorrow's Professionals* and *Medical Careers Education* which provide academic instruction, workplace learning, and mentoring opportunities to prepare students for health care careers and the *Project Lead the Way Biomedical Sciences Program* which will implement a national four year sequence of biomedical sciences courses to prepare students for post-secondary education and health care careers. The first two years in the sequence are being piloted by two high schools this year. The four-year curriculum is in the final stages of development and will be piloted as well.

In addition, 26 school districts have nurse aide training programs with 462 students enrolled last year. More schools are developing four-year programs of study for medical careers in therapeutic, biotech, and diagnostic areas with internships and articulations with community colleges. In addition, Hartford Public High School has established a Nursing Academy in collaboration with UConn School of Nursing.

## CT Career Choices Program

The CT Career Choices (CCC) Program, facilitated by the Office for Workforce Competitiveness (OWC), is an initiative to engage high school students in technology-related career development through a project-based, problem solving curriculum that builds upon basic science, technology, engineering and math (STEM) courses and experiential learning activities. Based on national education standards, this curriculum is intended to provide strong foundational and technical skills to students interested in allied health careers.

An initial effort to include biomedical sciences in CCC was undertaken because of the concern about persistent workforce shortages in healthcare professions – particularly nursing and allied health – and the state's focus on its pharmaceutical and biotechnology-related industries, which are one of a handful of targeted industry clusters for Connecticut economic development. Three courses have been piloted and are being used as part of the CCC Biosciences curriculum. The Foundations of Health Science and Technology course is being piloted in two high schools this year.

## Colleges and Universities

*Institutions of higher education are emphasizing improvements in the curriculum and delivery of allied health and nursing programs. They are working to promote student success through supports, career education and financial aid and scholarships.*

## Community College System

The Connecticut Community College System received two USDOL Community-Based Job Training grants featuring healthcare. The first three-year grant: "The Career Pathways Initiative in Nursing and Allied Health" was initially funded from November 2005 through October 30, 2008, and has received a no-cost extension through December 31, 2009. The second three-year

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grant: "The Bridges to Health Careers Initiative" is funded from January 2007 through December 31, 2009.

Both projects focus on targeted advising for health careers and include a joint initiative with the Workforce Investment Boards (WIBs) to provide a dedicated Health Career Advisor in each region. In addition to the Health Career Advisor positions, the CT Community Colleges have implemented the *Health Career Pathways Certificate Program*, career pathway and advising tools and a health education and career website as sustainable activities after the grant funding has ended. Colleges have also identified a number of strategies that focus on student success and retention, such as targeted summer orientation programs prior to the start of the associate's degree health programs. By the end of both grants in 2009, they will also have common course competencies identified in many of the health career certificate programs and a virtual health career academy. A number of distance learning courses will also be developed.

Funding from the USDOL for the Community-Based Job Training Grants has allowed the CT Community Colleges to utilize numerous strategies to enhance student success in nursing and allied health programs including career decision-making, academic preparation and program retention. Successful strategies include: health career orientation workshops; health career assessments; targeted advising for health careers; tutoring; financial aid counseling; and study-skills, time and stress-management workshops. Curriculum development provided by grant funding resulted in the new "Investigations in Health Careers" course as part of the *Health Career Pathways Certificate Program* available system-wide. Over 600 students are currently enrolled. Grant funding also supported an on-line interactive "Health and Safety Training Course" (the former Clinical Orientation Guide) which was developed in partnership with the Connecticut Hospital Association.

Colleges have noted significant improvements in student retention and success because of these federal grants. Naugatuck Valley Community College reported a 15% increase in the retention of first year Physical Therapy Assistant students and a 41% increase in graduation rate; as well as a 13% increase in retention for Respiratory Care students as a result of targeted support services. The Respiratory Care program has also reported the largest graduating classes for the past two years since inception of the program. Gateway Community College noted a 100% pass rate on board exams of Nuclear Medicine students as a result of program tutors. Manchester Community College has noted an increase in the number and quality of applicants in all allied health programs since the inception of the Allied Health Advisor position. The Health Career Advisors in the North Central, South Central and Eastern Workforce Regions have advised over 1,000 students since the inception of the USDOL Allied Health Grants, identifying both short and long-term healthcare career plans and pathways to meet student goals. None of the advising would have occurred without grant funding. To date, colleges have graduated an additional 127 students towards the goal of graduating 203 additional students in the targeted degree programs.

The successful outcomes of these strategies have resulted in more interested, better prepared, better informed students who will help to meet the critical workforce needs in allied health and nursing. Connecticut Department of Labor records indicate that earnings for students in the targeted degree programs (Nursing, Respiratory Care, Physical Therapy Assistant, Radiologic Technician and Medical Assistant) increased from \$23,626 in 2005 to \$57,740 in 2008 – a 144% increase. Other notable efforts include: training in healthcare careers for over 175 One-Stop

counselors and 145 guidance counselors and capacity building activities for over 5,000 students and 2,000 other individuals.

The most promising practices of the first grant initiative that the USDOL plans to share with other grantees include: the Health Career Pathways Certificate Program; the relationships between the Workforce Investment Boards, CT DOL and the Connecticut Community Colleges; and, the work of the Health Career and College Allied Health Advisors that are having a strong impact on guiding students potentially interested in health careers.

The Bridges to Health Careers Initiative awarded 560 scholarships to date for students participating in noncredit-targeted certificate programs. Connecticut Department of Labor wage records indicate that of those individuals who were not employed at the time they began training, 60% entered employment after completing their programs, with average annual earnings of approximately \$20,000.

Core competencies have been identified and validated by employers for the Certified Nurse Aide programs. A site license has been purchased for all twelve colleges to participate in a two-year pilot with Key Train, to provide pre-developmental remediation for noncredit students. Funding has been provided to colleges for simulation mannequins, software and tutoring to help noncredit students succeed in their programs. A contract with the Eastern AHEC will provide professional development and mentoring to new program graduates. More than 1,025 students and WIA participants have received outreach information on legal and social service supports through the CT Women's Education and Legal Fund.

Sustainable features of the Bridges to Health Careers Initiative will include the Virtual Health Career Academy—an online resource for students interested in pursuing a health career, common core competencies defined for six targeted certificate programs and clinical simulations purchased through the grant. Maintaining scholarship support to noncredit health career students at the current level of funding will require \$153,000 annually. Tutoring support for noncredit students costs \$41,000 annually.

This funding represents significant reinforcement for the Community College System's student success initiatives and is part of the Colleges' legislative agenda which calls for a substantial expansion of full-time faculty through the five-year faculty expansion plan and the parallel proposal to expand student support services.

The Community College System looks to future sustainability of a number of these programs through innovative practices supported by institutions and other partnerships. Some of the programs will become institutionalized such as the Health Career Pathways Certificate Program, on-line courses, and technology tools such as eTutoring and ePortfolio. Other student support services such as the Health Career Advisors and other work in tutoring and advising will need a mechanism in place for future funding beginning in 2010. It is important that the successful programs continue to remain in place to provide the greatest level of student support. The Community College System remains committed to addressing the healthcare workforce shortage in the state during the next several years.

The cost to maintain the currently funded level of college tutors and advisors is \$230,000 annually. The Community College System recognizes the strong impact of these support services

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on student success and retention and has already requested higher levels of funding to support the increased student interest and success. In addition, the cost to maintain the Health Career Advisors in each of the five WIBs regions is \$345,000 annually. There is currently discussion among the five WIBs to support the advisors in some fashion. The cost to retain a coordinator for these efforts is \$100,000 annually. These total costs of \$675,000 will serve to maintain the existing student support services in nursing and allied health, implemented by grant funding, and do not reflect any enhanced or increased level of services. As the grant funding is exhausted, there will need to be additional funding available to support the innovative programs that are showing impressive results. Without resources, the delivery of these programs will cease.

The five nursing programs within the Community College System have worked together since 2005 to establish a common approach to associate degree nursing education (ASN) and preparation for registered nurse licensure. The newly designed four-semester program was implemented at Capital, Gateway, Naugatuck Valley, Norwalk and Three Rivers Community Colleges in fall 2008. The system appointed a Nurse Administrator as the system-wide coordinator/facilitator of the new program in February 2008; a system-wide Nursing Admissions Specialist has been in place since fall 2007. The program, representing a system-wide approach to nursing admissions, curriculum and student policies, allows students throughout the state to complete a standard admissions process for any one of the five colleges and creates the opportunity for seamless transfer between the colleges. Inherent in the new program design has been the opportunity for students to begin the program in the spring or fall semester at three colleges in an attempt to address workforce needs for graduates throughout the year. Conservative plans for expansion at selected existing sites have been in development for more than two years, necessitating a critical need for additional nursing faculty. There also exists the need to convert remaining grant funded positions to permanent funds. Admittedly, the recent downturn in the economy and the bleak forecast going forward makes these challenges much more daunting than ever.

Creative approaches to faculty recruitment, development and retention have been hallmarks of the nursing programs in the system and will be vital in addressing the nursing faculty shortage. One project grounded in partnership with the clinical education community, designed to assist faculty with the integration of high fidelity simulated teaching and learning into the curriculum, is being approached with the Allied Health and Education Consortium. In keeping with the goals for the advancement of nursing education established by the Connecticut League for Nursing Council of Deans and Directors in 2004, the Connecticut Community College Nursing Program (CT-CCNP) has worked closely with the Connecticut Technical High School system and Charter Oak State College to strengthen the ability of Connecticut's Licensed Practical Nurses to advance their level of education to that of a registered nurse. The CT-CCNP will be addressing common articulation plans for ASN graduates to continue their education toward the baccalaureate, master's and doctoral levels in nursing.

The Community College System has also developed two accelerated learning pilot projects to offer intensive summer programs for developmental education students to improve skills necessary for college-level allied health programs. This project was implemented in summer 2006 and summer 2007. In addition, the dual enrollment initiative, spearheaded by the System allows high school students to take credit courses in math, science and technology in their junior and senior year at the State's community colleges. The Community College System also

participates in the national Achieving the Dream effort to improve student success particularly for low income, minority and under-prepared students. Guaranteed admissions agreements have been signed with the State University System and the University of Connecticut. In addition, articulation agreements are being established between the Connecticut Technical High School (CTHS) System and the Community College System. The latest agreement calls for a specific translation of successful experiences in the CTHS Licensed Practical Nursing program to college credit in Biology and Psychology.

In addition to the statewide initiatives, individual community colleges are undertaking a variety of activities to increase allied health and nursing programming and improve student success in those programs. For example, in collaboration with Capital Workforce Partners (CWP), Asnuntuck, Capital, Manchester and Tunxis Community Colleges are participating in a long-term care initiative funded by the U.S. Department of Labor and the Robert Wood Johnson Foundation. These grants utilize is a multi-organizational partnership to advance the skills of front-line healthcare workers. The colleges are responsible for the curriculum developed for four-clinical specialty courses; integration of the work-based learning activities into specialty courses; instruction at the long-term health care sites; developing and maintaining regular communication with the work-based mentors; and for developing/awarding an industry-recognized CNA Work-Based Learning Clinical Specialty Certificate.

### **CT Conference of Independent Colleges (CCIC)**

**Fairfield University** helped to facilitate the recruitment of the third cohort of graduate students in the Nurse Anesthesia Program in affiliation with the Bridgeport Hospital Nurse Anesthesia Program, conducted onsite recruitment events and has articulation agreements with area community colleges for seamless student transition to the University's RN-BSN program. In September 2007, the University launched a Clinical Nurse Leader (CNL) track in the master's program in which they recruited a cohort of 14 students; the number has since doubled, and there is an additional cohort taking classes at Danbury Hospital. Fairfield is one of 12 nursing schools in the country selected to partner with the Department of Veterans Affairs in launching an initiative begun June 2007, VA Academy, that is geared to expanding the number of nursing faculty, enhancing the professional and scholarly development of nurses, increasing nursing student enrollment by 1,000 and promoting innovations in nursing education. Fairfield's VA Academy is through its second degree nursing program, which has been in existence since 1992.

**Goodwin College** offers an array of allied health programs that meet the staffing needs of Connecticut employers and provides students with the knowledge and skills needed to succeed in the workforce. Current allied health programs include associate degrees in nursing, health science, medical assisting and respiratory care. Since 2005, over 400 Goodwin nursing graduates have joined the workforce, helping to alleviate the nursing shortage in the state. The Respiratory Care program is the only one in the state offering students the opportunity to fulfill their clinical requirements in the evening, thus allowing them to remain employed while pursuing their degree. Twenty-three (23) respiratory graduates have entered the workforce since August 2007.

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Collegiate certificates are offered in medical assisting, histotechnician, paramedic and phlebotomy. The Histotechnician (HT) program at Goodwin, which has a 100% pass rate for the National HT Board of Registry test, is the only accredited program in Connecticut and one of two in New England. Due to a shortage in this field, graduates are consistently hired prior to graduation.

Goodwin College has developed a comprehensive developmental educational program offering tutoring, mentoring and career exploration to assist underserved and under-prepared students entering allied health programs. A \$15,000 grant from AT&T for a 20 station computer lab assists students in fulfilling admission pre-requisites to allied health programs. A HRSA federal grant provides scholarships to low-income minority students in the nursing program. And two grants, totaling \$119,000, through the *Higher Education Health and Education Initiative*, funded a nursing computer lab, simulation software and tutoring services for nursing students.

Goodwin College has a number of employer partnerships in place to address workforce shortages: major area hospitals serve as clinical sites for Goodwin nursing students; Eastern CT Health Network (ECHN) allows entry-level workers in their hospitals and doctors' offices to pursue advance training; Quest Diagnostics allows phlebotomy students to gain practical experience in a clinical setting; and Yale-New Haven Hospital and Hartford Hospital provide clinical preceptors for respiratory care students.

A bachelor's degree in health science will be offered starting in May 2009. In addition to a degree completion track, this degree offers tracks in healthcare administration and environmental health. Goodwin is currently seeking approval for an RN to BSN completion program, scheduled for May 2009, pending approval by the Department of Higher Education.

**Sacred Heart University (SHU)** has significantly increased its capacity to graduate RNs to meet growing demand and admitted the largest class of sophomores this past fall (N=70). Plans for fall 2009 are to increase the size of the entering class to 80. The Nursing Department has concomitantly emphasized student retention, not just recruitment. In December 2007 the Department received a *Higher Education Health and Education Initiative* grant from the Office for Workforce Competitiveness and the Departments of Higher Education and Public Health to offer a remediation program for sophomore nursing students. Twelve (12) students took part in the program with 9 being successful. (In the past these students would be lost to the workforce). The program is now sustaining itself with University support.

SHU received a grant from the Connecticut Healthcare and Facilities Authority (CHEFA) that has provided direct support to 4 faculty pursuing doctorates. Three of the faculty completed their doctorates with the fourth to complete in May 2009. In addition, the Nursing Department implemented a Nursing Education Certificate that may be acquired by RN to BSN students and to MSN students achieving a MSN in administration, family nurse practitioner or clinical nurse leader. SHU also received a prior grant from CHEFA to support expansion and enrichment of the clinical nursing laboratory and, on its own, has made significant investments in the clinical laboratory and has received and hired a full-time ten-month position for a Clinical Learning Coordinator. SHU partners with the Connecticut League for Nursing to offer a certificate in Home Health Care Management. This certificate allows RNs without BS degrees

to assume supervisory roles in community health/home care organizations. SHU started the first Clinical Nurse Leader program in CT graduating the first Clinical Nurse Leader student in the state in December 2007 and graduated 3 students in December 2008.

**Saint Joseph College (SJC)** Division of Nursing has expanded enrollment in the traditional baccalaureate program and has maintained full enrollment in the accelerated second degree program that allows students to complete all nursing courses in 16 months. Using a grant from CHEFA, SJC is addressing workforce issues by promoting nursing to middle school students and establishing academic supports to reduce attrition of enrolled students. In addition, the Division was awarded a *Higher Education Health and Education Initiative* grant to support the use of simulation technology and the development of an on-line nursing education program including tuition subsidies for students. The graduate programs at SJC include advanced practice options in family practice or psychiatric-mental health, as well as nursing education.

**Saint Vincent's College (SVC)** has maintained its entering nursing cohort size of 120 students. The Radiography Program has again increased the size of its entering class. Health care related certificate programs continue to be in demand, especially medical assisting, hospital coding, pharmacy tech, multi-skilled assistant and central sterile processing technician. The Developmental Learning Center opened, staffed with a full-time Developmental Skills Specialist. The College received a grant from the Marillac-NE Trust to initiate an outreach program designed to increase the number of urban minority and male middle and high school students interested in health care careers. Fifty-eight (58) students attended the "Why Not You" summer camp. Follow-up with these students has continued through the academic year by SVC faculty and staff. Science, nursing, and healthcare faculty mentored participants. A second grant has been received from the Marillac-NE Trust to operate the program during the summer of 2008. Returning participants from summer 2008 will have a one-week experience with advanced learning experiences. A *Higher Education Health and Education Initiative* grant will increase the length of the Summer Camp experience to two weeks for new participants. The grant will also afford the utilization of paid nursing and radiography student tutors during the academic year and will subsidize a monthly "Lunch and Learn" Program designed to serve as retention mechanisms. An articulation agreement has been entered into with Excelsior College to facilitate completion of baccalaureate degrees by associate degree nurses. Articulating students can take an additional twenty credits at St. Vincent's and transfer them to Excelsior for credit.

**Quinnipiac University** continues to increase enrollment to both the traditional and one year accelerated nursing program. The clinical partnership with Charlotte Hungerford Hospital continues. A clinical partnership has been formed between Masonicare and Quinnipiac University. A Nursing Education Specialist has been hired to work for both institutions in each partnership. Quinnipiac's graduate nursing program has received a federal training grant for the fifth consecutive year from the Health Resources and Services Administration of the U.S. Department of Health and Human Services. The grant provides scholarships for students pursuing a master's of science in nursing. In addition, faculty received a grant for outreach to high school students who are interested in learning more about the nursing profession. These efforts also represent efforts to increase male and minority interest in the nursing profession.

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**The University of Hartford** has a long-standing program at the MSN level in Nursing Education, Management and Community Public Health. All areas address specialties that face challenges from the continued nursing shortages. The nursing education specialty is well enrolled and the management and community public health specialty is growing. With the receipt of the *Higher Education Health and Education Initiative* grant in November the Nursing Department will be recruiting 10 individuals from underrepresented populations into the community public health specialty. Hartford has a post-master's certificate program for master's-prepared nurses that was initially funded by a grant and that provides students with content and experiential activity. Hartford also has an RN to BSN program for registered nurses pursuing a bachelor's degree, who are licensed at the associate's degree and/or diploma level.

The current chair of the Nursing department is president of the Nursing Career Center of Connecticut (The Center). The Center is a nonprofit organization involved in recruitment, retention, and mobility. The Center had a Department of Higher Education (DHE) grant to work collaboratively with Goodwin College and Capital Community College to enhance articulation to a bachelor's degree in nursing. The grant has been completed however the programs continue to work collaboratively to enhance mobility of the ADN into the BSN program. The Center has received a second DHE grant and is working with 11 provider agencies on career mobility in the nursing profession in response to the recommendations of the AHWPB faculty report. The goal will be to increase RN mobility into BSN completion programs statewide, to mobilize BSN's into MSN programs and to begin to prepare MSN nurses to develop basic clinical teaching skills. The Center also completed a grant program with the state Technical High School System to provide career counseling related to LPN mobility.

**Yale University's School of Nursing** offers MSN and Ph.D. degrees. Yale received a *Grants in Area of National Need* (GANNS) grant to support doctoral study for individuals from disadvantaged backgrounds. The GANNS grant supports two to three full-time Ph.D. students yearly, and they admit a total of 4-6 students in the program, which aims to train nursing faculty. Yale has a long-standing MSN program focusing on advanced practice, which leads to preceptor and faculty roles. There are approximately 90 graduates per year from this program.

### **CT State University System (CSUS)**

**Central Connecticut State University (CCSU)** currently offers two programs leading to a BSN, i.e., an RN to BSN program for registered nurses and a generic BSN program. The RN to BSN program has a satellite cohort at Lawrence and Memorial Hospital in New London and enrollments have significantly increased in the 2008-2009 academic year. In the spring of 2008, the new Generic BSN program received approvals from the State of Connecticut's Department of Higher Education (DHE) and Department of Public Health (DPH) and enrollment for the first class started this fall with 80 pre-nursing students. In the spring of 2009, CCSU will formally admit 50 students into its first cohort. When fully operational, this Generic BSN program will have 150 students admitted to the major and moving toward completion of the BSN degree. Additionally, CCSU allocated \$100,000 to renovate the current nursing laboratory to create a state-of-the-art Nursing Learning Center with additional funding allocated to purchase needed equipment and materials, e.g., high fidelity simulation manikins. The creation of the Nursing Learning Center is underway and will be ready for the start of the spring 2009 semester. To

further support CCSU's nursing programs, a Senior Nursing Educator was hired to provide leadership for the department, and searches for two full-time nursing faculty members are underway. Additionally, preliminary conversations have begun with both New Britain and Bristol school district personnel; these conversations are focused 1) providing high school counselors and students with essential information about careers in nursing as well as Central's Generic BSN program and 2) efforts to ensure curriculum coordination between the high school and university so that high school students who aspire to a career in nursing come prepared with appropriate math, science and writing coursework and skills that will maximize their chances of success in the highly competitive field of nursing.

**Eastern Connecticut State University (ECSU)** Eastern Connecticut State University (ECSU) does not offer a nursing program, however, in 2008 in cooperation with UCONN and Southern Connecticut State University they developed plans of study for students who wish to pursue UCONN's MBEIN and Southern's ACE nursing programs. These plans of study ensure that Eastern students are prepared to enter the UCONN and Southern programs immediately upon graduation, enabling them to obtain nursing credentials approximately one year after receiving the bachelor's degree. A pre-nursing program coordinator and advisor has been appointed and a web site has been created to provide information about these plans of study and about nursing preparation and careers in Connecticut.

Eastern continues to offer three programs in public health: a public health certificate, public health minor and a bachelor's of general studies concentration in public health. These are designed as a pipeline, providing students an opportunity to take the basic courses required for admission to the graduate program in public health at the UCONN Health Center.

**Southern Connecticut State University (SCSU)** has a long standing Master's of Science in Nursing (MSN) Program with a concentration in Nursing Education and has converted several courses to online delivery to increase the number of master's-prepared nurses available to teach in the state's associate's and bachelor's degree programs. SCSU and Western Connecticut State University are collaborating to offer their nursing education courses online. This project has been partially funded by a *Higher Education Health and Education Initiative* grant as well as support from CHEFA. Additionally, a post-master's certificate in Nursing Education was approved which is tailored to nurses who need credentials to become educators. SCSU was successful in securing federal funding to provide financial support to its MSN-Nurse Educator students. Additionally, the department was awarded a HRSA traineeship grant to support graduate students during FY 09.

In August 2007, SCSU launched the Accelerated Career Entry (ACE) Program, a fully accelerated second degree BSN for individuals who have bachelor's degrees in other areas and want to make a career change to nursing. The nursing component only takes 12 consecutive months to complete. Students still need 9 prerequisites (sciences, math, psychology, etc.) if they do not have them as transfer courses, but general education requirements (e.g. history, fine arts, etc.) for SCSU are waived. The first cohort of 13 students completed the program in August 2008. To date, 10 of the 13 have taken the NCLEX-RN national licensing exam and have achieved a 90% pass rate. To continue to meet the demand for nurses, the program was expanded by about 60% with 24 ACE students admitted in August 2008. SCSU has been developing a

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clinical partnership with the Hospital of St. Raphael for clinical placement of most of its ACE students. In addition, a partnership with Eastern CT State University (ECSU) has been created and will be launched in Spring 2009 to facilitate the transition of qualified ECSU graduates into SCSU's ACE program. SCSU was successful in securing a two- year state grant (2007-2009) and federal funding to provide scholarships to ACE students so they could devote more time to the program and minimize outside employment.

To increase nursing faculty capacity, SCSU has developed several clinical teaching partnerships with a variety of healthcare agencies including Midstate Medical Center, Leeway House in New Haven and Orange Visiting Nurse Association. More recently, a similar partnership was developed with South Central VNA in New Haven. Each partner agency, with financial payment from SCSU, has provided a master's-prepared nurse to supervise RN students in their clinical agency.

With the support of a *Higher Education Health and Education Initiative* grant received in February 2008, SCSU has again collaborated with WCSU to extend this clinical partnership with Midstate Medical Center and Waterbury Hospital. Each hospital has hired a master's prepared nurse who supervises nursing students from SCSU and WCSU completing clinical rotations at their site.

To increase the number of RNs who return to school to complete the BSN, SCSU has been working with Gateway Community College to facilitate the transition of their associate's degree nursing graduates to SCSU's RN-BSN program in a timelier manner.

**Western Connecticut State University (WCSU)** offers a bachelor's degree in nursing and graduates approximately 45 nurses annually. WCSU also offers a RN-BSN program at WCSU in Waterbury. This program graduates approximately 10 students per year. Students who graduate with an associate's degree in nursing from any CT community college can transition to WCSU or UCONN to pursue their bachelor's and master's degrees. Finally, WCSU has partnered with Waterbury Hospital who provides a master's-prepared nurse as visiting faculty to the Nursing Department at WCSU expanding their ability to educate baccalaureate prepared nurses. WCSU offers a master's degree in nursing with specialization in Adult Nurse Practitioner and Clinical Nurse Specialist in addition to the collaborative nurse educator program with Southern Connecticut State University. The enrollment at Western Connecticut State University has grown in both undergraduate and graduate program offerings and they anticipate continued increased enrollment in our graduate programs.

### **Charter Oak State College**

Using its expertise in validating learning and online instruction, Charter Oak State College (Charter Oak) continues to address the nursing shortage through its work to provide career ladders for healthcare workers. In collaboration with the state's community colleges and the CT League for Nursing (CLN), Charter Oak is helping individuals transition from licensed practical nurse (LPN) to registered nurse (RN) through an online bridge course. Two hundred and thirty eight (238) LPNs have completed the course and entered the second year of nursing courses in two-year college RN programs. Because of the changes in the registered and licensed practical nursing programs, Charter Oak received a grant in October 2008 to update the Bridge course.

Working with the CLN, input has been gathered from the deans/directors of nursing, advisory committee and curriculum committees were formed, and data was collected on the 2006-07 program graduates (77% of the students had graduated, 6% were still in the program. The completion rate is higher than the traditional graduation rate.). An assessment of the graduates will be conducted to assess their level of satisfaction with the course and to assess how well the course prepared them for the RN program. Some revisions have already been made to the curriculum; however, major revisions will not be ready until spring 2010.

In addition, Charter Oak offers a series of refresher courses for licensed practical nurses, registered nurses and pharmacists to bring them back into the field, with 188 RN Refresher completers, 22 LPN Refresher Completers and 11 Pharmacy completers (many students actually get jobs in pharmacies before they take all three modules). Charter Oak, working with CLN, received funding in January 2008, to revise the RN Refresher course, to develop it into a staff development/licensing format and to examine alternate ways of delivering the clinical component. The pilot of the staff development format is to take place this spring at Danbury Hospital.

Charter Oak also developed an online perioperative nursing course to provide RNs with additional training. Started with a grant, the cost of training has now been absorbed by hospitals. There have been seventy (70) graduates prepared to take positions in operating rooms.

Charter Oak, through a career ladder grant, conducted an assessment of the certified nursing assistant (CNA) programs in the state and the licensed practical nursing (LPN) training curricula used by the CT Technical High School System to identify areas for enhancement and outline career pathways to nursing and other allied health professions. Based on the findings, the LPN program has developed more rigorous entrance requirements, modified its curriculum by adding a laboratory component to its biology curriculum and made minor revisions to its lifespan development content so students can be awarded credit in those areas. Students are required to take intermediate algebra, English composition and general psychology credit courses either online or in the classroom as either prerequisites or co-requisites. The changes in the LPN program went into effect fall 2008 and allow for seamless articulation to the community colleges. In addition, Charter Oak received a supplemental grant to assist the Technical High School in making curriculum changes, developing the science lab for online delivery, and providing tutoring for the algebra course for 08-09.

The following recommendations for the CNA program were made: develop a plan for enhancing the current CNA program by September 2008 to include time frames for obtaining a high school diploma or GED, and the incorporation of career competencies, based on those developed by Capital Workforce Partners and the CT Community College System; explore increasing the number of hours of training from 100 to 150 to include more content in math, English literacy (oral, written, and comprehension), computer literacy (including a possible online GED course), and career competencies; and develop career ladder certificate programs by September 2009 (CNA, CNA Clinical Specialist, CNA Advanced Clinical Specialist, CNA Leadership, CNA Health Care Advancement). The CNA Health Care Advancement certificate includes college credit courses that would help CNAs transfer into college level health career programs. Students completing the specialist certificates and the leadership certificate may be eligible for additional credit once the courses are developed and evaluated by Charter Oak. This effort supplemented

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the work being done through the Capital Workforce Partner's Robert Wood Johnson grant. As part of that grant, Charter Oak is reviewing the courses being developed for the CNAs to determine credit value. Those courses would become part of the CNA career advancement levels mentioned above.

### **University of Connecticut (UConn) School of Nursing**

UConn offers pre-licensure programs through its BS, with a major in nursing, and its Masters Entry into Nursing (MbeIN—the 'b' indicating that participants already earned baccalaureate degrees in other disciplines). Annually, between 130 and 140 students complete the BS program.

UConn received a grant from the Department of Higher Education in 2006 to establish an infrastructure for their certificate program for non-nurse college graduates (MbeIN) that prepares individuals for RN licensure in 11 months. In addition, the school expanded its MbeIN program to the Waterbury area in January 2008 and in January 2009 opened the Stamford program. Private donations are furnishing class and simulation space in Stamford and state support provided a partnership with Naugatuck Valley Community College to add additional sophisticated, high fidelity equipment to its laboratory. The two institutions share this critical class and simulation space to their mutual benefit. When fully subscribed (planned for 2010), an additional 96 individuals will be eligible for licensure each year.

For the first time in 2008, UConn received federal scholarship funds for disadvantaged students. Almost \$150,000 was given to such students, so that they could devote more time to study and less to employment to pay their bills. The recipients formed a learning community, where they provide mutual support and share common experiences/concerns associated with enrollment. The students are enrolled in all levels of the programs and thus, those more advanced are able to become exemplars of achievement throughout UConn's nursing programs.

In fall 2008, UConn opened its new doctorate in nursing practice (DNP) program with 16 enrollees, 11 of whom are full time. The majority of the courses are taught on-line, requiring only monthly trips to Storrs. The on-line format has been well received and students find their time in Storrs to be highly interactive and intellectually rewarding. The first full time group will complete the program in December 2009. Subsequently, upon the advice of the students, full time students will take the coursework over two academic years. This program prepares nurses, who have completed a master's degree in nursing and are certified, to become leaders in health care agencies. The students' final projects focus on quality improvement within partner clinical agencies. Well prepared clinical leaders are intended to guide health care systems through change, including translating evidence into practice and creating environments of the highest quality care (recognizing that a skill mix of staff may be necessary). These leaders may also become faculty and, thus, may select elective courses in higher education, such as those in the new nursing education certificate program, described below.

The research doctorate (PhD) continues, with 30 students currently enrolled. These graduates are expected to enter academic institutions, where teaching and conducting original research are required. Both PhD and DNP students are eligible for GANNIS funding, which is a scholarship

program that was competitively awarded by the Federal Department of Education to UConn for the preparation of teachers. Currently, six full time students are participating.

Beginning in January 2009, UConn is offering a certificate in nursing education. This two course sequence focuses on theories of learning and pedagogy, as well as the pragmatics of syllabi construction, managing a classroom, conducting clinical education, student evaluation and course refinement. Experts from the University's Center for Undergraduate Teaching and Learning and nursing faculty are collaborating to provide the most robust courses anywhere. This series is excellent preparation for the National League for Nursing's certificate in nursing education, a credential already earned by the nursing faculty in the program.

In spring 2008, UConn created a clinical faculty ladder so that excellence in teaching could be recognized in a manner similar to other faculty's academic excellence. A doctoral degree is not required, until achievement of the rank of clinical professor of nursing. As they advance on the ladder, clinical faculty members become eligible for multi-year appointments, which is a public acknowledgement of achievement and job security in a time of economic changes.

Over the last three years, UConn has partnered with various clinical agencies (specialty and general hospitals, visiting nurse associations and services for the elderly) to establish joint appointments for advanced practice nurses. These are win-win situations where an agency has a competent, caring professional for clinical practice and leadership and students are taught by faculty with current clinical skills and a wealth of practice examples to illustrate for their classes. These yearlong appointments also decrease the faculty turnover due to worries about maintaining clinical skills and a practice base. They move in and out of the partner agency all year—bringing science to practice and vice versa.

In order to attract elementary and middle school disadvantaged and underserved children to a nursing career, UCONN established learning communities in Hartford, Waterbury and New London. These programs provide opportunities for assistance with homework, expansion of students' knowledge about the health professions and concrete advice on what courses are needed to pursue a college degree. One faculty member leads the Nursing Academy's Advisory Council at Hartford Public High School and brings her exceptional curriculum design and instruction skills to the program. With a *Higher Education Health and Education Initiative* grant this year, UConn will begin a SAT preparation sequence in inner-city Hartford, in collaboration with the Nursing Academy. Also, state funding is supporting a 'weekend camp' experience at UConn for high school students. This camp will expose high school students to college life and help them realize that it is an experience that is possible and within reach.

Additionally, UConn received funding from HRSA to provide loans to those individuals engaged in full time master's or doctoral study that intend to teach upon graduation. When a graduate teaches for four full time years post degree, 85% of their loans will be forgiven.

In fall 2008, UConn School of Nursing welcomed seven new full time faculty members, all of whom have earned doctoral degrees. Additionally, three doctorally-prepared faculty members joined the School in January 2008. These full time faculty positions in combination with full time clinical faculty and some adjuncts allow UConn to provide courses, advising, and mentoring to the more than 700 students enrolled in the school.

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## University of Connecticut Health Center--Area Health Education Centers (AHEC)

The Connecticut AHEC Program at the UCONN Health Center and its four regional offices operate an array of health career recruitment and support initiatives, some of which are described below.

- The Urban Service Track recruits and prepares a cohort of students in the Schools of Medicine, Dentistry, Nursing, and Pharmacy specifically for practice in Connecticut's urban underserved communities. Recruitment of under-represented minority and disadvantaged students and interdisciplinary training are emphasized.
- The Collegiate Health Service Corps (CHSC) targets college freshmen and sophomore students who are at risk of dropping out of the college, by forming a campus based support system for first generation, minority and/or economically disadvantaged college students. At the same time, service-learning opportunities are created and implemented to empower those populations experiencing health disparities, while increasing college student exposure to careers in public health. The emphasis is on service learning that specifically integrates academic coursework and community projects. The majority of students expressed that service learning has had a highly favorable impact on their ability to communicate with diverse populations, understand how poverty impacts health, and has given them exposure to diverse populations who experience health disparities. The majority of students also reported that they were able to have a positive impact on the lives of the people they served. Those participating in the CHSC include Eastern, Western, Southern and Central State Universities, UConn, and the University of Hartford.
- The Youth Health Service Corps equips a diverse group of high school students across the state to provide substantive volunteer service in health care agencies. The nine-module curriculum includes CPR certification and an overview of health careers. Students fill a community need for volunteer service while acquiring real life learning experience under the guidance of professional role models.
- The Providing Early Acquaintance with Careers in Health Program provides middle school students with an integrated classroom curriculum, health professional speakers, and visits to nearby hospitals and community colleges.
- Hands on Science Outreach is an extracurricular science program for elementary students, who learn a variety of scientific concepts through a highly engaging curriculum.
- Careers for the Future Summer Medical Camp provides high school students with opportunities to shadow medical professionals at the UCONN Migrant Farm Worker Clinics, St. Francis Hospital and Medical Center, and the Hospital of Central Connecticut.
- Advancing Health Education Careers (AHEC) Summer Institute is a six-week career exploration and work readiness program for youth, ages 14-16. Activities include: independent and group research projects, guest presenters, leadership and employability skills building exercises, resume preparation, and health education trainings.
- The Saturday Academy Medical Careers Mentoring Program targets high school students from underserved areas, who work with college student mentors to promote academic achievement, communication skills, and career development.

- The Foreign Born Medical Professional Project provides an alternative health careers certification path for foreign born trained health professionals who have not been able to find employment in the health care industry in Connecticut. The project aims to address the barriers to obtaining licensure or certification in Connecticut and thereby increase workforce diversity.
  - The Medical Interpreter Training Program provides bilingual health care workers with a basic 48-hour, highly interactive, course of instruction covering topics such as interpreting skills, medical ethics, cross-cultural communication, medical terminology, and professional protocols. Advanced training and continuing education programs are being developed. Course offerings are provided for general public enrollment and are arranged for employers at their requested sites. Approximately 50 students attended the medical interpreter training program in 2008 and over 100 bi-lingual employees have had their language skills assessed by AHEC per the employer's requests.
  - The Health Occupations and Technology (H.O.T) Careers in Connecticut is a comprehensive guide to over 80 health occupations with training programs in Connecticut. The guide includes basic descriptions, academic and training requirements, places of employment, employment trends, licensure/certification, and salary ranges. It is very popular among high school guidance counselors and workforce development counselors.
  - The Promotora de Salud (Health Promoter) Program is a 40-hour certificate class offered in English and Spanish. The program is free of charge in exchange for 40 hours of community service. It is offered twice a year for a class size of 10-15 adults. Since its inception in 2005, approximately 700 people a year receive health education and health promotion services from the Promotores.
  - The Allied Health Professional Network is a new initiative for current and recent allied health graduates of eight certificate programs across the state's community college system, to provide support and motivation to pursue career pathways through continuing education and training. The Network sponsors regionally-based networking meetings at least twice an academic year, produces and distributes a bi-monthly newsletter, maintains a website and support/peer mentoring chat room.
  - The Building Bright Futures in Connecticut Program targets non-mental health professionals who work with children, adolescents, and their families to provide services from a strength-based context in understanding social-emotional development and the cultural implications affecting the concepts of mental health and mental illness. The course curriculum was developed and piloted and to date 60 people representing multiple state agencies have attended the program.
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## ***Workforce Investment Boards (WIBs)***

*The WIBs emphasize employer engagement and building the skills of current and future workers to promote productivity and career advancement. They play a central role in convening regional partners to address the education and training needs of youth and adults and match those skills to the needs of local employers.*

### **Capital Workforce Partners (CWP)—North Central Workforce Investment Board**

CWP has developed healthcare focused partnerships with the Capitol Region Education Council, Vernon Adult Education program, 1199 Training & Upgrading Fund, long-term care associations, and community colleges in the region to provide CNA career advancement and basic skills education. The purpose is to engage long-term care employers in establishing educational plans from a menu of services they have identified with their front line employees to better prepare them for potential higher level health career opportunities. CWP is sponsoring the delivery of onsite adult basic education programs for employees who are interested in future advanced careers in the health professions. Originally four homes were involved as a pilot project with the Adult Education providers. Through a USDOL High Growth Job Training Initiative grant featuring long-term care, CWP expanded the basic skills instruction to 8 sites and included leadership/clinical specialization career tracks through instruction provided by the community colleges in the region.

CWP was also awarded a Robert Wood Johnson/Jobs to Careers grant that allows for expansion of the USDOL grant to include 2 additional work sites during the 3-year grant period, culture change activities, and work-based learning. The program provides an on-site, incumbent worker training program targeted at CNAs, and incorporates work-based learning within clinical specialty tracks offered by area community colleges through a Seminar Institute. The program also assists participating sites to create a framework for organizational change and institutionalization of work-based learning through culture change activities. The expansion builds upon CWP's USDOL grant, which will provide incumbent worker training at no cost to participating workers, build academic and specialty skills, and personal management proficiencies of nurse aides, enable them to earn higher wages, and prepare them for continued study in a more advanced allied health or nursing profession.

CWP is also supporting partnerships with local hospitals (Hartford Hospital, ECHN and Hospital of Central Connecticut) that have engaged in administering the online School At Work (SAW) program onsite to enhance developmental academic, communication, and personal management skills for entry-level employees. They have developed a pre-SAW program as well to provide basic skills remediation for employees interested in SAW. The hospitals contribute a staff coach for the student employees, as well as financial resources, space and computers to sustain the program.

In addition to adult focused activities, CWP is sponsoring summer youth opportunities for students to explore health care careers. Youth have participated in internships with local

hospitals, volunteer nursing organizations and other health care employers sponsored through state summer youth employment funding.

### **Eastern Workforce Investment Board (EWIB)**

The Eastern Workforce Investment Board Health Pipeline Program represents a partnership between Eastern CT education, industry, and workforce development leaders. The program expands the pool of next generation workers in the healthcare field. The Health Pipeline was a partnership between EWIB, Three Rivers and Quinebaug Valley Community Colleges, EASTCONN and subcontractors New London Office of Youth Affairs and Norwich Youth and Family Services, the four (4) area hospitals, seven (7) high schools from Windham and New London Counties and the Eastern CT Area Health Education Center (AHEC).

The Health Pipeline Program was designed to increase student awareness of nursing and allied health careers and to improve student preparation for further study and careers in these fields. There were three program components: student selection, online academic training, and summer internships. Successful completion of online health courses selected by the hospitals advanced the students into six-week, paid clinical internships at the hospitals. This first time pilot program recruited 43 students, had 38 enter the program, 33 completed their online coursework, 32 accepted internships with the hospitals, and all but one of those successfully completed the internships. Students completed a portfolio of their experience and all high schools except the regional technical high school agreed to grant academic credit for the experience.

Students and all partner staff including hospital supervisors completed post assessment surveys as part of an overall program evaluation. Ninety-six percent (96%) of the students reported they are now more interested in pursuing a career in healthcare and better prepared for a future job in that field. The program has been refunded for 2009 with an increase to 50 students, two additional high schools, and an expansion to additional clinical sites for the internships.

EWIB also continues to partner with area healthcare employers to increase the skills of their current workforce through Incumbent Worker Training projects. Five health companies received training funds this year including: American Ambulance, Lawrence and Memorial Hospital, the Orthopedic Association of Windham County, and United Community and Family Services. Fifty-five (55) workers will receive training through a training investment of \$28,968 as well as \$54,679 leveraged from employer contributions for a total investment of \$85,343.

The EWIB continues to provide tuition funds for Workforce Investment Act (WIA) eligible and Jobs First Employment Services participants for a variety of healthcare occupations. In Program Year 2007/2008, the EWIB provided \$150,453 in tuition for health-related programs including CNA, Pharmacy Tech, Home Health Aide, Patient Care Tech, Radiology, Dental Assisting, Occupational Therapy Assistant, & LPN. In collaboration with the state's Community College System, the EWIB financially supports a Health Career Advisor in the Eastern Region who works with One Stop Career Center customers and community college students to map out health care career pathways.

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## Northwest Regional Workforce Investment Board (NRWIB)

The Northwest Regional WIB is actively involved with allied health employers in the region as well as the development of allied health education. This past year, the NRWIB was actively involved in the development of the educational specifications for the proposed Allied Health and Advanced Manufacturing Intradistrict High School in Waterbury. Understanding the need to focus on the STEM curriculum, the NRWIB, in partnership with the Waterbury Department of Education is focusing on the development of an educated pipeline of youth to fill the projected workforce needs in the region.

Continuing its work to develop the region's youth, the NRWIB provided funding to a program for inner city youth from Wilby High School to complete EMT basic training as part of the partnership between Waterbury Hospital and the North End Middle School/Wilby High School. This program is a continuation of the Health Careers Adopt-a-School Curriculum funded by the Health Resources and Service Administration (HRSA).

St. Mary's Hospital, a 347-bed acute care teaching hospital affiliated with Yale University School of Medicine, was awarded a grant to continue its Clinical Preparation Program for junior nursing students who work at the hospital during the summer and will become full-time employees following graduation. During the 8-week training, participants develop nursing skills and clinical techniques needed to work with hospital patients. St. Mary's Hospital also received a grant that will enable a current Diagnostic Radiology Technologist to become a certified CT Technologist. Following 126 hours of training, this St. Mary's employee will be eligible to take the certified exam for CT Technologist allowing him/her to earn more money and allow the hospital to increase its pool of technologists.

Sharon Hospital was funded to provide training for 25 of its employees in the area of budgeting and finance. Waterbury Hospital also utilized the Board's Incumbent Worker training funds to continue to develop the skills of its employees.

The NRWIB continues to commit a significant portion of its funding from the Workforce Investment Act (WIA) and the Jobs First Employment Services Program (JFES) to training for participants. In the last year, under WIA, the Board issued 131 individual training accounts (ITAs) in healthcare related fields totaling more than \$250,000. Under the JFES Program, a number of clients successfully completed similar programs including dental assistant, phlebotomy and CNA training.

The Health Career Advisor who works with One Stop Career Center clients and community college students to outline health care career pathways has been very successful. Since March 2008, over 200 individuals have attended Healthcare Career orientation sessions; 199 have taken the HOBET test; and 193 have worked to develop an educational plan. One success story is that of "Manny." Manny is a 24 year old who recently completed the 6-credit EMT-B class at Naugatuck Valley Community College. He is currently employed at Waterbury Hospital and hopes to move up the career ladder upon passing his state EMT exam.

## **Workforce Alliance—South Central Workforce Investment Board**

The Workforce Alliance is supporting partnerships with local hospitals and long-term care facilities (Yale and Masonicare) administering the online School at Work (SAW) program onsite to enhance developmental academic, communication, and personal management skills for entry-level employees. The hospital contributes a staff coach for the student employees, as well as financial resources, space and computers to sustain the program. The Workforce Alliance has also added pre- and post- SAW components for employees who need basic skills remediation before entering SAW or community college programs. The post-SAW module includes a strong focus on college preparatory skills (provided by New Haven Adult Education), case management (through CT Works Career Center) and instructor-led introductory class sessions for the traditionally on-line medical terminology course at Gateway Community College. Ultimately, participants will have an opportunity to enroll as a Gateway Community College student, and earn academic credits that can be applied toward many college certificate and degree programs.

Yale New Haven Hospital is one of many healthcare facilities that have decided to institutionalize the School at Work program, and have committed to making this an ongoing professional development opportunity for their employees.

Workforce Alliance is working to improve outcomes for those entering the health care workforce by institutionalizing services in their One Stop Career Center including client assessment through the Health Occupations Basic Entrance Test (HOBET), academic, career and financial aid assistance and referrals to education programs that meet their needs. In collaboration with the state's Community College System, the Workforce Alliance has been supporting a Health Career Advisor who works with One Stop Career Center clients and community college students to outline health care career pathways. Of the 162 individuals who took the HOBET test, 150 returned for academic and career advisement. Testing was offered at all the One Stop Career Centers in the region as well as New Haven Adult Education, New Haven Job Corps and Gateway Community College.

For the period October 1, 2007 – September 30, 2008, 71 Individual Training Accounts in Healthcare related fields were issued through the South Central CT Works Career Centers. This represents a total investment of \$124,442.00

Hospital of St. Raphael is partnering with Workforce Alliance to develop a customized clinical technician training program that offers ample growth opportunities. The program will be offered to individuals with a current wage of less than \$19.29 per hour (the self-sufficiency standard for South Central CT). Two (2) sessions will be conducted per year, serving a total of 24 employees (maximum of 12 individuals per session). Clinical technician training will run concurrently with the External Diploma Program to be implemented by New Haven Adult and Continuing Education. Based upon experience, they anticipate that half of the individuals seeking to participate in the program will lack a high school diploma or GED. New Haven Adult Education will conduct CASAS reading and math appraisals on approximately 6 individuals per session and develop one-on-one training plans for each participant. New Haven Adult Education will provide additional services, such as a support teacher and compiling required documentation, at no additional cost to the program. All participants will complete the hospital's enhanced

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certified nurse aide program, which includes 120 hours of instruction (60 didactic and 60 clinical).

The clinical technician training program at the Hospital of St. Raphael concluded both cycles very successfully. All 24 employees participating in the program completed training and earned promotions and significant wage gains. Workforce Alliance expects to partner again with the hospital this year.

#### **The Workplace, Inc.—Southwestern Workforce Investment Board**

The Workplace, Inc. is cultivating a pipeline of health care workers to meet the needs of employers in Southwestern Connecticut. Through a variety of programs The Workplace, Inc. has established strong ties with area hospitals and health care providers. It continues to provide group training to disadvantaged youth, participants on state subsidies and the Adult and Dislocated Worker population.

The Workplace, Inc.'s 2008/2009 Workforce Investment Act (WIA) Youth Program offers youth residing in Southwestern Connecticut with Certified Nurse Aide (CNA) training—a comprehensive program comprised of 240 hours of training and clinical preparation. The program boasts a 95% pass rate and a 90% placement rate at 90 days. In addition, youth have the option of earning an Emergency Medical Technician (EMT) or Dispatcher credential. In partnership with American Medical Response, youth go through an extensive curriculum to prepare them for the state test. The Workplace, Inc. runs this program in both Bridgeport and Norwalk. Lastly, The Workplace, Inc. also offers youth a Health and Human Services certificate that prepares them for employment with the Department of Developmental Disabilities.

The Workplace, Inc.'s 2008 21st Century Pathways to Education and Careers Program served two Allied Health employers from the region: Greenwich Hospital and Bridgeport Hospital. Literacy Volunteers of Southeastern Fairfield County (LVSFC) provided CASAS assessment followed by courses in English as a Second Language (ESL) instruction over several months. Employees of both Bridgeport Hospital and Greenwich Hospital were assessed using the CASAS system and placed into two groups, based on their scores, for the ESL instruction. In addition, Housatonic Community College provided 30-hour Spanish courses for two classes of 10 employees each at Bridgeport Hospital. The hospital serves a large number of patients who speak only Spanish, and its front-line, direct service staff benefited from the instruction. All assessments and instruction were provided at the employers' sites and the employers have committed to provide paid release time for their trainees and track attendance to document the required match.

Training at both Greenwich and Bridgeport Hospitals connected to career opportunities by providing a workforce pipeline for clinical positions such as pharmacy technician, phlebotomist, medical transcription provider, radiology technician, surgical technician and registered nurse.

Pathways to Education and Careers also supported an existing initiative. Bridgeport Hospital's School to Work (SAW) program is a DVD-format curriculum that includes two (2) four-month courses including "Introduction to Healthcare" and "Becoming a Healthcare Professional." Students received pre- and post-assessments as well as certificates of completion.

The year 2008 also featured two Incumbent Worker Training (IWT) programs administered by The WorkPlace, Inc. Based on a growing movement to transform the long-term care field from institution-centered to focused on the individual, The WorkPlace, Inc. provided a program at United Methodist Homes to give employees skills in critical-thinking and advanced decision-making, leadership basics, as well as additional training. Meanwhile, New Canaan-based Waveny Care Network utilized IWT funds through The WorkPlace, Inc. to address the educational needs of front-line care providers and their managers. The curriculum included classroom-style units including Managing Change, Conflict Resolution, Team Building, Hands-On Sensitivity Training, and Customer Service. The program is titled “Inspired Learning—Unlocking Your Potential.”

In addition, The Workplace, Inc. offers occupational skills training and case management to those interested in career advancement through their Academy for Career Advancement and their Career Coach, mobile One Stop Career Center. In particular, they are serving long-term care employers by providing workers with language skills training. In total, 147 individual training accounts were provided for individuals in health care training programs.

### ***Partner Agencies***

*Connecticut is fortunate to have partner agencies that collaborate with secondary schools, colleges and universities and Workforce Investment Boards. These partner agencies promote career exploration through hands-on learning and training as well as supporting individuals in their pursuit of education.*

### **CT Hospital Association**

The Connecticut Hospital Association (CHA) has been engaged in several activities to support the nursing and allied health workforce, including the development of a standardized nurse preceptor program and a collaborative initiative on safe patient handling. In accordance with a recommendation of the Clinical Placement Capacity Assessment Project regarding the need for statewide nurse preceptor programs, CHA will be offering basic and advanced preceptor courses starting April 2009. Curricula for the statewide preceptor program were developed through the work of CHA, hospital educators, and nursing school faculty. The basic preceptor program will be offered twice per year and the advanced course will be offered on an annual basis. These programs are designed to prepare nurse preceptors who will support nursing students and new graduate nurses in learning at the bedside, and as appropriate, to serve as faculty-extenders. The advanced program will provide opportunities for seasoned nurse preceptors to share practices with colleagues from around the state and to explore topics related to teaching nurses in some depth.

CHA has spearheaded *Smart Moves: Connecticut's Campaign for Safe Patient Handling* in collaboration with the Connecticut Nurses' Association, the Connecticut Association of Not-for-Profit Providers for the Aging, the Connecticut Association of Health Care Facilities, and the Connecticut Association for Home Care and Hospice. The campaign is focused on increasing awareness and education regarding safe patient handling practices in multiple healthcare settings and promoting the use of assistive equipment to avoid manual lifting and transfer of patients. The

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campaign has held educational sessions for healthcare givers across settings and a third annual Smart Moves Forum is scheduled for February 2009. In support of the Smart Moves campaign, Governor Rell has designated February 22-28, 2009 as Safe Patient Handling week in the State of Connecticut.

### **1199 Training and Upgrading Fund**

The 1199 Training & Upgrading Fund is a joint labor/management educational program that provides tuition reimbursement, career counseling and academic support for District 1199 members interested in improving their basic skills, getting their high school diplomas or pursuing higher education. The Fund offers critical financial resources for entry-level workers in unionized long-term care facilities interested in personal and professional advancement.

In partnership with the Capital Region Education Council (CREC), the Fund offers off-site adult education classes for 1199 members in Stamford, New Haven, and Hartford (basic skills, high school diploma, and transition to college). English language and adult education classes are offered on-site at work to employees with assistance from WIBs and community colleges (The Workplace, Inc. and Norwalk Community College did work in Stamford and Capital Workforce Partners is a current partner in the Hartford area). Several hundred 1199 members receive tuition reimbursement each semester, and approximately 150 members participate in adult education classes each year.

The Fund is a partner in several initiatives including the Bridges to Health Care Careers program at Capital Community College and Capital Workforce Partners' USDOL Grant and Robert Wood Johnson grant initiatives. 1199 Training and Upgrading Fund has been working with national consultants to engage employers in improving the culture of their workplaces to utilize and enhance the skills of their entry-level employees. Efforts have focused on relationship building to change the decision making process and the opportunity for career and personal advancement.

In fall 2008, the Fund went through a strategic planning process, meeting with union officials, members, and stakeholders around the state in order to get input on how to better serve its members. The Fund expects that these regional stakeholder meetings will lead to increased participation in Fund programs, and also to new partnerships with employers, educational institutions, and other organizations throughout the state.

***The AHWPB believes these initiatives are critical to the state's ability to meet demands in the health care labor force. Current state investments should be sustained and expanded to allow programs to continue and be replicated statewide. In particular, state funding should be identified to support institutionalization of efforts undertaken with federal funding.***

## Ongoing Challenges and Recommendations

Through its deliberations, the AHWPB has identified a number of challenges that must be addressed in order to lessen workforce shortages in allied health and nursing. These challenges require collaboration and investments among a variety of stakeholders including state agencies, colleges and universities, labor unions and employers. In addition, it is imperative in these difficult economic times that current investments in these agencies are targeted to high demand occupations such as health care that support Connecticut's long term competitiveness.

### Advancing a Talent Pipeline Initiative for Healthcare Careers

While much work is underway in Connecticut to address the immediate barriers to generating nurses and allied health professionals in the short-term, including addressing faculty shortages and availability of clinical sites, these initial steps will not be sufficient to addressing the need over time if more systemic approaches to ensure a continued talent pipeline of qualified students are not also pursued.

The AWPB 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.

Addressing these three critical talent pipeline issues – deficient skill readiness, lack of career awareness and readiness, and low representation of minority students – calls for advancing new partnerships and collaborations and building upon the ongoing efforts in health care training taking place across high schools and post-secondary institutions in Connecticut.

#### Recommendation 1: Provide Student Support Services & Academic Remediation

Sufficient studies and Connecticut pilot projects have shown that embedded tutoring, case management and academic counseling services directly impact student program completion. Most colleges and universities, as well as the technical high school system, have very limited funding for program-specific student services. In particular, the community college Health Career Advisor positions have proven successful and resources should be found to sustain these positions. Colleges should also consider a variety of other strategies to improve student success possibly by reallocating resources to student counseling and tutoring, shrink class sizes to provide students with more instructional contact, streamlining developmental courses to allow students to focus on their learning gaps and accelerate their progress wherever possible and raise tuition to include important student supports along with the cost of courses. The current cost of

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tuition at the state's technical high school adult programs and the community colleges are artificially low without the inclusion of these key student supports.

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 non-credit 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.

*Recommendation 2: Coordinate Statewide Allied Health Outreach Campaign*

While many training programs exist within the State, some of those programs and careers go virtually unnoticed by youth and adults. A coordinated, statewide outreach campaign designed with input from all stakeholders, including AHEC, the Nursing Career Center, One Stop Career Centers and the state's secondary and post-secondary institutions is recommended. This campaign should include general marketing of nursing and allied health careers, training for teachers and guidance counselors, and information and career counseling for parents and students, particularly minority students, on career opportunities and the location of, and educational requirements for allied health programs. Current funding in each of these agencies' budgets can be leveraged to start this effort.

*Recommendation 3: Improve Articulation Between Secondary, Post-Secondary and Graduate Allied Health And Nursing Programs*

In order to facilitate an allied health care talent pipeline, the state must explore and support greater collaboration and connection between its high schools and colleges and between undergraduate and graduate programs to promote career advancement. The Department of Higher Education should convene a curriculum committee in collaboration with the AHWPB to review current training efforts at different educational levels to ensure these programs are articulated in seamless pathways for students.

**Increasing Higher Education Capacity to Provide Training**

A key issue facing the future of the health care workforce is an insufficient supply of college faculty to provide academic and clinical training. The current faculty workforce is aging and few individuals are pursuing teaching degrees in nursing and allied health. One reason for this shortage is that salary levels of teaching professionals, in allied health and nursing fields in particular, are significantly less than salaries for practitioners. In addition, many bachelor's and graduate programs are full-time and few current employees are in a position to stop working to advance their careers. These individuals may also have difficulty securing financial aid or scholarships to support their educational programs.

*Recommendation 4: Invest In New Faculty*

Nearly every Connecticut degree program within nursing and allied health is vulnerable to the current, or anticipated, faculty shortage problem. In fact, colleges and universities sought out 78 waivers for faculty from the Nurse Board of Examiners between 2006 and 2008. Where sufficient faculty exists, it is recognized that securing replacements will be difficult. It is therefore in the best interests of the state to create a proactive plan to develop instructor talent.

The Scholarship-for-Service model has been used successfully in government and the armed forces to produce employees for areas of need and pilot projects are underway at University of Hartford and Southern CT State University through the *Higher Education Health and Education Initiative*. Connecticut should maintain its 2008 investment in the Initiative in the next biennial budget to support expansion of these new scholarship models. These resources will help the state meet its need for health care faculty and ensure we are able to continue training the future workforce.

The state must also identify ways to address the compensation differential between faculty and practitioners in order to recruit and retain instructors. Discussions with the labor unions representing faculty at the secondary and post-secondary level could help to surface challenges to raising wages as well as identifying possible opportunities to support increased compensation for all.

*Recommendation 5: Expand Allied Health and Nursing Programs*

In order to meet the demand for health care professionals, the state must expand its program offerings at the secondary, post-secondary, and graduate degree levels. In addition, new training opportunities for students and faculty need to be developed in on-line and simulated formats to promote greater access to education programs. The faculty plan commissioned by the AHWPB outlined a number of key areas in which program expansion is necessary to meet labor force demands. It is imperative that the faculty resources allocated in the 2009 budget to the state's colleges and universities be maintained to support the expansion of nursing and allied health programs to meet state workforce demands.

### **Promoting Education and Business Partnerships**

A number of creative models have been developed for meeting the educational requirements of schools and the personnel needs of employers. However, many of these partnerships are limited or vulnerable because of the lack of available resources. These types of public-private partnerships will be critical to the ongoing success of health care training programs.

*Recommendation 6: Improve Clinical Contracting Process*

The contracting process is cited by employers, particularly hospitals, colleges and universities and high schools as a major barrier to providing students with clinical placements. The issues arise in multiple ways: the contract requirements and rules change frequently; parent companies who reside outside of Connecticut may follow rules that conflict with Connecticut's; and the length of time to complete contracts jeopardizes securing placements. Stakeholders call for clearer direction from the state, particularly the Attorney General's office, on contract requirements and more support in getting these important contracts in place for the school year. The state's bureaucracy should work with, not against its own efforts to provide workforce training.

*Recommendation 7: Support Employer-sponsored Training*

Having employers offer education, especially basic skills classes to their own employees addresses several of the barriers (transportation, work and family obligations, the cost of training,

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difficulty locating courses) that entry-level workers, particularly recent immigrants, face in terms of accessing basic skills and language skills training. Employer-sponsored courses have the added benefit of enabling employers to develop curricula that focus on the specific skill development and language needs of workers in the health care industry. The state must continue its past investment of \$500,000 for incumbent worker training through the Department of Labor and Workforce Investment Boards in order to support the continued viability of hospitals and long-term care facilities. In addition, it is recommended that current state investments in summer youth employment be maintained to support the paid health care internships that have been developed statewide.

## Conclusion

The AHWPB has made great strides since its establishment in 2004. The Board has commissioned key studies of faculty shortages and clinical placement opportunities. The Board has convened stakeholders to share information and strategies and to identify ongoing challenges to address health care workforce shortages.

The AHWPB calls on the state and its agencies to target its resources to health care careers. The AHWPB will work with state agencies, colleges and universities, Workforce Investment Boards and other partners to ensure these investments are strategically implemented, monitored and replicated throughout the state.