

Ready for the Job:

Understanding Occupational and Skill Demand in New Jersey's Health Care Industry

A Report of the New Jersey State Employment and Training Commission



Prepared by the
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With the Assistance of the Workforce Investment Boards of
Bergen, Cumberland/Salem, Hudson, Mercer and Passiac Counties,
and Cumberland County College, Mercer County Community College, and William Paterson University

James E. McGreevey, Governor

Spring 2004

Preface and Acknowledgements

The *Ready for the Job* project was developed by the New Jersey State Employment and Training Commission (SETC) with the New Jersey Departments of Labor and Education. The project was directed by Henry Plotkin, Executive Director of the SETC, and was funded by the New Jersey Department of Education. The research was conducted by the John J. Heldrich Center for Workforce Development at Rutgers, The State University of New Jersey, with assistance from the local Workforce Investment Boards of Bergen, Cumberland/Salem, Hudson, Mercer, and Passaic Counties and from researchers at William Paterson University, Cumberland County College, and Mercer County Community College.

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The SETC and the Heldrich Center wish to thank Commissioner Albert Kroll, Commissioner William Librera, Governor James McGreevey, and the many employers and citizens of New Jersey who were interviewed for and provided guidance for these reports.

Project Summary

Economic prosperity for New Jersey, its citizens, and its businesses depends on a well-trained workforce. This joint effort of the New Jersey State Employment and Training Commission, the New Jersey Department of Education, and the New Jersey Department of Labor is designed to collect up to date information from employers on the skill needs of eight key industries in the state. The eight industries that are the focus of this effort are: health care, finance/insurance, construction, utilities/infrastructure, manufacturing, tourism/hospitality, transportation/logistics, and information technology.

The entire effort, led by the local Workforce Investment Boards of Bergen, Cumberland/Salem, Hudson, Mercer, and Passaic Counties and guided by Industry Advisory Groups, involved over thirty focus groups and eighty interviews with employers and educators. The Heldrich Center for Workforce Development at Rutgers, The State University of New Jersey, with assistance from researchers from William Paterson University, Cumberland County College, and Mercer County Community College, conducted this research to identify the skills, knowledge, and educational requirements of seventy-four select occupations and eleven areas of work. The Heldrich Center and its research partners also identified the key trends in each industry that affect skill requirements and identified strategies for meeting the key workforce challenges of each industry.

The information collected through this effort will be disseminated through this series of reports and through an Internet website (www.njnextstop.org) that will include a searchable database of each profiled occupation. This information will assist a variety of users. Students and job seekers can use this information to make decisions about education and careers. Educational and training institutions can use this information to develop course and programs of study that will provide individuals with necessary skills. Policy makers at the state level can use this information to ensure that government resources are invested in programs and efforts that will benefit individuals and businesses.

Understanding Occupational and Skill Demand in New Jersey's Health Care Industry

Executive Summary

Due to the presence of many large employers (hospitals, medical centers, pharmaceutical firms), the expected increase in demand for health care services by the state's aging population and its importance to the state economy, the health care industry is critical to New Jersey. The health care industry in New Jersey employs nearly 350,000 and the growth in employment from 2000 and 2010 is projected to be 29%.¹ However, a state, national and international shortage of nurses is spreading concern throughout the industry. The aging of the "Baby Boom" generation and other demographic, social, and economic factors are intensifying both the need for and lack of adequate numbers of skilled, qualified workers in the health care industry.

Jobs in the health care industry are changing. Private practice establishments and nursing care facilities will account for the majority of the increase in number of jobs, while hospitals, under pressure to control costs and encumbered with the demands of an increasingly consolidated health care industry, will account for the smallest percentage of the projected growth.² The New Jersey health care industry is no exception. Mirroring a national trend, in recent years New Jersey's health care industry has increased its focus on cost control and consolidation. The result is a competitive market-based system that has forced many small providers of health care services to merge into larger regional and national organizations.³

This report, based on focus groups and interviews that include over thirty separate employers, summarizes the skill, knowledge, and educational requirements of key health care occupations and identifies strategies for meeting the key workforce challenges facing the industry.⁴

Skill Requirements of Selected Job Groups

Ten occupations selected for this study by the Industry Advisory Group largely fall into three "job groups" that share a common set of core competencies, basic educational requirements, and skill sets. While within each job group the level of skill mastery required varies, the occupations within the job group share a common continuum of competencies and tasks. In a dynamic and fluid economy, the definitions and requirements of occupations change often and can vary from one employer to another. The grouping of occupations into job groups minimizes the effect of these differences.



Administration

The Administration job group includes occupations that are responsible for the daily organization and management of business affairs and include medical coders. A medical coder uses a classification system to assign code numbers and letters to each symptom, diagnosis, disease, procedure, and operation that appears in a patient's chart. These codes are used for insurance reimbursement, research, and health planning analysis and to make clinical decisions. A high degree of accuracy

and a working knowledge of medical terminology, anatomy, and physiology are important skills for these professionals. Certification programs are available and preferred, although not always required, by employers. Medical coder is a new occupation that developed in response to demands of medical insurance coverage and is not included in state labor market information (LMI) projections.

Occupations: Medical Coder	
Core Competencies	Sample Skills
Use keen and consistent attention to detail in order to file, code, and communicate industry records for billing, tracking and research purposes.	Communication and Teamwork
Communicate confidently and effectively with members of the industry, relying on strong familiarity with industry terminology.	Attention to Detail
	Research skills
	Computer skills

Patient Care

The Patient Care job group includes both highly skilled and entry-level workers who treat, communicate with and interact with patients, either in an institutional or home-based setting. The ability to effectively interact and communicate with members of the health care team (client, family, fellow health care workers) is critical to success in the Patient Care job group, as

is the ability to apply appropriate health care technology and to anticipate, identify and solve problems, particularly in an emergency situation. Employers cite these workers, particularly nurses, as the "backbone" or "front-line" of the health care industry, as well as the "human face" of health treatment.

Occupations: Pharmacist, Registered Nurse, Licensed Practical Nurse, Certified Nursing Assistant, Home Health Aide, Physical Therapist, Mental Health and Substance Abuse Social Worker	
Core Competencies	Sample Skills
Interact and communicate effectively with members of the health care team (patient, family, other health care workers).	Service Orientation
Ability to apply appropriate health care technology.	Problem Solving and Critical Thinking
Anticipate, identify and solve problems, relying on strong observation skills, medical knowledge, and the exchange of information with colleagues.	Communication and Teamwork
Ability to react quickly and professionally to emergency situations.	Judgement and Decision Making
Demonstrate patience and a willingness to address patient concerns and inquiries.	Monitoring
Demonstrate thorough and consistent adherence to industry and employer protocols, including those pertaining to occupational health and safety.	



Science and Technology Application

The Science and Technology Application job group includes occupations such as radiology technician and nuclear imaging technician.⁵ Workers in this occupation interact with patients, but patient care is not their primary function. Instead, they apply the science and technology needed for diagnosing and treating patients. Understanding and applying medical

technology and methods and computer skills are critical for workers in this job group. As advances in science increase the volume and complexity of health care services and create a need for workers with specialized or advanced skills, these skills will become even more critical for success in this job group.⁶

Occupations: Radiology Technician, Nuclear Medicine Technologist	
Core Competencies	Sample Skills
<p>Apply knowledge of technology and science relevant to industry practices.</p> <p>Use tremendous attention to detail while working to identify and assess system flaws.</p> <p>Demonstrate an understanding of and a consistent adherence to safety precautions.</p>	<p>Operation Monitoring</p> <p>Mathematics and Technology</p> <p>Equipment Selection</p> <p>Analysis</p> <p>Reading Comprehension</p> <p>Writing</p>

Key Workforce Challenges

The health care industry in New Jersey is facing two primary workforce challenges:

Challenge 1: Preparing Skilled, Qualified Entry-Level Workers

Employers cite the lack of training capacity in the state, particularly the shortage of qualified instructors, as one of the major barriers to preparing skilled, qualified workers and a significant contributing factor to the New Jersey nursing shortage.

Challenge 2: Attracting and Recruiting Workers

Attracting and retaining workers with the skills needed to succeed in the industry is a constant challenge for some occupations, due to job factors such as high turnover, poor working conditions, and low pay. In addition, men and minorities in Patient Care jobs remain underrepresented in an industry that has historically been dominated by white women.

To address these challenges, the health care industry must work with the public and the private sector, as well as educational institutions, to create and coordinate a comprehensive set of workforce development strategies. Recommendations for doing so must recognize the complex needs of this changing industry.

Recommendations

1. Recommendations to Prepare Skilled, Qualified Entry-Level Workers

Strengthen and Expand Post-Secondary Education and Training

Employers and other stakeholders stress the dire state of New Jersey's health care training capacity. The state must provide more funding to health care educational institutions. Funds are needed to increase the number of instructors and improve training capacity and increase building spaces available for medical education.

In addition, the consolidation of many of New Jersey's hospitals has resulted in decreased availability of clinical rotations for students. To ensure that students have access to this invaluable hands-on experience, the industry must take steps to increase and coordinate opportunities for student clinical work.

Strengthen Secondary Education

The health care industry should enhance mentoring opportunities for new nurses to help remedy some of the skill gaps employers say younger workers have, as well as facilitating their transition into the field. Such a mentoring program should also be extended to students (K-16), increasing awareness of the industry among students and providing a valuable learning experience.

The industry should also consider renewing the Junior Volunteer program (formerly the Candy Striper program). This program can serve as a "pre-nursing" program to provide training in some of the basic skills involved in nursing and offer students work experience in the field.

2. Recommendations to Attract and Recruit Workers

The health care industry must develop programs and strategies that target hard-to-fill positions, such as home health aides. The recruitment and retention of workers in lower paying jobs such as home health aides and other direct care workers is particularly problematic. The industry must develop strategies that target these positions, including the development of attractive and viable career ladders.

Recruit Workers from Untapped Labor Pools

The industry should develop a marketing strategy that targets under-represented groups such as men and minorities. This effort should be coordinated with community colleges, particularly those with program and curricula already in place.

Provide Funding for Training

The industry and the state of New Jersey should increase financial assistance for those already in health care programs, as well as incoming students. Scholarships and other forms of financial aid will widen the pool of students interested in entering the field, and provide them with the means to do so.

In addition, the industry should expand and develop accelerated nursing programs that allow students to complete their nursing studies in less time than the typical course of study. Such programs are particularly attractive to older workers who are interested in entering the health care industry but cannot afford to be out of work for exceptionally long periods.

When considering the above recommendations, it is important to remember that regulatory issues such as health insurance reimbursement policies, administrative regulations, and state and federal laws may stymie efforts to implement workforce strategies. Realigning reimbursement policies, for example, is a significant undertaking, as is changing the current regulatory environment. To affect change in these areas, public (federal and state) and private stakeholders would have to coordinate their efforts and make a long-term commitment to the process.

¹New Jersey Department of Labor. "Industry and Occupational Employment Projections." 1 October 2003. <<http://www.wnjin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi04/>>

²Gardner, W. Stephen. 2002. "Trends in the Health Care Industry in South Carolina." 2002. <http://www.sces.org/lmi/LMI_Library/Trends%20in%20the%20Healthcare%20Industry.pdf>

³Public Affairs Research Institute of New Jersey. 2002. <<http://www.nj.com/pari/healthoverview.html>>

Reader's Note

Ready for the Job Identifies Four Skill Types

The *Ready for the Job* project identifies four types of skills that are required by or important to employers. Employers require basic skills and workplace readiness skills for nearly all jobs. Cross-industry demand skills, identified through the focus groups and interviews with employers, are important in a variety of occupations in many industries. Finally, employers require advanced technical and professional skills for many jobs. These skills are job-specific and are typically obtained through post-secondary education and training either provided by educational institutions or by employers.

Type of Skill	Definition	Level of Importance
Basic Skills	Ability to read, write, and perform basic mathematical calculations.	Criteria for most entry level or low-level or low-skilled types of jobs.
Workplace Readiness Skills	Minimum expectations for functioning in the workplace, that include meeting standards for attendance and promptness, reliability and integrity, as well as dress and decorum.	Criteria for all jobs in the workforce.
Cross-Industry Demand Skills	Broader skills sets that are in the highest demand among employers in today's economy, and indicative of success in the workforce. These cross-industry demand skills include: - Math and technology skills - Problem solving and critical thinking skills - Communication and teamwork skills - Entrepreneurship and business skills	Strength in these skill areas can lead to expanded employment opportunities and career success across industries.
Advanced Technical/ Professional Skills	Skills acquired through education and training needed to perform specific tasks and succeed in specific jobs.	Criteria for performance in specific jobs. Education and training is provided by post-secondary education institutions and /or employers.

⁴A full discussion of the methodology used for this study is included in Appendix A.

⁵Many focus group participants say that radiology technician is really an umbrella term for a larger group of people including the CT technologist, MRI technologist, ultrasound technologist and a large number of other specialties.

⁶General Accounting Office. "Health Care: Adequacy of Pharmacy, Laboratory, and Radiology Workforce Supply Difficult to Determine." GAO-02-137R. 10 October 2001.

Understanding Occupational and Skill Demand in New Jersey's Health Care Industry

I. Introduction

Due to the presence of many large employers (hospitals, medical centers), the expected increase in demand for health care services by the state's aging population and its importance to the state economy, the health care industry is critical to New Jersey. This report, based on focus groups and interviews that included over thirty separate employers and educators, summarizes the skill, knowledge, and educational requirements of key health care occupations and identifies strategies for meeting the key workforce challenges facing the industry.⁷

The Cumberland/Salem Workforce Investment Board (WIB) convened an Advisory Group of industry stakeholders to guide the effort.⁸ This advisory group, working in collaboration with each WIB in South Jersey (Atlantic/Cape May, Burlington, Camden, Cumberland/Salem and Gloucester) selected ten key occupations within the health care industry for in-depth skill demand analysis and provided input on focus group and interview participants and research. The Heldrich Center and Cumberland County College held four focus groups with industry and educational stakeholders regarding industry trends and the skill, knowledge, and educational requirements of selected occupations. The Heldrich Center also conducted ten interviews with industry human resource and management personnel regarding education, training and recruitment issues.⁹

II. Profile of the Industry and Its Skill Needs

a. *Background of the Health Care Industry and its Importance to New Jersey*

The health care sector includes establishments providing health care and social assistance for individuals. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finishing with those providing only social assistance. Trained professionals deliver the services provided by establishments in this sector. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the occupations in the sector are defined based on the educational degree held by the practitioners included in the industry.¹⁰

Throughout the country, the economic impact of health care services is both significant and increasing. National statistics indicate that for the years 1998 through 2008, health services are one of the fastest growing sectors in the United States. Private practice establishments and nursing care facilities will

account for the majority of the increase in number of jobs, while hospitals, under pressure to control costs and encumbered with the demands of an increasingly consolidated health care industry, will account for the smallest percentage of the projected growth.¹¹ The New Jersey health care industry is no exception. Mirroring a national trend, in recent years New Jersey's health care industry has increased its focus on cost control and consolidation. The result is a competitive market-based system that has forced many small providers of health care services to merge into larger regional and national organizations.¹²

In 2000, there were more than eleven million individuals employed in the U.S. health care industry, including 383,000 self-employed individuals. Individuals employed in the health care industry work in a wide array of establishments, including hospitals, nursing and personal care facilities, offices and clinics of physicians (including osteopaths), home health care services, offices and clinics of dentists, offices and clinics of other health practitioners, offices of other health and allied services (for example, kidney dialysis centers) and medical and dental laboratories.¹³ Despite the variety of work settings, nearly half (45%) of individuals employed in the health care industry work in hospitals. Within this industry, the specific activities associated with health services include therapeutic, diagnostic, information services and environmental services activities.¹⁴ The employment outlook for the industry suggests considerable growth, with employment projected to increase more than 25% from 2000 to 2010, compared to 16.5% employment growth across all industries.¹⁵ Currently, a state, national and international shortage of nurses is spreading concern throughout the industry.

In the U.S., this shortage is expected to intensify as Baby Boomers age and the need for health care grows. Compounding the problem is the fact that nursing colleges and universities across the country are struggling to maintain enrollment levels, which remain insufficient to meet the projected demand for nursing care.¹⁶ According to a July 2002 report by the Health Resources and Services Administration, thirty states reported shortages of registered nurses (RNs) in the year 2000. The shortage is projected to intensify over the next two decades, with forty-four states and the District of Columbia expected to have RN shortages by the year 2020.¹⁷

The nursing shortage is caused by a number of factors, including:¹⁸

- Schools of nursing are reporting a decline in student enrollment, which translates into fewer nurses in the educational pipeline. According to a fall 2002 survey by the American Association of Colleges of Nursing, enrollment in entry-level baccalaureate programs in nursing increased by 8% nationwide since fall 2001.

Despite this increase, enrollment is still down by almost 10%, or 11,584 students from 1995. On average over the last five years, the number of graduates from entry-level baccalaureate programs in nursing declined by 1,030 each year.

- A shortage of nursing school faculty is restricting nursing program enrollments. According to a survey by the American Association of Colleges of Nursing, *2000-2001 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, more than one-third (38.8%) of schools that responded pointed to faculty shortages as a reason for not accepting all qualified applicants into entry-level baccalaureate programs.
- With fewer new nurses entering the profession, the average age of the RN is climbing. According to the *National Sample Survey of Registered Nurses*, released in February 2002 by the Division of Nursing within the Bureau of Health Professions, the average age of the working registered nurse was 43.3 in March 2000, up from 42.3 in 1996. The RN population under the age of 30 dropped from 25.1% of the nursing population in 1980 to 9.1% in 2000.
- Changing demographics signal a need for more nurses to care for our aging population.
- Job burnout and dissatisfaction are driving nurses to leave the profession. According to a study commissioned by the Federation of Nurses and Health Professionals in April 2001, *The Nurse Shortage: Perspectives from Current Direct Care Nurses and Former Direct Care Nurses*, one out of every five nurses currently working is considering leaving the patient care field for reasons other than retirement within the next five years.

Clearly, these factors are having a serious impact on patient care. Many recent studies demonstrate the link between nurse staffing levels and good patient care. For example, a survey reported in the December 12, 2002 issue of the *New England Journal of Medicine* found that 53% of physicians and 65% of the public cited the shortage of nurses as a leading cause of medical errors.¹⁹ According to a study published in the October 23/30, 2002 issue of the *Journal of the American Medical Association*, more nurses at the bedside could save thousands of patient lives each year. Nurse researchers at the University of Pennsylvania determined that patients who have common surgeries in hospitals where nurses have higher patient workloads have an up to 31% increased chance of dying. Funded by the National Institute for Nursing Research, the study found that every additional patient in an average hospital nurse's workload increased the risk of death in surgical patients by 7%. Having too few nurses may actually cost more money given the high costs of replacing burnt-out nurses and caring for patients with poor outcomes.²⁰

The New Jersey health care industry employed 9.2% of the state's workforce in 1998.²¹ In 2003, the industry employed 348,520 individuals, who earned an average yearly salary of \$41,005.²² Industry employment has grown dramatically in recent years and this upward trend is expected to continue. Between 1988 and 1998, employment in the health care industry grew by 38%.²³ The growth in employment from 2000 and 2010 is projected to be 29%.²⁴ Both in terms of economic development and employment, the health care industry is a key component of the state economy and crucial to its growth (see Figure 2.1).

b. Skill Requirements of Selected Occupation Groups

The advisory group for this effort selected ten occupations for in-depth skill demand analysis. These ten occupations were selected by the advisory group to include the occupations with the largest number of annual openings or that were expected to experience significant growth in openings in the next ten years. The advisory group members used estimates and projections produced by the New Jersey Department of Labor as well as their own knowledge of the industry. In addition, the advisory group also considered occupations with a shortage of qualified workers. Finally, the advisory group ensured that the selected occupations represented a diversity of education and training requirements.

In 2000, 187,400 individuals were employed in these ten selected occupations in the state (see Figure 2.2). The number of individuals employed in these occupations is expected to grow by 28% from 2000 to 2010. The mean annual wages of these occupations ranged from \$19,615 to \$73,505 in 2003.

**Figure 2.1: At-a-Glance:
The Health Care Industry**

Economic Impact: National and State	
Industry as share of GDP (2001) ²⁵	5.8%
Industry as share of GSP (2001) ²⁶	5.9%
Employment and Compensation: National²⁷	
Number employed (2000)	11 million
Average Weekly Earnings (2000) ²⁸	\$488
Projected Growth in Employment from 2000-2010	25.5%
Employment and Compensation: New Jersey	
Number employed (2003) ²⁹	348,520
Average Weekly Earnings (2003) ³⁰	\$789
Projected Growth in Employment from 2000-2010 ³¹	28.5%

Figure 2.2: New Jersey Employment³² and Earnings³³ in Selected Occupations* Throughout All Industries

Occupation	Mean Annual Wages 2003	Estimated Number Employed 2000	Projected Number Employed 2010	Percent Change 2000–2010	Annual Openings (due to both growth & replacement)
ADMINISTRATION					
Medical Records and Health Information Technicians	\$30,960	2,700	3,700	38.8%	160
PATIENT CARE					
Registered Nurses	\$53,870	78,900	99,000	25.5%	3,600
Licensed Practical and Licensed Vocational Nurses	\$38,445	19,900	25,100	26.2%	1,030
Home Health Aides	\$19,615	23,500	36,800	56.1%	1,620
Nursing Aides, Orderlies, and Attendants	\$22,545	40,600	50,400	24.3%	1,500
Mental Health and Substance Abuse Social Workers	\$41,120	2,700	3,600	34.6%	120
Physical Therapists	\$65,055	5,000	6,700	35.1%	300
Pharmacists	\$73,505	6,600	7,900	19.1%	320
SCIENCE AND TECHNOLOGY APPLICATION					
Radiologic Technologists and Technicians	\$45,645	6,700	8,500	27.7%	330
Nuclear Medicine Technologists	\$56,950	800	1,000	25.9%	40

* Totals may not add due to rounding. Employment data are rounded to 100. Percent changes are based on unrounded data.

The ten selected occupations in the health care industry largely fall into three “job groups” that share a common set of core competencies, basic educational requirements and skill sets (see Figure 2.3). These include Administration positions, including medical coders; Patient Care, including pharmacists, physical therapists, social workers, registered nurses, licensed practical nurses, certified nursing assistants and home health aids; and Science and Technology Application, including radiol-

ogy and nuclear imaging technicians. A description of these selected occupations, their skill requirements and key workforce issues can be found in Appendix D. A searchable database of all selected occupations in the eight industries is available at www.njnextstep.org.

Figure 2.3: Profile of Health Care Industry Job Groups

Job Groups	Description of Job Group	Occupations Included in Job Group	Education/Training Required or Preferred by Employers	Core Competencies ³⁴	Sample Occupational Skills
Administration	Work that involves daily organization and management of business affairs	Medical Coders	HS Diploma/GED Work Experience.	Use acute and consistent attention to detail in order to file, code, and communicate industry records for billing, tracking and research purposes Communicate confidently and effectively with members of the industry, relying on strong familiarity with industry terminology	Communication and Teamwork Attention to Detail Research skills Computer skills
Patient Care	Work that involves direct provision of patient care including diagnostic, therapeutic, and personal care.	Registered Nurse Licensed Practical Nurse Certified Nursing Assistant Home Health Aide Physical Therapist Mental Health and Substance Abuse Social Worker Pharmacist	Certifications required for all Many positions in this job group require a post-secondary degree	Interact and communicate effectively with members of the health care team (patient, family, other health care workers) Ability to apply appropriate health care technology Anticipate, identify and solve problems, relying on strong observation skills, medical knowledge, and the exchange of information with colleagues Ability to react quickly and professionally to emergency situations Demonstrate patience and a willingness to address patient concerns and inquiries Demonstrate thorough and consistent adherence to industry and employer protocols, including those pertaining to occupational health and safety	Service Orientation Problem Solving and Critical Thinking Communication and Teamwork Judgement and Decision Making Monitoring
Science and Technology Application	Work that involves the application and evaluation of technological and scientific processes.	Radiology Technicians Nuclear Medicine Technologists	Varies. Many positions in this job group require a post-secondary degree and/or substantial on-the-job training	Apply knowledge of technology and science relevant to industry practices Use tremendous attention to detail while working to identify and assess system flaws Demonstrate an understanding of and a consistent adherence to safety precautions	Operation Monitoring Mathematics and Technology Equipment Selection Analysis Reading Comprehension Writing

While within each job group the level of skill mastery required varies, the occupations within the job group share a common continuum of competencies and tasks. In a dynamic and fluid economy, the definitions and requirements of occupations change often and can vary from one employer to another. The grouping of occupations into job groups minimizes the effect of these differences.

Administration

Description and Skill Requirements

The Administration job group includes occupations that are responsible for the daily organization and management of business affairs and include medical coders. A medical coder uses a classification system to assign code numbers and letters to each symptom, diagnosis, disease, procedure, and operation that appears in a patient's chart. These codes are used for insurance reimbursement, research and health planning analysis and to make clinical decisions. A high degree of accuracy and a working knowledge of medical terminology, anatomy and physiology are important skills for these professionals. Certification programs are available and preferred, although not always required, by employers. Medical coder is a new occupation that developed in response to demands of medical insurance coverage and is not included in LMI projections.

Emerging Skills

The key emerging skill in the Administration job group is knowledge of the increasingly complex reimbursement and insurance regulations, regulations that continue to evolve in today's atmosphere of consolidation and managed care. In addition, occupations such as medical coder must master a relatively new set of skills regarding classification of medical procedures.

Workforce Trends and Issues

The increased complexity of the health care insurance industry is driving the rising demand for medical coders. Already a key member of the health care team in hospitals and other large health care institutions, employers tell us that soon every doctor's office will need a medical coder on staff. However, recruiting people to this profession is a challenge. "The biggest problem is that no one knows what this job is," explained one employer. "Guidance counselors know how to explain being a doctor or nurse to a student, but they have no sense of what a medical coder does."

Patient Care

Description and Skill Requirements

The Patient Care job group includes both highly skilled and entry-level workers who treat, communicate with, and interact with patients, either in an institutional or home-based setting. Occupations such as pharmacists, physical therapists, social workers, registered nurses (RN), licensed practical nurses (LPN), certified nursing assistants (CNA) and home health aides are included in this job group. In addition, highly skilled occupations such as physicians are also in this job group, but were not selected for in-depth study for the purposes of this report.

The ability to effectively interact and communicate with members of the health care team (client, family, fellow health care workers) is critical to success in the Patient Care job group, as is the ability to apply appropriate health care technology and to anticipate, identify and solve problems, particularly in an emergency situation. Employers cite these workers, particularly nurses, as the "backbone" or "front-line" of the health care industry, as well as the "human face" of health treatment. As such, possession of the above referenced competencies is essential for these workers.

In conducting focus groups and interviews with employers in the health care industry, a set of skills necessary to succeed in the selected occupations emerged. Using their own skill language, employers emphasized the need for Patient Care workers to possess effective communication skills, critical thinking, and problem solving skills (sometimes in emergency situations), teamwork skills and computer skills, in addition to their technical health care knowledge. RN's, in particular, one employer explained "must have the ability to make rapid judgments and prioritize care." Finally, as Patient Care occupations involve interactions with patients, workers in these occupations must have excellent interpersonal skills and what employers describe as a "good bedside manner." In general, employers say they are satisfied with the medical skill levels of new workers, as the education and certification process ensures that they possess the technical skills necessary. However, employers cite the lack of interpersonal skills in new workers and job seekers, as well a marked decline in "customer service orientation." Employers explain that health care is moving rapidly toward a client-provider model, where the patient is paying for a service. While employers are generally satisfied with the technical skills of new entrants into the workforce, they are less satisfied with the customer service skills of these workers than they have been in the past, focus groups revealed.

Employers stress that upgrading the skills of Patient Care workers is extremely important. "There are so many changes every day in terms of research, technology and treatments," says one employer. "It is tremendously important that staff stay on top of these changes."

Pharmacists must possess a firm knowledge of mathematics, English language, medicine, chemistry and biology. A keen attention to detail is a necessary skill for pharmacists. Employers note that many pharmacists work in high-volume settings and must be able to handle stress. Because pharmacists serve as an intermediary between patients and their health care providers, as well as between patients and their insurers, pharmacists must possess excellent communication skills.

The education requirements for Patient Care positions are established by the state and include certification and, in the case of registered nurses, a four-year degree. Physical therapists must hold a bachelor's and master's degree, which can often be pursued in a combined five-year program. Mental health and substance abuse social workers must hold a Master's of Social Work. Pharmacists must have a post-bachelor's degree in pharmacy.

Emerging Skills

The key emerging skills and knowledge in the Patient Care work are knowledge of increasingly complex health care technology and pharmaceutical products, complicated insurance regulations, computer skills, and customer service skills.

Workforce Trends and Issues

Several trends are influencing the demand for Patient Care workers. First, there is a serious and deepening labor shortage in the nursing field. The Bureau of Labor Statistics projects that nursing will face more staff vacancies by 2010 than any other professional category.³⁵ A workforce survey by the American Hospital Association has cited a current Registered Nurse (RN) vacancy rate of 11%.³⁶ Moreover, there are indicators that the crisis will only worsen in the coming years. A 2001 survey by the Federation of Nurses and Health Professionals reported that one in five nurses surveyed intends to exit the nursing field within the next five years.³⁷ Even more troubling, a 2001 American Nurses Association study reported that more than half of the nurses surveyed "would not recommend the profession to others." Nearly one in four would "actively discourage someone close to them from entering the field."³⁸

What factors are contributing to the nursing shortage? The crisis is due, in part, to the demographic composition of the nursing workforce, which is heavily comprised of older individuals. Nationally, the median age of nurses in 2001 was 43 years, up from 39 in 1989.³⁹ In New Jersey, half of the state's nurses will reach retirement age within ten years.⁴⁰ More than two-thirds of nurses are over age 40 and only 9% are under age 30, with an average age of 45.⁴¹ This suggests a deepening labor shortage, as many of the positions vacated by older

nurses transitioning into retirement are unfilled. Some suggest that the opening of other career paths for women has lessened the attractiveness of the nursing profession, as many young women opt for careers that were once generally held only by men. Indeed, the younger generation appears increasingly disinterested in the profession, as is evident in the 33% decline in nursing programs' applications from 1993 to 2000.⁴² The comparatively small pool from which labor has traditionally been recruited—white females—has also contributed to the labor shortage. In addition to recruitment problems, the nursing workforce is further compromised by retention problems. Nursing associations often point to low wages, heavy workloads and long hours, which pose barriers to the adequate retention of the current workforce. In addition, the advent of managed care and other policies that affect insurance and reimbursement practices has resulted in many nurses reporting that they spend more time on paperwork than they do on patient care. While the supply of nursing labor continues to slip, the demand for nursing services is rapidly increasing, due to both an aging population and longer-lived population.

In addition, there is currently a severe labor shortage of direct care workers such as nursing assistants and home health aides. Low wages, the absence of career ladders and an image of poor job quality contribute heavily to the labor shortage. Though report findings vary in magnitude, research suggests that the vacancy and turnover rates for these positions are high. More than one-third of long term care providers in Pennsylvania report that there are "extreme" problems with recruitment or retention for these health care positions. Twice as many providers characterized these problems as "significant." In New York, a 1999 survey reported a sizable nursing assistant turnover rate of 42%. Moreover, a 2000 report from Florida's Department of Elder Affairs found that only 53% of trained nursing assistants were working in health-related fields one year after certification, indicating that the profession has proven to be an undesirable one among those who have experienced it.⁴³

Demand for pharmacy services is increasing due to increased use of prescription medications. The development and promotion of new medications, the expansion of prescription coverage, and the aging of the population all contribute to this increased demand for pharmacy services. Additional stressors on demand may include the increased competitiveness of the market (as new pharmacies open and are incorporated into establishments such as grocery stores) as well as an increased role of pharmacists in patient care and education. Despite these increased demands, recruitment of new pharmacists is insufficient, as reflected in the 29% decline in pharmacy school applications from 1996 to 2000.⁴⁴ The American Hospital Association estimates the nationwide vacancy rate for pharmacists to be 21%.

Science and Technology Application

Description and Skill Requirements

The Science and Technology Application job group includes occupations such as radiology technician and nuclear imaging technician.⁴⁵ Workers in this occupation interact with patients, but patient care is not their primary function. Instead, they apply the science and technology needed for diagnosing and treating patients. Understanding and applying medical technology and methods and computer skills are critical for workers in this job group. As advances in science increase the volume and complexity of health care services and create a need for workers with specialized or advanced skills, these skills will become even more critical for success in this job group.⁴⁶

The term “radiologic technician” is typically considered to be an umbrella term for a number of diagnostic technicians including those who perform fluoroscopies, mammograms, and MRIs, among other tests. Radiologic and nuclear medicine technicians must possess knowledge of computers, chemistry, biology and mathematics. They should be skilled communicators, as they must be able to both ease patient concerns and accurately document their medical history, as well as converse with physicians and other health care staff. Radiologic technicians must possess a two-year associate’s degree or hospital diploma. Nuclear medicine technologists prepare for their career either through a one-year certificate program, two-year associate’s degree or four-year bachelor’s degree. These individuals must be state licensed.

Emerging Skills

The key emerging skill in the Technology/Science job group is the knowledge of increasingly complex technical procedures. As science and medicine advances, new types of technician occupations will continue to emerge, requiring new skills.

Workforce Trends and Issues

The General Accounting Office (GAO) reports that the supply of laboratory technicians and technologists and radiology technicians and technologists is not enough to meet demand. Among the surveys reviewed by the GAO, vacancy rates for these occupations rose from 5.0% to 13.6% in 1988 to 10.0% to 22.2% in 2000. The authors attribute this inadequate supply to the low appeal of employment in the health care industry, particularly since the technologically minded individual is likely to favor more profitable employment in other industries.⁴⁷ The vacancy rate for radiological technicians and laboratory technicians is also very high (18% and 12%, respectively).⁴⁸ Employers cite a number of reasons for this high vacancy rate, including a lack of awareness among job seekers and educational institutions about these occupations and a shortage of training capacity.

III. Key Workforce Challenges

The growth of the health care industry can be maintained only if there is an adequate supply of workers in the labor force who have the skills needed by the industry. However, two key workforce challenges to the industry are converging, resulting in a number of labor and skill shortage issues.

Challenge 1: Preparing Skilled, Qualified Entry-Level Workers. Employers stress that the number of people interested in entering the health care field is not the primary issue contributing to the current nursing shortage in New Jersey; it is the lack of training capacity. Even if applicants to nursing schools increased significantly, there are too few training programs to accommodate them. As one employer notes, “There is no point in increasing interest in these fields if we can’t accommodate new recruits in medical education programs.”

This severe lack of capacity at the state’s nursing schools is due to both a declining number of nursing schools and training institutions, as well as to difficulty in recruiting instructors to remaining institutions. Due to low pay and high education requirements, it has become increasingly difficult in recent years to attract nursing instructors with the required master’s degree to staff nursing programs.

Challenge 2: Attracting and Recruiting Workers.

Increased demand for services caused by an aging population, greater access to health insurance for some citizens and increasing health care options is increasing the demand in many health care occupations, particularly the Patient Care job group. At the same time, the health care workforce is aging and retiring in increasing numbers.

The labor shortage is expected to persist-and even worsen-in New Jersey due to a number of demand-side factors. The aging population and workforce are of particular significance. In New Jersey, while the total population is projected to grow by just 13% by 2020, the population over age 65 is projected to grow by 32%.⁴⁹ This trend will continue to increase the demand for health care services (particularly home- and community-based health care services) and the labor necessary to provide them. These shortages will deepen in the coming years as the demand for health care services increases. In addition, medical advances are lengthening the lives of the sick and elderly, further increasing the demand for health services. At the same time, half of the state’s nurses will reach retirement age within ten years.⁵⁰ “The shortage feeds itself,” notes one employer. “People leave the profession because their facilities are understaffed and they are too overworked.”

Registered nurses and licensed practical nurses are in particularly short supply, and in New Jersey, the nursing shortage is even more severe than for the nation (see Figure 3.2). While the national nursing workforce is expected to fall short of demand by 20% in 2020, the expected New Jersey workforce gap at that time is 30%.⁵¹

Figure 3.2: Nursing Shortage in New Jersey⁵²

Year	Projected Demand	Projected Supply	Projected Shortfall
2006	74,550 RNs	60,600 RNs	18% (n=13,950)
	23,786 LPNs	20,000 LPNs	17% (n=3,786)
2020	78,100 RNs	54,000 RNs	30% (n=24,100)

The New Jersey Colleagues in Caring projects an increased demand of 11,000 RN positions by 2006; and if the graduates of RN entry level programs continue to decline at the current rate of 12% per year; and if 3% of RNs leave nursing each year due to retirement or other reasons; then New Jersey will have a shortage of nearly 14,000 RNs in 2006. This figure represents a vacancy rate of 18% in the State RN workforce. A vacancy rate of 10% generally is considered critical.⁵³ Unfortunately, there are not enough new nurses in the pipeline. New Jersey nursing programs graduated 642 nurses with associate degrees in 2000, compared to 1,046 just three years earlier.⁵⁴

In contrast, the number of pharmacy graduates from Rutgers University increased from 177 to 243 over the past five years; however, demand for appropriately skilled pharmacists is still likely to outstrip this supply.⁵⁵ Research indicates that the New Jersey population is becoming better educated and more individuals are graduating from New Jersey higher education institutions with degrees appropriate to work in the pharmacy positions. However, in comparing the projected degrees demanded by the industry with the graduation trends of those degrees, it is clear that there are not sufficient numbers of individuals with advanced math and science degrees graduating from New Jersey higher education institutions to fill many positions.⁵⁶

Increasing the supply of new workers in the Patient Care job group of occupations is critical. However, several issues currently hinder this activity, including limited outreach to non-traditional workers, workplace issues such as low pay and long or irregular hours, lack of awareness among job seekers and students regarding many aspects of the industry, and a severe lack of capacity at the state's nursing schools to accommodate those who want to enter the field.

IV. Current Efforts to Meet the Challenges

Strategies to address the shortage of skilled workers in the industry have sought to attract more students to the field and to improve the quality and quantity of training programs.

Strategies to Prepare Skilled, Qualified Entry-Level Workers

Employers explain that the lack of nurses is not only due to a lack of interest in the field, but to a lack of capacity at the nursing schools; the limited number of available nursing programs/training slots is slowing entrance of new nurses into the field. Employers cite several capacity issues, including limited facilities, limited number of hospital positions available to do clinical rotations and the low availability of training instructors, due to a small pool of qualified individuals and the low salaries they receive. "We have people who want to become nurses," states one employer. "We just have no place to train them."

Employers bemoan the fact that little is being done to address the lack of training capacity in New Jersey. However, the state is beginning to awaken to the fact that the current higher education system is not adequate to meet the needs of the health care industry. In recognition of this, Governor James McGreevey commissioned a study to assess medical and allied health care education in the state and formulate recommendations designed "to enhance the quality of education, to increase their overall competitiveness as institutions of health care learning, and to foster healthy synergy amongst these institutions." The primary recommendation of the Commission on Health Science, Education, and Training is to create a single New Jersey research university system that builds on the collective strengths of the eight UMDNJ schools and the schools and programs of Rutgers and the New Jersey Institute of Technology.⁵⁷

In Oregon, the state Workforce Investment Board conducted an in-depth study of the health care sector, and determined that, as in New Jersey, education and training capacity is a major issue in the state. To solve this and other issues plaguing its health care industry, the Oregon WIB formed a state steering committee to oversee the effort to research, identify and analyze the most important factors in health care employment for key occupations. The goal of this effort is to create a set of recommendations for a statewide strategic plan.

Strategies to Attract and Recruit Workers

Efforts to recruit more workers to careers in the health industry include recruiting workers from untapped labor pools, providing financial assistance, and improving working conditions.

Recruiting Workers from Untapped Labor Pools

Nursing staffs are overwhelmingly white and female. Compared with the national workforce, which was 47% female and 83% white in 2000, the registered nurse population was 93% female and 87% white.⁵⁸ The perception that Patient Care occupations are for women starts early. In a 2003 survey of 881 high school juniors and seniors in New Jersey conducted by the Heldrich Center, when asked “what industry would you like to work in after completing your education” girls are more than twice as likely as boys to say health care (24% and 11%, respectively). However, with workers at a premium, accessing new labor pools is critical to solving the supply shortage. In particular, the industry needs to focus its recruitment efforts on men and minorities, and take steps to attract them to the field. For example, a report released by the state’s Latino Health Advisory Committee recommended, among other issues, that the state emphasize health career development for Latinos in schools, universities and state government agencies, and encourage employers to mentor minority youths in health-related fields.

One obvious way to ease the nursing shortage is by expanding the labor pool from which recruitment is made, increasing staff diversity. Recruiting campaigns have recently begun to tap into these long overlooked demographic groups, such as the Discover Nursing project operated by the Johnson & Johnson Corporation, a website where interested students and job seekers can access basic information about the field, find a nursing program in their area or search through hundreds of nursing scholarships.⁵⁹

In October 2003, the New Jersey Department of Education awarded the Center for Women and Work at Rutgers nearly \$1 million to create a Nontraditional Career Resource Center. The new center will assist New Jersey students grades seven through twelve in identifying and training for professions that now attract less than 25% of their gender, including nursing occupations for men. A comprehensive, interactive career website, pilot training programs and a summer “Nontraditional Career Week at Rutgers University” is planned for the first year.⁶⁰

In addition, attracting future nursing candidates, who already are committed to the institution, is being explored by Jersey Shore University Medical Center (JSUMC). The hospital’s Offer Program provides patient care associates or nurse’s aides and licensed practical nurses the opportunity to work a twenty-four hour weekend shift, get paid for thirty-six hours and receive full health care benefits and tuition to become a registered nurse.

Other states are engaged in similar efforts. Georgia has utilized the Nursing Home Transition Grant to conduct workforce development pilot projects in eighteen counties to identify barrier-sand opportunities to increase direct care workers and community services. The state of New York provided \$100 million in funding from 2000-2002 to recruit welfare recipients into careers at hospitals, nursing homes and home care agencies. Finally, Kentucky is undertaking efforts to increase minority recruitment into nursing professions through a collaborative effort between the state’s Board of Nursing and the Nurses Association.⁶¹

Providing Financial Assistance

Another effective strategy is to provide financial assistance to students interested in the field. For example, over the past two year, the Jersey Shore University Medical Center has awarded more than \$500,000 in nursing scholarships from private donations. The medical center also has partnered with Seton Hall University and Georgian Court College to sponsor ten students through their bachelor’s degree of science in nursing program.

Improving Working Conditions

Increasingly, New Jersey nurses report strong dissatisfaction with the nature of their employment. In a statewide survey of RNs conducted in 2000, nurses reported working longer hours, caring for larger numbers of acutely ill patients and experiencing exhaustion and job stress as significant factors in their professional lives. More than three-fourths of respondents report that their facilities are short-staffed, and only 11% feel that there are sufficient numbers of nurses available to provide quality care. Nearly one-third (31%) of nurses say that the typical nurse-to-patient ratio in their unit is one-to-eight or higher, with 14% reporting a ratio of one-to-thirteen or higher.⁶² In addition, employers explain that salaries are quick to plateau in the nursing field, and the lack of career ladders for less-skilled patient care workers such as CNAs and home health aides discourages many from entering or remaining in the field.

Similarly, long-term care workers experience low pay and long hours, which stymies recruitment and retention of these workers. Despite the lower skill levels required by many long term care workers, shortages in the state are as likely to be as acute as that of registered nurses.

In addition, regulatory issues, more complicated insurance procedures and an increase in the amount of paperwork required of nurses is contributing to a work climate in which patient care workers find themselves spending more time addressing these issues than caring for patients. Many employers in the industry cite this as a significant contributor to a negative work climate. “People don’t enter this field to fill out endless forms and paperwork,” explains one employer. “They became nurses because they care about people and want to take care of them.”

Employers are beginning to respond to this issue. In a recent *Star-Ledger* advertisement section on nursing, the list of benefits offered by employers looking to hire nurses who had placed ads was extensive, and included on-site child care, desirable shifts/flexible hours, sign-on bonus, special per diem rates, professional certification bonus, pay-for-performance compensation program, RN tuition forgiveness program, internship programs, continuous education programs, and tuition reimbursement.⁶³ However, it is critical to note—and employers stress—that in the current economic climate, there are significant financial restraints for employers to provide such benefits.

Rutgers College of Nursing also is interested in improving the health workplace and is the lead organization for the New Jersey Colleagues in Caring, one of the twenty national funded program sites addressing nursing workforce issues. The goal of this coalition of nursing leaders is to improve the working conditions of nurses, implement strategies to recruit and retain a diverse body of nurses, and develop policy initiatives to achieve each of these goals. To that end, the New Jersey Colleagues in Caring established the New Jersey Collaborating Center for Nursing in 2002. It is housed at the Rutgers College of Nursing in Newark and modeled on the collaborative approach of the Colleagues in Caring.⁶⁴ The goals of the center are to strengthen the nursing workforce in number, education and training, foster collaboration in the health care community achieve this goal, serve as a clearinghouse for data related to nursing resources, and secure competitive funding to support specific research endeavors.

V. Recommendations

The health care industry is faced with a number of challenges in meeting their current and future labor and skill needs. In recognition of this issue, the industry and many of the state's two-year institutions of higher education already have developed a number of programs and initiatives to increase both the supply and the skill level of health care labor. However, the industry should consider additional steps that would support and build upon current efforts, further strengthening the current workforce and increasing the pipeline of future workers. These include:

1. Recommendations to Prepare Skilled, Qualified Entry-Level Workers

Strengthen and Expand Post-Secondary Education and Training

Increase the Funding of Educational Institutions. Employers and other stakeholders stress the dire state of New Jersey's health care training capacity. The state must provide funds to increase the training capacity of the state's health care educational institutions and hospitals and to help offset the costs of graduate education. Instructors are needed for both nursing and other medical education programs. Scholarships and other financial incentives should be available for nurses and others who pursue master's and doctorate degrees that prepare them to become instructors. At the same time, faculty salaries must be competitive and attractive enough to attract qualified teachers. Employers, however, stress that this is not an easy fix. The introduction of one or two new instructors will not allow for the increase in students needed to meet the needs of the industry. Funding is also needed to increase building spaces available for medical education.

Expand Mentoring Programs. In focus groups and interviews, employers cite the need for mentors in the industry, particularly for new nurses. Enhancing mentoring for new nurses could help to remedy some of the skill gaps employers say younger workers have, as well as facilitating their transition into the field. In addition, if a salary increase or bonus were awarded to mentors, it could assist in retaining older workers. Such a mentoring program should also be extended to students (K-16), increasing awareness of the industry among students, and providing a valuable learning experience.

Increase the Availability of Clinical Rotations for Students. Employers note that as hospitals consolidate, there are fewer available to serve as clinical rotations. In addition, due to liability and insurance issues, many private hospitals are reluctant to participate in clinical rotations. This hands-on experience is a critical part of a medical education and efforts must be made to increase and coordinate opportunities for student clinical work.

Strengthen Secondary Education

Renew the Junior Volunteer Program. Some employers express support for a renewal of the Junior Volunteer Program, formerly the Candy Striper program. Such a program could serve as a “pre-nursing” program to provide training in some of the basic skills involved in nursing and offer students work experience in the field. The programs could be geared towards those who are not fully prepared for nursing school.

2. Recommendations to Attract and Recruit Workers

Develop Marketing Campaigns

Develop Programs and Strategies that Target Hard-to-Fill Positions, such as Home Health Aides. Employers note that while securing enough qualified workers is a challenge throughout the industry, certain jobs are harder to fill than others. The recruitment and retention of workers in lower paying jobs such as home health and other direct care workers is particularly problematic. The industry must develop strategies and programs that target the recruitment of workers to these positions, including the development of attractive and viable career ladders.

For example, the “Better Jobs, Better Care” program, funded by the Robert Wood Johnson Foundation, is an initiative to address the challenge of attracting skilled workers to the health care industry. The Foundation awarded five state-based coalitions with funds to carry out demonstration projects to improve the recruitment and retention of quality direct care workers-nursing assistants, home health aides, and personal care attendants-who provide necessary care and support to elderly people with chronic diseases or disabilities. Grantees will implement innovative changes in policy and practice necessary for building a stable, high-quality workforce that currently suffers from difficulties with recruitment of new workers, high turnover and worker shortages. The grantees represent coalitions of consumer advocates, long-term care workers, provider organizations and various state agencies.⁶⁵

Recruit Workers from Untapped Labor Pools

Attract Minorities and Men to the Industry. Historically, the majority of nurses have been white and female. Men and minorities represent untapped labor pools that can be accessed to increase the number of skilled, qualified workers interested in nursing and other areas of health care. To attract these potential workers, the industry should develop a marketing strategy to target these candidates. The industry should coordinate this marketing effort with community colleges and Rutgers University, particularly those with programs and curricula already in place. In addition, the industry should develop an initiative modeled after the Johnson & Johnson campaign to recruit non-traditional candidates into nursing and nursing-related fields. Finally, New Jersey Colleagues in Caring and the New Jersey Collaborating Center for Nursing should make the development of this marketing strategy one of their goals.

Provide Funding for Training

Provide Financial Assistance to Students. The industry and the state of New Jersey should increase financial assistance for those already in programs and to encourage others to enter programs. Scholarships and other forms of financial aid will widen the pool of students interested in entering the field. For example, Governor James McGreevey recently proposed the development of a tuition reimbursement program for students attending nursing school in New Jersey.

Expand and Develop Accelerated Nursing Programs. Some institutions offer programs that allow students to complete their RN studies in less time than the typical course of study. Such programs are particularly attractive to older workers who are interested in entering the health care industry but cannot afford to be out of work for exceptionally long periods. For example, Drexel University in Philadelphia has an eleven month Accelerated Nursing Program that allows individuals who already have a BA in a non-nursing field to become an RN.

When considering the above recommendations, it is important to remember that regulatory issues such as health insurance reimbursement policies, administrative regulations and state and federal laws may stymie efforts to implement workforce strategies. Realigning reimbursement policies, for example, is a significant undertaking, as is changing the current regulatory environment. To affect change in these areas, public (federal and state) and private stakeholders would have to coordinate their efforts and make a long-term commitment to the process (See Figure 5.1).

Figure 5.1: Recommendations by Stakeholder

	State Government	Workforce Investment Boards	Secondary Education	Post Secondary Education	Employers/Associations	Unions
Recommendations to Prepare Skilled, Qualified Entry-Level Workers						
Strengthen Secondary Education						
Renew the Junior Volunteer Program					X	
Strengthen and Expand Post Secondary Education and Training						
Increase the Funding of Educational Institutions	X					
Expand Mentoring Programs			X	X	X	
Increase the Availability of Clinical Rotations for Students				X	X	
Recommendations to Attract and Recruit Workers						
Develop Marketing Campaigns						
Develop Programs and Strategies that Target Hard-to-fill Positions	X	X			X	X
Recruit Workers from Untapped Labor Pools						
Attract Minorities and Men to the Industry	X	X			X	X
Provide Funding for Training						
Provide Financial Assistance to Students	X				X	
Expand the Develop Accelerated Nursing Programs				X	X	

VI. Conclusion

An aging population, regulatory and other changes in the industry, and problems with recruiting and retaining workers have led to a severe shortage of nursing and other patient care workers in New Jersey. At the same time, employers stress that a lack of training capacity in New Jersey is a critical factor in the shortage of health care workers. The health care industry is facing several workforce development challenges, including increased demand for health care workers, a lack of training capacity for students interested in the field and the need to increase and improve and recruitment of students to careers in health care.

At the same time, employers interviewed for this report are concerned that many factors are contributing to the deterioration of the quality of the health care workplace, including

reimbursement and regulatory issues, long and irregular hours, inadequate staffing, and increased workload. For home-based health care workers, these issues are even more critical, combined with low wages and lack of benefits.

Employers in the industry are engaging in a number of initiatives to raise the profile of the industry and increase the supply of skilled workers. The industry should continue and expand upon these efforts, targeting guidance and career counselors and students with marketing materials, providing financial assistance to health care students and creating mentoring programs for workers and students. In addition, it is critical that the industry secure public and/or private dollars to increase New Jersey's health care training capacity by hiring more instructors and developing new programs. As noted by employers, all efforts to attract more people to the field will be futile if the programs to train them are not available.

⁷ A full discussion of the methodology used for this study is included in Appendix A.

⁸ A full list of Advisory Group members is included in Appendix B.

⁹ A full list of focus group and interview participants is included in Appendix C.

¹⁰ U.S. Census Bureau. "North American Industry Classification System." <http://www.census.gov/epcd/naics02/def/NDEF62.HTM>

¹¹ Gardner, W. Stephen. 2002. "Trends in the Health Care Industry in South Carolina." 2002. <http://www.sces.org/lmi/LMI_Library/Trends%20in%20the%20Healthcare%20Industry.pdf>

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¹³ Bureau of Labor Statistics, U.S. Department of Labor. "Health Services." *Career Guide to Industries, 2002-03*. <<http://www.bls.gov/oco/cg/cgs035.htm>>

¹⁴ West Ed. *National Health Care Skill Standards*. <<http://www.west-ed.org/nhcssp/document.html>> (3 July 2003).

¹⁵ Bureau of Labor Statistics, U.S. Department of Labor. 2003. "Health Services." *Career Guide to Industries, 2002-03*. <<http://www.bls.gov/oco/cg/cgs035.htm>>

¹⁶ American Association of Colleges of Nursing. "Nursing Shortage Fact Sheet." 21 April 2003. <<http://www.aacn.nche.edu/Media/Backgrounders/shortagefacts.htm>>

¹⁷ National Center for Health Workforce Analysis, U.S. Department of Health and Human Services. *Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020*. July 2002. <<http://bhpr.hrsa.gov/healthworkforce/rnproject/default.htm>>

¹⁸ American Association of Colleges of Nursing. "Nursing Shortage Fact Sheet." 21 April 2003. <<http://www.aacn.nche.edu/Media/Backgrounders/shortagefacts.htm>>

¹⁹ Kaiser Family Foundation. 2002. *Medical Errors: Practicing Physician and Public Views*. <http://www.kff.org/content/2002/20021211a/>.

²⁰ Penn Nursing, University of Pennsylvania. "Penn Research Finds More Patients Die in Hospitals with Lower Nurse Staffing." 2002. <<http://www.nursing.upenn.edu/news/detail.asp?t=2&id=23>>

²¹ National Center for Health Workforce Information and Analysis, Bureau of Health Professions, Health Resources and Services Administration, U.S. Department of Health and Human Services. *HRSA State Health Workforce Profiles: New Jersey*. 2000.

²² New Jersey Department of Labor. *Occupational Employment Statistics Wage Survey: 2003 Edition*. January 2003. <<http://www.njpin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi23/index.html>>

²³ National Center for Health Workforce Information and Analysis, Bureau of Health Professions, Health Resources and Services Administration, U.S. Department of Health and Human Services. *HRSA State Health Workforce Profiles: New Jersey*. 2000.

²⁴ New Jersey Department of Labor. "Industry and Occupational Employment Projections." 1 October 2003. <<http://www.njpin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi04/>>

²⁵ Bureau of Economic Analysis, U.S. Department of Commerce. "Industry Accounts Data: Gross Domestic Product by Industry." 28 October 2002. <<http://www.bea.doc.gov/bea/dn2/gposhr.htm>>

²⁶ New Jersey Department of Labor. "Gross State Product for New Jersey by Industry, 1977-2001 (Millions of Current Dollars)." 7 July 2003. <<http://www.njpin.net/OneStopCareerCenter/LaborMarketInformation/lmi09>>

²⁷ Bureau of Labor Statistics, U.S. Department of Labor. "Health Services." *Career Guide to Industries, 2002-03 Edition*. <<http://www.bls.gov/oco/cg/cgs035.htm>>

²⁸ This figure reflects employment of non-supervisory workers in private health services.

²⁹ New Jersey Department of Labor. *Occupational Employment Statistics Wage Survey: 2003 Edition*. January 2003. <<http://www.njpin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi23/index.html>>

³⁰ Ibid.

³¹ New Jersey Department of Labor. "Industry and Occupational Employment Projections." 1 October 2003. <<http://www.njpin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi04/>>

³² Ibid.

³³ New Jersey Department of Labor. *Occupational Employment Statistics Wage Survey: 2003 Edition*. January 2003. <<http://www.njpin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi23/index.html>>

³⁴ Core competencies are a cluster of skills, knowledge, and abilities a worker needs to master to perform this job.

³⁵ Yin, Sandra. "Wanted: One Million Nurses." *American Demographics*. September 2002.

³⁶ New Jersey Hospital Association. "NJHA Unveils New Internet Resource on Healthcare Careers." 17 April 2002. <<http://www.njha.com/press/press.041702.html>>

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³⁸ Yin, Sandra. "Wanted: One Million Nurses." *American Demographics*. September 2002.

³⁹ Ibid.

⁴⁰ Staff. "New Jersey's Nursing Shortage Puts State in Critical Condition." *The Associated Press State and Local Wire*. 1 August 1999. <<http://www.calnurse.org/cna/new1/Nnew4899.html>>

⁴¹ The Forums Institute for Public Policy. "The Nursing Workforce Shortage: Impacts on Health and Medical Care in New Jersey." April 2001. <<http://www.forumsinstitute.org/pubs/ib36.pdf>>

⁴² Ibid.

⁴³ Stone, Robyn I. With Joshua M. Wiener. "Who Will Care For Us? Addressing the Long-Term Care Workforce Crisis." The Urban Institute and the American Association of Homes and Services for the Aging. October 2001.

⁴⁴ General Accounting Office. "Health Care: Adequacy of Pharmacy, Laboratory, and Radiology Workforce Supply Difficult to Determine." GAO-02-137R. 10 October 2001.

⁴⁵ Many focus group participants say that radiology technician is really an umbrella term for a larger group of people including the CT technologist, MRI technologist, ultrasound technologist and a large number of other specialties.

⁴⁶ General Accounting Office. "Health Care: Adequacy of Pharmacy, Laboratory, and Radiology Workforce Supply Difficult to Determine." GAO-02-137R. 10 October 2001.

⁴⁷ General Accounting Office. "Health Care: Adequacy of Pharmacy, Laboratory, and Radiology Workforce Supply Difficult to Determine." GAO-02-137R. 10 October 2001.

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⁵⁵ John J. Heldrich Center for Workforce Development, Rutgers, The State University of New Jersey. "Looking Ahead: A Workforce Supply and Demand Analysis for the Pharmaceutical and Medical Technology Industries of New Jersey." 2002.

⁵⁶ Ibid.

⁵⁷ Commission on Health Science, Education and Training. *The Report of the Governor's Commission on Health Science, Education, and Training*. 2003.

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⁵⁸ Staff. "New Jersey Nurses." *The Newark Star-Ledger*. 6 August 2003.

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⁶¹ Paraprofessional Healthcare Institute and the North Carolina Department of Health and Human Services, Office of Long Term Care. *Results of the 2002 National Survey of State Initiatives on the Long Term Care Direct Care Workforce*. June 2002.

⁶² Ibid.

⁶³ Staff. "New Jersey Nurses." *The Newark Star-Ledger*. 6 August 2003.

⁶⁴ For more information on the New Jersey Collaborating Center for Nursing, go to <http://www.njccn.org>.

⁶⁵ For more information on the "Better Jobs, Better Care" program, please see <http://www.bjbc.org/news.asp?pgid=63>.

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Appendix A: Methodology

Methodology for Industry Reports

The Workforce Investment Boards of Bergen, Cumberland/Salem, Hudson, Mercer and Passaic counties, in partnership with the New Jersey State Employment and Training Commission, selected the industries for study based on their prevalence in the state and regional economies, their current employment rate, and their potential for job creation.

The Heldrich Center, with input from each WIB, conducted a thorough literature search, or “knowledge inventory,” for each industry. The Heldrich Center compiled background research using the Internet and published research reports on the current and emerging national and state trends, and focused on emerging trends and growth projections in the selected industries. The knowledge inventory formed the basis of the industry reports.

The Heldrich Center utilized New Jersey Department of Labor Labor Market Information (LMI) data to create a list of occupations for each industry. The primary criterion was gross openings and expected growth. The secondary criterion was occupations with a shortage of qualified workers and those that displayed a diversity of income and educational levels. The Heldrich Center created a ranking of occupations for review by the WIBs. The WIBs, based on input from each Sectoral Advisory Committee, selected a subset of occupations for study that represented the above criteria and/or their own experience within the industry.

The WIBs convened an advisory group for each industry to guide the project. The Advisory Group consisted of employers and other key industry stakeholders. The advisory group aided in the selection of occupations for study and provided input regarding report recommendations. The groups met twice throughout the project.

The Workforce Investment Boards, with assistance from the Heldrich Center, Cumberland County College, Mercer County College and William Paterson University, convened four or more focus groups for each industry. These focus groups were facilitated by the Heldrich center, and included industry and educational representatives. In addition, the Heldrich Center and its research partners conducted ten or more phone interviews per industry with human resource or key operations managers regarding current and future skill issues and requirements.

Methodology for Emerging Skills Report

In December 2002, the Heldrich Center and the New Jersey Commission on Science and Technology (NJCST) convened a meeting of nine economic and technology forecasters and industry specialists to identify current and emerging trends influencing demand for skilled workers nationally and in New Jersey over the next three to five years. During this meeting, participants identified the fastest growing industrial sectors in New Jersey and the developments in science and technology that will lead to job growth and changes in work.

In January 2003, the Heldrich Center and the Commission on Science and Technology convened focus groups to further explore current and emerging trends in biotechnology/pharmaceutical and security (both physical and data) and to identify the skills that these trends may require. The NJCST identified key individuals from these emerging industries to participate in the sessions. Participants were asked to identify the fields within these industries that will be most important, the types of work that will emerge and the required skills, and the preparation that is necessary for these fields. Focus group participants also discussed the challenges and opportunities that employers face in these industries in identifying, recruiting, and hiring qualified employees.

For the remaining emerging industries discussed during the December forecaster meeting (food, e-commerce, and e-learning), the Heldrich Center conducted telephone interviews to explore further current and emerging trends and to identify the skills that these trends may require. The NJCST identified key individuals from these emerging industries to be contacted for interviews. Interviewees were asked to identify the fields within these industries that will be most important, the types of work that will emerge and the required skills, and the preparation that is necessary for these fields. They were also asked to discuss the challenges and opportunities that employers face in these industries in identifying, recruiting, and hiring qualified employees.

The Heldrich Center compiled background research using the Internet and published research reports on the current and emerging trends identified by participants. This research focused on emerging trends and growth projections in the identified fields. Given the fact that these industries are emerging, the amount of information available varied. In such cases, the Heldrich Center focused on the information gathered from experts in the emerging trends meeting, focus groups, and telephone interviews.

Appendix B: Advisory Group Members

Howard Adock	William B Kessler Memorial Hospital
Craig Atkinson	Millville Rescue Squad
John Bingenheimer	Kennedy Health System
Carmen Bisher	Cumberland County Health Department
Marie Caggina	Hospicecare of South Jersey
Anthony Di Bartolo	Underwood Memorial Hospital
Eric Florentine	South Jersey Hospital
Bridget Feery	South Jersey Hospital
Gretchen Johnson	Genesis Eldercare
Kathy Koerner	Virtua Health Care
Ursala Lawrence	Memorial Hospital of Salem County
Priscilla Meyers	Cumberland County Technical Education Center
Claire Sapienza-Eck	South Jersey Hospital
Diane K Smith	Cumberland Manor

Appendix C: Focus Group and Interview Participants

Eric Berman	Horizon Blue Cross Blue Shield of NJ
Joanne Besata	South Jersey Hospital
John Bingenheimer	Kennedy Health System
Jackie Bortarelli	Interim Healthcare
Sheresa Clement	Salem County Vocational Technical School
Belinda Cook	Deborah Heart & Lung
Anthony DiBartolo	Underwood Memorial Hospital
Bridget Feery	South Jersey Hospital
Eric Florentine	South Jersey Hospital
Sharon Kadany	Memorial Hospital of Salem County
Kathy Koerner	Virtua Health Care
Debbie Kramer	Supportive Care
Jane Leggieri	Cumberland County College
Susan Love	Southgate Health Care Center
Regina Mastrangelo	The Helene Fuld School of Nursing
Priscilla Meyers	Cumberland County Technical Education Center
Catherine Moore	Protocall Business & Healthcare Staffing
Sean Murphy	ATC Healthcare Staffing
Daniele Nicolosi	Our Lady of Lourdes
Stan Shewlakow	Griffin Medical Products, Inc.
Diane K Smith	Cumberland Manor
Teri Stallone	Technical Institute Of Camden County
Dawn Watkins	Spring Oak Assisted Living
Kyle Wdzieczkowski	Protocall Business & Healthcare Staffing

Appendix D: Profile of Selected Occupations

1. PHARMACISTS

Pharmacists are responsible for the preparation and distribution of medications and other treatments prescribed by direct care workers. Pharmacists may also counsel customers on possible side effects and any interactions that may result from combinations of certain medications.

Pharmacists must possess a firm knowledge of mathematics, English language, medicine, chemistry and biology. A keen attention to detail is a necessary skill for pharmacists. Employers noted that many pharmacists work in high-volume settings and must be able to handle stress. Because pharmacists serve as an intermediary between patients and their health care providers as well as between patients and their insurers, pharmacists must possess excellent communication skills. This is of less importance, however, for those pharmacists who work in less customer facing roles, such as at hospitals.

Technology provides pharmacists with an opportunity to achieve greater accuracy. Computer programs alert pharmacists of potential negative interactions that may be caused by a customer's mix of medications. Consequently, pharmacists must be adept at using new applications of technology.

2. HOME HEALTH AIDES

Home health aides provide in-home support to elderly and ill persons. Home health aides may provide general housekeeping services, support with daily activities such as bathing and dressing, and assist in meal preparation.

Home health aides should be knowledgeable in the provision of medications and basic health care needs. The physical demands of this occupation can be straining and often require an individual to have the ability to lift the customer. Employers stress that home health aides must possess a strong service orientation and empathy of others. They must be good communicators. Home health aides do not need any formal education but must seek licensing with the state.

The demand for home health aides is expected to increase greatly in the coming years, as the Baby Boomers continue to move into their senior years. Because the salaries of home health aides are low comparable to other low-skill jobs and because the job is both physically and emotionally demanding, the occupation suffers from a poor image.

3. CERTIFIED NURSING AIDES

Certified nursing aides provide direct care to patients. Certified nursing aides work under a nurse's supervision. Nursing aides assist patients in basic activities such as sitting up, moving around, eating, and bathing. They may also perform basic medical monitoring, such as taking a temperature or pulse.

Because the nursing aide may spend more time with the patient than other staff, it is especially important that the nursing aide remains alert to changes in the patient's condition and is responsible for reporting any changes to his/her supervising nurse. In addition, nursing aides must be able to communicate effectively with both patients and patients' families. In New Jersey, only nurses aides employed in long-term care settings must be licensed.

Nursing aides assist patients in basic activities such as sitting up, moving around, eating, and bathing. They may also perform basic medical monitoring, such as taking a temperature or pulse.

Because the nursing aide may spend more time with the patient than other staff, it is especially important that the nursing aide remains alert to changes in the patient's condition and is responsible for reporting any changes to his/her supervising nurse. In addition, nursing aides must be able to communicate effectively with both patients and patients' families. In New Jersey, only nurses aides employed in long-term care settings must be licensed. Licensing consists of 90 hours of classroom and clinical instruction.

Employers noted that there is a strong lack of work ethic among those currently employed in this occupation.

4. 5. REGISTERED NURSES AND LICENSED PRACTICAL NURSES

Nurses form the largest group of health care workers. Nurses provide front-line care and treatment to patients as they assist other health care workers, such as physicians, in the diagnosis and treatment of a patient as well as provide patient and family education. There are two primary types of nurses - registered nurses (RNs) and licensed practical nurses (LPNs). The work tasks are often similar for these two groups. However, employers noted that LPNs typically work with less acute patients than RNs and are less likely than RNs to engage in supervisory and patient assessment activities.

Nurses must possess a strong knowledge of medicine, mathematics, and biology. They must also have a strong service orientation towards patients. Team building skills, observation skills and problem solving skills are also highly important in this profession.

Both RNs and LPNs must pass a licensing exam. However, the education an individual might take to prepare for that exam can vary. RNs must have either an associate's or bachelor's degree in nursing. LPNs must have a high school diploma or GED. LPN programs are offered mainly at vocational schools, though some individuals pursue the degree through community colleges.

Employers noted that the greatest skill gap among new RNs is their inability to delegate tasks. New nurses, in general, are found to be lacking in their bedside manner, though their technical schools have been described by employers as excellent.

6. PHYSICAL THERAPISTS

Physical therapists assist patients in their rehabilitation from physical injury, help relieve pain, and combat the effects of disease. They "help restore function, improve mobility, relieve pain, and prevent or limit permanent physical disabilities of patients suffering from injuries or disease."⁶⁶

Physical therapists must possess a strong knowledge of medicine and therapy, as well as the English language. They must be able to build effective partnerships and trust with their patients. These individuals must have a strong service orientation. Key skills include listening and critical thinking skills. This is a physically demanding job and often requires the physical therapist to be able to lift or support the patient. Physical therapists must be licensed and have typically

Licensing consists of 90 hours of classroom and clinical instruction.

Employers noted that there is a strong lack of work ethic among those currently employed in this occupation.

7. RADIOLOGIC TECHNICIANS

Radiologic technicians prepare patients for and take x-rays, which assist other health care staff in the patient's diagnosis. Radiologic technicians work directly with the patient by explaining the procedures and answering any questions or concerns. The term "radiologic technician" is typically considered to be an umbrella term for a number of diagnostic technicians including those who perform fluoroscopies, mammograms, and MRIs, among other tests.

Radiologic technicians must possess knowledge of computers, chemistry, biology and mathematics. They must be skilled communicators, as they must be able to both ease patient concerns and accurately document their medical history, as well as converse with physicians and other health care staff. Radiologic technicians must possess a 2-year associate's degree or hospital diploma. These individuals must be state licensed.

Employers noted that this profession suffers from a lack of understanding and visibility among young people who are exploring their career options, therefore limiting the supply of these professionals.

8. NUCLEAR MEDICINE TECHNOLOGISTS

Nuclear medicine technologists prepare and administer dosages of radiopharmaceuticals and use advanced technological equipment to map the substance's distribution through the patient's body, allowing physicians to use results for diagnoses. Nuclear medicine technologists work directly with the patient by explaining the procedures and answering any questions or concerns.

Nuclear medicine technologists must have knowledge of computers, chemistry, biology and mathematics. They must be skilled communicators, as they must be able to both ease patient concerns and accurately document their medical history, as well as converse with physicians and other health care staff. Nuclear medicine technologists prepare for their career either through a one-year certificate program, 2-year associate's degree, or 4-year bachelor's degree. The Joint Review Committee of Educational Programs in Nuclear Medicine Technology has listed three accredited programs in this field within New Jersey. These programs are housed in Gloucester County College, the University of Medicine and Dentistry of New Jersey and Muhlenberg Regional Medical Center.

Employers noted that they have a very difficult time finding qualified nuclear medicine technologists.

9. MEDICAL CODERS

Medical coders are key administrative members of the health care workforce. They are responsible for the accurate assignment of codes for health care services in order to secure reimbursement from insurance companies and other entities, such as government agencies. Medical coding is also an important component of medical research.

Medical coders must possess strong familiarity and understanding of both medical and insurance terminology. Key skills for medical coders include a keen memory and attention to detail, research skills, and an aptitude with numbers. While most medical coders need only a high school education, some coders may pursue a certificate or associate's program in the field. The American Academy of Professional Coders and the American Health Information Management Association offer certification exams.

Employers noted that there are only a limited number of training programs in medical coding. In New Jersey, the Ultrasound Diagnostic School, Fairleigh Dickinson University, Kean University and Burlington, Passaic, and Camden Community Colleges offer programs in medical coding. Like most other health care positions, the demand for medical coders will continue to grow as the demand for health care services continues to increase.

10. MENTAL HEALTH AND SUBSTANCE ABUSE SOCIAL WORKERS

Mental health and substance abuse social workers may provide counseling to individuals struggling to overcome mental health and substance abuse problems. These individuals also arrange for clients to receive a broad array of services, which may include health and mental health services, employment services, family-related services, or other services.

Mental health and substance abuse social workers must possess a strong understanding of the type and quality of services available in the community. They must also possess some knowledge of psychology and possess excellent communication skills. A strong desire to help others and the ability to endure difficult and often troublesome situations is essential. Mental health and substance abuse social workers must be licensed with the state. Though some individuals employed in this field possess only a bachelor's degree in social work, most have earned a master's degree or higher.

Employers noted that the state requirements demanded for licensing in this profession are too burdensome and have served to restrict the supply of these needed members of the health care workforce.



