

Pennsylvania

WORKFORCE INVESTMENT BOARD

Addressing Priority Issues in Selected Allied Health Occupations

**Recommendation Report
from the
Allied Health Working Group**

May 2008

Pennsylvania Center for Health Careers

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Executive Summary

The Allied Health Working Group (Working Group) is an ad hoc task force of the Pennsylvania Workforce Investment Board (PA WIB) and Pennsylvania Center for Health Careers (PCHC) whose purpose is to suggest strategies to alleviate the Commonwealth's allied health workforce shortages, identify key issues and challenges across multiple occupations, and develop recommendations that address those issues. The Working Group is comprised of educators, health care professionals, hospital administrators, labor representatives, and public sector representatives from across the Commonwealth.

This project is the Commonwealth's first large-scale attempt to systematically illuminate the workforce challenges faced by multiple occupations and identify strategies to alleviate the challenges using an integrated and multi-occupation strategy. It represents a unique approach to addressing allied health workforce challenges. A preliminary best practices web-search conducted in March and April 2007 to identify and compare state and national initiatives revealed relatively few large-scale examinations of allied health occupations had been conducted and a standard definition of "allied health" does not exist.

The PA WIB, PCHC, and Working Group recognize that the findings and recommendations contained within this document are constrained by available resources and lack of precedence in this area while simultaneously mirroring some of the challenges articulated in the limited work conducted in other places. The findings and recommendations contained within this report represent a momentary snapshot and can and should be updated as conditions in the national and state health care settings change. They also may be applicable to a much broader set of occupations that are not represented in this project.

The Working Group identified 22 allied health occupations as part of this project and grouped them into one of four categories based on patient contact and job requirements. Please see Table 1 on the following page for a list of occupations. Data regarding the 22 occupations is assembled in the document *An Analysis of Allied Health Occupations in the Commonwealth: Technical Report of the Allied Health Working Group* (Allied Health Technical Report).

Table 1: Selected Allied Health Occupations by Occupational Category

Category	Occupation
Diagnostic	Cardiovascular Technologists and Technicians
	Medical and Clinical Laboratory Technicians
	Medical and Clinical Laboratory Technologists
	Phlebotomists
	Radiologic Technologists and Technicians
Medical Services	Dental Assistants
	Dental Hygienists
	Emergency Medical Technicians and Paramedics
	Medical Assistants
	Pharmacists
	Respiratory Therapists
	Surgical Technologists
Non-Direct Care	Dental Laboratory Technicians
	Medical and Health Services Managers
	Medical Appliance Technicians
	Medical Records and Health Information Technicians
	Medical Secretaries
	Medical Transcriptionists
	Pharmacy Technicians
Rehabilitative	Occupational Therapists
	Physical Therapists
	Speech-Language Pathologist

The Working Group then identified and prioritized four key issues that influence workforce trends in the 22 allied health occupations:

- Image
- Education Capacity
- Recruitment
- Retention

The Working Group also identified a subset of eight pilot occupations:

- Dental Assistants

- Dental Hygienists
- Medical and Clinical Laboratory Technicians
- Medical and Clinical Laboratory Technologists
- Pharmacists
- Physical Therapists
- Radiologic Technologists
- Respiratory Therapists

The Findings and Recommendations section provides information yielded for the 18 occupations represented during the series of regional roundtable discussions¹. The following are the findings and recommendations that the Allied Health Working Group requests the Governor review by priority area.

Findings and Recommendations

IMAGE

Image is defined as the self-perception of workers in a given occupation, the workers' perceived recognition of the occupation by others, and the public relations practices at work in a given occupation. Roundtable participants' discussion of image issues divided into two general categories:

1. External
2. Internal

¹ Occupations that were not represented include surgical technologists, medical appliance technicians, medical secretaries, and pharmacy technicians

Three recommendations are proposed for image:

Recommendation 1

Provide financial and other resources for local workforce investment boards (WIBs), Health Care Industry Partnerships, and others to develop a major awareness campaign for allied health that is directed to various audiences (i.e. K-12 students, postsecondary students, second-career seekers, and the general public)

Suggested Strategies:

- Utilize a mix of traditional and nontraditional media that appeal to the younger generations (i.e. facebook, YouTube, IM, blogs, video games, and other electronic and interactive media)
- Target parents and teachers as they directly influence children
- Show options for different levels and types of patient care ranging from direct to non-direct
- Promote different education options for various career paths
- Develop career information promotional materials that are appropriate for students in middle school, high school, and college as well as second career seekers
- Target minority and non-traditional populations

Recommendation 2

Provide grants for the development of regional educational initiatives to attract middle, high school, and college students to careers in allied health

Suggested Strategies:

- Develop programs such as career days, mall exhibits, job shadowing, and other career exposure activities
- Develop programs that provide students with in-depth career exploration such as mentoring programs, long-term shadowing opportunities, internships, summer programs, and others
- Strengthen and expand existing integrated models that link traditional high school, Career and Technology Center/Area Vocational Technical School (CTC/AVTS), and postsecondary education
- Target community college and/or high school students who are enrolled in science courses to observe allied health occupations in clinical settings

Recommendation 3

Develop a multi-dimensional, Commonwealth-wide “clearinghouse” for allied health care information and resources

Suggested Strategies:

- Develop and maintain a statewide website that describes allied health occupations including scopes of practice and potential careers
- Create, support, and/or expand regional and/or county programs for job shadowing, internships, clinical experiences
- Sponsor regional and/or state-wide conference(s) and/or seminar(s) for industry and education to share marketing strategies and ideas both for the general public and for the health care industry
- Develop a statewide job board for allied health occupations
- Develop materials, seminars, and other products that identify and market the variety of populations and settings across the Continuum of Care for the general public and health care practitioners
- Work with the Department of Labor and Industry and CareerLinks offices to promote allied health occupations as career options for unemployed individuals

EDUCATION CAPACITY

Education capacity is defined as the ability of the education system to prepare new workers for a given occupation. Three (3) major issues regarding education capacity emerged during the roundtable discussions:

1. The availability of sufficient, high quality clinical and fieldwork experiences
2. Degree and credentialing requirements
3. The structure and format of education models and programs

Five recommendations are proposed for education capacity:

Recommendation 4

Develop a methodology to accurately inventory state-wide and regional allied health education faculty on an ongoing basis

Suggested Strategies:

- Determine how the number of available faculty impacts the ability to educate more students in allied health and, if appropriate, identify what strategies need to be implemented to support the creation of sufficient qualified faculty
- Survey programs to quantify the number of open faculty positions, faculty tenure, salary, number of applicants for faculty positions, and number of qualified applicants for faculty positions
- Create incentives for solutions that enhance faculty availability between education and employers

Recommendation 5

Develop a methodology to accurately inventory supply and demand for allied Health professionals, as well as state-wide and regional allied health clinical site availability on an ongoing basis

Suggested Strategies:

- Determine how clinical site availability impacts the ability to educate more students in allied health and, if appropriate, identify strategies to maximize the use and availability of clinical sites
- Identify regulatory and/or payment issues that potentially restrict institutions' willingness and/or ability to serve as clinical sites and advocate for appropriate revisions
- Create incentives for solutions between education and employers that could enhance clinical site availability

Recommendation 6

Provide incentives for education-industry partnerships that facilitate classroom/clinical collaborations

Suggested Strategies:

- Provide incentives and rewards for clinicians to accept students for clinical and/or field work placements
- Provide incentives that encourage health care employers to provide academically and experientially qualified allied health staff to assist allied health education programs in preparing students
- Provide incentives and rewards for experientially qualified clinicians to assist allied health education programs in preparing students
- Support the facilitation of regional partnership efforts that promote the use and sharing of health care technologies across educational institutions and/or practice settings

Recommendation 7

Develop and implement ways to reduce the cost of obtaining an education in allied health occupations for a diverse group of students

Suggested Strategies:

- Provide low interest student loans, loan forgiveness, loan repayment, scholarships and grants for students who commit to working in Pennsylvania after graduation
- Develop articulation and/or transfer of credit agreements among a broad range of schools to maximize efficiencies in the education process
- Provide additional incentives for students who commit to teaching in their chosen occupation in Pennsylvania after graduation
- Look to expand benefits for those applicants that take advantage of classes and who would make a commitment to work in Pennsylvania

Recommendation 8

Provide resources and support to encourage education institutions to reformat all or portions of their allied health programs to maximize flexibility

Suggested Strategies:

- Survey programs for the number of applicants, number of qualified applicants, number of seats available, enrollment by various student demographics, student retention, student graduation, and professional entry examination pass rates (if applicable)
- Increase program flexibility in terms of location, time, and format
- Offer grants for programs to develop alternative and flexible programs
- Work with education programs to secure the equipment necessary to offer new programs, expand existing programs, and stay current with technology
- Explore the feasibility of accelerated education and training programs for persons with academic degrees seeking a second career

RECRUITMENT

Recruitment is defined as the process of attracting new workers to a given occupation. Three (3) major issues emerged:

1. Recruitment into education and industry settings
2. Generational differences and preferences
3. Untapped labor markets/diversity

Three recommendations are proposed for recruitment.

Recommendation 9

Collaborate with the Pennsylvania Department of Education, local Health Care Industry Partnerships, and others to develop allied health education curriculum materials for the K-12 system, with particular emphasis on middle and high schools

Suggested Strategies:

- Expand the range of opportunities for high school students to participate in elective allied health courses
- Develop K-12 allied health content that easily can be integrated into science and mathematics courses
- Offer incentives to high school students who enroll in allied health education programs (i.e. tuition, loans, see “Pittsburgh Promise”)
- Expand existing allied health career exploration programs such as the Pennsylvania’s Governor’s School

Recommendation 10

Provide financial incentives to newly prepared allied health professionals to stay and work in Pennsylvania upon graduation

Suggested Strategies:

- Provide tuition reimbursements/grants/loans for students who graduate from programs and choose to practice in Pennsylvania
- Provide additional financial assistance to new graduates who work in rural, inner city, or other underserved areas

Recommendation 11

Expand targeted recruitment efforts

Suggested Strategies:

- Develop innovative strategies that address preferences of the different generations in today’s workforce
- Explore and develop creative recruitment strategies that extend beyond Pennsylvania’s borders
- Develop recruitment strategies aimed at minority and underrepresented populations
- Promote the natural links between math and science majors and allied health occupations

RETENTION

The Commonwealth, PA WIB, and PCHC first examined how to create state-scale policy related to health care workforce retention issues in 2006. The outcomes and recommendations of that examination were released in the report *The Retention of Health Care Workers in the Commonwealth* (Retention Report) in fall 2006. The findings and recommendations contained in this report should be viewed as complimentary to those contained in the Retention Report.

Retention is defined by the Working Group as the process of keeping workers in a given occupation. Two (2) major issues emerged:

1. Retention Dynamics
2. Generational Differences

Two recommendations are presented for retention:

Recommendation 12

Develop and/or use the Health Care Industry Partnership and other infrastructures to provide monies for allied health training and professional development

Suggested Strategies:

- Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees
- Provide incentives to support a range of professional development opportunities for allied health employees

Recommendation 13

Ensure that Pennsylvania's professional practice acts and regulations for allied health occupations are progressive

- Ensure that Pennsylvania's professional practice acts are progressive and consistent with other state's professional practice acts, particularly related to mandatory continuing education and scope of practice
- Evaluate and ensure that the application process for licensure/certification by Pennsylvania's professional licensing boards is efficient and permits qualified applicants from other states to work in Pennsylvania
- Ensure that Pennsylvania is represented adequately in national dialogues as they pertain to allied health program accreditation standards and the implications that changing degree requirements have on state licensing requirements
- Ensure that Pennsylvania's professional practice acts and regulations protect the health, safety, and welfare of the public.

In addition, this report details findings and recommendations yielded by a series of occupation-specific discussions for the eight pilot occupations as well as offers suggestions for additional next steps.

Introduction

Governor Edward G. Rendell created the Pennsylvania Center for Health Careers (PCHC) in April 2004. The PCHC is a public/private initiative led by a Leadership Council whose members include employers, Commonwealth agencies, industry associations, labor unions, professional associations, and educational institutions. The PCHC is an initiative of the Pennsylvania Workforce Investment Board (PA WIB) and serves as a catalyst to develop action-oriented strategies that respond to Pennsylvania's short- and long-term health care workforce challenges.

The Governor and the PCHC recognize the importance of allied health occupations across the Commonwealth especially given the range of critical and widely-different health care functions these workers provide. Many allied health occupations are facing workforce challenges and shortages that potentially impact the quality of patient care.

The PCHC's Leadership Council created an ad hoc task force in April 2007, Allied Health Working Group (Working Group), whose purpose is to suggest strategies to alleviate the Commonwealth's allied health workforce shortages, identify key issues and challenges across multiple occupations, and develop recommendations that address those issues. The Working Group is comprised of educators, health care professionals, hospital administrators, labor representatives, and public sector representatives from across the Commonwealth². This project is the Commonwealth's first large-scale attempt to systematically illuminate the workforce challenges faced by multiple occupations and identify strategies to alleviate the challenges using an integrated and multi-occupation strategy.

The Working Group identified 22 allied health occupations as part of this project and grouped them into one of four categories based on patient contact and job requirements. Data regarding the 22 occupations is assembled in the document *An Analysis of Allied Health Occupations in the Commonwealth: Technical Report of the Allied Health Working Group* (Allied Health Technical Report).

² For a list of Working Group members, refer to Appendix J.

The Working Group then identified and prioritized four major issues that influence allied health occupations:

- Image
- Education Capacity
- Recruitment
- Retention

Following an initial data collection phase that yielded information related to 18 of the 22 occupations, recommendations were developed for the four priority areas. Then, recognizing that all 22 occupations are critical but that limited resources necessitated a more narrow focus, eight pilot occupations were identified based on Working Group members' knowledge and supporting research from the *Allied Health Technical Report* to target an even more specific inquiry. The eight pilot occupations are:

- Dental Assistants
- Dental Hygienists
- Medical and Clinical Laboratory Technologists
- Medical and Clinical Laboratory Technicians
- Pharmacists
- Physical Therapists
- Radiologic Technologists
- Respiratory Therapists

The Working Group conducted a series of occupation-specific discussions. The occupation-specific findings and suggested solutions are located in Appendix D: Conference Call/Focus Group Overviews.

This process represents a relatively unique approach to addressing allied health workforce challenges. A preliminary best practices web-search conducted in March and April 2007 revealed relatively few large-scale examinations of allied health occupations had been conducted recently in the United States.³

³ As of April 2007, California, Louisiana, New York, North Carolina, Oregon, Tennessee, Northwest States (Idaho, Montana, Washington, Oregon, and Wyoming) had taken large-scale examinations of allied health occupations in addition to the work conducted by the United States Department of Health and Human Services.

National efforts in allied health tended to focus on⁴:

- Attempting to define “allied health”
- Advocating for the Allied Health Reinvestment Act
- Evaluating and reforming the education system
- Promoting outcomes research
- Raising awareness of the allied health industry
- Promoting collaboration within the industry across national and state organizations
- Identifying shortage occupations through supply and demand analysis

The state-scale efforts in allied health tended to focus on examining and projecting the supply of and demand for allied health occupations.

Therefore, the PA WIB, PCHC, and Working Group recognize that the findings and recommendations contained within this document are constrained by available resources and lack of precedence in this area while simultaneously mirroring some of the challenges articulated in the limited work conducted in other places. The findings and recommendations contained within this report represent a momentary snapshot and can and should be updated as conditions in the national and state health care settings change. They may be applicable to a much broader set of occupations that are not represented in this project.

⁴ Please refer to Appendix I for a list of references.

Methodology

Given the scope of inquiry, the project was divided into three phases:

- Phase I: Critical Occupation and Key Issue Identification and Data Collection and Analysis
- Phase II: Statewide Stakeholder Validation and Feedback for all 22 Occupations
- Phase III: Occupation-Specific Discussions

Phase I: Critical Occupation and Key Issue Identification and Data Collection and Analysis

The Working Group identified 22 critical allied health occupations using the Department of Labor and Industry's High Priority Occupations list as a guide. The occupations were grouped into four categories to ease internal analysis and are found in Table 2 on the following page.

The report, *An Analysis of Allied Health Occupations in the Commonwealth: Technical Report of the Allied Health Working Group* (Allied Health Technical Report) provides an in-depth analysis of each of the 22 occupations using public and freely available data including:

- Occupational summary
- Definition of each occupation
- Minimum credential and licensure requirements
- Composition of the workforce (i.e. age, gender, and race/ethnicity)
- Demand data (i.e. estimated and projected employment, average annual openings, vacancy rates, and location and employment settings)
- Supply data (program completers by program level by race/ethnicity, male/female, and total, and program location)

Table 2: Selected Allied Health Occupations by Occupational Category

Category	Occupation
Diagnostic	Cardiovascular Technologists and Technicians
	Medical and Clinical Laboratory Technicians
	Medical and Clinical Laboratory Technologists
	Phlebotomists
	Radiologic Technologists and Technicians
Medical Services	Dental Assistants
	Dental Hygienists
	Emergency Medical Technicians and Paramedics
	Medical Assistants
	Pharmacists
	Respiratory Therapists
	Surgical Technologists
Non-Direct Care	Dental Laboratory Technicians
	Medical and Health Services Managers
	Medical Appliance Technicians
	Medical Records and Health Information Technicians
	Medical Secretaries
	Medical Transcriptionists
	Pharmacy Technicians
Rehabilitative	Occupational Therapists
	Physical Therapists
	Speech-Language Pathologist

Following a thorough review of the research and several hours of discussion, the Working Group identified four factors believed to impact shortages in allied health occupations:

- Image
- Education Capacity
- Recruitment
- Retention

The Working Group also selected a subset of eight pilot occupations, two from each of the occupational categories, on which to focus immediate attention and potentially test the recommendations. The selections were based on Working Group members' knowledge and supporting research, some of which is contained in the *Allied Health Technical Report*. The pilot occupations are:

- Dental Assistants
- Dental Hygienists
- Medical and Clinical Laboratory Technicians
- Medical and Clinical Laboratory Technologists
- Pharmacists
- Physical Therapists
- Radiologic Technologists
- Respiratory Therapists

Phase II: Statewide Stakeholder Validation and Feedback

After examining data and other research on the 22 allied health occupations, the Working Group wanted to reach out to stakeholders to:

- Validate the findings in the *Allied Health Technical Report* and the selection criteria for the eight pilot occupations
- Identify factors that influence workforce trends across and within each occupation
- Solicit direct input from allied health professionals

Two methods were used to achieve these goals:

- Roundtable discussions with health care administrators, educators, and frontline workers
- Focus groups/conference calls with representatives from the eight pilot occupations

The PA WIB, PCHC, and Working Group hosted a series of roundtable discussions to engage allied health education and industry professionals in six regions across the Commonwealth. The six regions correspond to those used for the data analyzed and reported in the *Allied Health Technical Report*. The roundtables were hosted in Harrisburg, Pittsburgh, Erie, State College, Wilkes-Barre, and Philadelphia. Figure 1 on the following page details the six regions and Table 3 breaks down the six regions into local workforce investment boards (WIBs) and counties.

Figure 1: Regions in the Commonwealth of Pennsylvania

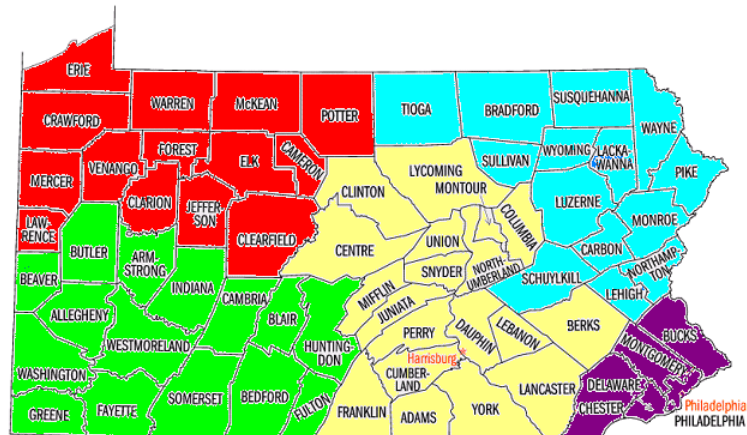


Table 3: Counties, Workforce Investment Areas, and Regions

Region	Workforce Investment Areas	Counties
Southwest	Southern Alleghenies	Bedford, Blair, Cambria, Fulton, Huntingdon, Somerset
	Southwest Corner	Beaver, Washington, Greene
	Three Rivers	Allegheny
	Tri-County	Armstrong, Butler, Indiana
	Wes-Fay	Westmoreland, Fayette
Northwest	North Central	Cameron, Clearfield, Elk, Jefferson, McKean, Potter
	Northwest	Clarion, Crawford, Erie, Forest, Venango, Warren
	West Central	Lawrence, Mercer
Central	Berks	Berks
	Central	Centre, Clinton, Columbia, Lycoming, Mifflin, Montour, Northumberland, Snyder, Union
	Lancaster	Lancaster
	South Central	Adams, Cumberland, Dauphin, Franklin, Juniata, Lebanon, Perry
Southeast	Bucks	Bucks
	Chester	Chester
	Delaware	Delaware
	Montgomery	Montgomery
	Philadelphia	Philadelphia
Northeast	Lackawanna	Lackawanna
	Lehigh Valley	Lehigh, Northampton
	Luzerne-Schuylkill	Luzerne, Schuylkill
	Northern Tier	Bradford, Sullivan, Susquehanna, Tioga, Wyoming
	Pocono Counties	Carbon, Monroe, Pike, Wayne

The Working Group, PA WIB staff, and consultants reached out to Pennsylvania’s local health care consortia, professional associations, and

colleagues in an effort to better understand factors influencing workforce trends, validate the *Allied Health Technical Report*, and gain a deeper understanding of the four priority issues. A total of 105 allied health representatives including health care administrators, front-line supervisors, front-line workers, and educators from 18 of the 22⁵ selected occupations participated in the allied health roundtable discussions conducted across the six regions. See Table 4 for a breakdown of the participants by region and Appendix A for a breakdown of number of participants by occupation and region.

Eleven facilitated discussions across the six regions were used to collect the stakeholder data. With the exception of the northeast session in which only seven people participated, participants at each roundtable were divided into two groups based on their occupational specialty. The rationale for using occupational specialty groups was that members with more in common would yield more substantive data. During the roundtable discussions, the participants were asked a series of questions relating to image, education capacity, recruitment, and retention. See Appendix B for the roundtable protocol and Appendix C for one page overviews for each of the regions.

Table 4: Roundtable Participation by Region and Perspective

Region	Industry	Education	Total
South central	14	12	26
Southwest	11	5	16
Southeast	23	0	23
Northwest	17	2	19
Northeast	6	1	7
North central	12	2	14
Total	83	22	105

Phase III: Occupation-Specific Discussions

In addition to the roundtable discussions, six occupation-specific conference calls/focus groups were scheduled to gather additional information and develop targeted solutions for challenges identified within the four priority areas for the eight pilot occupations. Dental assistants and dental hygienists were combined into one group for this purpose as were medical and clinical laboratory technologists and medical and clinical laboratory technicians to avoid duplication of effort due to similar work settings.

⁵ Occupations that were not represented include surgical technologists, medical appliance technicians, medical secretaries, and pharmacy technicians

A total of 57 individuals participated in the occupation-specific discussions via conference call or focus group setting. The breakdown of participants by occupation and their perspectives (industry, education, other) are in Table 5. The participants were asked a series of questions relating to image, education capacity, recruitment, and retention that were more detailed than the roundtables. See Appendix D for the occupation-specific protocol, Appendix E for overviews of the occupation-specific discussions, and Appendix F for a breakdown of overlapping and unique participation between the roundtables and occupation-specific discussions.

Table 5: Occupation-Specific Discussion Participation by Region and Perspective

Occupation	Industry	Education	Other	Total
Dental Assistants and Dental Hygienists	0	2	1	3
Medical and Clinical Laboratory Technicians and Technologists	17	2	0	19
Radiologic Technologists	3	1	0	4
Respiratory Therapists	6	2	0	8
Pharmacists	16	2	0	18
Physical Therapists	6	0	1	7
Total	46	9	2	57

Findings and Recommendations

This section details the key findings and recommendations resulting from the regional roundtable discussions that were conducted with representatives from 18 of the original 22 selected occupations. Findings and recommendations are organized by the four priority issues:

- Image
- Education Capacity
- Recruitment
- Retention

IMAGE

Image is defined as the self-perception of workers in a given occupation, the workers' perceived recognition of the occupation by others, and the public relations practices at work in a given occupation. Roundtable participants' discussion of image issues divided into two general categories:

1. External
2. Internal

External Image

Industry and education representatives emphasized that the general public has an overall lack of awareness of allied health occupations and their role in health care at all roundtables. Several individuals elaborated on this lack of image by stating that they are mistaken for nurses or are considered "ancillary" to patient care.

Roundtable participants also noted that those who are aware of one or more allied health occupations likely are not aware of the full range of occupations, the breadth of specialties and career options within those occupations, or the skill and training required to enter and advance within the occupations.

Roundtable participants indicated that current workers and other people who are aware of allied health occupations typically discover them through word-of-mouth or personal experience.

Respondents at all roundtables expressed specific concern regarding the lack of knowledge and understanding of allied health occupations among young people⁶, particularly middle school, high school, and college students. Many participants noted that middle and high school provide important opportunities for young people to learn about career options and develop educational paths that can lead them to their career paths.

Recommendation 1

Provide financial and other resources for local workforce investment boards (WIBs), Health Care Industry Partnerships, and others to develop a major awareness campaign for allied health that is directed to various audiences (i.e. K-12 students, postsecondary students, second-career seekers, and the general public)

Suggested Strategies:

- Utilize a mix of traditional and nontraditional media that appeal to the younger generations (i.e. facebook, YouTube, IM, blogs, video games, and other electronic and interactive media)
- Target parents and teachers as they directly influence children
- Show options for different levels and types of patient care ranging from direct to non-direct
- Promote different education options for various career paths
- Develop career information promotional materials that are appropriate for students in middle school, high school, and college as well as second career seekers
- Target minority and non-traditional populations

⁶ Palumbo, et.al. in their article *Perceptions of an Ideal Career Versus Perceptions of Six Health Careers* discussed this issue in depth for six allied health occupations in Vermont.

Recommendation 2

Provide grants for the development of regional educational initiatives to attract middle, high school, and college students to careers in allied health

Suggested Strategies:

- Develop programs such as career days, mall exhibits, job shadowing, and other career exposure activities
- Develop programs that provide students with in-depth career exploration such as mentoring programs, long-term shadowing opportunities, internships, summer programs, and others
- Strengthen and expand existing integrated models that link traditional high school, Career and Technology Center/Area Vocational Technical School (CTC/AVTS), and postsecondary education
- Target community college and/or high school students who are enrolled in science courses to observe allied health occupations in clinical settings

Internal Image

Three internal hierarchies were articulated by representatives at every roundtable: (1) allied health versus non-allied health occupations (i.e. allied health occupations versus doctors and nurses), (2) “professional” occupations versus “technical” occupations within allied health, and (3) employment setting. All three hierarchies are based on the perceived prestige and value placed on occupations and/or work settings.

Participants at every roundtable noted that doctors and nurses are well recognized and respected both in the general public and among health care professionals; while allied health occupations are not as well recognized or respected. Participants perceived that this hierarchy exists in both industry and education settings. Participants at all roundtables mentioned nursing, either by comparing allied health to nursing or by using the advances nursing has made in recent years, as examples of how to address allied health workforce challenges.

A perceived hierarchy between professional and technical occupations within allied health also was articulated. Therapists and pharmacists were perceived to be more prestigious, more respected and as having a more positive image; they were classified as “professional” occupations. Occupations in medical and clinical laboratory technology, respiratory therapy, cardiovascular technology, radiologic technology, dental hygiene, health information management, coding, transcription, and emergency medical services were viewed as being “technical” occupations.

The hierarchies of image within health care seem to be influenced by a number of factors including education level and/or degree requirements for practice,

presence or absence of a license and/or national credential, salary, and Medicare reimbursement. See Table 6 for roundtable participant’s statements of factors that influence image.

In addition to these factors, participants at all roundtables felt that even within health care, there is a lack of clarity and understanding of the breadth of occupations and specialties and the kinds of skills and training required for different occupations.

Some participants also perceived a hierarchy within practice settings with hospital-based settings being viewed as more prestigious than home care, long term care, or other community-based settings.

Table 6: Roundtable Participants’ Statements of Factors that May Influence Image among Allied Health Occupations

Factor	Professional	Technical
Education Requirements	Baccalaureate degree and/or higher	Associate’s degree and/or lower
Licensure and Credentialing	Licensure in Pennsylvania and/or national credential are required to practice	May or may not be licensed in Pennsylvania; credential may be available but not required to practice*
Salary	Higher entry-level salaries than “technical” occupations	Lower entry-level salaries than “professional” occupations
Medicare Reimbursement	More prestige seems to be placed on occupations for which Medicare provides reimbursement for individual professional services rendered	Less prestige seems to be placed on occupations for which Medicare does not provide reimbursement for individual professional services rendered

* Respiratory therapists are licensed through the Pennsylvania Board of Osteopathic Medicine and Pennsylvania State Board of Medicine and felt that this lowered their prestige as opposed to having their own board similar to nursing. Dental hygienists are licensed by the Pennsylvania Board of Dentistry which includes only one dental hygiene representative⁷.

⁷ The Pennsylvania State Board of Dentistry is comprised of three Doctors of Dental Surgery (DDS), three Doctors of Dental Medicine (DMD), one Registered Dental Hygienist (RDH), two lawyers, and one member whose credential is unknown (Pennsylvania State Board of Dentistry, 2008).

Recommendation 3

Develop a multi-dimensional, Commonwealth-wide “clearinghouse” for allied health care information and resources

Suggested Strategies:

- Develop and maintain a statewide website that describes allied health occupations including scopes of practice and potential careers
- Create, support, and/or expand regional and/or county programs for job shadowing, internships, clinical experiences
- Sponsor regional and/or state-wide conference(s) and/or seminar(s) for industry and education to share marketing strategies and ideas both for the general public and for the health care industry
- Develop a statewide job board for allied health occupations
- Develop materials, seminars, and other products that identify and market the variety of populations and settings across the Continuum of Care for the general public and health care practitioners
- Work with the Department of Labor and Industry and CareerLinks offices to promote allied health occupations as career options for unemployed individuals

EDUCATION CAPACITY

Education capacity is defined as the ability of the education system to prepare new workers for a given occupation. Three (3) major issues regarding education capacity emerged during the roundtable discussions:

1. The availability of sufficient, high quality clinical and fieldwork experiences
2. Degree and credentialing requirements
3. The structure and format of education models and programs

Clinical and Fieldwork Experiences

The clinical experience component of allied health education provides industry and education a logical venue for collaboration. Clinical experience is critical to providing students with the practical, hands-on opportunities necessary to apply their skills in the health care workplace. Industry and education representatives view high quality clinical experience as critical factors in sparking, developing, and sustaining a student's interest and commitment to a particular occupation. Some representatives described highly positive clinical and fieldwork experiences as "make or break" aspects of allied health education. Industry representatives at five of 11 roundtables specifically stated that the quality of a student's clinical fieldwork in part can predict their initial success in their first job. Representatives at nearly every roundtable indicated the need for some form of practical experience in the education process to mitigate the risk of new workers leaving because they "didn't know what they were getting into."

The availability of clinical sites is occupation and location dependent. Representatives at five roundtables noted a critical shortage of clinical sites across a variety of occupations; but representatives at four roundtables noted that some institutions have available clinical opportunities that go unfilled. While many of the occupational representatives identified barriers in placing students in clinical settings, medical and clinical laboratory technologists and technicians, respiratory therapists, occupational therapists, radiologic technologists, and physical therapists were most vocal regarding the lack of available clinical sites.

Some representatives indicated that rural hospitals had clinical sites available that go unfilled while others, specifically respiratory therapists and medical and clinical laboratory technicians and technologists, indicated that clinical sites sometimes go unfilled due to low numbers of students in education programs.

Participants indicated that accreditation agencies, government regulations (i.e. Medicare⁸, Health Insurance Portability and Accountability Act (HIPAA) and

⁸ Services rendered by students are not reimbursable by Medicare (U.S Department of Health and Human Services, 2002).

others), and recommendations of legal counsel impact the decisions made by employers to serve as clinical sites for students. The time and financial burden of ensuring compliance with the regulatory and accreditation requirements associated with providing clinical sites often outweighs the benefits. In addition, some clinical supervisors and/or employers are reluctant to accommodate students due to productivity and regulatory requirements, real or perceived.

Recommendation 4

Develop a methodology to accurately inventory state-wide and regional allied health education faculty on an ongoing basis

Suggested Strategies:

- Determine how the number of available faculty impacts the ability to educate more students in allied health and, if appropriate, identify what strategies need to be implemented to support the creation of sufficient qualified faculty
- Survey programs to quantify the number of open faculty positions, faculty tenure, salary, number of applicants for faculty positions, and number of qualified applicants for faculty positions
- Create incentives for solutions that enhance faculty availability between education and employers

Recommendation 5

Develop a methodology to accurately inventory state-side and regional allied health clinical site availability on an ongoing basis

Suggested Strategies:

- Determine how clinical site availability impacts the ability to educate more students in allied health and, if appropriate, identify strategies to maximize the use and availability of clinical sites
- Identify regulatory and/or payment issues that potentially restrict institutions' willingness and/or ability to serve as clinical sites and advocate for appropriate revisions
- Create incentives for solutions between education and employers that could enhance clinical site availability

Recommendation 6

Provide incentives for education-industry partnerships that facilitate classroom/clinical collaborations

Suggested Strategies:

- Provide incentives and rewards for clinicians to accept students for clinical and/or field work placements
- Provide incentives that encourage health care employers to provide academically and experientially qualified allied health staff to assist allied health education programs in preparing students
- Provide incentives and rewards for experientially qualified clinicians to assist allied health education programs in preparing students
- Support the facilitation of regional partnership efforts that promote the use and sharing of health care technologies across educational institutions and/or practice settings

Degree and Credentialing Requirements

Roundtable participants across all occupations discussed two related issues regarding degree and credentialing requirements:

- Degree Creep and Specialization
- Degree Acceleration

Human Resources representatives as well as occupational specialists described a phenomenon in which several of the occupations studied (i.e. physical therapists, occupational therapists, and pharmacists) are increasing or have increased the education degree and/or credential required to enter the field. Other occupations are debating the advantages and disadvantages of increasing the entry-level degree requirements including dental occupations, respiratory therapy, cardiovascular technology, medical and clinical laboratory technology, medical transcription, and speech-language pathology. Table 7 on page 30 provides additional detail for the three occupations that recently have/are increased/ing degree requirements to practice.

Representatives at four roundtables stated the increased and increasing requirements are driven by national professional associations and educational institutions and appear to be motivated by an effort to increase the image and prestige of particular occupations. Occupational specialist managers in physical therapy, occupational therapy, and laboratory settings perceived advantages to the increased credential as minor and the associated cost of student loan debt as not commensurate with the salaries industry is prepared to pay entry-level professionals. Representatives indicated that the clinical work and salary usually are equal regardless of educational preparation. Higher degrees are useful

mainly for moving into management or education but may deter potential entry-level students.

Other occupations are becoming increasingly specialized and therefore are either requiring more pre-requisites prior to entering an allied health educational program and/or additional continuing education once someone is in the occupation. Respiratory therapy, medical and clinical laboratory technology, dental hygienist, dental assistant, and cardiovascular technology programs were mentioned specifically at several roundtables. Furthermore, some programs require pre-requisites as students who enter post-secondary education are lacking proficiency in English, math, and science. These pre-requisites can require up to one year to complete before students enter allied health programs. As a result, students' programs of study are extended. This is perceived as having adverse effects on students (i.e. financial burden and delayed entry into the workforce) and is deterring potential students from choosing allied health occupations.

Table 7: Occupations that Recently Have Increased Credential Requirements

Occupation	Previous Credential	Current/Future Credential	Credential Increase Details
Physical Therapists (PTs)	Master of Physical Therapy (MPT)	Doctor of Physical Therapy (DPT), Transitional Doctor of Physical Therapy (tDPT)	American Physical Therapy Association (APTA)'s <i>Vision 2020</i> statement states that by the year 2020 PTs will be educated at the doctoral level and may be board certified-specialists (APTA, 2000). Programs are responding to by developing and expanding DPT and tDPT Programs.
Occupational Therapists (OTs)	Bacca-laureate	Master's of Occupational Therapy (MOT)	Accreditation Council for Occupational Therapy (ACOTE) began transitioning from entry-level bachelors to master's education programs in 1997. ACOTE formally adopted <i>Accreditation Standards for Master's-Degree-Level Educational Programs for the Occupational Therapist</i> in August 2006. Beginning January 1, 2008 all OT programs are accredited according to the 2006 standards (ACOTE, 2007)
Pharmacists	Bacca-laureate	Doctor of Pharmacy (PharmD)	The PharmD as the sole professional practice degree for pharmacy was formalized with the Accreditation Council for Pharmacy Education (ACPE)'s adoption of <i>Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree</i> on June 14, 1997 (ACPE, 2006).

Conversely, some programs such as phlebotomy and medical transcription are accelerating and compressing content and program length to graduate students in a shorter amount of time to fill workforce shortages. However, this is viewed as adversely affecting the graduates and contributing to a lack of perceived professional development and work-readiness skills.

Structure and Format of Programs

Allied health education programs are most often structured in a traditional full-time, weekday format. Education models that incorporate distance education, consortia, part-time, evening and/or weekend programs are not typical. Roundtable representatives viewed the reliance on a traditional education model as limiting the feasibility of enrolling a greater number and wider range of students.

Recommendation 7

Develop and implement ways to reduce the cost of obtaining an education in allied health occupations for a diverse group of students

Suggested Strategies:

- Provide low interest student loans, loan forgiveness, loan repayment, scholarships and grants for students who commit to working in Pennsylvania after graduation
- Develop articulation and/or transfer of credit agreements among a broad range of schools to maximize efficiencies in the education process
- Provide additional incentives for students who commit to teaching in their chosen occupation in Pennsylvania after graduation
- Look to expand benefits for those applicants that take advantage of classes and who would make a commitment to work in Pennsylvania

Recommendation 8

Provide resources and support to encourage education institutions to reformat all or portions of their allied health programs to maximize flexibility

Suggested Strategies:

- Survey programs for the number of applicants, number of qualified applicants, number of seats available, enrollment by various student demographics, student retention, student graduation, and professional entry examination pass rates (if applicable)
- Increase program flexibility in terms of location, time, and format
- Offer grants for programs to develop alternative and flexible programs
- Work with education programs to secure the equipment necessary to offer new programs, expand existing programs, and stay current with technology
- Explore the feasibility of accelerated education and training programs for persons with academic degrees seeking a second career

RECRUITMENT

Recruitment is defined as the process of attracting new workers to a given occupation. Three (3) major issues emerged:

1. Recruitment into education and industry settings
2. Generational differences and preferences
3. Untapped labor markets/diversity

Representatives from most occupations at every roundtable stated that workforce supply is not meeting workforce demand in their occupations. Most noted that this supply-demand gap will increase with the approaching retirement boom.

Recruitment into Education and Industry Settings

Different issues pertain to recruitment into an education program and recruitment into a job setting. Issues pertaining to recruitment into an education program focus on lack of awareness, understanding, and interest in allied health occupations among high school students; insufficient resources to accommodate students in clinical settings; and scarcity of flexible education programs.

Issues pertaining to recruitment into job settings are varied and complex, and include compensation and benefits packages, generational differences, regional dynamics, traveling worker programs and staffing agencies, differences among practice settings, and employer recruitment and marketing strategies. Participants indicated that a variety of recruitment strategies are used to attract employees to work settings. These include sign on bonuses, tuition reimbursement, vacation time, health care, flexible scheduling, creative job posting and e-recruiting, referral bonuses, retirement benefits, participation in job fairs and job shadowing, and serving as clinical sites.

Participants at four roundtables strongly disagreed with the practice of using sign-on bonuses to attract potential workers. These participants argued that sign-on bonuses attract workers that value money as the major work incentive, create a culture of “job-hopping” among workers, and lower employee morale.

While it may not be the best use of the Commonwealth’s resources to address the recruitment strategies used by individual educational institutions and employers, implementing systems and programs that positively affect the overall financial status of allied health care workers via loan forgiveness and repayment, scholarships, and grants may be helpful.

Recommendation 9

Collaborate with the Pennsylvania Department of Education, local Health Care

Industry Partnerships, and others to develop allied health education curriculum materials for the K-12 system, with particular emphasis on middle and high schools

Suggested Strategies:

- Expand the range of opportunities for high school students to participate in elective allied health courses
- Develop K-12 allied health content that easily can be integrated into science and mathematics courses
- Offer incentives to high school students who enroll in allied health education programs (i.e. tuition, loans, see “Pittsburgh Promise”)
- Expand existing allied health career exploration programs such as the Pennsylvania’s Governor’s School

Generational Differences and Preferences

Four generations are working in today’s employment settings. Tangible differences among the generations impact all aspects of the work environment. These include what makes an employment setting attractive to potential new hires, employees’ expectations for their work environment, and their habits and behaviors. Despite these differences, recruitment strategies that are mindful of generational differences do not appear to be the industry standard.

Untapped Labor Markets/Diversity

Data compiled in the *Allied Health Technical Report* indicate that workers in most of the 22 selected allied health occupations typically are Caucasian and female. Exceptions include pharmacists and emergency medical technicians and paramedics. Men and minorities are not well represented in allied health occupations. However, a targeted focus or priority for recruiting persons from these groups was not mentioned during the roundtable discussions. Targeted markets include second-career seekers, non-traditional, and international allied health professionals. Furthermore, representatives at two roundtables mentioned military spouses as an untapped market for medical transcription. Representatives at two roundtables mentioned biology and chemistry bachelor’s degree graduates as an untapped market for medical and clinical laboratory technology.

Recommendation 10

Provide financial incentives to newly prepared allied health professionals to stay and work in Pennsylvania upon graduation

Suggested Strategies:

- Provide tuition reimbursements/grants/loans for students who graduate from programs and choose to practice in Pennsylvania
- Provide additional financial assistance to new graduates who work in rural, inner city, or other underserved areas

Recommendation 11

Expand targeted recruitment efforts

Suggested Strategies:

- Develop innovative strategies that address preferences of the different generations in today's workforce
- Explore and develop creative recruitment strategies that extend beyond Pennsylvania's borders
- Develop recruitment strategies aimed at minority and underrepresented populations
- Promote the natural links between math and science majors and allied health occupations

RETENTION

The Commonwealth, PA WIB, and PCHC first examined how to create state-scale policy related to health care workforce retention issues in 2006. The outcomes and recommendations of that examination were released in the report *The Retention of Health Care Workers in the Commonwealth* (Retention Report) in fall 2006. The findings and recommendations contained in this report should be viewed as complimentary to those contained in the Retention Report.

Retention is defined by the Working Group as the process of keeping workers in a given occupation. Two (2) major issues emerged:

1. Retention Dynamics
2. Generational Differences

Retention Dynamics

Roundtable participants indicated that allied health care workers tend to stay in health care for most of their working career. Allied health workers may shift career focus and job responsibilities; however they typically do not leave their field or specialty for another industry. Those who leave health care altogether, do so because they relocate or need to take care of families. However, on an organizational level, representatives at four roundtables indicated that workers in several allied health occupations move from one organization to another with relative frequency.

Representatives at six roundtables observed that once people are established in a region they tend to remain in the region. Participants at four roundtables noted that younger workers are more mobile and may be more willing to move out of the state or out of rural areas to urban areas. Representatives at four roundtables discussed traveling worker programs and debated their merits and drawbacks. Employers in large metropolitan areas inside and outside of the Commonwealth, particularly in the Philadelphia region and northern Maryland, are able to attract workers with high salaries and flexible hours that allow them to travel from rural areas, work high volume hours over a short period of time, and travel back to their home region. Representatives from rural and smaller urban regions felt that they could not compete with the salary and flexible schedules offered to workers who are willing to travel and indicated this was affecting their ability to retain workers. However, representatives in the northeast commented that the allure of these programs may be decreasing.

Salary, benefits, longevity bonuses, leadership development, professional development, reward and recognition programs, incentives for off-shifts, phased retirement, changing job roles, mentoring programs, and career ladders were all mentioned as key strategies for retaining employees.

Generational Differences

There are generational differences pertaining to employment needs and preferences in work settings. These needs and preferences can impact a worker's longevity with an organization, particularly if clashes in the workplace arise from not understanding or respecting them.

Early Career

Younger workers tend to stay with an organization for shorter amounts of time and may leave one employer for another to take advantage of sign on bonuses, higher salaries, and/or more lucrative benefits packages. Many of these workers remain with an employer only until they have fulfilled their contract commitment. This contributes to a "revolving door" phenomenon among younger workers.

New graduates, specifically those who are entering the workforce for the first time, generally are viewed as having sufficient knowledge of specific content and the technical skills required for practice. However, industry representatives at nearly all roundtables indicated that new graduates lack the professional and work readiness skills that are essential for allied health occupations. Examples include, but are not limited to, problem solving and critical thinking, time management, customer service, responsiveness to supervisors and authority, and personal presentation.

Industry representatives and employers identified a need to incorporate additional professional skills training in their orientation sessions for the purposes of retaining workers. More progressive organizations are rethinking their approach to orientation and training and emphasizing customer service and interpersonal skills.

Mid-Career

Participants note that at mid-career, people tend to remain at one organization because they have seniority and accrued benefits. These workers value professional development opportunities such as leadership development training programs, greater autonomy, and the ability to move into management positions as contributing to their longevity with an organization.

Late Career

People nearing the end of their careers usually do not leave their organization to move to another work setting. The highly physical nature of some occupations

and burn out appear to be major factors that cause more senior employees to leave their employers and the health care field altogether. Employers are beginning to recognize a need to reconfigure and adjust jobs to accommodate the needs and changing abilities of the aging workforce. Organizations are trying to develop ways to retain people in the workforce as long as possible to sustain institutional memory and practices.

The impending retirement boom was discussed at nearly all of the roundtables. Representatives are concerned that the retirement of these experienced employees will increase shortages in many occupations. Health care professionals are discussing possible strategies to weather the approaching retirement boom including phased retirement, changing job roles and duties to retain older workers, and succession planning.

Recommendation 12

Develop and/or use the Health Care Industry Partnership and other infrastructures to provide monies for allied health training and professional development

Suggested Strategies:

- Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees
- Provide incentives to support a range of professional development opportunities for allied health employees

Recommendation 13

Ensure that Pennsylvania's professional practice acts and regulations for allied health occupations are progressive

- Ensure that Pennsylvania's professional practice acts are progressive and consistent with other state's professional practice acts, particularly related to mandatory continuing education and scope of practice
- Evaluate and ensure that the application process for licensure/certification by Pennsylvania's professional licensing boards is efficient and permits qualified applicants from other states to work in Pennsylvania
- Ensure that Pennsylvania is represented adequately in national dialogues as they pertain to allied health program accreditation standards and the implications that changing degree requirements have on state licensing requirements

Next Steps

The Commonwealth of Pennsylvania has a history of being proactive and forward thinking in anticipating critical workforce challenges, researching existing conditions, determining trends, and implementing policies to address current and future workforce needs. Governor Edward G. Rendell's 2004 creation of the PCHC within the PA WIB is an example of leadership in workforce development. The PCHC's proactive stance in commissioning this project for Allied Health is another example of the Commonwealth's foresight in workforce development.

A total of 13 recommendations with accompanying suggested strategies across the four priority areas of image, education capacity, recruitment and retention were developed during this project, using an initial template of 22 allied health occupations. In addition, a more focused review of eight pilot occupations resulted in occupation-specific suggested solutions that are relevant to those specialties. Overviews of the occupation-specific discussions including solutions to the challenges articulated by occupational representatives are found in Appendix E.

The Working Group achieved the Commonwealth's goal of validating existing statistical information concerning allied health workforce trends and is broaching the topic of allied health workforce shortages by bringing a diverse group of allied health educators and industry representatives together to discuss these critical challenges. By engaging stakeholders in this process, the Working Group is mobilizing a historically fragmented community around issues that are important to all. The next challenge is to use the information and recommendations provided in this report to build an integrated comprehensive strategy that responds to current allied health workforce challenges and anticipates the needs of the future.

To this end, we offer the following suggestions for how the work could proceed:

1. Focus attention on image and education capacity first.

On the surface, the four major areas of image, education capacity, recruitment, and retention appear to be discreet categories. However, the multiple synergies that cross these categories and the ability to implement recommendations in a variety of combinations became increasingly apparent during the course of the project. Appendix G provides a matrix that compares the suggested solutions of the occupation-specific discussions to the overarching recommendations and suggested strategies.

In addition, the categories of image and education capacity consistently emerged as priorities for the stakeholder groups and were viewed as highly complimentary and particularly suited to larger, state-wide interventions.

Focusing allied health workforce efforts on the areas of image and education capacity together could enhance the Commonwealth's ability to achieve its goals in allied health workforce development. It also is consistent with the focus of other places across the United States that are attempting to address allied health workforce challenges proactively.

2. Approach recruitment from a broad perspective.

The data from this project yielded important information regarding supply-demand issues and recruitment strategies largely on a regional scale. In addition to the strategies and recommendations that stakeholders contributed, and given the highly fluid and global nature of today's workforce, the Commonwealth also could develop new strategies to attract an even wider scope of workers into the Commonwealth to compliment the recommendations put forth in this report. This would be consistent with the Commonwealth's progressive, forward-thinking stance towards workforce development.

3. Consider the recommendations in a larger context.

The findings of this report reflect allied health workforce issues in the Commonwealth of Pennsylvania. However, allied health workforce issues are pervasive across the country and also are impacted by the global economy. Many of the trends articulated by allied health professionals in this report are affected by policies and regulations of the Commonwealth, national policies and regulations from the federal government and professional associations. Viewing the findings of this report through a broader lens that encompasses education trends and industry issues both within and beyond the Commonwealth could enhance these efforts.

Appendix A: Roundtable Demographics

Regional Roundtable Representation – Industry

Occupational Category	Occupational Title	South-central	South-west	South-east	North-west	North-east	North-central	Total
Diagnostic	Cardio Technologists & Technicians	3		2			1	6
	Medical & Clinical Lab Technologists & Technicians**	2		1	3	1		7
	Phlebotomists	1*						1
	Radiologic Technologists	3*		3		1	1	8
Medical Services	Dental Assistants							0
	Dental Hygienists							0
	EMTs and Paramedics	2*	1		1		1	5
	Medical Assistants							0
	Pharmacists			2				2
	Respiratory Therapists	2	1			1		4
	Surgical Technologists							0
Non Direct Care	Dental Lab Technicians	1						1
	Medical & Health Services Managers***		3	8	7	2	3	23
	Medical Appliance Technicians							0
	Medical Records & Health Information Technicians		2	2		1	4	9
	Medical Secretaries							0
	Medical Transcriptionists	2*	1		1			4
	Pharmacy Technicians							0
Rehabilitative	Occupational Therapists		1	1	1		1	4
	Physical Therapists	1	1	2	3		1	8
	Speech Language Therapists			1	1			2
Other	Nursing		1	1				2
Total		14	11	23	17	6	12	83

*Total counts may not equal total number of attendees, as some participants could speak for both industry and education or for multiple occupations

**Medical and clinical laboratory technicians and medical and clinical laboratory technologists were combined, as all representatives could speak for both occupations

***For the purposes of this chart, Medical and Health Services Managers includes corporate and human resources personnel. The U.S. Department of Labor's definition also includes the director level in clinical settings.

Regional Roundtable Representation – Education

Occupational Category	Occupational Title	South-central	South-west	South-east	North-west	North-east	North-central	Total
Diagnostic	Cardiovascular Technologists & Technicians							0
	Medical & Clinical Laboratory Technologists & Technicians**	1*					1	2
	Phlebotomists	1*						1
	Radiologic Technologists	1*	1					2
Medical Services	Dental Assistants		2*					2
	Dental Hygenists	1	2*					3
	EMTs and Paramedics	1*						1
	Medical Assistants	1						1
	Pharmacists							0
	Respiratory Therapists					1		1
	Surgical Technologists							0
Non Direct Care	Dental Laboratory Technicians							0
	Medical and Health Services Managers***	3			1			4
	Medical Appliance Technicians							0
	Medical Records & Health Information Technicians							0
	Medical Secretaries							0
	Medical Transcriptionists	1*						1
	Pharmacy Technicians							0
Rehabilitative	Occupational Therapists						1	1
	Physical Therapists				1 (PTA)			1
	Speech Language Therapists							0
Other	Nursing	2						2
Total		12	5	0	2	1	2	22

*Total counts may not equal total number of attendees, as some participants could speak for both industry and education or for multiple occupations

**Medical and clinical laboratory technicians and medical and clinical laboratory technologists were combined, as all representatives could speak for both occupations

***For the purposes of this chart, Medical and Health Services Managers includes corporate and human resources personnel. The U.S. Department of Labor's definition also includes the director level in clinical settings.

Appendix B: Roundtable Protocol

Health Care Administration, Educational Administration and Faculty, and Frontline Roundtable Questions

Total estimated time: 90 minutes

Introduction (approximately 10 minutes)

1. Explain Purpose
 - Validate findings from Allied Health Working Group's *Analysis of Health Occupations in the Commonwealth*
 - Identify critical issues for the 22 different allied health occupations/careers
 - Determine priorities
 - Identify strategies and recommendations to address the issues and priorities
2. Explain Breakouts
 - The Allied Health Working Group has identified a variety of priority areas regarding workforce development including:
 - Image: The self-perception of workers in a given occupation, the perception of recognition of the occupation by others, and the public relations practices at work in a given occupation.
 - Recruitment of workers: The process of attracting new workers to a given occupation.
 - Retention of workers: The process of keeping workers in a given occupation.
 - Educational capacity: The ability of the education system to prepare new workers for a given occupation.
3. Brief Introductions
 - Facilitators and participants (name, title, organization, and occupations with which most familiar)

Image (20 minutes)

4. How do you think people perceive the different allied health occupations in your region?
5. What aspects of your occupation are most desirable and could be marketed?

Educational Capacity (20 minutes)

6. What are the educational trends in your allied health career in terms of degree requirements and credentialing?
(Prompt: What challenges exist? What opportunities do you foresee?)
7. What, if anything, must change in the educational system to adequately address supply and demand issues in the allied health occupations?
(Prompt: clinicals, number of faculty, marketing, increasing the number of students, others)
8. Are education programs providing the skills that new hires need to be successful in their work environment?
9. In what ways, if any, do you see allied health educators and industry representatives communicating and collaborating about workforce issues and priorities?

Recruitment (20 minutes)

10. How much of a gap exists between supply and demand for your occupations?
11. What strategies do you typically use, have observed, or can think of to recruit students or employees?
12. There are four generations available for today's workforce. Has your institution developed any recruitment and/or retention strategies that are targeted toward the needs and preferences of each generation?

Retention (15 minutes)

13. Does your region have difficulty retaining its workforce in allied health careers? If so, why are you losing people and where are they going? If your region doesn't have difficulty retaining people, why?

Closing (5 minutes)

14. I'm happy to answer any additional questions you may have after the session.
15. Thank you for participating.
16. Next steps: conduct additional focus groups, surveys with other stakeholders and use these data, along with Working Group Report to determine priorities and strategies for allied health workforce development.

Appendix C: Roundtable Overviews

Allied Health Roundtable Overview – Harrisburg

Wednesday, December 5, 2007

Attendance: 24 attendees, 5 staff, 4 Allied Health Working Group members, 1 industry partnership representative

Occupations Represented

Clinical Lab – 2

Dental Hygiene – 1

Dental Lab – 1

Guidance Counselors – 2

Education Administration – 2

Radiologic Technologist – 3

Invasive Cardio Tech – 2

Medical Assistant – 1

Medical Transcription – 2

Non-invasive Cardio – 1

Paramedic – 2

Phlebotomy and Clinical Lab – 1

Physical Therapy – 1

Respiratory Therapist – 3

High Level Discussion Points

- ❖ Image
 - Several allied health occupations lack an image altogether
 - Students and their influencers lack adequate and accurate information about allied health occupations
 - Some allied health occupations seem to be a second-choice career
- ❖ Education Capacity
 - Several occupations are debating degree creep and its benefits and drawbacks
 - Some programs are under-enrolled, while others have an overabundance of applicants and are facing capacity issues in this region
 - Several occupations are debating if and how accreditation impacts a school's ability to adequately prepare students
- ❖ Recruitment
 - Recruitment issues seem to differ across occupations and could include the following: training gaps, exporting students to other states, lack of clinical sites, market saturation, vacancies, and compliance/regulatory issues
 - Generational differences, including differences in expectations and desired incentives, play a role when recruiting both new workers and second career workers and in retaining the aging workforce
- ❖ Retention
 - For some occupations represented, turnover seems to be due to churn, rather than people leaving the profession
 - Compensation and benefit programs or the lack thereof, such as flexible scheduling, salary, professional development, tuition reimbursement and others, can affect retention positively and negatively

Allied Health Roundtable Overview – Philadelphia

Tuesday, January 15, 2008

Attendance: 23 attendees, 4 staff, 6 Allied Health Working Group members, 2 industry partnership representatives

Occupations Represented

Clinical nurse specialist – 1	Long term care – 1
Home health – 2	Medical records and health information management – 2
Hospital-based human resources – 4	Occupational therapy – 1
Imaging – 2	Pharmacy – 2
Industry partnership – 1	Physical therapy – 2
Invasive cardiovascular technology – 2	Radiology – 1
Laboratory – 1	Speech-language pathology – 1

High Level Discussion Points

- ❖ Image
 - Allied health occupations don't seem to have an image among the general public
 - Within healthcare, occupations seem to be classified as professional or non-professional
- ❖ Education Capacity
 - Lack of flexible education options (i.e. part-time status, evening classes, distance learning) seem to be keeping people from entering some allied health fields
 - Scope of practice regulations seem to be causing frustration in some occupations
 - Lack of standardized curriculum and hands-on experience (i.e. clinicals, mentors, preceptorship) may cause a difficult transition to the work environment
- ❖ Recruitment
 - Small institutions may be at a disadvantage as they do not have the same resources or ability to provide benefits and compensation as large institutions
 - Benefits, particularly professional development opportunities and financial aid for education are commonly mentioned tools to aid in recruitment
 - Foreign workers may be an untapped resource, but the transition process is complex
- ❖ Retention
 - Physical work requirements may cause turnover among more seasoned workers
 - Leadership development, rewards and recognition programs, flexible schedules, opportunities for professional growth, and increased benefits may help to retain workers when customized for individual preference and needs

Allied Health Roundtable Overview – Pittsburgh

Wednesday, January 23, 2008

Attendance: 14 attendees, 4 staff, 2 Allied Health Working Group members, 1 local workforce investment board representative

Occupations Represented

Dental hygienist – 2	Medical transcription – 1
Emergency services – 2	Radiology – 1
Hospital-based human resources – 2	Rehabilitation executive – 2
Imaging – 1	Respiratory therapy – 1
Medical records – 2	

High Level Discussion Points

- ❖ Image
 - Allied health occupations don't seem to have an image among the general public
 - Within healthcare, occupations seem to be classified as professional or non-professional
 - Occupations with higher billable rates and hours seem to be more prestigious in the hospital setting (i.e. radiology and physical therapy)
 - Work setting impacts image (i.e. reputation, institution type, urban versus rural)
- ❖ Education Capacity
 - Degree requirements create a shortage of educators in some occupations (e.g. therapy, radiology, dental)
 - Professionals are debating the merits of increasing or changing credentials in dental assisting, medical records, and emergency services, among others
 - Younger generations may benefit from soft skill education (i.e. polish, business skills, communication, customer service)
- ❖ Recruitment
 - Retirees, minorities, stay-at-home moms, and high school students could be untapped markets
 - Outreach to elementary, middle, and high school students may help direct more people into allied health occupations
- ❖ Retention
 - Physical work requirements may cause turnover in more seasoned workers in physically demanding occupations
 - Phased retirement programs may provide benefits such as lowered health care cost and institutional knowledge retention while allowing older workers to work on their own terms

Allied Health Roundtable Overview – Erie

Tuesday, January 29, 2008

Attendance: 19 attendees, 4 staff, 1 Allied Health Working Group members, 1 Penn State Bererend representative

Occupations Represented

Education administration – 1
Emergency services – 1
Home health administration – 3
Hospital-based human resources – 3
Laboratory – 2
Medical technologist – 1

Medical transcription – 1
Occupational therapy – 1
Physical therapy – 3
Rehabilitation manager – 2
Speech-language pathology – 1

High Level Discussion Points

- ❖ Image
 - Allied health occupations don't seem to have an image among the general public
 - Within healthcare, occupations seem to be classified as professional or non-professional
 - Work setting impacts image (i.e. reputation, institution type, urban versus rural)
- ❖ Education Capacity
 - There seems to be a bifurcation between occupations experiencing degree creep and degree compression
 - Younger generations may benefit from soft skill education (i.e. polish, business skills, communication, customer service)
 - There seems to be a disconnect between employment opportunities and education
- ❖ Recruitment
 - Health care positions in the area are going unfilled for significant periods of time
 - Professionals seem to agree that recruitment strategies using technology and catering to generational differences would be effective
- ❖ Retention
 - Once people are established in the region, they tend to find a sense of community and stay in the region
 - Rather than leave their occupations, people tend to “job hop” from facility to facility in the area

Allied Health Roundtable Overview – Wilkes-Barre

Tuesday, February 26, 2008

Attendance: 8 attendees, 5 staff, 1 Allied Health Working Group member

Occupations Represented

Director, Cardiovascular Technology School – 1	Director, Respiratory Therapy Program – 1
Director, Compensation and Benefits – 1	Vice President – 1
Director, Medical Records Services – 1	Medical Technologist – 1
Director, Respiratory Care Services – 1	Radiology Technician – 1

High Level Discussion Points

- ❖ Image
 - Allied health occupations don't seem to have an image among the general public
 - The general public learns about allied health occupations through personal experience with allied health professionals
- ❖ Education Capacity
 - Proprietary schools market well and attract many students, but have high attrition and produce poor quality graduates
 - There is a critical shortage of allied health educators and programs have closed in medical technology and health information management in the region
 - Respiratory therapy is not attracting enough students to fill programs
 - Medical technology programs find placing students in clinicalships challenging
- ❖ Recruitment
 - Participants cited many generational differences and the need to address them in the workplace
 - Some recruitment strategies include: Introduction to Allied Health courses in “undecided” students’ freshman year or as a high school elective, train frontline staff to recruit, require job shadowing before students apply for programs, encourage mentoring
- ❖ Retention
 - Once people are established in the region, they tend to find a sense of community and stay in the region
 - Rather than leave their occupations, people tend to “job hop” from facility to facility in the area
 - Limited scope of practice can be a cause of poor retention – people are unable to utilize their training

Allied Health Roundtable Overview – State College

Friday, March 7, 2008

Attendance: 14 attendees, 6 staff, 2 Allied Health Working Group members

Occupations Represented

Business Office Manager – 1	Occupational Therapist – 1
Clinical Director and Assistant	Pre-hospital Services Manager – 1
Professor, Occupational Therapy – 1	Program Director, Clinical Lab – 1
Director of Rehab Services – 1	Radiology Supervisor – 1
Director, Cardiopulmonary – 1	Recruiter/HR Assistant – 1
Health Information Manager – 2	Regional Director, Health Services – 1
Industry Partnership Representative – 1	Software Product Analyst – 1

High Level Discussion Points

- ❖ Image
 - The general public is unaware of the breadth of careers in allied health and skills and training required to obtain them
 - There is a perceived hierarchy of value both among allied health professionals and between allied health and other health care occupations
- ❖ Education Capacity
 - Rules and regulations (i.e. Health Insurance Portability and Accountability Act (HIPAA), Medicare reimbursement) inhibit hospitals' ability to take students for job shadowing or clinicalships
 - There seems to be a lack of qualified educators, both academic and clinical
 - Negative clinical experiences due to lack of clinical sites and lack of quality clinical supervision can lead to attrition in education programs
 - Rural areas have clinical sites available, but lack students to fill them
- ❖ Recruitment
 - Possible recruitment strategies include: sign-on bonuses, retirement benefits, education reimbursement, flexible hours, and outreach to high school students
 - Second career seekers are a potential target market in the region
- ❖ Retention
 - Younger generations seem to value compensation as a retention strategy while more experienced workers seem to value cross-training, flexible scheduling, and increased responsibilities
 - Occupations that have a majority of female workers may experience turnover and vacancies due to women leaving work to raise children
- ❖ Technology is changing the work environment (i.e. health information management, electronic records, and others); health care professionals are debating its impact on the workforce

Appendix D: Conference Call Protocol

Conference Call Protocol Total estimated time: 60 minutes

Introduction (approximately 5 minutes)

- Explain Background

The Allied Health Working Group is part of the Pennsylvania Center for Health Careers and the Pennsylvania Workforce Investment Board and was created in the spring 2007 to respond to the growing demand for critical allied health occupations. To date the Allied Health Working Group has:

- Identified 22 critical allied health occupations across the Commonwealth
- Identified four priority issues to focus its attention toward:
 1. Image: The self-perception of workers in a given occupation, the perception of recognition of the occupation by others, and the public relations practices at work in a given occupation.
 2. Educational capacity: The ability of the education system to prepare new workers for a given occupation.
 3. Recruitment of workers: The process of attracting new workers to a given occupation.
 4. Retention of workers: The process of keeping workers in a given occupation.
- Narrowed the list of 22 to eight based on statistics and preliminary roundtable findings for initial focus
- Explain Purpose of Conference Calls
 - Determine priorities and identify strategies and recommendations within image, educational capacity, recruitment, and retention within each occupation
- Brief Introductions
 - Facilitators and participants (name, title, organization)
 - Your name will not be associated with your comments in the final report

Image (approximately 15 minutes)

1. What do you say when someone asks you, “What is a [insert occupation name] and what do you do?”
2. What are the most desirable aspects of [insert occupation name]?
3. What are the least desirable aspects of [insert occupation name]?
4. In general, how do people typically learn about [insert occupation name]?

Educational Capacity (approximately 15 minutes)

5. From our roundtable discussions we know that there are differences in the way people gain the necessary knowledge and skills to be successful in one occupation or another. In [insert occupation name], what needs to be done to increase our ability to educate and train [insert occupation name]?

Recruitment (approximately 10 minutes)

6. What kinds of strategies and incentives can organizations implement to recruit new hires into this profession?
7. What can the Commonwealth do to help organizations be successful in this process?

Retention (approximately 10 minutes)

8. What kinds of strategies and incentives can organizations implement to retain experienced individuals in this profession?
9. What can the Commonwealth do to help organizations be successful in this process?

Closing (approximately 5 minutes)

- Thank you for your participation.
- Next steps:
 - Use data gathered through quantitative data collection, roundtables, conference calls to build recommendations and strategies to address the growing demand for allied health occupations
 - Draft a report to be presented to the Pennsylvania Center for Health Career's Leadership Council, the Pennsylvania Workforce Investment Board, and ultimately the Governor
 - As a roundtable participant, you will receive a first copy of the final report that will ultimately build the Governor's workforce strategy in allied health across the Commonwealth

Appendix E: Conference Call/Focus Group Overviews

The Working Group selected a subset of eight pilot occupations to focus initial actions towards alleviating the Commonwealth's allied health workforce shortages and finding solutions to workforce challenges. This section details occupation-specific findings and suggested solutions for each of the following occupations⁹:

- Dental Assistants
- Dental Hygienists
- Medical and Clinical Laboratory Technicians
- Medical and Clinical Laboratory Technologists
- Pharmacists
- Physical Therapists
- Radiologic Technologists
- Respiratory Therapists

The findings and recommendations in the body of this report are applicable to all or most of the occupations including the eight pilot occupations. The occupation-specific findings and suggested solutions discussed in this section are the outcomes of a series of occupation-specific conference calls or focus groups. It is important to note that the findings and suggested solutions are based exclusively on the expertise and experience of the allied health professionals that participated in the conference calls or focus groups and are unique to each occupation.

⁹ Dental assistants and dental hygienists were combined during the occupation-specific discussions as were medical and clinical laboratory technicians and medical and clinical laboratory technologists.

Dental Assistants and Dental Hygienists Overview¹⁰

Attendance: 3 dental education representatives, 1 government representative, 2 Working Group members, 1 project team member

Discussion Points

❖ Image

- Dental assistants and dental hygienists are viewed as the same occupation outside of healthcare
- Dental hygienists
 - Job roles and credentials are clearly defined
 - Licensed in the Commonwealth by the Pennsylvania Board of Dentistry
 - Practice under the supervision of a dentist – this sometimes create resentment or frustration among dental hygienists
- Expanded function dental assistant (EFDA) is an emerging sub-specialty whose job roles are less clearly defined and are not yet well regulated
- Dental assistants are not licensed

❖ Education Capacity

- Degree requirements for dental hygiene
 - An associate's degree is the minimum point of entry for dental hygiene
 - A bachelor's or master's dental hygiene degree is needed for advanced careers in education or research
 - In clinical practice, the job tasks and compensation are roughly equal for bachelor's- and associate's-prepared hygienists
 - The American Dental Hygiene Association is working toward requiring an entry-level bachelor's degree for dental hygienists
- Degree requirements for dental assisting – dental assistants can be trained on-the-job at the discretion of the dentist or at area vocational technical schools/ career and technology centers
- The dental occupations experience a lack of qualified faculty. This may be driven by salary and education issues
- Programs are consistent in the Commonwealth and curriculum is generally applicable to practice

❖ Recruitment

- Dental assistants experience more vacancies in the work setting than dental hygienists
- Dental hygienists have more difficulty finding full-time employment with benefits than do dental assistants
- Personal experience is the main recruiting structure
- Historically, males and minorities have had less access to dental care and as such are reported as being more difficult to recruit to these occupations

❖ Retention

¹⁰ The Working Group combined the two occupations, dental assistants and dental hygienists, given their similarities.

- Informal career ladders from dental assisting to dental hygiene or from traditional dental assisting to EFDA exist for formally-trained dental assistants
- Benefits packages for both part-and full-time workers have helped institutions retain employees

Suggested Solutions

- ❖ **Develop a targeted awareness campaign that is unique to the needs of dental hygienists and dental assistants**
 - Clearly articulate the roles and responsibilities of dental assistants and dental hygienists and differentiate between the two occupations
 - Develop career promotional materials that are appropriate for middle school, high school, college, and second career people
 - Provide information on different education options for various career paths
- ❖ **Develop a central clearinghouse for students (i.e. a website) that includes the educational requirements and work responsibilities for each occupation**
 - Develop and maintain a statewide website for dental assistants and dental hygienists that describes allied health, scope of service, and potential careers
- ❖ **Expand targeted recruitment efforts specific to dental hygienists and dental assistants**
 - Develop recruitment strategies aimed at minority and underrepresented populations (i.e. male)
- ❖ **Ensure Pennsylvania's position regarding national and state regulations and recommendations for dental assistant and dental hygienist licensure and practice continue to be progressive and forward thinking**
 - Review the Pennsylvania Dental Hygienists' Association proposal to allow dental hygienists to administer local anesthesia¹¹
 - Examine the desirability and feasibility of allowing dental hygienists to practice without the supervision of a dentist in some settings (e.g. dental health community service in free clinics or prisons)
 - Increase flexibility for hiring foreign graduates

¹¹ As of June 2007, 31 states allow dental hygienists to administer local anesthesia. The states that do not allow dental hygienists to administer local anesthesia are: Alabama, Delaware, Florida, Georgia, Indiana, Maryland, Mississippi, New Jersey, North Carolina, Pennsylvania, and Texas (ADHA, 2007). Conference call representatives indicated this number may be even less since 2007.

Medical and Clinical Laboratory Technologists (MT) and Medical and Clinical Laboratory Technicians (MLT)¹² Overview

Attendance: 2 education representatives, 17 industry representatives, two Working Group members, 1 project team member

Discussion Points

❖ Image

- MLTs and MTs are viewed as “invisible” to the patient and general public
- MTs and MLTs are perceived as “technical” rather than “professional” within health care
- MTs and MLTs are not licensed in Pennsylvania
- Some organizations are improving the image and prestige for MTs and MLTs by changing titles for both occupations to “clinical laboratory scientist” and instituting career ladder programs
- Some education institutions have attempted to attract students by emphasizing the “forensic” aspects of the job made popular by TV shows such as CSI Miami
- Some participants disagreed with the CSI Miami strategy stating that such emphasis is misleading given types of jobs students typically enter upon graduation

❖ Education capacity

- Many MT and MLT programs have closed across the Commonwealth due to the high cost per student to maintain a program and the lack of interest in the profession
- Students are still unable to obtain clinical placements even with fewer programs
 - They attributed the lack of clinical sites to staff shortages and automation, which has decreased the number of staff needed to run a laboratory
 - Some respondents observed that some facilities are unable to fill clinical spaces due to the lack of students
 - Due to time constraints and productivity requirements, clinical instructors may not be able to provide as quality a clinical experience as they would like
- Degree requirements
 - An associate’s degree is the minimum point of entry for MLTs
 - A bachelor’s degree is necessary for MTs who want to become laboratory managers or educators at community colleges
 - A master’s degree is necessary for advanced careers in education or research
 - In the clinical setting, the work and salary for MTs and MLTs are roughly equal regardless of educational preparation
 - Professional societies are working towards increasing the entry-level degree requirements for MTs

¹² The Working Group combined the two occupations, MTs and MLTs, given their similarities.

❖ **Recruitment**

- Laboratories are understaffed in the Commonwealth
 - Not enough MT and MLT students are graduating to meet demand
 - Some graduates are recruited by out-of-state organizations with large sign-on bonuses or by pharmaceutical sales, research institutions, and vendors
 - Biology or chemistry graduates, retired employees, and non-traditional students are potential markets

❖ **Retention**

- The salary range is shrinking for MTs and MLTs as starting salaries increase faster than experienced worker raises
- Some workers and students use MT and MLT occupations as a stepping stone to other health care careers (i.e. nursing, radiology, physician's assistant)
- Younger workers are more challenging to retain than experienced workers due to their mobility
- Generational conflicts are more pronounced in the laboratory where one or two younger MTs or MLTs are hired into departments comprised of more experienced MTs and MLTs
- Automation is changing the work environment and its benefits and drawbacks are being debated by MTs and MLTs
 - Automation minimizes risk of contact with bio-hazards, increases time to focus on accuracy, and could be attractive to people interested in working with cutting-edge technology
 - However, automation can create repetitive job tasks that require little to no knowledge of the science and is viewed as taking the skill out of the job

Suggested Solutions

❖ **Develop a targeted awareness campaign that is unique to the needs of MTs and MLTs**

- Use a mix of traditional and nontraditional media to build awareness of the laboratory among the general public
- Target parents and teachers as they directly influence children
- Advertise options for career progression from MLT to MT
- Use open houses to build awareness

❖ **Provide grants for the development of regional education initiatives specific to MTs and MLTs to attract middle, high school, and college students to MT and MLT careers**

- Support the development of initiatives to build outreach and awareness that are directed toward various audiences such as career days, tours, mall exhibits, job shadowing, and other career exposure activities
- Target college and/or high school students enrolled in science courses to observe allied health occupations in clinical settings

❖ **Provide incentives for education-industry partnerships that facilitate classroom/clinical collaborations**

- Provide incentives and rewards for clinicians to accept students for clinical and/or field work placements

- ❖ **Provide resources and support to encourage education institutions to reformat all or portions of their MT and MLT programs to maximize flexibility**
 - Consider providing grant money for college laboratories to purchase equipment
 - Increase program flexibility in terms of location, time, and format
 - Offer grants for programs to develop alternative and flexible programs
 - Consider developing grants for incumbent worker training programs
 - Encourage programs that enable biology or chemistry graduates to obtain credentials to work as an MT easily

- ❖ **Collaborate with education professionals to develop allied health education curriculum materials for the K-12 system**
 - Offer incentives for high school students who enroll in medical technology programs
 - Develop recruitment materials such as presentations and promotional materials that can be integrated into the K-12 curriculum

- ❖ **Provide financial incentives to newly prepared MTs and MLTs to stay and work in Pennsylvania upon graduation**
 - Provide scholarship money/tuition reimbursements/grants/loans for students who graduate from programs and choose to practice in Pennsylvania

- ❖ **Expand targeted recruitment efforts for MTs and MLTs**
 - Promote the natural links between math and science majors and allied health occupations particularly for freshman and sophomore students in biology and chemistry and high school students with an interest in science and technology
 - Develop innovative strategies that address generational differences in the workforce

- ❖ **Develop and/or use the Health Care Industry Partnership infrastructure to provide monies for MT and MLT training and professional development**
 - Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees
 - Provide assistance for individual hospitals to institute career ladder programs to train laboratory aides, phlebotomists, and X-ray technicians as well as programs that enable MTs and MLTs to grow in their careers with or without taking on management roles
 - Provide assistance for formal mentoring programs
 - Provide programs, assistance, and incentives for leadership development training

Pharmacists Overview

Attendance: 2 education representatives, 16 industry representatives, 2 Working Group members, 1 project team member

Discussion Points

❖ Image

- The general public is unaware of pharmacists outside of the traditional pharmacy setting and of the amount of education required to become a pharmacist
- Students choose the profession because it offers a high salary
- Desirable aspects include helping people, educating patients and other medical staff, working across disciplines, affecting people's lives, optimizing medication use to save patient's money and help them improve their health
- The industry is driven by insurance companies and drug manufacturers who are concerned with the bottom line
 - Communicating with insurance companies and complying with their policies (e.g. prior authorization) is complex and time consuming
 - Often, insurance representatives do not have a background in health care
 - Explaining the complexities to patients is challenging
 - Compensation is based on a per prescription drug cost and dispensing fee which only encourages volume and not counseling and services provided to patients

❖ Education Capacity

- The communication and critical thinking skills required in hospital-based, community-based, and retail settings are different
- Programs are training students for clinical-based positions, which many graduates are unlikely to enter
- There seem to be more applicants than schools are able to take due to a lack of clinical sites and faculty

❖ Recruitment

- Increasing the number of minority pharmacists would benefit and be embraced by the community
- Access and lack of exposure may be barriers to recruiting minorities into pharmacy
- Students seem to leave Pennsylvania after graduation for large sign-on bonuses, higher salaries, fewer licensure requirements, and expanded scope of practice

❖ Retention

- People leave the occupation due to "burn out" in retail caused by the high pressure work environment and insurance company policies

Suggested Solutions

- ❖ **Develop a targeted awareness campaign that is unique to the needs of pharmacists**
 - Promote the various work settings of pharmacists
 - Promote the increasing use of information and technology in pharmacy

- ❖ **Provide grants for the development of regional educational initiatives to attract middle, high school, and college students and second-career seekers to careers in allied health**
 - Stress the importance of math and science for students interested in pharmacy

- ❖ **Provide financial incentives to newly prepared pharmacy graduates to stay and work in Pennsylvania upon graduation**
 - Provide a voucher or credit towards education, that in turn is paid back by number of hours worked in Pennsylvania

- ❖ **Ensure Pennsylvania's position regarding national and state regulations and recommendations for pharmacist licensure and practice continue to be progressive and forward thinking**
 - Investigate best practices and precedence in other states for pharmacists scope of practice

Physical Therapists Overview

Attendance: 7 industry representatives and 2 Working Group members

Discussion Points

❖ Image

- The general public does not think of physical therapists as medical professionals and often compares and/or contrasts physical therapists to nurses
- Within healthcare, physical therapy is sometimes viewed as not valuable or effective
- People usually learn about physical therapy through personal experience, by receiving care, or by word-of-mouth
- Physical therapy seems to be increasingly specialized (i.e. sports medicine, geriatric, pediatrics, schools, rehabilitative, and home care)

❖ Education Capacity

- Degree creep
 - Places additional strain on the educational system and students
 - Driven by education institutions and professional associations who are interested in increasing prestige
 - Causes a lack of qualified faculty and a shortage of clinical sites
 - Increases the time and financial commitment for students
 - Increases the number of clinical hours with inadequate sites to support the increase
- Participants observed that curriculum is applicable directly in clinical practice
- Professional skills seem to be lacking among some students

❖ Recruitment

- Participants observed a need to recruit more minorities and males to reflect changing patient populations and to encourage students to work in urban regions

❖ Retention

- Individuals choose to become physical therapists in part because of a perceived high level of patient care and contact; but increased rules and regulations, particularly those put forth by the State Board of Physical Therapist Examiners, the quantity of and costs associated with continuing education, administrative duties, and other responsibilities shift emphasis away from direct patient care and impact retention

Suggested Solutions

❖ Develop a targeted awareness campaign that is unique to the needs of physical therapists

- Develop career information promotional materials that are appropriate for middle, high school, college, and second-career seekers
- Emphasize documentation requirements to adequately prepare students and help them build realistic expectations of the occupation

- ❖ **Provide grants for the development of regional education initiatives to attract middle, high school, and college students to careers in physical therapy**
 - Develop programs that provide students with career exploration opportunities such as mentoring and job shadowing
- ❖ **Develop and implement ways to reduce the cost of obtaining a physical therapy education**
 - Provide low interest student loans, loan forgiveness, loan repayment, scholarships and grants
- ❖ **Expand targeted recruitment efforts by market segment**
 - Develop recruitment strategies aimed at minority and underrepresented populations (i.e. sports medicine may be a way to attract a more diverse pool of applicants, specifically male applicants)
- ❖ **Develop and/or use the Industry Partnership infrastructure to maximize training dollars available for physical therapy training and professional development**
 - Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees
 - Provide assistance for individual hospitals to institute career ladder programs
 - Provide scholarship or grant monies to subsidize the cost of continuing education courses
 - Provide assistance for formal mentoring programs
 - Provide programs, assistance, and incentives for leadership development training
- ❖ **Ensure Pennsylvania's position regarding national and state regulations and recommendations for physical therapist licensure and practice continue to be progressive and forward thinking**
 - Consider re-evaluating inter-state reciprocity policies to allow physical therapists moving into Pennsylvania easier access to work opportunities

Radiologic Technologists Overview

Attendance: 1 education representative, 3 industry representatives, 2 Working Group members, 1 project team member

Discussion Points

❖ Image

- There is a lack of awareness of existing technological advancements and critical care aspects of the occupation among the general public and within healthcare (e.g. operating room procedures can now be done with imaging technology)
- Healthcare professionals and the general public perceive radiologic technologists as technicians that follow protocols and do not use critical thinking skills rather than advanced-skill professionals in a complex and critical field

❖ Education Capacity

- Non-traditional students are an untapped market for radiologic technology
- Current education structures (i.e. weekday, daytime format) are not conducive to educating non-traditional students
- Radiologic technology is becoming increasingly specialized and that the equipment is becoming increasingly technologically advanced
 - Acquiring and maintaining state-of-the-art resources is expensive for education programs
 - Many education programs are using out-of-date equipment to instruct students due to financial constraints
- Students are taking longer and longer to complete programs
 - Students must be prepared in both traditional and new, computer-based methods (i.e. film and digital imaging) which adds additional content to programs
 - Many recent high school graduates are deficient in English, math, and science skills and therefore are required to complete pre-requisite coursework to enter programs
- There is a lack of qualified educators
 - The shortage is attributed to increasing degree requirements for radiologic technology educators
 - Requiring advanced degrees to teach is necessary to adequately prepare students, however it does create a lack of qualified faculty

❖ Recruitment

- There seems to be a balance between supply and demand for general radiologic technologists
 - However supply may not be meeting demand for some of the specializations
 - Radiology students are beginning to graduate without having secured jobs
 - Turnover seems to be at a manageable level for general radiologic technologists
- Top students are recruited by equipment vendors and into other non-direct care opportunities

- ❖ **Retention**
 - Leadership development was perceived as having a significant impact on retention in organizations

Suggested Solutions

- ❖ **Develop a targeted awareness campaign that is unique to the needs of radiologic technologists**
 - Develop programs such as open houses at hospitals or imaging centers to showcase advanced technology,
 - Promote the variety of education options, multiple points of entry, and career paths in radiology
- ❖ **Provide grants for the development of regional educational initiatives for radiologic technology to attract middle, high school, and college students to careers in allied health**
 - Develop programs such as career days, job fairs, mall exhibits, job shadowing, and other career exposure activities
- ❖ **Provide incentives for education-industry partnerships that facilitate classroom/clinical collaboration**
 - Encourage academic/industry/clinical partnerships that result in improved access for students to state-of-the-art technology
- ❖ **Develop and implement ways to reduce the cost of obtaining an education in radiologic technology for a diverse group of students**
 - Provide low interest student loans, loan forgiveness, loan repayment, scholarship programs, and grants to students who commit to working in Pennsylvania after graduation
- ❖ **Provide resources and support to encourage education institutions to reformat all or portions of their radiology programs to maximize flexibility**
 - Increase program flexibility in terms of location, time, and format
 - Offer grants for programs to develop alternative and flexible programs
 - Encourage clinical sites to offer clinical placements on “off-shifts”
 - Provide grant monies for education programs to purchase equipment
- ❖ **Develop and/or use the Health Care Industry Partnership and other infrastructures to maximize training dollars available for radiologic technology training and professional development**
 - Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees
 - Provide assistance for individual hospitals to institute career ladder programs, mentoring programs
 - Provide programs, assistance, and incentives for leadership development training

Respiratory Therapists Overview

Attendance: 2 education representatives, 6 industry representatives, 2 Working Group members, 1 project team member

Discussion Points

❖ Image

- The general public is largely unaware of respiratory therapy.
- Value and image seem to be dependent on respiratory therapists' ability to fully use their skills and on Medicare regulations that limit reimbursement for respiratory therapy services (e.g. at smaller hospitals respiratory therapists may have limited scope of work and are therefore viewed as less valuable)
- Medicare reimbursement and degree creep
 - The Medicare reimbursement structure was noted as driving the rationale for increasing degree requirements and enhancing the overall professional image of respiratory therapists
- Licensure and registry issues
 - Respiratory therapists are licensed under the Pennsylvania Board of Osteopathic Medicine and the Pennsylvania State Board of Medicine
 - Perception that being licensed increased the prestige and image of respiratory therapy and is important to promote in marketing materials and activities

❖ Education Capacity

- Education programs seem to be experiencing low numbers of applicants, are under-enrolled, and facing high attrition rates
- There seems to be a lack of qualified educators in respiratory therapy as education institutions prefer to hire educators with advanced degrees
- Clinical instructors often are not able to provide as quality a clinical experience to students as they would like due to time constraints and productivity requirements
- New graduates sometimes require on-the-job orientation that employers may not have the resources to provide adequately due to both a lack of professional skills and sometimes a lack of clinical skills.
- Graduates of four-year programs may have more developed reasoning and critical thinking skills than graduates of less than four-year programs
- The lack of baccalaureate programs across the Commonwealth makes career progression challenging
- Degree Creep
 - Increasing entry-level requirement to a bachelor's degree may raise the quality of applicants and increase the prestige of respiratory therapy (debated)
 - Respiratory therapists are debating the merits and drawbacks for increasing the credential for entry-level to a baccalaureate degree

❖ Recruitment

- Participants communicated that they are interested in advancing their profession and would like to be involved in a Commonwealth-wide project

- Clinicians sometimes give job shadow students or clinical students a negative impression of the occupation due to time and resource constraints
 - Compensation and benefits were viewed as critical recruitment factors that are driven by Medicare reimbursement
- ❖ **Retention**
- Retention does not seem to be an issue currently, but will be as the retirement boom approaches
 - Turnover in hospital settings may be due to respiratory therapists leaving to work in home health or other settings that provide daytime shifts and weekends and holidays off
 - Salary seemed to be a key retention factor
 - Participants noted that sign-on bonuses are a widely used recruitment tool but may be counterproductive to retention efforts as they decrease employee satisfaction and promote post-commitment turnover
 - Some hospitals have limited the scope of practice for respiratory therapists. This can create dissatisfaction when employees are unable to use the full breadth of their skills

Suggested Solutions

- ❖ **Develop a targeted awareness campaign that is unique to the needs of respiratory therapists**
 - Communicate the contribution of respiratory therapy to the health system
 - Develop career information promotional materials that are appropriate for middle, high school, college, and second-career seekers
 - Promote that respiratory therapy is a licensed occupation
- ❖ **Provide grants for the development of regional education initiatives to attract middle, high-school, and college students and second career seekers to careers in allied health**
 - Develop programs that provide students with career exploration opportunities such as mentoring and job shadowing
- ❖ **Develop and implement ways to reduce the cost of obtaining an education in respiratory therapy for a diverse group of students**
 - Provide low interest student loans, loan forgiveness, loan repayment, scholarships and grants for respiratory therapy students who commit to working in Pennsylvania after graduation
- ❖ **Expand targeted recruitment efforts by market segment**
 - Provide resources for individual hospitals to continue or to institute recruitment efforts

- ❖ **Develop and/or use the Industry Partnership infrastructure to maximize training dollars available for respiratory therapist training and professional development**
 - Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees
 - Provide programs, assistance, and incentives for leadership development training
 - Provide assistance for individual hospitals to institute career ladder programs
 - Provide assistance for formal mentoring programs

Appendix F: Comparison of Roundtable and Conference Call Demographics

Occupational Category	Occupation	Number of Roundtable Participants	Number of Conference Call/Focus Group Participants	Number of Participants that Overlap	Number of Unique Representatives
Diagnostic	Cardiovascular Technologists and Technicians	6			6
	Medical & Clinical Laboratory Technicians & Technologists	9	19	6	16
	Phlebotomists	2			1
	Radiologic Technologists and Technicians	10	4	3	8
Medical Services	Dental Assistants & Dental Hygienists	5	3	2	2
	Emergency Medical Technicians and Paramedics	6			6
	Medical Assistants	1			1
	Pharmacists	2	18	0	20
	Respiratory Therapists	5	8	5	3
	Surgical Technologists	0			0
Non Direct Care	Dental Laboratory Technicians	1			1
	Medical and Health Services Managers	27			27
	Medical Appliance Technicians	0			0
	Medical Records and Health Information Technicians	9			9
	Medical Secretaries	0			0
	Medical Transcriptionists	5			5
	Pharmacy Technicians	0			0
Rehabilitative	Occupational Therapists	5			5
	Physical Therapists	9	7	3	10
	Speech-Language Pathologist	2			2
Total		105	59	19	126

Appendix G: Comparison of Recommendations, Suggested Strategies, and Occupation-Specific Solutions

The occupation-specific suggested solutions were gathered through the series of conference calls/focus groups with front-line workers, front-line supervisors, and education representatives from the eight pilot occupations. This matrix compares the suggested solutions for the pilot occupations with the recommendations developed through the roundtable sessions for all 22 occupations.	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
IMAGE						
Recommendation 1: Provide financial and other resources for local workforce investment boards (WIBs), Health Care Industry Partnerships, and others to develop a major awareness campaign for allied health that is directed to various audiences	X	X	X	X	X	X
Suggested Strategies						
<ul style="list-style-type: none"> Utilize a mix of traditional and nontraditional media that appeal to the younger generations (i.e. facebook, YouTube, IM, blogs, video games, and other electronic and interactive media) 		X				
<ul style="list-style-type: none"> Target parents and teachers as they directly influence children 		X				
<ul style="list-style-type: none"> Show options for different levels and types of patient care ranging from direct to non-direct 						
<ul style="list-style-type: none"> Promote different education options for various career paths 	X	X	X			
<ul style="list-style-type: none"> Develop career information promotional materials that are appropriate for students in middle school, high school, and college as well as second career seekers 	X			X		X
<ul style="list-style-type: none"> Target minority and non-traditional populations 						

	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 1: Provide financial and other resources for local workforce investment boards (WIBs), Health Care Industry Partnerships, and others to develop a major awareness campaign for allied health that is directed to various audiences (Con't)	X	X	X	X	X	X
Occupation-Specific Solutions						
<ul style="list-style-type: none"> Clearly articulate the roles and responsibilities of dental assistants and dental hygienists and differentiate between the two occupations 	X					
<ul style="list-style-type: none"> Promote public open houses on location for occupations that have little direct patient contact 		X	X			
<ul style="list-style-type: none"> Advertise options for career progression from MLT to MT 		X				
<ul style="list-style-type: none"> Communicate the contribution of respiratory therapy to the health system 				X		
<ul style="list-style-type: none"> Promote that respiratory therapy is a licensed occupation 				X		
<ul style="list-style-type: none"> Promote the various work settings of pharmacists 					X	
<ul style="list-style-type: none"> Promote the increasing use of information and technology in pharmacy 					X	
<ul style="list-style-type: none"> Emphasize documentation requirements to adequately prepare students and help them build realistic expectations of the occupation 						X

	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 2: Provide grants for the development of regional educational initiatives to attract middle, high school, and college students to careers in allied health		X	X	X	X	X
Suggested Strategies						
<ul style="list-style-type: none"> Develop programs such as career days, mall exhibits, job shadowing, and other career exposure activities 		X	X			
<ul style="list-style-type: none"> Develop programs that provide students with in-depth career exploration such as mentoring programs, long-term shadowing opportunities, internships, summer programs, and others 				X		X
<ul style="list-style-type: none"> Strengthen and expand existing integrated models that link traditional high school, Career and Technology Center/Area Vocational Technical School (CTC/AVTS), and postsecondary education 						
<ul style="list-style-type: none"> Target community college and/or high school students who are enrolled in science courses to observe allied health occupations in clinical settings 		X				
Occupation-Specific Solutions						
<ul style="list-style-type: none"> Stress the importance of math and science for students interested in pharmacy 					X	

	Dental Ass't. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 3: Develop a multi-dimensional, Commonwealth-wide “clearinghouse” for allied health care information and resources	X					
Suggested Strategies						
<ul style="list-style-type: none"> Develop and maintain a statewide website that describes allied health occupations including scopes of practice and potential careers 	X					
<ul style="list-style-type: none"> Create, support, and/or expand regional and/or county programs for job shadowing, internships, clinical experiences 						
<ul style="list-style-type: none"> Sponsor regional and/or state-wide conference(s) and/or seminar(s) for industry and education to share marketing, image strategies and ideas both for the general public and for the health care industry 						
<ul style="list-style-type: none"> Develop a statewide job board for allied health occupations 						
<ul style="list-style-type: none"> Develop materials, seminars, and other products that identify and market the variety of populations and settings across the Continuum of Care for the general public and health care practitioners 						
<ul style="list-style-type: none"> Work with the Department of Labor and Industry and CareerLinks offices to promote allied health occupations as a career option for unemployed individuals 						

	Dental Ass't. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
EDUCATION CAPACITY						
Recommendation 4: Develop a methodology to accurately inventory state-wide and regional allied health education capacity on an ongoing basis						
Suggested Strategies						
<ul style="list-style-type: none"> Determine how the number of available faculty impacts the ability to educate more students in allied health and, if appropriate, identify what strategies need to be implemented to support the creation of sufficient qualified faculty 						
<ul style="list-style-type: none"> Survey programs for the number of open faculty positions, faculty tenure, salary, number of applicants for faculty positions, and number of qualified applicants for faculty positions 						
<ul style="list-style-type: none"> Create incentives for solutions that enhance faculty availability between education and employers 						

	Dental Ass't. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 5: Develop a methodology to accurately inventory state-side and regional allied health clinical education sites on an ongoing basis						
Suggested Strategies						
<ul style="list-style-type: none"> Determine how clinical site availability impacts the ability to educate more students in allied health and, if appropriate, identify strategies to maximize the use and availability of clinical sites 						
<ul style="list-style-type: none"> Identify regulatory and/or payment issues that potentially restrict institutions' willingness and/or ability to serve as clinical sites and advocate for appropriate revisions 						
<ul style="list-style-type: none"> Incentivize creative solutions between education and employers that could enhance clinical site availability 						

	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 6: Provide incentives for education-industry partnerships that facilitate classroom/clinical collaborations		X	X			
Suggested Strategies						
<ul style="list-style-type: none"> Provide incentives and rewards for clinicians to accept students for clinical and/or field work placements 		X				
<ul style="list-style-type: none"> Provide incentives that encourage health care employers to provide academically and experientially qualified allied health staff to assist allied health education programs in preparing students 						
<ul style="list-style-type: none"> Provide incentives and rewards for experientially qualified clinicians to assist allied health education programs in preparing students 						
<ul style="list-style-type: none"> Support the facilitation of regional partnership efforts that promote the use and sharing of health care technologies across educational institutions and/or practice settings 			X			

	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 7: Develop and implement ways to reduce the cost of obtaining an education in allied health occupations for a diverse group of students			X	X		X
Suggested Strategies						
<ul style="list-style-type: none"> • Provide low interest student loans, loan forgiveness, loan repayment, scholarships and grants for students who commit to working in Pennsylvania after graduation 			X	X		X
<ul style="list-style-type: none"> • Develop articulation and/or transfer of credit agreements among a broad range of schools to maximize efficiencies in the education process 						
<ul style="list-style-type: none"> • Provide additional incentives for students who commit to teaching in their chosen occupation in Pennsylvania after graduation 						
<ul style="list-style-type: none"> • Look to expand benefits for those applicants that take advantage of classes and who would make a commitment to work in Pennsylvania 						

	Dental Assi't. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 8: Provide resources and support to encourage education institutions to reformat all or portions of their allied health programs to maximize flexibility		X	X			
Suggested Strategies						
<ul style="list-style-type: none"> Survey programs for the number of applicants, number of qualified applicants, seats available, enrollment by various student demographics, graduation rates, and board pass rates (if applicable) 						
<ul style="list-style-type: none"> Increase program flexibility in terms of location, time, and format 		X	X			
<ul style="list-style-type: none"> Offer grants for programs to develop alternative and flexible programs 		X	X			
<ul style="list-style-type: none"> Work with education programs to secure the equipment necessary to offer new programs, expand existing programs, and stay current with technology 		X	X			
<ul style="list-style-type: none"> Explore the feasibility of accelerated education and training programs for persons with academic degrees seeking a second career 						
Occupation-Specific Solutions						
<ul style="list-style-type: none"> Encourage programs that enable biology or chemistry graduates to obtain credentials towards an MT degree easily 		X				
<ul style="list-style-type: none"> Consider developing grants for incumbent worker training programs 		X				
<ul style="list-style-type: none"> Encourage clinical sites to offer clinical placements on "off-shifts" 			X			

	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
RECRUITMENT						
Recommendation 9: Collaborate with Pennsylvania Department of Education, Health Care Industry Partnerships, and others to develop allied health education curriculum materials for the K-12 system, with particular emphasis on middle and high schools		X				
Suggested Strategies						
• Expand the range of opportunities for high school students to participate in elective allied health courses						
• Develop K-12 allied health content that easily can be integrated into science and mathematics courses		X				
• Offer incentives to high school students who enroll in allied health education programs (i.e. tuition, loans, see "Pittsburgh Promise")		X				
• Expand existing allied health career exploration programs such as the Pennsylvania's Governor's School						
Recommendation 10: Provide financial incentives to newly prepared allied health professionals to stay and work in Pennsylvania upon graduation		X	X	X	X	
Suggested Strategies						
• Provide tuition reimbursements/grants/loans for students who graduate from programs and choose to practice in Pennsylvania		X	X		X	
• Provide additional financial assistance to new graduates who work in rural, inner city, or other underserved areas						

	Dental Assit. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 11: Expand targeted recruitment efforts	X	X		X		X
Suggested Strategies						
• Develop innovative strategies that address preferences of the different generations in today's workforce		X				
• Explore and develop creative recruitment strategies that extend beyond Pennsylvania's borders						
• Develop recruitment strategies aimed at minority and underrepresented populations	X					X
• Promote the natural links between math and science majors and allied health occupations		X				
Occupation-Specific Solutions						
• Provide resources for individual hospitals to continue or to institute recruitment efforts				X		

	Dental Ass't. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
RETENTION						
Recommendation 12: Develop and/or use the Industry Partnership and other infrastructures to maximize training dollars available for allied health training and professional development		X	X	X		X
Suggested Strategies						
• Develop programs and retention strategies that are attentive to the needs of early-, mid-, and late-career employees		X	X	X		X
• Provide incentives to support a range of professional development opportunities for allied health employees						X
Occupation-Specific Solutions						
• Provide assistance for individual hospitals to institute career ladder programs		X	X	X		X
• Provide assistance for formal mentoring programs (i.e. stipends or incentives for experienced mentors)		X	X	X		X
• Provide programs, assistance, and incentives for leadership development training		X	X	X		X

	Dental Ass't. and Dental Hygienists	MTs and MLTs	Radiologic Technologists	Respiratory Therapists	Pharmacists	Physical Therapists
Recommendation 13: Ensure that Pennsylvania's professional practice acts and regulations for allied health occupations are progressive	X				X	X
Suggested Strategies						
<ul style="list-style-type: none"> Ensure that Pennsylvania's professional practice act are progressive and consistent with other state's professional practice acts, particularly related to mandatory continuing education and scope of practice 	X				X	
<ul style="list-style-type: none"> Evaluate and ensure that the application process for licensure/certification by Pennsylvania's professional licensing boards is efficient and permits qualified applicants from other states to work in Pennsylvania 	X					X
<ul style="list-style-type: none"> Ensure that Pennsylvania is represented adequately in national dialogues as they pertain to allied health program accreditation standards and the implications that changing degree requirements have on state licensing requirements 						
Occupation-Specific Solutions						
<ul style="list-style-type: none"> Investigate best practices and precedence in other states for pharmacists scope of practice 					X	

Appendix H: Organizations Represented in the Stakeholder Participation Process

Abington Hospital Home Care
Abington Memorial Hospital
Adams County Tech Prep
Allegheny-Chesapeake Physical Therapy
Ambulance Service Management, Inc.
Attention 2 Detail Transcription
Brandywine Hospital
Bryn Mawr Rehabilitation Hospital
Charles Cole Hospital
Community College of Allegheny County
Community Resources for Independence
Crozer-Chester Medical Center
Crozer-Keystone Health System
Delaware County Memorial Hospital
Emergency Services, Inc.
Emmco West, Inc.
Erie Veteran's Affairs Medical Center
Erie Vision and Blind Resources
Excelsa Health Frick Hospital
Geisinger Medical Center
Gentiva Health Services
Gettysburg High School
Good Samaritan Health Services
Great Lakes Home Health Care and Hospice
Grove City Medical Center
Hamot Medical Center
Harrisburg Area Community College
HealthSouth
Healthworks Incorporated
Holy Redeemer Health System
Holy Spirit Health System
Huntingdon Careerlink
Indiana Regional Medical Center
Jefferson University Hospitals – Methodist
Kane Regional Centers, Allegheny County
Keystone Home Health
Kidsworld
Lankenau Hospital
Lehigh Valley Hospital and Health Network
Lewistown Hospital
Main Line Health
Meadville Medical Center
Mercy Hospital – Scranton
Mercyhurst College
Millersville University
Muth and Mumma Dental Lab
Nason Hospital
Northeast Hospital
PathWaysPA
Pediatric Therapy Specialists
Pennsylvania College of Technology
Pennsylvania Department of Health
Pinnacle Health System
Pottstown Memorial Medical Center
Presby's Inspired Life
SEIU Health Care Pennsylvania
Siemens Medical Solutions
Spheris
St. Clair Hospital
Susquehanna Health
Susque-View Home, Inc.
Taylor Hospital
Temple University Health System – Northeastern Hospital
Temple University
The Children's Hospital of Philadelphia
University of Pittsburgh Medical Center
University of Pittsburgh Medical Center – McKeesport
University of Pittsburgh Medical Center – St. Margaret's Hospital
University of Pittsburgh Medical Center – Northwest Visiting Nurses Association
Veteran's Health Administration
Visiting Nurse Association of Erie
Visiting Nurses Association of Greater Philadelphia
Warren General Hospital
West Shore EMS
West York High School
Westmoreland County Community College
Williamsport Hospital (Susquehanna Health System)
Wyoming Valley Health Care System

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Appendix J: Allied Health Working Group Members

Co-Chairs

Name	Title/Organization
Eileen Connelly	Executive Director, SEIU Pennsylvania State Council
Vicki Hoak	Executive Director, Pennsylvania Homecare Association

Working Group Members

Name	Title/Organization
Melissa Costello	Pottstown Memorial Medical Center
Jim Curley	Rehab Services Manager, Neighborhood Health Agencies, Inc.
Lana deRuyter	Dean of Allied Health, Delaware County Community College
Patricia Epple	Executive Director, Pennsylvania Pharmacists Association
Ed Legge	Center for Workforce Information and Analysis Commonwealth of Pennsylvania
Lynn Leighton	Vice President, Professional and Clinical Services Hospital and Healthsystem Association of Pennsylvania
Kathleen Malloy	Dean, Health Professions and Biology Westmoreland County Community College
Joe Micucci	Director of Human Resources, Methodist Hospital a division of Thomas Jefferson University Hospital
Sharon Miller	President, Pennsylvania Society of Radiologic Technologists and Assistant Professor, Medical Imaging and Radiation Mt. Aloysius College
Marty Raniowski	Director, Bureau of Health Planning Pennsylvania Department of Health
Tom Roop	Director, Respiratory Therapy Program Community College of Allegheny County
Lois Schaffer	Associate Professor, Cardiovascular Technology Harrisburg Area Community College, Lancaster
Kathy Schlotthauer	Associate Professor of Dental Hygiene Harrisburg Area Community College
Eugene Zegar	Vice President of Human Resources Crozer Keystone Health System

Additional Contributors:

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Patty Knecht	Director of Practical Nursing, Center for Arts and Technology Brandywine Campus
Marina Matthew	Director, Division of Health Professions Development Pennsylvania Department of Health
Louise Reich	Senior Vice President, Human Resources Pinnacle Health System

Staff

Name	Title/Organization
Robert Garraty	Executive Director, Pennsylvania Workforce Investment Board
David Ranck	Interim Executive Director, Pennsylvania Center for Health Careers, Pennsylvania Workforce Investment Board
Victor Wills IV	Director of Research and Planning, Pennsylvania Center for Health Careers, Pennsylvania Workforce Investment Board
Kelly Glass	Consultant, The Hill Group
Molly Kwiatkowski	Policy Analyst, The Hill Group
Perri Stern	Consultant, The Hill Group