

*Southwestern Pennsylvania Industry Cluster Snapshot*

# **HEALTHCARE**

Three Rivers Workforce Investment Board  
August 2003

## ABOUT THIS BRIEF

*Southwestern Pennsylvania Industry Cluster Snapshot: Healthcare* is part of a series of publications intended to inform discussions about workforce development efforts in the region<sup>1</sup>. It is a product of the Community Audit project, a collaborative effort by the Three Rivers Workforce Investment Board (TRWIB) and its partners<sup>2</sup> to improve the quality of local workforce information. The target audience includes local elected officials, cluster coordinators and members, education and training providers, employers, job seekers and other stakeholders. Other cluster briefs deal with information technology, financial services, manufacturing and hospitality and tourism. The briefs serve as companion pieces to a more comprehensive report entitled "A Regional Audit of Workforce Supply and Demand." To obtain additional copies of this brief, contact the TRWIB at 412-552-7090. The complete series is also available online at [www.trwib.org/reports.htm](http://www.trwib.org/reports.htm).

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<sup>1</sup> In this series, the Southwestern Pennsylvania region is defined by four contiguous workforce areas: Southwest Corner (Washington, Greene and Beaver counties); Three Rivers (Allegheny County, including the City of Pittsburgh); Tri-County (Indiana, Armstrong and Butler counties); and Westmoreland-Fayette (Fayette and Westmoreland counties).

<sup>2</sup> Partners include Workforce Connections (a project of the Pennsylvania Economy League), the Pittsburgh Technology Council, the Steel Valley Authority, the Westmoreland-Fayette Workforce Investment Board, the Tri-County Workforce Investment Board, and the Southwest Corner Workforce Investment Board.

**TABLE OF CONTENTS**

What are Industry Clusters?	2
<i>The Five "Priority" Clusters</i>	2
Summary of Major Findings	3
Cluster Trends	4
<i>Employment</i>	4
<i>Wages</i>	5
<i>Job Growth</i>	5
<i>Labor Market Trends</i>	6
<i>Location Quotient</i>	6
<i>Shift Share Analysis</i>	7
Detailed Cluster Profile	8
<i>Industry Employment in the SWPA Healthcare Cluster</i>	8
Staffing Patterns	9
<i>Dynamite Dozen: Top 12 Healthcare Occupations by Employment, Pittsburgh Metropolitan Statistical Area (2001)</i>	9
<i>Top Occupations in the SWPA Healthcare Cluster by Education and Training</i>	10
Career Clusters	11
Career Mobility	12
Spotlight: #1 Demand-Occupation for the Healthcare Cluster	14
Employer Roundtable Comments	15
Next Steps	16

## WHAT ARE INDUSTRY CLUSTERS?

According to the National Governors Association, most experts define an industry cluster as a "geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue, that share specialized infrastructure, labor markets and services, and that are faced with common opportunities and threats."<sup>3</sup>

Businesses typically benefit from clustering through better access to suppliers, skilled labor pools, and transfers of knowledge. Collectively, cluster companies can enhance a region's economy by increasing productivity and fostering entrepreneurship.

### *The Five "Priority" Clusters*

In 2001, the Three Rivers Workforce Investment Board, Workforce Connections (a project of the Pennsylvania Economy League) and other major players in regional workforce development selected five industry clusters on which to concentrate their collective efforts. The five clusters, chosen because of their importance to the regional economy, are:

- financial services;
- healthcare;
- hospitality and tourism;
- information technology; and
- manufacturing.

Collective efforts to date have included convening four industry-focused workforce summits, hiring "cluster coordinators" to work with employers to develop and implement targeted strategies to address critical labor shortages, and undertaking action-oriented research.

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<sup>3</sup> *A Governor's Guide to Cluster-Based Economic Development*, National Governors Association (2002).

## SUMMARY OF MAJOR FINDINGS

- Healthcare is the largest of the five priority clusters, with over 9.7% of the region's total employment in 2000. It is also one of only two clusters with a higher annual wage for SWPA than for Pennsylvania or the U.S.
- The number of jobs in the healthcare cluster decreased in SWPA between 1995 and 2000, while it increased slightly in Pennsylvania and the U.S. SWPA also failed to keep up with the state's or the nation's rates of firm growth, job growth, and inflation-adjusted wage growth.
- In terms of employment, the leading industry within the cluster is "general medical and surgical hospitals," with 61,183 jobs, almost two and a half times as many as the next biggest industry, "offices and clinics of medical doctors" (24,542 jobs). In terms of the number of business establishments, "offices and clinics of medical doctors" leads with 2,561 firms, followed by "offices of health practitioners" with 2,341 firms.
- Registered nurse is the occupation with the most employment, with 23,330 positions in the region, followed by nursing aides, orderlies, and attendants. Occupations are generally categorized as "professional" (e.g., medical doctor, surgeon) and "support occupations" (e.g., nursing aides, home health aides, medical assistants). Compared to professional occupations, support occupations tend to be lower-paying, are more likely to be part-time, and require lower levels of education and training.
- Career clusters within the healthcare industry cluster include therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.
- Key skills separate occupations along a career mobility track. Registered nurses, for example, have a higher level of skills in time management, instruction, and management of personal resources than do licensed practical nurses. In addition, the former occupation requires an additional two years of education (a bachelor degree rather than an associate degree).

## CLUSTER TRENDS

This section provides an overview of the healthcare cluster in Southwestern Pennsylvania ("SWPA") in terms of employment, wages, and labor market trends. Data come from multiple sources so there may be some discrepancies.

### *Employment*

The healthcare cluster employed a total of 141,745 workers in SWPA in 2000, the highest level among the five priority clusters.<sup>4</sup> The level of employment is projected to increase by 21% between 1998 and 2008.<sup>5</sup>

High staff vacancies and turnover rates are increasingly seen as long-term, rather than cyclical, in nature due to: (1) rising demand from an aging population; (2) changing demographics in the supply of workers; and (3) the anticipation that patients will be sicker for longer periods due to rising life expectancies, making work more difficult.<sup>6</sup>

Employment trends vary across the region.<sup>7</sup> The concentration of healthcare workers employed in nursing and residential care facilities, for example, is nearly twice as high in Butler and Beaver counties than it is in the SWPA region as a whole. In Allegheny County, hospitals employ almost 20% more of the healthcare workforce compared to the region as a whole. Ambulatory care has higher rates of employment in Fayette, Indiana, and Washington counties than in other counties.

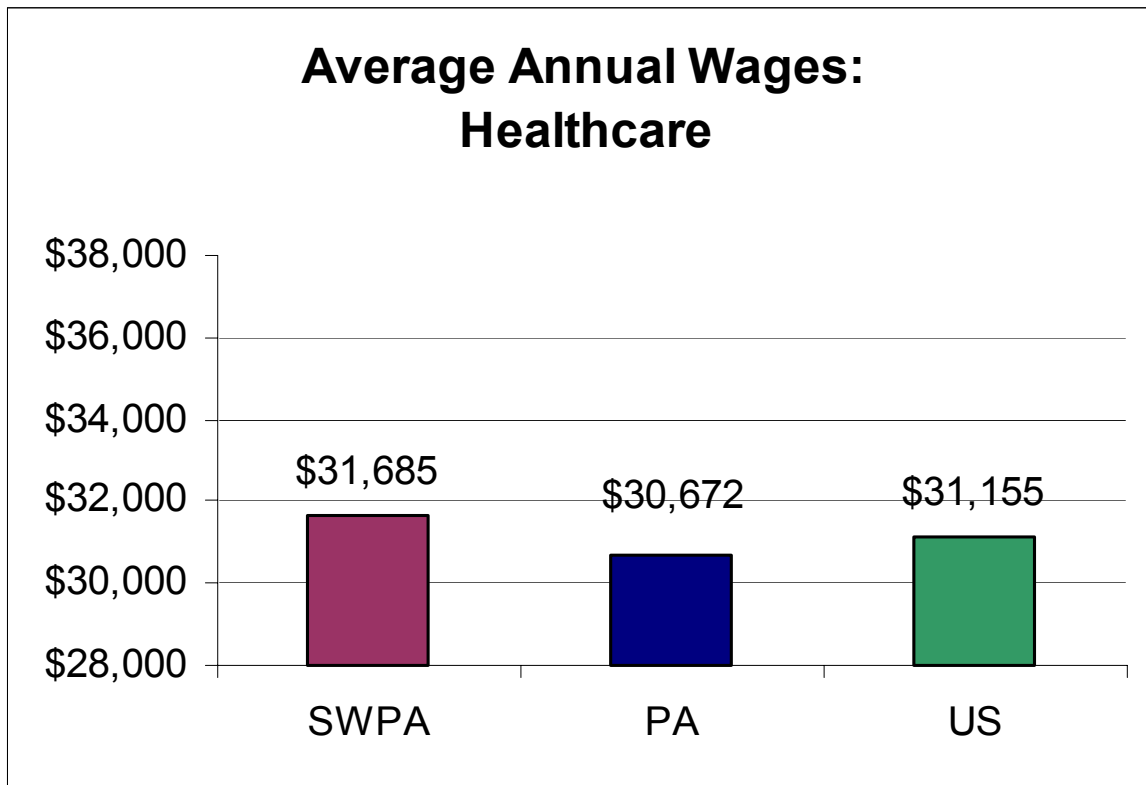
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<sup>4</sup> Center for Workforce Information and Analysis, PA Department of Labor & Industry

<sup>5</sup> The Health Workforce in Southwest Pennsylvania, Jewish Health Foundation and World-Class Industrial Network, prepared for Southwestern Pennsylvania Healthcare Industry Summit, Feb. 2001.

<sup>6</sup> Ibid

<sup>7</sup> Ibid

**CLUSTER TRENDS (CONT.)***Wages*

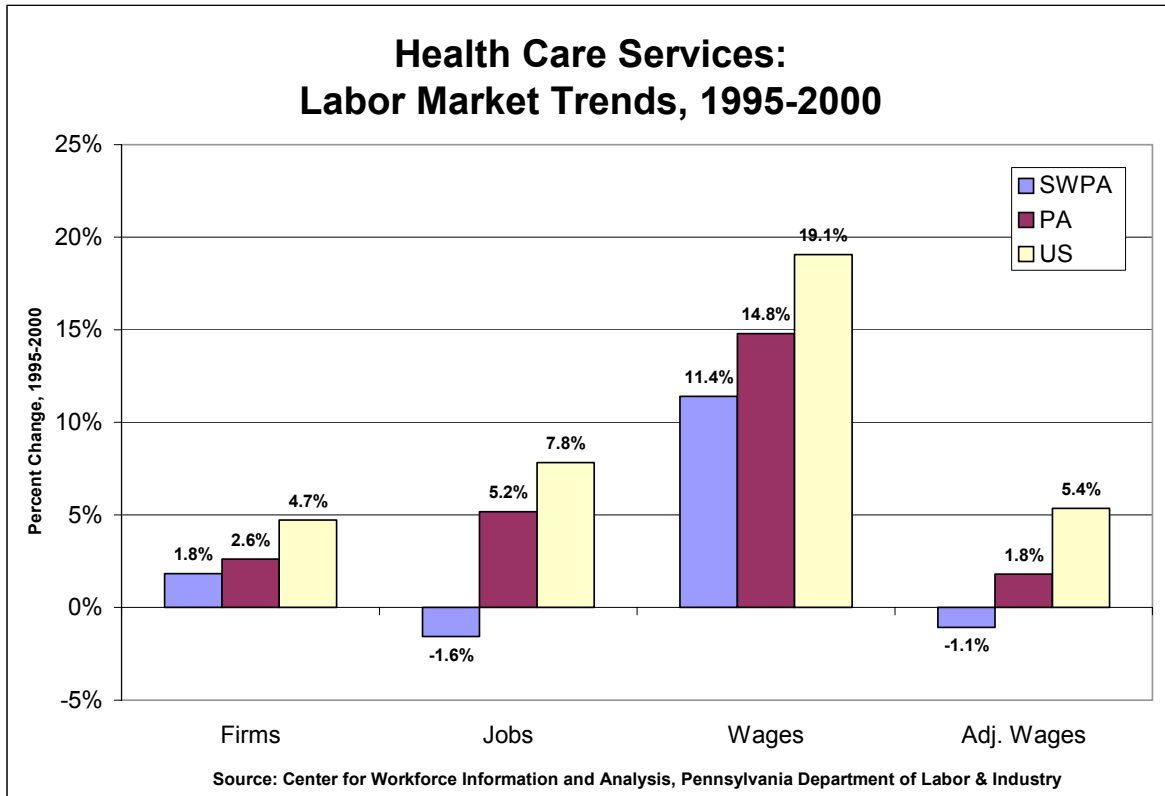
Source: Center for Workforce Information and Analysis, PA Department of Labor & Industry (2000)

The average annual wage within the healthcare cluster was higher in the SWPA region (\$31,685) in 2000 than it was in the state (\$30,672) or nation (\$31,155).

*Job Growth*

The number of jobs in the region's healthcare cluster declined 1.6% from 1995-2000 while the nation experienced an increase of 7.8% during the same period.<sup>8</sup>

<sup>8</sup> Center for Workforce Information and Analysis, PA Department of Labor & Industry

**HEALTHCARE****CLUSTER TRENDS (CONT.)***Labor Market Trends*

While the number of new healthcare business locations (“firms”) increased, along with wages, the region lagged behind the state and the nation in these categories. The number of healthcare jobs in the region decreased, meanwhile, as did adjusted wages<sup>9</sup>, while both values increased in Pennsylvania and the U.S.

*Location Quotient<sup>10</sup>*

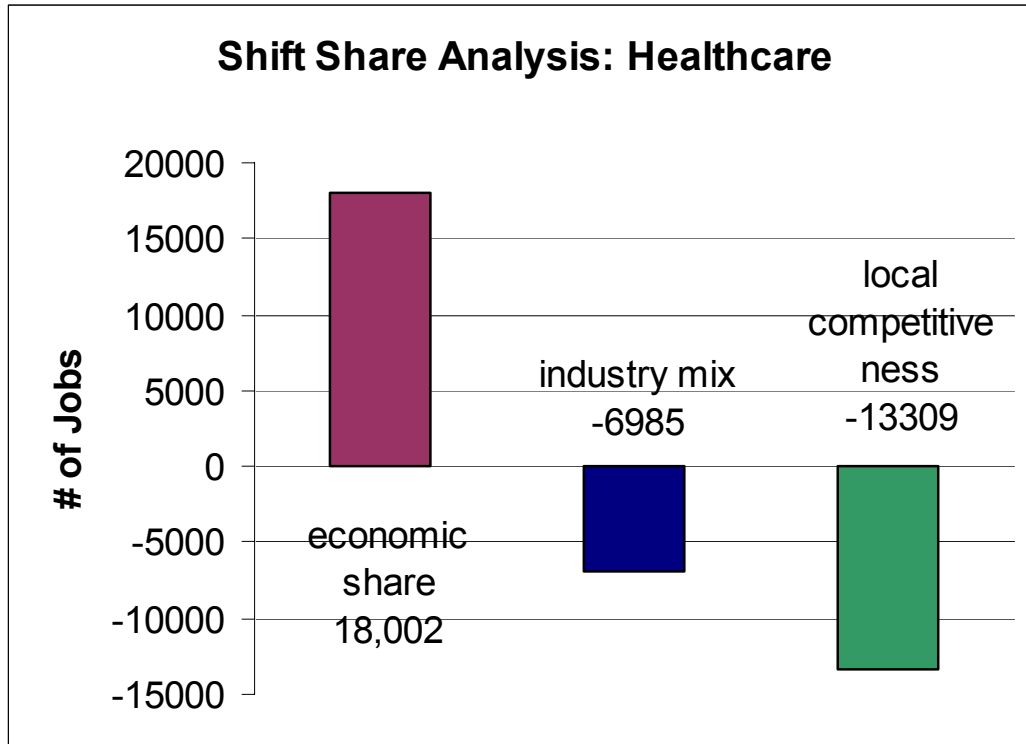
The region’s concentration of employment in the healthcare cluster in 2000 was slightly above average in comparison with Pennsylvania (with a location quotient of 1.05), while it was significantly higher than the national average (with a location quotient of 1.26).<sup>11</sup>

<sup>9</sup> i.e., adjusted for inflation

<sup>10</sup> A location quotient indicates the extent to which a single industry's concentration of employment in one region compares to the concentration in another region. A value greater than one signifies an above-average concentration of employment in the first region relative to the second; a value of less than one signifies a below-average concentration of employment in the first region relative to the second.

<sup>11</sup> Center for Workforce Information and Analysis, PA Department of Labor & Industry



**CLUSTER TRENDS (CONT.)***Shift Share Analysis<sup>12</sup>*

Source: Center for Workforce Information and Analysis, PA Department of Labor & Industry (1995-2000)

According to shift-share analysis for the region's healthcare cluster, employment growth was negative because regional conditions (reflected by "industry mix" and "local competitiveness") offset positive changes in the state and national economies ("economic share"). The negative measure for "industry mix" indicates that the healthcare industries nationwide experienced employment growth that was slower than the average for all industries, while the negative measure for "local competitiveness" indicates that the healthcare cluster in SWPA was less competitive than comparable industries across the nation.

<sup>12</sup> Shift Share Analysis breaks regional job growth or decline down by three factors: "economic share" (the increase or decrease in employment that can be attributed to growth or decline in the national or state economy); "industry mix" (the increase or decrease in employment that can be attributed to faster-than-average or slower-than-average growth in the industry cluster, compared with the average for all industries in the state or nation); and "local competitiveness" (the increase or decrease in employment that can be attributed to advantageous or disadvantageous conditions in the local area that make the industries in the cluster either more competitive or less competitive than their counterparts nationally or statewide).

**HEALTHCARE****DETAILED CLUSTER PROFILE**

This section provides a more up-to-date and more detailed picture of the cluster by looking at standard industrial classification (“SIC”) codes. (Note: the data come from a private third party – Dun and Bradstreet – so they may not correlate with other data that appear in this report.)

*Industry Employment in the SWPA Healthcare Cluster (March 2003)*

SIC Number	SIC Name	Employment	Businesses	Average Employment per Business
8062	General medical and surgical hospitals	61,183	150	618
8011	Offices and clinics of medical doctors	24,542	2,561	10
8051	Skilled nursing care facilities	16,133	151	136
8049	Offices of health practitioner	8,011	2,341	3
8059	Nursing and personal care, other	5,747	163	40
8021	Offices and clinics of dentists	5,540	1,224	5
8093	Specialty outpatient clinics, other	4,925	271	26
8069	Specialty hospitals, except psychiatric	4,903	54	123
8052	Intermediate care facilities	3,252	157	26
8082	Home healthcare services	3,104	145	32
8071	Medical laboratories	2,674	161	19
8099	Health and allied services, other	2,433	143	18
Total/ Average <sup>13</sup> for all 4-Digit Industries		148,333	8,424	19

Source: MarketPlace (Dun and Bradstreet)

There were almost 150,000 healthcare jobs in the nine-county region in March 2003. The bulk of these jobs were in hospitals (41%), doctors’ offices (17%), and nursing homes (11%).

<sup>13</sup> These aggregate figures reflect the entire cluster (all 4-digit industries), not just the top twelve 4-digit industries listed in the table.

**STAFFING PATTERNS**

This section looks at occupations for which there is high demand from employers and provides information about the number of jobs available, the average salary, the type of work schedule offered, the stability of the job, and the education level required.

*Dynamite Dozen: Top 12 Healthcare Occupations by Employment, Pittsburgh Metropolitan Statistical Area<sup>14</sup> (2001)*

Occupation	2001 Employment	Mean Annual Wage	Likelihood of Part-Time Employment	Susceptibility to Unemployment	Education and Training
1. Registered Nurses	23,330	\$43,320	High	Low	Associate Degree <sup>15</sup>
2. Nursing Aides, Orderlies, and Attendants	11,860	\$19,900	High	High	Short-term on-the-job training
3. Licensed Practical and Licensed Vocational Nurses	5,860	\$30,590	High	Low	Postsecondary vocational award
4. Home Health Aides	4,550	\$18,570	High	High	Short-Term on-the-job training
5. Emergency Medical Technicians and Paramedics	3,200	\$23,410	High	Low	Postsecondary Vocational Award
6. Medical Assistants	2,310	\$21,640	High	Low	Moderate on-the-job training
7. Pharmacists	2,280	\$65,150	Low	Very Low	First Professional Degree
8. Physical Therapists	2,090	\$56,200	High	Very Low	Master Degree
9. Medical and Clinical Laboratory Technicians	1,970	\$31,580	High	Low	Associate Degree
10. Pharmacy Technicians	1,870	\$20,920	High	Low	Moderate on-the-job training
11. Dental Assistants	1,860	\$21,160	Very High	Very Low	Moderate on-the-job training
12. Dental Hygienists	1,590	\$40,130	Very High	Very Low	Associate Degree

Source: U.S. Bureau of Labor Statistics

<sup>14</sup> The Pittsburgh MSA includes the counties of Allegheny, Beaver, Butler, Fayette, Washington, and Westmoreland.

<sup>15</sup> The Bureau of Labor Statistics assigns "Associate Degree" to registered nurses, but anecdotal evidence and statistical research from around the country suggests that a bachelor degree is actually required.

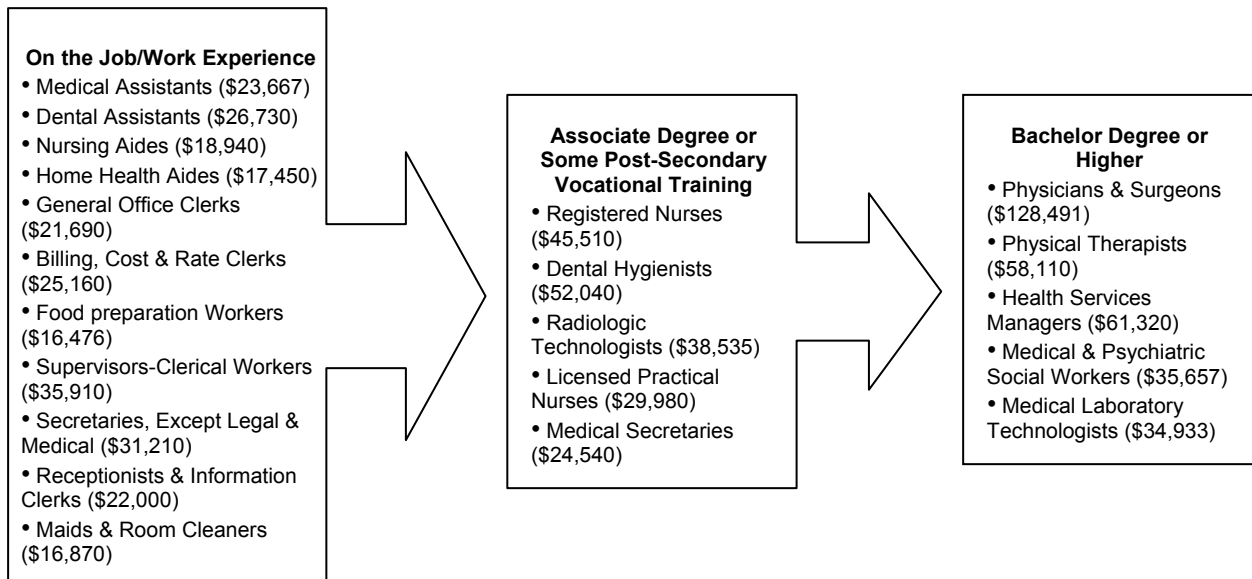
**HEALTHCARE**

**STAFFING PATTERNS (CONT.)**

The top dozen occupations for healthcare accommodate a range of education and training backgrounds. A majority have a high likelihood of being part-time, including registered nurses, the occupation with the highest employment and second highest paying salary. On the other hand, most occupations are not susceptible to unemployment, with the exception of nursing aides, orderlies and home health aides.

*Top Occupations in the SWPA Healthcare Cluster by Education and Training*

In addition to identifying occupations in demand, it's useful to look at career mobility – how workers move from one job to another. In the chart below, occupations are ranked according to current employment, projected rate of growth and annual wage, and then categorized according to education and training levels required.<sup>16</sup>



Source: O\*NET, U.S. Department of Labor, and Corporation for a Skilled Workforce

According to this model<sup>17</sup>, "Medical Assistant" appears to be the most promising healthcare-related, entry-level position in the cluster, followed by "Dental Assistant." Among the cluster's non-medical occupations, "General Office Clerk" rates the highest.

<sup>16</sup> The Bureau of Labor Statistics assigns "Associate Degree" to registered nurses, but anecdotal evidence and statistical research from around the country suggests that a bachelor degree is actually required.

<sup>17</sup> Current employment, projected growth rates, and average annual wages were ranked, weighted equally, and aggregated.

## CAREER CLUSTERS

The U.S. Department of Education's Office of Vocational and Adult Education (OVAE) has developed 16 career clusters<sup>18</sup> to help educators organize curricula around employment readiness. For each cluster, OVAE has identified sample career specialties/occupations and a set of common knowledge and skills. Career clusters related to the healthcare cluster include:

### **Therapeutic Services**

Sample career specialties/occupations: athletic trainer, chiropractor, dental assistant, home health aide, licensed practical nurse, physician, psychologist, registered nurse, social worker.

### **Diagnostic Services**

Sample career specialties/occupations: clinical lab technician, geneticist, magnetic resonance technologist, nuclear medicine technologist, nutritionist, radiologic technologist.

### **Health Informatics**

Sample career specialties/occupations: admitting clerk, community service specialists, health educator, medical assistant, transcriptionist.

### **Support Services**

Sample career specialties/occupations: central services, facilities managers, industrial hygienist, transport technicians.

### **Biotechnology Research and Development**

Sample career specialties/occupations: biochemist, cell biologist, lab technician, microbiologist, pharmaceutical scientist, research scientist, toxicologist.

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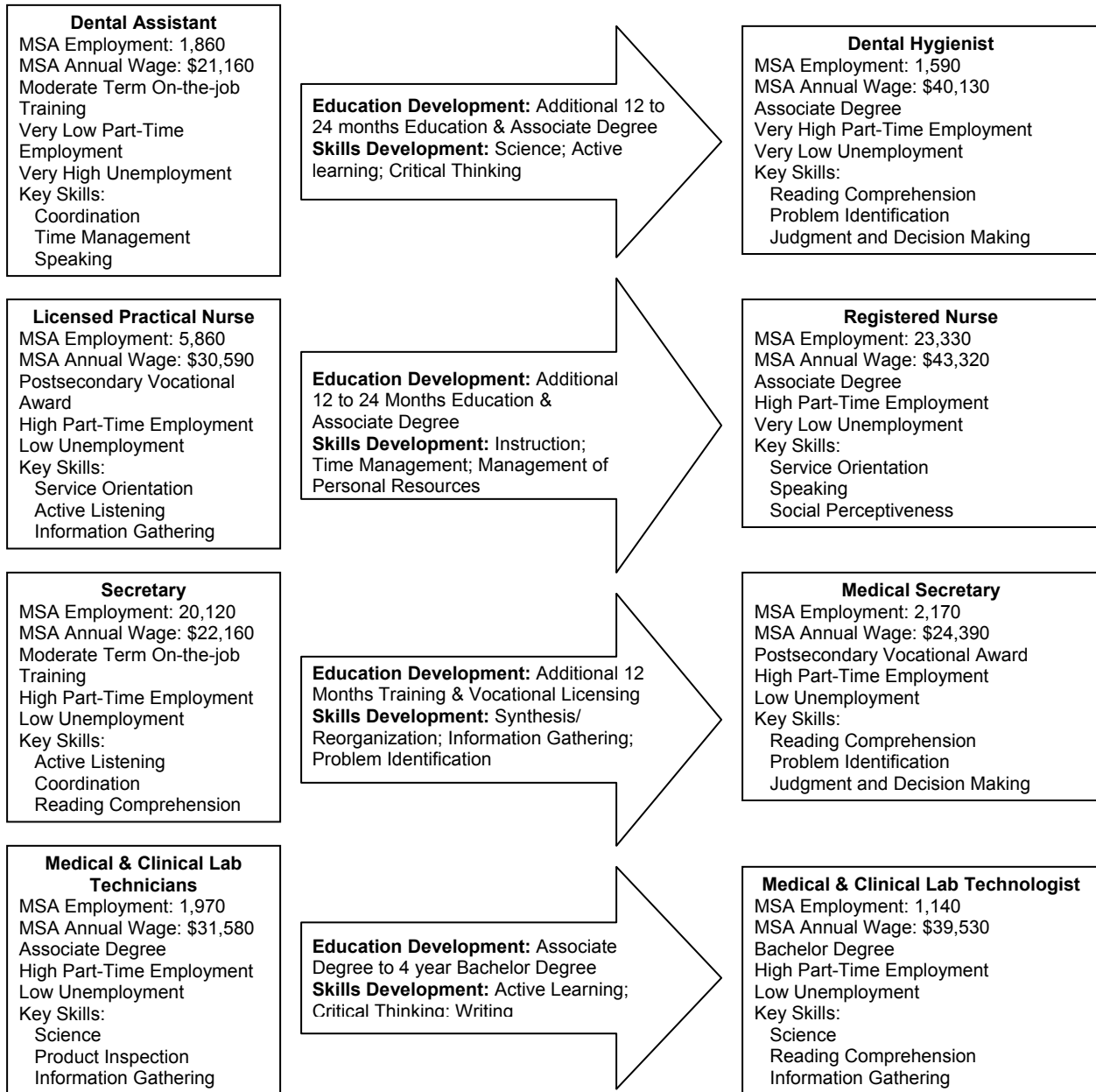
<sup>18</sup> For more information, visit [www.careerclusters.org](http://www.careerclusters.org).

## **CAREER MOBILITY**

The chart on the next page illustrates how workers might progress from one occupation to another within the healthcare cluster. Based on 2001 data from O\*NET (a project of the U.S. Department of Labor), pairs of occupations were analyzed in terms of employment and wages for the Pittsburgh Metropolitan Statistical Area, the education and training requirements (as identified by the U.S. Bureau of Labor Statistics), the likelihood of part-time employment, the susceptibility to unemployment, and key skills (as defined by O\*NET and the U.S. Department of Labor).

Included in the arrow between occupations are the necessary education and training development required, and the three critical skills that must either be developed or enhanced in order to make a successful transition from one job to the next.

**CAREER MOBILITY (CONT.)**



Source: O\*NET, Department of Labor

**SPOTLIGHT: #1 DEMAND-OCCUPATION FOR HEALTHCARE CLUSTER**

There are more than 23,000 registered nurses in the Pittsburgh metropolitan area. Compiling a list of the most often performed tasks for the occupations in highest demand is one approach to ensuring that the region's educational and training curricula are adequate for creating and maintaining a pool of qualified workers.

The tasks most often performed by registered nurses include:

- Provides healthcare, first aid, and immunization in facilities such as schools, hospitals, and industry.
- Observes patient's skin color, dilation of pupils, and computerized equipment to monitor vital signs.
- Records patient's medical information and vital signs.
- Administers local, inhalation, intravenous, and other anesthetics.
- Prepares patients for and assists with examinations.
- Orders, interprets, and evaluates diagnostic tests to identify and assess patient's condition.
- Prepares rooms, sterile instruments, equipment and supplies, and hands items to surgeon.
- Recommends drugs or other forms of treatment, such as physical therapy, inhalation therapy, or related therapeutic procedures.
- Contracts independently to render nursing care, usually to one patient, in hospital or private home.
- Provides prenatal and postnatal care to obstetrical patients under supervision of obstetrician.
- Discusses cases with physician or obstetrician.
- Informs physician of patient's condition during anesthesia.

Source: O\*NET, U.S. Department of Labor



**EMPLOYER ROUNDTABLE COMMENTS**

A roundtable of seven private sector healthcare employers was held in Summer 2002 to discuss workforce-related concerns. The following observations were made:

- The demand for medical assistants, non-certified home health aides, pharmacists, and medical transcribers is very high. Demand for other positions – including registered nurses – is lower but still significant.
- Employers are concerned about the quality of English literacy courses, the performance of private career schools, the level of career awareness among youth, the level of basic skills training, the level of coordination among government agencies, and the effectiveness of public employment programs.
- As a result of recently enacted healthcare regulations, nearly 100% of employees received some type of training in the past year.
- Skills shortages contribute to an overall lack of productivity.
- There are really three separate clusters within healthcare – hospitals and doctors' offices; home health agencies; and research companies and laboratories. Workforce-related efforts ought to target each of these three clusters separately.

## NEXT STEPS

This brief provides a range of cluster-specific information to orient stakeholders and to foster discussion about opportunities and challenges facing the region. It is intended to be used in conjunction with other products developed within the scope of the Community Audit project – such as the educational index – to identify cluster-specific concerns related to the regional labor market.

Possible next steps include the following:

- Consider focusing efforts more strategically on high performance sub-clusters of the industry cluster rather than the cluster as a whole, recognizing that this approach could be much more challenging from a coordination standpoint.
- Work with education and training providers and other workforce professionals to integrate career clusters, career mobility concepts, and work task information into programs and curriculum.
- Develop and/or validate skill standards within the cluster so that education and training providers as well as job seekers better understand the occupations and job duties associated with them from employers' perspectives.

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The Regional Enterprise Tower, Suite 1750, 425 Sixth Avenue, Pittsburgh, PA 15219  
Phone: 412-552-7090 | Fax: 412-552-7091 | Internet: [www.trwib.org](http://www.trwib.org)

CREDITS: **Gary Yakimov** (The Corporation for a Skilled Workforce) - research, data analysis, writing | **William Ceriani** (Center for Workforce Information and Analysis, Pennsylvania Department of Labor & Industry) - data analysis | **Theo Finn** (Three Rivers Workforce Investment Board) - editing | **Jenny Wolsk Bain** (JWB Consulting) - editing, design

