

**A Study of Healthcare Occupations in Northwest Tennessee—  
Workforce Needs, Career Ladder, Awareness Programs,  
and Financial Sources for Training**

**By**

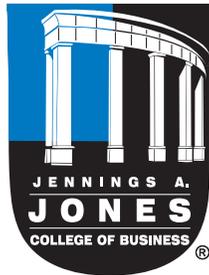
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**Prepared for  
Northwest Tennessee Workforce Investment Board and  
Dyersburg State Community College  
Dyersburg, Tennessee**

**March 2006**

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**Acknowledgements.** The authors would like to acknowledge the contributions of several individuals to this project. The following staff members provided valuable research assistance: Petar Skobic and Zhijie Qi. Sally Govan edited the report and formatted tables and charts consistently throughout the report. Kitty Kulp handled the survey materials from beginning to the end. Finally, the authors would like to thank Dr. Karen Bowyer, president of Dyersburg Community College, Dr. Henry Lewis, director of Northwest Tennessee Workforce Investment Board, and many community leaders who provided us invaluable information through interviews and surveys. This report is the result of the cumulative efforts of these individuals.

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## **Northwest Tennessee Healthcare Workforce Study: Executive Summary**

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One of the fastest growing sectors in the economy, the healthcare industry, faces a number of difficult challenges; among these is the problem of securing a reliable supply of trained workers. The workforce challenge applied to a seven-county area of northwest Tennessee<sup>1</sup> is the focus of this study. This research is sponsored by the Northwest Tennessee Workforce Investment Board and Dyersburg State Community College.

Using information from a variety of sources, the study examines issues that are important for both healthcare employers and workers in northwest Tennessee. The study is arranged in six reports that cover the following topics:

- Healthcare workforce needs now and over the next decade;
- Factors contributing to workforce shortages;
- Education and training trends, local training capacities, and local training needs;
- Needed skills, pay, and advancement opportunities by occupation;
- Potential sources of funding for workforce training;
- Perceptions of healthcare occupations by young people; and
- Encouraging young people to choose a career in healthcare.

### **I. Current status of the northwest Tennessee healthcare sector**

As shown in Chapter III, more than 6,000 workers are employed in the healthcare sector in northwest Tennessee, 6.6 percent of nonfarm employment. Nursing and residential care is the largest employer, followed by doctors' and dentists' offices (ambulatory services), and hospitals. Employment growth experienced by nursing homes and doctors' and dentists' offices is faster than the state average. As for average pay, northwest Tennessee wages in the healthcare sector are significantly less than the state average.

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<sup>1</sup> Counties included in the study area are Crockett, Dyer, Gibson, Lake, Lauderdale, Obion, and Tipton.

## **II. Current and future demand for healthcare workers**

The demand for healthcare workers in northwest Tennessee can be traced to three influences:

- First, *the industry needs more workers right now*. We estimate that employers need 343 more workers to meet current staffing needs, mostly in nursing home care.
- Second, *retirements and other job leavers will create additional demand for workers*; we estimate that over the next 10 years, employers will need to fill nearly 1,100 positions left vacant by retirements and workers who leave the industry.
- A third source of the demand for workers is *the rising demand for healthcare services*. As the front edge of the baby-boom population enters retirement years, the demand for healthcare services is certain to rise. The northwest Tennessee healthcare industry will need 939 more workers between 2005 and 2015 to satisfy the growing need for services.
- In total, *the northwest Tennessee healthcare industry needs 2,300 new workers to meet current and anticipated needs through 2015*. Chapter III provides details by occupation, with figures for current shortages, replacement demand, and new demand for workers in the northwest Tennessee healthcare industry.

## **III. Constraints on workforce availability**

Information developed from interviews with healthcare professionals and a survey of healthcare providers provides a glimpse of views that relate both to the demand for and the supply of workers. Details of the interviews with professionals are summarized in Chapter I, while the results of the survey of healthcare providers are presented in Chapter II.

- *Four in 10 healthcare providers in northwest Tennessee currently need more workers*;
- *Employers that need more workers cite turnover and increased demand for services as the primary reasons*;

- *Among the larger employers, more are displeased than pleased with the quality of new hires;*
- *The level of education and weak soft-skills among entry-level workers are a major concern for a significant number of employers;*
- *Language differences are not identified as a problem;*
- *Educational requirements for entry-level workers are rising and will continue to rise;*
- *A number of students entering healthcare training programs lack the necessary educational background;*
- *Increasing the flow of new workers entering healthcare occupations should focus on young people in middle school and high school;*
- *Some occupations are in extremely short supply, including nurses (both RNs and LPNs), physical therapists, pharmacists, certified nursing assistants, medical technologists, and occupational therapists;*
- *Institutional training capacity for some occupations is limited.*

#### **IV. Addressing workforce shortages**

Healthcare professionals and providers offered a number of possible solutions to the problem of workforce shortages. The solutions tend to gravitate to one of three kinds:

- *market-based,*
- *training-based, and*
- *perceptions-based.*

Market-based solutions involve increasing the attractiveness of healthcare occupations by boosting pay for entry-level workers, improving benefits, and improving the working environment. Training-based solutions focus on increasing the local institutional training capacity by increasing the number of instructors. Finally, healthcare professionals and providers believe that changing the public's perceptions of healthcare occupations and opportunities is important, especially the perceptions and attitudes held by young people in middle and high school.

Public perceptions of healthcare occupations may improve with better information. With this in mind, Chapter IV provides an in-depth appraisal of individual healthcare occupations including job descriptions, educational requirements, entry-level pay, required experience, certification requirements, and availability of educational programs in the area. The report also shows how one might advance from an entry-level position to more demanding and rewarding occupations.

In addition, Chapter VI provides a compendium of possible funding sources both for training programs and individual students who seek an education in a healthcare occupation. Details are provided for specific programs offered by the federal government, private foundations, Tennessee state government, and other organizations.

## **V. Students' attitudes toward college and the healthcare professions**

Chapter V presents results of a survey of middle and high school students in northwest Tennessee. By and large, the survey results show that students understand that a college degree will help them get a good job in the future. Encouragingly, the vast majority of students plan to attend college, but this desire could be unfulfilled for two reasons:

- *low high school grades and*
- *the cost of college.*

First, although most 11<sup>th</sup> graders know what classes they need to get into college, many are not sure their grades are good enough. Second, many students do not believe they can afford college. *However, most students need to learn more about available scholarships and financial aid; only about one in three know about these.*

*The biggest challenge discovered by the survey of students is the lack of desire to pursue an occupation in healthcare. However, the survey also shows that some of the problem may be due simply to lack of knowledge of the various careers available in healthcare. Also, the vast majority of students don't know which courses to take in high school if they desire to pursue a career in healthcare.*

## **VI. A plan to change attitudes and develop interest among young people**

Changing students' attitudes about the healthcare professions and fostering the desire to pursue a career in healthcare is the challenge faced by northwest Tennessee. Consequently, Chapter V offers a marketing plan consisting of four components: getting attention, developing interest, generating desire, and producing action.

- *Getting attention* – make students aware of local opportunities in the healthcare field. School contests could be developed that award prizes for the best message about following a career in healthcare.
- *Developing interest* – bring healthcare professionals into the classroom; integrate healthcare occupations in course material; bring school counselors on board.
- *Generating desire* – bring students into contact with the healthcare professions with mentoring, internships, and a healthcare summer camp. Also, a high school class could produce a film about working in the healthcare industry by recording what goes on in individual jobs.
- *Producing action* – having excited the students' interest in healthcare professions, the action plan makes it as easy as possible for students to act on their interest. Counselors should be briefed on grants, scholarships, and training programs. Training schools and colleges, along with healthcare professionals, should actively reach out to students through career nights and on-site visits.

## **VII. A plan of action**

- *Focus on that which is amendable to change.* Attitudes, perceptions, and desire can be changed. Training programs can be tweaked, and new sources of funding pursued.
- *Build and reinforce lines of communication among healthcare stakeholders.* The healthcare consortium is a start; build on it.
- *Write down an implementation plan.* What actions should be taken? Who is responsible for each action? When will each action occur? Who will monitor progress of implementation, and how often will they report to the consortium?

**CHAPTER I:**

**Challenges of the Healthcare Workforce in Rural Northwest Tennessee:  
Perspectives of Key Professionals**

**Challenges of the Healthcare Workforce in Rural Northwest Tennessee:  
Perspectives of Key Professionals**

- I. Introduction
- II. Overview of Regional Healthcare Workforce Supply and Demand Factors
- III. Methodology
- IV. Healthcare Workforce Diversity
  - a. Issues
  - b. Trends
- V. Education and Healthcare Occupations
  - a. Issues
  - b. Trends
  - c. Assessment
- VI. Occupational Shortages
  - a. Areas of Shortages
  - b. Reasons for Shortages
  - c. Regional Solutions to Address These Shortages
- VII. Regional Labor Pool and Workforce Shortages
- VIII. Capacity of Educational Institutions in the Region
- IX. Funding Sources for Workforce Training
- X. Retention of Healthcare Workforce in the Region
- XI. Factors Affecting Skilled Workers' Access to Healthcare Employment
- XII. Conclusion
- XIII. Appendix
  - a. Appendix A: Educational Institutions
  - b. Appendix B: Interview Material

## I. INTRODUCTION

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Healthcare services is one of the fastest growing sectors in the United States. According to the Bureau of Labor Statistics ([www.bls.gov](http://www.bls.gov)), one in every 10 jobs is in this sector. Employment in the healthcare sector grew more than 20 percent between 1995 and 2003. Furthermore, occupational projections for 2012 indicate that six out of the 10 fastest growing occupations will be in the healthcare sector.

These growth dynamics, however, have brought forth many workforce-related issues. Currently, many healthcare occupations are in short supply. A review of national and local media headlines on any given day demonstrates the extent of shortages across the country.

These emerging workforce issues are related to the nature of the healthcare sector in three respects: (1) the healthcare sector is labor intensive but unlike other labor-intensive sectors requires substantial knowledge, skills, and training; (2) the healthcare sector has become increasingly technology dependent, which, combined with the first issue, requires even more training, resources, and money, and (3) this sector is highly regulated and therefore susceptible to the changes in government policies.

Over the years, the growth of the industry has created immense shortages since the workforce has not kept pace with the dynamic growth of the sector in terms of employment, technology, and skills. Considering the current shortages and projected increase in demand for healthcare services due to the aging population, many studies and healthcare professionals have painted a bleak future for the industry. While many urban areas might be able to mobilize their existing resources to develop a temporary solution to this problem (such as importing foreign healthcare workers), many rural areas have been unable to utilize options that are available in urban settings. Consequently, rural areas will be even more affected by the increasing shortages.

The healthcare sector is a diverse sector that includes outpatient medical centers, hospitals, and nursing care facilities. While some of the employment shortages affect all subsectors, the type of shortages and the nature of the care vary by subsectors, possibly necessitating slightly different solutions to the workforce shortages.

Why are there so many shortages across healthcare occupations? There is no single easy answer to this question. The irony is that many local communities, especially rural ones, are experiencing both unemployment rates that are substantially higher than the national average and healthcare workforce shortages in critical numbers. In a few industries, there is a significant mismatch between the requirements of healthcare occupations and the skill set of the local workforce in rural areas.

Because shortages in healthcare affect everyone in a community, it is hardly possible for any single group to find a solution to the problem. Furthermore, a local solution is necessary to address this issue. Realizing this, many local communities have initiated projects to reinvigorate critical linkages among different stakeholders in those communities. A solution to the workforce challenges must involve local businesses, workforce boards, and training institutions. This critical trio can address many if not all of the factors creating shortages.

A review of factors affecting workforce shortages in healthcare indicates multiple bottlenecks on both the supply and demand sides as well as a transmission belt—educational institutions—connecting the two. Realizing the multifaceted nature of the problem, this study addresses issues and concerns as well as local recommendations to alleviate shortages in rural northwest Tennessee.

This is the first of a series of reports that aim to develop a comprehensive approach to addressing local shortages. This report presents the results of the interviews conducted in the region in the summer of 2005. Along with interview results, a secondary data analysis is provided to substantiate some of the concerns in the region.

The rest of the report is organized as follows: section two presents an overview of the healthcare industry in the region. Section three deals with methodological issues. Section four presents healthcare workforce diversity issues. Section five looks at the occupational shortages from the perspectives of key individuals. Section six analyzes the relationship between the regional labor pool and healthcare shortages.

Sections seven and eight present concerns over the capacity of regional training institutions and sources of funding for individuals interested in healthcare jobs. Sections nine and 10 deal with issues about the work environment, workforce retention, and incentives for people interested in healthcare occupations. Sections 11 and 12 provide an analytical framework regarding workforce challenges in the region and recommendations for the solution to workforce challenges.

## **II. AN OVERVIEW OF REGIONAL WORKFORCE DEMAND AND SUPPLY FACTORS**

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The geographical focus of this study is seven counties (Crockett, Dyer, Gibson, Lake, Lauderdale, Obion, and Tipton) in northwest Tennessee. These counties are primarily rural except for Tipton County, which is heavily influenced by the Memphis metropolitan area.<sup>1</sup> As in many communities, the region, which consists of these seven counties, has experienced severe shortages in its healthcare workforce. Unlike many urban communities, however, the region has unique challenges because of its rural character.

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<sup>1</sup> According to the U.S. Department of Agriculture classification, which assigns a score of 1 to 9 (“1” being urban, “9” being rural) to reflect location on the rural-urban continuum, Crockett County has a score of 8, Dyer County 5, Gibson County 4, Lake County 9, Lauderdale 6, Obion County 7, and Tipton County 1. For more information, see Economic Research Services at [www.usda.gov](http://www.usda.gov).

## **An overview of the healthcare sector in the region (workforce demand side)**

The healthcare industry in the region employs more than 6,000 individuals, representing 6.6 percent of total employment. The largest subsector within the healthcare industry is nursing and residential care facilities, employing nearly 2,500 people. The employment share of this sector in total healthcare services is 40 percent in the region, substantially higher than in Tennessee, where the share of the nursing and residential care subsector is about 21 percent, that of hospitals 36.5 percent, and that of ambulatory services 42.5 percent.

In terms of employment per healthcare establishment, the difference between northwest Tennessee and Tennessee is striking: on average, establishments in ambulatory services employ 12 people in Tennessee as opposed to 7.7 people in northwest Tennessee. A hospital employs about 476 people in Tennessee versus 212 people in northwest Tennessee, and a nursing and residential care facility employs 62 people in Tennessee but 55 people in northwest Tennessee. This implies that the healthcare services sector in rural northwest Tennessee is substantially understaffed or has less demand for services.

While these employment figures suggest possible staffing issues, substantially lower weekly wage rates across healthcare services in the region relative to wage rates in Tennessee create disincentives for qualified healthcare workers to remain in the region as well as for other members of the region's workforce to enter healthcare occupations. On average, the weekly wage difference between healthcare services in the region and the state amounts to more than the region's average monthly fair market rent of \$555.<sup>2</sup> Despite these critical differences between the region's average and what Tennessee healthcare workers earn, health services employment in the region grew about 11.65 percent between 2001 and 2004, slightly more than in Tennessee (11.6 percent). When compared to total employment in the same period in the region, the role of the healthcare sector in the region's economy becomes very critical: total employment in the region fell 1.15 percent between 2001 and 2004.

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<sup>2</sup> Fair market rent figures are available from the U.S. Office of Housing and Urban Development at [www.huduser.org](http://www.huduser.org).

## Healthcare Industry in Tennessee versus Northwest Tennessee: Employment, Establishments, and Average Wages

	Tennessee		Northwest Tennessee	
	Total	% in Total	Total	% in Total
<b>Employment</b>				
Total All Industries	2,751,800	100.00	93,720	100.00
Ambulatory Services	101,949	3.70	2,018	2.15
Hospitals	87,075	3.16	1,693	1.81
Nursing and Residential Care Facilities	49,985	1.82	2,482	2.65
Healthcare Total	239,009	8.69	6,193	6.61
<b>Establishments</b>				
Total All Industries	129,346	100.00	4,036	100
Ambulatory Services	8,414	6.51	262	6.49
Hospitals	183	0.14	8	0.20
Nursing and Residential Care Facilities	806	0.62	45	1.11
Healthcare Total	9,403	7.27	315	7.80
<b>Average Wages</b>	<b>Annual</b>	<b>Weekly</b>	<b>Annual</b>	<b>Weekly</b>
All Industries	\$34,924	\$672	\$30,073	\$578
Ambulatory Services	\$49,695	\$956	\$36,593	\$704
Hospitals	\$39,331	\$756	\$31,823	\$612
Nursing and Residential Care Facilities	\$22,292	\$429	\$19,561	\$376

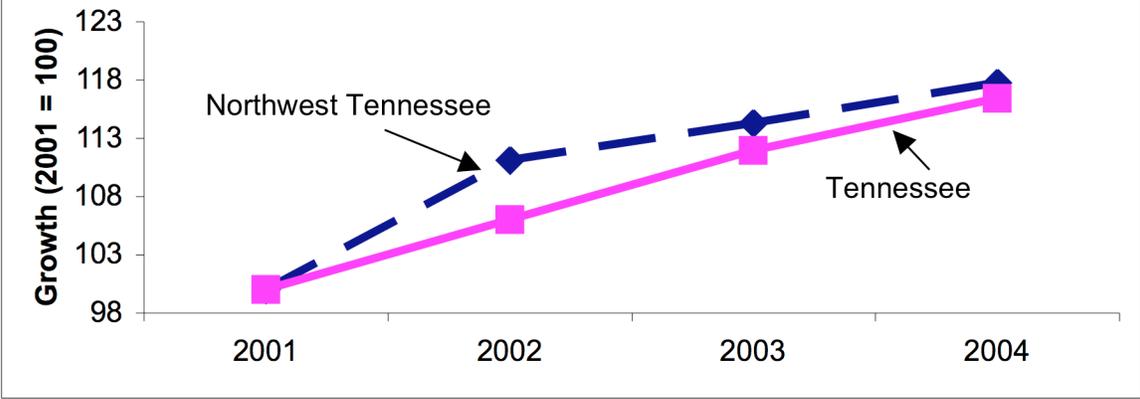
Sources: Tennessee Department of Workforce and Employment Security and BERC estimates

Hospital employment growth was slower in northwest Tennessee than in the state.

Hospital employment grew 5.8 percent in northwest Tennessee as opposed to 7.4 percent in Tennessee between 2001 and 2004.

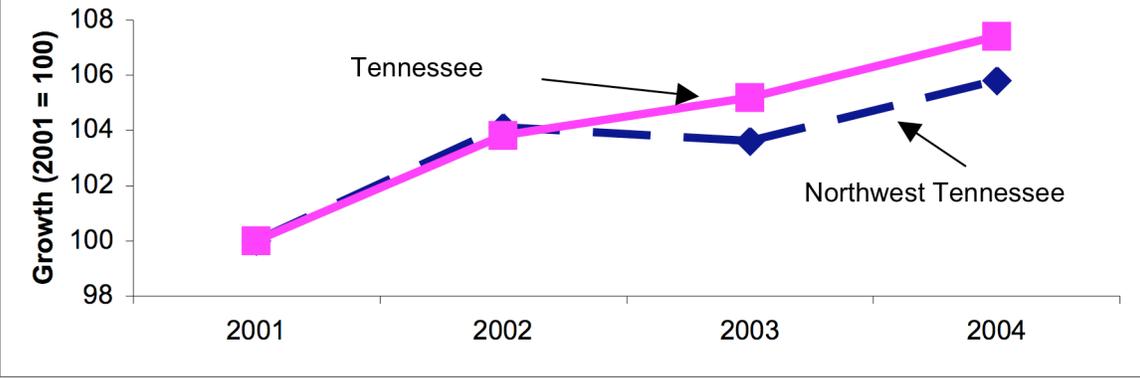
Employment growth in nursing and residential care facilities was 11.12 percent in northwest Tennessee between 2001 and 2004. In Tennessee, the growth rate of this sector was 9.9 percent in the same period.

### Employment Growth in Ambulatory Services: Northwest Tennessee vs. Tennessee

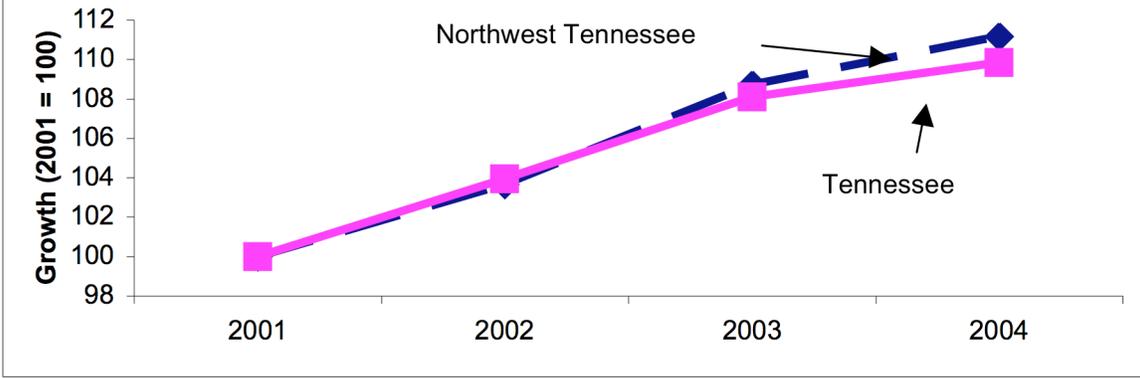


Sources: Tennessee Department of Workforce and Employment Security and BERC calculations

### Employment Growth in Hospitals: Northwest Tennessee vs. Tennessee



### Employment Growth in Nursing and Residential Care Facilities: Northwest Tennessee vs. Tennessee



## **An Overview of Factors Affecting Shortages**

Healthcare workforce shortages affect all establishments in the healthcare sector in the region. However, the types and causes of shortages vary by institution. For example, the pressing need for a nursing and residential care facility is to have a steady pipeline of certified nursing assistants (CNAs) and licensed practical nurses (LPNs) as well as geriatricians and geriatric nurses. In a hospital setting, the priorities are different, to a certain extent; the pressing needs are registered nurses (RNs), pharmacists, and physical therapists.

The factors that contribute to the shortages could then be both system and institution specific. System-specific factors affect all establishments that might be related to any of the demand- and supply-side factors. Institution-specific shortages are clearly demand-related factors. The reason for focusing on these different types of factors is that a policy recommendation for eliminating shortages is far from a one-size-fits-all proposition. Given the share of nursing and residential care employment in the region, a policy recommendation should take into account the specific concerns of those facilities.

As the regional overview presented above demonstrates, many issues can potentially create substantial shortages in the region. The following are some general region-specific concerns that could be responsible for healthcare workforce shortages.

- (1) The region is rural, affecting local efforts to recruit and retain qualified individuals in the area. Some of the counties (e.g., Tipton and Gibson) are better positioned than others in terms of their proximity to the major metropolitan areas of Memphis and Jackson, respectively.
- (2) Healthcare wages in the region are substantially lower than in metropolitan areas; this reduces the interest of qualified professionals in healthcare opportunities in the region.

- (3) Regulatory issues are a concern for many establishments because their healthcare professionals must spend time on document preparation. Medicare and Medicaid reimbursement rates create additional stress for these establishments because they are unable to hire additional staff for documentation of care.
- (4) Getting enough people interested in working in nursing and residential care facilities, which involve bedside care of the highly vulnerable elderly population, is a big challenge that, combined with low wages and the growing demand for services, means these facilities are likely to be even more affected by healthcare workforce shortages.
- (5) Universal demand-side factors, such as the approaching retirement age of baby boomers, increasing demand for healthcare services due to lifestyle changes, increasing diffusion of medical knowledge through the media, and new diseases, create challenges for the healthcare workforce.
- (6) Critical supply-side factors, such as poor educational attainment, lack of critical thinking skills, an aging healthcare workforce, misperceptions about healthcare occupations, and self-perpetuating regional habits and attitudes toward healthcare jobs, affect the steady supply of healthcare workers in the region.

### **III. METHODOLOGY**

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This report presents a comprehensive view of healthcare workforce challenges in northwest Tennessee. It includes two types of information: (1) interview results and (2) secondary data. The report utilizes interview results as its main source of information. However, in order to substantiate healthcare workforce concerns and guide workforce policymakers in addressing them, this study relies heavily on available secondary data that will also shed light on the extent of healthcare workforce concerns in the region.

## **Goals of This Study**

The goals of this study are to address following healthcare workforce issues.

- ♣ What is the trend in the healthcare workforce in terms of diversity?
- ♣ What are the shortages from the leadership viewpoint?
- ♣ What problems exist in the region regarding the supply of healthcare workers?
- ♣ Does the region have enough educational capacity to accommodate increasing demands for courses?
- ♣ What impact do the working conditions have on healthcare workforce shortages?
- ♣ Does the region have the necessary funding for needy students who want to go through training in healthcare?

## **Interview Procedure**

BERC, in cooperation with the Northwest Tennessee Workforce Investment Board, identified 68 community leaders who are closely involved in healthcare workforce-related issues. BERC set the period for interviews between July 1 and August 5, 2005. BERC staff attempted to contact all selected individuals within this period for an interview. In some instances, BERC staff presented options for responding to interview questions through fax, e-mail, or mail. BERC's goal was to interview 35 out of 68 professionals. The following presents a tally of our attempts to reach these individuals.

- ♣ Fourteen (14) were unreachable (wrong phone number, not in the office, retired, etc.).
- ♣ Three (3) refused to be interviewed.
- ♣ Fifteen (15) were not available for an interview within the time frame (schedule conflict, out of town, etc.).
- ♣ Six (6) either did not show or changed plans after interviews were scheduled.

BERC completed 28 interviews in the field and received two written responses to the interview questions for a response rate of 44 percent and target interview success rate of

86 percent. The following are the affiliations of those individuals participating in this study.

- ♣ Forty-three (43) percent in hospitals/physicians,
- ♣ Seventeen (17) percent in nursing and residential care facilities,
- ♣ Thirteen (13) percent in business (chambers of commerce),
- ♣ Twenty (20) percent in education, and
- ♣ Seven (7) percent in pharmacy.

These professionals represent all seven counties as well as Madison County, where BERCC interviewed two professionals who are closely involved in healthcare workforce issues in the region.

The key interviewer asked the interviewees eight pre-defined questions and one open-ended question. Furthermore, the key interviewer asked several follow-up questions during the interview regarding the issues raised in that session. The interview questions reflect both supply- and demand-side concerns as well as educational issues. The interview questions are presented in the appendix.

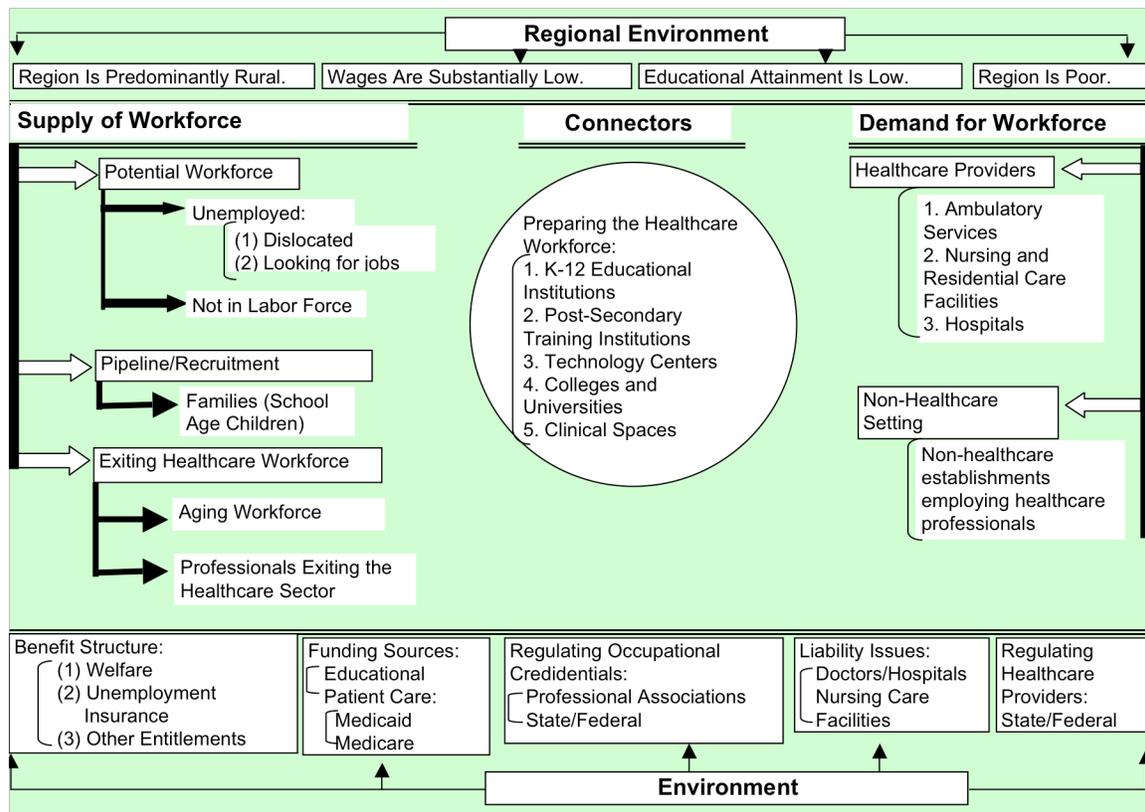
### **Secondary Data**

Where necessary, BERCC utilized a large number of indicators to substantiate the extent of healthcare workforce challenges in the region. The particular goal of this approach is to inform workforce policymakers of the extent of healthcare workforce problems in the region and what target groups should be included in policy recommendations.

### **Conceptual Framework**

The factors affecting shortages in rural areas are multifaceted, spanning from perception of healthcare occupations to the broader regulatory environment. In a smoothly functioning labor market, supply and demand factors in cooperation with educational

institutions interact with each other to regulate the labor market. However, any bottlenecks in one of these markets or indirect interventions through the regulatory environment could generate a substantial breakdown in the system. If these bottlenecks continue unaddressed for a prolonged period, multiple vicious cycles emerge throughout the system. The following chart identifies each market and issues that create potential problems in the labor market.



This chart points out many issues external to the local labor market that have a potentially strong influence on every stage of healthcare workforce development. Furthermore, issues concerning competition between the healthcare sector and other sectors in the region for a skilled labor force are excluded from the chart. As this report will highlight in the following sections, interviews will focus on the local working relationships among different parts of the system and analyze where the local workforce system is creating problems.

#### IV. HEALTHCARE WORKFORCE DIVERSITY

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**Overview.** Healthcare workforce professionals have provided mixed opinions on workforce diversity issues. While many agree that diversity in the healthcare workforce is desirable and contributes positively to the work environment and patient care, they provided somewhat mixed reviews of the current makeup of the healthcare workforce. Almost all professionals agree that educational requirements for healthcare occupations have increased substantially. This creates further challenges for the region, which is characterized as having low educational attainment.

**Diversity by race/ethnicity.** Only 38 percent of professionals agree that the healthcare workforce has become more diverse in terms of race and ethnicity. Many argue that the healthcare workforce reflects the current population mix rather than a wide swing toward a particular race. A particular trend, common in big metropolitan settings, is that of more and more healthcare professionals coming from other countries to fill shortages in the healthcare sector, but these interviews suggest that this is spreading across rural areas as well.

*Trend.* When it comes to future trends, the consensus among professionals is that the healthcare workforce will be more racially diverse, attracting more minorities and recent immigrants. However, a critical issue that many highlight is the skill requirement for these jobs. Many immigrants and underrepresented minorities in the region have low educational attainment. This challenge along with cultural and linguistic problems is likely to create difficulties in integrating these groups into the healthcare workforce.

*Challenges.* Several other challenges to increasing diversity throughout the region were mentioned. (1) Cultural issues must be overcome in order to employ a more diverse population in patient care. The ability of healthcare providers to accommodate diverse groups differs by type of care; in a big hospital setting, all it takes is good communication, but in long-term care facilities, it requires a cultural change for patients to accept care from diverse groups of people. (2) Education will play a critical role in

accommodating different groups of people. Hispanics in certain parts of the region have low educational attainment. Many cannot speak English well enough to communicate in a patient-care environment. (3) Finally, members of many minority groups are not likely to seek employment in the healthcare sector unless there is a comprehensive outreach program to recruit them.

**Diversity by gender.** More than 50 percent of healthcare professionals agree that the healthcare workforce has become more diverse in terms of gender in the region. Many highlighted the changing roles of gender in the healthcare environment with many females now enrolled in medical schools and many males in nursing schools. Again, the extent of change differs by establishment; males tend to work in hospital settings in big cities. Nursing-care facilities are also attracting males as licensed practical nurses and certified nursing assistants. However, male nurses are not as prevalent in the long-term patient-care environment as they are in hospital settings in the region.

*Trend.* Many healthcare professionals agree that more and more males will enter the healthcare workforce in the future. Currently, enrollment in various nursing programs is increasing, but the concern is that these male program participants usually quit at the clinical stage of their programs.

*Challenges/Issues.* In rural areas, a particular challenge to increasing gender diversity in the healthcare workforce comes from cultural attitudes that nursing is a female profession. This perception is already undergoing fundamental changes in major urban areas. However, few indications exist that rural areas will embrace these changes in gender role in healthcare occupations without a systematic public awareness campaign addressing multiple segments of population. Peer pressure in rural areas remains strong enough to influence the younger generation not to consider a healthcare occupation. Even if these pressures are overcome, low pay in the rural healthcare sector is a major disincentive to males seeking employment in a healthcare setting. Instead, many males prefer a more lucrative job in truck driving or manufacturing. In some cases, even if some males start working in a hospital setting, the relationship between nurses in the work

environment discourages these individuals. Finally, faculty expectations of male nurses in the school setting are different from their expectations of female nurses.

## V. HEALTHCARE WORKFORCE EDUCATION

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**Overview.** Healthcare workforce education is a critical issue that was raised throughout the interviews. According to Census 2000 figures, nearly 45,000 individuals over the age of 25 in the region had less than a high school diploma. This group is vulnerable to economic downturns to a great extent. Furthermore, many will be unable to find jobs without a substantial period of training if they are laid off through plant closings.

### Number of People with Less Than High School Education

	1970	2000
<b>Tennessee</b>	1,239,514	901,684
Crockett County	5,731	3,379
Dyer County	12,482	8,210
Gibson County	17,681	9,546
Lake County	3,197	2,414
Lauderdale County	8,505	6,607
Obion County	11,429	6,412
Tipton County	10,017	8,100
<b>United States</b>	52,373,312	35,715,625

}

44,668

Education is one area that many professionals talked about at great length during the interviews. Workforce professionals, families, and educational institutions need to be aware of a variety of issues concerning education because this issue is related to all aspects of the healthcare workforce system.

**Schooling requirements for healthcare occupations.** The consensus among healthcare professionals in the region is that healthcare occupations have required more schooling over the past 10 years. Especially since the healthcare sector has become more technology dependent, a certain level of education is imperative for many individuals interested in healthcare occupations. Although there is universal consensus that

healthcare jobs require life-long learning, educational requirement varies by occupations. Many professionals argue that professional associations control the number of professionals in the field by increasing credential requirements for some jobs.

Although many healthcare professionals agree on the requirements, some do not believe that more schooling means better caregiving. Increasing education requirements from two years to four years does not make a nurse better in a clinical setting, and increasing credential requirements puts a heavy toll on shortages in many occupations, some argue. Many healthcare professionals expressed concern over additional educational requirements in certain occupations. They argue that the region needs healthcare workers with a solid basic background and the following qualities: (1) trainability, (2) work ethic, (3) commitment to patient care, (4) critical thinking skills, and (5) motivation to learn more. Once these qualities exist, healthcare providers are willing to help the healthcare workforce obtain further education/training while they are employed. The critical issue, then, is where to learn these basic qualities. Many suggested middle and high school are the right places to focus.

*Trend.* There is almost universal agreement about the trend in educational requirements of healthcare occupations. Every aspect of healthcare relies heavily on technology, which has dramatically changed over the years. Furthermore, new diseases, new drugs, more knowledge about healthcare among the general public, and new treatment methods using minimally invasive medical technology are dramatically changing the healthcare sector itself.

*Challenges/Issues.* As the credential requirements increase for some occupations, the shortages will increase accordingly. Training institutions are not flexible enough to revise existing programs and institute new ones in a short period. Many public universities lack discretionary money to respond to new occupational requirements. Increasing credential requirements will increase faculty shortages across healthcare program areas.

Educational attainment in the region is already low. Those who graduate and apply for licensed practical nurse programs, for example, lack the necessary background to enter these programs. Scores on the Nurse Entrance Test are already low, some argue. Many schools in the region are allocating a substantial amount of money for remedial courses instead of spending that money for additional faculty or instructional materials.

One year of additional educational requirement would substantially increase the cost of education. In turn, this would discourage many individuals from seeking training for healthcare occupations. Some suggest that funding would not be an issue because many employers in the region are providing necessary support for individuals. However, some argue, knowledge about funding sources for healthcare education is definitely not available for many potential healthcare workforce candidates. A critical issue is to get information out about available career options and funding sources.

The region does not have a well-educated workforce. Many members of the existing workforce are not even eligible for entry-level healthcare occupations without substantial remedial course work. Additional educational requirements are a big challenge to the region because of the insufficient background of those interested in healthcare programs, requiring a systematic effort in the region to motivate youth to obtain basic education.

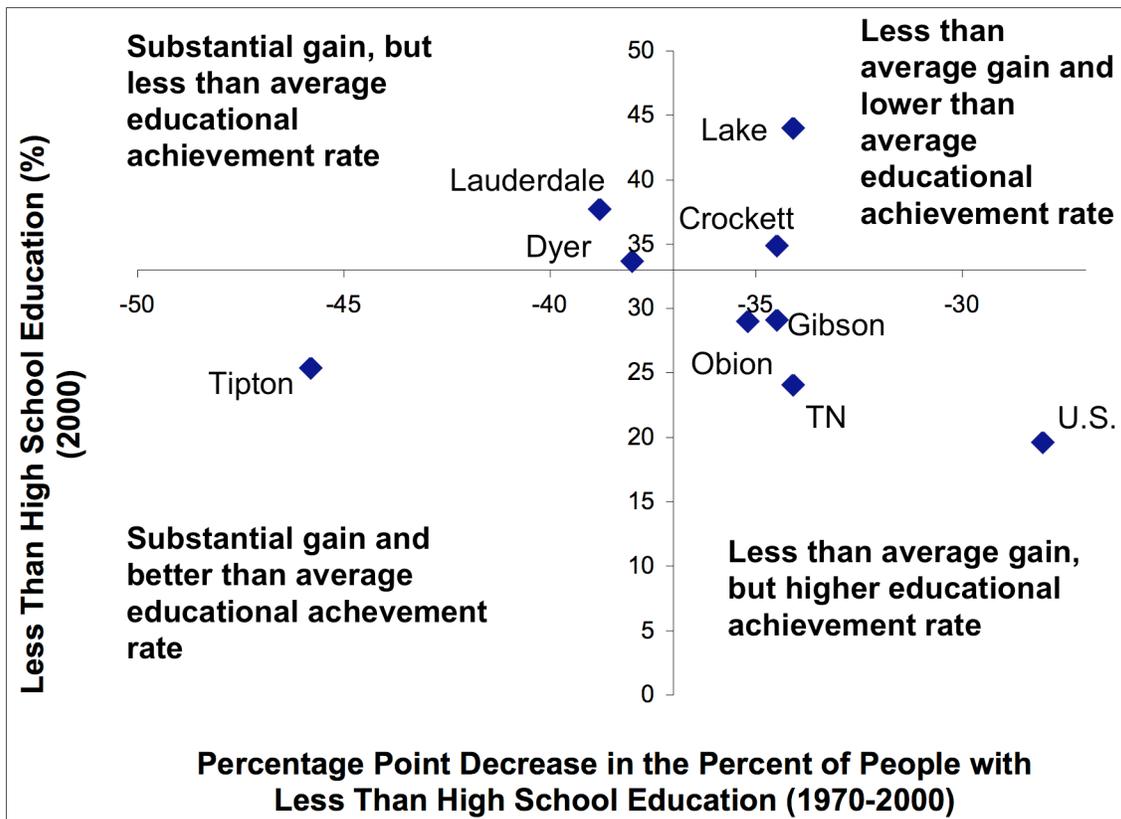
Many also raised critical thinking skills as an issue in this context. Instead of the ever-increasing credential requirements for many occupations that are already in short supply, some argue that providers in the region need people with critical thinking skills.

Experience shows, they argue, that adding two more years of education does not provide individuals with the assessment skills necessary in a patient-care setting.

**An assessment of the region's educational preparedness.** A review of interview results and regional educational data indicates a dilemma in the region: how to reconcile increasing educational requirements of healthcare occupations with the high percentage of the workforce possessing less than a high school education. To summarize interview responses, the following picture emerges.

- ♣ Healthcare occupations require more schooling.
- ♣ Those applying for specific healthcare programs do not have the necessary background.
- ♣ Work ethic, critical thinking skills, and commitment to work are lacking.
- ♣ Youth does not perceive education as valuable.
- ♣ The current educational attainment level of the labor force is not promising because of the high percentage of the population with less than a high school education.
- ♣ Drug use is affecting many individuals in the region.

Over the years, the region has made substantial progress in terms of reducing the percentage of those with less than a high school education. However, as the following chart indicates, the region is far from reaching the educational attainment level of Tennessee and the nation. Only Tipton County has made substantial progress.



While the portion of the population with less than a high school education is running around 20 percent nationwide, the average of the seven counties is around 33 percent. All counties in the region have a higher rate than both Tennessee and the nation. A further breakdown of educational attainment by age, gender, and race is given below. The numbers in the table are raw figures rather than percentages to identify the number of members of the target population for policy purposes. One critical observation is that the number of males who are not high school graduates is substantially higher than the number of females.

*Educational attainment by age, race, and gender.* According to census figures, educational attainment varies substantially by racial groups: those who have less than a high school education account for 54 percent of total Hispanics, 27 percent of African Americans, 21 percent of other races, and 20 percent of non-Hispanic whites. By age group, the table indicates a promising trend: the percentage of those with less than a high school education was higher in the older group (21 percent of those 40+) than in the younger group (16 percent of those 20-34 years old).

In addition to the above figures, a number of school-age children (1,453) were not enrolled in a school in the region in 2000.

*Employment and educational status of youth.* Finally, we highlight the status of youth by education and employment as well as poverty dynamics in the table below. Primarily the second and third columns represent a critical and highly vulnerable population group in the region. A policy recommendation would be to reach out to those people to make sure they go through additional training to increase their employment opportunities.

*Recent trends in youth education and employment.* According to data compiled by the Tennessee Department of Children and Youth, the percentage of students who drop out of high school prior to graduating is not showing a regionwide decline. By county, Gibson and Obion made substantial progress between 2000 and 2003. The region has

experienced a worsening youth unemployment rate over the years, and many young people are without job.

### Northwest Tennessee Labor Force by Age, Gender, Race, and Educational Attainment (2000)

Age Group	Race	Graduate or professional degree		Bachelor's degree		Some college or associate's degree		High school graduate (including equivalency)		Not a high school graduate	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
16-19	White non-Hispanic	0	0	0	0	329	170	525	735	1,160	1,495
	Hispanic	0	0	0	0	0	0	4	4	34	59
	Black non-Hispanic	0	0	0	0	55	28	194	185	283	345
	Other	0	0	0	0	0	0	0	0	12	28
20-34	White non-Hispanic	359	329	1,405	1,200	4,115	3,385	4,325	6,285	1,175	2,480
	Hispanic	0	10	14	18	63	36	40	135	59	315
	Black non-Hispanic	34	10	164	48	845	555	1,555	1,370	580	500
	Other	10	19	38	40	59	36	53	60	10	44
35-39	White non-Hispanic	164	198	505	469	1,685	1,415	1,845	2,320	725	1,170
	Hispanic	0	10	15	24	12	24	10	34	25	48
	Black non-Hispanic	69	8	109	43	395	243	525	470	223	160
	Other	14	10	0	18	18	0	16	38	14	4
40+	White non-Hispanic	1,045	1,290	1,575	2,125	5,240	5,770	8,480	9,220	2,810	5,670
	Hispanic	4	0	4	12	44	36	63	22	72	151
	Black non-Hispanic	102	34	228	92	760	595	1,250	1,280	900	1,080
	Other	0	14	0	36	10	102	91	68	53	73
Total	White non-Hispanic	1,568	1,817	3,485	3,794	11,369	10,740	15,175	18,560	5,870	10,815
	Hispanic	4	20	33	54	119	96	117	195	190	573
	Black non-Hispanic	205	52	501	183	2,055	1,421	3,524	3,305	1,986	2,085
	Other	46	43	66	94	186	138	160	166	89	149

Source: www.census.gov.

## Number of School Age Children Who are Not Enrolled in a School

	Total	Not Enrolled in School (ages 5 to 17)
Crockett County	2,625	94
Dyer County	7,125	213
Gibson County	8,589	263
Lake County	1,059	52
Lauderdale County	4,901	189
Obion County	5,542	175
Tipton County	11,407	467

Source: www.census.gov.

*Job and education mismatch.* As data indicate, educational attainment is a problem in the region. There is no way to verify skill level, critical thinking skills, and work ethic except by relying on the commentary of workforce professionals in the region. However, only attainment data demonstrate the extent of the problem. The following table compares the educational profile of healthcare occupations in Shelby County (for which census data are available) with that of the region's counties. There is a clear mismatch between the educational attainment of those holding a healthcare job and the labor force in the region.

## Status of the Population under Age 24

	Ages 16 to 19				Ages 18 to 24			Under 18	
	Total	% NNNN	%ENN	%HSDO	Total	NHSG	%NHSG	SPCU	
								PBP	18BP
Crockett	794	7.56	5.16	12.70	1,178	377	32.00	713	183
Dyer	1,898	7.11	2.74	9.90	3,338	997	29.90	2,029	709
Gibson	2,453	4.61	4.32	8.90	3,866	1,087	28.10	1,961	680
Lake	429	20.28	0.93	21.20	1,026	470	45.80	498	177
Lauderdale	1,509	7.95	4.24	12.20	2,856	1,115	39.00	1,675	629
Obion	1,554	4.18	1.54	5.70	2,735	631	23.10	1,421	532
Tipton	3,060	5.78	3.33	9.10	4,419	1,283	29.00	2,460	858
Tennessee	312,760	5.17	4.64	9.80	547,119	136,079	24.90	247,397	81,444

Source: Tabulated from the Census 2000 figures. %NNNN = percent of population ages 16–19, not employed, not in labor force, not in school, not high school graduates; %ENN = percent of population 16–19, employed, not in school, not high school graduates; %HSDO = percent of population 16–19 who are high school dropouts; NHSG = people 18–24 who are not high school graduates; %NHSG = percent of people 18–24 who are not high school graduates; PBP = people under 18 below poverty; SPCU18BP = single parents with children under 18 below poverty.

*Summary.* A detailed analysis of secondary data substantiates many issues raised by healthcare workforce professionals. The challenge in the region is clear. The overwhelming consensus of healthcare workforce professionals on the necessity of

focusing on middle and high school students to prepare a steady supply of workers has strong merit in light of the secondary data analysis.

**Percent of Cohort Dropouts and Youth Unemployment Rate  
in Selected Counties and the State**

Area Name	2000	2001	2002	2003
<b>Percent of Cohort Dropouts</b>				
Tennessee	14.40%	13.90%	12.50%	11.30%
Crockett County	6.90%	8.90%	5.20%	6.70%
Dyer County	6.90%	9.80%	8.90%	9.10%
Gibson County	14.80%	11.00%	8.90%	6.80%
Lake County	17.50%	8.60%	4.30%	15.50%
Lauderdale County	15.60%	16.20%	9.80%	13.80%
Obion County	12.70%	15.10%	11.30%	8.90%
Rutherford County	16.10%	15.40%	10.00%	7.30%
Tipton County	8.50%	11.00%	12.80%	10.90%
Williamson County	6.50%	5.40%	6.60%	5.30%
<b>Youth Unemployment Rate</b>				
Tennessee	12.00%	13.60%	15.30%	18.80%
Crockett County	13.20%	15.40%	21.40%	34.70%
Dyer County	19.20%	22.30%	23.00%	21.50%
Gibson County	18.40%	25.00%	24.10%	30.30%
Lake County	13.30%	13.30%	12.50%	9.10%
Lauderdale County	23.20%	33.30%	33.90%	35.80%
Obion County	12.40%	12.00%	12.60%	28.10%
Rutherford County	9.40%	11.20%	12.40%	17.70%
Tipton County	11.50%	14.70%	16.70%	30.50%
Williamson County	5.80%	6.90%	8.70%	10.30%

Source: Tennessee Commission on Children and Youth at [www.aecf.org](http://www.aecf.org)

## Educational Attainment

	Bachelor's degree and over	Some college or associate degree	High school graduate (including equivalency)	Not a high school graduate
<b>By Healthcare Occupation (Shelby County, 2000)</b>				
Clinical Laboratory Technologists and Technicians	50.20%	35.30%	8.90%	5.50%
Dental Assistants	7.70%	52.40%	34.30%	6.90%
Dental Hygienists	71.40%	21.60%	2.70%	4.10%
Diagnostic Related Technologists and Technicians	24.60%	58.60%	14.60%	1.30%
Emergency Medical Technicians and Paramedics	29.60%	68.00%	3.20%	0.00%
Health Diagnosing and Treating Practitioner Support Technicians	11.20%	53.40%	25.30%	10.40%
Health Diagnosing and Treating Practitioners, All Other	100.00%	0.00%	0.00%	0.00%
Licensed Practical and Licensed Vocational Nurses	4.30%	71.30%	22.70%	1.50%
Medical Assistants and Other Healthcare Support Occupations	8.20%	56.90%	27.50%	6.90%
Medical Records and Health Information Technicians	16.10%	46.00%	28.00%	9.50%
Miscellaneous Health Technologists and Technicians	18.60%	46.90%	21.10%	15.70%
Nursing, Psychiatric, and Home Health Aides	5.90%	34.40%	40.10%	19.80%
Occupational Therapist Assistants and Aides	0.00%	100.00%	0.00%	0.00%
Occupational Therapists	92.30%	2.10%	2.10%	0.00%
Other Healthcare Practitioners and Technical Occupations	36.20%	31.50%	17.00%	12.30%
Physical Therapist Assistants and Aides	25.00%	77.90%	0.00%	0.00%
Physical Therapists	91.00%	4.70%	2.00%	2.70%
Physician Assistants	43.00%	46.20%	2.10%	7.20%
Radiation Therapists	40.00%	56.00%	16.00%	0.00%
Registered Nurses	49.60%	46.80%	2.20%	1.60%
Respiratory Therapists	32.40%	60.70%	3.60%	0.00%
Speech-Language Pathologists	100.00%	0.00%	0.00%	0.00%
Therapists, All Other	76.10%	21.70%	0.00%	1.70%
<b>By County</b>				
Crockett County	9.10%	18.80%	37.30%	34.90%
Dyer County	12.00%	20.70%	33.60%	33.70%
Gibson County	10.10%	21.40%	39.30%	29.10%
Lake County	5.40%	15.30%	35.30%	44.00%
Lauderdale County	7.70%	16.40%	38.20%	37.70%
Obion County	10.30%	19.40%	41.30%	29.00%
Tipton County	10.80%	27.10%	36.70%	25.40%

Source: [www.census.gov](http://www.census.gov)

## VI. OCCUPATIONAL SHORTAGES IN THE REGION

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**Overview.** Occupational shortages in the healthcare sector are affecting many urban and rural areas. A review of literature indicates that registered nurses are in short supply across the United States. According to Modern Healthcare, enrollment in nursing programs declined from 1999 to 2002 and then started increasing again in 2003.<sup>3</sup> However, shortages in other healthcare occupations seem to be driven by local market conditions.

There are many reasons for shortages, some local, but state- and national-level factors also play a substantial role. Some solutions require long-term planning and interventions, especially for issues dealing with the supply of workforce. Some short-term solutions might provide interim relief for healthcare providers in the region.

### Occupations in Shortest Supply

		Rank Order
First-Priority Occupations	Registered Nurses (RN)	1
	Licensed Practical Nurses (LPN)	2
	Physical Therapists (PT)	3
	Pharmacists (P)	4
	Certified Nursing Assistants (CNA)	5
	Medical Technologists (MT)	6
	Occupational Therapists (OT)	7
Second-Priority Occupations	Lab Technicians (LT)	8
	Respiratory Therapy (RT)	9
	Ultrasound Technologists	10
	Radiologist (R)	11
Third-Priority Occupations	Physical Therapy Assistants (PTA)	12
	Dental Hygenists (DH)	13
	Dietitians	14

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<sup>3</sup> *By the Numbers.* [www.modernhealthcare.com](http://www.modernhealthcare.com).

**Occupational shortages.** Interviews identified 14 occupations (each cited at least once) as experiencing shortages in the region. Based on the number of citations, occupations are grouped under first-, second-, and third-priority occupations. First-priority occupations are the ones many professionals consider an area of dire need in the region. According to the table, registered nurses are most often cited as in short supply. Licensed practical nurses, physical therapists, pharmacists, and certified nursing assistants were also mentioned several times as experiencing shortages.

**Reasons for Shortages.** Reasons for shortages vary by type of establishment and professional interviewed. Based on interviews, several general factors can be identified as reasons for shortages:

- ♣ service demand,
- ♣ healthcare workforce,
- ♣ labor force,
- ♣ educational capacity,
- ♣ work environment,
- ♣ regulatory environment,
- ♣ professional association,
- ♣ occupation,
- ♣ liability, and
- ♣ culture.

*Service demand–induced shortages.* The aging population is a big concern for all professionals. As baby boomers approach retirement age, demand for services will increase substantially. Further, many professionals cited increasing public awareness of diseases and new drugs as a factor in increasing hospital visits and per capita prescriptions. Lifestyle issues also generate demand for services.

From the long-term care perspective, patients arrive sicker, live longer, and require more social activities than they did 10 to 15 years ago. People are demanding better care because they are better educated.

*Healthcare workforce–induced shortages.* Many professionals mentioned aging registered nurses and pharmacists as a factor creating shortages in the region. In the next five to 10 years, a large number of members of the existing workforce will reach retirement age. Unless a pipeline of new entrants is created, this will dramatically increase shortages throughout the region.

Further, young nurses and certified nursing assistants (CNAs) do not have the commitment to care and to the work ethic that older nurses and CNAs have. These factors along with the existing negative culture among nurses are creating an environment that discourages new entrants to the field.

*Labor force–induced shortages.* The primary concerns of the labor force in the region are work ethic, lack of critical thinking skills, lack of a basic educational background, lack of motivation, and misperceptions about healthcare occupations. Further, many individuals are not interested in moving from high school to college. Many professionals stress the fact that the real issue is not lack of interest in healthcare jobs but lack of the necessary background and trainability.

*Educational capacity–induced shortages.* In certain occupations, the shortage is due to the limited number of institutions and slots available for a given year. As of 2004, only one pharmacy school existed in Tennessee, and it has limited enrollment capacity. Similarly, the region has few programs for physical therapists.

In the areas where regional institutions have programs, faculty shortages limit the number of enrollees per semester. These issues were raised on several occasions as factors leading to shortages. From the educational institutions' perspective, funding per student

from the state has decreased over the years as these institutions have grown. Without the necessary funding, initiating a new program is not an option.

*Work environment–induced shortages.* One critical issue that emerged from the interviews is related to the healthcare work environment: burnout is cited as a major factor leading to shortages in the industry. Factors causing burnout include long work hours, night and weekend shifts, workload, stress, being on call around the clock, and workplace culture. Regarding workplace culture, several healthcare professionals mentioned the adverse relationship between nurses on one hand and between doctors and nurses on the other. Although these professionals acknowledge the workplace culture is a lot better than it used to be, they still believe this is a factor contributing to burnout.

A critical concern many professionals raised is the low pay rate in the healthcare sector in rural areas. The level of compensation for the given workload is discouraging for both the existing workforce and new entrants. This is the reason many people choose either to stay on welfare or seek career options elsewhere. For example, the pay rate for CNAs is substantially lower than for other healthcare occupations. That is why, some professionals argue, this occupation has a high turnover rate. Pharmacy shortages have similar issues, since retail businesses pay substantially more money than hospitals for pharmacists.

*Regulatory environment–induced shortages.* Almost all professionals complain about the impact of the regulatory environment on shortages. Regulatory issues are at the heart of many healthcare workers' decision to seek employment in other venues. Nurses, many professionals maintain, spend most of their time documenting rather than providing care. Although many professionals acknowledge the necessity of certain regulations, they argue that current multilayered regulations are excessive. As one professional puts it, "Rules change all the time. Once you get used to a set of rules, they introduce new ones."

Regulations are multifaceted, some professionals argue, and compliance cost is increasing. Some regulations are related to workplace, some to occupation, some directly

to patient care, and some to accreditation. The combined effect of these regulations is disastrous, these professionals maintain. Rural areas are having substantial problems finding geriatric physicians and nurses.

According to several professionals, regulators have no idea what is actually happening in the patient-care setting, and this mismatch is creating substantial problems in providing care for the increasing elderly population.

*Professional association–induced shortages.* About one-third of the interviewed healthcare professionals expressed concern over “turf battles” in the healthcare sector. As previously mentioned, more and more healthcare occupations require additional schooling. Some professional associations have raised the bar for credentials in certain occupations. For example, the educational requirement for physical therapists is increasing. Currently, there are shortages in this area, but not many individuals are able to get through a program because of the limited number of available slots. According to educational institutions, it is hard to respond in a timely manner to open a new program for an occupation whose credential requirements change frequently.

Pharmacy programs have gone through similar changes, and area colleges and universities have begun shifting their two-year nursing programs to four-year nursing programs. These shifts in educational requirements, some professionals argue, might benefit the colleges and universities as well as the professional associations but are definitely hurting caregiving in the sector by contributing to shortages.

*Liability-induced shortages.* Liability is increasingly a concern for many professionals. Long-term care facilities, especially, complained about the “vicious cycle of settling cases.” Liability issues along with insurance requirements have forced many specialists to stop practicing medicine.

*Culture-induced shortages.* Many cultural orientations induce shortages, including (1) the workplace culture among nurses, (2) the workplace culture between nurses and doctors,

(3) a culture of competition among healthcare providers for the available workforce that manifests as sign-on bonuses and other incentives, (4) a youth culture that does not value education and work, (5) general cultural attitudes regarding nursing occupations, and (6) cultural attitudes of patients in the long-term care environment regarding gender and race.

The self-perpetuating nature of some of these cultural orientations, many professionals argue, has prevented smooth functioning of the healthcare workforce system in rural areas. As we will explain, each creates its own vicious cycle, thereby creating disconnected subsystems in the region.

**Addressing workforce shortages in northwest Tennessee.** Many professionals offered regional solutions to workforce shortages, ranging from streamlining paperwork to increasing enrollment at the college level. However, one solution all professionals agree on is changing the perception of young people through intervention in middle and high schools. Healthcare workforce professionals offer the following regional solutions to workforce shortages:

- ♣ changing the perceptions of middle and high school students of the value of education in general and healthcare occupations in particular,
- ♣ improving communication within establishments and with the general public about healthcare occupations and opportunities,
- ♣ improving the work environment to increase job satisfaction,
- ♣ reaching out to underrepresented minority groups and males,
- ♣ facilitating regional cooperation among stakeholders,
- ♣ increasing enrollment in training programs for healthcare occupations,
- ♣ improving pay rates of entry-level healthcare jobs,
- ♣ creating and securing special funds to address the needs of dislocated workers,
- ♣ instituting more benefits and flexible schedules in the work environment,
- ♣ instituting school-based healthcare programs,
- ♣ decreasing social benefits to force people to work,
- ♣ increasing the number of faculty members and instructors,

- ♣ streamlining the regulatory process by standardizing required forms,
- ♣ using role models in the school setting and the media to change perceptions of the healthcare workforce, and
- ♣ addressing work ethic and drug issues comprehensively.

*Testing-related vicious cycle.* The key, emphasized many professionals, is to break several vicious cycles across the healthcare workforce system. Most important, they feel, is breaking a vicious cycle in education: the school system currently places heavy emphasis on the required testing system to meet state and federal mandates in educational achievement. This process so far has created a set of parameters that overlook what is required to make a successful transition to the job market or postsecondary education. The result is high school dropouts and inadequately prepared high school graduates.

*Family-related vicious cycle.* The region is one of the poorest in Tennessee. Many families, especially single-parent households, receive social benefits through income maintenance programs and/or food stamps. There are second-generation individuals who have never seen anyone in their families holding a job. Some see this situation as promoting illegal activities, such as drug use, over getting a job, and some professionals label the high unemployment rate in the region “unemployment by choice.”

Healthcare professionals also acknowledge the fact that entry-level healthcare occupations do not pay enough to maintain a decent living for a family with children. The pay rate for CNAs is especially low. Many families choose to keep their welfare benefits instead of getting a job. Over the years, this has become a way of life for some families, and bringing them into the mainstream labor force is a big challenge. Considering these issues, some professionals suggested that resources should be concentrated on the younger generation rather than dealing with what they consider a “lost generation.” Schools are considered a prime avenue for such initiatives.

*Working environment-related vicious cycle.* A critical perspective shared by many professionals is that working conditions in the care setting are extremely stressful. Often

job satisfaction is low because of poor communication among different parties. In an environment already driven by shortages, long hours, workload, negative attitudes toward coworkers, and regulatory issues create burnout among nursing staff, driving many nurses out of the profession and creating even more shortages. A possible solution is to increase job satisfaction among healthcare workers.

*Provider-related vicious cycle.* Many healthcare providers are engaged in a practice of recruiting nurses from their competitors by providing certain incentives, including attractive sign-on bonuses. However, job-hopping in the healthcare sector has created a situation that breeds distrust between healthcare providers, which in turn prevents effective cooperation between providers to address labor shortages.

The preceding vicious cycles have critically affected the level of local healthcare shortages in the region. It is difficult to chart a new course, and the goal of this study is to set up a consortium through which some of these cycles might be broken.

## VII. REGIONAL LABOR POOL AND WORKFORCE SHORTAGES

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**Overview.** BERC asked local healthcare workforce professionals whether the region has a large enough labor pool to fill the existing shortages in healthcare. The overwhelming response to this question was “yes, but...,” indicating that major workforce-related issues should be addressed first in order to fully utilize the existing labor pool. Since many related issues under this section have already been addressed, we will briefly summarize the main points recorded throughout the interviews.

*Yes, but they need to be motivated.* Many professionals expressed concern over motivational issues. The existing labor pool does not have a work ethic. Optimally a program should exist at the middle and high school levels to get young people interested in working. A major information campaign targeting the younger generation and their families is essential if the region is to utilize the available labor pool. In order to increase

interest among existing members of the labor pool, some professionals suggested mentoring programs, hospital camp at schools, and the use of role models.

*Yes, but they need substantial educational help.* Many professionals pointed out the lack of required background in the existing labor pool for eligibility for healthcare-related programs. Some professionals called for increasing funding for teachers and faculty to ensure that remedial programs are in place for these individuals.

*Yes, but emphasis should be on dislocated workforce members.* Some professionals, arguing that these individuals already have a strong work ethic and would be willing to work after going through special training, suggested this targeted approach. Among the recommendations was a special fund for adult worker training.

*Yes, but social benefits must be cut.* Some suggested that social benefits discourage individuals from working and that cutting all entitlements would force people to seek employment in the healthcare sector.

*Yes, but they need to have access to healthcare employment.* Accessibility to certain healthcare jobs was an issue for some professionals, who argued that, even if people are interested in healthcare occupations, information about jobs and access points is not easily available.

## VIII. CAPACITY OF EDUCATIONAL INSTITUTIONS IN THE REGION

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**Overview.** BERC asked healthcare professionals whether the region has enough educational capacity to train the labor force for healthcare occupations, both in terms of the number of educational institutions and faculty and program capacity.

*Results.* Almost all professionals agree that the region has enough educational institutions to handle the potential demand for healthcare occupations. However, 90 percent raised concern over the lack of programs and faculty members to meet increasing educational

demand in the healthcare sector. For certain occupations (physical therapists and pharmacists, in particular), however, both the number of institutions and the number of programs were cited as problematic (see appendix for a list of major institutions).

A concern resonating throughout the educational community is that faculty compensation in public schools is not competitive. In a clinical setting a faculty member could command twice as much salary as in an instructional setting. This issue is creating a major problem in the occupational areas in shortest supply. Many public universities and colleges, some argue, do not have discretionary money to hire new faculty members, ramp up certain programs, and increase instructional space.

## IX. FUNDING SOURCES FOR WORKFORCE TRAINING

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**Overview.** As a separate question, BERC asked whether the region has enough funding for individuals seeking education in healthcare-related occupations. Even one-fourth of healthcare professionals themselves indicated they have no knowledge of regional funding resources. The results demonstrate the need for an awareness campaign to inform the public about the availability and accessibility of regional funds.

*Results.* Healthcare professionals were split on regional funding. Forty-three percent of healthcare professionals indicated that funding is sufficient in the region, but the public does not know where to find and how to benefit from these funding sources. Twenty-one percent answered that, given the regional labor pool and its associated problems, the region does not have enough funding. The remaining 36 percent either did not respond or indicated they are not sure about the extent of regional funding for individuals seeking healthcare-related opportunities.

The answers to this question demonstrate that both professionals and the public should be informed about regional funding resources. Lack of information about funding sources

when the cost of education is increasing discourages many people who otherwise might be interested in healthcare.

## **X. RETENTION OF HEALTHCARE WORKFORCE IN THE REGION**

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**Overview.** One critical issue related to the healthcare workforce is the extent to which healthcare professionals are exiting the field before retirement. Many national and regional studies highlight the fact that, even though nurse shortages exist everywhere, a substantial number of nurses are not practicing. There many reasons for an early exit from this occupational practice, ranging from workload to caring for children at home.

*Results.* Interviews provided a mixed response: 36 percent believed this does not occur in rural Tennessee, whereas 64 percent of professionals mentioned that a substantial number of people are exiting the healthcare sector either to seek opportunities in other sectors or to care for children at home.

Healthcare professionals mentioned several factors contributing to the massive exodus from the field:

- ♣ burnout due to stress and the work environment,
- ♣ regulatory issues, and
- ♣ insurance and liability cases.

## **XI. FACTORS AFFECTING SKILLED WORKERS' ACCESS TO HEALTHCARE EMPLOYMENT**

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**Overview.** BEREC finally asked a question regarding what type of benefits might interest individuals in seeking healthcare employment. Three options were to be ranked in order of importance: transportation, childcare, and other cash assistance.

*Results.* Eighty-six percent of interview respondents mentioned childcare as a critical issue that could make a difference in the region. None listed transportation as a major concern for those entering the workforce. No healthcare professionals wanted to recommend offers of a certain amount of monthly cash assistance. A main concern of many professionals was the number of single parents in the region, many of whom are unable to afford childcare that would enable them to work. By offering childcare the region would free up a substantial number of single parents for the healthcare workforce.

## **XII. CONCLUSION**

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The healthcare workforce in northwest Tennessee faces challenges that threaten to create a major setback in service delivery in the next 10 years. The main challenges include the lack of sufficient educational background of the existing labor force for eligibility for a healthcare program, major deficiencies resulting from the lack of math and science background in middle and high school, and the involvement of a large proportion of the regional labor pool in extensive drug use. A comprehensive plan to address these issues might include surveying the youth in middle and high schools to learn how they perceive healthcare occupations; the results of this survey would help local healthcare leaders to address regional deficiencies.

## Appendix A: Educational Institution, Program Areas, Capacity, and Duration

Name of Institution	Programs Offered	Capacity	Duration
<b>Independent Colleges and Universities</b>			
Baptist College of Health and Science	Bachelor of Science in Diagnostic Medical Sonography Bachelor of Science in Health Care Management Bachelor of Science in Medical Radiography Bachelor of Science in Nuclear Medicine Bachelor of Science in Nursing Bachelor of Science in Radiation Therapy		4 years for all bachelor programs
Christian Brothers University	<b>Pre-Professional Health Programs</b> • Dentistry • Medicine • Nursing • Optometry • Pharmacy • Physical Therapy • Veterinary Medicine	88 total in health program	2-year programs on average
Crichton College	Pre-Nursing Program		2 years
Bethel College	Bachelor of Science in Pre-Physician Assistant Studies Master of Science in Physician Assistant Studies		4 years (BS)
Freed Hardeman University	Bachelor of Science in Health Services Administration Bachelor of Science in Nursing (through a cooperative agreement with Jackson State Community College)		
Lambuth University	<b>Pre-Professional Programs</b> • Dentistry • Medical • Optometry • Medical Technology • Pharmacy • Physical Therapy • Nursing • Cytotechnology • Dental Hygiene • Health Information Management		4 years 4 years 4 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years
Lane College			
LeMoyne-Owen College			
Rhodes College	Bachelor of Science in Biochemistry and Molecular Biology (BMB)		4 years
Southern College of Optometry	<b>Doctor of Optometry</b> Prerequisite: minimum 90 semester hours completed at an undergraduate institution; preference given to candidates with bachelor's or master's degrees		4 years
Union University	<b>Bachelor of Science in Nursing (BSN)</b> Second degree program for non-nurses who have a bachelor degree in another area <b>Certified Registered Nurse Anesthetist (CRNA) Program</b> <b>Dual Degree Nursing Program</b> (Blue Mountain College/Union University)		
<b>Tennessee Tech Centers</b>			
Covington	Practical Nursing Program	18-20	12-18 mo.
Memphis	<b>Medical Assisting Program</b> Upon completion, students are eligible to take the Medical Assisting Certification Examination.		12 months

Memphis (continued)	<b>Surgical Technology Program</b>	20-30	12 months
	Upon completion, students are eligible to take the nationally administered certification examination.	based on demand	
	<b>Nursing Assistant Program</b>	(used to take 90	3 months
	Upon completion of this certification program, students are prepared to take the state certification exam.	students for	
	<b>Pharmacy Technology Program</b>	9 months	
	Upon completion, students will be prepared to take the Pharmacy Technician Certification Examinations (PTCE).	surgical tech, but demand fell)	12 months
	<b>Dental Assistant Program</b>		
	This program provides students with classroom instruction and practical experience and prepares them for employment as dental Assistants.		12 months
	<b>Practical Nursing Program</b>		
	This program prepares students to take the State Board of Nursing Exam and become an LPN.		
Jackson	Practical Nursing Program		1,296
	Surgical Technology Program		hours each
	Pharmacy Technician Program (Certified Pharmacy Technician)		
McKenzie	Practical Nursing Program	20-24	1,296 hrs
Newbern	Practical Nursing Program	40	1,296 hrs
Ripley	Practical Nursing Program	25	1 year
	<b>Certificate Programs</b>		
	• Nursing Assistant	25	6 months
	• Phlebotomy Technician		
	• Electrocardiography Technician		
	• Patient Care Technician		
Paris	Practical Nursing Program	70	1 year
	Surgical Technology Program	12	1 year
Whiteville	Practical Nursing Program	30	1 year
<b>Public Community Colleges</b>			
Dyersburg State Community College	Associate of Science in Allied Health		2 years
	Associate of Science – Pre-Nursing		2 years
	Associate of Applied Science – Nursing		2 years
	Associate of Applied Science – Health Information Tech.		2 years
	<b>Pre-Professional Programs</b>		
	• Emergency Medical Technology 1		
	• Emergency Medical Technology 2		7 CRH
	• Advanced Standing Program LPNs		8 CRH
	<b>Certificate Programs</b>		9 CRH
	• Medical Transcription		
• Medical Coding			
• Surgical Technology			
Jackson State Community College	<b>Allied Health Programs</b>		
	• EMT Paramedic Program	35	
	• Medical Laboratory Technician (AD)	15	24 months
	• Physical Therapist Assistant (AD)	14	24 months
	• Radiography	30	
	• Respiratory Care Technology (AD)	18	21 months
Southwest Tennessee Community College	<b>Associate of Applied Science Degrees (AAS)</b>		2 years (all AAS)
	• Biotechnology		
	• Dietetic Technician		
	• Medical Laboratory Technician		
	• Nursing		
	• Office Administration - Medical Administrative Assistant		
	• Physical Therapist Assistant		
	• Radiologic Technology		

Southwest Tennessee Community College (continued)	<b>Associate of Science Degrees (AS)</b>	
	• Allied Health Science	2 years
	<b>Technical Certificate Programs</b>	
	• Caregiver Administration	22 CRH
	• EMT - Basic	17 CRH
	• EMT - Paramedic	40 CRH
	• Home Manager	15 CRH
• Laboratory Phlebotomy Technician	20 CRH	
• Pharmacy Technician	35 CRH	

**Public Universities**

University of Memphis	Bachelor of Science in Nursing	4 years
	Bachelor of Science in Audiology	(All BS)
	Bachelor of Science in Audiology and Speech Pathology	
	Master of Science in Nursing	2 years
	Master of Science in Audiology	(All MS)
	Master of Science in Audiology and Speech Pathology	
	Master of Healthcare Administration	
	<b>Concentration only</b>	
	• Biochemistry	
	• Behavioral Neuroscience	
• Bioinformatics		
• Biomedical Illustration		
• Biomedical Systems		
• Dietetics		

University of Tennessee at Martin	Bachelor of Science in Nursing	4 years
	Bachelor of Science in Health Science	4 years
	<b>Pre-Professional Programs (Non-degree)</b>	
	• Pre-Dental	90 CRH
	• Pre-Medical	90 CRH
	• Pre-Optometry	90 CRH
	• Pre-Pharmacy	90 CRH
	• Pre-Cytotechnology	90 CRH
	• Pre-Dental Hygiene	64 CRH
	• Pre-Health Information Management	90 CRH
	• Pre-Medical Technology	61 CRH
• Pre-Occupational Therapy	90 CRH	
• Pre-Physical Therapy	90 CRH	

University of Tennessee Health Science Center	Bachelor of Science in Cytotechnology	
	Bachelor of Science in Dental Hygiene	
	Bachelor of Science in Health Information Management	
	Bachelor of Science in Medical Technology	
	Bachelor of Science in Occupational Therapy	
	Master of Science in Clinical Laboratory Services	
	Master of Science in Physical Therapy	
	Master of Science in Biomedical Sciences	
	Master of Science in Biochemistry	
	Master of Science in Microbiology and Immunology	
	Master of Science in Pathology	
	Master of Science in Pharmacology	
	Master of Science in Physiology	
	Master of Science – Interdisciplinary	
	Master of Science in Biomedical Engineering	
	Master of Science in Health Science Administration	
	Master of Science in Dental Science	
	Master of Science in Pediatric Dentistry	
	Master of Science in Periodontology	
	Master of Science in Forensic Toxicology	
Doctor of Philosophy Anatomy/Neurosciences		
Doctor of Physical Therapy		
Doctor of Physical Therapy Science		

University of Tennessee  
Health Science Center  
(continued)

Doctor of Dental Surgery  
Doctor of Neurosciences  
Doctor of Biochemistry  
Doctor of Microbiology/Immunology  
Doctor of Health Science Administration  
Doctor of Nursing  
Doctor of Pathology  
Doctor of Pharmaceutical Sciences  
Doctor of Medicinal Chemistry  
Doctor of Pharmacology  
Doctor of Physiology

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Notes: 1,296 hours translates into one year. CRH = Credit hour (semester hour). Region has 14 post secondary public institutions and 11 private colleges and universities in close proximity. In addition, there are 35 post-secondary private training institutions in the area.

## **Appendix B: Interview**

**State of the Healthcare Workforce in Northwest Tennessee  
Business and Economic Research Center  
Middle Tennessee State University  
November 10, 2005**

### **Interview of Key Informants**

#### **Healthcare Labor Supply Factors**

1. Based on your experience, has the workforce changed over the past decade in terms of race, ethnicity, gender, educational attainment, disability, and other factors? Do you expect this trend to continue, and if so what implications might this have for the future workforce supply?
2. Which occupational areas in healthcare are currently experiencing the largest shortage, and why do you believe this is the case? In your opinion, what could be done on a regional level to combat this issue?
3. How can the supply of healthcare workers be increased from the existing regional labor pool?

#### **Attractors and Connectors**

1. What is the capacity of the region's educational system to prepare healthcare workers? What deficits—in terms of teacher shortage, low enrollment, etc.—do you see, and how can they be addressed?
2. What are the sources and levels of funding for healthcare education in the region?
3. To what extent are healthcare professionals leaving the field prior to retirement? Why do you think this is the case?
4. How does the performance of other work-related systems such as transportation, childcare, and employee assistance affect the ability of interested and skilled workers to access healthcare employment?
5. What are some other constraints that may affect employment in the healthcare industry?

*Your input is critical in addressing healthcare workforce issues in the region. Thank you for your cooperation!*

## **CHAPTER II:**

### **The State of the Healthcare Workforce: Perspectives of Healthcare Providers**

**The State of the Healthcare Workforce:  
Perspectives of Healthcare Providers**

- I. Introduction
- II. Methodology
- III. Current Workforce Needs and Challenges
- IV. Healthcare Workforce Supply-Side Problems
- V. Healthcare Workforce Demand-Side Issues
- VI. Current Workforce Shortages
- VII. Future Workforce Shortages
- VIII. Factors Affecting Future Shortages
- IX. Conclusion

**Chapter II:  
The State of the Healthcare Workforce:  
Perspectives of Healthcare Providers**

**I. INTRODUCTION**

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This report provides an assessment of the state of the healthcare workforce in northwest Tennessee from the perspectives of healthcare providers.

The rationale for this approach is that healthcare providers are well positioned to reflect on day-to-day issues regarding the healthcare workforce in the region. Any solution to workforce challenges must include employers' assessment of those challenges because they are the ones who will be affected by existing and potential healthcare workforce challenges.

In order to identify healthcare workforce issues, the BERC mailed a questionnaire to healthcare providers asking particularly about their experiences with the current healthcare workforce and factors generating future shortages in the healthcare sector in northwest Tennessee. The survey was also designed to identify healthcare occupations that are expected to be in short supply in the next six to 10 years.

The rest of the report is organized as follows. Section two deals with methodology. Section three summarizes current workforce needs and challenges. Section four provides

an analysis of healthcare workforce supply-side issues. Section five looks at employee benefits available in the healthcare sector. Sections six and seven identify current and future shortages in the healthcare occupations, respectively. Section eight presents a detailed view of the factors that are expected to create future shortages in northwest Tennessee. Section nine provides a brief assessment of the providers' assessment of workforce challenges. Section 10 concludes the report.

## II. METHODOLOGY

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BERC mailed questionnaires to healthcare providers in late June 2005. BERC also initiated key informant interviews between July and August 2005. During these interviews, BERC sought the active cooperation of the major healthcare providers, reminding them of the importance of this study and their participation in this process.

Two hundred seventy-eight individuals representing 244 healthcare providers were identified using two sources: (1) BERC obtained a list of healthcare providers from the ReferenceUSA database, and (2) the Workforce Investment Board for northwest Tennessee compiled a list of healthcare providers from their own database. A merged list of healthcare providers was targeted for this survey. Following is the result:

Total Sample:	278
Total Establishments:	244
Undeliverable:	1
Valid Sample:	277
Completed:	52
Total Response Rate:	18.8%
Establishment Response Rate:	21.3%

As of 2004, healthcare providers in the region employed approximately 6,200 people. Considering the total number of full- and part-time employment reported by the survey responses, the response rate becomes considerably larger. The establishments that

responded to the survey reported 2,193 full-time and part-time jobs. This represents 35.4 percent of healthcare jobs in northwest Tennessee.

Because this is a targeted study that includes only healthcare providers, and because of the low response rate, the BERC reports issues and concerns regarding the healthcare workforce without subjecting them to any statistical analyses. Although many issues are ranked by the frequency of appearance in the surveys, BERC did not use any cut-off frequency number to eliminate issues or concerns mentioned by only one provider. All the data are presented by frequency distribution.

#### IV. CURRENT WORKFORCE NEEDS AND CHALLENGES

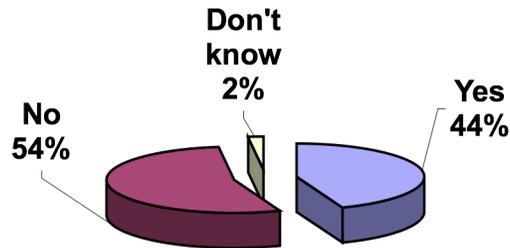
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**Overview.** Healthcare employers are constantly in search of new people to fill positions vacated through turnover, retirement, and expansion. These three factors simultaneously affect day-to-day provision of care in the region. Working conditions and low wages in rural areas increase turnover rate for many occupations. Furthermore, many current professionals are approaching retirement age. The aging population further aggravates this state of healthcare.

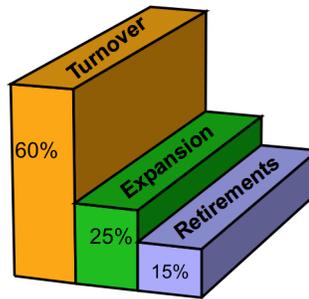
Shortages are prevalent across healthcare sectors, and many employers are having difficulty finding qualified people to fill those shortages. The problem is that these shortages occur in rural areas with a higher than average unemployment rate. BERC asked providers four questions in an effort to understand their hiring needs and workforce challenges.

**Results.** *Is there a need for entry-level healthcare workers?* Healthcare providers we surveyed gave a mixed response to this question. While 54 percent indicated they do not need to hire entry-level healthcare workers, 44 percent expressed the need to hire entry-level healthcare workers.

**Does your company need to hire entry-level healthcare-related workers?**

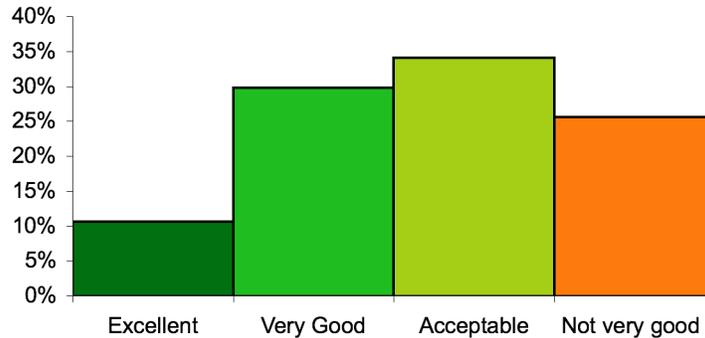


**Are these new hires for expansion, turnover, retirement, or all three?**



*Why are these employers in need of entry-level healthcare workers?* Responses vary, but an overwhelming 60 percent of healthcare providers cited turnover as a primary reason. The second most-cited reason was expansion in healthcare services. Demand for healthcare services has been rising over the years and is expected to increase with more people approaching retirement age. Retirement of the existing workforce constitutes 15 percent of the region's hiring needs. A review of secondary data indicates the average age of current registered nurses is over 45 in Tennessee. Increasingly many healthcare administrators are concerned that, coupled with high turnover and increasing demand for care, a large number of retiring nurses is likely to lead to a systemwide healthcare crisis.

**Compared with your current needs, how do you rate the characteristics of recent hires from the northwest Tennessee labor market?**



*Are the new hires up to the challenge? Do they have the characteristics required to join the healthcare workforce?* Even though the experience of healthcare providers varies by occupation and establishment, in aggregate about 40 percent find the characteristics of new hires to be very good or excellent and one-third find them acceptable. More than one-fourth of employers, however, find new hires’ characteristics not to be very good.

**Characteristics of New Hires by Establishment Size**

	Excellent	Very Good	Acceptable	Not Very Good
100+	0.00%	25.00%	37.50%	37.50%
26-100	0.00%	25.00%	25.00%	50.00%
11-25	22.22%	22.22%	22.22%	33.33%
1-10	11.54%	34.62%	38.46%	15.38%

Characteristics of new hires by establishment size, however, present quite a different picture: many large establishments consider new hires not very good as opposed to the smaller establishments’ favorable experience. This indicates that new hires are not able to demonstrate required aptitudes in an intense patient-care environment, which are the characteristics of these large institutions (hospitals or nursing-care facilities).

*Why do many large healthcare providers find the quality of new hires “not very good”?*

While the reasons vary, we can nevertheless identify three broad categories from the

healthcare providers' responses: lack of availability of workers in the region, personal characteristics of potential workers, and educational background of potential workers.

According to some healthcare providers, rural Tennessee simply does not have a qualified healthcare workforce in certain occupations, ranging from dental assistants to emergency room nurses.

The more critical challenge comes from the personal characteristics of new and potential healthcare workers, according to healthcare providers. Many reported that new hires do not exhibit a strong work ethic, motivation, or a sense of responsibility. Furthermore, some reported that new hires do not understand the importance of the job.

While personal characteristics and lack of qualified workers in certain areas are concerns for some healthcare providers, the educational background of potential workers is seen as a real challenge. Some providers reported that training and education do not match with capabilities and skills required by certain jobs. Finally, a number of providers mentioned that the welfare system is responsible for encouraging some individuals not to work.

#### **Why Are Characteristics of Recent Hires Unacceptable?**

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##### *Lack of Availability*

- There are no applicants for experienced registered nurses for emergency rooms.
- There are no applicants for licensed physical therapy assistants.
- There are shortages of dental hygienists and assistants.

##### *Personal Characteristics*

- New hires have poor work ethic.
- New hires lack responsibility.
- Certified nursing assistants do not show up after a couple of weeks.
- New hires are unwilling or unable to get the concept and importance of job.
- New hires does not have ambition, initiative, and responsibility.

##### *Educational Issues*

- Education certification does not correspond with skills and capabilities.
- Employees with training or experience are unavailable.
- Many have minimum education to be considered for healthcare jobs.

##### *Systemic Issues*

- More benefits are available if new hires do not work.
- 

**Summary.** The need for a larger healthcare workforce is growing in the region. Three factors (turnover, expansion, and retirement) work together to generate these shortages.

However, the quality of potential workforce is questionable. Especially, the lack of critical soft skills and motivation is a workforce challenge that is hard to address in the short run.

#### **IV. BARRIERS TO EMPLOYMENT IN THE HEALTHCARE SECTOR**

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**Overview.** BERC asked healthcare providers to identify what they consider the top three problems related to the healthcare workforce. These problems, which are potential barriers for individuals who are interested in working in the healthcare sector, can be grouped under four major categories: (1) education-related problems, (2) personal characteristics, (3) workplace conditions, and (4) environmental problems.

**Results.** Studies indicated that the educational background of the potential healthcare workforce is an area of concern for many employers. When asked individually, few healthcare employers identified reading, math, and writing skills as a cause for concern for the potential healthcare workforce. Furthermore, language difference was not considered a problem area. However, overall level of education and background skills were cited as a critical area for the potential healthcare workforce: 35 percent of healthcare employers mentioned educational level and training as a big problem area in the region. Overall, more than 50 percent cited educational background of the potential workforce as a concern.

As a personal characteristic, soft skills play a critical role in the employability of the workforce, especially in the patient-care environment. Forty-four percent of healthcare providers stated that soft skills are a big problem in the region.

Environmental factors are sometimes critical for people to be able to take certain jobs. Especially, unemployed single parents are hard-pressed to find and pay for childcare and earn a decent living. Many entry-level jobs simply do not pay enough to cover childcare and other living expenses. Among three factors, childcare, transportation, and housing,

only childcare was cited by healthcare providers as a big concern for many potential healthcare workers.

Finally, workplace conditions that generate high turnover were considered a problem by about 30 percent of healthcare providers.

### How Significant Are the Following Problems?

Problem	Percent of Respondents			
	A big problem	A moderate problem	An issue that should be a concern	Not a concern
<b>Education</b>				
Level of education and training	35%	14%	4%	48%
Language differences	0%	2%	0%	98%
Reading skills of job applicants	2%	2%	8%	88%
Math skills of job applicants	4%	2%	4%	90%
Writing skills of job applicants	8%	2%	6%	84%
<b>Personal Characteristics</b>				
“Soft” skills of job applicants	44%	8%	8%	40%
<b>Environmental Problems</b>				
Availability of transportation for new employees	8%	2%	4%	86%
Availability of housing	0%	0%	0%	100%
Availability of childcare	21%	8%	2%	69%
<b>Workplace Condition</b>				
High turnover	23%	4%	6%	67%

\*Raw totals equal 100.

**Summary.** Education and training, soft skills, childcare, and high turnover were cited as problem areas that healthcare providers encounter when dealing with the potential healthcare workforce. Specific reading, writing, and math skills as well as language differences, transportation, and housing were not seen as major concerns.

## V. WHAT BENEFITS DO HEALTHCARE PROVIDERS OFFER?

**Overview.** Benefits for full-time employees are an important incentive for many individuals to seek employment in certain venues. Especially the increasing cost of healthcare and prescription medicine as well as retirement concerns have made benefits

even more of a concern for many individuals with dependent relatives. Many retail companies, for example, do not pay much or offer such employee benefits as health insurance and retirement plans.

BERC asked healthcare providers to identify what benefits they offer their permanent, full-time employees. The presence of such benefits could make many individuals consider employment in the healthcare sector.

**Results.** Almost 60 percent of healthcare providers indicated they offer medical and dental insurance. More than 65 percent offer defined contribution plans. About one-fourth of employers offer employee benefits not listed in the survey. Almost all employers provide paid vacations and holidays.

**Which of the Following Benefits Do You Offer Your Permanent, Full-Time Employees in the Seven-County Area?**

Employee Benefits	Percent of Providers*
Medical insurance	59.62%
Dental insurance	59.62%
Paid vacations and holidays	98.08%
Company pension	40.38%
Defined contribution plan (401k, SAR, SEP)	65.38%
Childcare subsidies and/or on-site childcare	3.85%
No benefits provided	0.00%
<b>Other (please specify):</b> (Long-term and short-term disability insurance, life insurance, continuing education, uniforms, gain sharing, sick leave, stock options, performance bonuses, vision care, employee discounts)	25.00%

\*Only positive responses are counted. Employers are asked to check all that apply.

**Summary.** Many employers offer a wide range of employee benefits in the healthcare sector. While almost all large employers offer medical insurance, dental insurance, paid vacations and holidays, and a defined contribution plan, only about half of small employers are able to offer similar benefits to their full-time employees. As many studies indicate, childcare for the entry-level healthcare workforce could be a barrier to

employment. About four percent of the healthcare providers indicated they have childcare assistance for full-time employees.

## VI. CURRENT WORKFORCE SHORTAGES

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**Overview.** Shortages in the healthcare sector are not only projected but also current ones healthcare establishments. Knowledge of the range of these occupations is critical if workforce professionals are to develop policies to redirect resources to address labor force dynamics in the region efficiently. Furthermore, comparing vacancies and turnover rates of establishments with those of other occupations in the field provides valuable information about the possible reasons for shortages.

To identify current vacancies and turnover rates in the healthcare, BERC asked the healthcare providers two questions: (1) what three occupations are currently in shortest supply for your company, and (2) how do you compare the turnover rate for each of these occupations with similar ones in your company?

**Results.** Tabulation of the occupations is provided below. The most often cited occupations currently in short supply are registered nurses, dental assistants, certified nursing assistants, and licensed practical nurses. Following these are dental hygienists, physical therapists, medical clinic receptionists, and physicians. The third critical group of occupations in short supply includes therapists (occupational, speech, and recreational), lab technicians, and pharmacists. In addition, healthcare providers mentioned several occupations, ranging from mental health workers to office managers, at least once.

**What Three Healthcare Occupations Are Currently in Shortest Supply for Your Company?**

Healthcare Occupations	Frequency Distribution	
Registered Nurses	16.7%	} <b>Several providers indicated that current shortages in these areas are at critical level.</b>
Registered Dental Assistant	10.8%	
Certified Nursing Assistants	8.8%	
Licensed Practical Nurses	6.9%	
Dental Hygienist	5.9%	
Physical Therapists	5.9%	
Receptionist	5.9%	
Physicians	4.9%	
Speech Therapists	3.9%	
Occupational Therapists	2.9%	
Certified Recreational Therapist	2.9%	
Lab Technicians	2.9%	
Pharmacist	2.9%	
Dentist	1.0%	} <b>At least one provider mentioned that there is a current shortage in one of these occupations.</b>
Histotech	1.0%	
Home Health Aides	1.0%	
Medical Transcriptionist	1.0%	
Mental Health	1.0%	
Patient Care Attendants	1.0%	
Pharmacy Technician	1.0%	
Psychological Technicis	1.0%	
Ultrasound Technicians	1.0%	
Cytotechnologist	1.0%	
Insurance Coders	1.0%	
Licensed Physical Therapy Assistant	1.0%	
Medical Secretaries	1.0%	
Dieticians	1.0%	
Master's Level Counselors	1.0%	
Radiologic Technologists	1.0%	
Billing Staff	1.0%	
Business Personnel	1.0%	
Office Manager	1.0%	

*How does the turnover rate in these occupations compare with that of similar occupations?* Nearly 70 percent of respondents stated their turnover rate is about the same as or lower than that of other occupations in the healthcare sector.

However, this highly aggregated view might substantially gloss over differences among occupations. The following tables present turnover rates for each occupation mentioned by the healthcare providers.

**How Does the Turnover Rate for Each of These Occupations Compare with Other Occupations You Employ?**

Overall Response Percent for All Occupations	
Much Higher	17.71%
Higher	13.54%
About the Same	46.88%
Lower	12.50%
Much Lower	9.38%
Total	100.00%

Providers identified the following occupations from among those they listed in shortest supply as having a higher turnover rate than other healthcare occupations:

- certified nurse aides,
- certified nursing assistants,
- home health aides,
- licensed practical nurses,
- mental health, occupational therapists,
- psychology technicians,
- registered nurses, and
- ultrasound technicians

**How Does the Turnover Rate for Each of These Occupations (from Question 8) Compare with Other Occupations You Employ?**

First Occupations Reported by Employers	Percent of Respondents*				
	Much Higher*	Higher	About the Same	Lower	Much Lower
Certified Nurse Aides	50%	50%			
Certified Nursing Assistants	75%		25%		
Dental Hygienist			66%	33%	
Home Health Aides		100%			
Licensed Practical Nurses		100%			
Medical Transcriptionist			100%		
Mental Health	100%				
Occupational Therapists		100%			
Patient Care Attendants			100%		
Pharmacy Technician			100%		
Physical Therapists		20%	20%	60%	
Physicians	33%		66%		
Psychology Technicians	100%				
Receptionist	33%		66%		
Registered Dental Assistant			75%	25%	
Registered Nurses	34%	17%		34%	17%
Ultrasound Technicians		100%			

\*Row percentages equal to 100. Percentages DO NOT REFLECT all healthcare providers' opinions but only show the percent of those providers who indicated the level of turnover for a given occupation.

Providers identified only a few of the occupations listed in second shortest supply as having a higher than average turnover rate: medical secretaries, and speech therapists.

**How Does the Turnover Rate for Each of These occupations (from question 8) Compare with Other Occupations You Employ?**

<b>Second Occupations Reported by Employers</b>	<b>Much Higher*</b>	<b>Higher</b>	<b>About the Same</b>	<b>Lower</b>	<b>Much Lower</b>
Certified Recreational Therapist			50%	50%	
Dental Hygienist		33%	66%		
Insurance Coders				100%	
Lab Personnel			50%		50%
Licensed Practical Nurses		29%	43%	29%	
Licensed Physical Therapy Assistants			100%		
Medical Secretaries		100%			
Occupational Therapists			100%		
Pharmacist					100%
Physical Therapists			100%		
Physicians			100%		
Registered Dental Assistant		40%	60%		
Registered Nurses			83%	17%	
Speech Therapists		50%	50%		

\*Row percentages equal to 100. Percentages DO NOT REFLECT all healthcare providers' opinions but only show the percent of those providers who indicated the level of turnover for a given occupation.

**How Does the Turnover Rate for Each of These Occupations (from question 8) Compare with Other Occupations You Employ?**

<b>Third Occupations Reported by Employers</b>	<b>Much Higher*</b>	<b>Higher</b>	<b>About the Same</b>	<b>Lower</b>	<b>Much Lower</b>
Billing Staff			100%		
Business Personnel			100%		
Certified Nursing Assistants			100%		
Dieticians	100%				
Master's Level Counselors		100%			
Medical Technicians			100%		
Office Manager					100%
Pharmacist			100%		
Radiologic Technologists				100%	
Receptionist		33%	33%	33%	
Recreational Therapist		100%			
Registered Nurses		50%		25%	25%
Speech Therapists			100%		

\*Row percentages equal to 100. Percentages DO NOT REFLECT all healthcare providers' opinions but only show percent of those providers who indicated the level of turnover for a given occupation.

Providers also identified only a few of the occupations they reported to be third shortest in supply as having a higher than average turnover rate: dietitians, master's level counselors, recreational therapists, and registered nurses.

**Summary.** Healthcare providers reported a substantial number of occupations currently in short supply in the region, implying that an individual going through training in the specified areas has no problem finding a job in the healthcare sector in the region.

Turnover rates in certain occupations are higher than in other occupations in the healthcare sector. The above tables show noticeable differences in responses for the same occupations, reflecting the particular experience and priority of given establishments with respect to current shortages. In other words, a registered nurse in a small-clinic setting is highly stable, but the same is not true for one in a nursing-care facility.

## VII. FUTURE WORKFORCE SHORTAGES

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**Overview.** The healthcare sector presents one of the few growth opportunities in rural northwest Tennessee. It has potential for growth but also faces many challenges, one of which is the workforce. As indicated above, many employers report current vacancies throughout the healthcare sector, which, combined with projected shortages, are likely to place a great strain the region's healthcare sector, workforce centers, and educational institutions. It is critical to develop careful planning through input and cooperation from healthcare providers to maximize local benefits of the growth potential in the healthcare industry.

BERC asked healthcare providers to identify three occupations expected to be in short supply during the next six to 10 years. The healthcare providers mentioned repeatedly nearly 20 occupations that are projected to grow, which can be grouped under five categories: (1) nursing, (2) therapy, (3) professional, (4) dental, and (5) other.

**Which Three Healthcare Occupations Employed in Your Company Do You Believe Will Be in Shortest Supply, on Average, During the Next Six to 10 Years?**

Occupations	Frequency Distribution	
Registered Nurses	16.96%	} <b>These are the occupations expected to be in critical shortages during the next six to 10 years.</b>
Licensed Practical Nurses	9.82%	
Certified Dental Assistants	8.04%	
Physical Therapists	7.14%	
Certified Nursing Assistants	6.25%	
Dental Hygienist	6.25%	
Physicians	6.25%	
Occupational Therapists	5.36%	
Speech Therapists	4.46%	
Lab Technicians	3.57%	
Medical Assistants	2.68%	
Pharmacist	2.68%	
Insurance Coders -Transcriptionists	2.68%	
Dentist	1.79%	
Radiologic Technologists	1.79%	
Receptionist	1.79%	
Business - Insurance Clerks	1.79%	
Master's Level Therapists	1.79%	
<hr/>		
Histotechnician	0.89%	} <b>At least one provoder indicated that these occupations are expected to be in short supply during the next six to 10 years.</b>
Home Health Aides	0.89%	
Medical Manager	0.89%	
Patient Care Attendants	0.89%	
Psychology Technicians	0.89%	
Cytotechnologist	0.89%	
Operating Room Technicians	0.89%	
Pharmacy Technician	0.89%	
Computer Operators	0.89%	
Dietician	0.89%	

In addition to critical shortages, 10 other occupations were cited by at least one provider as having projected shortages.

**Summary.** Considering the range of occupations projected to be in short supply, there is ample room for policy intervention to increase the local preparedness of the workforce for these occupations. Some of the occupations, such as physician specialists, dentists, and pharmacists, do not have short-term local solutions, but many other occupations' shortages could be solved locally with cooperation among different stakeholders.

## VIII. FACTORS AFFECTING FUTURE SHORTAGES

**Overview.** Many possible reasons exist for shortages in certain occupations. Knowledge of why shortages exist in some occupations but not others could help healthcare workforce professionals determine the range of policy actions needed to solve the problem.

BERC asked the healthcare providers to identify a set of factors affecting shortages for a given occupation and suggested the following as possible responses: aging population, retirement, poor working conditions, lack of training facilities, lack of educators, low pay/inadequate benefits, and misperception about the occupations. There was also an open-ended question for employers to provide additional comments.

**Percent of Those Respondents Citing Aging Population as Reason for Shortages**

Projected Occupations*	Critical	Very Important	Somewhat Important	Not Important
Registered Nurses	42.86%	28.57%	14.29%	14.29%
Licensed Practical Nurses	40.00%		40.00%	20.00%
Certified Nursing Assistants	50.00%	16.67%	16.67%	16.67%
Dental Hygienist	40.00%	40.00%		20.00%
Physician	66.67%			33.33%
Business - Insurance Clerks	100.00%			
Medical Assistants	50.00%			50.00%
Occupational Therapists	20.00%	20.00%	20.00%	40.00%
Pharmacist	33.33%	66.67%		
Physical Therapists	14.29%	42.86%	28.57%	14.29%
Radiologic Technologists	50.00%		50.00%	
Registered Dental Assistant	33.33%	66.67%		
Speech Therapists	25.00%		50.00%	25.00%
Dieticians	100.00%			
Certified Dental Assistants		50.00%		50.00%
Histotechnician				100.00%
Home Health Aides			100.00%	
Lab Technicians			50.00%	50.00%
Patient Care Attendants			100.00%	
Receptionist				100.00%
Cytotechnologist				100.00%
Pharmacy Technician		100.00%		
Master's Level Therapists				100.00%
Insurance Coders -Transcriptionists		100.00%		
Operating Room Techs		100.00%		

\*Ranking is based on the frequency of providers citing the reason as critical.

**Results. Aging population.** Aging population is expected to critically affect many healthcare shortages. At the top of the list are three nursing occupations. With an already shrinking pipeline of new workers due to credentialing requirements, the supply of therapists will also be extremely strained by increasing demand. One solution would be to focus on training licensed physical therapy assistants to meet demand.

*Retirement.* As the population ages, so does the current healthcare workforce. Many healthcare professionals will soon be approaching retirement. According to providers, the most affected professions will be registered nurses, physicians, licensed practical nurses, pharmacists, radiology technicians, and dieticians.

**Percent of Those Respondents Saying Retirement Is Reason for Shortages**

<b>Projected Occupations*</b>	<b>Critical</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>
Physician	100.00%			
Licensed Practical Nurses	40.00%	20.00%		40.00%
Certified Nursing Assistants	20.00%			80.00%
Dental Hygienist	20.00%		40.00%	40.00%
Pharmacist	50.00%		50.00%	
Radiologic Technologists	50.00%		50.00%	
Registered Dental Assistant	25.00%		50.00%	25.00%
Registered Nurses	10.00%	50.00%	20.00%	20.00%
Business - Insurance Clerks	100.00%			
Dieticians	100.00%			
Certified Dental Assistants				100.00%
Histotechnician				100.00%
Home Health Aides				100.00%
Lab Technicians			50.00%	50.00%
Medical Assistants				100.00%
Occupational Therapists		25.00%	25.00%	50.00%
Patient Care Attendants			100.00%	
Physical Therapists		16.67%	50.00%	33.33%
Receptionist				100.00%
Speech Therapists		25.00%	25.00%	50.00%
Cytotechnologist				100.00%
Master's Level Therapists				100.00%
Insurance Coders - Transcriptionists		50.00%		50.00%
Operating Room Techs				100.00%

\*Ranking is based on the frequency of providers citing the reason as critical.

*Poor working conditions.* The healthcare workforce studies and field interviews suggest that poor working conditions and lack of resultant job satisfaction are primary reasons for high turnover rates in certain occupations. During the interviews throughout northwest Tennessee, professionals suggested that, in certain occupations, working conditions are driving people out of the healthcare workforce. However, many also acknowledged that working conditions now are a lot better than 10 to 15 years ago.

Survey results indicate only three occupations cited frequently as having shortages due to poor working conditions: physicians, pharmacists, and, at a moderate level, registered nurses.

**Percent of Those Respondents Citing Poor Working Conditions As Reason for Shortages**

<b>Projected Occupations*</b>	<b>Critical</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>
Registered Nurses	36.36%		9.09%	54.55%
Physician	66.67%			33.33%
Certified Nursing Assistants	20.00%	20.00%		60.00%
Licensed Practical Nurses	20.00%	20.00%		60.00%
Occupational Therapists	25.00%			75.00%
Pharmacist	50.00%			50.00%
Certified Dental Assistants				100.00%
Dental Hygienist				100.00%
Histotechnician				100.00%
Home Health Aides				100.00%
Lab Technicians			33.00%	66.00%
Medical Assistants				100.00%
Patient Care Attendants			100.00%	
Physical Therapists			16.67%	83.33%
Radiologic Technologists				100.00%
Receptionist				100.00%
Registered Dental Assistant				100.00%
Speech Therapists			25.00%	75.00%
Cytotechnologist				100.00%
Master's Level Therapists				100.00%
Business - Insurance Clerks				100.00%
Insurance Coders - Transcriptionists				100.00%
Operating Room Techs				100.00%
Dieticians		100.00%		

\*Ranking is based on the frequency of providers citing the reason as critical.

*Low wages/inadequate benefits.* Northwest Tennessee counties are rural and substantially poorer than other Tennessee counties. Wages and benefits are much lower than in nearby metropolitan areas. This has a big impact on the healthcare workforce since professionals migrate to major urban areas for higher-paying job opportunities and urban amenities.

Not so surprisingly, many healthcare providers cited this as a reason for shortages in many occupations, especially the three cited most frequently, all in nursing. The pay issue for certified nursing assistants has a different dynamic than for registered nurses: low pay for certified nursing assistants is driving them out of the profession rather than out of the region.

**Percent of Those Respondents Citing Low Wages/Inadequate Benefits As Reason for Shortages**

<b>Projected Occupations*</b>	<b>Critical</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>
Registered Nurses	33.33%	8.33%	16.67%	41.67%
Certified Nursing Assistants	50.00%		50.00%	
Licensed Practical Nurses	50.00%	16.67%	16.67%	16.67%
Physician	75.00%			25.00%
Occupational Therapists	40.00%	20.00%		40.00%
Receptionist	66.00%			33.00%
Certified Dental Assistants	33.00%			66.00%
Dental Hygienist	20.00%		20.00%	60.00%
Dentist	100.00%			
Lab Technicians	33.00%		33.00%	33.00%
Medical Manager	100.00%			
Patient Care Attendants	100.00%			
Pharmacist	33.00%		33.00%	33.00%
Physical Therapists	14.29%	14.29%	14.29%	57.14%
Registered Dental Assistant	25.00%	25.00%		50.00%
Operating Room Techs	100.00%			
Dieticians	100.00%			
Histotechnician			100.00%	
Home Health Aides		100.00%		
Medical Assistants			50.00%	50.00%
Radiologic Technologists				100.00%
Speech Therapists		25.00%	25.00%	50.00%
Cytotechnologist		100.00%		
Master's Level Therapists				100.00%
Business - Insurance Clerks				100.00%
Insurance Coders - Transcriptionists		50.00%		50.00%

\*Ranking is based on the frequency of providers citing the reason as critical.

*Lack of training facilities and educators.* There was an overwhelming response to these questions by healthcare providers. Many healthcare providers cited lack of training facilities as a critical factor in projected shortages of therapists (physical, occupational, speech, in order of importance) as well as other healthcare occupations. Similarly, a lack of educators was cited as a reason for many shortages, sending a strong message to the educational community to address certain (if not all) aspects of the problem. Nursing, therapy, and dental occupations are projected to have shortages because of the lack of educators.

**Percent of Those Respondents Citing Lack of Training Facilities as Reason for Shortages**

<b>Projected Occupations*</b>	<b>Critical</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>
Registered Nurses	41.67%		25.00%	33.33%
Occupational Therapists	80.00%	20.00%		
Physical Therapists	66.67%	16.67%		16.67%
Speech Therapists	80.00%	20.00%		
Certified Nursing Assistants	50.00%	16.67%		33.33%
Dental Hygienist	60.00%	40.00%		
Registered Dental Assistant	60.00%	20.00%	20.00%	
Licensed Practical Nurses	40.00%		20.00%	40.00%
Medical Assistants	66.00%		33.00%	
Insurance Coders - Transcriptionists	66.00%		33.00%	
Certified Dental Assistants	33.00%	66.00%		
Histotechnician	100.00%			
Lab Technicians	50.00%			50.00%
Pharmacist	50.00%	50.00%		
Physician	50.00%			50.00%
Business - Insurance Clerks	50.00%			50.00%
Operating Room Techs	100.00%			
Dieticians	100.00%			
Dentist				100.00%
Home Health Aides				100.00%
Patient Care Attendants				100.00%
Radiologic Technologists				100.00%
Receptionist				100.00%
Cytotechnologist			100.00%	
Pharmacy Technician		100.00%		
Master's Level Therapists			100.00%	

\*Ranking is based on the frequency of providers citing the reason as critical.

**Percent of Those Respondents Citing Lack of Educators as Reason for Shortages**

<b>Projected Occupations*</b>	<b>Critical</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>
Registered Nurses	45.45%	9.09%	27.27%	18.18%
Physical Therapists	66.67%		16.67%	16.67%
Dental Hygienist	75.00%	25.00%		
Occupational Therapists	75.00%		25.00%	
Speech Therapists	75.00%		25.00%	
Certified Nursing Assistants	40.00%		20.00%	40.00%
Licensed Practical Nurses	40.00%		20.00%	40.00%
Medical Assistants	66.00%			33.00%
Certified Dental Assistants	50.00%		50.00%	
Lab Technicians	50.00%			50.00%
Pharmacist	50.00%	50.00%		
Physician	50.00%		50.00%	
Registered Dental Assistant	25.00%	50.00%	25.00%	
Business - Insurance Clerks	50.00%			50.00%
Dieticians	100.00%			
Dentist			100.00%	
Histotechnician				100.00%
Home Health Aides				100.00%
Patient Care Attendants				100.00%
Radiologic Technologists				100.00%
Receptionist				100.00%
Cytotechnologist				100.00%
Pharmacy Technician		100.00%		
Master's Level Therapists			100.00%	
Insurance Coders - Transcriptionists		50.00%	50.00%	
Operating Room Techs			100.00%	

\*Ranking is based on the frequency of providers citing the reason as critical.

*Misperceptions about healthcare occupations.* Many healthcare providers cited nursing occupations as in short supply because of misperceptions of these occupations, with registered nurse, certified nursing assistant, and licensed practical nurse topping the list.

**Percent of Those Respondents Citing Misperception about Occupation  
as Reason for Shortages**

<b>Projected Occupations*</b>	<b>Critical</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>
Licensed Practical Nurses	66.67%			33.33%
Certified Nursing Assistants	50.00%	16.67%	16.67%	16.67%
Registered Nurses	30.00%	20.00%	10.00%	40.00%
Medical Assistants	50.00%			50.00%
Occupational Therapists	25.00%		25.00%	50.00%
Patient Care Attendants	100.00%			
Physician	50.00%	50.00%		
Psychology Technicians	100.00%			
Registered Dental Assistant	25.00%	25.00%	50.00%	
Insurance Coders--Transcriptionists	33.00%	66.00%		
Operating Room Techs	100.00%			
Dieticians	100.00%			
Certified Dental Assistants		50.00%	50.00%	
Dental Hygienist			100.00%	
Histotechnician		100.00%		
Home Health Aides				100.00%
Lab Technicians				100.00%
Pharmacist			100.00%	
Physical Therapists			33.33%	66.67%
Radiologic Technologists				100.00%
Receptionist				100.00%
Speech Therapists			50.00%	50.00%
Cytotechnologist		100.00%		
Master's Level Therapists				100.00%

\*Ranking is based on the frequency of providers citing the reason as critical.

*Other reasons for shortages.* Certain occupations are expected to be short supply for the following employer-defined reasons: job difficulty, limited enrollment, lack of experience, not qualified because of educational background, pay discrimination, rural environment, years of education required to complete a degree, and cost of education. The following table presents the results.

### Other Reasons for Expected Shortages in Certain Occupations

Projected Occupations	Difficult job	Lack of experience	Limited class enrollment	Not qualified (education)	Pay discrimination	Rural environment	Years of education	Cost of education
Lab Technicians						√		
Licensed Practical Nurses		√				√		
Medical Assistants	√							
Radiologic Technologists			√					
Receptionist				√				
Registered Nurses				√	√	√		
Pharmacy Physical Therapists					√		√	√
Insurance Specialists	√							
Master's Level Therapists						√		
Speech Therapists					√			

**Summary.** There are many reasons for shortages, some of which can be manipulated through policy intervention. However, some others (aging population) are immune to policy interventions. The following matrix presents a comprehensive view of factors critically affecting shortages in certain occupations.

**A Matrix for Critical Reasons for Expected Occupational Shortages  
in Northwest Tennessee**

<b>Projected Occupations</b>	<b>Aging population (demand)</b>	<b>Retirement (your company)</b>	<b>Poor working conditions</b>	<b>Low wages / Inadequate benefits</b>	<b>Lack of training facilities</b>	<b>Not enough educators</b>	<b>Misperceptions about occupation (no interest)</b>
Registered Nurses	√	√	√	√	√	√	√
Occupational Therapists			√	√	√	√	
Physical Therapists	√				√	√	
Speech Therapists					√	√	
Certified Nursing Assistants	√		√	√	√		√
Dental Hygienist	√				√	√	
Registered Dental Assistant	√			√	√	√	√
Licensed Practical Nurses		√	√	√			√
Medical Assistants	√				√	√	√
Insurance Coders - Transcriptionists	√	√		√	√	√	√
Certified Dental Assistants	√				√	√	√
Histotechnician					√		√
Lab Technicians					√	√	
Pharmacist	√	√	√		√	√	
Physician	√	√		√	√	√	√
Business - Insurance Clerks	√	√	√		√	√	√
Operating Room Techs	√			√	√		√
Dieticians	√	√	√	√	√	√	√
Dentist				√			
Home Health Aides				√			
Patient Care Attendants				√			√
Receptionist				√			
Cytotechnologist				√			√
Pharmacy Technician					√	√	

**IX. CONCLUSION**

This report summarized healthcare providers’ responses to the workforce challenges in northwest Tennessee. Based on employers’ responses, it is fair to say that the healthcare industry in northwest Tennessee has substantial growth potential as well as local healthcare workforce challenges. The critical question then is how to make use of the

existing unemployed labor force as well as youth to fill both existing and projected vacancies. At this juncture, cooperation among different stakeholders (workforce boards, higher education institutions, chambers, healthcare providers, and other associations) is essential.

It is not our goal to analyze the motivation of each stakeholder in dealing with workforce shortages. It might be in the short-term best interests of healthcare providers to find a solution to an impending healthcare crisis due to shortages, as many of them described it, individually. However, in the end, without a cooperative regional solution, all will be facing the classic “tragedy of the commons.”

**CHAPTER III:**  
**Healthcare Workforce Supply and Demand in Northwest Tennessee**

## **Healthcare Workforce Supply and Demand in Northwest Tennessee**

- I. Introduction
- II. Methodology
- III. Summary of Factors Affecting Healthcare Workforce Demand
- IV. Summary of Factors Affecting Healthcare Workforce Supply
- V. Healthcare Workforce Supply and Demand
  - a. Nursing
  - b. Pharmacy
  - c. Therapy
  - d. Dental
  - e. Laboratory Personnel
  - f. Health Information
  - g. Imaging and Technology
  - h. Other Practitioners
  - i. Entry-Level Healthcare Occupations
- VI. Conclusion
- VII. Appendix

**CHAPTER III:**  
**Healthcare Workforce Supply and Demand in Northwest Tennessee**

**I. INTRODUCTION**

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This report highlights the extent of these shortages in northwest Tennessee by occupational categories and is organized as follows. Section two deals with methodology. Sections three and four summarize the factors

affecting healthcare workforce demand and supply in the region. Section five provides a detailed assessment of healthcare workforce supply and demand in northwest Tennessee by nine occupational categories: nursing, pharmacy, therapy, dental, laboratory, health information, imaging and technology, other practitioners, and entry-level healthcare occupations. Section six concludes the report.

## II. METHODOLOGY

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Specific information about healthcare workforce supply and demand is not readily available for many regions. The latest employment by occupation projection includes estimates for 2002 and projections for 2012.<sup>1</sup> The three-year-old data, while quite useful for providing information about the overall trend, fall short of addressing current healthcare workforce problems. Many baby boomers will reach retirement age after 2015, so, for policy considerations, employment projections for 2015

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<sup>1</sup> See Tennessee Department of Labor and Workforce Development, Employment Security Security and Research and Statistics divisions.

have provided critical knowledge for workforce planning activities.

This report will therefore present estimates for occupational employment for 2004-2005 and employment projections for 2015 for the selected healthcare occupations.

*Estimated employment by type of job opening.* Employment by occupations is estimated using current employment, current vacancies, projected vacancies due to replacement, projected vacancies due to new additions (growth), and total projected employment.

*Estimated current employment.* This reflects estimates for current employment by healthcare occupation at healthcare establishments in northwest Tennessee.

*Current estimated vacancies.* Current estimated vacancies or shortages are the estimated budgeted openings by occupation not filled by qualified healthcare professionals as of 2004-2005.

*Projected vacancies due to replacement.* This category reflects openings by occupation due to retirement and turnover.

*Projected vacancies due to new additions.* This category reflects growth in employment by occupational category over the years because of the increasing demand for healthcare services.

*Total projected employment by occupation.* This category reflects estimated employment by occupation in 2015. It is the sum of base year estimated employment (2005) and projected vacancies due to new additions (growth).

***Method of estimation.*** Having a reliable data source for estimations and projections is critical for an analysis of healthcare workforce demand and supply. The BERC utilized multiple sources of data to arrive at final estimates and projections for healthcare occupations.

*Survey data.* BERC surveyed healthcare establishments in the region regarding current employment, current vacancies,

projected vacancies due to replacement, and projected vacancies due to new additions (see survey instrument in appendix).

This is the primary source of information for the BERC's projections. However, the BERC supplemented the survey data with additional data from other sources due to the low response rate to the survey (21 percent of establishments and 35 percent of jobs are represented in the survey).

*Tennessee Department of Health Joint Hospital Survey Data 2004.* Every year the Tennessee Department of Health administers a hospital survey for information about patient origin, finances, current occupational employment, and current budgeted vacancies by occupation. The BERC obtained survey data from the Tennessee Department of Health and used this data to complement the BERC's survey data.

*Occupational employment projections.* The BERC used the Tennessee Department of Labor and Workforce Development's occupational employment projections data for the region as a

framework for current employment estimates. These estimates and projections cover the period between 2002 and 2012.

*ES202 Data.* The BERC used the Quarterly Census of Employment and Wages (QCEW, commonly known as ES202) data to generate current employment estimates and occupation by employment ratios for allied health occupations. This database is a cooperative product of the Bureau of Labor Statistics of the U.S. Department of Labor and state employment security agencies.

*Census data.* Census data for ~~occupational~~ employment by age is used as an input into the calculations of projected vacancies due to replacement in 2015. The census data for the closest area (Shelby County) is used as a proxy for the age profile of current healthcare workforce by occupation.

***Problems and issues.*** Two critical data issues require special treatment. First, calculation of vacancies by replacement in the healthcare industry includes two components: (1) retirement of the healthcare workforce and (2) turnover.

- (1) The retiring healthcare workforce is calculated using survey and census data for Shelby County. Population projections indicate that the share of retirement age (65 and over) population will be substantially larger in northwest Tennessee than in Shelby County. Many studies indicate that the aging population is one of the main reasons for increasing demand for healthcare services. Therefore, the BERC's estimates using Shelby County Census data are very conservative.<sup>2</sup>
- (2) The turnover rate for healthcare occupations is hard to calculate properly considering different interpretations of the concept. National studies indicate that healthcare occupations have a higher turnover rate than other occupations. However, the concept of turnover has three different meanings depending on the unit of analysis and geographical scope.
  - a. Turnover from an establishment's perspective means employees in certain occupations changing employers

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<sup>2</sup> According to population projections, the share of seniors in the total population will be five percentage points higher in northwest Tennessee (16 percent) than in Shelby County (11 percent) in 2015.

framework for current employment estimates. These estimates and projections cover the period between 2002 and 2012.

*ES202 Data.* The BERC used the Quarterly Census of Employment and Wages (QCEW, commonly known as ES202) data to generate current employment estimates and occupation by employment ratios for allied health occupations. This database is a cooperative product of the Bureau of Labor Statistics of the U.S. Department of Labor and state employment security agencies.

*Census data.* Census data ([www.census.gov](http://www.census.gov)) for occupational employment by age is used as an input into the calculations of projected vacancies due to replacement in 2015. The census data for the closest area (Shelby County) is used as a proxy for the age profile of current healthcare workforce by occupation.

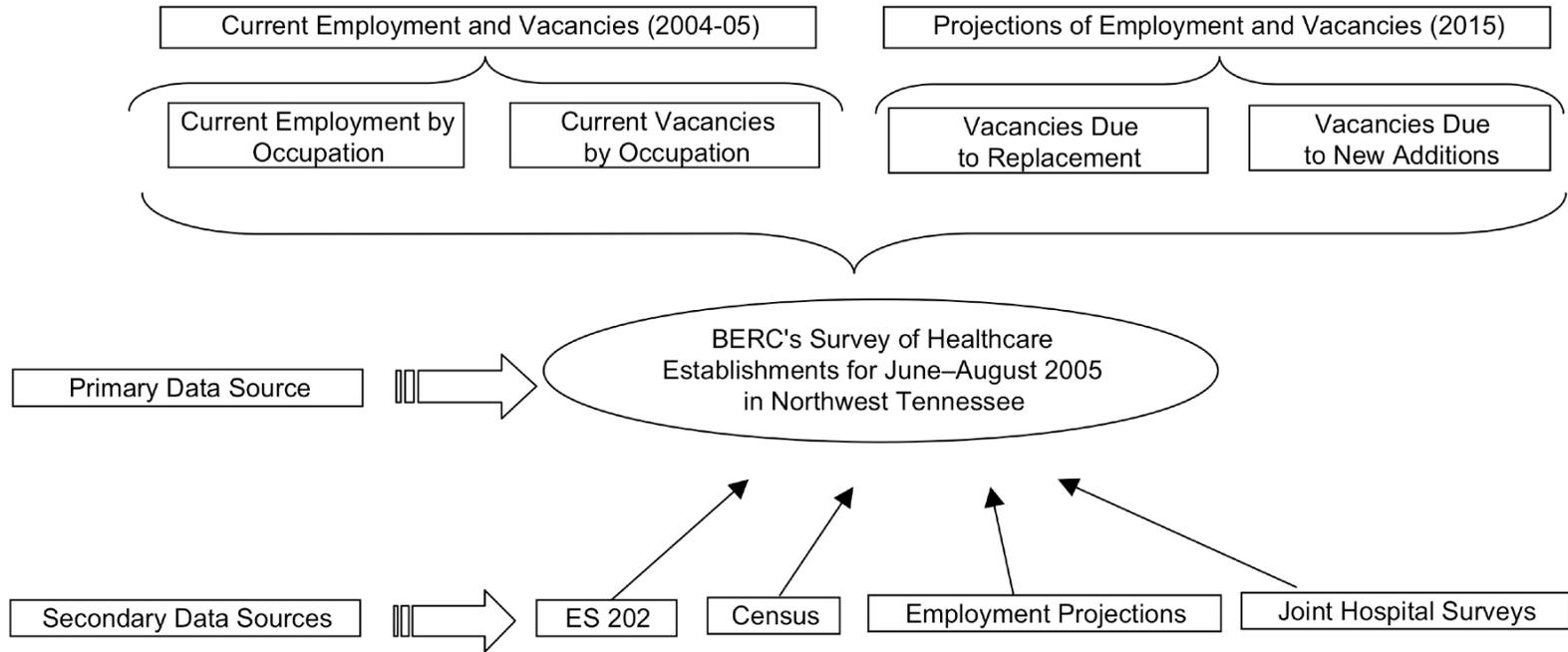
***Problems and issues.*** Two critical data issues require special treatment. First, calculation of vacancies by replacement in the healthcare industry includes two components: (1) retirement of the healthcare workforce and (2) turnover.

- (1) The retiring healthcare workforce is calculated using survey and census data for Shelby County. Population projections indicate that the share of retirement age (65 and over) population will be substantially larger in northwest Tennessee than in Shelby County. Many studies indicate that the aging population is one of the main reasons for increasing demand for healthcare services. Therefore, the BERC's estimates using Shelby County Census data are very conservative.<sup>2</sup>
- (2) The turnover rate for healthcare occupations is hard to calculate properly considering different interpretations of the concept. National studies indicate that healthcare occupations have a higher turnover rate than other occupations. However, the concept of turnover has three different meanings depending on the unit of analysis and geographical scope.
  - a. Turnover from an establishment's perspective means employees in certain occupations changing employers

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<sup>2</sup> According to population projections, the share of seniors in the total population will be five percentage points higher in northwest Tennessee (16 percent) than in Shelby County (11 percent) in 2015.

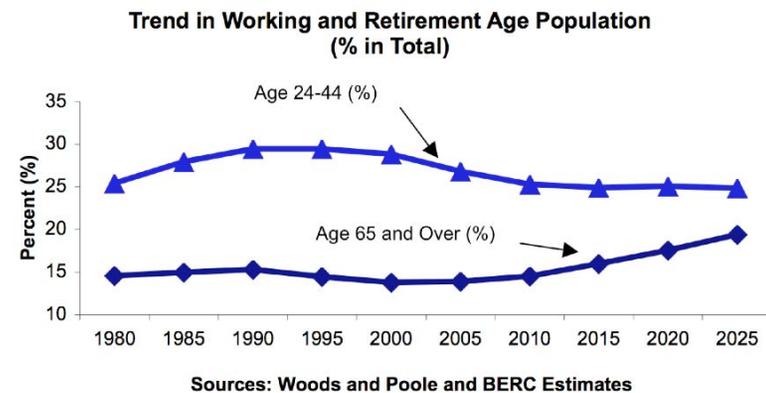
### Northwest Tennessee Healthcare Occupations: Current Estimates and Future Projections (2015)



### III. SUMMARY OF FACTORS AFFECTING DEMAND FOR HEALTHCARE WORKFORCE

The previous two reports discussed various issues affecting demand for healthcare workers in northwest Tennessee. To summarize briefly, baby boomer demographics, lifestyle issues, new diseases, knowledge about health issues, and the fact that people are getting sicker and living longer, thereby requiring more healthcare services.

The most important issue is the increase in the aging population requiring healthcare services from healthcare establishments and the decline in the working age population who could provide care for the elderly. The chart at right demonstrates the trend in both retirement and working age population over the years.



According to the chart, the percent of retirement age population is projected to increase substantially, especially after 2015, reflecting changing population dynamics in northwest Tennessee. A gradual decline in the share of working age population, age 24-44, is also visible. It is expected that the increasingly aging population will dramatically increase the demand for healthcare services, especially in long-term care facilities.

#### IV. SUMMARY OF FACTORS AFFECTING HEALTHCARE WORKFORCE SUPPLY

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While the demand for healthcare workforce increases in response to growth in demand for healthcare services, the healthcare workforce supply is not keeping pace with demand. Furthermore, the increasing cost of healthcare and reimbursement issues are reinforcing healthcare providers' cost-cutting measures; therefore many budgeted staffing needs go unfilled. However, the healthcare workforce supply pipeline is also shrinking due to many factors, some of which are summarized below.

- *Interest* in healthcare jobs is declining.
- *Turnover* in the healthcare sector is high because of
  - *low entry-level wages compared to other sectors,*
  - *the difficulty of performing healthcare jobs,*
  - *the inhospitable work environment, and*
  - *the unstable working schedule.*

- *The educational background* of the workforce does not meet entrance requirements for healthcare job training programs.
- *The supply of healthcare educators* is not sufficient in the region to increase the capacity of existing healthcare programs and initiate new ones.
- *Funding* for healthcare workforce training programs is limited.
- *The existing healthcare workforce* is aging.
- *Work ethic* is a big concern, prohibiting a substantial number of workers from taking a healthcare position.
- *Changing credentialing requirements* make it difficult for educational institutions to adapt quickly in response.

While many factors affect the healthcare workforce supply, the demand for healthcare workers is expected to increase dramatically over the next 10 years in northwest Tennessee.

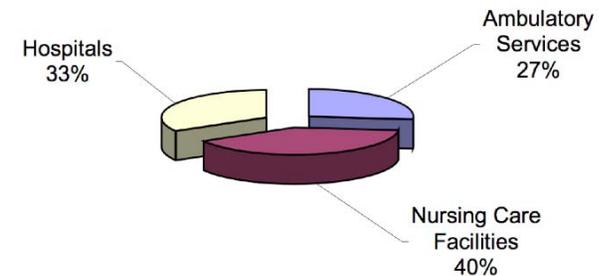
## V. HEALTHCARE WORKFORCE SUPPLY AND DEMAND

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**Overview.** In 2005, healthcare establishments in northwest Tennessee employed an estimated 3,871 healthcare professionals, excluding medical doctors, dentists, and pharmacists. This represents nearly 63 percent of total healthcare sector employment in the region.

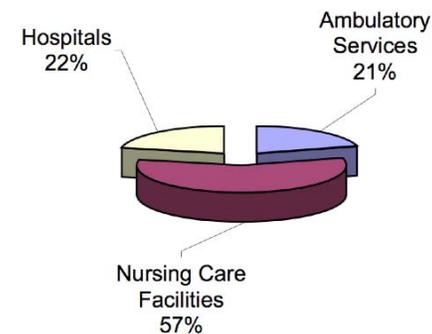
The following chart shows the distribution of employment by healthcare industry segment. Nursing home facilities employ about 40 percent of allied health occupations in northwest Tennessee, hospitals 33 percent, and ambulatory services 27 percent.

**Total Employment of Healthcare Professionals by Industry Segment (%) (2005)**



Similarly, in terms of total current shortages, nursing care facilities are experiencing 57 percent, hospitals 22 percent, and ambulatory services 21 percent.

**Current Shortages by Healthcare Industry Segment (2005)**



**Current and Projected Vacancies in Healthcare Occupations by Healthcare Segment**

Healthcare Segment	Current Employment (2005)	Current Shortages (2005)	Replacement (2015)	New Additions (2015)	Total (2015)
Ambulatory Services	1,036	71	485	409	894
Nursing Care Facilities	1,545	199	386	479	865
Hospitals	1,290	74	208	51	259
Total	3,871	343	1,079	939	2,018

Note: "Total (2015)" column reflects total projected shortages.

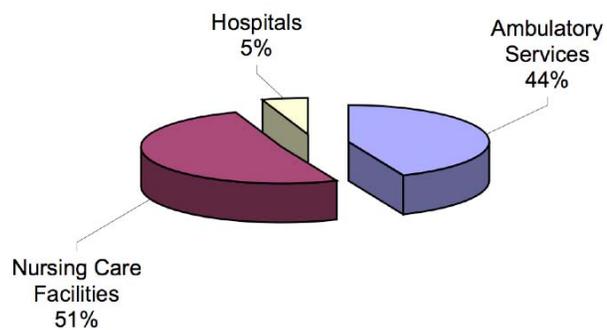
The table above presents an aggregate view of supply and demand for the healthcare workforce in northwest Tennessee. The BERC estimates there are 343 unfilled job openings in northwest Tennessee in 2005, a substantial number of which are in nursing care facilities.

According to BERC projections, 28 percent of current allied health workers will be replaced by the year 2015, a total of 1,079 jobs. Ambulatory services will be affected most (485 jobs), followed by nursing home facilities (386 jobs) and hospitals (208 jobs).

In terms of employment growth, an estimated 939 new jobs will be created by the healthcare sector in northwest Tennessee by 2015. Not surprisingly, nursing care facilities will be the largest segment with a projected job growth of 479 by 2015.

The ambulatory services segment is projected to add 409 allied health jobs in the same time frame. Hospitals will be expected to add only 51 new allied health jobs.

**Distribution of New Allied Health Jobs by Healthcare Industry Segment (%) (2015)**



As the chart at left shows, only five percent of projected job growth in allied health will be in hospitals; a whopping 51 percent will be in nursing care facilities and 44 percent in ambulatory services.

According to BERC projections, between 2005 and 2015, hospital allied health jobs will grow 3.92 percent, nursing care allied health jobs 31.02 percent, and ambulatory services allied health jobs 39.47 percent.

**Top Ten Fastest Growing Allied Health Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Certified Nurse Assistant	786	55	159	174	333	960	22.11	174
Registered Nurse	584	61	120	124	244	707	21.20	124
Licensed Practical Nurses	519	44	136	85	221	604	16.33	85
Dental Assistants	164	16	109	49	158	213	30.00	49
Physical Therapists	137	24	29	45	74	182	33.03	45
Personal and Home Care Aides	27	7	9	34	43	61	128.15	34
Dental Laboratory Technicians	98	11	44	33	76	131	33.33	33
Physical Therapy Assistants	43	15	19	29	48	72	67.65	29
Medical Record and Health Information Technicians	60	1	29	29	57	88	48.05	29
Medical Secretaries	117	5	18	29	46	145	24.58	29
<b>Total</b>	<b>2534</b>	<b>240</b>	<b>671</b>	<b>630</b>	<b>1302</b>	<b>3164</b>	<b>24.87</b>	<b>630</b>

**Top 10 fastest growing allied health occupations.** The table above shows the fastest growing allied health occupations in northwest Tennessee between 2005 and 2015. Occupations are ranked by total numerical changes by 2015. A full list of allied health occupational projections is provided in the appendix.

According to the table, certified nursing assistants, registered nurses, and licensed practical nurses are projected to grow

fastest by 2015. Dental assistants, physical therapists, and personal and home care aides rank fourth, fifth, and sixth. The other four fastest growing occupations are dental laboratory technicians, physical therapy assistants, medical record and health information technicians, and medical secretaries.

These 10 occupations represent 65 percent of total projected vacancies (replacement and new additions) in 2015.

**Projected Nursing Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Registered Nurses	584	61	120	124	244	707	21.20	124
Licensed Practical Nurses	519	44	136	85	221	604	16.33	85
Clinical Nurse Specialists	23	0	23	23	46	46	100.00	23
<b>Total</b>	<b>1,126</b>	<b>105</b>	<b>279</b>	<b>232</b>	<b>511</b>	<b>1,358</b>	<b>20.57</b>	<b>232</b>

**V.a. Projected Nursing Occupations**

- **Registered Nurses**
- **Licensed Practical Nurses**
- **Clinical Nurse Specialists**

*Registered nurses (RNs).* An estimated 584 registered nurses are employed in the region. There are 61 current estimated vacancies for registered nurses across healthcare establishments. A projected total of 244 registered nurses are expected to fill 120 jobs vacated by retirement and/or turnover and 124 new jobs in the region.

The number of registered nurses is expected to reach 707 for a 21.20 percent increase by 2015.

*Licensed practical nurses (LPNs).* Area healthcare establishments employ an estimated 519 LPNs with 44 LPN positions unfilled. There are 221 projected LPN jobs, of which 136 are due to replacement and 85 are new additions. Projected employment in 2015 is 604, a 16.33 percent increase from 2005.

*Clinical nurse specialists.* The region has an estimated 23 clinical nurse specialists in 2005 with no vacancy reported.

There are 46 projected vacancies, half due to replacement and half new additions.

Clinical nurse specialists are projected to total 46 in 2015, a 100 percent increase from 2005.

**Projected Pharmacy Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)		Projected Employment and Changes			
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Pharmacy Aides	41	5	0	16	16	58	39.73	16
Pharmacy Technicians	53	5	16	0	16	53	0.00	0
Total	94	11	16	16	33	111	17.37	16

**V.b. Projected Pharmacy Occupations**

Pharmacists are excluded from projections because of their special educational requirements.

*Pharmacy aides.* Healthcare establishments in the region employ an estimated 41 pharmacy aides with five positions unfilled. The total projected vacancies in this occupation are 16 in 2015 due to new additions. Projected employment for pharmacy aides is expected to be 58 (39.73 percent growth).

- **Pharmacy Aides**
- **Pharmacy Technicians**

*Pharmacy technicians.* There are an estimated 53 pharmacy technicians in the region in 2005 with five positions unfilled. The total projected vacancies are 16 due to replacement by 2015.

Projected employment for pharmacy technicians is expected to be 53 without an increase.

### Projected Therapy Occupations in Northwest Tennessee (2005-2015)

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Physical Therapists	137	24	29	45	74	182	33.03	45
Physical Therapy Assistants	43	15	19	29	48	72	67.65	29
Occupational Therapists	33	18	24	25	49	57	76.23	25
Speech Language Pathologists	38	14	22	24	45	61	62.89	24
Respiratory Therapists	32	0	4	12	16	44	37.50	12
Physical Therapy Aides	25	4	5	9	15	35	36.50	9
Occupational Therapy Aides	7	9	14	9	23	16	133.33	9
Licensed Certified Respiratory Therapists	32	0	4	0	4	32	0.00	0
Licensed Registered Respiratory Therapists	32	0	4	0	4	32	0.00	0
Radiation Therapists	8	0	0	0	0	8	0.00	0
Recreational Therapists	4	0	0	0	0	4	0.00	0
<b>Total</b>	<b>391</b>	<b>84</b>	<b>124</b>	<b>153</b>	<b>278</b>	<b>544</b>	<b>39.24</b>	<b>153</b>

### V.c. Projected Therapy Occupations

- Physical Therapists
- Physical Therapy Assistants
- Occupational Therapists
- Speech Language Pathologists
- Respiratory Therapists
- Physical Therapy Aides
- Occupational Therapy Aides
- Licensed Certified Respiratory Therapists
- Licensed Registered Respiratory Therapists
- Radiation Therapists
- Recreational Therapists

*Physical therapists.* The region is estimated to have 137 physical therapists with 24 positions unfilled in 2005. Physical therapy vacancies are projected to total 74 in 2015, of which 29 are due to replacement and 45 are new additions. Total projected physical therapists in 2015 are 182, a 33.03 percent increase from 2005.

*Physical therapy assistants.* Estimated employment for physical therapy assistants in the region is 43 with 15 jobs unfilled in 2005. Projected physical therapy aide vacancies are expected to total 48 in 2015, of which 19 are due to replacement and 29 are new additions. Total projected physical therapy aides in 2015 are 72, a 67.65 percent increase from 2005.

*Occupational therapists.* The healthcare sector in the region employs 33 occupational therapists in 2005 with 18 unfilled positions. Vacancies for this occupation are expected to be 49 in 2015, 24 due to replacement and 25 new additions. Total projected employment for occupational therapists in 2015 is 57, a 76.23 percent increase from 2005.

*Speech language pathologists.* There are an estimated 38 speech language pathologists with 14 current vacancies in 2005. Vacancies in the next 10 years are expected to be 45, 22 replacements and 23 new additions.<sup>3</sup> The projected employment in 2015 is 61, a 62.89 percent increase from 2005.

*Respiratory therapists.* The estimated current employment is 32 in 2005. The total projected vacancies for 2005 are 16 with 4 replacements and 12 new additions. The estimated employment in 2015 is 44, a 37.5 percent increase from 2005.

*Physical therapy aides.* The estimated current employment is 25 with four current vacancies in 2005. There are expected to be 15 vacancies in this occupation in 2015, five replacements and 10 new additions. The total employment for physical therapy aides is projected to be 35, a 36.5 percent increase from 2005.

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<sup>3</sup> The slight differences in numbers in certain occupations are due to the rounding of full-time equivalent employment. Therefore, the total vacancies column might include a slightly different number than the rounded sum of the replacements and new additions columns.

*Occupational therapy aides.* The region has seven occupational therapy aides with nine budgeted current vacancies. Total projected vacancies for this occupation in 2015 are 23 with 14 replacements and nine new additions. Total estimated employment for occupational therapy aides in 2015 is 16, a 133.3 percent increase from 2005.

*Other therapy occupations.* Licensed certified respiratory therapists, licensed registered respiratory therapists, radiation therapists, and recreational therapists are not projected to have large vacancies by 2015. Respiratory therapists are expected to have a total of eight vacancies due to replacement.

**V.d. Projected Dental Occupations**

- **Dental Assistants**
- **Dental Laboratory Technicians**
- **Dental Hygienists**

**Projected Dental Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Dental Assistants	164	16	109	49	158	213	30.00	49
Dental Lab Technicians	98	11	44	33	76	131	33.33	33
Dental Hygienists	109	0	38	27	65	136	25.00	27
<b>Total</b>	<b>371</b>	<b>27</b>	<b>191</b>	<b>109</b>	<b>300</b>	<b>480</b>	<b>29.41</b>	<b>109</b>

*Dental assistants.* The estimated employment for dental assistants in northwest Tennessee is 164 with 16 vacancies in 2005. The projected vacancies are 158 in 2015 with 109 replacements and 49 new additions. The estimated employment for dental assistants is 213, a 30 percent increase by 2015.

*Dental laboratory technicians.* The total of estimated dental laboratory technicians is 98 with 11 vacancies in 2005. The

projected vacancies for this occupation are 76 with 44 replacements and 32 new additions. Estimated total employment in 2015 is 131, a 33.33 percent increase from 2005.

*Dental hygienists.* This occupation has an estimated current 109 jobs with 65 projected vacancies in 2015. Estimated employment for 2015 is 136, a 25 percent increase from 2005.

#### **V.e. Laboratory Personnel Occupations**

- **Phlebotomists**
- **Medical Appliance Technicians**

*Phlebotomists.* The estimated employment for phlebotomists is 21 in 2005. Eighteen vacancies for this occupation are expected in 2015, consisting of two replacements and 16 new additions. The estimated total employment for phlebotomists is 37 in 2015 with 77.71 percent increase from 2005.

- **Medical Equipment Preparers**
- **Medical and Clinic Laboratory Technicians**
- **Medical and Clinical Laboratory Technologists**

*Other laboratory personnel occupations.* Medical equipment preparers, medical and clinical laboratory technicians, and technologists have two current vacancies and 26 projected vacancies due to replacement. Medical appliance technicians are not expected to have any vacancies.

**Projected Laboratory Personnel Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)		Projected Employment and Changes			
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Phlebotomists	21	0	2	16	18	37	77.71	16
Medical Appliance Technicians	28	0	0	0	0	28	0.00	0
Medical Equipment Preparers	27	0	11	0	11	27	0.00	0
Medical and Clinical Laboratory Technicians	30	1	7	0	7	30	0.00	0
Medical and Clinical Laboratory Technologists	50	1	8	0	8	50	0.00	0
<b>Total</b>	<b>157</b>	<b>3</b>	<b>27</b>	<b>16</b>	<b>44</b>	<b>173</b>	<b>10.41</b>	<b>16</b>

**V.f. Medical Record and Health Information Occupations**

- **Medical Records and Health Information Technicians**

*Medical record and health information technicians.* The current estimated employment for this occupation is 60 with one vacancy. There are 57 projected vacancies for 2015 (29 replacements and 29 new additions). Employment in 2015 is expected to be 88, a 48.05 percent increase from 2005.

- **Medical Secretaries**
- **Medical and Health Services Managers**
- **Medical Transcriptionists**

*Medical secretaries.* The estimated current employment is 117 with five current vacancies. Vacancies are expected to be 46 with 18 replacements and 29 new additions. The projected total employment is 145, a 24.58 percent increase from 2005.

*Medical and health services managers.* The estimated employment for this occupation is 79. The projected vacancies are 53 (31 replacements and 22 new additions). The 2015 projected total employment for medical and health services managers is 100, a 27.73 percent increase from 2005.

*Medical transcriptionists.* The estimated employment for this occupation is 73 in 2005. There are no projected vacancies for medical transcriptionists by 2015.

**Projected Medical Records and Health Information Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Medical Record and Health Information Technicians	60	1	29	29	57	88	48.05	29
Medical Secretaries	117	5	18	29	46	145	24.58	29
Medical and Health Service Managers	79	0	31	22	53	100	27.73	22
Medical Transcriptionists	73	0	0	0	0	73	0.00	0
<b>Total</b>	<b>327</b>	<b>7</b>	<b>78</b>	<b>79</b>	<b>157</b>	<b>407</b>	<b>24.17</b>	<b>79</b>

**Projected Imaging and Technology Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Radiologic Technologists and Technicians	108	0	0	21	21	130	19.76	21
Diagnostic Medical Sonographers	17	0	3	8	12	25	50.00	8
Cardiovascular Technologists and Technicians	5	0	0	0	0	5	0.00	0
Nuclear Medicine Technologists	7	0	1	0	1	7	0.00	0
<b>Total</b>	<b>137</b>	<b>0</b>	<b>4</b>	<b>30</b>	<b>34</b>	<b>167</b>	<b>21.87</b>	<b>30</b>

**V.g. Imaging and Technology Occupations**

- **Radiologic Technologists and Technicians**

*Radiologic technologists and technicians.* The estimated employment for this occupation in 2005 is 108. The projected vacancies for 2015 are 21, all new additions. The estimated total employment for 2015 is 130, a 19.76 percent increase from 2005.

- **Diagnostic Medical Sonographers**
- **Cardiovascular Technologist and Technicians**
- **Nuclear Medicine Technologists**

*Diagnostic medical sonographers.* The estimated current employment is 17. Twelve vacancies are projected with three replacements and eight new additions. The projected total employment for 2015 is 25, a 50 percent increase from 2005.

*Cardiovascular technologists and technicians.* Estimated employment for this occupation in the region is five in 2005. No vacancies are projected for 2015.

*Nuclear medicine technologists.* Estimated current employment is seven in the region. There is one projected vacancy due to replacement.

**V.h. Other Allied Health Practitioners**

- **Dietitians/Nutritionists**
- **Dietetic Technicians**
- **Emergency Medical Technicians and Paramedics**
- **Physician Assistants**
- **Surgical Technologists**
- **Psychiatric Aides**
- **Psychiatric Technicians**

**Projected Other Allied Health Professional Occupations in Northwest Tennessee (2005-2015)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Dietitians / Nutritionists	48	0	18	14	32	61	28.75	14
Dietetic Technicians	51	0	11	0	11	51	0.00	0
Emergency Medical Technicians and Paramedics	60	0	1	0	1	60	0.00	0
Physician Assistants	16	0	0	16	16	33	100.00	16
Surgical Technologists	35	0	4	16	21	51	46.79	16
Psychiatric Aides	0	0	0	0	0	0	0.00	0
Psychiatric Technicians	17	0	4	0	4	17	0.00	0
<b>Total</b>	<b>227</b>	<b>0</b>	<b>39</b>	<b>46</b>	<b>85</b>	<b>273</b>	<b>20.46</b>	<b>46</b>

*Dietitians/nutritionists.* The estimated current employment is 48. This occupation is expected to have 32 vacancies by 2015 (18 replacements and 14 new additions).

The projected total employment for this occupation is 61 for 2015, a 28.75 percent increase from 2005.

*Dietetic technicians.* An estimated 51 people are employed in this occupation in 2005. The projected vacancies for 2015 are 11, all replacements.

*Emergency medical technicians and paramedics.* The estimated employment figure for this occupation is 60 in 2005. The 2015 projected vacancy is one replacement.

*Physician assistants.* Estimated current employment in the region is 16. For 2015, there are 16 projected vacancies, all new additions, and estimated total employment is 33, a 100 percent increase from 2005.

*Surgical technologists.* The estimated employment in 2005 is 35. The projected employment in 2015 is 51, a 46.79 percent increase from 2005, with 21 projected vacancies.

*Psychiatric aides and technicians.* The region does not have any psychiatric aides in 2005. There are an estimated 17 psychiatric technicians in the region. There are four projected vacancies for technicians, all replacements.

### V.i. Entry-Level Healthcare Occupations

- Certified Nurse Assistants
- Personal and Home Care Aides
- Home Health Aides
- Nursing Aides, Orderlies and Attendants, Excluding CNAs

#### Projected Entry-Level Healthcare Occupations in Northwest Tennessee (2005-2015)

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Certified Nurse Assistant	786	55	159	174	333	960	22.11	174
Personal and Home Care Aides	27	7	9	34	43	61	128.15	34
Home Health Aides	56	14	29	25	54	81	44.59	25
Nursing Aides, Orderlies and Attendants, Excluding CNAs	133	31	120	23	144	156	17.47	23
<b>Total</b>	<b>1,002</b>	<b>107</b>	<b>318</b>	<b>256</b>	<b>574</b>	<b>1,258</b>	<b>25.59</b>	<b>256</b>

*Certified nurse assistants (CNAs).* This occupation has the largest current estimated employment, 786, in 2005. There are 55 current estimated vacancies. There are 333 projected vacancies for CNAs in 2015 (159 replacements and 174 new additions). Total estimated employment in 2015 will be 960, a 22.11 percent increase from 2005.

*Personal and home care aides.* The estimated employment for is 27 in 2005 with seven vacancies. There are 43 projected vacancies for 2015 (nine replacements and 34 new additions). Employment in 2015 is expected to total 61, a 128.15 percent increase from 2015.

*Home health aides.* Estimated current employment is 56 with 14 budgeted vacancies. There are 54 projected vacancies for 2015 with 29 replacements and 25 new additions. Estimated total employment for 2015 is 81, a 44.59 percent increase from 2005.

*Nursing aides, orderlies and attendants, excluding CNAs.* Estimated total employment in 2005 is 133 with 31 current vacancies. This occupation is projected to have 144 vacancies in 2015 (120 replacements and 23 new additions). Projected total employment is expected to be 156 in 2015, a 17.47 percent increase from 2005.

## **VI. CONCLUSION**

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Northwest Tennessee is expected to experience substantial shortages in the healthcare sector. Current estimated vacancies alone are substantial at 343 across healthcare professions. In the next 10 years, nearly 1,100 jobs are expected to be vacant due to either retirement or turnover. Similarly, more than 900 new jobs will be created in the region's healthcare sector across occupations. Considering these vacancies, workforce education and training should be a critical component of workforce policies in northwest Tennessee.

## VII. APPENDIX

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### VII.1. Aging Healthcare Workforce

#### Age of the Selected Healthcare Occupations (Shelby County-2000)

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	Percent of Individuals Age 50 and over in 2000
Physician Assistants	47.70%
Licensed Practical and Licensed Vocational Nurses	27.20%
Nursing, Psychiatric, and Home Health Aides	26.10%
Therapists, All Other	23.30%
Medical and Health Services Managers	23.10%
Clinical Laboratory Technologists and Technicians	22.60%
Dietitians and Nutritionists	22.00%
Diagnostic Related Technologists and Technicians	18.60%
Registered Nurses	18.50%
Dental Hygienists	14.90%
Speech-Language Pathologists	14.60%
Dental Assistants	13.30%
Occupational Therapists	12.30%
Respiratory Therapists	11.60%
Physical Therapists	8.70%
Emergency Medical Technicians and Paramedics	1.60%
Physical Therapist Assistants and Aides	0.00%
Radiation Therapists	0.00%

## VII.2. All Projected Allied Health Occupations in Northwest Tennessee (2005-2015)

### Projected Allied Health Occupations in Northwest Tennessee (2005-2015)

	Estimated Employment		Projected Vacancies (2015)		Projected Employment and Changes			
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Certified Nurse Assistant	786	55	159	174	333	960	22.11	174
Registered Nurse	584	61	120	124	244	707	21.20	124
Licensed Practical Nurses	519	44	136	85	221	604	16.33	85
Dental Assistants	164	16	109	49	158	213	30.00	49
Physical Therapists	137	24	29	45	74	182	33.03	45
Personal and Home Care Aides	27	7	9	34	43	61	128.15	34
Dental Laboratory Technicians	98	11	44	33	76	131	33.33	33
Physical Therapy Assistants	43	15	19	29	48	72	67.65	29
Medical Record and Health Information Technicians	60	1	29	29	57	88	48.05	29
Medical Secretaries	117	5	18	29	46	145	24.58	29
Dental Hygienists	109	0	38	27	65	136	25.00	27
Home Health Aides	56	14	29	25	54	81	44.59	25
Occupational Therapists	33	18	24	25	49	57	76.23	25
Speech Language Pathologists	38	14	22	24	45	61	62.89	24
Clinical Nurse Specialists	23	0	23	23	46	46	100.00	23
Nursing Aides, Orderlies and Attendants, excluding CNAs	133	31	120	23	144	156	17.47	23
Medical and Health Service Managers	79	0	31	22	53	100	27.73	22
Radiologic Technologists and Technicians	108	0	0	21	21	130	19.76	21
Pharmacy Aides	41	5	0	16	16	58	39.73	16
Physician Assistants	16	0	0	16	16	33	100.00	16
Surgical Technologists	35	0	4	16	21	51	46.79	16
Phlebotomists	21	0	2	16	18	37	77.71	16
Dietitians / Nutritionists	48	0	18	14	32	61	28.75	14

**Projected Allied Health Occupations in Northwest Tennessee (2005-2015) (continued)**

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-15)	Numerical Change (2005-15)
Respiratory Therapists	32	0	4	12	16	44	37.50	12
Physical Therapy Aides	25	4	5	9	15	35	36.50	9
Occupational Therapy Aides	7	9	14	9	23	16	133.33	9
Diagnostic Medical Sonographers	17	0	3	8	12	25	50.00	8
Licensed Certified Respiratory Therapists	32	0	4	0	4	32	0.00	0
Licensed Registered Respiratory Therapists	32	0	4	0	4	32	0.00	0
Radiation Therapists	8	0	0	0	0	8	0.00	0
Recreational Therapists	4	0	0	0	0	4	0.00	0
Cardiovascular Technologists and Technicians	5	0	0	0	0	5	0.00	0
Dietetic Technicians	51	0	11	0	11	51	0.00	0
Emergency Medical Technicians and Paramedics	60	0	1	0	1	60	0.00	0
Medical Appliance Technicians	28	0	0	0	0	28	0.00	0
Medical Equipment Preparers	27	0	11	0	11	27	0.00	0
Medical Transcriptionists	73	0	0	0	0	73	0.00	0
Nuclear Medicine Technologists	7	0	1	0	1	7	0.00	0
Pharmacy Technicians	53	5	16	0	16	53	0.00	0
Psychiatric Aides	0	0	0	0	0	0	0.00	0
Psychiatric Technicians	17	0	4	0	4	17	0.00	0
Respiratory Therapy Technicians	38	0	2	0	2	38	0.00	0
Medical and Clinical Laboratory Technicians	30	1	7	0	7	30	0.00	0
Medical and Clinical Laboratory Technologists	50	1	8	0	8	50	0.00	0
<b>Total</b>	<b>3871</b>	<b>343</b>	<b>1079</b>	<b>939</b>	<b>2018</b>	<b>4809</b>	<b>24.25</b>	<b>939</b>

**CHAPTER IV:**  
**Career Ladder for Healthcare Occupations  
in Northwest Tennessee**

## **Career Ladder for Healthcare Occupations in Northwest Tennessee**

- I. Introduction
- II. Methodology
- III. Overview of Occupations
  - a. Education
  - b. Course Requirement
  - c. Entry Level Pay
  - d. Training
  - e. Experience
  - f. License and Certification Requirement
  - g. Summary of Requirements
- IV. Career Ladder: Upward and Cross-Mobility
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**CHAPTER IV:  
Career Ladder for Healthcare Occupations  
in Northwest Tennessee**

**INTRODUCTION**

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A career ladder is a way to inform both the workforce and workforce professionals about future opportunities in a given occupational cluster. It is also one way to promote local solutions to healthcare workforce shortages in northwest Tennessee. When used with public awareness programs, a career ladder becomes an effective tool for providing the healthcare industry with a steady supply of healthcare workers.

Shortages are prevalent across the healthcare industry in the U.S. Current as well as projected shortages require a systematic approach, especially in rural areas. The healthcare industry in northwest Tennessee has substantial current shortages, which are projected to increase dramatically over the next 10 years in response to both supply and demand side factors.

The reasons for shortages are many, but two prominent ones are misperceptions about healthcare occupations and low wages at entry-level occupations. However, knowledge of potential upward mobility within a given occupational cluster and a public awareness campaign for prospective entrants to the healthcare industry workforce

would substantially change workforce supply dynamics. This report provides a comprehensive assessment of healthcare occupations in northwest Tennessee.

The rest of the report is organized as follows: section two deals with methodology. Sections three provides an overview of occupations by education, experience, training, pay rate, course requirement, and certification requirement. Section four provides detailed descriptions of occupations by occupational cluster. Section five includes appendices regarding healthcare occupations and survey materials.

## II. METHODOLOGY

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There are many sources of information about specific occupations. At the national level, *Occupational Handbook for Industries* is a comprehensive guide for a large number of occupations.<sup>1</sup> Furthermore, each state maintains a database of a comprehensive set of occupations and their characteristics.<sup>2</sup> However, some of the major characteristics of healthcare occupations have been shaped by the local labor market dynamics. Thus, the state and national level characteristics are not easily applicable to the especially rural areas.

This report will, therefore, present a comprehensive view of healthcare occupations by occupational cluster in northwest Tennessee utilizing BERC healthcare establishment survey and other secondary data sources.

**Goals of this report.** This report answers the following major questions:

1. What do people in each occupation do?
2. What does it take to enter a program for a given occupation?
3. What is the educational requirement?
4. What is the entry-level pay rate for a given occupation?
5. Is there any required work related experience?

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<sup>1</sup> Occupational Handbook for Industries is a publication of the U.S. Department of Labor, the Bureau of Labor Statistics. Online version is available at [www.bls.gov](http://www.bls.gov).

<sup>2</sup> See Tennessee Department of Labor and Workforce Development, Div Emp Sec, R&S.

6. Is there any special work related training?
7. Is there any certification and/or registration requirement for a given occupation?
8. Which educational institutions offer programs for a given occupation?
9. What happens after starting to work at an healthcare establishment?

*Method of analysis.* The BERC utilized multiple sources of information to construct the healthcare occupational ladder.

*Survey data.* The BERC surveyed healthcare establishments in the region regarding educational requirement, experience requirement, training requirement, background course requirement, entry-level pay rate, and certification requirement (see survey instrument in appendix).

This is the primary sources of information for the BERC analysis of occupational ladder. However, the BERC supplemented survey data with additional information from other sources.

*Tennessee Department of Health.* The Tennessee Department of Health maintains a web-based manpower information database including occupations that require registration and licensing in Tennessee. This information is also available for Tennessee counties.

*Occupational employment projections.* The BERC utilized Tennessee Department of Labor and Workforce Development's occupational employment data for the region as a framework for occupational descriptions.

*Occupational Handbook for Industries (www.bls.gov).* This source provides critical supplemental information to the survey data. This source includes a thorough analysis of each occupation from work description to pay rate.

*Local post-secondary school survey.* The BERC called major universities, colleges, and technology centers to gather information about their healthcare training programs in a

seven-county area and neighboring areas, such as Jackson and Memphis metropolitan areas. For some educational institutions, the BERC performed a web-based search for available programs and consulted the Tennessee Board of Regents (TBR) databases for the TBR member institutions.

### III. OVERVIEW OF THE HEALTHCARE OCCUPATIONS

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This section will highlight important characteristics of the healthcare occupations that are expected to have net growth between 2005 and 2015. The next section will present details on all occupations within an occupational cluster. A total of 27 healthcare occupations is projected to add 939 jobs in northwest Tennessee by 2015. These occupations also account for nearly 94 percent of the projected vacancies due to replacement in the region.

The BERC tabulated all responses to career ladder related questions in part C of the establishment survey (see appendix) regardless of the number of responses for a given category. Therefore, in many categories (i.e., education, course requirement, training), there are multiple marks for a given occupation. The BERC assumes that multiple responses indicate either a trend or preference of healthcare providers as a condition for employment in a given occupation. The responses that are colored indicate the predominant responses by healthcare providers in a given category for an occupation.

The BERC would like to caution the reader that the educational, training, experience, course background, and certification requirements for occupations would be slightly different from the descriptions of the similar occupations by the U.S. Department of Commerce, Bureau of Labor Statistics. This is because the BERC reports the responses of the healthcare providers in the region.

**III.a. Educational requirement.** According to the survey responses, many healthcare occupations that this study emphasizes do not require an advanced degree. While the education requirement for many healthcare occupations is increasing, healthcare establishments indicate the possibility of multiple entry-level educations for many

occupations. Out of 27 growing healthcare occupations in the region, healthcare providers indicated that only seven of them require a Bachelor's degree and above. As this report will highlight later, however, a higher entry-level degree means higher annual salary.

**Educational Requirement Based on Survey Responses of the Region's Healthcare Human Resources Departments (Two Major Responses are Marked, and Grayed Responses have the highest frequency)**

Name	Less Than High School (LHS)	High School (HS)	Vocational School (VS)	Associate Degree (AD)	Bachelor's Degree (BA/BS)	Master's Degree (MA/MS)	Doctoral or Professional Degree (Ph.D.)
Certified Nurse Assistants	✓		✓				
Registered Nurses				✓	✓		
Licensed Practical Nurses			✓	✓			
Dental Assistants		✓	✓				
Physical Therapists					✓		
Personal and Home Care Aides	✓						
Dental Laboratory Technicians			✓				
Physical Therapy Assistants				✓	✓		
Medical Record and Health Information Technicians		✓	✓	✓			
Medical Secretaries		✓	✓				
Dental Hygienists		✓		✓	✓		
Home Health Aides		✓	✓				
Occupational Therapists					✓	✓	✓
Speech Language Pathologists					✓	✓	✓
Clinical Nurse Specialists			✓				
Nursing Aides, Orderlies and Attendants	✓	✓					
Medical and Health Service Managers		✓	✓				
Radiologic Technologists and Technicians		✓		✓	✓		
Pharmacy Aides	✓	✓					
Physician Assistants				✓	✓		
Surgical Technologists		✓	✓	✓			
Phlebotomists		✓	✓				
Dietitians/Nutritionists		✓			✓		
Respiratory Therapists		✓	✓		✓		
Physical Therapy Aides		✓					
Occupational Therapy Aides		✓					
Diagnostic Medical Sonographers				✓	✓		

Notes: Multiple entry level educational requirements are reported by healthcare establishments. This implies three factors about the healthcare occupations in northwest Tennessee: (1) a trend toward more educational requirements for a given occupation, (2) difference in healthcare establishments' hiring practices, and (3) possibility of entry into the healthcare occupation at multiple educational attainment level.

As the above table indicates, many occupations require a high school degree as an entry-level education. Although some healthcare providers indicated that they prefer an entry-level education higher than high school for most occupations, for the majority of them a high school diploma, or at most an associate degree is satisfactory.

**III.b. Course requirement.** Even though many occupations require a high school diploma as a satisfactory entry-level education, students should be prepared in a way that after graduation they become eligible for the healthcare programs for many of the healthcare occupations in the region. The predominant response from healthcare

providers clearly indicates that high school students should take high school level math, statistics, biology, chemistry, and physics courses to become eligible for many programs for healthcare occupations.

According to the table below, healthcare providers consider high school level math and science education as an important precondition to a successful entrance to healthcare workforce. Some healthcare providers, however, indicate that they do not have a strong preference for math and science education: any educational category can be acceptable as long as applicants have the required degree.

**Background Course Requirement for Healthcare Occupations**

	Mathematics / Statistics	Biology, Chemistry, and Physics	Social Studies	Mathematics, Statistics, Biology, Chemistry, and Physics	Any Categories
Certified Nurse Assistants					✓
Registered Nurses		✓		✓	
Licensed Practical Nurses				✓	
Dental Assistants		✓		✓	
Physical Therapists				✓	✓
Personal and Home Care Aides	N/A	N/A	N/A	N/A	N/A
Dental Laboratory Technicians	✓				
Physical Therapy Assistants				✓	
Medical Record and Health Information Technicians					✓
Medical Secretaries					✓
Dental Hygienists				✓	
Home Health Aides					✓
Occupational Therapists				✓	
Speech Language Pathologists					✓
Clinical Nurse Specialists				✓	
Nursing Aides, Orderlies and Attendants					✓
Medical and Health Service Managers					✓
Radiologic Technologists and Technicians				✓	
Pharmacy Aides	N/A	N/A	N/A	N/A	N/A
Physician Assistants				✓	
Surgical Technologists				✓	
Phlebotomists		✓			
Dietitians/Nutritionists				✓	
Respiratory Therapists					✓
Physical Therapy Aides				✓	
Occupational Therapy Aides	N/A	N/A	N/A	N/A	N/A
Diagnostic Medical Sonographers				✓	

Notes: Many healthcare occupations require math and science education at the high school level. Survey respondents predominantly marked both math and science education requirement as a requirement for entering to a post-secondary program for healthcare occupations. In addition, some healthcare providers marked "any categories" as a requirement to enter certain healthcare programs.

**III.c. Entry-level pay.** Entry-level pay changes from one provider to another, and it depends on the specific employer-defined qualifications of the job applicants. The BERC

converts all hourly wages reported by the responders to annual wages based on the following two assumptions: (1) 40 hours per week, and (2) 52 weeks per year.

The healthcare industry consists of a diverse group of establishments. Within the healthcare industry, establishments vie for short-supplied qualified workforce. This competition generates a diverse set of wage structure for a given occupation. Therefore, the BERC reports only average wages by occupation in the region. The table below reports the entry-level wages by occupations that are projected to grow by 2015.

According to the table, the top ten highest paying occupations are occupational therapists, physician assistants, physical therapists, speech language pathologists, dental hygienists, certified nurse specialists, physical therapy assistants, diagnostic medical sonographers, dietitians/nutritionists, and registered nurses.

### **Entry Level Pay for Healthcare Occupations in Northwest Tennessee**

<b>Name</b>	<b>Reported Average Pay</b>	<b>Rank by Average Pay</b>
Certified Nurse Assistants	\$15,520	22
Registered Nurses	\$36,843	10
Licensed Practical Nurses	\$26,024	12
Dental Assistants	\$21,840	15
Physical Therapists	\$59,904	3
Personal and Home Care Aides	\$13,000	26
Dental Laboratory Technicians	\$21,320	16
Physical Therapy Assistants	\$44,424	7
Medical Record and Health Information Technicians	\$16,603	20
Medical Secretaries	\$16,980	18
Dental Hygienists	\$52,416	5
Home Health Aides	\$16,293	21
Occupational Therapists	\$74,636	1
Speech Language Pathologists	\$52,636	4
Clinical Nurse Specialists	\$48,422	6
Nursing Aides, Orderlies and Attendants	\$13,853	25
Medical and Health Service Managers	\$22,187	14
Radiologic Technologists and Technicians	\$25,945	13
Pharmacy Aides	\$12,480	27
Physician Assistants	\$62,400	2
Surgical Technologists	\$20,696	17
Phlebotomists	\$16,605	19
Dietitians/Nutritionists	\$37,007	9
Respiratory Therapists	\$27,581	11
Physical Therapy Aides	\$14,560	23
Occupational Therapy Aides	\$14,560	23
Diagnostic Medical Sonographers	\$42,151	8

Total annual pay is based on the following assumptions: 40 hours/week and 52 weeks/year  
BERC reported estimates from the establishment surveys.

**III.d. Training requirement.** Many healthcare occupations require moderate term clinical training. However, certain occupations that are expected to grow substantially by 2015 require long-term clinical training. Some of these occupations are licensed practical nurses and registered nurses. Few providers reported related work experience as a requirement for certain occupations. According to healthcare providers, the clinical training component is essential for many healthcare occupations.

### Required Training for Healthcare Occupations

Name	Short-Term	Moderate Term	Long-Term	Clinical Training	Related Work Experience
	Training (0-1 Month)	Training (2-12 Months)	Training (More Than 12 Months)		
Certified Nurse Assistants	✓	✓			
Registered Nurses			✓	✓	
Licensed Practical Nurses		✓	✓	✓	
Dental Assistants		✓			
Physical Therapists			✓	✓	
Personal and Home Care Aides	N/A	N/A	N/A	N/A	N/A
Dental Laboratory Technicians		✓			
Physical Therapy Assistants		✓		✓	
Medical Record and Health Information Technicians	✓				✓
Medical Secretaries		✓			
Dental Hygienists		✓		✓	
Home Health Aides		✓			
Occupational Therapists			✓	✓	
Speech Language Pathologists			✓	✓	
Clinical Nurse Specialists		✓		✓	
Nursing Aides, Orderlies and Attendants	✓				
Medical and Health Service Managers		✓			✓
Radiologic Technologists and Technicians		✓		✓	
Pharmacy Aides	N/A	N/A	N/A	N/A	N/A
Physician Assistants			✓	✓	
Surgical Technologists		✓			
Phlebotomists		✓			
Dietitians/Nutritionists			✓	✓	
Respiratory Therapists		✓		✓	
Physical Therapy Aides		✓			✓
Occupational Therapy Aides				✓	
Diagnostic Medical Sonographers		✓		✓	

Notes: Many healthcare providers indicated that the majority of healthcare occupations require moderate level training. Furthermore, they indicated that clinical training is a requirement for many occupations. For some occupations, the multiple training requirements are marked. This indicates the preferences of some healthcare providers as a requirement to offer employment.

**III.e. Experience requirement.** The experience requirement for healthcare occupations varies by establishment. The median experience requirement for many occupations is less than six months or zero. For the fastest growing nursing occupations, the median experience requirement ranges from six months for certified nursing assistant to 12 months for licensed practical nurses and registered nurses. However, some employers indicate that they are willing to hire people holding these nursing and many other healthcare occupations without any experience. The table below presents experience requirement by occupation. Minimum and maximum values indicate some employers' preferences for experience requirement for certain jobs.

### Experience Required for Occupations

Name	Median Reported Experience (Months)	Minimum Years of Experience Reported	Maximum Years of Experience Reported
Certified Nurse Assistants	6 Months	0	5
Registered Nurses	12 Months	0	4
Licensed Practical Nurses	12 Months	0	4
Dental Assistants	12 Months	0	1
Physical Therapists	0 Months	0	5
Personal and Home Care Aides	0 Months	0	0
Dental Laboratory Technicians	0 Months	0	0
Physical Therapy Assistants	0 Months	0	1
Medical Record and Health Information Technicians	6 Months	0	1
Medical Secretaries	0 Months	0	1
Dental Hygienists	6 Months	0	1
Home Health Aides	6 Months	0	1
Occupational Therapists	0 Months	0	1
Speech Language Pathologists	6 Months	0	5
Clinical Nurse Specialists	24 Months	2	2
Nursing Aides, Orderlies and Attendants	6 Months	0	4
Medical and Health Service Managers	12 Months	1	2
Radiologic Technologists and Technicians	12 Months	0	1
Pharmacy Aides	0 Months	0	0
Physician Assistants	0 Months	0	0
Surgical Technologists	6 Months	0	1
Phlebotomists	0 Months	0	0
Dietitians/Nutritionists	12 Months	0	5
Respiratory Therapists	12 Months	1	1
Physical Therapy Aides	12 Months	1	1
Occupational Therapy Aides	0 Months	0	0
Diagnostic Medical Sonographers	6 Months	0	1

Notes: Maximum and minimum experience requirements reflect the healthcare providers' preferences for condition for employment. Some require no experience, but others require substantial experience for certain occupations.

**III.f. Licensing and certification requirement.** Almost all healthcare occupations require licensing and/or certification, as well as registration with state health departments. For many occupations, the licensing and certification process is handled through their respective national associations or state boards of healthcare occupations. A full list of such organizations is provided in the appendix. The healthcare occupations that do not require licensing and/or certification are the ones that are not related to bedside patient care.

### Certification/ Licensing Requirement

Name	YES	NO
Certified Nurse Assistants	✓	
Registered Nurses	✓	
Licensed Practical Nurses	✓	
Dental Assistants	✓	
Physical Therapists	✓	
Personal and Home Care Aides		✓
Dental Laboratory Technicians	✓	
Physical Therapy Assistants	✓	
Medical Record and Health Information Technicians		✓
Medical Secretaries		✓
Dental Hygienists	✓	
Home Health Aides	✓	
Occupational Therapists	✓	
Speech Language Pathologists	✓	
Clinical Nurse Specialists	✓	
Nursing Aides, Orderlies and Attendants		✓
Medical and Health Service Managers		✓
Radiologic Technologists and Technicians	✓	
Pharmacy Aides		✓
Physician Assistants	✓	
Surgical Technologists	✓	✓
Phlebotomists		✓
Dietitians/Nutritionists	✓	
Respiratory Therapists	✓	
Physical Therapy Aides		✓
Occupational Therapy Aides	✓	
Diagnostic Medical Sonographers	✓	
Pharmacy Technicians	✓	

Notes: In some cases, both yes and no are marked by the healthcare providers. This discrepancy may be the reflection of (a) voluntary certification for certain occupations, and (b) willingness of these providers to offer a job to those people having completed the required education and going through certification process.

**III.g. Summary of requirements.** The following table summarizes the requirements for each occupation and average annualized entry-level pay. This table clearly indicates that the increasing educational level is closely associated with an increase in average annualized pay rate.

**Summary Overview of Healthcare Occupations in Northwest Tennessee**

<b>Name</b>	<b>Significant Source of Education</b>	<b>Average Annual Pay</b>	<b>Required Background Education</b>	<b>Length of Training</b>	<b>Certification/Licensing</b>	<b>Median Experience (Months)</b>
Occupational Therapists	BA/BS	\$74,636	MSBCP	LT+CT	YES	0 Months
Physician Assistants	AD	\$62,400	MSBCP	LT+CT	YES	0 Months
Physical Therapists	BA/BS	\$59,904	MSBCP	LT+CT	YES	0 Months
Speech Language Pathologists	MA/MS	\$52,636	ANY	LT+CT	YES	6 Months
Dental Hygienists	BA/BS	\$52,416	MSBCP	MT+CT	YES	6 Months
Clinical Nurse Specialists	MA/MS	\$48,422	MSBCP	MT+CT	YES	24 Months
Physical Therapy Assistants	AD	\$44,424	MSBCP	MT	YES	0 Months
Diagnostic Medical Sonographers	AD	\$42,151	MSBCP	MT+CT	YES	6 Months
Dietitians/Nutritionists	BA/BS	\$37,007	MSBCP	LT+CT	YES	12 Months
Registered Nurses	AD	\$36,843	MSBCP	LT+CT	YES	12 Months
Respiratory Therapists	BA/BS	\$27,581	ANY	MT+CT	YES	12 Months
Licensed Practical Nurses	AD	\$26,024	MSBCP	LT+CT	YES	12 Months
Radiologic Technologists and Technicians	AD	\$25,945	MSBCP	MT+CT	YES	12 Months
Medical and Health Service Managers	HS	\$22,187	ANY	MT+RWE	NO	12 Months
Dental Assistants	VS	\$21,840	BCP	MT	YES	12 Months
Dental Laboratory Technicians	VS	\$21,320	MS	MT	YES	0 Months
Surgical Technologists	VS	\$20,696	MSBCP	MT	YES	6 Months
Medical Secretaries	HS	\$16,980	ANY	MT	NO	0 Months
Phlebotomists	HS	\$16,605	BCP	MT	NO	0 Months
Medical Record and Health Information Technicians	HS	\$16,603	ANY	ST+RWE	NO	6 Months
Home Health Aides	HS	\$16,293	ANY	MT	YES	6 Months
Certified Nurse Assistants	LHS	\$15,520	ANY	ST+MT	YES	6 Months
Physical Therapy Aides	HS	\$14,560	MSBCP	MT+RWE	YES	12 Months
Occupational Therapy Aides	HS	\$14,560	N/A	CT	YES	0 Months
Nursing Aides, Orderlies and Attendants	HS	\$13,853	ANY	ST	NO	6 Months
Personal and Home Care Aides	LHS	\$13,000	N/A	N/A	NO	0 Months
Pharmacy Aides	HS	\$12,480	N/A	N/A	NO	0 Months

<b>Education Legend</b>	<b>Course Background Legend</b>	<b>Training Requirement Legend</b>
LHS = Less Than High School	MSBCP = Math, Statistics, Biology, Chemistry, and Physics	ST = Short Term (0-1 Month)
HS = High School	MS = Math, and Statistics	MT = Moderate Term (2-12 Months)
VS = Vocational School	BCP = Biology, Chemistry, and Physics	LT = Long Term (More Than 12 Months)
AD = Associate Degree	SS = Social Science	CT = Clinical Training
BA/BS = Bachelor's of Arts or Science	ANY = Any of Above Categories	RWE = Related Work Experience
MA/MS = Master of Arts or Science		

**III.h. Institutions offering training for healthcare occupations.** The BERC compiled a detailed list of educational institutions offering training and degree programs for healthcare occupations. The BERC called the local educational institutions several times to confirm the list of programs these institutions are currently offering. Absent from the list is a number of post-secondary private training institutions. The BERC has attempted to contact some of these institutions without success.

One of the fastest growing healthcare occupations is the certified nursing assistant. There are several state approved certified nursing assistant training facilities in the region. The following table presents a list of active certified nursing assistant training facilities in the seven-county area.

**Certified Nursing Assistant Training Facilities in Northwest Tennessee**

<b>County</b>	<b>Institution 1</b>	<b>Institution 2</b>	<b>Institution 3</b>
<b>Crockett</b>	Crockett County High School	Nursing Assistant Training Center	N/A
<b>Dyer</b>	Dyersburg Nursing Manor	Wesley at Dyersburg - Nursing Care	N/A
<b>Gibson</b>	Humboldt manor Nursing Home	Milan High School	NHC Healthcare, Milan
<b>Lake</b>	N/A	N/A	N/A
<b>Lauderdale</b>	Ripley Healthcare and Rehabilitatiton	Ripley High School	Tennessee Technology Center at Ripley
<b>Obion</b>	Union City Manor	N/A	N/A
<b>Tipson</b>	Covington Care Center	Covington Manor Nursing Center	N/A

Source: Tennessee Department of Health

As of 2005, there are 13 active certified nursing assistant training facilities in northwest Tennessee. All counties except Lake County have at least one active training center.

The following tables present a full list of schools and available healthcare programs in the region.

	Tennessee Tech Centers							Commun.			Public		Independent Colleges and Universities												
	Covington	Memphis	Jackson	McKenzie	Newbern	Ripley	Paris	Whiteville	Dyersburg State Community College	Jackson State Community College	Southwest TN Community College	University of Memphis	University of Tennessee at Martin	UT Health Science Center	Baptist College of Health and Sci.	Christian Brothers University	Crichton College	Bethel College	Freed Hardeman University	Lambuth University	Lane College	LeMoyné-Owen College	Rhodes College	Southern College of Optometry	Union University
<b>Nursing</b>																									
Registered Nurse									A	A	AS	M	B	Ph	B	P	P	B		P		P			B
Certified Nurse Assistant		C				C																			
Certified Registered Nurse Anaesthetist																									C
Clinical Nurse Specialist																									
Licensed Practical Nurse	C	C	C	C	C	C	C	C																	
Licensed Practical Nurse - Advanced Standing								P																	
Nurse Aides, Orderlies and Attendants																									
Nurse Midwife																									
Nurse Practitioner																									
<b>Rehabilitation Professions</b>																									
Audiologist												Ph													
Anatomy and Neurosciences														Ph											
Dental Surgery														Ph											
Dietitians/Nutritionists												B	B	M											
Dispensing Opticians																									
Licensed Certified Respiratory Therapists									AS	AS					B										
Licensed Registered Respiratory Therapists																									
Occupational Therapists																									
Optometrists												P			P					P			Ph		
Physical Therapists														Ph											
Radiation Therapists															B										
Recreational Therapists																									
Registered Respiratory Therapists									AS	AS					B										
Speech Language Pathologists												M													

	Tennessee Tech Centers							Commun.			Public		Independent Colleges and Universities													
	Covington	Memphis	Jackson	McKenzie	Newbern	Ripley	Paris	Whiteville	Dyersburg State Community College	Jackson State Community College	Southwest TN Community College	University of Memphis	University of Tennessee at Martin	UT Health Science Center	Baptist College of Health and Sci.	Christian Brothers University	Crichton College	Bethel College	Freed Hardeman University	Lambuth University	Lane College	LeMoyne-Owen College	Rhodes College	Southern College of Optometry	Union University	
<b>Medical Assisting</b>																										
Health Science, General														B												
Medicine, General													P		P					P		P				
Medical Assisting, General		C																								
Allied Health, General									A		A															
Dental Assistant		C																								
Dental Hygienists													P								P					
Dietetic Technicians													AS													
EMTs (1 and 2) and Paramedics									P	C																
Electrocardiography Technician						C																				
Home Health Aides																										
Medical Administrative Assistant											AS															
Med. Record and Health Info. Technicians									AS				P								P					
Medical Appliance Technicians																										
Medical Coding									C																	
Medical Equipment Preparers																										
Medical Secretaries																										
Medical Technologists													P								P					
Medical Transcriptionists									C																	
Nuclear Medicine Technologists																										
Occupational Therapy Assistants													P		B											
Patient Care Technician							C																			
Personal and Home Care Aides																										
Pharmacy, General													P	Ph		P					P					
Pharmacy Aides																										
Pharmacy Technicians		C	C																							
Pharmacology, General																										
Physical Therapy, General													P	M		P					P					
Physical Therapy Aides																										

	Tennessee Tech Centers							Commun.			Public		Independent Colleges and Universities												
	Covington	Memphis	Jackson	McKenzie	Newbern	Ripley	Paris	Whiteville	Dyersburg State Community College	Jackson State Community College	Southwest TN Community College	University of Memphis	University of Tennessee at Martin	UT Health Science Center	Baptist College of Health and Sci.	Christian Brothers University	Crichton College	Bethel College	Freed Hardeman University	Lambuth University	Lane College	LeMoyne-Owen College	Rhodes College	Southern College of Optometry	Union University
Physical Therapy Assistants									A	AS															
Pre-Physician Assistants																		B							
Phlebotomy Technician						C																			
Physician Assistants																		M							
Psychiatric Aides																									
Psychiatric Technicians																									
Physiology, General														Ph											
Respiratory Therapy Technicians									A																
Surgical Technologists and Technicians		C	C				C		C																
Veterinary Technologists and Technicians																									
<b>Medical Imaging</b>																									
Diagnostic Medical Sonographers																		B							
Medical Radiography									C									B							
Radiologic Technologists and Technicians										AS															
<b>Clinical Laboratory Services</b>																									
Clinical Laboratory Services, General															M										
Dentistry, General													P			P				P					
Biochemistry and Molecular Biology														Ph										B	
Biotechnology										AS															
Cytotechnologists													P	B						P					
Dental Laboratory Technicians																									
Medical and Clinical Laboratory Technician									A	AS															
Medical and Clinical Laboratory Technologists																									
Microbiology / Immunology														Ph											
Phlebotomist																									
<b>Medical and Health Service Management</b>																									
Medical and Health Administration												M				B									

- Ph** = Doctorate Program
- M** = Master of Science
- B** = Bachelor of Science
- A** = Associate of Science
- AS** = Associate of Applied Science
- P** = Pre-Professional Program
- C** = Certification Program

#### IV. CAREER LADDER AND UPWARD AND/OR CROSS-MOBILITY

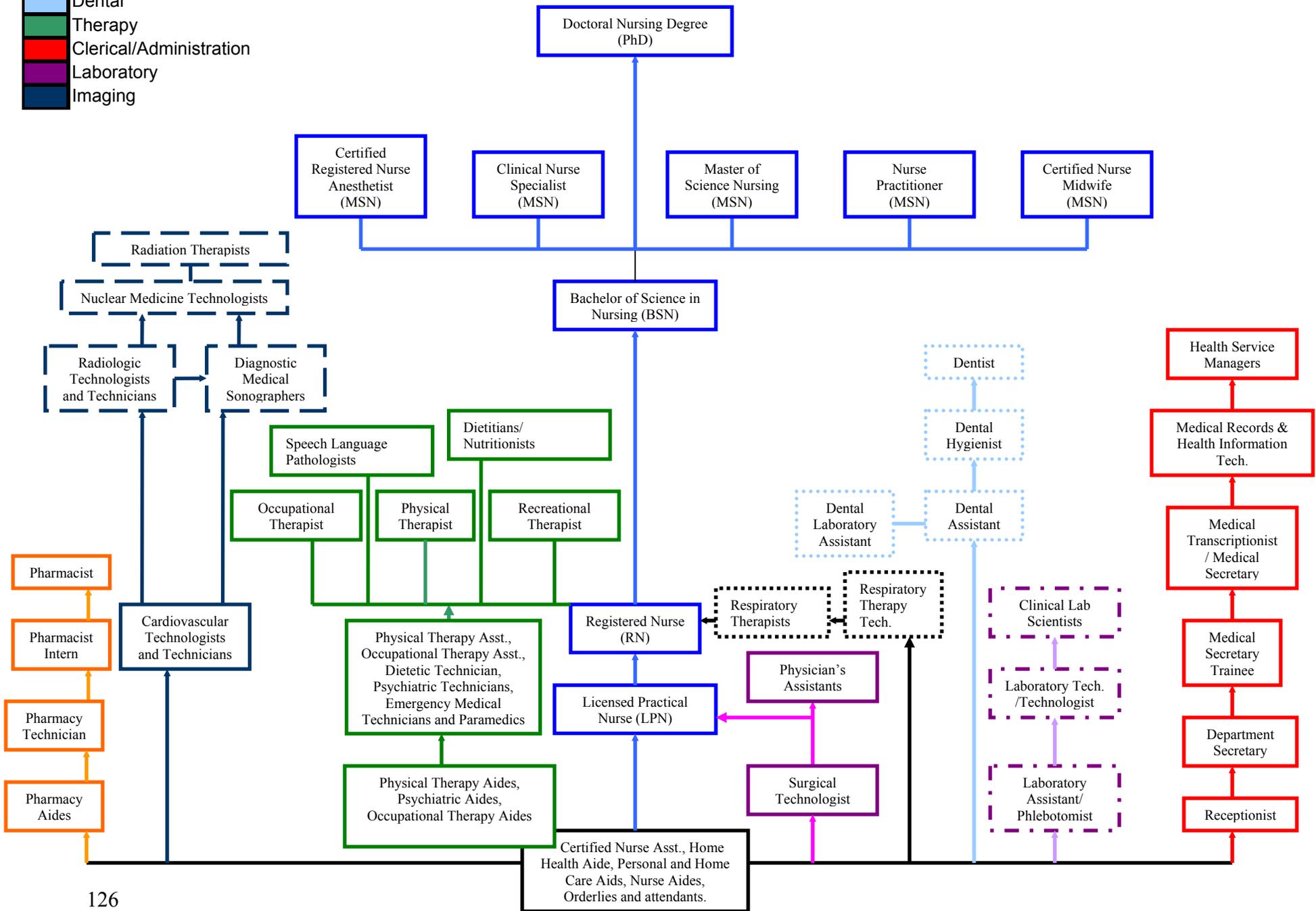
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**Overview.** This section provides a detailed analysis of healthcare occupations in northwest Tennessee. The BERC's detailed analysis focuses only on those healthcare occupations that are projected to have vacancies due to both replacement and new additions (growth). In constructing this occupational ladder, the BERC benefited substantially from healthcare career ladder studies in both Tennessee and other states.<sup>3</sup> These studies provided substantial secondary data for national and state level professional associations and description of occupations. Furthermore, the Tennessee Department of Workforce Development and the U.S. Department of Commerce, Bureau of Labor Statistics publications regarding healthcare occupations are widely consulted as supplemental data sources to the BERC's healthcare career ladder survey in northwest Tennessee. However, in case of discrepancies between primary data (local survey data) and these secondary sources, the BERC reported the findings from the regional healthcare career ladder survey.

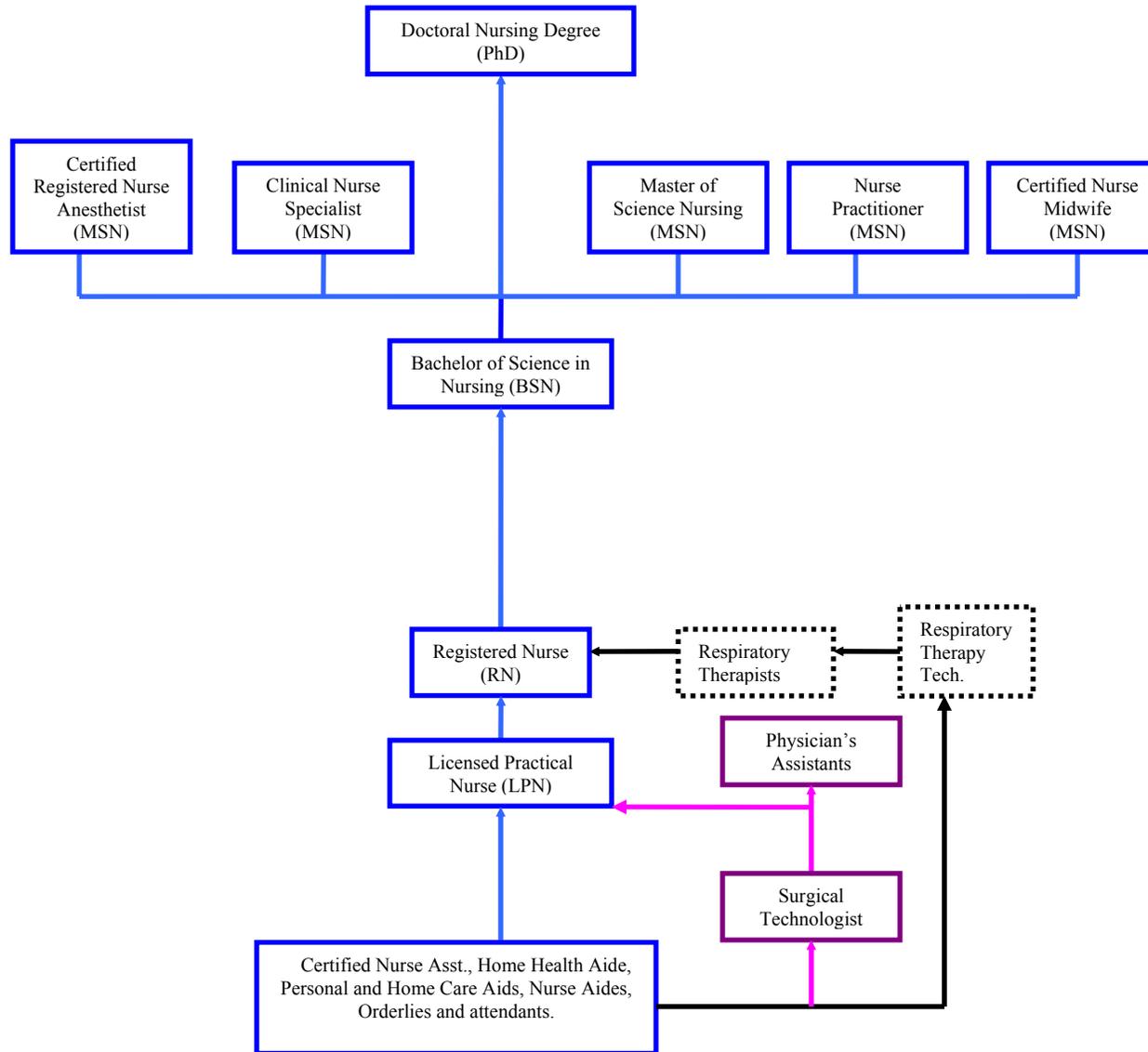
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<sup>3</sup> The BERC benefited from the following two studies to a great extent: *Healthcare Career Map*, 2004 at [www.healthcarecareermap.org](http://www.healthcarecareermap.org), and *The Career Ladder Mapping Project*, 2002 at [www.seiu-uhw.org](http://www.seiu-uhw.org).

- Nursing
- Pharmacy
- Dental
- Therapy
- Clerical/Administration
- Laboratory
- Imaging



## Nursing and Related Occupations Career Tracks



**Nursing Career Cluster and Advancement Paths**

Mobility/ Tracks	Name of Occupations	Significant Source of Education	Average Annual Pay	Required Background Education	Length of Training	Certification/ Licensing	Median Experience (Months)
Level 4	Nurse Anesthetists	MA/MS	\$82,992	MSBCP	LT+CT	YES	60 Months
	Nurse Midwives	MA/MS	\$62,608	MSBCP	LT+CT	YES	24 Months
	Nurse Practitioners	MA/MS	\$62,608	MSBCP	LT+CT	YES	36 Months
Level 3	Clinical Nurse Specialists	MA/MS	\$48,422	MSBCP	MT+CT	YES	24 Months
	Registered Nurses	AD	\$36,843	MSBCP	LT+CT	YES	12 Months
Level 2	Licensed Practical Nurses	VS	\$26,024	MSBCP	LT+CT	YES	12 Months
Level 1A & B Sidetracks	Respiratory Therapists	BA/BS	\$27,581	MSBCP	MT+CT	YES	12 Months
	Respiratory Therapy Technicians	HS	\$23,000	MSBCP	MT+CT	YES	0 Months
	Surgical Technologists	VS	\$20,696	MSBCP	MT	YES	6 Months
	Physician Assistants	AD	\$62,400	MSBCP	LT+CT	YES	0 Months
Level 1	Home Health Aides	HS	\$16,293	ANY	MT	YES	6 Months
	Certified Nurse Assistants	LHS	\$15,520	ANY	ST+MT	YES	6 Months
	Nursing Aides, Orderlies and Attendants	HS	\$13,853	ANY	ST	NO	6 Months
	Personal and Home Care Aides	LHS	\$13,000	N/A	N/A	NO	0 Months
<b>Legends</b>	<b>Education Legend</b>	<b>Course Background Legend</b>		<b>Training Requirement Legend</b>			
	LHS = Less Than High School	MSBCP = Math, Statistics, Biology, Chemistry, and Physics		ST = Short Term (0-1 Month)			
	HS = High School	MS = Math, and Statistics		MT = Moderate Term (2-12 Months)			
	VS = Vocational School	BCP = Biology, Chemistry, and Physics		LT = Long Term (More Than 12 Months)			
	AD = Associate Degree	SS = Social Science		CT = Clinical Training			
	BA/BS = Bachelor of Arts or Science	ANY = Any of Above Categories		RWE = Related Work Experience			
	MA/MS = Master of Arts or Science						

**Level 1** This level represents entry-level healthcare occupations. These occupations do not require an education beyond high school. Training for these occupations is available in the region. The most important segment of level 1 occupations is certified nursing assistants (CNAs). This occupation requires training and a CNA exam. CNAs should register with the Tennessee Department of Health Services. According to local employers, training for CNAs takes six (6) to 11 months.

**Level 1** Mobility1: From level 1, someone would follow a sidetrack toward surgical technologists and physicians assistants, or respiratory therapy technicians and respiratory therapists. With a rigorous high school education, this upward mobility would increase average salary more than 30 percent.  
 Mobility2: Moving from level 1 to level 2 requires vocational school education or special training at regional post-secondary institutions. Becoming a licensed practical nurse (LPN) from a CNA leads to an average salary increase of more than 65 percent.

**Level 1A** It is also possible to move from level 1A to level 2 (from surgical technician to LPN) and level 3 (from respiratory therapist to registered nurse). This mobility also generates substantial increase in benefits.

**Level 2** LPNs are either trained at vocational school level or go through special training programs. To be eligible for LPN training program, candidates should have a strong high school educational background in math and sciences.

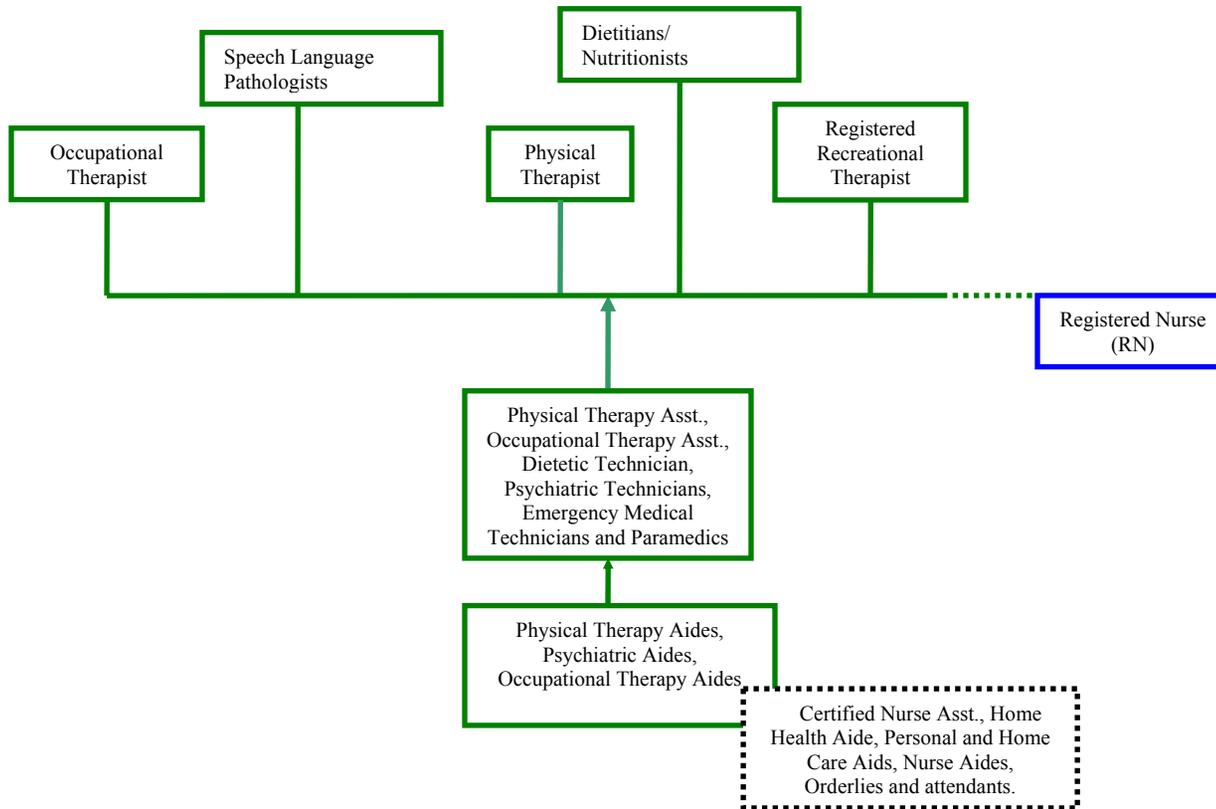
**Level 2** Mobility: Moving from LPN to registered nurse would lead an average salary increase of more than 35 percent.

**Level 3** Registered nurse (RN) occupation requires an associate degree and training. While many employers prefer having an RN with an associate degree and 2 years training at a clinical setting, the trend in RN occupation is toward more education (BS in Nursing).

**Level 4** Moving from level 3 to level 4 requires substantial years of training and education. This in turn increases the average salary by nearly 60 percent.

**Notes:** In certain cases where fewer than three (3) providers supplied wage and other data for an occupation, the BERCC lumped them with similar occupations to calculate average wage and other data points.

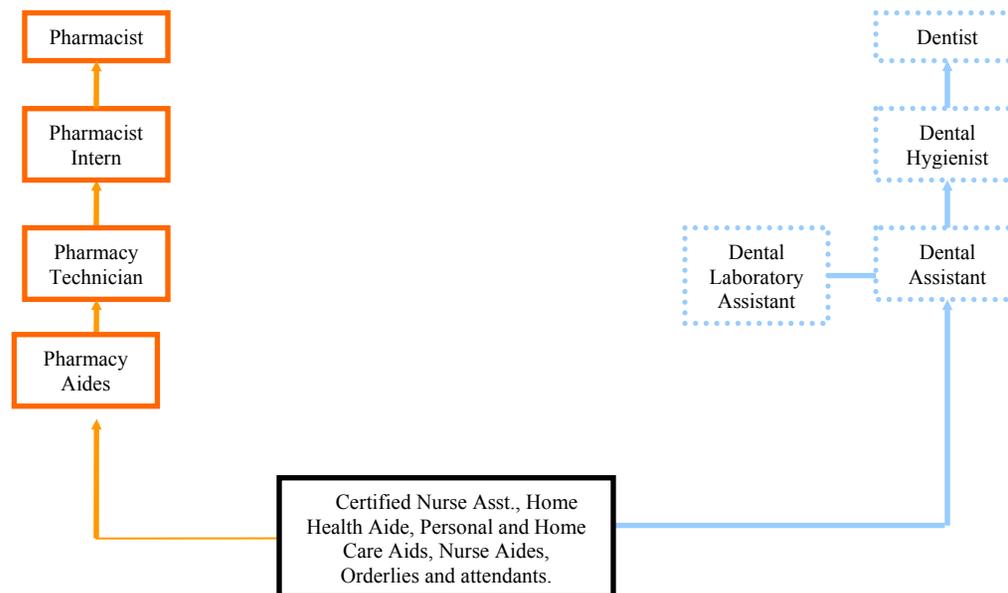
## Therapy Career Tracks



**Therapy Career Cluster and Advancement Paths**

Mobility/ Tracks	Name of Occupations	Significant Source of Education	Average Annual Pay	Required Background Education	Length of Training	Certification/ Licensing	Median Experience (Months)
<b>Level 3A Sidetrack</b>	<i>Registered Nurses</i>	AD	\$36,843	MSBCP	LT+CT	YES	12 Months
<b>Level 3</b>	Occupational Therapists	BA/BS	\$74,636	MSBCP	LT+CT	YES	0 Months
	Physical Therapists	BA/BS	\$59,904	MSBCP	LT+CT	YES	0 Months
	Speech Language Pathologists	MA/MS	\$52,636	ANY	LT+CT	YES	6 Months
	Dietitians/Nutritionists	BA/BS	\$37,007	MSBCP	LT+CT	YES	12 Months
	Recreational Therapists	HS/AD	\$20,800	ANY	MT	YES+NO	12 Months
<b>Level 2</b>	Physical Therapy Assistants	AD	\$44,424	MSBCP	MT	YES	0 Months
	Occupational Therapy Assistants	AD	\$34,174	MSBCP	MT	YES	0 Months
	Emergency Medical Technicians and Paramedics	VS/AD	\$21,944	MSBCP	MT+CT	YES	6 Months
	Dietetic Technicians	AD	\$21,216	MSBCP	MT	YES	0 Months
	Psychiatric Technicians	HS	\$17,680	ANY	MT	NO	12 Months
<b>Level 1</b>	Psychiatric Aides	HS	\$17,160	ANY	MT	YES	18 Months
	Physical Therapy Aides	HS	\$14,560	MSBCP	MT+RWE	YES	12 Months
	Occupational Therapy Aides	HS	\$14,560	N/A	CT	YES	0 Months
<b>Legends</b>	Education Legend	Course Background Legend		Training Requirement Legend			
	LHS = Less Than High School	MSBCP = Math, Statistics, Biology, Chemistry, and Physics		ST = Short Term (0-1 Month)			
	HS = High School	MS = Math, and Statistics		MT = Moderate Term (2-12 Months)			
	VS = Vocational School	BCP = Biology, Chemistry, and Physics		LT = Long Term (More Than 12 Months)			
	AD = Associate Degree	SS = Social Science		CT = Clinical Training			
	BA/BS = Bachelor of Arts or Science	ANY = Any of Above Categories		RWE = Related Work Experience			
	MA/MS = Master of Arts or Science						
<b>Level 1</b>	This level and level 1 specified in nursing cluster represent entry-level occupations in this cluster. Educational requirement for level 1 occupations is usually high school diploma. Training requirement is moderate, and course requirements vary. All of these occupations require certification and/or licensing, although some employers indicated otherwise. At least half of the employers prefers certain months of experience in the field for new full-time hires.						
<b>Level 1</b>	Mobility: All level 1 occupations become eligible for upward mobility with additional training. A successful move from level 1 to level 2 also requires strong high school math and science background. Upward mobility brings substantial wage benefits ranging from three (3) percent to 45 percent in some occupations, while it is extremely higher in physical therapy assistants and occupational therapy assistants because of high demand for these occupations.						
<b>Level 2</b>	Level 2 occupations usually require associate degree level education and moderate term training. Almost all of them require registration and/or licensing. Emergency medical technicians and paramedics occupation also requires clinical training.						
<b>Level 2</b>	Mobility: Upward mobility with additional education and training leads to a substantial increase in salaries. On average, bachelor's degree is necessary for many level 3 occupations. From level 1 occupations, a bachelor's degree and moderate training would secure a highly demanded level 3 occupations. From level 2, it takes a couple of years additional education and moderate training to get to level 3.						
<b>Level 3</b>	Level 3 occupations are the highest occupational title for this occupational cluster. It is quite possible at this level to earn higher degrees.						
<b>Level 3A Sidetrack</b>	With the right course background and training, it is possible to have cross-mobility with nursing cluster as registered nurse. Many of the tasks performed by level 3 occupations are similar to registered nurse.						

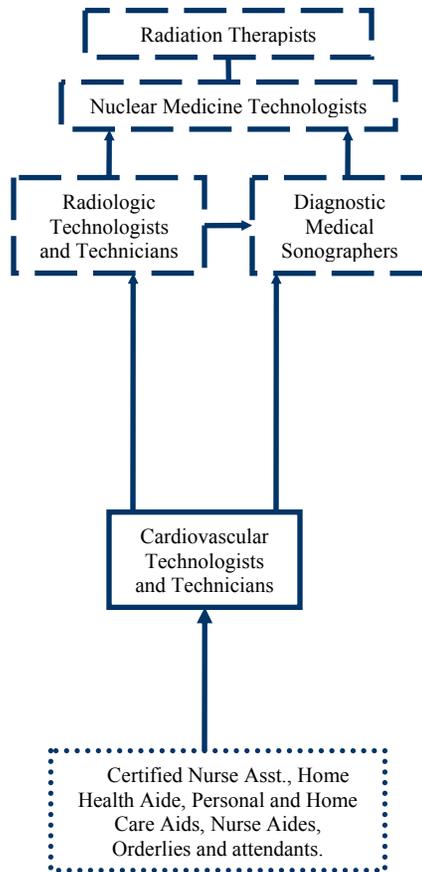
## Pharmacy and Dental Career Tracks



**Dental and Pharmacy Career Clusters and Advancement Paths**

Mobility/ Tracks	Name of Occupations	Significant Source of Education	Average Annual Pay	Required Background Education	Length of Training	Certification/ Licensing	Median Experience (Months)
<b>Dental Occupational Track</b>							
Level 3D	Dentists	Professional	N/A	MSBCP	N/A	YES	N/A
Level 2D	Dental Hygienists	BA/BS	\$52,416	MSBCP	MT+CT	YES	6 Months
Level 1D	Dental Assistants	VS	\$21,840	BCP	MT	YES	12 Months
	Dental Laboratory Technicians	VS	\$21,320	MS	MT	YES	0 Months
<b>Pharmacy Occupational Track</b>							
Level 3P	Pharmacists	Professional	N/A	MSBCP	N/A	YES	N/A
Transition	Pharmacy Intern	In School	In School	In School	In School	In School	In School
Level 2P	Pharmacy Technicians	HS	\$16,817	MSBCP	MT	YES	6 Months
Level 1P	Pharmacy Aides	HS	\$12,480	N/A	N/A	NO	0 Months
<b>Legends</b>	<b>Education Legend</b>		<b>Course Background Legend</b>		<b>Training Requirement Legend</b>		
	LHS = Less Than High School HS = High School VS = Vocational School AD = Associate Degree BA/BS = Bachelor of Arts or Science MA/MS = Master of Arts or Science		MSBCP = Math, Statistics, Biology, Chemistry, and Physics MS = Math, and Statistics BCP = Biology, Chemistry, and Physics SS = Social Science ANY = Any of Above Categories		ST = Short Term (0-1 Month) MT = Moderate Term (2-12 Months) LT = Long Term (More Than 12 Months) CT = Clinical Training RWE = Related Work Experience		
<b>Level 1P</b>	Pharmacy aides requires a high school diploma. This occupation has the potential to make upward mobility to level 2P and become pharmacy technicians. However, in order to make this move, a high school level math and science education and moderate term training are necessary conditions. An upward move from level 1P to 2P generates a wage increase of 35 percent.						
<b>Level 2P</b>	From level 2P, the next track is professional education to become pharmacists. New school of pharmacy enrollees go through a certain number of hours internship program under the supervision of a pharmacists. Then, a pharmacy intern becomes a pharmacist (level 3P) with a substantial wage and benefit increases.						
<b>Level 1D</b>	Level 1D occupations are somewhat different. Primary educational requirement is vocational school. However, the region has training programs leading to a degree in dental laboratory technicians and dental assistants.						
<b>Level 1D</b>	Mobility: The next stage is level 2D occupation of dental hygienists, which requires a bachelor's degree. For a successful upward mobility, a candidate should have math and science background at level 1D.						
<b>Level 2D</b>	Dental hygienists command substantial amount of wages over level 1D occupations (more than 100 percent increase). Additional education pays handsomely. The next stage from level 2D is going through professional education to become a dentist at level 3D.						

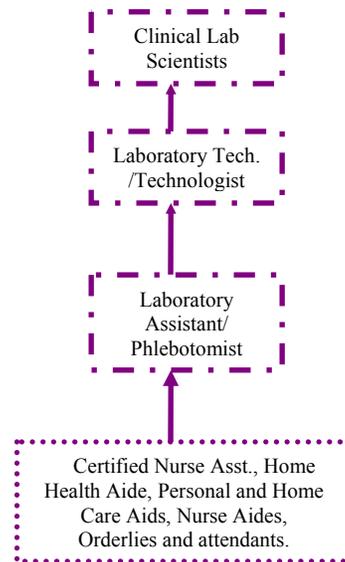
## Imaging Career Track



**Medical Imaging Career Cluster and Advancement Paths**

Mobility/ Tracks	Name of Occupations	Significant Source of Education	Average Annual Pay	Required Background Education	Length of Training	Certification/ Licensing	Median Experience (Months)
Level 4	Radiation Therapists	AD/BA	\$45,791	MSBCP	CT	YES	6 Months
Level 3	Nuclear Medicine Technologists	AD	\$43,774	MSBCP	MT+CT	YES	0 Months
Level 2	Diagnostic Medical Sonographers	AD	\$42,151	MSBCP	MT+CT	YES	6 Months
	Radiologic Technologists and Technicians	AD	\$25,945	MSBCP	MT+CT	YES	12 Months
Level 1	Cardiovascular Technologists and Technicians	AD	\$21,632	MSBCP	CT	YES	0 Months
<b>Legends</b>	Education Legend		Course Background Legend		Training Requirement Legend		
	LHS = Less Than High School		MSBCP = Math, Statistics, Biology, Chemistry, and Physics		ST = Short Term (0-1 Month)		
	HS = High School		MS = Math, and Statistics		MT = Moderate Term (2-12 Months)		
	VS = Vocational School		BCP = Biology, Chemistry, and Physics		LT = Long Term (More Than 12 Months)		
	AD = Associate Degree		SS = Social Science		CT = Clinical Training		
	BA/BS = Bachelor of Arts or Science		ANY = Any of Above Categories		RWE = Related Work Experience		
Level 1	Occupation at this level requires an associate degree and some clinical training. Many entry-level healthcare occupations might be eligible to move level 1 imaging occupation with a high school diploma and math and science education. Moving from such occupations as nurse aides and home health aides to level 1 imaging occupation generates a salary increase of at least 40 percent.						
Level 1	Mobility: Cardiovascular technologists and technicians may choose to become either radiologic technologists and technicians or diagnostic medical sonographers with additional experience and training. This mobility generates an average salary increase of between 20 and 90 percent depending on which occupation a person chooses.						
Level 2	Level 2 occupations can have different tracks of upward mobility. Radiologic technologists and technicians can become either nuclear medicine technologists at level 3 or diagnostic medical sonographers at level 2. In either case, this mobility generates about 60 percent salary increase. Diagnostic medical sonographers can become nuclear medicine technologists with additional experience and training.						
Level 3	Level 3 occupation is nuclear medicine technologists, which require an associate degree and additional training and experience beyond level 2. An upward move from level 3 leads to level 4 position of radiation therapists.						
Level 4	The highest level position is radiation therapist, which requires an associate degree or increasingly bachelor's degree in the field.						

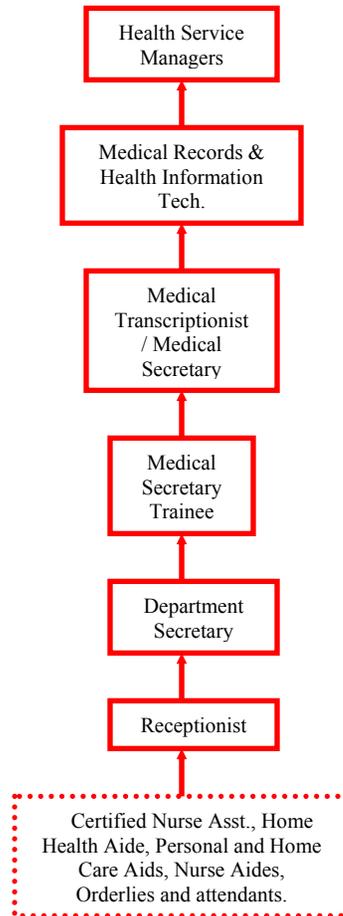
## Laboratory Personnel Career Track



**Laboratory Personnel Career Cluster and Advancement Paths**

<b>Mobility/ Tracks</b>	<b>Name of Occupations</b>	<b>Significant Source of Education</b>	<b>Average Annual Pay</b>	<b>Required Background Education</b>	<b>Length of Training</b>	<b>Certification/ Licensing</b>	<b>Median Experience (Months)</b>
<b>Level 4</b>	Clinical Lab Scientists	Professional	N/A	N/A	N/A	N/A	N/A
<b>Level 3</b>	Medical and Clinical Laboratory Technologists	BA	\$32,219	MSBCP	MT	YES	12 Months
<b>Level 2</b>	Medical and Clinical Laboratory Technicians	AD	\$24,502	MSBCP	MT	YES	12 Months
<b>Level 1</b>	Phlebotomists	HS	\$16,605	BCP	MT	NO	0 Months
<b>Legends</b>	<b>Education Legend</b>	<b>Course Background Legend</b>		<b>Training Requirement Legend</b>			
	LHS = Less Than High School	MSBCP = Math, Statistics, Biology, Chemistry, and Physics		ST = Short Term (0-1 Month)			
	HS = High School	MS = Math, and Statistics		MT = Moderate Term (2-12 Months)			
	VS = Vocational School	BCP = Biology, Chemistry, and Physics		LT = Long Term (More Than 12 Months)			
	AD = Associate Degree	SS = Social Science		CT = Clinical Training			
	BA/BS = Bachelor of Arts or Science	ANY = Any of Above Categories		RWE = Related Work Experience			
	MA/MS = Master of Arts or Science						
<b>Level 1</b>	Entry-level nursing occupations and phlebotomists are level 1 occupations for this cluster. High school diploma and biology, chemistry, and physics background are necessary two conditions to start as phlebotomists.						
<b>Level 1</b>	Mobility: Phlebotomists have upward mobility with additional two-year degree and some experience. At level 2, they become medical and clinical laboratory technicians. This mobility would generate a salary increase of more than 45 percent.						
<b>Level 2</b>	Medical and clinical laboratory technicians require an associate degree level education with strong math and science background in high school. Technicians then would become technologists with additional education and experience leading to an average of 30 percent salary increase.						
<b>Level 3</b>	Level 3 occupation of laboratory technologists requires a bachelor's degree in the field and moderate term training as well as some work experience. Advancement in this position is possible. Technologists become scientists with an additional degree and education.						

## Clerical/ Administrative Career Track



**Clerical/ Administrative Healthcare Career Cluster and Advancement Paths**

Mobility/Tracks	Name of Occupations	Significant	Average	Required	Length of Training	Certification/Licensing	Median Experience (Months)
		Source of Education	Annual Pay	Background Education			
<b>Level 3</b>	Medical and Health Service Managers	HS	\$22,187	ANY	MT+RWE	NO	12 Months
<b>Level 2</b>	Medical Transcriptionists	HS	\$18,897	ANY	MT	NO	12 Months
	Medical Secretaries	HS	\$16,980	ANY	MT	NO	0 Months
<b>Level 1</b>	Medical Record and Health Information Technicians	HS	\$16,603	ANY	ST+RWE	NO	6 Months
<b>Legends</b>	Education Legend		Course Background Legend		Training Requirement Legend		
	LHS = Less Than High School		MSBCP = Math, Statistics, Biology, Chemistry, and Physics		ST = Short Term (0-1 Month)		
	HS = High School		MS = Math, and Statistics		MT = Moderate Term (2-12 Months)		
	VS = Vocational School		BCP = Biology, Chemistry, and Physics		LT = Long Term (More Than 12 Months)		
	AD = Associate Degree		SS = Social Science		CT = Clinical Training		
	BA/BS = Bachelor of Arts or Science		ANY = Any of Above Categories		RWE = Related Work Experience		
<b>Level 1</b>	This cluster of healthcare occupations does not require any specific educational background beyond a high school diploma. For those individuals who do not have a proper math and science background, this cluster of occupations would be the right place to start.						
<b>Level 1</b>	Mobility: With additional training (mostly on the job), a person would move upward to level 2 or level 3 occupations without obtaining additional educational degree. A move from level 1 to level 2 occupations generates a salary increase of between two (2) and 14 percent.						
<b>Level 2</b>	Level 2 occupations are expected to know the medical terminology to process the information properly. High school education and moderate training qualify an individual for these jobs.						
<b>Level 3</b>	Level 2 occupations would advance to level 3 with an estimated salary increase of more than 15 percent. However, an additional degree in the field would result in even higher benefits.						

### Nursing and Related Occupations Career Tracks

<b>Name:</b>	<b>Personal and Home Care Aides</b>
<b>Job Description:</b>	Personal and home care aides help elderly, disabled, ill, and mentally disabled persons live in their own homes or in residential care facilities instead of in health facilities.
<b>Projected Vacancies:</b>	43
<b>Education Requirements:</b>	LHS
<b>Background Course Requirement:</b>	N/A
<b>Training Requirement:</b>	N/A
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$13,000
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Nurse Aides Orderlies and Attendants</b>
<b>Job Description:</b>	Also known as nursing assistants, certified nursing assistants, generic aides, unlicensed assistive personnel, orderliness, or hospital attendants-perform routine tasks under the supervision of nursing and medical staff.
<b>Projected Vacancies:</b>	144
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	ST
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$13,853
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Certified Nurse Assistant</b>
<b>Job Description:</b>	They provide patients with basic care and services, such as assisting frail or disabled people with bathing, getting out of bed, and etc.
<b>Projected Vacancies:</b>	333
<b>Education Requirements:</b>	LHS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	ST+MT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$15,520
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	TTCM / See also the table about CNA training facilities
<b>More Information:</b>	<a href="http://www.nursingassistantcentral.com">http://www.nursingassistantcentral.com</a>

<b>Name:</b>	<b>Home Health Aides</b>
<b>Job Description:</b>	They help elderly, convalescent, or disabled persons live in their own homes instead of in a health care facility. They provide health-related services, such as administering oral medications.
<b>Projected Vacancies:</b>	54
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$16,293
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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**Training Legend:** ST = Short Term (0-1 Month), MT = Moderate Term (2-12 Months), LT = Long Term (>12 months), CT = Clinical Training, RWE = Related Work Experience

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**Name:** Physician's Assistants

**Job Description:**

They Provide healthcare services typically performed by a physician, under the supervision of a physician. They conduct complete physicals, provide treatment, and counsel patients. They may, in some cases, prescribe medication.

<b>Projected Vacancies:</b>	16
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$62,400
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	IBC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

**Name:** Surgical Technologist

**Job Description:**

They're also called scrubs and surgical or operating room technicians, assist in surgical operations under the supervision of surgeons, registered nurses, or other surgical personnel.

<b>Projected Vacancies:</b>	21
<b>Education Requirements:</b>	VS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$20,696
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	TTCM, TTCJ, TTCP, CDSCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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**Name:** Respiratory Therapy Tech.

**Job Description:**

Provide specific, well defined respiratory care procedures under the direction of respiratory therapists and physicians.

<b>Projected Vacancies:</b>	2
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$23,000
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CJSCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

**Name:** Respiratory Therapists

**Job Description:**

Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians.

<b>Projected Vacancies:</b>	16
<b>Education Requirements:</b>	BA/BS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT+CP
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$20,800
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Licensed Practical Nurse (LPN)</b>
<b>Job Description:</b>	They work under the supervision of a doctor, registered nurse or nurse practitioner in offering care and services. They provide basic bedside care. They may also be responsible for scheduling appointments, updating patient charts, and give some medication
<b>Projected Vacancies:</b>	221
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$26,024
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CDSCC, TTCC, TTCM, TTCJ, TTCMC, TTCN, TTCR, TTCP, TTCW
<b>More Information:</b>	<a href="http://www.nflpn.org/index.html">http://www.nflpn.org/index.html</a>

<b>Name:</b>	<b>Registered Nurse (RN)</b>
<b>Job Description:</b>	They direct or work within a team of health professionals in providing patient care and preventing illness. They educate patients on illnesses, they monitor illnesses, study their symptoms.
<b>Projected Vacancies:</b>	244
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$36,843
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CDSCC, CJSCC, CSTCC, PUM, PUTHSC, IUU
<b>More Information:</b>	<a href="http://www.ana.org/">http://www.ana.org/</a> or <a href="http://www.nсна.org/">http://www.nсна.org/</a>

<b>Name:</b>	<b>Clinical Nurse Specialists</b>
<b>Job Description:</b>	Provide direct patient care and expert consultations in one of many nursing specialties.
<b>Projected Vacancies:</b>	46
<b>Education Requirements:</b>	MA/MS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	24 Months
<b>Average Entry-Level Annual Wage:</b>	\$48,422
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUM, PUTHSC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Nurse Practitioner (MSN)</b>
<b>Job Description:</b>	Nurse practitioners are registered nurses who have the advanced education and experience necessary to perform many duties traditionally performed by physicians.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	MA/MS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	36 Months
<b>Average Entry-Level Annual Wage:</b>	\$62,608
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUM, PUTHSC
<b>More Information:</b>	<a href="http://www.aanp.org/default.asp">http://www.aanp.org/default.asp</a>

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<b>Name:</b>	<b>Nurse Midwife</b>
<b>Job Description:</b>	A certified nurse midwife is an advanced practice nurse with specialized training in delivering babies and providing prenatal and postpartum care to women. In some states they may prescribe medications.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	MA/MS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	24 Months
<b>Average Entry-Level Annual Wage:</b>	\$62,608
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.acnm.org">http://www.acnm.org</a>

<b>Name:</b>	<b>Nurse Anesthetist</b>
<b>Job Description:</b>	It is an advanced clinical nursing specialty. They work closely with other health care professionals such as surgeons, dentists, and etc. They take care of a patient's anesthesia needs before, during and after surgery.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	MA/MS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	60 Months
<b>Average Entry-Level Annual Wage:</b>	\$82,992
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	IUU
<b>More Information:</b>	<a href="http://www.aana.com/crma/careerqna.sp">http://www.aana.com/crma/careerqna.sp</a>

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### Therapy Career Tracks

Entry Level Basic Occupations ( For information see information above)

**Certified Nurse Assistant**                      **Personal and Home Care Aids**  
**Home Health Aide**                                **Nurse Aides Orderlies and attendants**

<b>Name:</b>	<b>Physical Therapy Aides</b>
<b>Job Description:</b>	Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.
<b>Projected Vacancies:</b>	15
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+RWE
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$14,560
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Psychiatric Aides</b>
<b>Job Description:</b>	Also know as mental health assistants or psychiatric nursing assistants, care for mentally impaired or emotionally disturbed individuals.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	2-12 Months
<b>Experience Requirement:</b>	18 Months
<b>Average Entry-Level Annual Wage:</b>	\$17,160
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Occupational Therapy Aides</b>
<b>Job Description:</b>	Under close supervision of an occupational therapist or occupational therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing patient and treatment room.
<b>Projected Vacancies:</b>	23
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	N/A
<b>Training Requirement:</b>	CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$14,560
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUTM
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Respiratory Therapy Technicians</b>
<b>Job Description:</b>	They evaluate, treat, and care for patients with breathing disorders. They test the capacity of the lungs and analyze oxygen and carbon dioxide concentration.
<b>Projected Vacancies:</b>	2
<b>Education Requirements:</b>	BA/BS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$27,581
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CJSCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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<b>Name:</b>	<b>Emergency Medical Technicians and Paramedics</b>
<b>Job Description:</b>	EMTs and paramedics, following strict rules and guidelines, give appropriate emergency care on the scene to where they been dispatched, and when necessary transport the patient.
<b>Projected Vacancies:</b>	1
<b>Education Requirements:</b>	VS/AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$21,944
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CDSCC, CJSCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Psychiatric Technicians</b>
<b>Job Description:</b>	They work on a mental health team with doctors, psychologists, and rehabilitations therapist. Together they treat institutionalized patients who are mentally ill, emotionally disturbed, or developmentally disabled.
<b>Projected Vacancies:</b>	4
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$17,680
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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<b>Name:</b>	<b>Dietetic Technician</b>
<b>Job Description:</b>	Assist dietitians in the provision of food service and nutritional programs. Under the supervision of dietitians, may plan and produce meals based on established guidelines, teach principles of food and nutrition, or counsel individuals.
<b>Projected Vacancies:</b>	11
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$21,216
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CSTCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Occupational Therapy Assistant</b>
<b>Job Description:</b>	They help clients with rehabilitative activities and exercises outlined in a treatment plan developed in collaboration with an occupational therapist.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$34,174
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUTM
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

**Name:** Physical Therapy Assistants

**Job Description:**

They record the patient's responses to treatment and report to the physical therapist the outcome of each treatment.

<b>Projected Vacancies:</b>	48
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$44,424
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUTM, PUTHSC, ICBU, ILU
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

**Name:** Recreational Therapists

**Job Description:**

They're also called therapeutic recreation specialists, provide treatment services and recreation activities individuals with disabilities, illnesses. They treat and maintain the physical, mental, and emotional well being of clients.

<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	HS/AD
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$20,800
<b>Certification / License Requirement:</b>	YES+NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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**Name:** Dietitians/Nutritionists

**Job Description:**

They plan food and nutrition programs and supervise the preparation and serving of meals. They run food service systems for institutions such as hospitals and schools, promote sound eating habits through education, and conduct research.

<b>Projected Vacancies:</b>	32
<b>Education Requirements:</b>	BA/BS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$37,007
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

**Name:** Speech Language Pathologists

**Job Description:**

They assess, diagnose, treat, and help to prevent speech, language, cognitive, communication, voice, swallowing, fluency, and other related disorders.

<b>Projected Vacancies:</b>	45
<b>Education Requirements:</b>	MA/MS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$52,636
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUM
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	Physical Therapists
<b>Job Description:</b>	They provide services that help restore function, improve mobility, relieve pain, and prevent or limit permanent physical disabilities. They examine patients' medical histories, then test and measure their strength, range of motion, and etc.
<b>Projected Vacancies:</b>	74
<b>Education Requirements:</b>	BA/BS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$59,904
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUTHSC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	Occupational Therapists
<b>Job Description:</b>	They help people improve their ability to perform tasks in their daily living and working environments. They assist clients in performing activities of all types.
<b>Projected Vacancies:</b>	49
<b>Education Requirements:</b>	BA/BS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	LT+CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$74,636
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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### Dental and Pharmacy Career Clusters and Advancement Paths

Entry Level Basic Occupations ( For information see above)

**Certified Nurse Assistant**                      **Personal and Home Care Aids**  
**Home Health Aide**                                **Nurse Aides Orderlies and attendants**

<b>Name:</b>	<b>Pharmacy Aides</b>
<b>Job Description:</b>	Record drugs delivered to the pharmacy, store incoming merchandise, and inform the supervisor of stock needs. May operate cash register and accept prescriptions for filling.
<b>Projected Vacancies:</b>	16
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	N/A
<b>Training Requirement:</b>	N/A
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$12,480
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Pharmacy Technicians</b>
<b>Job Description:</b>	They help licensed pharmacists provide medication and other healthcare products to patients. They usually perform routine tasks to help prepare prescribed medication for patients.
<b>Projected Vacancies:</b>	16
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$16,817
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	TTCM, TTCJ
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Dental Laboratory Technicians</b>
<b>Job Description:</b>	They fill prescriptions from dentists for crowns, bridges, dentures, and other dental prosthetics.
<b>Projected Vacancies:</b>	76
<b>Education Requirements:</b>	VS
<b>Background Course Requirement:</b>	MS
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$21,320
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Dental Assistants</b>
<b>Job Description:</b>	They perform a variety of patient care, office, and laboratory duties. They make patients as comfortable as possible in the dental chair, prepare them for dental treatment, and obtain dental records.
<b>Projected Vacancies:</b>	158
<b>Education Requirements:</b>	VS
<b>Background Course Requirement:</b>	BCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$21,840
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	TTCM
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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<b>Name:</b>	Dental Hygienists
<b>Job Description:</b>	They remove soft and hard deposits from teeth, teach patients how to practice good oral hygiene, and provide other preventive dental care.
<b>Projected Vacancies:</b>	65
<b>Education Requirements:</b>	BA/BS
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$52,840
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	PUTM, ILU
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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### Medical Imaging Career Cluster and Advancement Paths

Entry Level Basic Occupations ( For information see above)

**Certified Nurse Assistant**                      **Personal and Home Care Aids**  
**Home Health Aide**                                **Nurse Aides Orderlies and attendants**

<b>Name:</b>	<b>Cardiovascular Technologists and Technicians</b>
<b>Job Description:</b>	Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary-functions, lung capacity, and similar tests.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$21,632
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Radiologic Technologists and Technicians</b>
<b>Job Description:</b>	They tack x-rays and administer nonradioactivematerials into patients' bloodstream for diagnostic purposes.
<b>Projected Vacancies:</b>	21
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CP
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$25,945
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CSTCC, CJSCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Diagnostic Medical Sonographers</b>
<b>Job Description:</b>	Diagnostic medical sonographers, also known as ultrasonographers, use special equipment to direct nonionizing, high frequency sound waves into areas of the patient's body. Sonographers operate the equipment, which collects reflected echoes and forms an image.
<b>Projected Vacancies:</b>	12
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$42,151
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	IBCHS
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Nuclear Medicine Technologists</b>
<b>Job Description:</b>	Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies utilizing a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists.
<b>Projected Vacancies:</b>	1
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT+CT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$43,774
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	IBCHS
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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<b>Name:</b>	<b>Radiation Therapists</b>
<b>Job Description:</b>	They administer radiation treatments to patients using a planned design to treat cancers in the body they have been previously diagnosed.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	AD/BA
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	CT
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$45,791
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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### Laboratory Personnel Career Cluster and Advancement Paths

Entry Level Basic Occupations ( For information see information above)

**Certified Nurse Assistant**                      **Personal and Home Care Aids**  
**Home Health Aide**                                **Nurse Aides Orderlies and attendants**

<b>Name:</b>	<b>Phlebotomists</b>
<b>Job Description:</b>	They are one type of medical laboratory technicians. They collect blood samples. Only a tiny percentage of medical technicians are phlebotomists.
<b>Projected Vacancies:</b>	18
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	BCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$16,605
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Medical and Clinical Laboratory Technicians</b>
<b>Job Description:</b>	They examine and analyze body fluids, tissues, and cells. They look for bacteria, parasites, and other microorganisms. Medical laboratory technicians perform less complex tests and laboratory procedures than technologists.
<b>Projected Vacancies:</b>	7
<b>Education Requirements:</b>	AD
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$24,502
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	CJSCC, CSTCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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<b>Name:</b>	<b>Medical and Clinical Laboratory Technologists</b>
<b>Job Description:</b>	Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff.
<b>Projected Vacancies:</b>	8
<b>Education Requirements:</b>	BA
<b>Background Course Requirement:</b>	MSBCP
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$32,219
<b>Certification / License Requirement:</b>	YES
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

### Clerical Administrative Healthcare Career Cluster and Advancement Paths

Entry Level Basic Occupations ( For information see above)

Certified Nurse Assistant  
Home Health Aide

Personal and Home Care Aids  
Nurse Aides Orderlies and attendants

<b>Name:</b>	<b>Medical Record and Health Information Technicians</b>
<b>Job Description:</b>	Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system. Process, maintain, compile, and report patient information.
<b>Projected Vacancies:</b>	57
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	ST+RWE
<b>Experience Requirement:</b>	6 Months
<b>Average Entry-Level Annual Wage:</b>	\$16,603
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	CDSCC, PUTM, ILU
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Medical Secretaries</b>
<b>Job Description:</b>	Perform secretarial duties utilizing specific knowledge of medical terminology and hospital, clinic, or laboratory procedures.
<b>Projected Vacancies:</b>	46
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	0 Months
<b>Average Entry-Level Annual Wage:</b>	\$16,980
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	N/A
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Medical Transcriptionists</b>
<b>Job Description:</b>	They're also called medical transcribers and medical stenographers, listen to dictated recordings made by physicians and other administrative material . The documents they produce include discharge summaries, history and physical examination reports, and other patient information.
<b>Projected Vacancies:</b>	0
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$18,897
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	CDSCC
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

<b>Name:</b>	<b>Medical and Health Service Managers</b>
<b>Job Description:</b>	Plan, direct, or coordinate medicine and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.
<b>Projected Vacancies:</b>	53
<b>Education Requirements:</b>	HS
<b>Background Course Requirement:</b>	ANY
<b>Training Requirement:</b>	MT+RWE
<b>Experience Requirement:</b>	12 Months
<b>Average Entry-Level Annual Wage:</b>	\$22,187
<b>Certification / License Requirement:</b>	NO
<b>Educational Institutions:</b>	PUM, ICBU
<b>More Information:</b>	<a href="http://www.bls.gov/oco">http://www.bls.gov/oco</a>

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## Healthcare Workforce Related Organizations

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Tennessee Department of Health, Division of Health Related Boards:

Web Address: <http://www2.tennessee.gov/health/Boards/index.htm>

### Boards, Councils, Committees, and Registry

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#### **Athletic Trainers**

**TN Advisory Committee for Acupuncture**

**Board of Alcohol and Drug Abuse Counselors**

**Board of Chiropractic Examiners**

**Committee for Clinical Perfusionists**

**Board of Communications Disorders/Sciences**

**Board of Dentistry**

**Board of Dietitian and Nutritionist Examiners**

**Board of Dispensing Opticians**

**Board of Electrolysis Examiners**

**Emergency Medical Services Board**

**Council for Hearing Instrument Specialists**

**Tennessee Massage Licensure Board**

**Board of Medical Examiners**

**Tennessee Medical Laboratory Board**

**Board of Nursing**

**Council of Certified Professional Midwifery**

**Board of Examiners for Nursing Home Administrators**

**Board of Occupational & Physical Therapy Examiners**

**Board of Optometry**

**Board of Osteopathic Examination**

**Committee on Physician Assistants**

**Board of Podiatric Medical Examiners**

**Board for PC, MFT and CPT**

**Board of Examiners in Psychology**

**Board of Respiratory Care**

**Reflexology Registration**

**Board of Social Worker Certification and Licensure**

**Board of Veterinary Medical Examiners**

**X-Ray Operators**

#### **Address of the above boards:**

First Floor, Cordell Hull Building

425 Fifth Avenue, North

Nashville, TN 37247-1010

(615) 532-3202 local or 1-800-778-4123

#### **Tennessee Primary Care Association**

416 Wilson Pike Circle, Brentwood, TN, 37027

Tel: 1-800-343-3136, 1-615-329-3836

Fax: 1-615-329-3823

<http://www.tnpca.org/index.html>

## Local Health Department (County Level)

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### **CROCKETT COUNTY**

Marilyn Barnes, Director  
John Cummings, MD, Health Officer  
228 East Church Street  
Alamo, TN 38001  
(731) 696-2505  
(731) 696-4410  
(731) 696-3165  
(731) 696-4370 Fax

### **DYER COUNTY**

Sara Rice Miller Health Center  
Tony Harden, Director  
John Cummings, MD, Health Officer  
[1629 Woodlawn Extd.](#)  
Dyersburg, TN 38024  
(731) 285-7311  
(731) 285-7359  
(731) 285-2610 Fax

### **GIBSON COUNTY**

Cara Coley, Director  
Karen Codjoe, MD, Health Officer  
Trenton Clinic  
P. O. Box 8  
[1250 Manufacturer's Row](#)  
Trenton, TN 38382  
(731) 855-7601  
(731) 855-7602  
(731) 855-7604  
(731) 855-7603 Fax

Milan Clinic  
P. O. Box 698  
[6501 Telecom Drive](#)  
Milan, TN 38358  
(731) 686-9240  
(731) 686-0962 Fax

Humboldt Clinic  
[149 N. 12th St.](#)

Humboldt, TN 38343  
(731) 784-5491  
(731) 784-1726 Fax

### **LAKE COUNTY**

Marilyn Barnes, Director  
Howard Ragsdale, MD, Health Officer  
[400 Highway 78 South](#)  
Tiptonville, TN 38079  
(731) 253-9954  
(731) 253-9955  
(731) 253-9956 Fax

### **LAUDERDALE COUNTY**

Danny Perry, Director  
Shavetta Conner, MD, Health Officer  
500 Highway 51, South  
Ripley, TN 38063  
(731) 635-9711  
(731) 635-4661  
(731) 635-3630 Fax

### **OBION COUNTY**

Marilyn Barnes, Director  
Howard Ragsdale, MD, Health Officer  
P. O. Box 248  
[1008 Mt. Zion Road](#)  
Union City, TN 38261  
(731) 885-8722  
(731) 885-8723  
(731) 885-8724  
(731) 885-4855 Fax

### **TIPTON COUNTY**

Danny Perry, Director  
Shavetta Conner, MD, Health Officer  
P. O. Box 685  
[4700 Mueller Brass Road](#)  
Covington, TN 38019  
(901) 476-0235  
(901) 476-0229 Fax

## Details of Healthcare Workforce Related Boards and Associations

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### **Nurse (RN, LPN and Certified Nurse Assistant)**

#### **Tennessee Board of Nursing**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

#### **Council of Certified Professional Midwives**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

#### **Board of Examiners for Nursing Home Administrators**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

#### **American College of Nurse Midwives**

818 Connecticut Avenue, NW, Suite 900  
Washington DC 20006  
Phone: (202) 728-9860  
Fax: (202) 728-9897  
[www.midwife.org](http://www.midwife.org)

#### **American Nurses' Association**

600 Maryland Avenue, SW Suite 100 West  
Washington, DC 20024  
Phone: (800) 274-4ANA  
[www.ana.org](http://www.ana.org)

#### **National Federation of Licensed Practical Nurses, Inc.**

893 US Highway 70 West, Suite 202  
Garner, NC 27529  
Phone: (919) 779-0046 800-948-2511 Fax  
919-779-5642  
[www.nflpn.com](http://www.nflpn.com)

#### **American Board of Nursing Specialties (ABNS)**

4035 Running Springs, San Antonio, TX  
78261  
Phone: (830) 438-4897  
Fax: (830) 438-4897  
<http://www.nursingcertification.org/>

### **Medical Technician, Medical Secretaries, Lab Personnel**

#### **Board of Medical Examiners**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

#### **Tennessee Medical Laboratory Board**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

#### **Educational requirements/certification requirements:**

Contact the ASCP Board of Registry  
P.O. Box 12277, Chicago, IL 60612-0277  
Phone: 800-621-4142, ext.1345  
In Illinois, 312-738-4890, ext. 1345  
On-line: [www.ascp.org/bor](http://www.ascp.org/bor)

### **Dental Hygienist and Dental Assistant**

#### **Board of Dentistry**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **Histologic Technicians**

#### **Tennessee Medical Laboratory Board**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

#### **American Society for Clinical Pathology**

2100 West Harrison Street, Chicago IL  
60612  
Phone: (312) 738-1336  
<http://www.ascp.org>

#### **National Society for Histotechnology**

4201 Northview Drive, Bowie, MD 20716  
[www.nsh.org](http://www.nsh.org)

## **Cytotechnologist**

### **Tennessee Medical Laboratory Board**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **American Society of Cytopathology**

400 West 9th Street • Suite 201•  
Wilmington, Delaware 19801  
Phone: (302) 429-8802  
Fax: (302) 429-8807  
<http://www.cytopathology.org>

## **Ultrasound Technicians**

### **Tennessee Medical Laboratory Board**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **Certified Recreational Therapists, Occupational Therapists, Physical Therapists and Primary Care Physician Therapist**

### **Board of Occupational & Physical Therapy Examiners**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **American Physical Therapy Association**

1111 North Fairfax Street Alexandria, VA  
22314-1488  
Phone: (703) 684-APTA (2782) or (800)  
999-APTA (2782)  
Fax: (703) 684-7343  
[www.apta.org](http://www.apta.org)

## **Speech Therapists**

### **Board of Communications Disorders/Sciences**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

## **Radiologic Technologists**

### **X-Ray Operators**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **American Society of Radiological Technology**

15000 Central Ave. SE • Albuquerque • NM •  
87123-3917  
Phone: 800-444-2778  
Fax: 505-298-5063  
[www.asrt.org](http://www.asrt.org)  
Radiological Society of North America  
2021 Spring Road, Suite 600 Oak Brook, IL  
60523-1860  
Phone: (630) 571-2670  
<http://www.rsna.org>

## **Dietician**

### **Board of Dietitian and Nutritionist Examiners**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **Mental Health and Psychological Technicians**

### **Board of Examiners in Psychology**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

## **Home Health Aides**

### **Board of Examiners for Nursing Home Administrators**

First Floor, Cordell Hull Building  
425 Fifth Avenue, North  
Nashville, TN 37247-1010  
(615) 532-3202 local or 1-800-778-4123

### **National Association for Home Care**

228 7th Street, SE  
Washington, DC 20003  
Phone: (202) 547-7424  
Fax: (202) 547-354  
<http://www.nahc.org>

**Medical Transcriptionist**

**Pharmacist**

**American Pharmaceutical Organization**

800 I Street, NW Washington, DC 20001

Phone: (202) 777-2742 (APHA)

Fax: (202) 777-2534

[www.apha.org](http://www.apha.org)

**American Association of Colleges of  
Pharmacy**

Office of Student Affairs 1426 Prince Street

Alexandria, Virginia 22314

Phone: (703) 739-2330

Fax: (703) 836-8982

[www.aacp.org](http://www.aacp.org)

**Pharmacy Technician**

**American Pharmaceutical Organization**

800 I Street, NW Washington, DC 20001

Phone: (202) 777-2742 (APHA)

Fax: (202) 777-2534

[www.apha.org](http://www.apha.org)

**Part B: Workforce Supply and Demand**

***Please use the following guide to fill out this portion of the survey:***

- A** - 0 positions or less
- B** - 1 - 5 positions
- C** - 6 - 10 positions
- D** - 11 - 20 positions
- E** - 21 - 40 positions
- F** - 40+ positions

The following is a list of healthcare occupations. Please estimate your hiring needs in the healthcare occupations that are relevant to your company.

Occupation		Current Condition		Future Hiring (6-10 yr. est.)			
		Current employment	Current vacancies	Replacement	New additions		
<b>Nursing</b>		<b>Example:</b>		<b>F</b>	<b>C</b>	<b>B</b>	<b>D</b>
	Certified Nurse Assistants						
	Clinical Nurse Specialists						
	Licensed Practical Nurses						
	Nurse Midwives						
	Nurse Aides, Orderlies and Attendants						
	Nurse Anesthetists						
	Nurse Practitioners						
	Registered Nurses						
<b>Rehabilitation Professions</b>							
	Dietitians/Nutritionists						
	Dispensing Opticians						
	Licensed Certified Respiratory Therapists						
	Licensed Registered Respiratory Therapists						
	Occupational Therapists						
	Optometrists						
	Physical Therapists						
	Radiation Therapists						
	Recreational Therapists						
	Respiratory Therapists						
	Speech Language Pathologists						
<b>Medical Assisting</b>							
	Cardiovascular Technologists and Technicians						

Occupation		Current Condition		Future Hiring (6-10 yr. est.)	
		Current employment	Current vacancies	Replacement	New additions
	Dental Assistants				
	Dental Hygienists				
	Dietetic Technicians				
	Emergency Medical Technicians and Paramedics				
	Home Health Aides				
	Med. Record and Health Information Technicians				
	Medical Appliance Technicians				
	Medical Equipment Preparers				
	Medical Secretaries				
	Medical Transcriptionists				
	Nuclear Medicine Technologists				
	Occup. Health and Safety Technicians & Spec.				
	Occupational Therapy Aides				
	Occupational Therapy Assistants				
	Personal and Home Care Aides				
	Pharmacy Aides				
	Pharmacy Technicians				
	Physical Therapy Aides				
	Physical Therapy Assistants				
	Physician Assistants				
	Psychiatric Aides				
	Psychiatric Technicians				
	Respiratory Therapy Technicians				
	Surgical Technologists				
	Veterinary Assistants & Lab. Animal Caretakers				
	Veterinary Technologists and Technicians				
<b>Medical Imaging</b>					
	Diagnostic Medical Sonographers				
	Radiologic Technologists and Technicians				
<b>Clinical Laboratory Services</b>					
	Dental Laboratory Technicians				
	Medical and Clinical Laboratory Technicians				
	Medical and Clinical Laboratory Technologists				
	Phlebotomist				
<b>Medical and Health Service Management</b>					
	Medical and Health Service Managers				

**Part C: Healthcare Career Ladder**

In order to address the problems in healthcare, we need your cooperation in the following areas.

**Please use the guide below to fill out this part of the survey.**

<b>Education:</b> LHS: Less than high school HS: High school VS: Vocational school AD: Associate's degree BA: Bachelor's degree MA: Master's degree PhD or Professional	<b>Required Courses:</b> 1 - Math/Statistics 2 - Biology/Chemistry/Physics 3 - Social Studies 4 - Option 1 and 2 5 - Any one category	<b>Required Training:</b> ST: Short-term training (0 - 1 month) MT: Moderate-term training (1 - 12 months) LT: Long-term training (more than 12 months) CT: Clinical training RWE: Related Work Experience Other: Specify any combination of the above (Example: MT + RWE)
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Occupation	Minimum experience (years)	Minimum education Level	Required courses	Required training	Entry pay rate	Certification or license required
<b>Nursing</b>	<b>Example: 2</b>	<b>VS</b>	<b>4</b>	<b>LT</b>	<b>\$7</b>	<b>yes / no</b>
Certified Nurse Assistants						yes / no
Clinical Nurse Specialists						yes / no
Licensed Practical Nurses						yes / no
Nurse Aides, Orderlies and Attendants						yes / no
Nurse Anesthetists						yes / no
Nurse Midwives						yes / no
Nurse Practitioners						yes / no
Registered Nurses						yes / no
<b>Rehabilitation Professions</b>						
Dietitians/Nutritionists						yes / no
Dispensing Opticians						yes / no
Licensed Certified Respiratory Therapists						yes / no
Licensed Registered Respiratory Therapists						yes / no
Occupational Therapists						yes / no
Optometrists						yes / no
Physical Therapists						yes / no
Radiation Therapists						yes / no
Recreational Therapists						yes / no
Respiratory Therapists						yes / no
Speech Language Pathologists						yes / no
<b>Medical Assisting</b>						
Cardiovascular Technologists and Technicians						yes / no

<b>Education:</b> LHS: Less than high school HS: High school VS: Vocational school AD: Associate's degree BA: Bachelor's degree MA: Master's degree PhD or Professional	<b>Required Courses:</b> 1 - Math/Statistics 2 - Biology/Chemistry/Physics 3 - Social Studies 4 - Option 1 and 2 5 - Any one category	<b>Required Training:</b> ST: Short-term training (0 - 1 month) MT: Moderate-term training (1 - 12 months) LT: Long-term training (more than 12 months) CT: Clinical training RWE: Related Work Experience Other: Specify any combination of the above (Example: MT + RWE)
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Occupation	Minimum experience (years)	Minimum education Level	Required courses	Required training	Entry pay rate	Certification or license required
Dental Hygienists						yes / no
Dietetic Technicians						yes / no
Emergency Medical Technicians and Paramedics						yes / no
Home Health Aides						yes / no
Med. Record and Health Information Technicians						yes / no
Medical Appliance Technicians						yes / no
Medical Equipment Preparers						yes / no
Medical Secretaries						yes / no
Medical Transcriptionists						yes / no
Nuclear Medicine Technologists						yes / no
Occup. Health and Safety Technicians & Spec.						yes / no
Occupational Therapy Aides						yes / no
Occupational Therapy Assistants						yes / no
Personal and Home Care Aides						yes / no
Pharmacy Aides						yes / no
Pharmacy Technicians						yes / no
Physical Therapy Aides						yes / no
Physical Therapy Assistants						yes / no
Physician Assistants						yes / no
Psychiatric Aides						yes / no
Psychiatric Technicians						yes / no
Respiratory Therapy Technicians						yes / no
Surgical Technologists						yes / no
Veterinary Assistants & Lab. Animal Caretakers						yes / no
Veterinary Technologists and Technicians						yes / no
<b>Medical Imaging</b>						
Diagnostic Medical Sonographers						yes / no
Radiologic Technologists and Technicians						yes / no
<b>Clinical Laboratory Services</b>						
Dental Laboratory Technicians						yes / no
Medical and Clinical Laboratory Technicians						yes / no
Medical and Clinical Laboratory Technologists						yes / no
Phlebotomist						yes / no
<b>Medical and Health Service Management</b>						
Medical and Health Service Managers						yes / no

Thank you for your help. We appreciate your efforts. For questions about this study, you may contact Dr. Murat Arik. Please return in the enclosed postage paid envelope.

**CHAPTER V:**

**Middle and High School Perception Survey  
and  
Public Awareness Marketing Plan**

## **Middle and High School Perception Survey and Public Awareness Marketing Plan**

- I. Introduction
- II. Background and Methodology
- III. Survey of Student Attitudes Toward Work and Career
  - a. Attitudes Toward Careers
  - b. Attitudes Toward Jobs and Careers
  - c. College Preparation
  - d. Importance of a College Degree
  - e. Attitudes Toward Classes
  - f. Knowledge of Health Care Careers: Courses
  - g. Knowledge of Health Care Careers: Type of Work
  - h. Health Care Careers Considered by Students
- IV. Student Attitudes: Conclusion
- V. Public Awareness Marketing Plan
- VI. Appendix: Survey Instrument

CHAPTER V:  
Middle and High School Perception Survey  
and Public Awareness Marketing Plan

I. INTRODUCTION

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The middle and high school perception survey and public awareness program are informed by the state of healthcare workforce reports prepared for northwest Tennessee. The school perception survey and the marketing plan are critical parts of a comprehensive assessment of the healthcare workforce in northwest Tennessee. The findings in this report and the previous four reports should be used to design regional solutions to identified health care workforce issues and to apply for seed money for programs regarding health care workforce development.

One critical reason for the labor shortage that many healthcare professionals mentioned is misperceptions of healthcare occupations. Even though many secondary school students are highly motivated to get a college education and knowledgeable about course requirements for college, they do not show the same level of enthusiasm and knowledge about healthcare professions. This report provides a comprehensive view of students' perceptions of healthcare occupations and offers a marketing plan to change perceptions of healthcare professions in northwest Tennessee.

The rest of the report is organized as follows: section two deals with methodology, section three presents the perception survey results for the whole region. Section four summarizes the survey results. Section five details a marketing plan to change the prevailing perceptions and attitudes toward healthcare professions. Section six includes appendices regarding healthcare perceptions and attitude survey materials.

## II. BACKGROUND AND METHODOLOGY

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**Background.** This research was designed to serve as a baseline for knowledge of and attitudes toward careers in the healthcare industry. We would expect this survey to be administered every one to two years as the marketing research continues to measure results from the program. Furthermore, we suggest the survey results be used to guide any efforts to redesign the program. Given the nature of this program, shifts in knowledge about healthcare career requirements are likely to occur before any appreciable change in attitudes toward the careers.

**Methodology and Demographics.** Surveys were mailed to middle and high schools in the seven counties of northwest Tennessee where principals identified specific classes for participation. The individual schools were given discretion over exactly when the surveys would be administered and to how many students. While such flexibility might not be

preferred as the ideal research approach, the BERC felt it was necessary in order to get cooperation from already overworked schools and teachers. After follow-up contacts and allowing as much time as possible, the BERC received 741 completed surveys, 268 from students in the 8<sup>th</sup> grade and 473 from students in the 11<sup>th</sup> grade. More detailed demographics of the returned surveys are shown in the table below.

**Characteristics of Survey Respondents**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
<b>Gender (%)</b>		
<i>Male</i>	42.20	42.50
<i>Female</i>	57.80	57.60
<b>County (%)</b>		
<i>Crockett</i>	4.50	0.00
<i>Dyer</i>	5.60	9.70
<i>Gibson</i>	38.80	16.10
<i>Lake</i>	14.20	3.60
<i>Lauderdale</i>	0.00	3.60
<i>Obion</i>	29.90	39.50
<i>Tipton</i>	7.10	27.50
<b>Family members with college degree (%)<sup>1</sup></b>		
<i>Father has degree</i>	8.60	9.90
<i>Mother has degree</i>	17.50	18.00
<i>Both have degrees</i>	26.50	15.70
<i>Neither has degree</i>	41.40	54.10
<i>Either is now going to college</i>	5.20	4.10
<b>Brothers/sisters going to college (%)</b>	43.60	47.20
<b>Hours/week on paying job in previous summer – Average</b>	13.20	35.70
<i>% who said no job</i>	50.00	43.00
<b>Hours/week on Internet – Average</b>	8.7	6.80
<b>Did volunteer work (%)</b>	55.40	54.60

<sup>1</sup>These numbers may not add to 100% due to rounding and some multiple responses.

### III. SURVEY OF STUDENT ATTITUDES TOWARD WORK AND CAREER

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*a. Attitudes toward Careers.* Students were first asked to think about what career they might have and identify what would be important to them in choosing a career. It is not surprising that over half the students identified pay as very important, yet being able to spend more time with family was rated as very important by over two-thirds of 8<sup>th</sup> graders and 54 percent of 11<sup>th</sup> graders. The other two factors that rated high were ability “to get a job anywhere in the U.S.” and “a job you can keep until you retire.” The first is a concern since it could indicate a greater geographic mobility of the younger generation. The second is a concern because in today’s business environment it is simply unrealistic.

In addition to looking at results by grade, the BEREC also looked within each grade by gender. In terms of attitudes toward a career, boys and girls in the 8<sup>th</sup> grade did not differ significantly. However, in the 11<sup>th</sup> grade some differences became evident. Women were more concerned about the number of hours worked each day and, perhaps in tandem, the opportunity for more time with the family. Well over half (57 percent) of the 11<sup>th</sup> grade women found the ability to get a job anywhere in Tennessee “very important” as compared to only 44 percent of men. The next results seem counterintuitive: more women than men are attracted to work that is challenging (18 vs. 6 percent), yet more women than men want a job that is routine (21 vs. 9 percent). To try to understand this anomaly, the BEREC looked at a correlation between the two questions. One would expect that, with questions that appear to be opposites, the correlation between the two would be negative and substantial, yet the correlation between these two questions was .178, significant but

positive and relatively insubstantial.<sup>1</sup> A brief discussion with a teenage girl revealed a different interpretation of the word “routine.” Her immediate response was to ask what I meant by the word, whether I was using it in the sense of a dance routine or a system or way of doing things. She seemed to have few pejorative associations with the term and could readily understand how something could be both routine and challenging. While this sample of one certainly cannot be said to be definitive, it at least gives us some idea of how such seemingly conflicting statements can be seen as similar to some audiences.

**Importance of Different Factors in Choosing a Career:  
% Who Said “Very Important”**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
Pay	60.80%	52.10%
Hours work each day	31.80%	35.20%
Days work per week	38.90%	35.70%
Job that doesn’t require a college education	13.50%	8.30%
Work that is challenging	18.40%	12.90%
Job you can keep until you retire	52.10%	52.30%
Job that is routine	18.80%	15.90%
Able to get a job anywhere in the U.S.	52.70%	51.60%
Able to get a job in this area of Tennessee	29.20%	23.20%
Able to spend more time with your family	68.70%	53.60%

**b. Attitudes toward Jobs and Careers.** Later in the survey the BERC asked students about their attitudes toward jobs and careers. The most dramatic differences by gender occur for the desire to do work that helps others. For both grades, twice as many women found this to be important than did men (8<sup>th</sup> grade – 50 vs. 24 percent; 11<sup>th</sup> grade – 63 vs. 30 percent). It is encouraging to see that nearly three-fourths of the respondents strongly agree

<sup>1</sup> Based on Spearman’s Rho, significant at  $p = .01$ .

that “hard work is rewarded.” This suggests that they could be receptive to the idea that good jobs are the payoff of choosing a more rigorous academic program. There were no differences by gender for 8<sup>th</sup> graders, but among 11<sup>th</sup> graders women were more likely to strongly agree than were men (76 vs. 67 percent). Over half of the students expect to work most of their adult lives. For this statement, there were no significant differences by sex.

**Attitudes Toward Jobs and Careers:  
% Who “Strongly Agree”**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
I want to do work that helps others.	39.20%	9.10%
I want a job that others admire.	31.80%	29.80%
I expect to work most of my adult life.	57.50%	4.60%
I believe hard work is rewarded.	73.10%	72.00%
I want a job, not a career.	4.90%	3.90%

*c. College Preparation.* Less than one-fourth of the 8<sup>th</sup> graders strongly agreed that they know what classes to take to get into college. Awareness is significantly higher among 11<sup>th</sup> graders where nearly 60 percent strongly agreed they are aware. However, a lot less believe they are making the grades to get into college. Nevertheless 80 percent of 8<sup>th</sup> graders and 78 percent of 11<sup>th</sup> graders strongly agree that they plan to go to college. It is more than a little surprising to see such strong numbers for intention to go to college; especially given the rate of college attendance for the state of Tennessee (33 percent of those 18 years old, 30 percent of those 18-24).<sup>2</sup> What is driving these mixed results? It is possible that students are giving the answers that they believe are “correct” or that they think we want to hear. They may believe, even the 11<sup>th</sup> graders, that they can turn their low grades around before time to go to college. It is also possible that while many intend to go, most recognize that

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<sup>2</sup> Source: U.S. Census.

they may not be able to afford to go. Among 8<sup>th</sup> graders, just over one-third were confident they could afford college, while just over one-fourth of those in the 11<sup>th</sup> grade were confident. Certainly building awareness of the multitude of scholarships available to students pursuing a degree in the healthcare industry could hopefully help more of those who intend to go to college actually be able to go; since only 40 percent of 8<sup>th</sup> graders and 37 percent of 11<sup>th</sup> graders feel strongly that they know about scholarships and financial aid.

**Attitudes Toward College:  
% Who “Strongly Agree”**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
I know what classes I need to take to get into college.	24.30%	59.80%
I am making good grades to get me into college.	42.90%	34.60%
I plan to go to college.	80.10%	77.60%
I am confident I can afford to go to college.	34.00%	26.90%
I know about scholarships and financial aid.	40.10%	37.40%

**d. Importance of a College Degree.** Students understand that what they study in school will help them get a job. Girls in 11<sup>th</sup> grade were more likely to strongly agree than were 11<sup>th</sup> grade boys (58 vs. 41 percent) Furthermore, students seem to have a clear understanding of the importance of college: both to get a good job and to get the job they want. However, the attitude that college is needed to get a good job varies by gender, with females more likely to see the need (8<sup>th</sup> grade girls 75 percent vs. boys 55 percent; 11<sup>th</sup> grade girls 69 percent vs. boys 53 percent). Women who are but a year away from graduation are more likely than men to see the need for college to get the job they want. There are those who believe that plenty of jobs exist for people without a college degree, but they are the exception rather than the rule. More than six in 10 students believe they need a college degree to insure

they have a job in the future. Among 11<sup>th</sup> graders, women are more likely to agree than men.

**Importance of a College Degree:  
% Who “Strongly Agree”**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
What I study in school will help me get a job.	66.00%	51.20%
I need to go to college to get a good job.	66.80%	62.20%
I need to go to college to get the job I want.	72.70%	73.70%
There are plenty of jobs in this area for people without a college degree.	14.70%	11.20%
To be sure I have a job in the future, I will need a college degree.	63.90%	62.10%

*e. Attitudes toward Classes.* Strangely enough, 45 percent of the 8<sup>th</sup> grade students in our sample gave the most positive response when asked about their attitude toward math.

Even science comes in with one-third of 8<sup>th</sup> graders and 28 percent of 11<sup>th</sup> graders indicating a positive attitude toward the subject. There were a few variations by gender. Both 8<sup>th</sup> and 11<sup>th</sup> grade boys viewed history and social studies more favorably; while in high school women were more likely to prefer English and foreign languages.

**Attitudes toward Classes Taken in School:  
% Who “Like” (the Most Positive Response)**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
English/Language Arts	17.20%	27.30%
Math	45.10%	29.70%
Science	33.00%	27.80%
History	23.70%	29.30%
Social Studies	23.70%	20.00%
Foreign Language	24.80%	15.70%

*f. Knowledge of Healthcare Careers/Courses.* While high school students are slightly more aware of the courses to take to prepare to pursue medical degrees, only 23 percent or less indicated knowledge of the courses required. Among 8<sup>th</sup> graders, fewer than one in five felt that they knew what courses to take in high school in preparation for higher education in the healthcare field.

**Know What Courses to Take in High School for Different Medical Careers  
% Who Strongly Agree**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
Medical doctor	18.40%	22.90%
Nurse Practitioner	9.30%	15.90%
Registered Nurse	13.30%	19.50%
Licensed Practical Nurse	9.30%	16.90%
Medical Technician	9.20%	12.60%

Among middle school students, the greatest variations by gender occurred in knowledge about nurse practitioner, RN, and LPN courses; girls were more likely to claim knowledge than boys. Across all professions, high school girls claimed more knowledge than high school boys.

*g. Knowledge of Healthcare Careers/Type of Work.* Students have the best understanding of the type of work a doctor does, yet even this is limited to a relatively small portion of the sample. Awareness of the work a doctor does was followed by awareness of the work of a registered nurse (RN). Clearly there is much that could be done to better communicate the nature of work in the healthcare field, yet high school girls have a better grasp of the work involved than do high school boys.

**Know the Type of Work Involved for Different Medical Careers:  
% Who Strongly Agree**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
Medical Doctor	21.10%	19.90%
Nurse Practitioner	11.60%	11.50%
Registered Nurse	14.80%	19.50%
Licensed Practical Nurse	6.60%	12.90%
Medical Technician	8.10%	8.80%

*h. Healthcare Careers Considered by Students.* The vast majority of students do not seriously consider a job in the medical field. Whether this is due to a lack of understanding of the work involved, a concern over the number of years of school required, a concern over their ability to fund this education, a lack of interest in working in the healthcare industry, or some other reason remains to be seen. Among 8<sup>th</sup> graders, females are more likely to consider careers in nursing than are males, but the level is still below 15 percent. Eleventh grade women are more likely than the men to give serious consideration to all healthcare careers.

**This is a Job I Seriously Consider Doing:  
% Who Strongly Agree**

	8 <sup>th</sup> grade	11 <sup>th</sup> grade
Medical Doctor	14.20%	12.80%
Nurse Practitioner	4.60%	6.90%
Registered Nurse	8.70%	13.30%
Licensed Practical Nurse	3.90%	5.30%
Medical Technician	7.70%	5.70%

#### IV. STUDENT ATTITUDES: CONCLUSION

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This research has given us a baseline for knowledge of and attitudes toward careers in the healthcare industry among 8<sup>th</sup> and 11<sup>th</sup> graders in the seven counties of Northwest Tennessee. We had hoped for a stronger response across all seven counties to enable us to do some comparisons by county. Time and the exigencies of the school calendar precluded this. However, we were able to make comparisons by gender within the grades. This revealed some differences and many similarities.

Perhaps certain inconsistencies we see in the data are reflections of the inconsistencies that are present in most teenagers. Both 8<sup>th</sup> and 11<sup>th</sup> grade students recognize the need for a college education to survive in today's work environment. Most see themselves working most of their adult lives. Yet less than half are making the grades it will take to get into college. About one-third or fewer think they will be able to afford college. Only a fourth of the younger students know what classes are needed to get into college. Perhaps this is not surprising given their year in school. However, if they do not begin taking the right courses in the next year, they will not be prepared. There are many opportunities for some type of intervention to make a significant difference in the lives of these students. The marketing plan we have developed is a first attempt to find the right intervention.

This survey gave us a good understanding of some of the knowledge and attitudes students in Northwest Tennessee have toward jobs, college, and healthcare careers. We expect this survey will be administered every one to two years as the marketing program

continues, to measure results of the program. Furthermore, we suggest the survey results be used to guide any efforts to re design the program. Given the nature of this program, we are likely to see shifts in knowledge about healthcare career requirements before we see any appreciable change in attitudes toward the careers.

## V. MARKETING PLAN FOR SECONDARY SCHOOL STUDENTS TO RAISE AWARENESS OF AND INTEREST IN CAREERS IN HEALTHCARE

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**Overview.** Middle school students rarely understand the implications of their course choices on future career possibilities. In fact, they typically give little thought to potential careers. Even high school students may be more concerned about the ease of a plan of courses than any long-term consequences. The following marketing plan looks to raise awareness of the opportunities in the healthcare industry as well as to highlight the preparation needed for careers in this field.

**Background.** The Northwest Tennessee Workforce Board recognized the changing nature of employment in Northwest Tennessee for the coming decade. As more and more manufacturing jobs were moving overseas and the dominant employment picture for the United States was becoming one of a service industry, there was major concern over the readiness of local high school students to meet even the basic entrance requirements for a college education. Too often students had to do remedial work before beginning college classes, resulting in added time to complete a college degree as well as added expense. Furthermore, there was some reason to believe that students were not aware of the need for a college education or of the changing face of employment for the area.

Concurrent with this situation is the near-term crisis in healthcare. Just as the baby boomer generation is reaching an age with greater health needs, the medical workforce is aging and nearing retirement; the juxtaposition of these two phenomena is expected to result in a major workforce shortfall. In order to prevent this healthcare

crisis, the industry is looking to today's high school students in the hopes that a greater percentage will consider a career in healthcare. The Northwest Tennessee Workforce Board sees this as an opportunity for students in the area to select and prepare for a career that carries long-term job opportunities. Such a career requires at least some college, which in turn requires preparation in high school by taking a higher concentration of math and science courses—the very courses that students often try to avoid. Students who do not take these courses arrive at college needing to take remedial classes.

The Northwest Tennessee Workforce Board contracted with the research team at Middle Tennessee State University to measure 8<sup>th</sup> grade and 11<sup>th</sup> grade students' attitudes toward jobs, healthcare careers, and other related issues. In addition, the BERC was asked to develop a marketing plan that would persuade students to consider a career in healthcare. Results of the attitude research have been presented earlier and have been used to guide the subsequent marketing plan. The following is an outline of the steps for a program to raise awareness of healthcare career opportunities as well as the educational requirements for these careers. We have included many specific suggestions for each step; however, this has been designed to be a fluid program responding to students' input and the ideas of local area career and healthcare experts.

***Marketing Plan.*** The marketing plan will incorporate the classic four-point strategy: *Attention*—simply getting the students aware of opportunities in the medical field and the need for a college education; *Interest*—going beyond getting the students to notice the materials and programs to building a general interest in the information; *Desire*—letting

the students get involved in activities that will lead them to consider a career in the healthcare field and actually envision themselves in such jobs; and finally *Action*—moving students to make changes in their approach to classes in order to prepare themselves for college and career.

### **Student Involvement**

We recognize that peers have a major impact on teenagers' decisions; therefore any efforts to influence attitudes about a healthcare career must incorporate local input. The key to success for this plan is extensive student involvement in its creative execution. This allows the messages to resonate with the target audience and to generate school “buzz” about the local artists. The greater the level of local involvement, the more likely it is that the students will have ownership in the program and influence its success.

### **Attention**

Today's students are bombarded with messages—television advertisements, Internet postings, ipod tunes, podcasts, and blogs as well as the messages the teachers try to impart. Breaking through this noise is not simple and will require a multi-step approach with repetition.

Teasers. We recommend a series of teasers about salary levels for various jobs. Many school systems have closed-circuit televisions that allow announcements at the beginning of the school day, often during homeroom. If these systems are present in the Northwest Tennessee schools, teasers could be a part of morning announcements—perhaps as a static

frame at the beginning or end, or as a crawl along the bottom of the screen. These announcements should be supported with print media. These teasers would continue throughout the campaign with the expectation that, by the end of the effort, students would be able to supply the answers. This would result in a greater imprint of the message.

Trivia. Following the beginning wave of teasers by at least two weeks, trivia questions about education requirements for various medical careers, starting with medical technicians, would be shown on the televisions. The med tech job is likely the one that is most accessible to the widest range of students; therefore, the marketing program would be best served by starting with this job so that students do not “tune out” the messages as being unrelated to them. The trivia question should be asked and followed by the answer about the education required combined with an estimate of the number of jobs available in the area.

Contests. Perhaps the quickest way to a student’s heart is through his/her wallet. In each school, have a contest to develop a theme for the program. The message should be about the advantage of choosing a healthcare career. We would be looking for a short catch phrase, not a long list of the specific advantages. Prizes could be awarded at the middle school and high school levels (the contest should be open to all levels in both schools, not just 8<sup>th</sup> and 11<sup>th</sup> graders). This could be followed with a second contest to design an artistic rendition of the theme. Again prizes at both school levels would be awarded. The winning designs would be judged across all schools to determine one winning design.

The homeroom(s) of the winning theme writer and the winning designer could be given an appropriate reward (such as a pizza party). The winning theme would then be used throughout the rest of the program.

Art students, using the winning theme, could design simple 11 x 17 posters to be placed at strategic locations throughout the school. Individual posters should be made for each of the different careers. It is important to rotate these messages at least once a week.

Repetition is important, but it is also important to avoid excessive “wear” of the message; therefore, we recommend that the posters and messages be rotated at least once a week.

On the posters, multiple design executions for each message would not only reduce the wear of the message but also increase the number of students involved in the program.

A contest for best poster, with students voting on their choice, should be done each half of the school year. These updated posters will serve as reminders to continue to focus attention on the program throughout the year.

### **Interest**

It is important to move from awareness to interest. At this stage, we must present the facts of the careers and the opportunities that are available to graduates in the area.

Professional Presentations. It is important to bring healthcare professionals into the classrooms for direct interaction with the students. While some of these presentations could be made during school assembly, others should be direct to the classroom to allow more student interaction. Beyond the basic generalized presentations on the advantages

and requirements of the career, presentations could be arranged with math and science teachers to show how the material covered in class is used by healthcare professionals in the real world.

Integration in the Course Material. Examples gleaned from the professional presentations as well as online materials could be used in math and science courses on a regular basis to reinforce the connection between courses and careers. (Some of this may already be taking place.)

Counselors. School counselors should be included in the program in every way possible. A full packet of materials about the various professions—the educational requirements, the salary ranges, the outlook for local job opportunities, the course requirements for college, the career paths—should be provided to the counselors at the outset of the program.

### **Desire**

Letting students know about the nature and advantages of healthcare careers is much simpler than actually convincing the students that these careers could be for them. Many different efforts should be made to reach the diverse and wide range of students who could benefit from a healthcare career.

Mentoring. Students who evidence the greatest interest in a healthcare career should be matched with a professional in the job of interest. This should be a match for an entire

school year. During this time, there should be scheduled meetings with a small number of suggested agendas; the remaining meetings should evolve from the nature of the relationship. It's not only the nature of the career that is being demonstrated through the relationship but also the more casual linking of the student and mentor in such a way that the student can identify with the mentor and ultimately see him/herself in a similar job. If possible, the student should shadow the professional for one day. The students selected for the mentor program would be expected to present in homeroom the advantages of the job as well as other points they have learned.

Lights, film, action. High school students should be selected to prepare a 20-minute or shorter video on the life of professionals in healthcare careers. Ideally, they would be allowed to shadow a professional for a day to record what goes on in the individual jobs. At least one group per county would be selected to create these videos. The best video in each county could be shown at assembly or in homeroom for both middle and high schools. A single video would be selected for screening in all schools throughout the region. This allows greater student involvement and presents the career options from the perspective of the student. Also, we believe the uniqueness of this approach will generate “buzz” in the schools.

Summer camp. Many areas offer short day camps on particular professional fields. MTSU has hosted camps for young students on careers in business, writing, and the music industry. Similar camps could be hosted at Dyersburg State Community College or local hospitals (or a partnership of the two). These day camps could last for a week

and provide the students hands-on opportunities in the healthcare field. A small fee (\$100-\$250) could cover the minor expenses for the camp (t-shirts, transportation to local venues, lunch each day, and other small items). Requiring at least a modest fee decreases the likelihood that a student would reserve a spot in camp and not show up. Other expenses could be funded locally or perhaps through grants (either state or national).

Internships. Either paid or unpaid summer internships could be offered to students finishing the 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> grades. These internships should be competitive. If the internships are unpaid, they would be of shorter duration. Paid internships could last most of the summer, with a minimum number of hours required of the students. These internships would be with local healthcare organizations and would allow the students close personal views of the work involved in particular jobs.

### **Action**

To a great extent the previous three stages determine whether or not the student is likely to pursue a career in healthcare. At this stage of the marketing plan, the key efforts revolve around making it as easy as possible for the students to act on their interest.

Counselors. School counselors, having already received packets about this program, would be given information on local college and technical school programs. They would have specific entrance requirements, information on grants and scholarships (both at the local and national levels), and pamphlets on application processes for the local schools.

College and career nights. An effort that is likely already underway could be utilized to stress the healthcare options. Juniors and seniors and their parents would be invited to college night in the fall semester. Not only would local colleges, technical schools, and state universities be present, but there would be specific packages of grants, scholarships, and course paths for healthcare careers. We would also recommend that local healthcare agencies be present to discuss job opportunities and provide basic healthcare screenings for the parents as the students are researching some advanced education opportunities. This would be a good opportunity for younger students in the mentor program to be included in providing the healthcare screenings to the extent possible.

***Conclusion.*** This program requires a long-term commitment by the local healthcare organizations and the individual school systems. Furthermore, the Northwest Tennessee Workforce Board will need to be closely involved in steering the program, insuring long-term compliance with our plan, and providing continued support through the search for state and national grants to support the program as well as scholarships and funding available for the students.

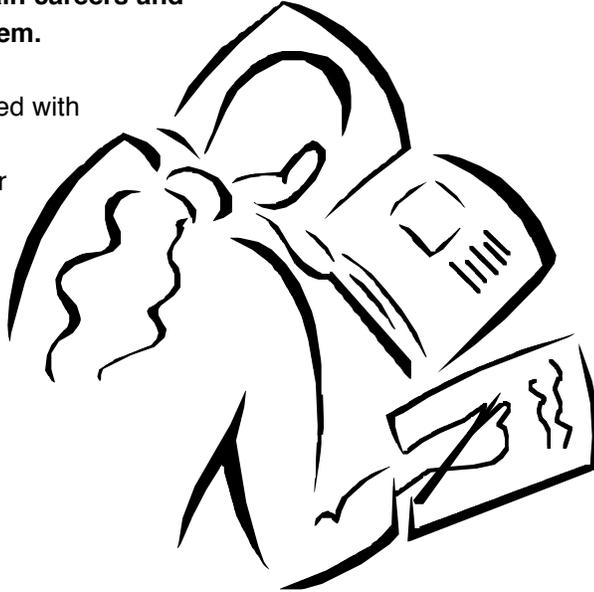
This is not an overnight effort. It will take time to build awareness and interest and likely a longer time to convert these to desire and action. However, there will be a carryover effect from year to year, and many of the messages can become imbedded in the minds of students to potentially impact choices even after completing their high school degree.

A key to success for the program is that it be fluid and respond to feedback from the schools as well as the students. Certain aspects of the program may be less successful, while other ideas may develop over time. Schools should be encouraged to adapt this program as they feel it will work best for their particular situations. They should also be encouraged (even through financial incentives) to come up with new ideas for the program. The more successful of these ideas should be quickly expanded to the region. As this program moves forward, it is important that it not become stale. Every effort should be made to revise and update as needed.

# Survey of Student Attitudes Toward Work and Careers

This survey is designed to understand how students view certain careers and jobs available to them.

This study will be used with other information to develop programs for students in northwest Tennessee.



- You may choose to do the survey or not.
- This will not affect your grade in this class.
- You may stop at any point in the survey, or you may choose to skip some questions.
- There are no right or wrong answers.
- Please answer each question honestly and to the best of your ability.
- We will look at results by groups and all information will be kept confidential.
- Please do not put your name on this survey.

## I. What is important to you in choosing a career?

For each item below, tell us how important it is to you. If it is very important, you would circle "5"; if it is not important, you would circle "1." You may choose any number between 1 and 5. Please mark only one number per item.

	Not Important			Very Important	
	1	2	3	4	5
1. The pay	1	2	3	4	5
2. Number of hours you work each day	1	2	3	4	5
3. Number of days you work each week	1	2	3	4	5
4. A job that where you don't need a college education	1	2	3	4	5
5. Work that is challenging	1	2	3	4	5
6. A job you can keep until you retire	1	2	3	4	5
7. A job that is routine	1	2	3	4	5
8. Able to get a job anywhere in the U.S.	1	2	3	4	5
9. Having a job in this area of Tennessee	1	2	3	4	5
10. Being able to spend more time with your family	1	2	3	4	5

**II. The next questions relate to jobs in the medical field. There are 4 questions for each job.**



**Strongly  
Disagree**

**Strongly  
Agree**

**1. Medical doctor**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| a. I know what courses I should take in high school. | 1 | 2 | 3 | 4 | 5 |
| b. I know generally the type of work involved.       | 1 | 2 | 3 | 4 | 5 |
| c. This is a job I seriously consider doing.         | 1 | 2 | 3 | 4 | 5 |
| d. How many years of college are required? _____     |   |   |   |   |   |

**2. Nurse practitioner**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| a. I know what courses I should take in high school. | 1 | 2 | 3 | 4 | 5 |
| b. I know generally the type of work involved.       | 1 | 2 | 3 | 4 | 5 |
| c. This is a job I seriously consider doing.         | 1 | 2 | 3 | 4 | 5 |
| d. How many years of college are required? _____     |   |   |   |   |   |

**3. Registered Nurse (RN)**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| a. I know what courses I should take in high school. | 1 | 2 | 3 | 4 | 5 |
| b. I know generally the type of work involved.       | 1 | 2 | 3 | 4 | 5 |
| c. This is a job I seriously consider doing.         | 1 | 2 | 3 | 4 | 5 |
| d. How many years of college are required? _____     |   |   |   |   |   |

**4. Licensed Practical Nurse (LPN)**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| a. I know what courses I should take in high school. | 1 | 2 | 3 | 4 | 5 |
| b. I know generally the type of work involved.       | 1 | 2 | 3 | 4 | 5 |
| c. This is a job I seriously consider doing.         | 1 | 2 | 3 | 4 | 5 |
| d. How many years of college are required? _____     |   |   |   |   |   |

**5. Medical Technician**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| a. I know what courses I should take in high school. | 1 | 2 | 3 | 4 | 5 |
| b. I know generally the type of work involved.       | 1 | 2 | 3 | 4 | 5 |
| c. This is a job I seriously consider doing.         | 1 | 2 | 3 | 4 | 5 |
| d. How many years of college are required? _____     |   |   |   |   |   |

6. If you would not seriously consider doing one or more of the jobs above, please tell us why not.

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**III. With whom would you be likely to talk about career options and requirements? (Check all that apply.)**

- Teachers
- Counselors
- Parents
- Friends
- Other (Please specify.) \_\_\_\_\_

**IV. The next questions are about school and college.**

	<b>Strongly Disagree</b>				<b>Strongly Agree</b>
	1	2	3	4	5
1. What I study in school will help me get a job.	1	2	3	4	5
2. I know what classes I need to take to get into college.	1	2	3	4	5
3. I am making good grades to get me into college.	1	2	3	4	5
4. I plan to go to college.	1	2	3	4	5
5. I am confident I can afford to go to college.	1	2	3	4	5
6. I know about scholarships and financial aid for college.	1	2	3	4	5
7. I need to go to college to get a good job.	1	2	3	4	5
8. I need to go to college to get the job I want.	1	2	3	4	5
9. There are plenty of jobs in this area for people without a college degree.	1	2	3	4	5
10. To be sure I have a job in the future, I will need a college degree.	1	2	3	4	5

**11. Thinking about the classes you have taken in school, how would you describe your attitude toward each?**

	<b>Dislike</b>				<b>Like</b>
	1	2	3	4	5
a. English/Language arts	1	2	3	4	5
b. Math	1	2	3	4	5
c. Science	1	2	3	4	5
d. History	1	2	3	4	5
e. Social Studies	1	2	3	4	5
f. Foreign Languages	1	2	3	4	5

**V. These questions are about your attitude toward jobs and careers.**

	<b>Strongly Disagree</b>				<b>Strongly Agree</b>
1. I want to do work that will help others.	1	2	3	4	5
2. I want a job that is very prestigious.	1	2	3	4	5
3. I expect to work most of my adult life.	1	2	3	4	5
4. I believe hard work is rewarded.	1	2	3	4	5
5. I want a job, not a career.	1	2	3	4	5

**VI. The last questions are used to learn a little about students' backgrounds and experiences.**

**1. Does either of your parents have a college degree?**

- Father has a college degree.
- Mother has a college degree.
- Both have a college degree.
- Neither has a college degree.
- Father or mother is currently going to college.

**2. Do you have brothers or sisters who have gone or are going to college?**

- Yes
- No

**3. Thinking of this past summer, on average, how many hours per week did you work at a paying job? (Please include any hours that you worked and were paid for including baby sitting, mowing yards, working for a business, and any other work).**

- \_\_\_ hours, or
- Did not have any paid jobs

**4. Did you do any volunteer work this summer?**

- Yes
- No

**5. On average, how many hours do you spend on the Internet in the typical week (including weekends)?**

- \_\_\_\_\_
- 0

**6. What year were you born? \_\_\_\_\_**

**7. Gender**

- Male
- Female

**8. What grade are you in? \_\_\_\_\_**

**CHAPTER VI:**

**Funding Sources for Northwest Tennessee Healthcare  
Workforce Initiative**

**Funding Sources for Northwest Tennessee Healthcare  
Workforce Initiative**

- I. Introduction
- II. Background and Guide for Using This Document
- III. Why Pursue Post-Secondary Education?
- IV. What Kinds of Financial Aid are Available for Post-Secondary Education?
- V. What Kinds of Workforce Development Funding are Available for Local Workforce Development Agencies/Institutions?
- VI. Appendix A: Detailed Information for Selected Financial Aid Programs
- VII. Appendix B: Detailed Information for Selected Workforce Development Grant Programs

**CHAPTER VI:**  
**Funding Sources for Northwest Tennessee Healthcare**  
**Workforce Initiative**

**I. INTRODUCTION**

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This study has analyzed different aspects of healthcare workforce dynamics in northwest Tennessee. The overarching conclusions from the reports are that the region is one of the poorest in the state; the healthcare industry is experiencing current and future workforce shortages; postsecondary educational institutions are financially hard-pressed to accommodate more programs; the existing potential health care workforce does not have the necessary background to complete healthcare training programs; and even though middle and high school students are motivated to go to college, their attitudes toward healthcare occupations are not encouraging.

In addition to a well-designed public awareness program to change the perceptions of middle and high school students regarding healthcare occupations, a pressing issue seems to be sources of funding for healthcare workforce training programs. This is also an issue for secondary school students wanting to continue their postsecondary education. Based on the survey results, it is clear that the high motivation of secondary school students has not translated into a high college attendance rate. Lack of awareness of the financial aid system could be the reason why many highly motivated students do not pursue education beyond high school.

This report highlightings the sources of funding for healthcare workforce development and postsecondary school financial aid.

5. School Surveys and Public Awareness Campaign
6. *Funding Sources for Healthcare Workforce Education and Training*

There are many sources of funding for healthcare workforce development. The most prominent and significant source of funding is at the federal level. The second important source is private foundations. Finally, there would be state level workforce development initiatives in creation periods. The funding programs for healthcare workforce development, however, are not fixed: they change frequently. There might be changes in the scope of programs every funding season. The critical component of healthcare workforce development funds is the institutions that administer these funds, and these institutions remain constant. It is critical that healthcare workforce development facilities in northwest Tennessee should be in close contact with the major funding sources to take advantage of workforce development funds. The analyses prepared so far provide necessary background information to prepare grant proposals in all aspects of workforce development from dislocated workers to welfare-to-work programs.

Similarly, there are many sources of funding for secondary school students to pursue their postsecondary education. The results of surveys suggest that students and parents are not aware of the sources of funding for postsecondary education in the region. One possible interpretation of the survey results that show high college motivation and low college enrollment in the region is that the financial aspect of postsecondary education plays a critical role in the decision to pursue college education. Especially, misperceptions of healthcare occupations could be about both the occupations themselves and the high cost of healthcare education. This report, therefore, highlights critical sources of financial aid that families and school counselors can utilize to prepare the future healthcare workforce.

The rest of the report is organized as follows: section two provides the background and guide for using this document. Section three highlights the benefits of pursuing postsecondary education. Section four provides a guide for students seeking financial aid. Section five presents a summary of major sources of funding for workforce development

at the federal, regional, and private foundation levels. Section six offers detailed information on selected sources of financial aid for students who want to pursue postsecondary education. Section seven includes a detailed profile of selected funding grant programs for workforce development.

## II. BACKGROUND AND GUIDE FOR USING THIS DOCUMENT

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The BERC conducted an extended Web search to identify sources of funding for healthcare workforce development and financial aid for students who are pursuing postsecondary education. Specifically, the BERC searched several databases and foundation Web sites to find information on sources of funding in the following areas:

- Financial aid for students
- Healthcare workforce training
- Community capacity building
- Community college capacity building
- Secondary school science education
- Secondary school curriculum development
- Dislocated workforce training
- Welfare-to-workforce training
- Skill enhancement program
- Rural area workforce training
- School-to-work program
- Faculty recruitment and training programs
- In-house hospital certificate programs
- Minority and immigration training programs
- Healthcare workforce shortage reduction programs
- High-growth industry grant programs.

Based on the perception survey results, the BERC then organized the information in a way that could be easily used by secondary school counselors, healthcare facilities, and workforce development agencies/institutions.

The BERC's role in this process is to prepare background materials, highlighting the extent of problems in healthcare workforce development in rural Tennessee. The workforce development agencies/institutions and healthcare facilities could then use these materials in contacting grantmaking public and private agencies, which are listed here. While approaching grantmaking organizations, it is important that regional workforce development agencies/institutions use one or more of the areas listed above. Based on this study, the BERC concludes that the region could be eligible for grants in any one of the areas listed above.

The financial aid sources and grantmaking agencies are organized in the following way:

- Federal Sources
- State Sources
- Private/Foundation/Associations
- Regional Sources

For the specific type of grants listed in appendices A and B, the following grant elements are highlighted:

- Source
- Description
- Amount
- Award Range
- Key Dates
- Eligibility
- Evaluation Criteria
- Address
- Contact Person
- Supplementary Information

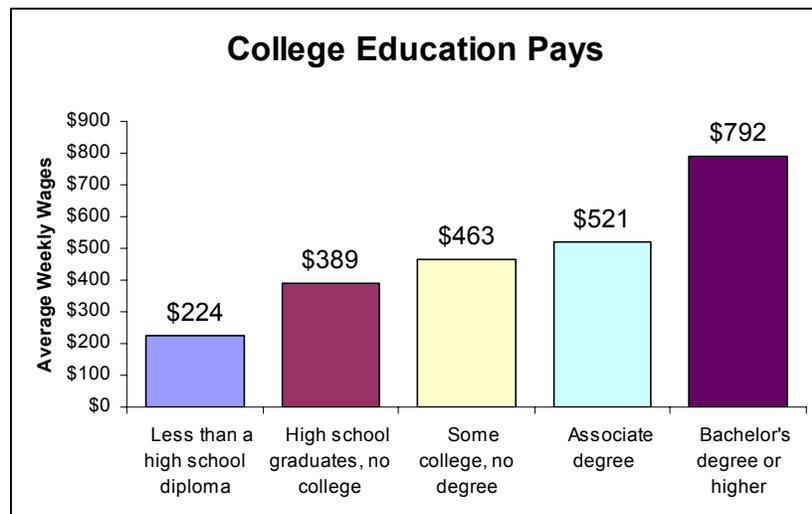
- Web site

There are two issues concerning the grant information listed here: (1) not all grants fit the format described above, and (2) not all grants could be active at this time. Local workforce development agencies ought to monitor major grant sources regularly and remain in close contact with the program administrators of the various grantmaking agencies and foundations.

### III. WHY PURSUE POSTSECONDARY EDUCATION?

#### ***College education pays.***

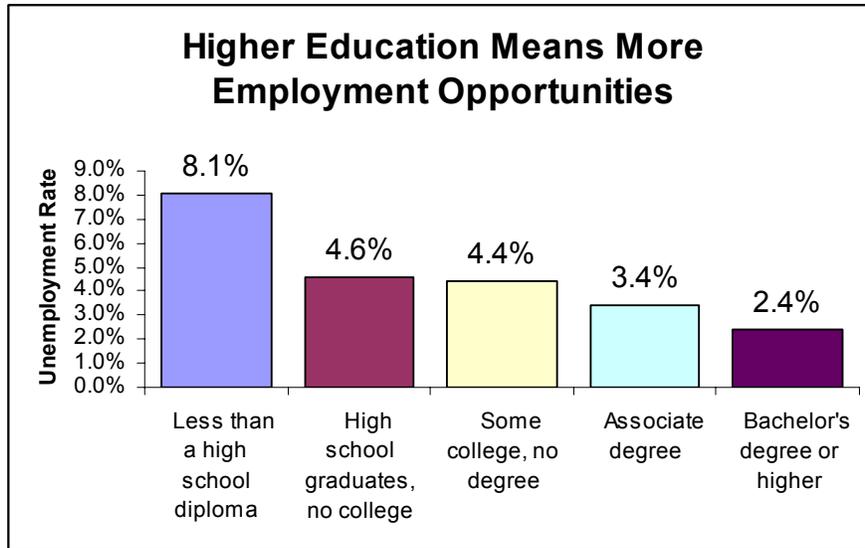
This is the most obvious reason for many individuals pursuing postsecondary education. According to survey data, individuals with an associate degree earn 2.35 times more than those individuals with less than high school education. Earnings from the main job increase by



Source: Tabulated from Current Population Survey ([www.census.gov](http://www.census.gov)) (December 2004). Weekly earnings from main job reported in December 2004 CPS survey for the age group between 25 and 65.

34 percent if you get an associate's degree after high school. This estimated difference in earnings could improve the quality of life of individuals substantially.

***College education means more employment opportunities.*** In addition to wage benefits, postsecondary education substantially increases an individual's chance of finding work substantially. Someone with an associate's degree has a substantially lower chance of being unemployed than someone with less than a high school education.



Source: [www.bls.gov](http://www.bls.gov) (2004 Q4)

**Looking for a job in healthcare increases your chance of employment.** Healthcare is the fastest growing industry. Currently the region is experiencing shortages, and it is projected that shortages will increase over the next 10 years. An education in healthcare provides many benefits: high earnings, diverse career options, career advancements, portability of skills from one region/institution to another, and availability of regional educational institutions.

Currently there are an estimated 343 shortages in healthcare in the region, and healthcare establishments will employ 2,108 qualified healthcare workers by 2015. The

Top Ten Fastest Growing Allied Health Occupations in Northwest Tennessee (2005-2015)

	Estimated Employment		Projected Vacancies (2015)			Projected Employment and Changes		
	Current Employment	Current Vacancies	Replacement	New Additions	Total Vacancies	Total Employment (2015)	% Change (2005-2015)	Numerical Change (2005-2015)
Certified Nurse Assistant	786	55	159	174	333	960	22.11	174
Registered Nurse	584	61	120	124	244	707	21.20	124
Licensed Practical Nurses	519	44	136	85	221	604	16.33	85
Dental Assistants	164	16	109	49	158	213	30.00	49
Physical Therapists	137	24	29	45	74	182	33.03	45
Personal and Home Care Aides	27	7	9	34	43	61	128.15	34
Dental Laboratory Technicians	98	11	44	33	76	131	33.33	33
Physical Therapy Assistants	43	15	19	29	48	72	67.65	29
Medical Record and Health Information Technicians	60	1	29	29	57	88	48.05	29
Medical Secretaries	117	5	18	29	46	145	24.58	29
<b>Total</b>	<b>2534</b>	<b>240</b>	<b>671</b>	<b>630</b>	<b>1302</b>	<b>3164</b>	<b>24.87</b>	<b>630</b>

following table presents areas in which the greatest employment opportunities are likely to occur.

*The region has a healthy mix of educational institutions.* Many educational institutions in the region offer programs in healthcare. The following table presents Certified Nursing Assistant training centers by county.

### Certified Nursing Assistant Training Facilities in Northwest Tennessee

County	Institution 1	Institution 2	Institution 3
<b>Crockett</b>	Crockett County High School	Nursing Assistant Training Center	N/A
<b>Dyer</b>	Dyersburg Nursing Manor	Wesley at Dyersburg - Nursing Care	N/A
<b>Gibson</b>	Humboldt manor Nursing Home	Milan High School	NHC Healthcare, Milan
<b>Lake</b>	N/A	N/A	N/A
<b>Lauderdale</b>	Ripley Healthcare and Rehabilitatiton	Ripley High School	Tennessee Technology Center at Ripley
<b>Obion</b>	Union City Manor	N/A	N/A
<b>Tipson</b>	Covington Care Center	Covington Manor Nursing Center	N/A

Source: Tennessee Department of Health

In other healthcare programs, consult one of the following institutions:

### Training Centers for Healthcare Workforce

Technology Centers	Community Colleges	Colleges and Universities
Covington (Tipton)	Dyersburg State Community College	<u>Public</u>
Newbern (Dyer)	Jackson State Community College	University of Memphis
Ripley (Lauderdale)	Southwest Tennessee Community College	University of Tennessee at Martin
Jackson (Madison)		UT Health Science Center
McKinzie		<u>Private</u>
Whiteville		Baptist College of Health and Sci.
Memphis (Shelby)		Christian Brothers University
Paris		Crichton College
		Bethel College
		Freed Hardeman University
		Lambuth University
		Lane College
		LeMoyne-Owen College
		Rhodes College
		Southern College of Optometry
		Union University

*What kind of preparation is required to enter a program in healthcare?* Many healthcare occupations require basic knowledge and understanding of math, chemistry, biology, and physics. The appropriate grade for planning for a college education is 8th grade.

Early planning is critical in taking the appropriate sequence of courses and finding sources of financial aid for college.

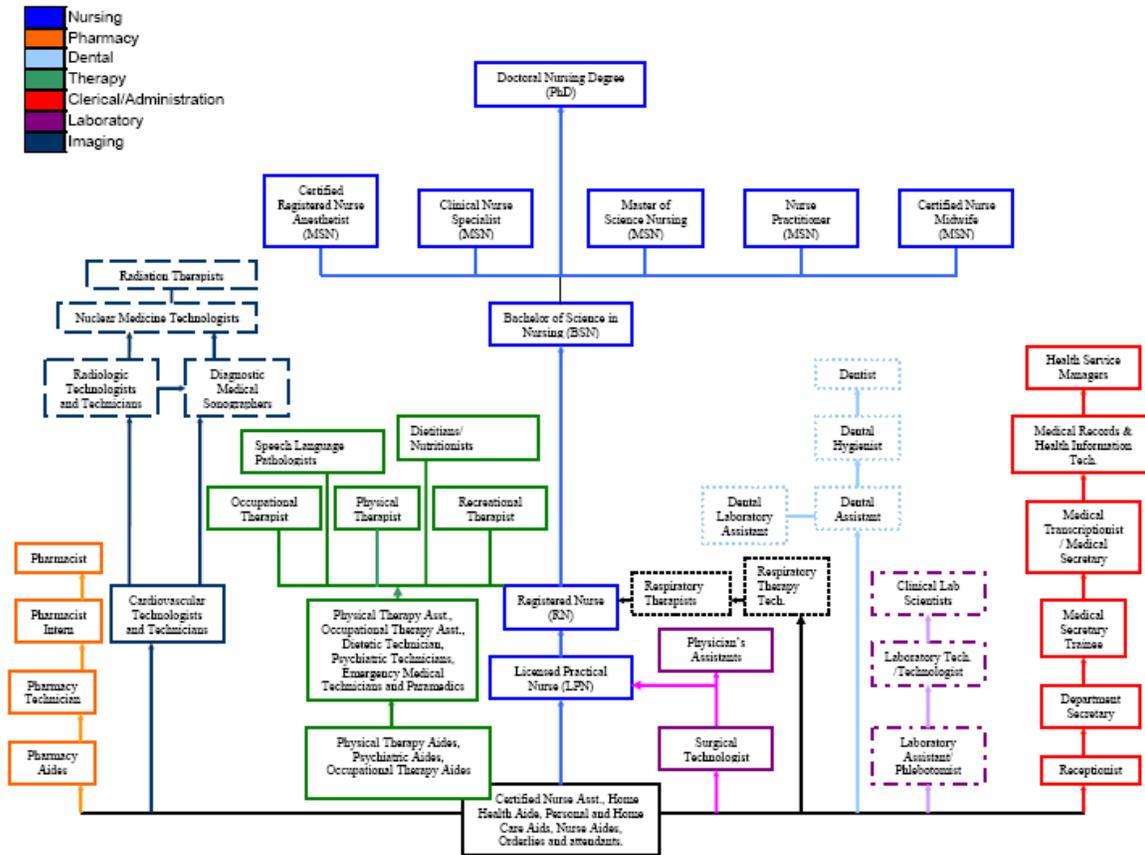
You should start taking courses to prepare for college and healthcare career programs when you are in high school (grades 9 through 12). For healthcare career training, you should have the following foundation:

- ◆ Three courses in math (algebra I, algebra II, and geometry or a higher-level math course)
- ◆ Three science courses
- ◆ One physical science course
- ◆ One lab course
- ◆ Four English courses
- ◆ Two social studies courses
- ◆ Two years of a foreign language

Having completed these courses will give you a strong foundation for a college education as well as healthcare training programs. There might also be possibilities for Certified Nursing Assistant (CNA) or Licensed Practical Nurse (LPN) programs at your school. You might be able to graduate from your high school with a CNA or LPN designation. It is important that you get yourself familiar with healthcare careers by volunteering at regional healthcare facilities. You may start looking for sources of funding for your college education by visiting admissions offices of regional schools.

***Where can I start, and what is my chance of career advancement?*** Starting a career in healthcare requires a strong high school math and science education. After high school, you may seek employment in healthcare at the entry level or go through various training programs to start a healthcare career at an advanced level. Whichever choice you make, you have many opportunities for advancement and upward/cross mobility. Healthcare facilities in the region encourage their employees to receive further education while they are working. The following chart will give you an idea about the advancement path.

You can start anywhere you like with proper training and education.



#### IV. WHAT KINDS OF FINANCIAL AID ARE AVAILABLE FOR POSTSECONDARY EDUCATION?

**Overview.** Planning early is critical to securing necessary funding for your education. There are many sources of financial aid available to qualified students who want to go through healthcare workforce training/education. Many available funding opportunities are administered through the financial aid office of area colleges. Consult with the financial aid office of these colleges for eligibility requirements. The list of these educational institutions is provided in this document. There are many types of financial aid. Determine which one fits your financial needs.

Before presenting a summary view of the selected financial aid sources, the BERC advises that students consult the following institutions for assistance to secure financial aid:

- School Counselors
- Northwest Tennessee Workforce Investment Board
- Financial Aid Office of Area Colleges and Technology Centers
- Major Healthcare Facilities in the Region
- [www.mapping-your-future.org](http://www.mapping-your-future.org)
- U.S. Department of Education at [www.ed.gov](http://www.ed.gov)
- Free Application for Federal Student Assistance at [www.fafsa.ed.gov](http://www.fafsa.ed.gov)
- Web site of Major Healthcare Professional Associations. These websites often provide links to the current sources of funding in the given occupational area.

***What are the most common options available to the students?*** There are many types of federal financial aid:

- Federal Pell Grant
  - Need-based grant
  - Covers both tuition and living expenses
- Federal Perkins Loans
  - Need-based student loan
  - The college is the lender.
  - 5 percent fixed interest rate
  - Repayment starts nine months after students fall below half-time enrollment.
  - College determines eligibility.
- Federal Supplemental Educational Grant
  - Need-based grant
  - Priority to Federal Pell Grant recipients
- Federal Work-Study
  - Need-based employment program
  - Provides jobs on and off campus

- Non Work-Study
  - Employment on campus
  - Not based on financial need
  - Not part of financial aid award
- Federal Stafford Loan
  - Low-interest loan
  - The FAFSA must be completed.
  - Repayment begins six months after the student falls below half-time enrollment.
- Federal PLUS Loan
  - Parent is the borrower.
  - Repayment begins 30-60 days after loan is disbursed.

***Tennessee-Based Financial Aid Sources:***

- ◆ Robert C. Byrd Honors Scholarship Program
  - 3.5 cumulative GPA at high school or 57 GED score
  - Submit the completed TSAC application form.
- ◆ Ned McWherter Scholars Program
  - 3.5 cumulative GPA
  - Up to \$6,000
- ◆ Tennessee Education Lottery Scholarship
  - Apply with the Free Application for Federal Student Aid (FAFSA)
  - The award amount varies to cover the cost of education.
- ◆ Tennessee Dual Enrollment Grant
  - \$600 per academic year
  - Grant will pay for lower-level courses.
- ◆ Tennessee Student Assistance Awards
  - Award covers tuition and mandatory fees.
  - Requires FAFSA application

***Region-based financial aid sources.*** Check local hospitals and other medical facilities for the availability of grants for healthcare workforce training.

- ◆ DYERSBURG REGIONAL MEDICAL CENTER  
(731) 285-2410 Administrator: COLEMAN FOSS
- ◆ GIBSON GENERAL HOSPITAL  
Attn: SHERRY SCRUGGS  
(731) 855-7900 Administrator: SHERRY SCRUGGS
- ◆ HUMBOLDT GENERAL HOSPITAL  
Attn: BILL KAIL  
(731) 784-2321 Administrator: BILL KAIL
- ◆ MILAN GENERAL HOSPITAL  
Attn: JOHN M. CARRUTH  
(731) 686-1591 Administrator: JOHN M. CARRUTH
- ◆ BAPTIST MEMORIAL HOSPITAL - LAUDERDALE  
Attn: KEON FALKNER (731) 221-2402 Administrator: KEON FALKNER
- ◆ BAPTIST MEMORIAL HOSPITAL - UNION CITY  
Attn: MIKE PERRYMAN  
(731) 885-2410
- ◆ BAPTIST MEMORIAL HOSPITAL - TIPTON  
Attn: PAUL BETZ  
(901) 476-2621

***Do I have to pay back the financial aid?*** There are local healthcare facilities that allow someone to work and get training at the same time. Most Certified Nursing Assistants work at the nursing care facilities and at the same time go through their training. Similarly, a Certified Nursing Assistant would pursue LPN training while working at a healthcare facility. Check the nursing care facilities in your county to inquire about these opportunities.

You do not pay back if you are getting GRANTS and SCHOLARSHIPS. You need to pay back if you are getting LOANS. On most loans, payments are not required until after

graduation. Some regional financial aid programs require you to work for them for a specified number of years in return for their tuition support. Check with local hospitals for the requirements. For detailed selected financial aid information, see appendix A.

## V. WHAT KINDS OF WORKFORCE DEVELOPMENT FUNDING ARE AVAILABLE FOR LOCAL WORKFORCE DEVELOPMENT AGENCIES/INSTITUTIONS?

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There are many workforce training grant opportunities at the federal level. Furthermore, many private foundations provide community capacity-building grants. At the state level, government agencies and various associations work with local workforce training facilities to expand the educational opportunities in the areas experiencing workforce shortages. It is important to mention that some federal agencies and foundations listed here work closely with state workforce development agencies in administering training programs. Therefore, local workforce development agencies/institutions should be in close contact with the key state agencies to secure local workforce training grants.

There are many venues through which updated grant information can be obtained. In addition to subscription-based sources, such as Community of Science (COS), two easily accessible sources are:

- [www.grants.gov](http://www.grants.gov), which provides daily updates on federal grants, and
- <http://fdncenter.org/>, which provides detailed information and links to the foundations. Certain resources at the Foundation Center are fee based, but the Web site allows keyword search to identify foundations in certain areas and provides links to the foundations.

The key federal agencies providing workforce development grants in one or more areas are highlighted in this document:

- ◆ U.S. Department of Health and Human Services ([www.hhs.gov/grantsnet/](http://www.hhs.gov/grantsnet/))
- ◆ National Institutes of Health (<http://grants.nih.gov/grants/oer.htm>)
- ◆ U.S. Department of Labor ([www.dol.gov/oasam/grants/main.htm](http://www.dol.gov/oasam/grants/main.htm))
- ◆ National Science Foundation ([www.nsf.gov/funding/](http://www.nsf.gov/funding/))

- ◆ U.S. Department of Education ([www.ed.gov/funding.html](http://www.ed.gov/funding.html))
- ◆ U.S. Department of Agriculture ([www.usda.gov/rus](http://www.usda.gov/rus))
- ◆ Department of Commerce, Economic Development Administration, Economic Development Assistance Program ([www.eda.gov](http://www.eda.gov)).

The key state-level agencies/organizations providing or coordinating workforce training grants in healthcare:

- ◆ Tennessee Department of Workforce Development ([www.state.tn.us/labor-wfd/maininfo.html](http://www.state.tn.us/labor-wfd/maininfo.html))
- ◆ Tennessee Department of Economic and Community Development ([www.state.tn.us/ecd](http://www.state.tn.us/ecd))
- ◆ Tennessee Center for Health Workforce Development ([www.healthworkforce.org](http://www.healthworkforce.org))
- ◆ Tennessee Hospital Association ([www.tha.com](http://www.tha.com))
- ◆ Tennessee Center for Nursing ([www.centerfornursing.org](http://www.centerfornursing.org))

The key regional organizations/agencies providing or coordinating workforce training grants:

- ◆ Northwest Tennessee Workforce Investment Board ([www.dscc.edu/workforce/](http://www.dscc.edu/workforce/))
- ◆ West Tennessee Hospital Association ([www.tha.com](http://www.tha.com))
- ◆ Local Healthcare Facilities
  - DYERSBURG REGIONAL MEDICAL CENTER  
(731) 285-2410 Administrator: COLEMAN FOSS
  - GIBSON GENERAL HOSPITAL  
(731) 855-7900 Administrator: SHERRY SCRUGGS
  - HUMBOLDT GENERAL HOSPITAL  
(731) 784-2321 Administrator: BILL KAIL
  - MILAN GENERAL HOSPITAL  
(731) 686-1591 Administrator: JOHN M. CARRUTH
  - BAPTIST MEMORIAL HOSPITAL - LAUDERDALE  
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- BAPTIST MEMORIAL HOSPITAL - TIPTON

Attn: PAUL BETZ (901) 476-2621

The key private foundations providing workforce training and community capacity-building grants:

- ◆ Andrew W. Mellon Foundation ([www.mellon.org](http://www.mellon.org))
- ◆ Anne E. Casey Foundation ([www.aecf.org](http://www.aecf.org))
- ◆ Bill and Melinda Gates Foundation ([www.gatesfoundation.org](http://www.gatesfoundation.org))
- ◆ The Ford Foundation ([www.fordfound.org](http://www.fordfound.org))
- ◆ Henry J. Kaiser Family Foundation ([www.kff.org](http://www.kff.org))
- ◆ The John D. and Catherine T. MacArthur Foundation ([www.macfound.org](http://www.macfound.org))
- ◆ Lawrence Foundation ([www.thelawrencefoundation.org](http://www.thelawrencefoundation.org))
- ◆ Pew Charitable Trusts ([www.pewtrusts.com](http://www.pewtrusts.com))
- ◆ Robert Wood Johnson Foundation ([www.rwjf.org](http://www.rwjf.org))
- ◆ W. K. Kellogg Foundation ([www.wkkf.org](http://www.wkkf.org))
- ◆ William T. Grant Foundation ([www.wtgrantfoundation.org](http://www.wtgrantfoundation.org))

These foundations are actively involved in community-building grants and healthcare workforce development programs. A close contact with these foundations is likely to generate positive responses for the grant requests by various local organizations and training institutions. A collaborative effort among the members of Northwest Tennessee Healthcare Consortium is likely to generate the highest impact in securing grants from these foundations and federal agencies.

VI. APPENDIX A: DETAILED INFORMATION FOR SELECTED  
FINANCIAL AID PROGRAMS

**State-Level Financial Aid Sources for Students**  
**(S1) Christa McAuliffe Scholarship Program**

Source	<a href="http://www.state.tn.us/tsac/stud_par/stu_par.htm">http://www.state.tn.us/tsac/stud_par/stu_par.htm</a>
Description	<p>The Tennessee General Assembly created a scholarship program to honor the memory of Christa McAuliffe, a high school teacher who lost her life in the space shuttle Challenger accident. The scholarship program was established to encourage promising Tennesseans who have a commitment to teaching and inspiring young minds to explore and achieve their highest potential.</p> <p>Applications are available from TSAC.</p>
Amount	\$1,000
Award Range	Maximum annual amount of \$1,000.
Key Dates	The application deadline is April 1. By May 1, each applicant will be notified in writing of his/her status. Only tentative awards can be made until the end of the spring term since the minimum cumulative grade point average for the full year must be 3.5 to be eligible.
Eligibility	<p>(1) To be eligible, an applicant must:</p> <p>(a) Be certified by the dean of an approved teacher education program to have met the following criteria:</p> <ol style="list-style-type: none"> <li>1. Demonstrated commitment to teaching as a profession by having successfully completed at least the first semester or first two quarters of the junior year and having been admitted for the senior year of a teacher education program which has been approved by the Tennessee State Department of Education.</li> <li>2. Demonstrated high academic ability by having earned a cumulative grade point average of at least 3.5 on a 4.0 scale in college. (See 1640-1-10-.05 (3) for elaboration.)</li> <li>3. Be enrolled on a full-time basis, as determined by the college's written policies, in that institution's state-approved teacher education program.</li> <li>4. Attain scores on either the ACT or SAT that meet or exceed the national norms.</li> <li>5. Have on file at the institution to be attended a statement of compliance with federal drug-free rules and laws.</li> <li>6. Not be in default on a federal or state student loan or owe repayment to any student financial aid program underwritten in whole or part by the federal or state government.</li> </ol> <p>(b) Attest in writing to his or her intent to teach in a Tennessee elementary or secondary school upon completion of study.</p> <p>(c) Make application to the Tennessee Student Assistance Corporation for the scholarship by established deadlines on Tennessee Student Assistance Corporation approved application forms.</p> <p>Payment of the scholarship shall cease immediately if at any time the recipient ceases to attend on a full-time basis. Payment shall also cease at the end of the quarter or semester during which the recipient fails to maintain at least a 3.5 cumulative grade point average. The scholarship will not continue beyond one academic year of awards.</p>
Evaluation Criteria	Degree of fulfillment of eligibility requirements.
Address	404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820
Contact Person	Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523 Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101
Web Site	Tennessee Student Assistance Corporation: <a href="http://www.state.tn.us/tsac/">http://www.state.tn.us/tsac/</a>

## (S2) Dependent Children Scholarship Program

Source	<a href="http://www.state.tn.us/tsac/stud_par/stu_par.htm">http://www.state.tn.us/tsac/stud_par/stu_par.htm</a>
Description	<p>The Dependent Children Scholarship Program provides aid for Tennessee residents who are dependent children of a Tennessee law enforcement officer, fireman, or emergency medical service technician who has been killed or totally and permanently disabled while performing duties within the scope of such employment.</p> <p>Applicant must also complete a Free Application for Federal Student Aid (FAFSA). Contact TSAC for application information.</p>
Amount	Depends on availability of funds.
Award Range	See above.
Key Dates	Since the act requires that the applicant's eligibility for other aid be established before this scholarship is determined, the priority deadline for applications for fall awards is immediately preceding July 15th.
Eligibility	<p>The awards are available only to full-time undergraduate students who are in good standing and making satisfactory progress at the institution in which they are enrolled according to the institution's published standards or, if freshmen, accepted by the institution for enrollment as regular students.</p> <p>The award is for up to four academic years (the equivalent of eight semesters) or the period required for the completion of the appropriate course of study, whichever is less. Provided, however, a scholarship recipient enrolled in an undergraduate degree program that requires more than four years for completion may apply to TSAC during the fourth year for an extension of the award to a fifth year.</p> <p>Unless a waiver is granted by the Executive Director of TSAC for sufficient cause, the periods of attendance for which awards are made must be consecutive academic years, i.e., nine-month terms or the equivalent.</p> <p>The institution that the recipient attends must be one offering postsecondary vocational or undergraduate education and approved by TSAC to enroll students receiving Tennessee Student Assistance Awards during the period of time in which the recipient will be enrolled.</p>
Evaluation Criteria	<p>Students who wish to apply for the Dependent Children Scholarship must write a letter to TSAC and request assistance. The letter of application must include evidence satisfactory to TSAC that the law enforcement officer, fireman, or emergency medical service technician was killed or totally and permanently disabled while performing duties within the scope of such employment. The application must also include certification by the Financial Aid Office at the institution the applicant plans to attend that the student has been accepted for admission, the cost of attendance, and the amount of financial assistance from other sources. The applicant must complete a Free Application for Federal Student Aid each academic year that the applicant wishes to be considered for the scholarship and have the data submitted to TSAC.</p> <p>The amount of the award will depend on the availability of funds. If funds are insufficient to provide scholarships to all eligible applicants, non-need-based awards will be limited to tuition and other required fees.</p>
Address	404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820
Contact Person	Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523 Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101
Supplementary Information	Close attention should be given to the definitions in sub-part (b) of the act. The entire act was written with such specificity that much of it is not duplicated in these regulations. Therefore, both the act and these regulations should be consulted for a full administrative reference.
Web Site	Tennessee Student Assistance Corporation: <a href="http://www.state.tn.us/tsac/">http://www.state.tn.us/tsac/</a>

### (S3) Ned McWherter Scholars Program

Source	<a href="http://www.state.tn.us/tsac/stud_par/stu_par.htm">http://www.state.tn.us/tsac/stud_par/stu_par.htm</a>
Description	<p>The Ned McWherter Scholars Program is intended to encourage academically superior Tennessee high school graduates to attend college in Tennessee. Recent Tennessee high school graduates and those starting their last semester in high school who have at least a 3.5 cumulative grade point average and an ACT or SAT score in the top 5% nationally and who are Tennessee residents (and whose parents are also Tennessee residents) are eligible to apply. Student must be a U.S. citizen and attend school full time.</p> <p>Applications are available at high school guidance offices and TSAC. Awards are very competitive and are based on funding.</p>
Amount	The award is for up to \$6,000 per academic year. One-half of the award is from the state and must be matched on a 1:1 basis by the college or university attended. Awards are made in equal installments each term throughout the academic year.
Award Range	Up to \$6,000.
Key Dates	To be considered, TSAC must receive the completed application by the February 15 deadline.
Eligibility	<p>(1) To be eligible, an applicant must:</p> <p>(a) Have earned a minimum cumulative grade point average in high school, at the end of the seventh semester, of at least 3.5 on a 4.0 scale. (The seventh semester is usually the semester before the semester in which one would graduate.)</p> <p>(b) Have attained a composite score on the ACT or the SAT that places the student in the top 5% of test takers nationally, such minimum score to be estimated based upon the previous year's data and announced annually.</p> <p>(c) Have graduated with a regular diploma no more than one year prior to the time of his/her first application for an award, from a high school in Tennessee that is approved by the Tennessee State Department of Education, is accredited by the Southern Association of Colleges and Schools, or belongs to an agency whose accreditation process is approved by the State Board of Education. Exceptions to this requirement for graduates of a "home school" as defined in T.C.A. §49-6-3050 may be granted by the Executive Director of the Tennessee Student Assistance Corporation.</p> <p>(d) Be an applicant for initial admission to college after high school graduation at the time of his/her initial application for the scholarship. (For the first year of the program, must not have entered college prior to July 1, 1986.)</p> <p>(e) Be a resident of Tennessee and a citizen or permanent resident of the United States. The applicant's parent(s) or legal guardian must also meet the same residency and citizenship requirements for the applicant to qualify.</p> <p>(f) Make application to TSAC for the scholarship by established deadlines on TSAC-approved application forms.</p> <p>(g) Cause a certified copy of the high school transcript to be sent to TSAC by the high school from which graduated (or graduating). If the high school transcript does not contain ACT and/or SAT scores, cause at least one of these scores to be sent to TSAC by the testing agency by the established deadline.</p> <p>QUALIFYING PROGRAMS AND INSTITUTIONS OF HIGHER EDUCATION:</p> <p>(1) The institution to be attended must be located in Tennessee and be approved by the Tennessee Higher Education Commission or accredited by an accrediting agency approved by the Council on Postsecondary Accreditation to award academic associate or higher degrees.</p> <p>(2) The postsecondary educational institution that the recipient will attend must agree in writing to provide to TSAC the administrative and academic information necessary to administer the program. The institution must also agree in writing to match the endowment portion of the scholarship award on a 1:1 basis.</p> <p>(3) The program entered must lead to an associate or baccalaureate degree.</p>
Evaluation Criteria	<p>Recipients for freshmen awards will be selected by the following criteria:</p> <p>(a) The applicant must meet the minimum standards described in rule 1640-1-9-.02 hereinbefore.</p> <p>(b) The ACT or SAT score, including past scores of each test, the high school grades attained in each course, and the difficulty of the high school program taken will be compared to those of other applicants.</p> <p>(c) Other relevant factors will be considered that tend to indicate the success the applicant may have in the program and his/her future contributions to society. The awards will be made with due regard for broad participation by recipients from across the state who are representative of various ethnic and racial characteristics</p>

	and by members of each sex.
Address	404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820
Contact Person	Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523 Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101
Supplementary Information	
Web Site	Tennessee Student Assistance Corporation: <a href="http://www.state.tn.us/tsac/">http://www.state.tn.us/tsac/</a>

**(S4) Robert C. Byrd Honors Scholarship Program**

Source	<a href="http://www.state.tn.us/tsac/stud_par/stu_par.htm">http://www.state.tn.us/tsac/stud_par/stu_par.htm</a>
Description	<p>The Robert C. Byrd Honors Scholarship Program provides aid for Tennessee residents who meet citizenship requirements and who will be graduating from high school or received a GED no more than one year prior to the award year.</p> <p>Recipients of these federally funded awards must have a 3.5 GPA, 57 GED or a 3.0 GPA and a score of 24 on the ACT. Recipients are identified from among qualified applicants utilizing a scientifically based stratified random selection procedure.</p> <p>Applications are available at high school guidance offices and TSAC.</p>
Amount	The amount of annual award will be determined by federal appropriations.
Award Range	See above.
Key Dates	To be considered, TSAC must receive the completed application by the March 1 deadline.
Eligibility	<p>To be eligible to apply, one must:</p> <p>(a) Have achieved at least a 3.5 cumulative grade point average on a 4.0 scale through seven semesters of high school or have attained a minimum GED score of 57. Those whose high school cumulative grade point average is at least 3.0 are also eligible to apply if they document they attained an ACT or SAT score in the top quartile of college-bound seniors nationally.</p> <p>(b) Have applied for admission to a recognized public or private nonprofit institution of higher education as defined in 34 CFR 654.5.</p> <p>(c) Be a legal resident of the State of Tennessee.</p> <p>(d) Be a U.S. citizen or national or, alternatively, meet another federally specified citizenship criteria in 34 CFR 654.40(b)(1)(2)(3).</p> <p>(e) Be recommended by an appropriate school official pertaining to his or her promise of continued academic achievement. (For high school seniors, this would be a high school official. GED applicants should ask a college official to sign.)</p> <p>(f) Apply before the published deadline, which is March 1 each year.</p> <p>(2) To be considered applicants must:</p> <p>(a) Meet the requirements specified hereinbefore.</p> <p>(b) Submit the completed TSAC-approved application by the deadline.</p> <p>(c) Not have applied for consideration in a prior year.</p>
Evaluation Criteria	<p>(a) All applications will be analyzed to ensure compliance with requirements specified hereinbefore.</p> <p>(b) Applications will be sorted according to the grand division of Tennessee in which the applicant resides.</p> <p>(c) The first selections for approximately one-half of the awards will be from among those eligible with at least a 3.5 cumulative grade point average or 62 GED. The remainder of the selections will be from among all eligible applicants. Selections will be made on a scientific basis by a stratified random technique to provide for reasonable representation from each grand division among those selected throughout the state. Selected applicants must submit an official high school transcript containing the first semester of the senior year within three weeks after selection notification. Note: An official GED score certification may be submitted in lieu of the high school transcript. An official ACT or SAT score should also be submitted as applicable.</p> <p>(d) Each year the selection procedures utilized will be reviewed by the Executive Director of TSAC and representatives of the State Board of Education, State Department of Education, and Tennessee Higher Education Commission.</p>
Address	404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820
Contact Person	Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523

	Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101
Supplementary Information	<p>(1) Tentative awardees and alternates will be notified of their status within 30 days after the submission deadline. Others will be notified within 60 days.</p> <p>(2) To receive the award, the selectee must:</p> <p>(a) Have graduated from a secondary school or obtained the GED in the same secondary academic year the awards are being made.</p> <p>(b) Be accepted for enrollment at an eligible institution of higher education.</p> <p>(c) Have on file at the higher education institution a signed Statement of Selective Service Registration Compliance.</p> <p>(d) Have on file at the higher education institution a Statement of Compliance with anti-drug provisions.</p> <p>(3) The first actual payment will be made at the beginning of the fall term after the selectee has been certified by the respective higher education institution to be enrolled on a full-time basis and that the award amount will not create an overaward. A recipient may receive a maximum aggregate of \$6,000 over four years, if he/she continues to be eligible.</p> <p>(4) Normally the award must be utilized in the same year as the original award was made. However, if the selectee requests that the award be delayed before the fall payments have been certified by the college, the TSAC Executive Director for sufficient cause may authorize a postponement of the utilization of the award for up to one additional year.</p> <p>(5) The amount of the annual award will be determined by federal appropriations. The warrant will be made payable to the honoree but will be sent to the school for delivery. If the school participates in Automated Clearing House, the funds will be sent by direct deposit to the school and the school will be directed to deliver the funds to the honoree. The award will be paid in at least two disbursements.</p> <p>(6) Current recipients annually must submit a renewal application in a timely manner. Each term the college must certify that the student is making satisfactory progress, is enrolled full-time, and that the award will not create an overaward. Upon receipt of the college's certification, TSAC will request that a warrant be prepared for the student for the term during the academic year being attended.</p>
Web Site	Tennessee Student Assistance Corporation: <a href="http://www.state.tn.us/tsac/">http://www.state.tn.us/tsac/</a>

## (S5) Tennessee Dual Enrollment Grant

Source	Tennessee Student Assistance Corporation <a href="http://www.collegepaystn.com/mon_college/dual_enroll_grant_rules.htm">http://www.collegepaystn.com/mon_college/dual_enroll_grant_rules.htm</a>
Description	The Tennessee Dual Enrollment Grant program is defined as a grant for study at an eligible postsecondary institution that is funded from net proceeds of the state lottery and awarded to students who are attending high school and who are also enrolled in college courses at eligible postsecondary institutions for which they will receive college credit. It is designed to provide financial assistance to qualified high school students in pursuit of postsecondary study at an eligible Tennessee public or private institution while receiving dual high school and college credit from successfully completed courses. This program provides opportunities for these students to begin working toward a college degree, while still pursuing a high school diploma, and encourages post-secondary education and the acceleration of postsecondary attainment.
Amount	Prorated based on credit hours. See Award Range.
Award Range	<p>(1) The Tennessee Dual Enrollment Grant program maximum award is \$300 per semester and \$600 per academic year (\$200 per quarter) or approved Tennessee Technology Center schedule. The award amount is prorated for students enrolled at the postsecondary level as follows:</p> <ul style="list-style-type: none"> <li>i. 1 hour - \$100</li> <li>ii. 2 hours - \$200</li> <li>iii. 3 hours - \$300</li> </ul> <p>The Grant will pay only for lower division postsecondary courses to include remedial or developmental courses (numbered lower than 100-200 or 1000-2000). The grant will not pay for upper division courses (numbered 300-400 or 3000-4000).</p> <p>(2) The Tennessee Student Assistance Corporation will utilize an invoicing methodology to transfer payment to eligible post-secondary institutions.</p> <ul style="list-style-type: none"> <li>i. Funds shall be paid to the postsecondary institution in one check or electronic transfer of funds on behalf of eligible students each school term upon submission to the Corporation of an invoice.</li> <li>ii. An electronic spreadsheet will be delivered to the Corporation by the higher education governing agencies (TBR, UT, and TICUA) for each term after census date.</li> <li>iii. Once the Corporation has processed student payment records for each recipient, funds will be disbursed to the eligible postsecondary institution.</li> </ul> <p>(3) The Tennessee Student Assistance Corporation will reconcile awards as follows:</p> <ul style="list-style-type: none"> <li>i. After the completion of the award year, each institution will print and sign a reconciliation report that certifies student payment records for the award year.</li> <li>ii. The institution must conduct a complete student-by-student reconciliation with the Corporation and submit a reconciliation certification form to the Corporation by July 1 of the current award year.</li> <li>iii. The institution must return to the Corporation by July 1 any funds not utilized according to the final reconciliation.</li> </ul>
Key Dates	The application must be completed and processed by the deadline date <b>each semester</b> in order for a student to participate and receive funding from this grant. The student and high school official must complete and sign Sections I & II; respectively, and submit the application to the postsecondary institution to which the student is seeking admission. The processing deadline dates for the college award year are: <b>September 1</b> for fall enrollment and <b>February 1</b> for spring or summer enrollment. The processing deadline dates for Tennessee Technology Centers are: <b>November 1</b> for fall enrollment, <b>March 1</b> for spring and <b>July 1</b> for summer enrollment.
Eligibility	<p>To be eligible for the Tennessee Dual Enrollment Grant program, a student enrolled in an eligible high school must be admitted to and concurrently enrolled in an eligible postsecondary institution. Institutional admission requirements will govern the admission of dual enrollment students. A student must be a Tennessee resident, as defined by Chapter 0240-2-2, Classifying Students In-State and Out-of-State, as promulgated by the Board of Regents, for one year as of September 1 of the academic year of enrollment in an eligible postsecondary institution;</p> <ul style="list-style-type: none"> <li>1. The student must have completed all of the academic requirements of the 10th grade (high school sophomore) and be classified as an 11th grader (high school junior) or 12th grader (high school senior) by the student's eligible high school. Eligible high school is defined as follows: <ul style="list-style-type: none"> <li>a. Tennessee public secondary school; or</li> <li>b. Any private secondary school that is located in Tennessee and: <ul style="list-style-type: none"> <li>i. Is approved by the State Board of Education as a category 1, 2, or 3 secondary school;</li> </ul> </li> </ul> </li> </ul>

	<p style="text-align: center;">or</p> <ul style="list-style-type: none"> <li>ii. Is a candidate for full accreditation status by an accrediting agency approved by the State Board of Education by June 8, 2004 for the purpose of application for Tennessee Hope scholarships for the 2004-05 academic year by students who graduated after January 1, 2003 and prior to December 1, 2004.</li> </ul> <ol style="list-style-type: none"> <li>2. Students may apply the grant in postsecondary enrollment in their junior and senior years prior to high school graduation.</li> <li>3. The student must submit the Tennessee Dual Enrollment Grant application to the postsecondary institution to which the student is seeking admission;</li> <li>4. Students must meet admissions criteria for dual enrollment to the postsecondary institution to which they are applying for admission as a dual enrollment student.</li> <li>5. Full-time enrollment at the postsecondary institution is not a requirement for receipt of the grant; there is no required minimum number of hours of enrollment.</li> <li>6. The student must renew the Tennessee Dual Enrollment Grant application each postsecondary academic term.</li> <li>7. The student must comply with United States Selective Service System requirements for registration, if such requirements are applicable to the student;</li> <li>8. The student must be in compliance with federal drug-free rules and laws for receiving financial assistance;</li> <li>9. The student must not be in default on a federal Title IV educational loan or Tennessee educational loan;</li> <li>10. The student must not owe a refund on a federal Title IV student financial aid program or a Tennessee student financial aid program;</li> <li>11. The student must not be incarcerated;</li> <li>12. Home School Student: A student who is completing high school in a Tennessee home school program meeting the requirements of §49-6-3050. For two (2) years immediately preceding completion of high school as a home school student, such student shall have been a student in a home school associated with a church-related school as defined by §49-50-801 and registered with the Tennessee local school district which the student would otherwise attend as required by §49-6-3050(a)(2)(C)(i) or an independent home school student whose parent or guardian has given notice to the local director of a Tennessee school district under § 49-6-3050(b)(1) of intent to conduct a home school.</li> <li>13. The student must not have already received a high school diploma or General Education Development (GED) diploma.</li> <li>14. The student must be attending an eligible postsecondary institution as defined below: <ol style="list-style-type: none"> <li>a. Eligible Postsecondary Institution: An eligible independent postsecondary institution or an eligible public postsecondary institution.</li> <li>b. Eligible Independent Postsecondary Institution: <ol style="list-style-type: none"> <li>i. An institution created by testamentary trust for which the state acts by statute as trustee and for which the governor is authorized to appoint commissioners with the advice and consent of the senate and that offers courses leading to undergraduate degrees; or</li> <li>ii. A Southern Association of Colleges and Schools accredited private postsecondary institution whose main campus is located in Tennessee; or</li> <li>iii. A private, four-year postsecondary institution that: <ol style="list-style-type: none"> <li>a. Has been chartered in Tennessee as a not-for-profit entity for at least thirty (30) consecutive years;</li> <li>b. Has had its primary campus domiciled in Tennessee for at least thirty (30) consecutive years;</li> <li>c. Is accredited by an accrediting agency that is recognized by the United States Department of Education and the Council on Higher Education Accreditation;</li> <li>d. Awards associate or baccalaureate degrees; and</li> <li>e. As of May 1, 2005, has an articulation agreement with an institution of the state university and community college system or the University of Tennessee system</li> </ol> </li> </ol> </li> <li>c. Eligible Public Postsecondary Institution: <ol style="list-style-type: none"> <li>i. An institution operated by the Board of Regents; or</li> <li>ii. An institution in the University of Tennessee system</li> </ol> </li> </ol> </li> </ol>
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Evaluation Criteria	
Address	404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820
Contact Person	Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523 Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101
Supplementary Information	
Web Sites	Tennessee Student Assistance Corporation: <a href="http://www.state.tn.us/tsac/">http://www.state.tn.us/tsac/</a> Tennessee lottery: <a href="http://www.tnlottery.com/">http://www.tnlottery.com/</a>

**(S6) Tennessee Education Lottery Scholarship Program  
Tennessee HOPE Scholarship**

Source	Tennessee Student Assistance Corporation (College Pays Website) <a href="http://www.collegepaystn.com/mon_college/hope_scholar.htm">http://www.collegepaystn.com/mon_college/hope_scholar.htm</a>
Description	The Tennessee Education Lottery Scholarship Program offers several different scholarships, awards and grants to match the needs of students entering public or private educational institutions in Tennessee, including the Tennessee HOPE Scholarship, Aspire Award, Tennessee HOPE Access Grant, General Assembly Merit Scholarship, Wilder-Naifeh Technical Skills Grant.
Amount	Award amounts vary by type of scholarship/award/grant given. <u>Tennessee HOPE Scholarship</u> \$3,300 for 4-year institutions; \$1,650 for 2-year institutions (no more than cost of attendance) <u>Aspire Award</u> \$1,500 supplement to Tennessee HOPE Scholarship <u>Tennessee HOPE Access Grant</u> \$2,400 for 4-year institutions; \$1,575 for 2-year institutions <u>General Assembly Merit Scholarship</u> \$1,000 supplement to Tennessee HOPE Scholarship <u>Wilder-Naifeh Technical Skills Grant</u> \$1,300 (no more than cost of attendance)
Award Range	Up to the above specified amounts. No more than the full cost of attendance.
Key Dates	<b>FAFSA Application Deadlines:</b> <ul style="list-style-type: none"> <li>• Submit 2005-2006 FAFSA on the Web Applications by midnight Central Daylight time, June 30, 2006.</li> <li>• Submit 2006-2007 FAFSA on the Web Applications by midnight Central Daylight time, July 2, 2007.</li> </ul>
Eligibility	<b>All Tennessee Education Lottery Scholarship Program Recipients Must:</b> <ul style="list-style-type: none"> <li>• Have been a Tennessee resident for one year by September 1, 2005. For students beginning spring and summer terms, residency determined by February 1, 2006.</li> <li>• Dependent children of U.S. military, Tennessee National Guard on active duty, or Department of Defense employees, who maintain Tennessee residency while stationed out-of-state are eligible.</li> <li>• Apply with the Free Application for Federal Student Aid (FAFSA), available at <a href="http://www.fafsa.ed.gov">www.fafsa.ed.gov</a>. To receive a paper FAFSA, check with your high school counselor or call the Tennessee Student Assistance Corporation (TSAC) 1-800-342-1663 or (615) 741-1346. Applications must be received by September 1st for fall semester, February 1st for spring and summer semesters. Early application is recommended.</li> </ul> <b>HOPE Scholars Must:</b> <ul style="list-style-type: none"> <li>• Enroll in one of the Tennessee public colleges, universities, or private colleges listed on the back of this form.</li> <li>• Enroll within 16 months of high school graduation or completion of a home school or GED program.</li> <li>• Home school students must have been enrolled in an accredited home school program for a minimum of two years prior to graduating.</li> <li>• Tennessee residents graduating from some out of state high schools may be eligible.</li> <li>• Entering freshmen (High School Class of 2005 and thereafter) must have a minimum of a 21 ACT (980 SAT) OR</li> <li>• Overall unweighted minimum 3.0 grade point average (GPA)</li> <li>• Home School graduates – minimum 21 ACT (980 SAT)</li> <li>• GED Applicants – minimum 525 and 21 ACT (980 SAT)</li> </ul> <b>Aspire Award Scholars Must:</b> <ul style="list-style-type: none"> <li>• Meet Tennessee HOPE Scholarship requirements</li> </ul> AND <ul style="list-style-type: none"> <li>• Must have parents' or independent student's and spouse's adjusted gross income of \$36,000 or less on IRS tax form</li> </ul>

	<p><b>Wilder-Naifeh Technical Skills Grant Recipients Must:</b></p> <ul style="list-style-type: none"> <li>• Enroll in a certificate or diploma program at a Tennessee Technology Center.</li> <li>• Cannot be prior recipient of Tennessee HOPE Scholarship</li> <li>• Available to all students enrolled at a Tennessee Technology Center who are TN residents 1 year prior to the term school begins</li> </ul> <p><b>General Assembly Merit Scholars Must:</b></p> <ul style="list-style-type: none"> <li>• Entering freshmen must have a minimum 3.75 weighted GPA AND 29 ACT (1280 SAT)</li> <li>• Home school students must complete 12 college credit hours (at least 4 courses) with a minimum 3.0 GPA at a Tennessee college or university while they are enrolled in the home school program</li> </ul> <p><b>Tennessee HOPE Access Grant Scholars Must:</b></p> <ul style="list-style-type: none"> <li>• Entering freshmen must have a minimum unweighted 2.75 GPA AND 18 - 20 ACT (860 - 970 SAT) AND</li> <li>• Parents' or independent student's and spouse's adjusted gross income of \$36,000 or less on IRS tax form</li> <li>• Grant non-renewable – will be eligible for Tennessee HOPE Scholarship by meeting HOPE Scholarship renewal criteria</li> </ul>
Evaluation Criteria	<p><b>Tennessee HOPE Scholarship Renewal Criteria:</b></p> <p>Eligibility shall be reviewed by the institution at the end of the semesters in which the student has attempted a total of 24, 48, 72, 96, and 120 semester hours</p> <ul style="list-style-type: none"> <li>• Must have a minimum cumulative GPA of 2.75 after 24 attempted semester hours</li> <li>• Must have a minimum cumulative GPA of 3.0 after 48, 72, 96, and 120 attempted semester hours</li> <li>• Must be enrolled in fall and spring semesters and maintain satisfactory academic progress</li> </ul>
Address	<p>404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820</p>
Contact Person	<p>Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523 Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101</p>
Supplementary Information	<p><b>Tennessee HOPE Scholarship—Nontraditional Component</b></p> <p>The nontraditional student must complete the Free Application for Federal Student Aid (FAFSA) and be an entering freshmen at the minimum age of 25 years as of the date of enrollment. An “entering freshmen” is defined as a student who is for the first time enrolling in a degree-seeking program of study at an eligible postsecondary institution. The adjusted gross income attributable to the student must be no more than \$36,000 per year.</p> <p>Additionally, these students must work their way into the HOPE Scholarship program by attempting the first 24 semester hours with a minimum grade point average of 2.75. Students are eligible to receive the HOPE Scholarship in the semester following the one in which this academic requirement is met.</p> <p>To continue eligibility, the adult learner must maintain satisfactory academic progress, maintain the adjusted gross income requirement, and be continuously enrolled (including the period of time during which the initial 24 credit hours are attempted) with a minimum of 6 semester hours each semester. At 48 attempted hours and thereafter, the student must maintain at least a 3.0 grade point average.</p>
Web Site	<p><a href="http://www.collegepaystn.com/mon_college/lottery_scholars.htm">http://www.collegepaystn.com/mon_college/lottery_scholars.htm</a></p>

**(S7) Tennessee Student Assistance Awards**

Source	Tennessee Student Assistance Corporation (College Pays Website) <a href="http://www.collegepaystn.com/mon_college/tsa_award.htm">http://www.collegepaystn.com/mon_college/tsa_award.htm</a>
Description	The purpose of the program is to provide non-repayable financial assistance to financially needy undergraduate students who are residents of Tennessee and are enrolled, or accepted for enrollment, at a public or an eligible non-public postsecondary educational institution in Tennessee. Student must be enrolled at least half-time. Based on funding, first priority is given to U.S. citizens.
Amount	Maximum award amounts are determined by the TSAC Board of Directors prior to the beginning of the fall term. No student will receive an award greater than the amount of tuition and mandatory fees assessed by the institution attended.
Award Range	Up to the total amount of tuition and mandatory fees. Award recipients may receive awards to a maximum for: (a) a 4 year program, up to 8 semesters or 12 quarters; (b) a 3 year program, up to 6 semesters or 9 quarters; (c) a 2 year program, up to 4 semesters or 6 quarters; (d) a 1 year program, up to 2 semesters or 3 quarters; and (e) a 6 month program, up to 1 semester or 2 quarters or until completion of the program of study, whichever comes first, assuming all other eligibility requirements are met.
Key Dates	Students must have their Free Application For Federal Student Aid (FAFSA) processed by the federal processor by May 1 for the upcoming fall term.
Eligibility	(1) A person shall be eligible for a student assistance award upon submission of an application and when the Corporation determines: (a) He or she is a resident of Tennessee. (b) He or she has financial need. (c) He or she is enrolled or intends to enroll in an eligible postsecondary institution as an undergraduate student on at least a half-time basis as established by federal financial aid minima. (d) He or she has applied for a Federal Pell Grant under Title IV-A-1 of the Higher Education Act of 1965, as amended, and has been assigned an Expected Family Contribution (EFC) by the U.S. Department of Education or its contractor, and has that EFC on file at the postsecondary institution to be attended. (e) If previously enrolled in the eligible postsecondary institution, that he or she remains in good standing and is making satisfactory progress according to the standards and practices of the institution. (f) He or she does not owe a refund or repayment on any grant, and is not in default on any loan, received at any institution under provisions of Title IV of the Higher Education Act of 1965, as amended. (g) He or she is not incarcerated as defined in rule 1640-1-1-.01(13).
Evaluation Criteria	(1) The parents' or students' ability to contribute to educational expenses shall be measured using the same guidelines as those used in determining eligibility for assistance under the Federal Pell Grant Program, as those guidelines may from time to time be changed or amended. (2) The amount of an individual award for a complete academic year shall approximate one-half the difference between the average public and private tuitions and mandatory fees. The maximum award paid each year shall be based on available funds and shall be determined by the TSAC Board of Directors. (3) Should anticipated funding be insufficient to serve the expected number of eligible applicants, the Corporation will establish a maximum contribution index level based on anticipated appropriations and the expected pool of eligible applicants on July 1. Students with a contribution index equal to or less than the maximum amount will receive award commitments on a first-come, first-served basis until appropriated funds are exhausted.
Address	404 James Robertson Parkway Suite 1950, Parkway Towers Nashville, TN 37243-0820
Contact Person	Robert Ruble, Executive Director Nashville, Tennessee Local (615) 741-1346 Tennessee Financial Aid Information 800-342-1663 Tennessee Loan Information 800-447-1523 Out-of-State Loan Information 800-257-6526 FAX (615) 741-6101
Web Site	Tennessee Student Assistance Corporation: <a href="http://www.state.tn.us/tsac/">http://www.state.tn.us/tsac/</a>

VII. APPENDIX B: SELECTED WORKFORCE DEVELOPMENT PROGRAMS

**(G1) Centers of Excellence**

Source	Health Resources and Services Administration U.S. Department of Health and Human Services
Description	The goal of the Centers of Excellence (COE) is to assist eligible schools in supporting programs of excellence in health professions education for underrepresented minority individuals. The grantee is required to use the funds awarded: (1) to establish, strengthen, or expand programs to enhance the academic performance of the underrepresented minority students attending the school; (2) to improve the capacity of such schools to train, recruit, and retain underrepresented minority faculty including the payment of stipends and fellowships; (3) to carry out activities to improve the information resources, clinical education, curricula, and cultural competence of the graduates of the schools as it relates to minority health issues; (4) to facilitate faculty and student research on health issues, particularly affecting underrepresented minority groups; including research on issues relating to the delivery of health care; (5) to carry out a program to train students of the school in providing health services to a significant number of underrepresented minority individuals through training provided to such students at community based health facilities that provide such health services and are located at a site remote from the main site of the teaching facilities of the school; (6) to provide stipends as appropriate; and (7) to develop a large competitive applicant pool through linkages with institutions of higher education, local school districts, and other community based entities and establish an educational pipeline for health professions careers.
Amount	\$15,542,630.00
Award Range	Estimated Number of Awards: 11 Estimated Average size of Awards: \$500,000
Key Dates	Application Deadline: Jan 26, 2006 5:00 PM ET Archive Date: Mar 27, 2006 Projected Award Date: Sep 01, 2006
Eligibility	Schools of allopathic medicine, osteopathic medicine, dentistry, pharmacy, graduate programs in behavioral or mental health, or other public and non profit health or educational entities, including faith based organizations, and community based organizations, that meet the requirements of section 736(c) of the Public Health Service Act. Historically Black Colleges and Universities, as described in section 736(c)(2)(A) of the Public Health Service Act and which received contracts under former section 788B of the Public Health Service Act (Advanced Financial Distress Assistance) for fiscal year 1987 may apply for Centers of Excellence (COE) grants under section 736(c)(2) of the Public Health Service Act.
Evaluation Criteria	Letter of Intend is not required. Final review criteria are included in the application materials.
Address	Parklawn Building 5600 Fishers Lane Rockville, Maryland,20857
Contact Person	Jeanne Willis (301) 443-4494 jwillis@hrsa.gov
Supplementary Information	Application should be online
Web Site	<a href="https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose">https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose</a>

VII. APPENDIX B: SELECTED WORKFORCE DEVELOPMENT PROGRAMS

**(G1) Centers of Excellence**

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Contact Person	Jeanne Willis (301) 443-4494 jwillis@hrsa.gov
Supplementary Information	Application should be online
Web Site	<a href="https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose">https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose</a>

VII. APPENDIX B: SELECTED WORKFORCE DEVELOPMENT PROGRAMS

**(G1) Centers of Excellence**

Source	Health Resources and Services Administration U.S. Department of Health and Human Services
Description	The goal of the Centers of Excellence (COE) is to assist eligible schools in supporting programs of excellence in health professions education for underrepresented minority individuals. The grantee is required to use the funds awarded: (1) to establish, strengthen, or expand programs to enhance the academic performance of the underrepresented minority students attending the school; (2) to improve the capacity of such schools to train, recruit, and retain underrepresented minority faculty including the payment of stipends and fellowships; (3) to carry out activities to improve the information resources, clinical education, curricula, and cultural competence of the graduates of the schools as it relates to minority health issues; (4) to facilitate faculty and student research on health issues, particularly affecting underrepresented minority groups; including research on issues relating to the delivery of health care; (5) to carry out a program to train students of the school in providing health services to a significant number of underrepresented minority individuals through training provided to such students at community based health facilities that provide such health services and are located at a site remote from the main site of the teaching facilities of the school; (6) to provide stipends as appropriate; and (7) to develop a large competitive applicant pool through linkages with institutions of higher education, local school districts, and other community based entities and establish an educational pipeline for health professions careers.
Amount	\$15,542,630.00
Award Range	Estimated Number of Awards: 11 Estimated Average size of Awards: \$500,000
Key Dates	Application Deadline: Jan 26, 2006 5:00 PM ET Archive Date: Mar 27, 2006 Projected Award Date: Sep 01, 2006
Eligibility	Schools of allopathic medicine, osteopathic medicine, dentistry, pharmacy, graduate programs in behavioral or mental health, or other public and non profit health or educational entities, including faith based organizations, and community based organizations, that meet the requirements of section 736(c) of the Public Health Service Act. Historically Black Colleges and Universities, as described in section 736(c)(2)(A) of the Public Health Service Act and which received contracts under former section 788B of the Public Health Service Act (Advanced Financial Distress Assistance) for fiscal year 1987 may apply for Centers of Excellence (COE) grants under section 736(c)(2) of the Public Health Service Act.
Evaluation Criteria	Letter of Intend is not required. Final review criteria are included in the application materials.
Address	Parklawn Building 5600 Fishers Lane Rockville, Maryland,20857
Contact Person	Jeanne Willis (301) 443-4494 jwillis@hrsa.gov
Supplementary Information	Application should be online
Web site	<a href="https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose">https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose</a>

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Supplementary Information	Application should be online
Web Site	<a href="https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose">https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose</a>

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Supplementary Information	Application should be online
Web Site	<a href="https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose">https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=84424F2B-7DB9-42AB-85A4-2CF9D74BFCF8&amp;ViewMode=EU&amp;GoBack=&amp;PrintMode=&amp;OnlineAvailabilityFlag=True&amp;pageNumber=1&amp;Popup=#Purpose</a>

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Evaluation Criteria	Letter of Intend is not required. Final review criteria are included in the application materials.
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### (G4) Public Health Training Centers

Source	Department of Health and Human Services, Health Resources & Services Administration
Description	The goal of the Public Health Training Centers Grant Program is to improve the Nation's public health system by strengthening the technical, scientific, managerial and leadership competencies and capabilities of the current and future public health workforce. Emphasis is placed on developing the existing public health workforce as a foundation for improving the infrastructure of the public health system and helping achieve the Healthy People 2010 Objectives. With respect to a Public Health Training Center, applicants must agree to: (1) specifically designate a geographic area, including medically underserved populations, e.g., elderly, immigrants/refugees, disadvantaged, to be served by the Center that shall be in a location removed from the main location of the teaching facility of the school participating in the program with such Center; (2) assess the public health personnel needs of the area to be served by the Center and assist in the planning! , development and delivery of training programs to meet such needs; (3) establish or strengthen field placements for students in public or nonprofit private public health agencies or organizations; and (4) involve faculty members and students in collaborative projects to enhance public health services to medically underserved communities. **This program is not included in the President's budget for FY 2006. Potential applicants for funds should consider this announcement provisional until final Congressional appropriations action is taken. Updated information on Congressional action on appropriations will be available on the HRSA website.
Amount	\$2,100,000
Award Range	Expected Number of Awards:6 Estimated Average size of Awards: \$350,000
Key Dates	Application Available : Nov 23, 2005 Application Deadline : Jan 17, 2006 5:00 PM ET Estimated Project Start Date: Sep 01, 2006 Estimated Project End Date: Aug 31, 2011
Eligibility	Eligible applicants include accredited schools of public health or other public or nonprofit private institutions accredited for the provision of graduate or specialized training in public health.
Evaluation Criteria	<p>Letter of intent is not required.</p> <p>Criterion 1: NEED - The extent to which the application describes the problem and associated contributing factors to the problem. (5 points)</p> <ul style="list-style-type: none"> <li>• Demonstrates a strong understanding of the need for public health workforce training nationally; trends, deficits, related factors and the need for improving the skill and competence of the public health workforce</li> <li>• Demonstrates an understanding of the purpose of the PHTC program</li> <li>• Illustrates a clear need, based on existing state or local data, for the proposed PHTC</li> <li>• Justifies the need for the project including the designation of a geographic service area with a discussion of public health status, workforce characteristics and learning needs</li> </ul>

- Applicant does not duplicate geographic area coverage of existing Public Health Training Centers

Criterion 2: RESPONSE - The extent to which the proposed project responds to the “Purpose” included in the program description. The clarity of the proposed goals and objectives and their relationship to the identified project. The extent to which the activities (scientific or other) described in the application is capable of addressing the problem and attaining the project objectives. (37 points)

- Presents clear goals and measurable objectives including: development and/or expansion of PHTC organizational structure, strategic academic and practice partnerships, learning needs assessment activities, training development and delivery and evaluation activities. Plan should include the scope of proposed education and training; location(s) of target audience(s); and anticipated numbers of public health professionals, leaders and students to be reached with education or training and delivery modes, as well as plans for implementing collaborative projects and field placements if funding permits.
- Applicant covers one or more states and involves one or more accredited schools of public health
- Extent to which the proposed work plan builds upon lessons learned by the PHTC or similar experiences of new applicants
- Clarity of project work plan and mechanisms to assure that satisfactory progress is made to effect the plan
- Presents a plan that clearly outlines responsibilities of key personnel related to the Center and network activities with clear descriptions of major roles for local, state, and other public health partners in planning, implementing and evaluating PHTC activities
- Efficiency and extent to which the project will assess needs and deliver targeted, needed training to a broad spectrum of the public health workforce in the geographic target area within a reasonable budget
- Adequacy of the proposed approaches/methodologies for training the public health workforce
- Extent to which the training is based on the 10 Essential Public Health Services and Core Competencies
- Degree to which cost-effectiveness principles for maximizing the impact of training activities are employed
- Degree to which the project’s objectives reflect the legislative and programmatic objectives outlined for the

Public Health Training Center Program

- Degree to which distance learning and related new technologies are included in the training efforts
- Extent to which the training is developed quickly yet with the participation and input of the workforce partners
- Extent to which the applicant employs administrative, programmatic and technological methods that bring the greatest number of needed learning programs to the greatest number of public health workers in its geographic service area
- Degree to which project challenges are identified and addressed
- Adequacy of plan to overcome identified project challenges

Criterion 3: EVALUATIVE MEASURES- The effectiveness of the method proposed to monitor and evaluate the project results. Evaluative measures must be able to assess 1) to what extent the program objectives have been met, and 2) to what extent these can be attributed to the project. (15 points)

- Adequacy of the proposed project's evaluation plan
- Presents methods to be used to meet all program requirements
- Potential for the proposed methodology to achieve outcomes specified in the objectives
- Presents a clear plan for monitoring progress toward the stated goals and objectives, including specific evaluation questions to be addressed, and plans to provide annual evaluation data
- Experience in conducting and reporting evaluation activities of a PHTC i.e. conducting successful process, outcome, and impact evaluation as a Center and reporting and participating in overall evaluation activities as a member of the PHTC Coordinating Council and its committees
- Extent the objectives identify performance outcome standards against which the project accomplishments can be measured

Criterion 4: IMPACT- The extent and effectiveness of plans for dissemination of project results and/or the extent to which project results may be national in scope and/or degree to which the project activities are replicable, and/or the sustainability of the program beyond the Federal Funding. (15 points)

- For competing continuations, accomplishments captured in UPR-CPMS data
- Extent to which the proposed project addresses Healthy People 2010 Public Health Infrastructure objectives, particularly 23-8 through 23-10.

- Extent to which the proposed outcomes include training larger numbers of public health workers and expanded numbers of workforce agencies and organizations
- Adequacy of plans and arrangements to provide new or expand existing practica and related field experiences for graduate public health students in health departments or related public health workforce agencies serving underserved areas or populations
- Adequacy of the plan for developing collaborative projects involving graduate public health students and academic faculty with workforce agency partners serving underserved areas or populations
- Degree to which the project will involve underrepresented minorities in the training programs of the Center and provide learning related to diversity issues
- Adequacy of the self-sufficiency plan

Criterion 5: RESOURCES/CAPABILITIES- The extent to which project personnel are qualified by training and/or experience to implement and carry out the projects. The capabilities of the applicant organization, and quality and availability of facilities and personnel to fulfill the needs and requirements of the proposed project. For competing continuations, past performance will also be considered. (20 points)

- Adequacy of technical resources, human and material, to assess, develop, deliver, and evaluate the proposed applicant's program
- Proposed governance, management and advisory structure are adequate to accomplish the PHTC goals and objectives
- Demonstrates staff, expertise, and facilities necessary to accomplish the program requirements
- Demonstrates experience, expertise and involvement of project staff, faculty and consultants with public health education and training including the core areas of public health
- Demonstrates expertise and involvement of project personnel with both the current-front line and future public health workforce
- Demonstrates management expertise and experience to provide the leadership, management structure and support to assure desired project outcomes
- Provides sufficient commitment of key personnel to effect the proposed work plan and achieve the stated outcomes
- Demonstrates strong academic partnerships and linkages exhibited by sharing of resources, workload, teaching and governance

	<ul style="list-style-type: none"> <li>• Describes the roles of public health workforce agency partners in governance, needs assessment, training and program evaluation activities</li> <li>• Demonstrates effective collaborations with community, local, state, and other public health partners with whom and to whom program activities will be provided, including letters of intent from participating agencies and organizations</li> <li>• Practice partners are committed to working with the PHTC and having their employees trained by the PHTC</li> <li>• PHTC leadership is committed to participating in the work of the national PHTC Coordinating Council and its committees.</li> </ul> <p>Criterion 6: SUPPORT REQUESTED- The reasonableness of the proposed budget in relation to the objectives, the complexity of the activities, and the anticipated results. (8 points)</p> <ul style="list-style-type: none"> <li>• The proposed budget is justified and reasonable in relation to the objectives, activities of the partners and projected number of trainees.</li> </ul>
Address	<p>The Legin Group, Inc.  901 Russell Avenue, Suite 450  Gaithersburg, MD 20879  Telephone: (877) 477-2123  Fax: (877) 477-2345  <a href="mailto:HRSAGAC@hrsa.gov">HRSAGAC@hrsa.gov</a></p>
Contact Person	<p>John R. Kress  Director, Public Health Training Centers  Public Health Branch  Telephone: 301-443-6864  Fax: 301-443-1164  <a href="mailto:jkress@hrsa.gov">jkress@hrsa.gov</a></p>
Supplementary Information	
Web Site	<a href="http://www.grants.gov/search/search.do?mode=VIEW&amp;oppId=2900">http://www.grants.gov/search/search.do?mode=VIEW&amp;oppId=2900</a>

**(G5) 21ST CENTURY COMMUNITY LEARNING CENTERS**

Source	U.S. Department of Education
Description	<p>The 21st CCLC Program is a key component of President Bush's No Child Left Behind Act. It is an opportunity for students and their families to continue to learn new skills and discover new abilities after the school day has ended. Congress has appropriated \$991.07 million for afterschool programs in Fiscal Year (FY) 2005.</p> <p>The focus of this program, re-authorized under Title IV, Part B, of the No Child Left Behind Act, is to provide expanded academic enrichment opportunities for children attending low performing schools. Tutorial services and academic enrichment activities are designed to help students meet local and state academic standards in subjects such as reading and math. In addition 21st CCLC programs provide youth development activities, drug and violence prevention programs, technology education programs, art, music and recreation programs, counseling and character education to enhance the academic component of the program.</p>
Amount	\$981,166,230
Award Range	<p>Number of Awards: 57</p> <p>Range of Awards:\$4,801,715 to \$131,320,892</p>
Eligibility	<p>Formula grants are awarded to State educational agencies, which in turn manage statewide competitions and award grants to eligible entities. For this program, eligible entity means a local educational agency, community-based organization, another public or private entity, or a consortium of two or more of such agencies, organizations, or entities. States must give priority to applications that are jointly submitted by a local educational agency and a community-based organization or other public or private entity.</p> <p>Consistent with this definition of eligible entities, faith-based organizations are eligible to participate in the 21st Century Community Learning Centers program. <u>New regulations</u> governing the participation of faith-based organizations in Federal programs for which they are eligible are available.</p>
Evaluation Criteria	<p>Final regulations to implement Executive branch policy that, within the framework of constitutional church-state guidelines, religiously affiliated (or "faith-based") organizations should be able to compete on an equal footing with other organizations for funding by the U.S. Department of Education are available.</p> <ul style="list-style-type: none"> <li>• View the full text of the <u>Federal Register notice announcing these final regulations</u> (June 4, 2004)</li> <li>• View the full text of the regulations amended by this Federal Register notice, which apply to all entities, including faith-based organizations, that receive grants from the Department of Education in <u>34 C.F.R. parts 74-99</u></li> <li>• View the <u>final regulations</u> compiled by the <u>Center for Faith-Based and Community Initiatives</u></li> </ul>
Contact Person	<p>For questions or comments, please contact: <a href="mailto:21stCCLC@ed.gov">21stCCLC@ed.gov</a>          Laura Ellis          615-253-6037  <a href="mailto:Laura.Ellis@state.tn.us">Laura.Ellis@state.tn.us</a></p>
Web Site	<a href="http://www.ed.gov/programs/21stcclc/index.html">http://www.ed.gov/programs/21stcclc/index.html</a>

**(G6) GRANTS FOR THE INTEGRATION OF SCHOOLS AND MENTAL HEALTH SYSTEMS**

Source	U.S. Department of Education
Description	The Grants for the Integration of Schools and Mental Health Systems will provide funds to increase student access to high-quality mental health care by developing innovative approaches that link school systems with the local mental health system.
Amount	\$4,960,000
Award Range	Number of New Awards Anticipated: 20
Key Dates	Applications deadline: May 16, 2005
Eligibility	State Educational Agencies (SEA), Local Educational Agencies (LEA), and Indian tribes. LEAs or consortia of LEAs that have ever received funds or services under the Safe Schools/Healthy Students Initiative (CFDA Number 184.184L), or will receive funds under the FY 2005 competition for CFDA Number 84.184L, are not eligible for <u>funding under this program.</u>
Evaluation Criteria	Laws, Regulations, and Guidance  LEGISLATION  <u>ESEA Title V, Part D, Subpart 14, Section 5541 Fund for the Improvement of Education</u>  REGULATIONS  Regulations: Program regulations can be found in 34 CFR Parts 74, 75, 77, 79, 80, 81, 82, 84, 85, 97, 98, 99, and 299.  Note: The regulations in 34 CFR part 79 apply to apply to all applications except federally recognized Indian tribes.
Address	
Contact Person	Name Dana Carr E-mail address <a href="mailto:Dana.Carr@ed.gov">Dana.Carr@ed.gov</a> Mailing address U.S. Department of Education, OSD/FS 400 Maryland Ave., S.W., Rm. 3E242, FB-6 Washington, DC 20202-6450 Telephone (202) 260-0823 Fax (202) 260-7767
Web Site	<a href="http://www.ed.gov/programs/mentalhealth/index.html">http://www.ed.gov/programs/mentalhealth/index.html</a>

**(G7) UNSOLICITED APPLICATIONS ANNOUNCEMENT**

Source	U.S. Department of Education
Description	The Institute of Education Sciences announces its interest in considering unsolicited applications for research, evaluation, statistics, and dissemination projects that would make significant contributions to the mission of the Institute. The Institute's mission is to conduct and support rigorous education statistics, research, and evaluation in order to provide reliable information about the condition of education, education practices that improve academic achievement, and the effectiveness of federal and other education programs. Unsolicited applications are defined as those that are not eligible for funding under the Institute's current grant competitions. The Institute's current grant competitions are those for the current fiscal year, both open and closed, that are described at <a href="http://www.ed.gov/about/offices/list/ies/programs.html">http://www.ed.gov/about/offices/list/ies/programs.html</a> .
Amount	\$200,000
Award Range	The Institute expects that relatively low levels of funding will be available for these projects. Typical awards will be in the range of \$75,000 to \$200,000 (total cost) per year for 1 to 3 years. Larger budgets and longer award periods will be considered if a compelling case can be made for such support. The size of the award depends on the scope and significance of the project.
Key Dates	To be considered for funding in FY 2006 (ending September 30, 2006), the prospectus must be received by May 1, 2006.
Eligibility	Applicants that have the ability and capacity to conduct scientifically valid research are eligible to apply. Eligible applicants include, but are not limited to, nonprofit and for-profit organizations and public and private agencies and institutions, such as colleges and universities.
Evaluation Criteria	<p>Those interested in this opportunity to conduct field initiated research, evaluation, statistics, or dissemination projects should submit a short prospectus that will allow the Institute to decide whether further conversations with the potential applicant are warranted. The prospectus should include (1) a description of the proposed project (note, proposals to conduct research, evaluation, or statistics projects should include descriptions of the proposed methods and data analysis strategy), (2) the proposed timeline, (3) the proposed total budget (including both direct and indirect costs), and (4) the personnel.</p> <p>The prospectus should be <b>no more than 6 double-spaced pages</b>, where a "page" is 8.5 inches x 11 inches, on one side only, with 1 inch margins at the top, bottom, and both sides, and using a font that is at least 12-point in height with no more than 15 characters per inch. As a practical matter, applicants who use a 12 point Times New Roman without compressing, kerning, condensing or other alterations typically meet these requirements.</p> <p>The prospectus must be submitted via electronic mail to <a href="mailto:IESprospectus@ed.gov">IESprospectus@ed.gov</a>. The prospectus should be submitted in attachment form as a Word document or a pdf file. To be considered for funding in FY 2006 (ending September 30, 2006), the prospectus must be received by May 1, 2006.</p> <p>Notification of Decision</p>

	<p>Because of the anticipated volume of submissions, the Institute is unable to respond to specific queries prior to the receipt of the prospectus. Potential applicants should submit the required prospectus. The Institute will evaluate the prospectus to determine if the proposed project would make a significant contribution to the Institute's overall mission to advance evidence-based education. The Institute will notify the applicant via return email of its decision by June 23, 2006. Because of the anticipated volume of submissions, the Institute is unable to provide feedback on prospectuses that do not result in a request for a full proposal. If the decision is to consider the project further, a full proposal using the forms and format applicable to the Institute's regular research competitions will be required for external peer review. Funding decisions will be based on scientific merit as determined by the peer review, performance and use of funds under a previous federal award, contribution to the mission of the Institute, and availability of funds.</p>
Address	<p>Institute of Education Sciences  U.S. Department of Education  555 New Jersey Ave, NW  Washington, DC 20208-5500</p>
Contact Person	<p><a href="mailto:IESprospectus@ed.gov">IESprospectus@ed.gov</a></p>
Supplementary Information	
Web Site	<p><a href="http://www.ed.gov/programs/unsolicited/applicant.html">http://www.ed.gov/programs/unsolicited/applicant.html</a></p>

**(G8) Course, Curriculum, and Laboratory Improvement (CCLI)**

Source	National Science Foundation
Description	The Course, Curriculum, and Laboratory Improvement (CCLI) program seeks to improve the quality of science, technology, engineering, and mathematics (STEM) education for all undergraduate students. The program supports efforts to create new learning materials and teaching strategies, develop faculty expertise, implement educational innovations, assess learning and evaluate innovations, and conduct research on STEM teaching and learning. The program supports three types of projects representing three different phases of development, ranging from small, exploratory investigations to large, comprehensive projects.
Amount	\$31,000,000
Award Range	Expected number of awards: 71
Key Dates	Full Proposal Deadline Date: May 9, 2006 For Phase 1 proposals from submitting organizations located in states or territories beginning with A through M. Full Proposal Deadline Date: May 10, 2006 For Phase 1 proposals from submitting organizations located in states or territories beginning with N through W. Full Proposal Deadline Date: January 10, 2007 For Phase 2 and 3 proposals.
Eligibility	This program provides educational opportunities for Undergraduate Students. This program provides indirect funding for undergraduate students or focuses on educational developments for this group such as curriculum development, training, or retention. To inquire about possible funding opportunities not directly from NSF, please look at the active awards for this program.
Evaluation Criteria	Proposers should allow sufficient time for all organizational approvals and for correction of errors in uploading the proposal in FastLane. No corrections to submitted proposals will be accepted after the deadline. Proposals received after the deadline will be returned without review. <b>PROPOSALS THAT DO NOT MEET THE GPG REQUIREMENT FOR SEPARATELY AND EXPLICITLY ADDRESSING INTELLECTUAL MERIT AND BROADER IMPACTS IN THE PROJECT SUMMARY WILL BE RETURNED WITHOUT REVIEW.</b> Proposals that do not comply with the formatting requirements (e.g., page limitation, font size, margin limits, and organizational structure) specified in the GPG will be returned without review.
Address	
Contact Person	<ul style="list-style-type: none"> <li>• Myles G. Boylan, Lead Program Director, telephone: (703) 292-4617, email: <a href="mailto:mboylan@nsf.gov">mboylan@nsf.gov</a></li> <li>• Russell L. Pimmel, Lead Program Director, telephone: (703) 292-4618, email: <a href="mailto:rpimmel@nsf.gov">rpimmel@nsf.gov</a></li> <li>• Terry S. Woodin, Lead Program Director, telephone: (703) 292-4657, email: <a href="mailto:twoodin@nsf.gov">twoodin@nsf.gov</a></li> </ul>
Web Site	<a href="http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5741">http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5741</a>

**(G9) NURSE ANESTHETIST TRAINEESHIPS**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	Grants are awarded to eligible institutions to provide financial support through traineeships for licensed registered nurses enrolled as full-time students beyond the twelfth month of study in a master's nurse anesthesia program.
Amount	\$500,000
Award Range	\$1,800 to \$29,000; \$14,500
Key Dates	www.hrsa.gov
Eligibility	Eligible applicants are schools of nursing, academic health centers, and other public or private nonprofit entities which provide registered nurses with full-time anesthetist master's education and have evidence of earned accreditation status from the American Association of Nurse Anesthetists (AANA) Council on Accreditation of Nurse Anesthesia Education Programs.
Evaluation Criteria	This program is subject to the provisions of 45 CFR Part 92 for State, local and tribal governments and 45 CFR Part 74 for institutions of higher education, hospitals, other nonprofit organizations and commercial organizations.
Address	
Contact Person	Regional or Local Office Ms. Karen Breeden, Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Parklawn Building, Room 9-36, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-5787.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.124">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.124</a>

**(G10) LABORATORY LEADERSHIP, WORKFORCE TRAINING AND MANAGEMENT DEVELOPMENT, IMPROVING  
PUBLIC HEALTH LABORATORY INFRASTRUCTURE**

Source	CENTERS FOR DISEASE CONTROL AND PREVENTION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To promote and maintain a collaborative relationship with the Association of Public Health Laboratories (APHL) that includes the National Laboratory Training Network (NLTN) and the National Laboratory Partnership (NLP) for the purpose of improving public health laboratory infrastructure, maintaining a competent and trained laboratory workforce, promoting laboratory leadership activities to ensure future laboratory leaders, ensure laboratory preparedness for emerging infectious diseases or other biologic and chemical public health threats, promote technology transfer to ensure up-to-date technologies for the testing laboratory, and to enhance communication linkages between state and local public health laboratories, and the clinical laboratory testing community.
Amount	\$4,904,834
Award Range	\$4,200,000 to \$4,800,000; \$4,700,000.
Key Dates	Applications must be received in the Centers for Disease and Prevention Control (CDC) Procurement and Grants Office (PGO) by 4:00 p.m. Eastern Time on the deadline date.
Eligibility	State governments, specifically State public health laboratories, particularly any organization representing state public health laboratories and having an established training network
Evaluation Criteria	This program is subject to the provisions of 45CFR Part 92 for State, local, and tribal governments and 45 CFR Part 74 for institutions of higher educations, hospitals, other nonprofit organizations and commercial organizations.
Address	
Contact Person	Headquarters Office William O. Schalla, M.S. Project Officer, (770) 488-8098, Wschalla@cdc.gov or Sharon Robertson, Grants Management Specialist Procurement and Gra, (770) 488-2748, Srobertson1@cdc.gov.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.065">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.065</a>

**(G11) ADVANCED EDUCATION NURSING GRANT PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	Grants are awarded to eligible institutions for projects that support the enhancement of advanced nursing education and practice including master's and doctoral programs, combined RN/ master's degree programs, post-nursing master's certificate programs, or in the case of nurse midwives, in certificate programs in existence on November 12, 1998, to serve as nurse practitioners, clinical nurse specialists, nurse-midwives, nurse anesthetists, nurse educators, nurse administrators, public health nurses, or in other nurse specialties determined by the Secretary to require advanced education.
Amount	Est. \$30,300,000.
Award Range	\$90,000 to \$450,516; \$250,000.
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	Eligible applicants are schools of nursing, academic health centers, other appropriate public or private nonprofit entities, including faith-based and community-based organizations and for-profit entities capable of carrying out the legislative purpose.
Evaluation Criteria	This program is subject to the provisions of 45 CFR Part 92 for State, local and tribal governments and 45 CFR Part 74 for institutions of higher education, hospitals, other nonprofit organizations and commercial organizations.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288
Contact Person	Dr. Irene Sandvold, Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, Parklawn Building, Room 9-36, 5600 Fishers Lane, Rockville, MD 20857. Telephone (301) 443-6333
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.247">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.247</a>

**(G12) NATIONAL HEALTH SERVICE CORPS SCHOLARSHIP PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To assure an adequate supply of primary care physicians, certified nurse midwives, certified family nurse practitioners, and physician assistants; and, if needed by the National Health Service Corps, an adequate supply of other health professionals in the Health Professional Shortage Areas (HPSAs) of the U.S.A. by providing service-obligated scholarships to health professions students.
Amount	\$17,600,000
Award Range	Monthly stipend payment for the 2004/2005 school year is \$1,128 plus tuition, fees and other reasonable costs.
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	At the time of award, the applicant must be a U.S. citizen or national. At the time of award, the applicant must be enrolled or accepted for enrollment in accredited school in U.S. in a course of study leading to a degree in medicine, osteopathic medicine, dentistry, or other health profession. The applicant must submit application and signed contract to the Division of National Health Service Corps by the last Friday in March, agreeing to accept payment of scholarship and provide full-time primary health services in a Health Professional Shortage Area.
Evaluation Criteria	This program is subject to the provisions of 45 CFR Part 92 for State, local and tribal governments and 45 CFR Part 74 for institutions of higher education, hospitals, other nonprofit organizations and commercial organizations.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Division of National Health Service Corps., Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, Room 8A-55, 5600 Fishers Lane, Rockville, Maryland 20857. Phone: (301) 594-4400. For 24-hour toll-free calls from outside MD: 1-800-221-9393, use for requesting applications.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.288">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.288</a>

**(G13) ADVANCED EDUCATION NURSING TRAINEESHIPS**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	Grants are awarded to eligible institutions to provide financial support through traineeships for registered nurses enrolled in advanced education nursing programs to prepare nurse practitioners, clinical nurse specialists, nurse midwives, nurse anesthetists, nurse administrators, nurse educators, public health nurses and nurses in other specialties determined by the Secretary to require advanced education.
Amount	\$9,000,000
Award Range	\$1,000 to \$235,000; \$45,000
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	Eligible applicants are schools of nursing, academic health centers, and other public or private nonprofit entities.
Evaluation Criteria	This program is subject to the provisions of 45 CFR Part 92 for State, local and tribal governments and 45 CFR Part 74 for institutions of higher education, hospitals, other nonprofit organizations and commercial organizations.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288
Contact Person	Ms. Karen Breeden, Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 9-36, Parklawn Building, Rockville, MD 20857. Telephone: (301) 443-6333.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.358">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.358</a>

**(G14) NURSE EDUCATION, PRACTICE AND RETENTION GRANTS**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To strengthen and enhance the capacity for nurse education, practice and retention to address the nursing shortage. Education purposes include: 1) expanding enrollment in baccalaureate nursing programs; 2) developing and implementing internship and residency programs to encourage mentoring and the development of specialties; 3) providing education in new technologies, including distance learning methodologies. Practice methodologies include: 1) establishing or expanding nursing proactive arrangements in non-institutional settings to demonstrate methods to improve access to primary health care in medically underserved communities; 2) providing care for underserved populations and other high-risk groups such as the elderly, individuals with HIV/AIDS, substance abusers, the homeless and victims of domestic violence; 3) providing managed care, quality improvement, and other skills needed to practice in existing and emerging organized health care systems; 4) developing cultural competencies among nurses. Retention purposes include grants for 1) Career Ladder programs for nursing personnel and 2) enhancing patient care delivery systems through improving the retention of nurses and enhancing patient care that is directly related to nursing activities by enhancing collaboration and communication among nurses and other health care professionals, and by promoting nurse involvement in the organizational and clinical decision making process of health care facility.
Amount	\$41,000,000
Award Range	\$25,000 to \$400,000; \$250,000
Key Dates	www.hrsa.gov
Eligibility	Eligible applicants for Education purpose 1, are collegiate schools of nursing. Eligible entities for all other purposes are: schools of nursing, health care facilities, or a partnership of such a school and facility, nursing centers, academic health centers, State or local governments, public or private non-profit entities, including faith-based organizations and community-based organization, and for-profit entities capable of carrying out the legislative purpose.
Evaluation Criteria	This program is subject to the provisions of 45 CFR Part 92 for State, local and tribal governments and 45 CFR Part 74 for institutions of higher education, hospitals, other nonprofit organizations and commercial organizations
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Ms. Catherine Rupinta and Ms. Claudia Brown, Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 9-36, Rockville, MD 20857. Telephone: (301) 443-6193.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.359">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.359</a>

**(G15) GRANTS FOR TRAINING IN PRIMARY CARE MEDICINE AND DENTISTRY**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	Grants are awarded for the following purposes: (1) Residency Training in Grants are awarded for the following purposes: (1) Residency Training in Primary Care-- to plan, develop, and operate or participate (including provision of financial assistance) in approved residency programs in family medicine, general internal medicine and/or general pediatrics; (2) Faculty Development in Primary Care-- to plan, develop, and operate (including provision of financial assistance) programs for the training of physicians who plan to teach in family medicine (including geriatrics), general internal medicine and/or general pediatrics training programs; (3) Predoctoral Training in Primary Care-- to plan, develop, and operate or participate (including provision of financial assistance) in predoctoral programs in family medicine, general internal medicine and/or general pediatrics; (4) Academic Administrative Units in Primary Care-- to meet the costs of projects to establish, maintain or improve academic administrative units to improve clinical instruction in family medicine, general internal medicine and/or general pediatrics; (5) Physician Assistant Training in Primary Care-- to meet the costs of projects to plan, develop and operate or maintain approved programs for the training of physician assistants, and for the individuals who will teach in programs to provide such training; (6) General and Pediatric Dentistry-- to meet the costs of planning, developing, or operating (including provision of financial assistance) approved residency programs of general or pediatric dentistry.
Award Range	\$27,000 to \$657,344; \$178,803
Key Dates	www.hrsa.gov
Eligibility	For program purposes (1) Residency Training in Primary Care, (2) Faculty Development in Primary Care, and (5) Physician Assistant Training in Primary Care - public or nonprofit private hospitals, accredited schools of medicine or osteopathic medicine, or public or private nonprofit entities are eligible to apply. For program purposes (3) Predoctoral Training in Primary Care and (4) Academic Administrative Units - public or nonprofit private accredited schools of allopathic or osteopathic medicine are eligible to apply. For program purpose (6) General and Pediatric Dentistry - (a) Residencies and Advanced Education in the Practice of General Dentistry - Programs in dental schools, approved residency programs in the general practice of dentistry, and approved advanced education programs in the general practice of dentistry; b) Residencies in the Practice of Pediatric Dentistry - Public or nonprofit entities that have programs in accredited dental schools, approved residency programs in the pediatric or general practice of dentistry, approved advanced education programs in the pediatric or general practice of dentistry, or approved residency programs in pediatric dentistry are eligible to apply. For all grant program purposes (1) through (6), nonprofit entities, including faith based organizations and community based organizations, that meet other eligibility requirements are eligible to apply. Each allopathic program must be fully or provisionally accredited by the Accreditation Council for Graduate Medical Education. Each osteopathic program must be approved by the American Osteopathic Association. Eligible physician assistant programs are those which are either accredited by the American Medical Association's Committee on Allied Health Education and Accredited (AMA-CAHEA) or its successor organization, the Commission on Accreditation of Allied Health Education Programs (CAAHEP).
Evaluation Criteria	Applicants should review the individual HRSA Guidance documents issued under this CFDA program for any required proof or certifications which must be submitted prior to or simultaneous with submission of an application package.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288
Contact Person	P. Preston Reynolds, M.D., Ph.D., F.A.C.P., Branch Chief, Primary Care Medical Education Branch, Division of Medicine and Dentistry of the Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, Room 9A-20, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-1467
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.884">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.884</a>

**(G16) DISADVANTAGED HEALTH PROFESSIONS FACULTY LOAN REPAYMENT (FLRP) AND MINORITY FACULTY FELLOWSHIP PROGRAM (MFFP)**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	FLRP - To attract and retain disadvantaged health professions faculty members for accredited health professions schools of medicine, nursing, osteopathic medicine, dentistry, pharmacy, podiatric medicine, optometry, veterinary medicine, public health, allied health or graduate programs in behavioral and mental health practice for at least two years. MFFP - To assist eligible entities in increasing the number of underrepresented minority faculty at health professional schools.
Amount	
Award Range	FLRP - \$2,740 to \$55,600; \$16,300 (average award for FY 04 including funds for award tax liability). MFFP - \$36,057 to \$61,620; \$51,2855 (average FY 04)
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	FLRP - Individuals from disadvantaged backgrounds who (1) have a degree in medicine, osteopathic medicine, dentistry, pharmacy, podiatric medicine, optometry, veterinary medicine, nursing, graduate public health, selected allied health or graduate behavioral and mental health; (2) are enrolled in an approved graduate training program in one of the health professions listed above; (3) are enrolled as full-time students in accredited institutions described above and in the final course of study or program leading to a degree from the institution. MFFP - Eligible applicants are accredited health profession schools of allopathic and osteopathic medicine, nursing, dentistry, veterinary medicine, optometry, allied health, public health, podiatric medicine, pharmacy, and schools offering graduate programs in behavioral and mental health. To be eligible to receive the grant the applicant shall: (1) Provide assurance that such applicant will make available (directly through cash donations) \$1 for every \$11 of Federal funds received under section 738 of the Public Health Service Act. (2) provide an assurance that institutional support will be provided for the individual for the second and third year at a level that is equal to the total amount of institutional funds provided in the year in which the grant or contract was awarded. (3) provide an assurance that the individual that will receive the fellowship will be a member of the faculty of the applicant school. (4) provide an assurance that the individual that will receive the fellowship will have, at a minimum, appropriate advanced preparation (such as a master's or doctor degree) and special skills necessary to enable such individuals to teach and practice.
Evaluation Criteria	
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Program Contact for the Faculty Loan Repayment Program: Barry Dubrow, Division of Health Careers Diversity and Development, Bureau of Health Professions, Health Resources and Services Administration, Parklawn Building, Room 8-42, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (888) 275-4772 or (301) 443-4776. Program Contact for the Grants for Minority Faculty Fellowship Program: Ms. Donna Pacheco, Division of Health Careers, Diversity and Development, Bureau of Health Professions, Health Resources and Services Administration, Parklawn Building, Room 8-55, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-2100.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.923">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.923</a>

**(G17) SCHOLARSHIPS FOR HEALTH PROFESSIONS STUDENTS FROM DISADVANTAGED BACKGROUNDS**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	Promotes diversity among health professions students and practitioners by providing scholarships for students from disadvantaged backgrounds. Eligible health professions and nursing schools apply for funds to make scholarships to students from disadvantaged backgrounds, who have financial need for scholarships and are enrolled, or accepted for enrollment, as full-time students at the schools.
Amount	\$9,000,000
Award Range	\$727 to \$650,000; \$102,468.
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	Accredited public or private nonprofit schools of allopathic medicine, nursing, osteopathic medicine, dentistry, pharmacy, podiatric medicine, optometry, veterinary medicine, chiropractic, allied health, or schools offering graduate programs in public health, behavioral and mental health or physician assistants.
Evaluation Criteria	This program is subject to the provisions of 45 CFR Part 92 for State, local and tribal governments and 45 CFR Part 74 for institutions of higher education, hospitals, other nonprofit organizations and commercial organizations
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Andrea Stampone, Division of Health Careers Diversity and Development, Bureau of Health Professions, Health Resources and Services Administration, Public Health Service, Parklawn Building, Room 8-42, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-4776. Use the same numbers for FTS.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.925">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.925</a>

**(G18) MEDICAL RESERVE CORPS SMALL GRANT PROGRAM**

Source	OFFICE OF THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To support the development of Medical Reserve Corps (MRC) units in communities throughout the United States to: (1) increase capacity at the community level to respond during emergencies which have medical consequences, and (2) improve public health in communities through volunteerism on an ongoing basis.
Amount	\$8,350,000.
Award Range	\$10,000 to \$50,000; \$50,000.
Key Dates	Contact Headquarter Office listed below for application deadlines
Eligibility	Applicants may be an entity of the local government or a local nonprofit, non-governmental community-based organization. If a local Citizen Corps Council has a nonprofit status, the Citizen Corps Council can be the applicant. Faith based organizations are eligible to apply.
Evaluation Criteria	Complete review criteria are published in the Federal Register Notice or can be obtained from the Program contact. Listed below are some criteria used to review applications: 1) Implementation plan which describing linkages to existing community resources, the role the Medical Reserve Corps will most likely have, and the timeframe for planning and implementation; 2) Management plan describing the organization's capabilities; 3) Evaluation plan describing program goals and how those goals will be assessed; 4) Supporting documentation detailing how the Medical Reserve Corps is connected to a Citizen Corps Council; and 5) Background on the adequacy of demonstrated knowledge of emergency medical response/care systems and utilization of volunteers.
Address	
Contact Person	Program Contact: Office of the Surgeon General, USPHS, Room 18-66, 5600 Fishers Lane, Rockville, Maryland 20817. Telephone (301) 443-2910. Grants Management Contact: Office of Grants Management, Office of Public Health and Science, 1101 Wootton Parkway, Suite 550, Rockville, MD 20852, Telephone (301) 594-0758.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.008">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.008</a>

(G19) HEALTH CARE AND OTHER FACILITIES

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To construct, renovate, expand, equip, or modernize health care facilities and other health care related facilities.
Amount	
Award Range	\$45,250 to \$24,945,000
Key Dates	Application deadlines are indicated in the application materials provided to eligible applicants.
Eligibility	Eligible applicants include State and local governments, including their universities and colleges, quasi- governmental agencies, private universities and colleges, and private profit and nonprofit organizations. Organizations must be specifically earmarked in the Congressional Appropriation Bill.
Evaluation Criteria	General information may be obtained by contacting the Headquarters Office indicated below. PHS Grants Policy Statement, DHHS Publication No. (OASH) 94-50,000, (Rev.) April 1, 1994.
Address	
Contact Person	Program Contact: Mr. Paul Murhy, Chief, Facilities Monitoring Branch, Division of Facilities Compliance and Recovery, Office of Special Programs, Health Resources and Services Administration, Department of Health and Human Services, Parklawn Building, 5600 Fishers Lane, Room 16C-17, Rockville, MD 20857. Telephone: (301) 443-5656. Grants Management. Contact: Mr. Neal Meyerson, Grants Management Specialist, Division of Grants Management Operations, Health Resources and Services Administration, 4350 East-West Highway, 11th Floor, Bethesda, MD 20814. Telephone: (301) 443-5906.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.887">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.887</a>

**(G20) MEDICAID INFRASTRUCTURE GRANTS TO SUPPORT THE COMPETITIVE EMPLOYMENT OF PEOPLE WITH DISABILITIES**

Source	CENTERS FOR MEDICARE AND MEDICAID SERVICES, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To support State efforts to enhance employment options for people with disabilities by building Medicaid infrastructure. Funding may be used to develop a Medicaid buy-in, increase availability of Personal Assistance Services, or for State-to-State technical assistance. In addition, States may use funding to develop a comprehensive approach to bridge Medicaid services with other key supports and programs used by employed people with disabilities
Amount	\$22,000,000
Award Range	\$500,000 to \$2,750,000
Key Dates	Established when program announcements are published in the Federal Register or transmitted to States.
Eligibility	Either of the following may apply: (a) the single state medicaid agency; or (b) any other agency or instrumentality of a state(as determined under State law) in partnership, agreement and active participation with the single state medicaid agency, the State Legislature, or the office of the Governor.
Evaluation Criteria	The major elements in evaluating proposals include: understanding the barriers that impede competitive employment of people with disabilities; the extent to which the proposed infrastructure development will offer enduring and significant improvement in the ability of the system to provide adequate health coverage for people with disabilities and are competitively employed; providing needed personal assistance and other supports, and/or removing other significant employment barriers; the appropriateness of the methods, work plan, budget, and timetable; the qualifications of key staff; and the State's plan for using its grant experiences to identify different or better ways to improve its buy-in or Medicaid services that support the competitive employment efforts of people with disabilities.
Address	
Contact Person	Dennis Smith, Director, Center for Medicaid and State Operations, Centers for Medicare & Medicaid Services, Department of Health and Human Services, Room C5-21-17, Central Building, 7500 Security Boulevard, Baltimore, MD 21244-1850. Telephone: (410) 786-3870.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.768">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.768</a>

**(G21) RURAL HEALTH CARE SERVICES OUTREACH AND RURAL HEALTH NETWORK DEVELOPMENT PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To expand access to, coordinate, restrain the cost of, and improve the quality of essential health services, including preventive and emergency services, through the development of integrated health care delivery systems or networks in rural areas and regions.
Amount	\$28,900,000
Award Range	A maximum of \$150,000 for the first year of funding for the Outreach Grant; A maximum of \$180,000 in year one for the Network Development Grant
Key Dates	Contact Headquarters Office listed below for deadline dates
Eligibility	Rural public or nonprofit private entities that include three or more health care providers that provide or support the delivery of health care services. The administrative headquarters of the organization must be located in a rural county or a rural zip code of an urban county; or an organization is constituted exclusively to provide services to migrant and seasonal farmworkers in rural areas and supported under Section 330G of the Public Health Service Act; or the applicant is a Tribal government whose grant-funded activities will be conducted within their Federally-recognized Tribal area.
Evaluation Criteria	Criteria are based on the need of the project, innovation, clearly defined roles of each network member, strength of applicant's management plan, level of local commitment, costs, and program evaluation plan.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Program Contact: Ms. Eileen Holloran, Outreach Grant Program Coordinator, Office of Rural Health Policy, Health Resources and Services Administration, Room 9A-55, Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-0835. Erica Molliver, Network Development Grant Program Coordinator, Office of Rural Health Policy, Health Resources and Services Administration, Room 9A-55, Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-0835.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.912">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.912</a>

**(G22) LABORATORY TRAINING, EVALUATION, AND QUALITY ASSURANCE PROGRAMS**

Source	CENTERS FOR DISEASE CONTROL AND PREVENTION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To improve the quality of laboratory genetic testing practices relevant to clinical and public health settings and to determine standardized approaches to quality assurance in pathology and laboratory medicine that can be applied in multiple, diverse settings (e.g. community hospitals, academic medical centers, and independent laboratories) that demonstrate measurable and sustainable improvements over time.
Amount	\$425,000
Award Range	\$100,000 to \$225,000
Key Dates	
Eligibility	Applications may be submitted by public and private nonprofit organizations and by governments and their agencies, such as: Public nonprofit organizations, private nonprofit organizations, universities, colleges, research institutions, hospitals, community and faith based organizations, State and local governments or their Bona Fide Agents (this includes the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, the Commonwealth of the Northern Marianna Islands, American Samoa, Guam, the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau).
Evaluation Criteria	Applications will be evaluated based upon best practices in quality assurance methods for addressing pre-analytic components of laboratory testing, including the test requisition, quality assurance methods for addressing post-analytic components of laboratory testing, including the test report, assessments of laboratory practices which gather specific information related to technology assessment. This requires the development of specific and measurable objectives and a sound operational plan that includes laboratory genetic testing practices relevant to clinical and public health settings and standardized approaches to quality assurance in pathology and laboratory medicine that can be applied in multiple, diverse settings, demonstrate measurable and sustainable improvements over time.
Address	Program POC: Tracy Carter, Email: TCarter@cdc.gov. Grants Management Officer contact is Sharon Robertson. Telephone: 770-488-2748, Grants Management Branch A, Procurement and Grants Office, Centers for Disease Control and Prevention, Department of Health and Human Services, 2920 Brandywine Road, Suite 3000, Atlanta, GA 30341.
Contact Person	For general questions about this announcement, contact: Technical Information Management Section, CDC Procurement and Grants Office, 2920 Brandywine Road, Atlanta, GA 30341. Telephone: 770-488-2700. For program technical assistance, contact: Ira Lubin, Ph.D., Centers for Disease Control and Prevention, PHPPPO, DLS, 4770 Buford HWY, MSG23. Telephone: 770-488-8070, Fax: 770-488-8278, E-mail: ilubin@cdc.gov. For financial, grants management, or budget assistance, contact: Sharon Robertson, Grants Management Specialist, CDC Procurement and Grants Office, 2920 Brandywine Road, Atlanta, GA 30341. Telephone: 770-488-2748, E-mail: sqr2@cdc.gov.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.064">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.064</a>

**(G23) NATIONAL HEALTH SERVICE CORPS LOAN REPAYMENT PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To ensure an adequate supply of trained health professionals by assisting the repayment of qualifying educational loans in return for service to populations located in selected health professional shortage areas identified by the Secretary of the Department of Health and Human Services.
Amount	\$59,400,000
Award Range	\$9,163 to \$74,817; \$66,061 for new contract awards; \$3,671 to \$52,372; \$43,707 for contract amendments; \$26,679 to \$65,465; \$37,753 for contract adjustments.
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	Individuals are eligible to apply if they have (1) U.S. citizenship; (2) a health professions degree or are in professional practice (they must hold an unrestricted health professions license from the State in which they will be working, and be eligible for selection for a Federal civil service appointment, or hold an appointment as a commissioned officer in the Regular or Reserve Corps of the U.S. Public Health Service); (3) not defaulted on any Federal debt or do not have a court judgment against them; and (4) no existing service obligation.
Evaluation Criteria	Priority will be given to applicants who are individuals whose training is in a health profession or specialty determined by the Secretary to be needed by NHSC.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Chief, Application and Award Branch, Division of the National Health Service Corps., Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 8A-55, Rockville, MD 20857. Telephone: (301) 594-4400. Public Information Phone: 1-800-221-9393.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.162">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.162</a>

**(G24) CONSOLIDATED HEALTH CENTERS (COMMUNITY HEALTH CENTERS, MIGRANT HEALTH CENTERS, HEALTH CARE FOR THE HOMELESS, PUBLIC HOUSING PRIMARY CARE, AND SCHOOL BASED HEALTH CENTERS)**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	Grants are awarded to increase access to comprehensive primary and preventive health care and improve the health status of underserved and vulnerable populations in the area to be served. Individual health center grant mechanisms include: (1) Community Health Centers; (2) Migrant Health Centers; (3) Health Care for the Homeless; (4) Public Housing Primary Care Program; and (5) School Based Health Centers.
Amount	\$1,600,000,000
Award Range	\$100,000 to \$8,000,000
Key Dates	www.hrsa.gov
Eligibility	Eligible applicants are public and non-profit private entities, including tribal, faith-based and community-based organizations that have the capacity to effectively administer the grant.
Evaluation Criteria	Criteria for selecting proposals is expected to be available in the Program Information Notice issued in <a href="http://www.bphc.hrsa.gov/pinspals/pins.htm">http://www.bphc.hrsa.gov/pinspals/pins.htm</a> ). All applicants are expected to demonstrate compliance with applicable requirements including the Health Center Program Expectations. In addition to these general requirements, there are specific requirements and expectations for applicants requesting funding under each of the section 330 programs. Applicants are strongly encouraged to demonstrate compliance with these requirements and expectations in the application. Applicants requesting funding under multiple programs are expected to demonstrate compliance with the expectations and requirements of all of those programs.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Director, Division of Health Center Management, Bureau of Primary Health Care, HRSA, 5600 Fishers Lane, Room 16C-26, Rockville, MD 20857. Telephone: (301) 594-4420.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.224">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.224</a>

**(G25) STATE RURAL HOSPITAL FLEXIBILITY PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To help states work with rural communities and hospitals to develop and implement a rural health plan, designate critical access hospitals (CAHs), develop integrated networks of care, improve emergency medical services and improve quality, service and organizational performance.
Amount	\$24,000,000
Award Range	\$200,000 to \$700,000
Key Dates	<a href="http://www.hrsa.gov">www.hrsa.gov</a>
Eligibility	States that have submitted a State Rural Health Plan to the Centers for Medicare and Medicaid Services (CMS) can apply. All other States need to submit an application to the Regional Administrator of their CMS Regional Office that expresses the State's interest in developing a Medicare Rural Hospital Flexibility Program before they can apply for grant funds.
Evaluation Criteria	Contact Headquarters for selection criteria.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Program Contact: Steve Hirsch, Office of Rural Health Policy, Health Resources and Services Administration, 5600 Fishers Lane, Room 9A-55, Rockville, MD 20857. Telephone: (301) 443-0835.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.241">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.241</a>

**(G26) FAMILY PLANNING PERSONNEL TRAINING**

Source	OFFICE OF THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To provide job specific training for personnel to improve the delivery of family planning services
Amount	\$8,442,000
Award Range	\$238,000 to \$472,000
Key Dates	To be announced
Eligibility	Any public entity (including city, county, local, regional, or State government) or nonprofit private entity located in a State (including the District of Columbia, Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the Virgin Islands, the Federated States of Micronesia, the Republic of the Marshall Islands and the Republic of Palau) is eligible to apply for a grant under this program. Faith based organizations are eligible to apply.
Evaluation Criteria	Proposals will be evaluated to determine which would best promote the purposes of the authorizing legislation, taking into account: (1) The increase in delivery of services to people, particularly low-income groups, with a high percentage of unmet need for family planning services; (2) the promise of the program to fulfill the family planning services needs of the area to be served; (3) capacity to use assistance rapidly and effectively; (4) the administrative and management capability and competence of the applicant; (5) competence of the project staff; and (6) compliance with pertinent regulations and guidelines.
Address	Program Contact: Ms. Susan Moskosky, Director, Office of Family Planning, Office of Population Affairs, Department of Health and Human Services, 1101 Wootton Parkway, Suite 700, Rockville, MD 20852. Telephone: (301) 594-4008. Grants Management Contact: Karen Campbell, Director, Office of Grants Management, Office of Public Health and Science, Department of Health and Human Services, 1101 Wootton Parkway, Suite 550, Rockville, MD 20853, Telephone (301) 594-0758.
Contact Person	Regional Health Administrator, DHHS Regional Offices. (See Appendix IV of the Catalog for addresses.)
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.260">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.260</a>

**(G27) SMALL RURAL HOSPITAL IMPROVEMENT GRANT PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To help hospitals: (1) pay for costs related to implementation of PPS; (2) comply with provisions of HIPAA; and (3) reduce medical errors and support quality improvement
Amount	\$14,700,000
Award Range	\$38,720 to \$909,920
Key Dates	www.hrsa.gov
Eligibility	All small rural hospitals located in the 50 States and Territories.
Evaluation Criteria	Applicants will be evaluated based on: (1) extent to which applicant is responsive to the requirements and purposes of this program; and (2) extent to which application describes need, strategies and investment to address those needs.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Keith Midberry, Office of Rural Health Policy, Parklawn Building, Room 9A-55, 5600 Fishers Lane, Rockville, MD, 20857, 301-443-0835, 301-443-2669 (fax).
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM TEXT RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.301">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM TEXT RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.301</a>

**(G28) RURAL HEALTH CARE SERVICES OUTREACH AND RURAL HEALTH NETWORK DEVELOPMENT PROGRAM**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To expand access to, coordinate, restrain the cost of, and improve the quality of essential health services, including preventive and emergency services, through the development of integrated health care delivery systems or networks in rural areas and regions.
Amount	\$28,900,000
Award Range	A maximum of \$150,000 for the first year of funding for the Outreach Grant; A maximum of \$180,000 in year one for the Network Development Grant.
Key Dates	Contact Headquarters Office listed below for deadline dates
Eligibility	Rural public or nonprofit private entities that include three or more health care providers that provide or support the delivery of health care services. The administrative headquarters of the organization must be located in a rural county or a rural zip code of an urban county; or an organization is constituted exclusively to provide services to migrant and seasonal farmworkers in rural areas and supported under Section 330G of the Public Health Service Act; or the applicant is a Tribal government whose grant-funded activities will be conducted within their Federally-recognized Tribal area.
Evaluation Criteria	Criteria are based on the need of the project, innovation, clearly defined roles of each network member, strength of applicant's management plan, level of local commitment, costs, and program evaluation plan.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Program Contact: Ms. Eileen Holloran, Outreach Grant Program Coordinator, Office of Rural Health Policy, Health Resources and Services Administration, Room 9A-55, Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-0835. Erica Molliver, Network Development Grant Program Coordinator, Office of Rural Health Policy, Health Resources and Services Administration, Room 9A-55, Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-0835.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.912">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.912</a>

**(G29) GRANTS FOR DENTAL PUBLIC HEALTH RESIDENCY TRAINING**

Source	HEALTH RESOURCES AND SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES
Description	To plan and develop new residency training programs and to maintain or improve existing residency training programs in dental public health; and to provide financial assistance to residency trainees enrolled in such programs.
Amount	
Award Range	\$46,962 to \$153,323
Key Dates	www.hrsa.gov
Eligibility	An entity that offers a Dental Public Health Training Program accredited by the American Dental Association Commission on Dental Accreditation, such as a School of Public Health or Dentistry, is eligible to apply. Governmental and nonprofit entities, including faith-based and community-based organizations, that meet other eligibility requirements, are eligible to apply. Each applicant must demonstrate that the institution has or will have available full-time faculty members with training and experience in the field of dental public health and support from other faculty members trained in public health and other relevant specialties and disciplines.
Evaluation Criteria	Competing applications are reviewed by nonfederal reviewers for technical merit recommendations. Approval of an application will be based on an analysis of the factors set forth in the application. See the section on Application Procedure above to obtain a copy of the application, and the respective factors delineated in the application.
Address	Grants Management Office: Lawrence Poole, Director, Division of Grants Management, Health Resources and Services Administration, Department of Health and Human Services, 5600 Fishers Lane, Room 11A-16. Health Services Branch: 301-443-2385; Research and Training Branch: 301-443-3099; Government and Special Focus Branch: 301-443-3288.
Contact Person	Raymond Lala, D.D.S., Division of Medicine and Dentistry, Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, Parklawn Building, Room 9A-27, 5600 Fishers Lane, Rockville, MD 20857. Telephone: (301) 443-1707 and E-mail address rlala@hrsa.gov.
Supplementary Information	
Web Site	<a href="http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.236">http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&amp;p_arg_values=93.236</a>

**Foundation Grants**  
**(F1) The Gates Millennium Scholars**

Source	<a href="http://www.gmsp.org/(bdt2tij1r2sbvuqg4tkoc245)/about.aspx">http://www.gmsp.org/(bdt2tij1r2sbvuqg4tkoc245)/about.aspx</a>
Description	<p>The Gates Millennium Scholars (GMS), funded by a grant from the Bill &amp; Melinda Gates Foundation, was established in 1999 to provide outstanding African American, American Indian/Alaska Native, Asian Pacific Islander American, and Hispanic American students with an opportunity to complete an undergraduate college education in all discipline areas and a graduate education for those students pursuing studies in mathematics, science, engineering, education, or library science. The goal of GMS is to promote academic excellence and to provide an opportunity for thousands of outstanding students with significant financial need to reach their fullest potential.</p> <p>The Bill &amp; Melinda Gates Foundation established the initiative to encourage and support students to complete college and continue on to earn master's and doctoral degrees in disciplines in which their ethnic and racial groups are currently underrepresented. The Gates Millennium Scholars award will enable young Americans to attend undergraduate and graduate institutions of their choice and be prepared to assume important roles as leaders in their professions and in their communities.</p>
Amount	Variable – determined by the Advisory Council – described below.
Award Range	N/A
Key Dates	N/A
Eligibility	<p><b>Nomination Process</b>  Principals, teachers, guidance counselors, tribal higher education representatives, and other professional educators are invited to nominate students with outstanding academic qualifications, particularly those likely to succeed in the fields of mathematics, science, engineering, education, or library science. Students who are nominated also should have strong leadership potential and a demonstrated commitment to community service. Nominators must be sufficiently familiar with the student's academic performance to respond to questions concerning academic achievement. Nominators should carefully review GMS eligibility requirements and nominate only those students who are eligible. Nominators must act in their personal capacity. Institutional nominations will not be accepted. A nominator must not be a relative of the student. Students are required to provide a completed Nominee Personal Information Form. Nominators are encouraged to assist students with this step. Please note that students are allowed to submit a Nominee Personal Information Form on their own and may secure a nominator afterwards. Only those students for whom all materials have been received postmarked by or submitted online by January 19, 2004, will be considered for a scholarship. A Recommender Form is also required for a complete package. A recommender can be a supervisor at work, a community group leader, or any other adult who is familiar with the Nominee's community service and leadership activities. A recommender must act in his/her personal capacity. A recommender must not be a relative of the student.</p>
Evaluation Criteria	<p><b>Administration</b>  The United Negro College Fund (UNCF) is the administrator of the GMS initiative. To reach, coordinate, and support the constituent groups, UNCF has subcontracted with the American Indian Graduate Center Scholars, the Hispanic Scholarship Fund, and the Organization of Chinese Americans to assist in implementing the initiative. The Advisory Council is made up of six members: five members from higher education and one member representing the Bill &amp; Melinda Gates Foundation. Advisory Council members include:</p> <ul style="list-style-type: none"> <li>• Dr. Gilberto Cardenas, Assistant Provost, Institute of Latino Studies at Notre Dame</li> </ul>

	<ul style="list-style-type: none"> <li>• Dr. David Chang, President of Polytechnic University</li> <li>• Mr. James Larimore, Dean of Dartmouth College</li> <li>• Dr. Walter Massey, President of Morehouse College</li> <li>• Dr. Piedad Robertson, Superintendent/President of Santa Monica College</li> <li>• Mr. Tom Vander Ark, Executive Director of Education of the Bill &amp; Melinda Gates Foundation</li> </ul> <p>The Advisory Council will develop policy, make final funding decisions, and administer the final nomination review.</p>
Address	Gates Millennium Scholars P.O. Box 10500 Fairfax, VA 22031-8044
Contact Person	Toll-free number: 1-877-690-GMSP
Supplementary Information	<p>Goals of the foundation:</p> <ul style="list-style-type: none"> <li>• To reduce the financial barriers for African-American, Hispanic American, Native American/Alaskan Native, and Asian Pacific American students with high academic and leadership promise who are at a significant economic disadvantage</li> <li>• To increase the representation of these target groups in the disciplines of mathematics, science, engineering, education, and library science, where these groups are severely underrepresented</li> <li>• To develop a diversified cadre of future leaders for America by facilitating successful completion of bachelor's, master's, and doctorate degrees.</li> <li>• To provide seamless support from undergraduate through doctoral programs for students entering target disciplines</li> </ul>
Web Site	<a href="http://www.gmsp.org/">http://www.gmsp.org/</a>

**(F2) The John D. and Catherine T. MacArthur Foundation**

Source	<a href="http://www.macfound.org/site/c.lkLXJ8MQKrH/b.938141/k.FEFC/Domestic_Grantmaking.htm">http://www.macfound.org/site/c.lkLXJ8MQKrH/b.938141/k.FEFC/Domestic_Grantmaking.htm</a>
Description	<p>The premise of the Program on Human and Community Development is that demonstrable improvement in the human condition requires systemic and sustainable change. The Foundation has selected a set of issues on which to focus its grantmaking strategies. These include strengthening communities and enhancing the competitiveness of regions, improving teaching and learning, increasing access to stable and affordable housing, improving juvenile justice, advancing policies that promote mental health, and translating research into effective policy and practice.</p> <p>In addition to its grantmaking, the Foundation provides low-cost loans and other financial tools through program-related investments.</p> <p>Grantmaking in education seeks to help improve student learning through better instruction, research, and a better understanding of the effect of technology of young people.</p>
Amount	Varies based on project.
Award Range	Average grant amount is \$436,364 based on 2003 data.
Key Dates	Applications are accepted year round.
Eligibility	<p>In order to be considered for a grant from The John D. and Catherine T. MacArthur Foundation, all organizations will be required to submit a proposal. However, at this time no unsolicited proposals are being accepted. Therefore, if interested in applying for a grant, please send the following to: <a href="mailto:4answers@macfound.org">4answers@macfound.org</a></p> <p><b>LETTER OF INQUIRY: COVER SHEET</b>          In order to expedite a letter of inquiry, it is important that it include a cover sheet with the following information:</p> <ul style="list-style-type: none"> <li>*Information regarding who will carry out the work</li> <li>*Name of your organization (and acronym if commonly used)</li> <li>*Name of parent organization, if any</li> <li>*Name of chief executive officer or person holding similar position</li> <li>*Organization's address (and courier address if different)</li> <li>*Organization's phone number, fax number, and e-mail address, if any</li> <li>*Name and title of the principal contact person, if different from the above</li> <li>*Address (and courier address if different), phone number, fax number, and e-mail address, if any, of principal contact</li> <li>*Web address, if any.</li> </ul> <p><b>LETTER OF INQUIRY: FORMAT</b>          There is no set format, but letters of inquiry generally include the following:</p> <ul style="list-style-type: none"> <li>* Name or topic of the proposed project or work to be done</li> <li>* A brief statement (two or three sentences) of the purpose and nature of the proposed work</li> <li>* The significance of the issue addressed by the project and how it relates to a stated MacArthur program strategy</li> <li>* How the work will address the issue</li> <li>* How the issue relates to your organization, and why your organization is qualified to undertake the project</li> <li>* Geographic area or country where the work will take place</li> <li>* Time period for which funding is requested</li> <li>* Information about those who will be helped by and interested in the work and how you will communicate with them</li> <li>* Amount of funding requested from MacArthur and total cost (estimates are acceptable).</li> </ul>

Evaluation Criteria	Merit of the proposal and relatedness to the foundation's goals.
Address	The John D. and Catherine T. MacArthur Foundation Office of Grants Management 140 S. Dearborn Street Chicago, IL 60603-5285
Contact Person	Staff Phone: (312) 726-8000 Fax: (312) 920-6258 TDD: (312) 920-6285 E-mail: <a href="mailto:4answers@macfound.org">4answers@macfound.org</a>
Supplementary Information	
Web Site	<a href="http://www.macfound.org/">http://www.macfound.org/</a>

**(F3) The Ford Foundation  
Community and Resource Development Grant**

Source	<a href="http://www.fordfound.org/publications/recent_articles/docs/current_interests05.pdf">http://www.fordfound.org/publications/recent_articles/docs/current_interests05.pdf</a>
Description	The Community and Resource Development grant from the Ford Foundation supports work on community development and the environment to give low-income communities greater ownership and control of key community institutions and resources.
Amount	N/A
Award Range	Average grant is \$159,137 based on 2003 data.
Key Dates	Applications are considered throughout the year. Normally applicants may expect to receive within six weeks an indication of whether their proposals are within the foundation's program interests and budget limitations.
Eligibility	<p>Before a request is made for a grant or program-related investment, a brief letter of inquiry is advisable to determine whether the foundation's present interests and funds permit consideration of the request.</p> <p>The letter should include:</p> <ul style="list-style-type: none"> <li>* The purpose of the project for which funds are being requested</li> <li>* Problems and issues the proposed project will address</li> <li>* Information about the organization conducting the project</li> <li>* Estimated overall budget for the project</li> <li>* Period of time for which funds are requested</li> <li>* Qualifications of those who will be engaged in the project</li> </ul> <p>After receiving the letter, foundation staff members may ask the grant seeker to submit a formal proposal. There is no grant application form. The proposal should include:</p> <ul style="list-style-type: none"> <li>* The organization's current budget</li> <li>* A description of the proposed work and how it will be conducted</li> <li>* The names and curricula vitae of those engaged in the project</li> <li>* A detailed project budget</li> <li>* Present means of support and status of applications to other funding sources</li> <li>* Legal and tax status</li> </ul> <p>In some instances, the foundation requires the grantee organization to match the foundation's grant with funds from other sources. The foundation supports pluralism and equal opportunity in its grantmaking and in its internal policies. The opportunities that prospective grantee organizations provide for minorities and women are considered in evaluating proposals. Applications are considered throughout the year. Normally applicants may expect to receive within six weeks an indication of whether their proposals are within the foundation's program interests and budget limitations. Activities supported by grants and program-related investments must be charitable, educational, or scientific, as defined under the appropriate provisions of the U.S. Internal Revenue Code and Treasury Regulations. The foundation monitors grants through regular financial and narrative reports submitted by the grantee. The foundation's funds are limited in relation to the great number of worthwhile proposals received. For example, in 2004 the foundation received about 41,000 grant requests and made 2,091 grants. The foundation directs its support to activities that are within its current interests and are likely to have wide effect. Support is not normally given for routine operating costs of institutions or for religious activities. Except in rare cases, funding is not available for the construction or maintenance of buildings.</p>
Evaluation Criteria	In all cases, recipients are selected on the merits of their proposals and on their potential contribution to advancing the foundation's program objectives.
Address	The Ford Foundation

	320 East 43rd Street New York, N.Y. 10017
Contact Person	Barron M. Tenny, Secretary <a href="mailto:Office-Secretary@fordfound.org">Office-Secretary@fordfound.org</a>
Supplementary Information	Most of the foundation's grant funds are given to organizations. Although it also makes grants to individuals, they are few in number relative to demand and are limited to research, training, and other activities related to its program interests. The foundation does not award undergraduate scholarships or make grants for purely personal needs. Support for graduate fellowships is generally provided through grants to universities and other organizations, which are responsible for the selection of recipients. Most foundation grants to individuals are awarded either through publicly announced competitions or on the basis of nominations from universities and other nonprofit institutions.
Web Site	<a href="http://www.fordfound.org/">http://www.fordfound.org/</a>

### (F4) W.K. Kellogg Foundation Grant

Source	<a href="http://www.wkkf.org/default.aspx?tabid=63&amp;ItemID=6&amp;NID=41&amp;LanguageID=0">http://www.wkkf.org/default.aspx?tabid=63&amp;ItemID=6&amp;NID=41&amp;LanguageID=0</a>
Description	Health programming at the Kellogg Foundation focuses explicitly on improving individual and community health and improving access to and the quality of health care. Our current goal is to promote health among vulnerable individuals and communities through programming that empowers individuals, mobilizes communities, engages institutions, improves healthcare quality and access, and informs public and marketplace policy. Grantmaking takes into account the social and economic determinants of health within a person's community, the quality of health institutions within that community, and the policies that determine how health services are organized, provided, and financed. Grantmaking also targets communities, healthcare systems, and public health as centers of change.
Amount	Varies based on project size.
Award Range	See above.
Key Dates	N/A (continually taking online applications)
Eligibility	<p>The following guidelines help direct the Kellogg Foundation's funding decisions:</p> <ol style="list-style-type: none"> <li>1. Foundation Goals: The Foundation will only consider requests that fall within these interest areas: Health, Food Systems and Rural Development, Youth and Education, and Philanthropy and Volunteerism.</li> <li>2. Geographic Considerations: Generally, the Foundation gives priority to applicants from these targeted regions: <ul style="list-style-type: none"> <li>• The United States</li> <li>• Latin America and the Caribbean</li> <li>• Southern Africa – Botswana, Lesotho, Malawi, Mozambique, South Africa, Swaziland, and Zimbabwe</li> </ul> </li> <li>3. Activities/Projects Not Funded: Generally, the Foundation does not make loans and does not provide grants for: <ul style="list-style-type: none"> <li>• Operational phases of established programs</li> <li>• Capital purposes (purchasing, remodeling, or furnishing of facilities and equipment, except as part of a programmatic effort)</li> <li>• Separate budget line items labeled as "indirect or overhead costs"</li> <li>• Conferences</li> <li>• Films, television, or radio programs, unless they are integral parts of a project or program already being funded</li> <li>• Endowments or development campaigns</li> <li>• Religious programs</li> <li>• Individuals</li> </ul> </li> <li>4. Research Funding: Research is funded only as part of a broader program (research to investigate the effects of a Foundation-funded project, for example).</li> <li>5. Planning or Studies: Funds may be provided to grantees for planning or studies that directly assist in the development or implementation of a project. This may occur when planning or studies are needed to enhance a project's objectives.</li> <li>6. Qualifying Organizations/Projects: To be eligible for support, the organization or institution, as well as the purpose of the proposed project, must qualify under regulations of the United States Internal Revenue Service.</li> </ol>

	7. Sustainability of Project: The grantee, community, or other beneficiary must demonstrate the potential to continue the funded work in a self-renewing manner after Kellogg Foundation funding ceases.
Evaluation Criteria	
Address	W.K. Kellogg Foundation One Michigan Avenue East Battle Creek, Michigan 49017-4012 USA
Contact Person	Supervisor of Proposal Processing
Supplementary Information	Fill out a grant application electronically at <a href="http://www.wkkf.org/ApplyOnline">www.wkkf.org/ApplyOnline</a> . For those applicants who are unable to fill out the online application, please submit a paper form with the information outlined in detail at the foundation website.
Web Site	<a href="http://www.wkkf.org/">http://www.wkkf.org/</a>

## (F5) The Annenberg Foundation

Source	<a href="http://www.annenbergfoundation.org/grants/grants_show.htm?doc_id=210575">http://www.annenbergfoundation.org/grants/grants_show.htm?doc_id=210575</a>
Description	<p>The Annenberg Foundation provides support for projects within its grantmaking interest areas of education and youth, arts and culture, civic and community, and health.</p> <p>The Foundation only considers organizations defined as a public charity and tax exempt under Section 501(c)(3) of the Internal Revenue Code.</p>
Amount	Varies by project.
Award Range	Over 15 years, the Foundation has awarded some 5,200 grants totaling more than \$2.8 billion.
Key Dates	The Annenberg Foundation accepts letters of inquiry at all times during the year and there are no deadlines. After review of the inquiry by Foundation staff, the applicant will be contacted within 6 to 8 weeks as to the status of the request. At this point, a full proposal may be requested by a Foundation officer or other representative. We do not accept proposals unless requested by a Foundation representative.
Eligibility	<p>To be eligible for this grant, the project must fall within the foundation's grant-making interest areas. The areas are: education and youth, arts and culture, civic and community, and health.</p> <p>Please send a letter of inquiry to the contact person and address listed below or e-mail it to: <a href="mailto:info@annenbergfoundation.org">info@annenbergfoundation.org</a> (The Foundation does not open attachments. Please send your letter of inquiry in the body of your e-mail as text.)</p> <p>When received, the letter of inquiry will be directed to the appropriate staff members for review. All letters of inquiry will be answered within 6 to 8 weeks of receipt.</p> <p>Foundation resources are limited in relation to the number of worthwhile requests it receives. A large portion of applications must be declined.</p> <p>The Annenberg Foundation does not use a grant application form. To initiate contact with the Foundation, send a letter of inquiry to determine whether the Foundation's current interests and funds permit consideration of the request. The document should not exceed 2 pages, single-spaced, and should include:</p> <ul style="list-style-type: none"> <li>• Description of the organization conducting the project</li> <li>• Purpose of the project for which funds are being requested</li> <li>• Problems your project will address</li> <li>• Estimated overall project budget</li> <li>• Time period for which funds are requested</li> <li>• Qualifications of key project personnel</li> <li>• Contact information (name, title, address, phone, fax, and e-mail)</li> </ul> <p>The letter of inquiry should not include any additional supporting information such as videotapes/compact discs, financial reports, annual reports, or books. Proposals are not accepted unless requested by a representative of the Foundation.</p>
Evaluation Criteria	Only solicited proposals will be reviewed. The organization must submit a letter of inquiry before submitting a full proposal. The proposals will be evaluated based on merit and congruence with the foundation's grantmaking areas of interest.
Address	The Annenberg Foundation Radnor Financial Center, Suite A-200 150 N. Radnor-Chester Rd. Radnor, PA 19087

Contact Person	Gillian Norris-Szanto Senior Program Officer
Supplementary Information	The Annenberg Foundation is not presently considering inquiries for: <ul style="list-style-type: none"> <li>• Individuals</li> <li>• Individual K-12 schools</li> <li>• For-profit organizations</li> <li>• Political activities or attempts to influence specific legislation</li> <li>• Individual Scholarships</li> <li>• Projects focused exclusively on research</li> <li>• Programs outside of our grantmaking interests</li> </ul>
Web Site	<a href="http://www.annenbergfoundation.org/">http://www.annenbergfoundation.org/</a>

## (F6) The W. M. Keck Foundation

Source	<a href="http://www.wmkeck.org/fund/criteria_science.html">http://www.wmkeck.org/fund/criteria_science.html</a>
Description	<p>The W.M. Keck Foundation makes grants to research institutions and accredited institutions of higher learning primarily in the areas of Science and Engineering, Medical Research and Liberal Arts. Eligible institutions in these fields are U.S. accredited universities, colleges, medical schools and major, independent scientific and medical research institutions.</p> <p>The W.M. Keck Foundation was established in 1954 in Los Angeles by William Myron Keck, founder of The Superior Oil Company. Our Foundation is one of the nation's largest philanthropic organizations, with assets of more than \$1 billion. We believe that a high-quality, well-rounded college education is vital for tomorrow's leaders. The Foundation's two undergraduate programs - in liberal arts, and science and engineering - <u>promote innovative instruction and research at colleges across the nation</u>. Undergraduate Science and Engineering grants support new degree programs as well as the development of new curricula and interdisciplinary course materials.</p>
Amount	Varies by project.
Award Range	See above.
Key Dates	Need to request details from: <a href="mailto:info@wmkeck.org">info@wmkeck.org</a>
Eligibility	<p><b>Eligible U.S. institutions</b></p> <ul style="list-style-type: none"> <li>• Accredited four-year colleges and universities</li> <li>• Medical schools</li> <li>• Major, independent scientific and medical research institutions</li> </ul> <p><b>Organizations ineligible for funding</b></p> <ul style="list-style-type: none"> <li>• Those that are located outside the United States</li> <li>• Those that are not recipients of a permanent, tax-exempt ruling determination from the U.S. government and (if located in California) the State of California</li> <li>• Those that cannot provide current full, certified, audited financial statements</li> <li>• Private foundations</li> <li>• "Conduit" organizations, unified funds, or organizations that use grant funds from donors to support other organizations or individuals</li> </ul> <p><b>Projects ineligible for funding</b></p> <ul style="list-style-type: none"> <li>• Routine institutional or general operating expenses, general endowments, deficit reduction, or general or administrative overhead expenses</li> <li>• General and federated campaigns, including fundraising events, dinners or mass mailings</li> <li>• Grants to individuals</li> <li>• Conference or seminar sponsorship</li> <li>• Book publication and film or theater productions</li> <li>• Projects to be undertaken outside the United States</li> <li>• Public policy research or activities of any kind</li> </ul>
Evaluation Criteria	<p><b>Institutional criteria</b></p> <ul style="list-style-type: none"> <li>• Exemplary institutions and organizations with a history of achievement and effective management</li> </ul>

	<ul style="list-style-type: none"> <li>• Institutions and organizations whose financial condition is strong, as demonstrated by their current, full, certified audited financial statements prepared in conformity with generally accepted accounting principles</li> </ul> <p><b>Programmatic criteria</b></p> <ul style="list-style-type: none"> <li>• Significant programs and projects that: <ul style="list-style-type: none"> <li>• focus on emerging areas of research at the forefront of science, engineering and medicine, or have the potential to lead to breakthrough technologies in these areas; or</li> <li>• establish new directions and utilize creative approaches in education and research for the liberal arts and sciences at predominantly undergraduate institutions</li> </ul> </li> <li>• Programs that respond to a compelling need and have the potential to create a significant and long-lasting impact</li> <li>• Programs and projects that are consistent with the Foundation's stated fields of interest</li> <li>• Programs and projects that demonstrate that the chances of success would be seriously impaired but for the assistance of private philanthropy generally, and the W.M. Keck Foundation in particular</li> <li>• Programs and projects that encourage self-sufficiency rather than continuing dependence on W.M. Keck Foundation support</li> </ul>
Address	W.M. Keck Foundation 550 South Hope Street Suite 2500 Los Angeles, CA 90071 (213) 680-3833
Contact Person	Not available.
Supplementary Information	
Web Site	<a href="http://www.wmkeck.org/">http://www.wmkeck.org/</a>

### (F7) The Kresge Foundation Science Initiative

Source	<a href="http://www.kresge.org/filedownloads/">http://www.kresge.org/filedownloads/</a>
Description	The Kresge Foundation was established in 1899 by the initial gift of Sebastian S. Kresge, who subsequently added \$60 million more to the foundation's primary goal – "To promote the well-being of mankind. Since its establishment, the Foundation has awarded a total of 8,222 grants for \$1.92 billion.
Amount	Varies by project.
Award Range	Based on the organization's annual report, the grants related to education, health and science for the year 2004 ranged between \$200,000 and \$2,500,000.
Key Dates	N/A
Eligibility	Applicants must fill out the grant application available to download at: <a href="http://www.kresge.org/programs/SI.pdf">http://www.kresge.org/programs/SI.pdf</a>
Evaluation Criteria	In the words of the foundation President:  "We look very carefully at the programs to be housed in the buildings, at the organizations that propose them, at their financial audits, accreditation reports, and projections of the cost to operate new or expanded facilities. Questions about long-range, strategic plans, staff and program development, and governance are unavoidable. It is an opportunity to look into an organization's soul and to ask, "Who needs it? Who supports it? Who will work and give to advance it?" It has been said that a capital campaign will reveal whether an organization's board of trustees is composed of movers and shakers or of the moved and the shaken."
Address	The Kresge Foundation 3215 West Big Beaver Rd. Troy, Michigan 48084
Contact Person	Judith A. Beebe <i>Administrative Secretary</i> JABeebe@Kresge.Org Tel. (248)643-9630 Fax (248)643-0588  Sandra M. Harrison <i>Application Secretary</i> SMHarrison@Kresge.Org
Supplementary Information	
Web Site	<a href="http://www.kresge.org/">http://www.kresge.org/</a>