

Health Care Industry Nashville MSA 2015

Trends, Scope, and Impact on the Regional Economy

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NASHVILLE MSA* HEALTH CARE INDUSTRY 2015: EXECUTIVE SUMMARY

Executive Summary

Health care is a growth industry that is relatively immune to economic cycles. Over the years, the health care sector has been driving employment growth in the national economy, and considering such factors as the health care worker shortage across the United States along with an increasingly aging population, it is likely that this trend will continue.

Amid overall growth in the health care sector throughout the United States, Nashville provides a unique example of a hub of the national health care industry. A total of 15 publicly traded health care companies have chosen Nashville as their headquarters in 2014, and seven of the nation's 13 leading for-profit acute care hospital companies are located in Nashville, controlling approximately 40 percent of investor-owned hospitals in the United States.

The scope of the health care industry in Nashville ranges from basic-service providers such as physicians to ambulatory care, behavioral health, long term care, major hospital management companies, large renal dialysis companies, health information technology, and advanced life sciences research. This study presents two views of Nashville's health care industry: (1) the core health care industry, defined as ambulatory services, hospitals, and nursing and residential care facilities that provide care in the Nashville MSA*, and (2) the health care industry cluster, which encompasses the core health care industry and other related health care industries such as health care management companies, life sciences research, and professional services firms that operate on a local, national, or international basis. Also included in this study is a profile of Nashville Health Care Council (the Council) member companies and the Council member *CEO Confidence Survey*.

Overview of the Core Health Care Industry

The term *core health care industry* refers to health care services classified under the NAICS (North American Industrial Classification System) as 621 (Ambulatory Services), 622 (Hospitals), and 623 (Nursing and Residential Care Facilities).**

Nation

- **By 2022, one in every six new jobs** in the nation will be in health care, and the resulting 2.9 million additional workers will be spread throughout this large and diverse sector from health care practitioners' offices, outpatient clinics, and hospitals to nursing and residential care facilities.
- **A total of 19.3 percent of gross domestic product (GDP)** is projected to be health care expenditures in 2023, up from 17.4 percent in 2013.

Tennessee

- **One in every 11 new jobs** in Tennessee is projected to be in health care by 2022.

Nashville MSA

- **For every 100 nonfarm jobs created between 2008 and 2013, 25 were in the health care sector.**
- **One in every 11 occupations in 2013 was a health care occupation.**

Employment, Establishments, and Wages in the Nashville MSA

- **In 2014, over 105,000 people were employed by Nashville's core health care sector,** an increase of more than 17 percent from 2008.
- Between 2008 and 2014, **a total of 426 new core health care establishments*** emerged** in Nashville, bringing the total to 4,027, up 12.4 percent from 2008.
- **Wages totaling \$5.8 billion were paid in 2014** by the core health care industry in the Nashville MSA, up 24 percent from 2008.
- The **average wage for health care occupations is \$66,950**, significantly higher than Nashville's average annual wage of \$47,984.

Core Health Care Spending in the Nashville MSA

- **More than 75 percent of core health care spending** goes to individuals as either payroll or proprietary income in the Nashville MSA, increasing the purchasing power of many people in the region.

Overview of the Nashville Health Care Industry Cluster

The greater health care industry cluster in Nashville encompasses the core health care industry and other related health care industries such as health care management companies, life sciences research, and professional services firms that operate on a local, national, or international basis.

Nashville-Based Health Care Headquarter Companies

- **In 2014, there were 15 publicly traded health care companies in Nashville.**
- **These companies employed over 500,000 and had revenues greater than \$73 billion.**

Health Care Industry Cluster Employment and Office Space

- **In 2014, the health care industry cluster directly employed 125,918 people in the Nashville MSA, up 10 percent from 2010,** making the health care industry cluster the largest employer in the region.
- **Fourteen of every 100 nonfarm employees** in the Nashville MSA were employed directly in health care.

- **A total of 83.7 percent of Nashville health care industry cluster employment** was in the core health care industry.
- In 2014, the Nashville health care industry cluster occupied **34.7 million square feet of office space and 17.4 percent of Nashville's total office and industrial space.**

Employment Impact

- In 2014, the health care industry cluster in the Nashville MSA accounted for **249,345 jobs (direct, indirect, and induced), up 18.14 percent from 2008.**
- This accounts for **nearly 9 percent of Tennessee's and 25.6 percent of the Nashville MSA's nonfarm employment** in 2014.
- **For every 100 industry cluster jobs, an additional 98 jobs are created** in the Nashville economy.
- The Nashville health care industry cluster includes nearly **4,027 establishments, up 12.4 percent from 2008.**

Personal Income Impact

- The Nashville health care industry cluster generated **\$21.03 billion in personal income (direct, indirect, and induced)** in 2014, up 57 percent from 2008.
- **Every \$100 of personal income generated an additional \$34** in the local economy.
- Nashville health care industry cluster direct personal income was \$15.74 billion.
- This corresponds to nearly 26.3 percent of the Nashville MSA's total personal income in 2014.

Economic Impact

- The health care industry cluster in the Nashville MSA created **\$38.8 billion in business revenues (direct, indirect, and induced) in 2014, an increase of 32.9 percent from 2008.**
- **Of this amount, a total of \$22.8 billion was injected directly** into the economy.
- **Every \$100 of health care cluster spending generates an additional \$70** in business revenues.
- The Nashville health care industry cluster accounted for **an estimated \$1.5 billion in state and local taxes in 2014.**

Health Care Financial Infrastructure Access to Capital

- Nashville ranks first among 13 MSAs in terms of the **number of public health care industry cluster management companies**, their revenues, and their employment.
- Nashville ranks **second in terms of business climate and in relative health care competitiveness.**

Nashville Health Care Council Member Companies

More than 265 Council member companies were surveyed and profiled in order to gain an up-to-date and accurate picture of the Council's membership.

Council Members' Capital Expenditures and Philanthropic Contributions

- **In 2014, 116 Council member companies reported \$214,651,900 in philanthropic contributions** in the Nashville MSA.
- **In 2014, 116 Council member companies reported \$2.7 billion in capital expenditures** in the Nashville MSA.

Council Members' Impact on the Nashville MSA

- **In 2014, Council member companies employed over 96,000 people** in the Nashville MSA, up 37 percent from 2010.
- Total Nashville-based **payroll of Council member companies is \$8.2 billion, an increase of 40 percent from 2010.**
- **The average annual wage per employee is \$84,641**, substantially higher than the average nonfarm wage in the Nashville MSA.

Council Members' Office Space

- Council member companies in the Nashville MSA occupied nearly **9 million square feet of office space** in 2014.

Council Members' Nashville Business Revenue

- Council member companies generated **an estimated \$35.4 billion in Nashville-based sales** in 2014.

Council Members' Global Impact

- Council member companies **employed 628,044 people globally with a total revenue of \$144 billion, of which 550,373 employees and \$125 billion are health care related.**

* This study is a detailed analysis of the Nashville MSA, which includes Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Maury, Robertson, Rutherford, Smith, Sumner, Trousdale, Wilson, and Williamson counties.

** When comparing the findings in this report with the 2010 study, please keep in mind the following changes that affect comparability:

- 1) The geographical scope of this study is different: Maury County is now included in the Nashville MSA.
- 2) The Council membership has grown drastically to 265 members from 170 in 2010.
- 3) Some variables used in the MSA rankings have changed.

*** An establishment is defined as a single physical business location.

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I. INTRODUCTION

Health care is a growth industry that is relatively immune to economic cycles. The health care sector has been the only sector consistently adding jobs throughout the recent economic crisis. Historical employment data and recent Bureau of Labor Statistics (BLS, www.bls.gov) surveys indicate that the basic health care services sector is driving employment growth in the national economy. Considering the ongoing health care worker shortage across the United States, it is likely that this growth trend will continue. Moreover, the baby boomer generation is expected to increase the demand for health care services over the years, further increasing the demand for health care workers. In fact, population projections (www.census.gov) suggest that the share of seniors (65+) in the total population will increase to nearly 22 percent by 2040, up from about 14 percent in 2013.

Amid overall growth in the health care sector throughout the United States, Nashville provides a unique example of a national health care industry hub. Fifteen major health care companies (publicly traded) have chosen Nashville as their home, and three of the nation's five largest investor-owned hospital companies are located in Nashville, controlling more than one-third of investor-owned hospitals in the United States.¹

The scope of the health care industry in Nashville ranges from basic-service providers such as physicians to advanced life sciences research companies. This study presents two views of Nashville's health care industry: (1) the core health care industry, defined as ambulatory services, hospitals, and nursing and residential care facilities, and (2) the health care industry cluster, which encompasses the core health care industry and other related health care industries, including management companies and health information technology. This approach is necessary because the presence and quality of both components profoundly affect a region's economic status.²

Through a variety of methods, this study examines the reasons Nashville has become a salient locus of the health care industry and analyzes the trends and scope of the core health care industry in Nashville from a comparative perspective. In addition, it provides a detailed assessment of the economic impact of the health care industry cluster on the regional economy. Furthermore, it provides a benchmarking initiative that compares Nashville with 12 peer Metropolitan Statistical Areas (MSAs) using a host of selected health care–related indicators. Finally, the study profiles the member companies of the Nashville Health Care Council (the Council) and presents the results of a *CEO Confidence Survey*. This study is a detailed analysis of the Nashville MSA, which includes Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Maury, Robertson, Rutherford, Smith, Sumner, Trousdale, Wilson, and Williamson counties. Wherever

¹ According to the 2013 American Hospital Association survey, the number of investor-owned hospitals is 1,060. See also Becker's Hospital Review (www.beckershospitalreview.com). The number of health care companies is extracted from ReferenceUSA and LexisNexis Academic Universe. These companies are part of the broadly defined Nashville health care industry cluster.

² Quality of health care providers is closely related to the quality of life in a region. Similarly, the presence and quality of health care-related industries are considered crucial to a region's business infrastructure.

Nashville is mentioned in the study, it refers to the entire Nashville MSA. From a variety of sources, these data allow the Business and Economic Research Center (BERC) at Middle Tennessee State University to accurately determine the reasons Nashville has become a focal point in the national health care industry, assess the relationship between the health care industry and other sectors of the regional economy, and address other questions concerning Nashville's health care industry.

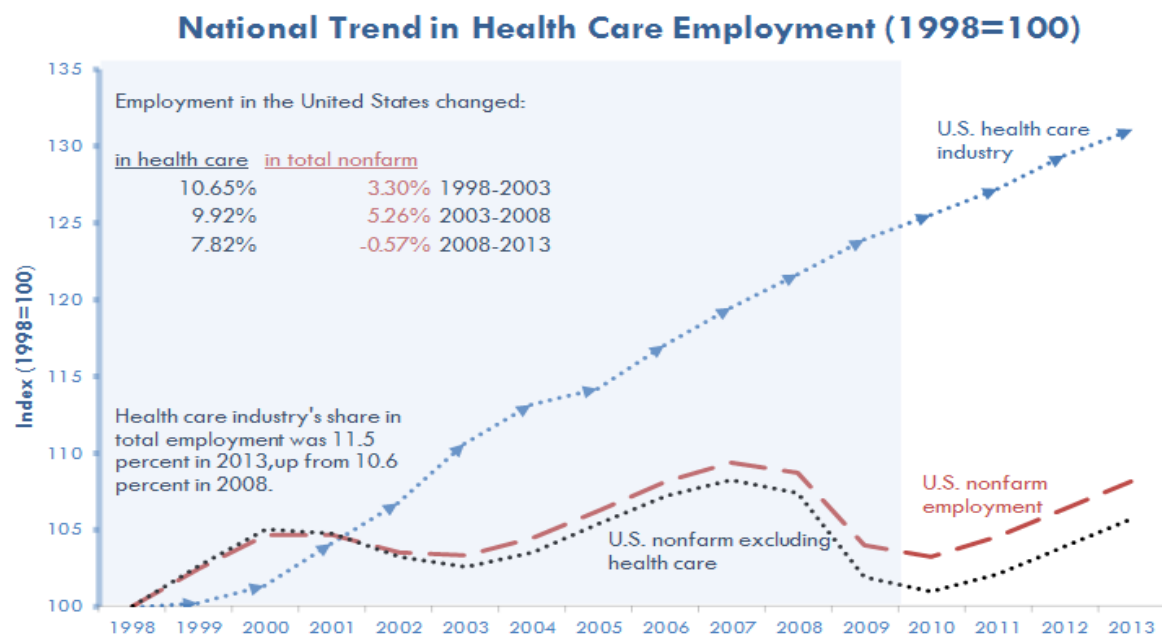
The rest of this study is organized as follows. Chapter two presents an overview of trends in the core health care industry, comprising ambulatory services, hospitals, and nursing and residential care facilities, in the nation, Tennessee, and the Nashville MSA. Chapter three briefly details the study's goals and methodology. Chapter four examines trends in the core health care industry in the Nashville MSA, exploring its various aspects and growth dynamics. Chapter five adopts a broader view of the health care industry and assesses the scope, size, and impact of the health care industry cluster on Nashville's economy. Furthermore, this chapter highlights the importance of publicly traded health care management companies in Nashville's economy. Chapter six compares Nashville's core health care industry with that of 12 of its peer MSAs. Chapter seven profiles Council member companies and presents the results of the *CEO Confidence Survey*. Chapter eight concludes the study. The last chapter provides survey material and technical information on various study components.

II. OVERVIEW OF THE CORE HEALTH CARE INDUSTRY³

The term *core health care industry* refers to health care service providers classified under the NAICS (North American Industrial Classification System) as 621 (Ambulatory Services), 622 (Hospitals), and 623 (Nursing and Residential Care Facilities).⁴

II.1. National Trends

Regarding national trends, increasing demand for health care services by the retiring baby boomer generation likely will fuel further growth in core health care industry employment. According to Census Bureau projections, the over-65 population will increase to nearly 22 percent by 2040, up from 14 percent in 2013. Nationally, the core health care industry has grown significantly faster than nonfarm employment in the past 15 years.



Source: Bureau of Labor Statistics (www.bls.gov), County Business Patterns (www.census.gov), and BERC calculations

³ The majority of data in section two comes from a variety of governmental sources. The sources include the Census Bureau, Bureau of Labor Statistics, County Business Patterns database via the Census Bureau, Center for Medicare and Medicaid Services, Tennessee Advisory Commission on Intergovernmental Relations, Projections Central, and BERC estimates.

⁴ For a detailed analysis, see the methodology section.

Nationally, core health care industry employment grew nearly 8 percent between 2008 and 2013, while total nonfarm employment recorded a decrease of almost 1 percent. Nonfarm employment excluding health care showed a decrease of nearly 2 percent in the same period. To give a better perspective on changing employment dynamics in the nation, one in three jobs created between 1998 and 2003 was in the health care sector. This has changed dramatically in recent years, as over 1 million jobs were added to the health care sector between 2008 and 2013 despite a decrease in total nonfarm employment.

The growth trend in employment in the health care sector since 1998 is expected to continue through 2022, when core health care industry employment is projected to be the dominant source of employment growth. Health care occupations are projected to add nearly 2.9 million new jobs nationally between 2012 and 2022. In this period, growth in health care occupations is expected to be 25 percent versus 11 percent for all occupations. By 2022, health care occupations' share in total employment is projected to be 9.35 percent, an increase of two percentage points from 2013. **Health Care occupations will account for one in every six new jobs, and the resulting 2.9 million additional workers will be spread throughout this large and diverse sector from health care practitioners' offices, outpatient clinics, and hospitals to nursing and residential care facilities.**⁵ According to the Bureau of Labor Statistics, six health care occupations are projected to be in the top 10 fastest-growing occupations in the U.S.

Furthermore, national health care expenditures are expected to reach \$2.5 trillion by 2023, representing nearly 19.3 percent of gross domestic product (GDP), up from 17.4 percent in 2013.⁶

Fastest-growing occupations in the U.S., 2012 and projected for 2022 (number in thousands)*

	Employment		Change	
	2012	2022	Number	Percentage
Industrial-Organizational Psychologists	2	3	1	53%
Personal Care Aides	1,191	1,171	581	49%
Home Health Aides	875	1,299	424	49%
Insulation Workers, Mechanical	29	42	14	47%
Interpreters and Translators	64	93	29	46%
Diagnostic Medical Sonographers	59	86	27	46%
Helpers—Brickmasons, Blockmasons, Stonemasons, Tile and Marble Setters	24	35	11	43%
Occupational Therapy Assistants	30	43	13	43%
Genetic Counselors	2	3	1	41%
Physical Therapist Assistants	71	101	29	41%

Source: U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov).

National projections are not available for 2013-2023.

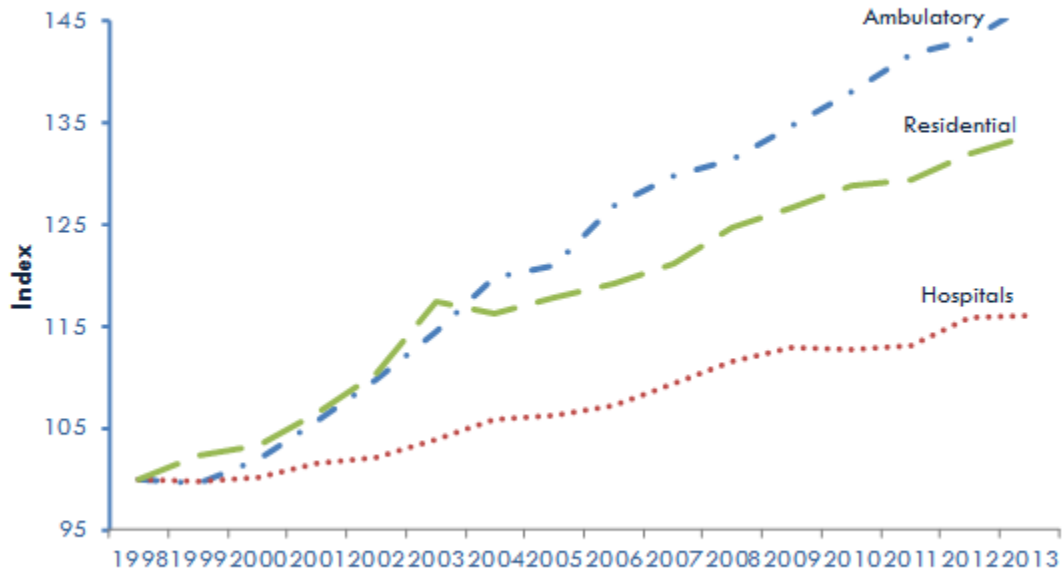
⁵ Employment projections are from the U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov).

Occupations include (a) health care practitioners and technical occupations and (b) health care support occupations.

⁶ Health expenditure projections are from the Center for Medicare and Medicaid Services (www.cms.hhs.gov).

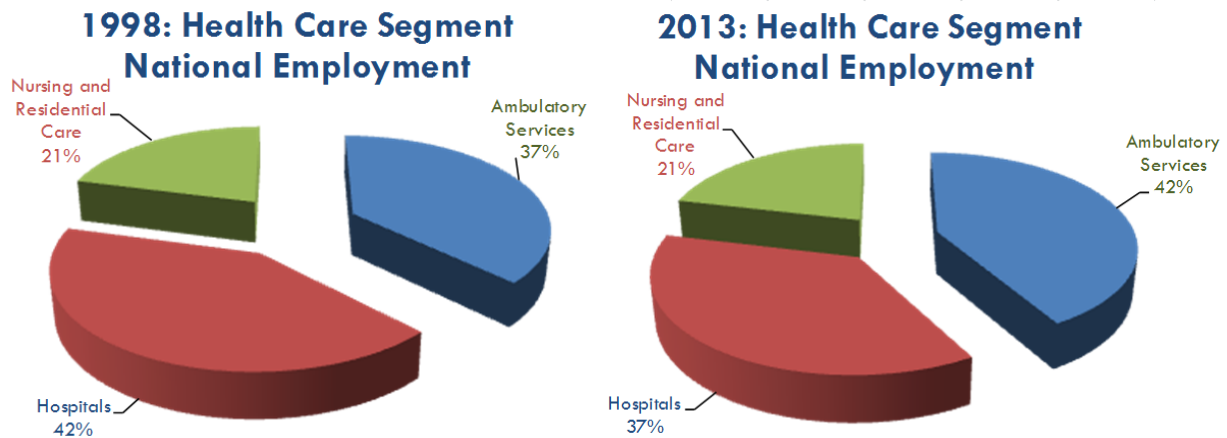
Among national health care sectors, growth in ambulatory services outpaced growth in both nursing care facilities and hospital employment. Hospital and nursing care facilities employment grew 4 and 7 percent, respectively, while ambulatory services recorded 12 percent growth between 2008 and 2013.

Ambulatory Services: Driving Employment Growth (1998=100)



Source: County Business Patterns (www.census.gov) and BERC calculations

The share of ambulatory services in total national health care employment increased considerably over the past 15 years. For example, ambulatory services accounted for 37 percent of total health care employment, residential care facilities 21 percent, and hospitals 42 percent in 1998. From 1998 to 2013, the share of ambulatory services employment grew (increasing to 42 percent) at the expense of hospital employment, which declined to 37 percent.

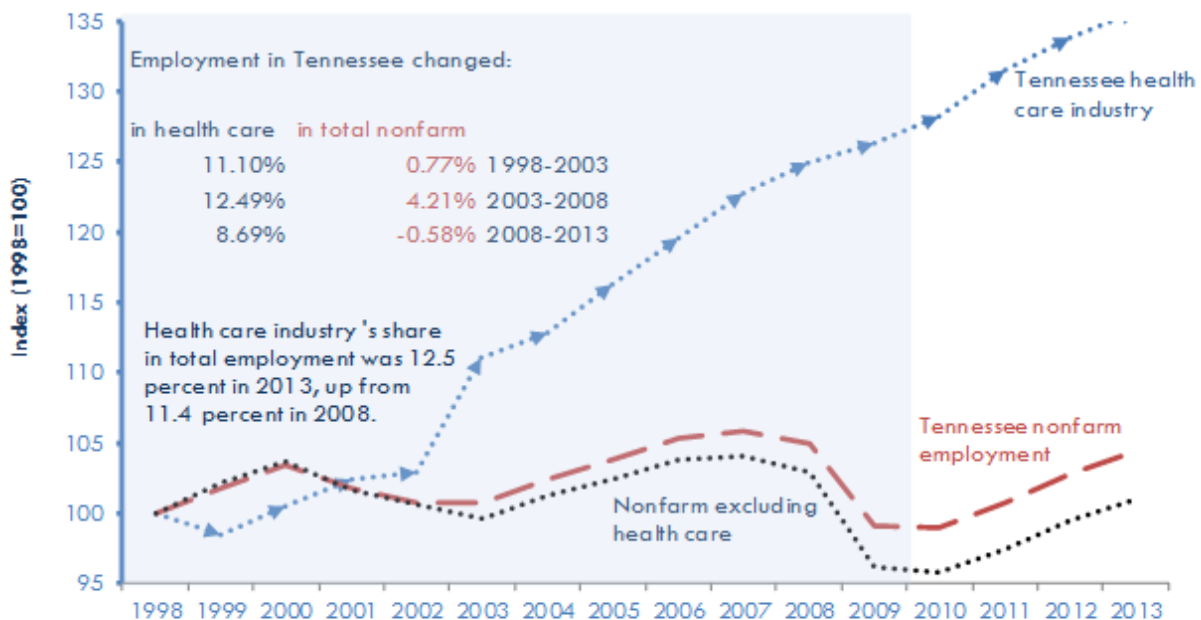


II.2. Trends in Tennessee

Tennessee's health care sector demonstrated significant growth between 1998 and 2003. As core health care employment grew over 11 percent, nonfarm employment increased nearly 1 percent. This early growth trend continued from 2003 to 2008, when Tennessee's health care employment reported 12 percent growth compared to total nonfarm employment, which showed a 4 percent increase in employment.

From a historical perspective, employment growth in Tennessee shows a reversal of trends between total nonfarm and health care employment. From 1998 to 2003, health services employment showed a rigorous growth trend of over 11 percent versus a mere 1 percent for nonfarm employment. From 2003 to 2008, health services employment grew over 12 percent versus a 4 percent increase in total nonfarm. While the growth in health services employment continued to grow from 2008 to 2013, increasing nearly 9 percent, total nonfarm employment recorded a decrease of over half a percent.

Trend in Health Care Employment in Tennessee (1998=100)



Source: Bureau of Labor Statistics (www.bls.gov), County Business Patterns (www.census.gov) and BERC calculations

As previously noted, the share of seniors in the total population, projected to increase to 22 percent of the population in 2040, is likely to increase the demand for health care services dramatically. According to Census Bureau projections, the share of the population over age 65 in Tennessee is expected to increase from 13.30 percent in 2010 to 19.21 percent in 2030.

Health care occupations are projected to increase 18.77 percent from 2012 to 2022, compared to the 13.17 percent growth in all occupations. **Additionally, five out of the 10 fastest-growing occupations in Tennessee are in health care.** Health care occupations' share in total employment will increase to 9.47 percent in 2022, up from 9.03 percent in 2012. Overall, health care occupations are projected to add 49,970 new jobs, accounting for one in every 11 projected jobs between 2012 and 2022.

Fastest-growing occupations in Tennessee in 2012 and projected for 2022 (in thousands)*

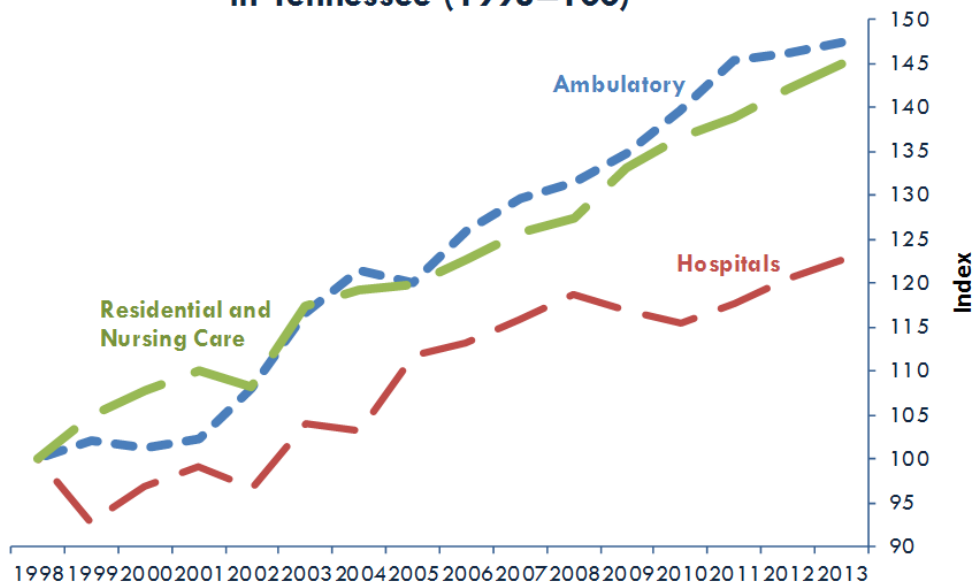
	Employment		Change	
	2012	2022	Number	Percentage
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	490	740	250	50%
Paralegals and Legal Assistants	4,820	7,170	2,350	49%
Skincare Specialists	560	830	270	47%
Physician Assistants	1,300	1,880	580	45%
Industrial-Organizational Psychologists	50	70	20	44%
Interpreters and Translators	690	1,000	310	44%
Orthotists and Prosthetists	120	170	50	44%
Nurse Midwives	70	100	30	43%
Diagnostic Medical Sonographers	1,450	2,060	610	42%
Ambulance Drivers and Attendants, Except Emergency Medical Technicians	270	380	110	42%

Source: State Occupational Projections at <http://www.projectioncentral.com>

*State projections are not available for 2013-2023.

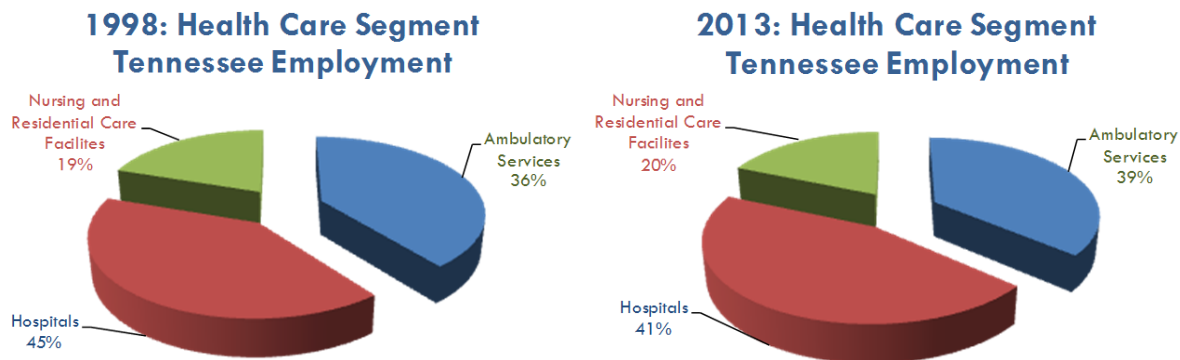
In Tennessee, unlike the U.S. as a whole, growth in health care employment was primarily driven by residential and nursing care facilities between 1998 and 2003; the hospital sector and ambulatory services sector recorded similar growth patterns. However, this early growth trend changed. From 2003 to 2013, ambulatory services employment has been the key employment driver in health care in Tennessee. Ambulatory services grew nearly 27 percent, while nursing care facilities recorded a growth rate of 23 percent. Hospitals grew at a much slower pace than the other two health care segments with a growth rate of 18 percent.

Ambulatory Services: A Key Employment Driver in Tennessee (1998=100)



Source: County Business Patterns (www.census.gov) and BERC calculations

Even though the ambulatory services segment has grown faster than the other two health care segments, its share in Tennessee health care employment is still smaller than its national share in total health care employment. Ambulatory services increased its employment share 3 percentage points from 1998 to 2013 at the expense of hospital employment.



II.3. Trends in the Nashville MSA

Nashville’s health care employment grew faster than total nonfarm employment between 1998 and 2013. While nonfarm employment recorded a 9 percent growth rate between 2003 and 2008, Nashville’s health care employment recorded a 14 percent growth rate during the same period. This growth trend continued between 2008 and 2013. During that period, Nashville’s health care sector recorded a 15 percent growth rate.

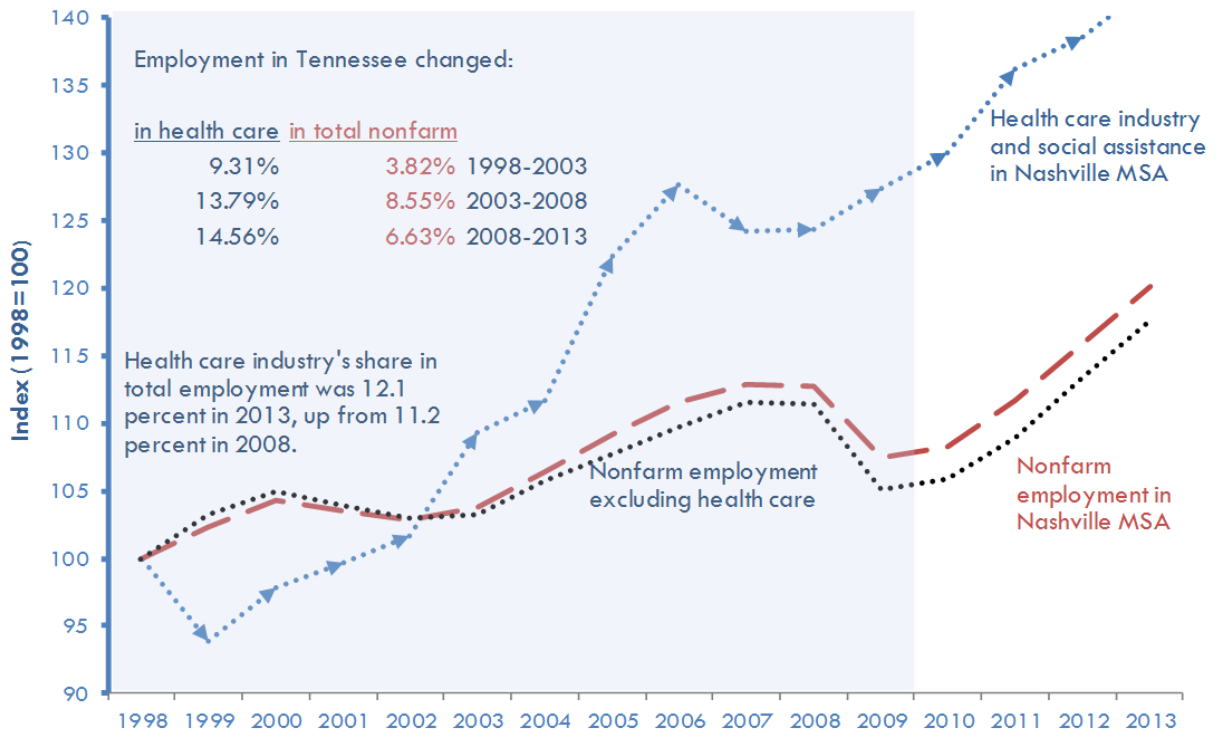
From a historical perspective, Nashville’s health care sector grew 42 percent from 1998 to 2013, adding more than 30,000 jobs. In this period, of every 100 nonfarm jobs created, over 21 were in health care. The period between 2003 and 2008 was somewhat less active for Nashville’s health care sector, which added nearly 11,000 jobs; of every 100 nonfarm jobs created during this time, 17 were in health care. Between 2008 and 2013, of every 100 nonfarm jobs created, 25 were in the health care sector.

In line with national and state population growth trends, the share of seniors in the adult population in Davidson County is projected to reach 16 percent in 2025, up from 12 percent in 2010, further increasing the demand for health care services.⁷

⁷ Data is from TACIR (Tennessee Advisory Commission on Intergovernmental Relations) at www.state.tn.us/tacir/population.htm.

Health care occupations in Nashville represented 12 percent of total jobs, or one in every 8 occupations, in 2013. In terms of the share of the health care sector in total nonfarm employment, one in every eight workers was employed by the health care industry.

Trend in Health Care in Nashville MSA (1998=100)

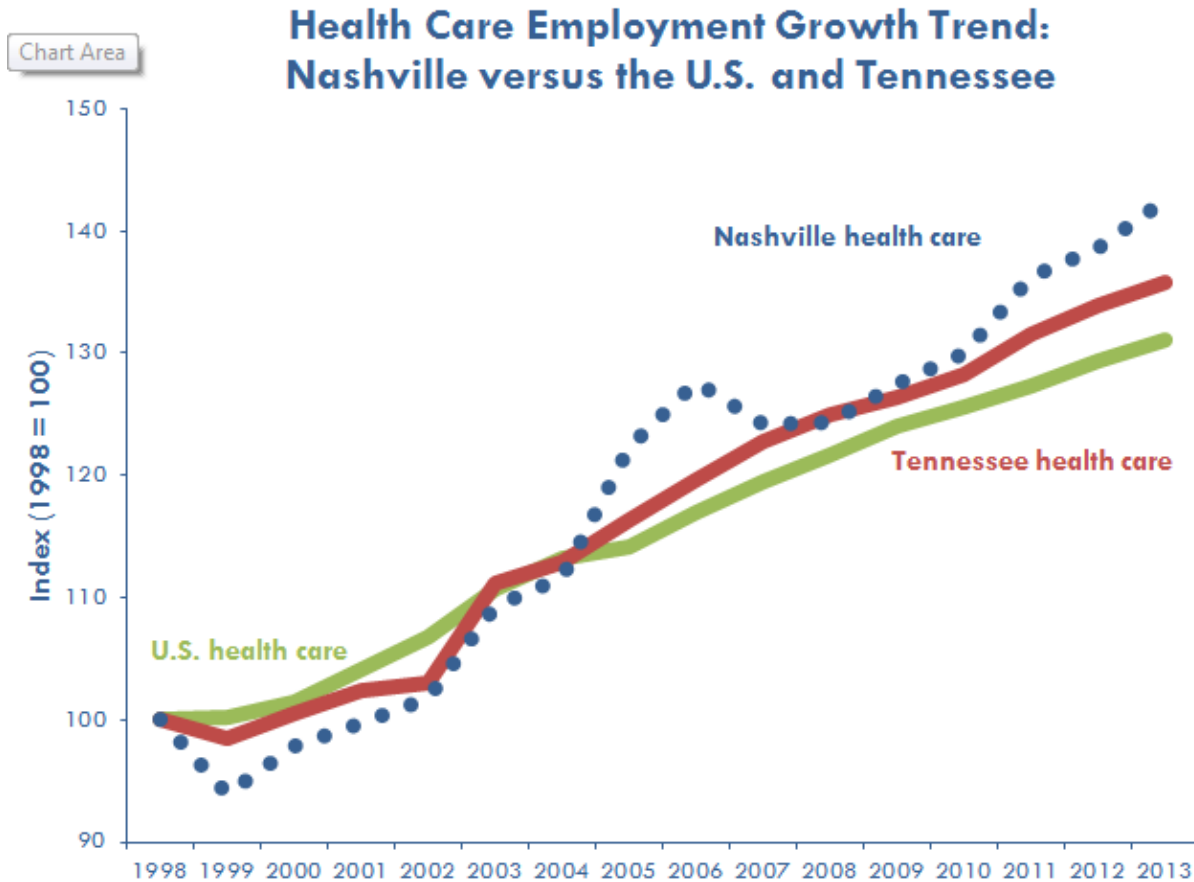


Source: Bureau of Labor Statistics (www.bls.gov), County Business Patterns (www.census.gov), and BERC calculations

Unlike the trend in previous periods, the share of ambulatory services in the Nashville MSA in health care employment decreased between 2008 and 2013 to 39 percent. Ambulatory services employment increased about 10 percent from 2008. The increase in hospital and nursing care employment between 2008 and 2013 was remarkable: 19 percent and 14 percent, respectively. Hospitals' share in health care jobs jumped nearly 2 percentage points to 46 percent in 2013.

II.4. Comparative Perspective on Trends in the Core Health Care Industry

Employment growth in Nashville's core health care industry has been faster than that of national and state employment since 2004.

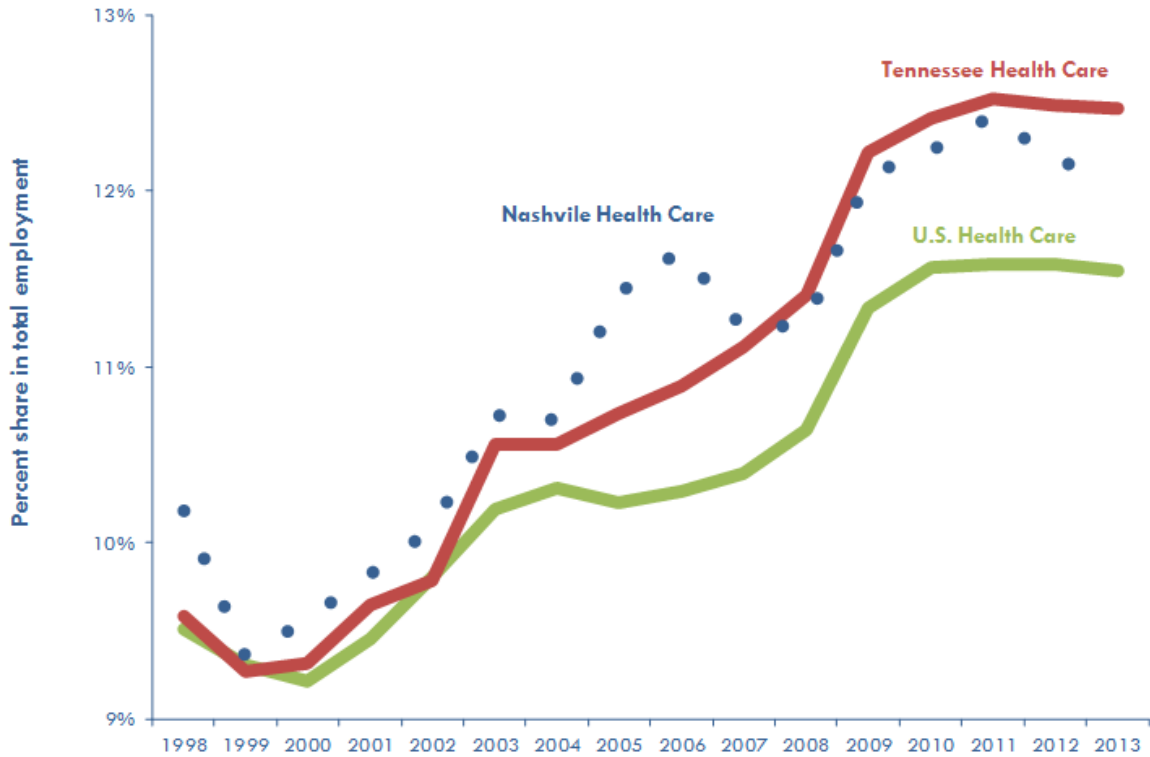


Source: Bureau of Labor Statistics (www.bls.gov), County Business Patterns (www.census.gov), and BERC calculations

The core health care sector plays a more prominent role in Nashville's economy than in the state and national economies. More than 12 of every 100 Nashville nonfarm jobs in 2013 were core health care jobs. The graph below clearly shows that the employment share of the health care industry substantially increased in Nashville from 1999 to 2006 and again from 2007 to 2011. This followed a decline in the share of health care employment in total nonfarm employment between 1998 and 1999 and again from 2006 to 2007.

This period coincides with substantial health care spending cuts as a result of the 1997 Balanced Budget Act, which affected Nashville, a national health care industry hub, more than both the state and the nation.

**Percent Share of Health Care Employment in Total Nonfarm:
Nashville versus the U.S. and Tennessee**



Source: Bureau of Labor Statistics (www.bls.gov), County Business Patterns (www.census.gov), and BERC calculations

III. STUDY GOALS AND METHODOLOGY⁸

III.1. Goals of the Study

- What are the trends, scope, and impact of the core health care industry and health care industry cluster in the regional economy?
- What is the economic significance to the region of health care companies headquartered in Nashville?
- How does Nashville’s health care industry compare with the health care industry in 12 of its peer MSAs?
- How does the Nashville MSA rank relative to its 12 peer MSAs in terms of selected health care indicators?
- What is the overall economic trend of health care services in the greater Nashville area, and how does this trend compare to its peer markets?
- What role has the Nashville Health Care Council played in promoting the health care industry in the greater Nashville area since 1995?

III.2. A Review of Selected Literature

Given the importance of the health care industry in the national and regional economies, many studies have treated this sector as an engine of growth. According to a recent study by the U.S. Bureau of Labor Statistics (BLS), “The healthcare industry is projected to add more jobs—over 4 million—than any other industry between 2012 and 2022. And it is projected to be among the fastest-growing industries in the economy.”⁹ This growth has been steady through the years including the 2007–2009 recession primarily because there is always a need for health care services regardless of the economic climate.

Many regional studies continue to place the health care industry at the center of regional economic growth. However, many studies examine health care–related infrastructure industries such as health care management, life sciences research, professional services firms, and others. These studies lack the necessary broader perspective—viewing health care providers as a core health care industry at the center of a health care industry cluster. A few recent studies emphasize the importance of cluster linkages in the health care industry. For example, A BioCrossroads’ study

⁸ Section three consulted the following resources: *The Economic Impacts of Indiana’s Public And Private Hospitals and Outpatient Care Centers* by BioCrossroads, *Economic Impact of Arizona’s Hospitals on the State & Its Counties* by the L. William Seidman Research Institute, *Healthcare: Millions of Jobs Now and in the Future* by Torpey, *Lake Chelan Valley Healthcare Industry Assessment* by BergerABAM, and *Louisville’s Health-Related Economy: Size, Character, and Growth*.

⁹ For more information, see Elka Torpey (2014), *Healthcare: Millions of Jobs Now and in the Future* (Bureau of Labor Statistics).

(2013), *The Economic Impacts of Indiana's Public and Private Hospitals and Outpatient Care Centers*, examines a range of impacts through analyzing both the key supplier industries to the sector as well as the overall extent of sector-related impacts. This study uses an input/output model to represent interrelationships among economic sectors as well as life sciences research.¹⁰

Greater growth potential in the health care industry is expected to result from increasing interaction between the core health care industry and health care–related infrastructure industries such as health care management, health care finance, and life sciences research, among others. The cluster perspective allows for a clearer understanding of not only health care providers but also other industrial linkages to the core health care industry and their combined economic impact on a regional economy. A 2014 study of the health care industry in Lake Chelan Valley, Washington, uses a healthcare business cluster prospective to aid in the measurement of its economic impact as it exists and projected forward with the implementation of a replacement hospital.¹¹ The critical conclusion reached by the BioCrossroads and Washington studies, which apply the cluster perspective, is that life sciences and medical research play a substantial role in the development of the health care industry and consequently greatly affect the regional economy. This salient fact remained unnoticed by studies that focused solely on health care providers without taking into consideration industrial linkages.

Missing from such presentations of the health care industry cluster, however, is the growing role of health care management and health care services companies in the health care industry cluster. A classic example of the importance of management companies is seen in the growth of the health care industry in Nashville, where accumulated knowledge of health care management and entrepreneurship is a foundation for innovations and breakthroughs that fuel the ever-changing national health care industry landscape. A brief history of Nashville's health care industry attests to this fact (Nashville Health Care Council, www.healthcarecouncil.com). Therefore, this study includes health care management companies as part of the health care industry cluster.¹²

III. 3. Method and Data

Indicators for this study are collected from different sources. It is often difficult to find comparable figures for peer MSAs due to data suppression. BERC used a multitude of different sources to estimate comparable figures for these MSAs. This analysis is guided by the availability of data for health care–related indicators. Throughout this study, there may be some slight discrepancies in figures due to the estimation methods used by different employment surveys. BERC consulted several sources to construct a time-series perspective on health care indicators for Nashville and its peer MSAs. The sources of data are presented in the appendix.

¹⁰ For more information, see *The Economic Impacts Of Indiana's Public And Private Hospitals And Outpatient Care Centers* (BioCrossroads 2013).

¹¹ For more information, see *Lake Chelan Valley Healthcare Industry Assessment* (BergerABAM 2014).

¹² For a sample of selected studies, see bibliography.

Selection of MSAs

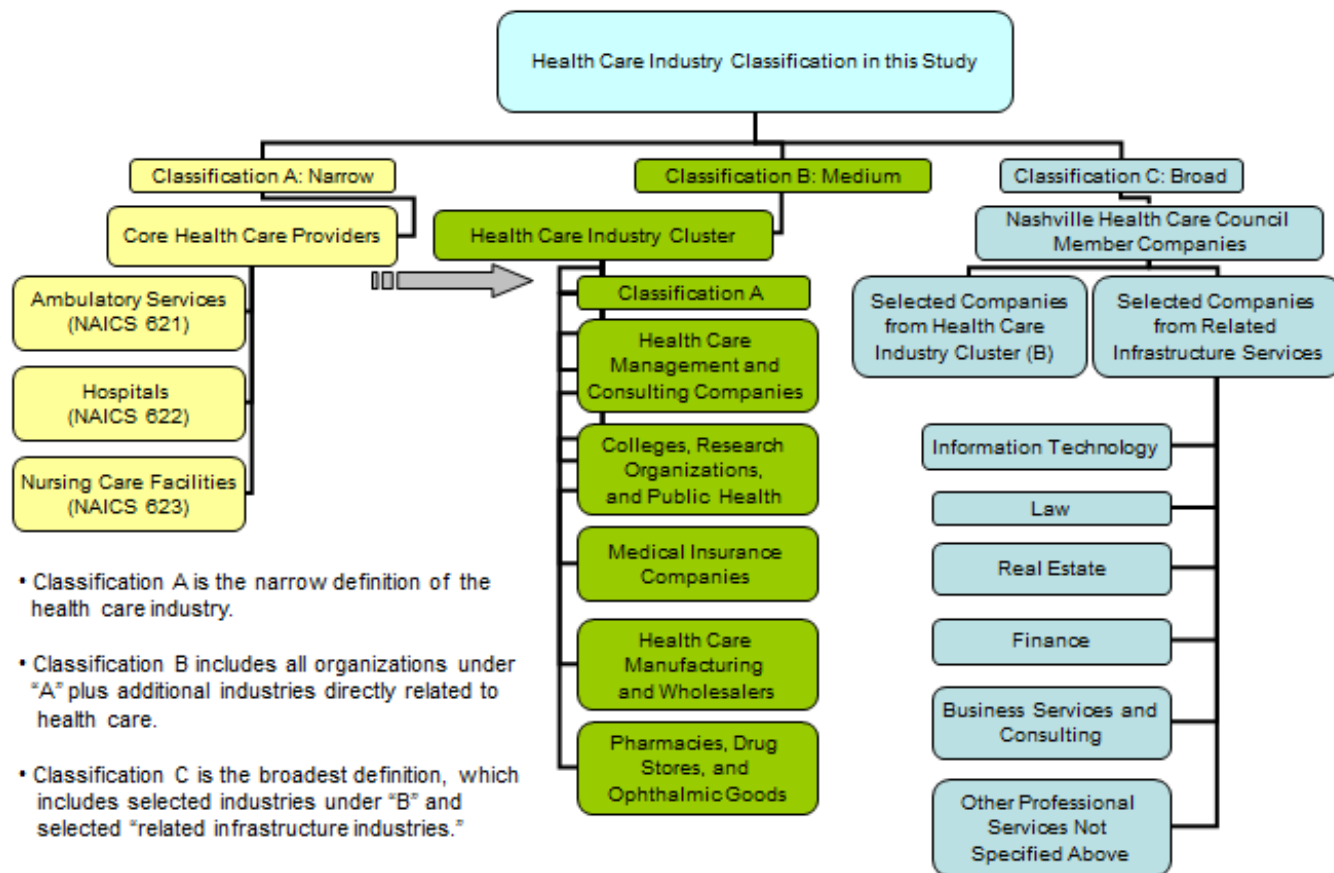
In consultation with the Nashville Health Care Council and the Nashville Area Chamber of Commerce, BERC has identified 12 peer MSAs for Nashville: Atlanta, Birmingham, Charlotte, Columbus, Dallas, Denver, Indianapolis, Jacksonville, Kansas City (MO), Louisville, Raleigh, and Richmond, all major U.S. MSAs with substantial health care–related economic activity. BERC’s selection of these MSAs was also guided by the literature (for example, see Coomes and Narang, 2001).

Survey Method

Since 1995, the Council has promoted the growth of the health care industry in Nashville. The Council has a unique member mix in that both health care and professional services (i.e., management, consulting, information technology, finance, and law) companies work together to forge strong ties to accelerate growth in the health care industry. BERC conducted a survey to develop a profile of the Council’s member companies. The appendix delineates the survey instruments used.

III.3.a. Definitions

Throughout this study, BERC classifies Nashville’s health care industry into three distinct categories: (1) core health care industry, (2) health care industry cluster, and (3) Council member companies. The chart on the next page indicates the relationship between these three categories of health care industry classification. A complete industry description by NAICS code is presented in the appendix.

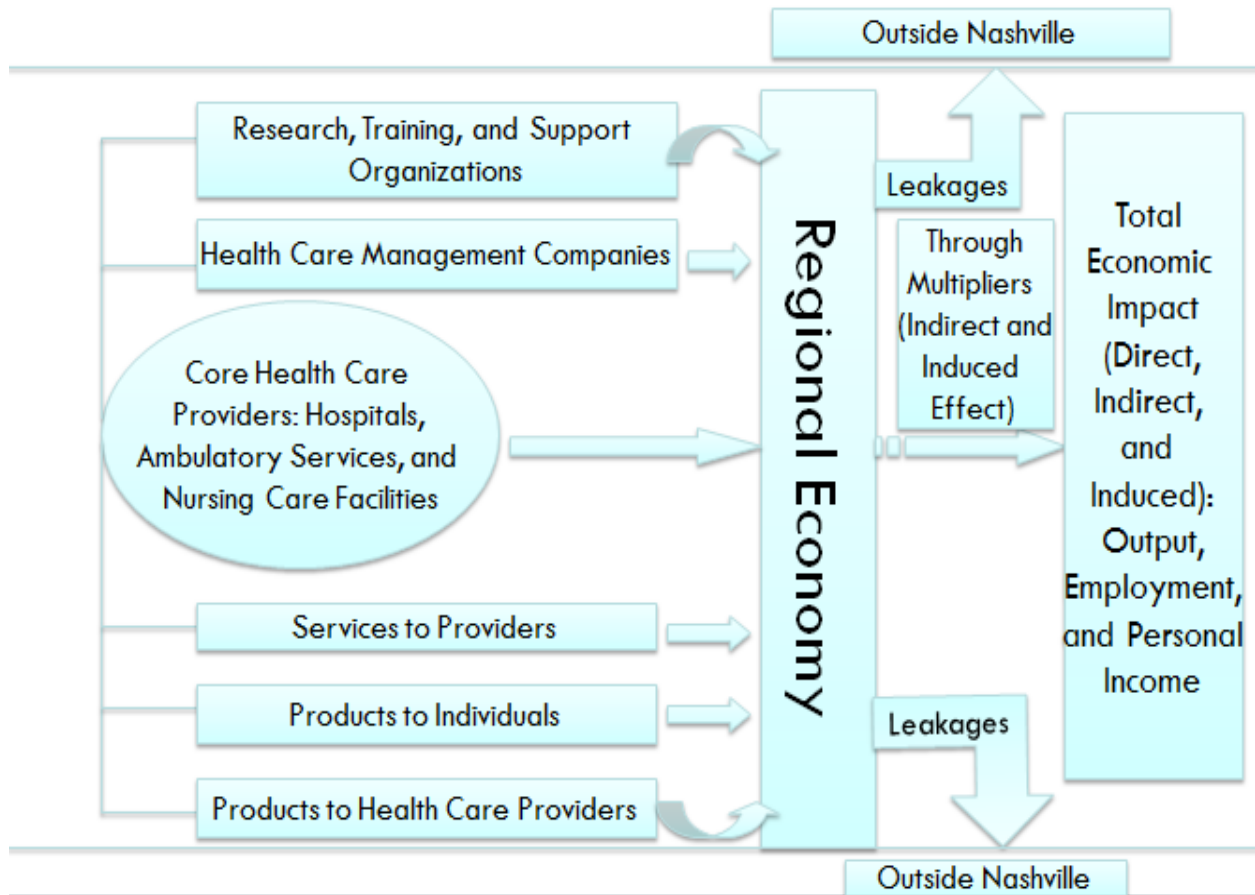


III.3.b. Conceptual Framework for Impact Analysis

The economic impact assessment of the health care industry is based on the health care industry cluster definition provided above. The goal of this assessment is to highlight what happens if the entire health care industry cluster is removed from the regional economy. BERC reports the direct, indirect, and induced economic impact of counterfactually removing the health care industry cluster from the economy.¹³ The report presents three categories of impact: output, employment, and personal income. For each of these categories, BERC also reports leakages out of Nashville and the relationship between the health care industry cluster and other sectors of the economy. BERC made adjustments to the indirect and induced effects of the health care subsectors on each other within the health care industry cluster. BERC assumes that IMPLAN (see appendix) regional purchasing coefficients (RPC) represent the current situation, and the differences between 100 percent local purchasing and the default model RPCs determine the leakages outside of Nashville. To avoid double counting, the core health care providers were not allowed to stimulate the health care sector and other subsectors in the cluster. The following chart shows the conceptual framework that highlights the procedure used to calculate the economic impact of the health care cluster.

¹³ See L. William Seidman Research Institute (2015), *Economic Impact of Arizona's Hospitals on the State & Its Counties* (Arizona Hospital and Healthcare Association).

Conceptual Framework for Impact Analysis



IV. CORE HEALTH CARE INDUSTRY IN THE NASHVILLE MSA: ITS SCOPE AND TREND¹⁴

IV.1. Total Employment

Nashville's core health care sector employed just over 105,000 people in 2014, up almost 17 percent from 2008. By segment, 42 percent were in ambulatory services, 43 percent in hospitals, and 15 percent in nursing care facilities. The core health care sector includes NAICS 621, 622, and 623. The share of hospital employment decreased almost four percentage points between the years 2008 and 2014, reversing the trend for years 2004 to 2008 (see below).

Core Health Care Employment in Nashville MSA (NAICS 621, 622 and 623)

Years	Ambulatory	Hospitals	Nursing Care	Total
2004	28,000	33,000	13,000	74,000
2008	34,000	42,300	14,000	90,300
2014	44,100	45,400	15,800	105,300
Change (2004-2014)	57.50%	37.58%	21.54%	42.30%
Change (2008-2014)	29.71%	7.33%	12.86%	16.61%

Source: Tennessee Department of Labor and Workforce Development and BERC estimates. BERC used several data sources including IMPLAN and Census Bureau County Business Patterns to estimate employment by segment.

Each segment of the Nashville MSA core health care industry experienced phenomenal growth over both the long and short term. From 2004 to 2014, ambulatory services grew nearly 58 percent, hospitals almost 38 percent, and nursing care nearly 22 percent. In the short run between 2008 and 2014, ambulatory services experienced a nearly 30 percent increase in employment, followed by nursing care with almost 13 percent growth, and hospitals with approximately 7 percent.

¹⁴ Section four uses data from BERC estimates, IMPLANpro Inc, Bureau of Labor Statistics, Tennessee Department of Labor and Workforce Development, Census Bureau, and County Business Patterns database via the Census Bureau.

Employment by Occupation

A salient difference between employment in the health care sector and employment by health care occupations is that the former includes all occupations in the sector, ranging from accountant to medical doctor. However, health care occupations refer to medical professionals and allied health occupations and do not include occupations in health care education and research. Nonetheless, health care occupations account for about 9 percent of total occupations in the Nashville MSA. Overall, the average wage for health care occupations at \$66,950 is significantly higher than Nashville's average annual wage of \$47,984.

Employment by Occupation in Nashville

	Employment		Average Wage	
	Total Number	Percent Share	Average Wage	Percent Difference from Nashville Average
All Occupations	819,880	100%	\$47,984	0.00%
Management occupations	52,450	6%	\$98,200	123.44%
Business and financial operations occupations	41,240	5%	\$65,300	48.58%
Computer and mathematical science occupations	20,430	2%	\$70,850	61.21%
Architecture and engineering occupations	12,010	1%	\$70,750	60.98%
Life, physical, and social science occupations	4,290	1%	\$59,190	34.68%
Community and social services occupations	8,590	1%	\$40,750	-7.28%
Legal occupations	5,540	1%	\$89,510	103.66%
Education, training, and library occupations	39,510	5%	\$45,220	2.89%
Arts, design, entertainment, sports, and media occupations	13,280	2%	\$57,850	31.63%
Healthcare practitioners and technical occupations	52,370	6%	\$66,950	52.33%
Healthcare support occupations	21,220	3%	\$27,410	-37.63%
Protective service occupations	17,520	2%	\$37,290	-15.15%
Food preparation and serving related occupations	73,250	9%	\$20,600	-53.13%
Building and grounds cleaning and maintenance occupations	21,910	3%	\$23,770	-45.92%
Personal care and service occupations	19,460	2%	\$24,580	-44.07%
Sales and related occupations	84,400	10%	\$37,460	-14.77%
Office and administrative support occupations	142,340	17%	\$34,980	-20.41%
Farming, fishing, and forestry occupations	550	0%	\$29,210	-33.54%
Construction and extraction occupations	23,460	3%	\$40,000	-8.99%
Installation, maintenance, and repair occupations	33,610	4%	\$43,170	-1.77%
Production occupations	63,280	8%	\$34,690	-21.07%
Transportation and material moving occupations	69,140	8%	\$32,520	-26.01%

IV.2. Sectoral Diversity

The health services sector (core health care industry + social assistance) is the third largest in Nashville's economy, after government and professional and business services, representing about 12.64 percent or 110,800 of total nonfarm jobs.¹⁵ This is a significant increase from 2004, when it ranked fifth after manufacturing and retail trade. An increase of nearly 15.18 percent between 2008 and 2014 continues to make the sector a pillar of Nashville's economy.

Employment by Sector in Nashville MSA (2014)

	Employment		
	Number (in thousands)	Growth from 2008 (%)	Current Share (%)
Nonfarm	876.4	10.45%	100.00%
Professional and Business Services	134.4	30.61%	15.34%
Government	111.3	2.11%	12.70%
Health and Social Assistance	110.8	15.18%	12.64%
Leisure and Hospitality	95.0	15.29%	10.84%
Retail	92.1	1.54%	10.51%
Manufacturing	77.9	-2.14%	8.89%
Financial Activities	56.2	16.12%	6.41%
Wholesale	42.5	8.42%	4.85%
Transportation and Utilities	38.3	25.57%	4.37%
Other Services	36.8	13.93%	4.20%
Mining, Logging and Construction	35.3	-13.48%	4.03%
Educational Services	25.0	25.63%	2.85%
Information	20.7	-4.61%	2.36%

In this context, we would like to briefly address the perennial issue of which sector ranks first in the Nashville MSA. We would like to emphasize that employment is only one aspect of an economic sector's contribution to the regional economy: business revenue, value added, personal income, and indirect business taxes are additional, often overlooked considerations. What follows is a guide to an economic sector's role in a region's economy.¹⁶

¹⁵ NAICS (North American Industrial Classification System) 62 provides an aggregate view of health and social services. Social services includes community services, individual and family services, and child day care services. For more information, see www.census.gov/eos/www/naics/.

¹⁶ IMPLANpro model for the Nashville MSA includes Maury County.

Contributing to Nashville's Economy: How Much?

	Employment			Business Revenue			Value Added (GDP)			Cumulative Ranking	
	Number (in thousands)	Score	Rank	Total (in millions)	Score	Rank	Total (in millions)	Score	Rank	Average Score	Final Rank
Total	1,131.3	n/a	n/a	\$185,167	n/a	n/a	\$99,285	n/a	n/a	n/a	n/a
11 Ag, Forestry, Fish & Hunting	15.1	0.13	17	\$643	0.19	19	\$321	0.12	20	0.15	18
21 Mining	2.1	0.07	19	\$577	0.18	20	\$337	0.13	19	0.13	20
22 Utilities	1.1	0.06	20	\$1,154	0.20	18	\$490	0.13	18	0.13	19
23 Construction	54.7	0.48	10	\$9,927	0.53	7	\$3,731	0.38	11	0.46	11
31-33 Manufacturing	76.6	0.71	7	\$43,795	1.00	1	\$11,396	0.94	3	0.88	2
42 Wholesale Trade	44.9	0.37	13	\$10,049	0.53	6	\$6,508	0.65	6	0.52	8
44-45 Retail trade	108.3	0.92	2	\$8,718	0.48	10	\$5,624	0.57	8	0.66	6
48-49 Transportation & Warehousin	48.2	0.41	12	\$7,467	0.43	11	\$3,182	0.33	13	0.39	13
51 Information	26.2	0.20	16	\$8,728	0.48	9	\$4,289	0.43	9	0.37	14
52 Finance & insurance	64.8	0.59	9	\$12,388	0.63	4	\$5,766	0.58	7	0.60	7
53 Real estate & rental	51.7	0.45	11	\$17,125	0.79	3	\$12,460	0.97	2	0.74	3
54 Professional- scientific & tech svc	81.3	0.75	6	\$11,970	0.61	5	\$8,018	0.78	4	0.71	5
55 Management of companies	14.7	0.12	18	\$3,637	0.28	15	\$2,320	0.26	15	0.22	16
56 Administrative & waste services	84.7	0.78	5	\$5,279	0.34	13	\$3,824	0.39	10	0.50	9
61 Educational svcs	26.5	0.20	15	\$1,958	0.22	17	\$1,234	0.18	17	0.20	17
62 Health & social services	124.7	0.97	1	\$18,955	0.84	2	\$13,996	0.99	1	0.93	1
71 Arts- entertainment & recreation	34.9	0.28	14	\$2,771	0.25	16	\$1,635	0.20	16	0.24	15
72 Accommodation & food services	92.1	0.84	4	\$5,503	0.35	12	\$3,133	0.32	14	0.50	10
81 Other services	74.9	0.69	8	\$4,813	0.32	14	\$3,183	0.33	12	0.45	12
92 Government & non NAICs	103.8	0.90	3	\$9,709	0.52	8	\$7,838	0.76	5	0.73	4

Employment, business revenue (value of production) and value added (GDP-equivalent) figures are derived from IMPLANpro 2013 data for the Nashville MSA.

As the table above demonstrates, employment is only one measure of the effect of economic activity on a region's economy. Although its ranking by employment is behind other sectors, health care ranks second in terms of creating economic value in the region. Overall, professional and business services ranks first, manufacturing third, and financial activities fourth¹⁷.

IV.3. Establishments

Ambulatory services account for almost 90 percent of establishments (establishment defined as a single business location of a company) in the core health care industry. Nursing care facilities and hospitals account for about 10 percent of establishments. This table includes only health care establishments under NAICS 621, 622, and 623.

¹⁷ For detailed information about a specific sector, please see the North American Industrial Classification System (NAICS) at www.census.gov/eos/www/naics/.

Core Health Care Establishments in Nashville MSA (NAICS 621, 622, and 623)

Years	Ambulatory	Hospitals	Nursing Care	Total
2004	2,317	53	214	2,584
2008	2,417	52	234	2,703
2014	2,804	45	280	3,129
Change (2004-2014)	21.02%	-15.09%	30.84%	21.09%
Change (2008-2014)	16.01%	-13.46%	19.66%	15.76%

Source: Tennessee Department of Labor and Workforce Development and BERC estimates. BERC used several data sources including IMPLAN and Census Bureau County Business Patterns to estimate establishment by segment.

The number of health care establishments experienced a greater increase from 2008 to 2014 than from 2004 to 2008. This increase of almost 16 percent is approximately four times greater than the increase from 2004 to 2008. **Between 2008 and 2014, a total of 426 new health care establishments emerged in Nashville, for a total of 3,129.**

IV.4. Wages

In 2014, wages in the core health care industry in Nashville totaled \$5.8 billion, with hospitals and ambulatory services accounting for 92 percent of those wages. Moreover, total wages across core health care industry segments increased between 2008 and 2014: ambulatory services wages increased from \$1.87 billion to \$2.59 billion, hospital wages increased from \$2.45 billion to \$2.77 billion, and nursing care facilities wages rose from \$0.39 billion to \$0.47 billion. Of the three health care industry segments, ambulatory services experienced the greatest increase in total wages, approximately 39 percent. Nursing care wages increased almost 21 percent and hospital wages 13 percent.

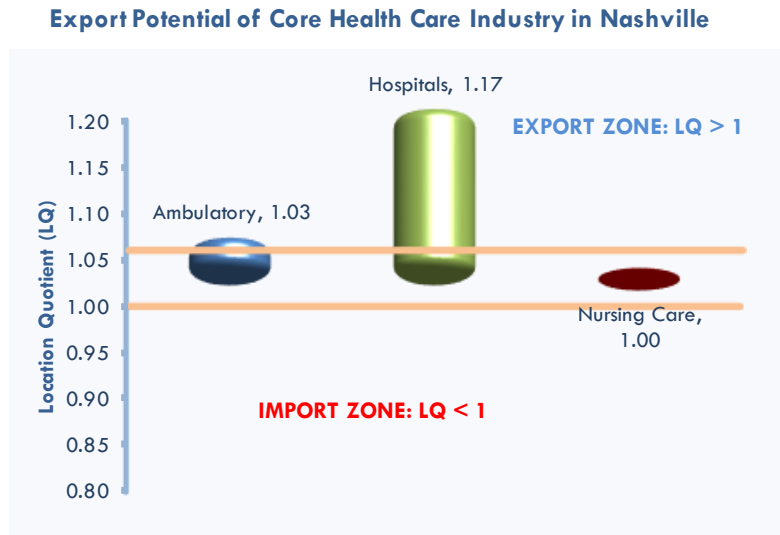
Core Health Care Wages in Nashville MSA (NAICS 621, 622, and 623) (Billion \$)

Years	Ambulatory	Hospitals	Nursing Care	Total
2004	\$1.43	\$1.49	\$0.34	\$3.26
2008	\$1.87	\$2.45	\$0.39	\$4.71
2014	\$2.59	\$2.77	\$0.47	\$5.83
Change (2004-2014)	81.12%	85.91%	38.24%	78.83%
Change (2008-2014)	38.50%	13.06%	20.51%	23.78%

Source: Tennessee Department of Labor and Workforce Development and BERC estimates. BERC used several data sources including IMPLAN and Census Bureau County Business Patterns to estimate wages by segment.

IV.5. Export Potential of Core Health Care Industry Segments

Location quotient (LQ) is often used to describe the relationship between the local and national economies. If the LQ for an industry is larger than 1, that industry has a larger presence in the local economy than its national economic counterpart. Ambulatory services and hospitals employ substantially more people in the Nashville MSA than in the U.S. Consequently, these findings suggest that supply in the region exceeds local demand for hospitals and ambulatory services and that these health care establishments serve residents outside the Nashville area. In the case of nursing care, the findings seem to indicate the supply and demand are equal.

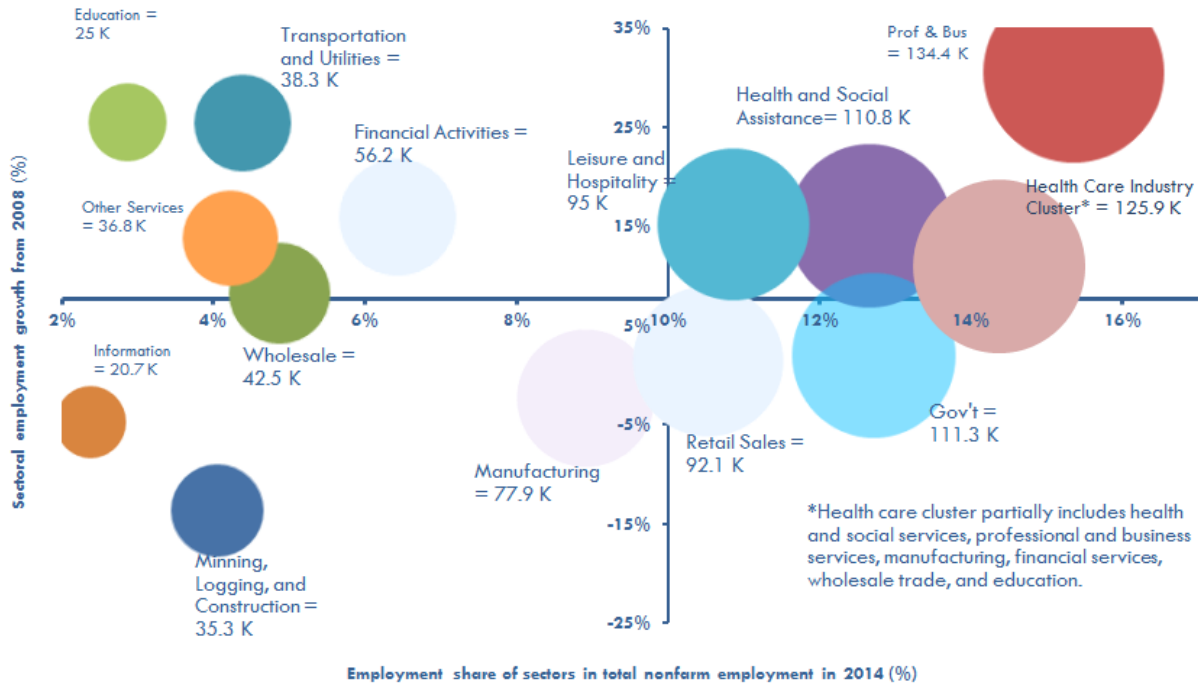


Sources: Bureau of Labor Statistics (www.bls.gov) and BERC calculations

IV.6. Relative Growth Performance of Core Health Care Segments

The health care and social services sector grew faster than other sectors in the Nashville MSA (see the chart below). Growth in health care and social services (15.18%) was substantially larger than the average sector growth rate of 10.45 percent. Furthermore, its current (2014) share in total employment is 5 percent above average for all sectors.¹⁸

"Core Health Care Industry" Trend in Nashville: Relative Performance from 2008 to 2014 (Bubbles show the actual employment level of each aggregated sector)



¹⁸ See Chapter V for information about the health care industry cluster.

IV.7. Core Health Care Industry and the Local Economy

More than 75 percent of core health care spending goes to individuals as either payroll or proprietary income in the Nashville MSA. Real estate, pharmaceuticals, employment services, wholesale trade, and securities investment are the top five sectors that benefit most from the business expenditures of core health care establishments in Nashville.

Where does \$1 million in core industry spending go in the local economy? (Major industries only)

Industry	Value	%
Services to buildings and dwellings	\$2,396	0.24%
Other basic organic chemical manufacturing	\$2,545	0.25%
Office administrative services	\$3,029	0.30%
Postal service	\$3,120	0.31%
Management consulting services	\$3,123	0.31%
Power generation and supply	\$3,127	0.31%
Surgical and medical instrument manufacturing	\$3,822	0.38%
Plastics plumbing fixtures and all other plastics	\$3,842	0.38%
Management of companies and enterprises	\$4,135	0.41%
Food services and drinking places	\$4,383	0.44%
Other ambulatory health care services	\$7,147	0.71%
Legal services	\$8,223	0.82%
Securities, commodity contracts, investments	\$11,605	1.16%
Wholesale trade	\$11,633	1.16%
Employment services	\$11,967	1.20%
Pharmaceutical and medicine manufacturing	\$13,463	1.35%
Real estate	\$42,928	4.29%
Other sectors	\$99,875	9.99%
Institutions/Individuals		
Employee compensation	\$332,630	33.26%
Proprietary income	\$321,216	32.12%
Other property income	\$96,407	9.64%
Indirect business taxes	\$9,387	0.94%
Total	\$1,000,000	100.00%

Source: IMPLANpro Inc. and BERC's estimates.

Note: Calculations are based on assumption that all spending occurs in the local economy.

V. NASHVILLE'S HEALTH CARE INDUSTRY CLUSTER¹⁹

In order to measure the economic impact of Nashville's health care industry cluster, BERC uses the counterfactual approach. This differs from the "net new concept" in that the counterfactual approach removes the whole health care industry cluster from the economy and then measures the total economic impact that the subtraction generates across the remaining economy. Besides the counterfactual approach, BERC also uses employment by sector as an input when assessing the economic impact of the health care industry cluster. Finally, in the absence of detailed industry spending by zip code and vendor, BERC uses default regional purchasing coefficients to allow for outside leakage. Then BERC treats the outside leakages as the difference between the impact results with the default regional purchasing coefficients and the impact results with 100 percent local purchasing.

BERC assumes that each group of sectors in the health care industry cluster is not only closely linked to the core health care sector but that each sector also has its own independent effect on the local economy. Therefore, BERC measures the economic impact of the individual groups of sectors independent of each other and then adjusts the measure of the economic impact to take into consideration the indirect impact of each group on the core health care sector and vice versa. When the health care industry cluster is removed from the economy, BERC assumes that an economic shock to the core health care providers should not have a ripple effect on the providers themselves. An adjustment for this purpose has been made to the study results.

In this study, BERC reports on the direct, indirect, and induced impacts of the Nashville health care industry cluster. The direct impact refers to the current state of employment, sales, and personal income generated by the cluster in an economy. The indirect impact refers to the employment, sales, and personal income generated in the local economy by a business-to-business transaction. For example, a hospital purchases goods and services from local businesses for its operation. This hospital's spending in the local economy means additional jobs, business revenues, and personal income in other sectors. Induced impact refers to the employment, sales, and personal income generated in the local economy by employee spending. For example, a hospital employs and pays many individuals for their work at the hospital. These workers then spend their earnings in the local economy to maintain their lifestyle. This process generates additional jobs, business revenues, and personal income across the local economy. Finally, BERC also estimates linkages between the health care industry cluster and other sectors in the local economy.

¹⁹ Section four uses IMPLANpro Inc as its prominent source of data. Figures from BERC Estimates, LexisNexis Academic Universe, Reference USA, Census Bureau, Bureau of Economic Analysis, Bureau of Labor Statistics, and Nashville Chamber of Commerce are also used in the analysis of Nashville's Health Care Industry Cluster.

V.1. Employment and Office Space

The Nashville health care industry cluster employed 125,918 people (2014), or 14 of every 100 nonfarm employees in Nashville. Nashville health care industry cluster employment increased 11 percent from 2008. As an industry cluster, its employment was the largest among major aggregate sectors in the Nashville MSA. Additionally, the Nashville health care cluster accounted for nearly 34.7 million square feet of office space (up 12 percent from 2008), or 17.4 percent of Nashville's total office and industrial space.²⁰

Nashville Healthcare Industry Cluster: Employment and Office Space

Major Sectors	Employment*	Employment per 1000 Sq. ft.**	Office Space (Square Foot)
Healthcare Management & Consulting (NAICS 551, 5412, 5415, 5416, 561, 813920)	3,818	4.10	931,138
Healthcare Providers (NAICS 621, 622, 623)	105,435	4.10	25,715,772
Research, Training, and Support Organizations			
<i>Educational (NAICS 6112, 6113, 6115)</i>	1,592	2.55	624,131
<i>Research and Public Health (NAICS 54171, 92312)</i>	3,568	2.55	1,399,216
Services to Providers (NAICS 524114)	2,046	4.10	499,024
Products to Healthcare Providers			
<i>Manufacturing (NAICS 3391, 3254)</i>	572	3.03	188,669
<i>Wholesalers (NAICS 42345, 42346, 4242)</i>	4,017	1.28	3,138,542
Products to Individuals (NAICS 44611, 44613)	4,871	2.22	2,193,994
Total	125,918		34,690,486

Notes: *BERC estimated employment figures from the Tennessee Department of Labor and Workforce Development database.

**Several studies were consulted to calculate employment density by major sectors, including Urban Land Institute studies. BERC also used an in-house establishment survey to calculate employment density in several sectors where data are available.

As the table above indicates, the Nashville health care industry cluster consists of diverse groups of sectors, with health care providers (ambulatory services, hospitals, and nursing care facilities) at the core. **The core health care industry employs 83.7 percent of Nashville health care industry cluster employees.** The rest (16.3 percent) are shared by five major industry groups, of which products to individuals have the largest share with 4,871 employees.

²⁰ According to a quarterly MarketView report for Nashville by CB Richard Ellis, Nashville had approximately 199.6 million square feet of office and industrial space in 2012. For details, see www.cbre.com. This figure does not include total office and industrial spaces in Maury County.

V.2. Establishments and Wages

The Nashville health care industry cluster, consisting of over 4,000 establishments, accounted for \$7.2 billion in wages. From 2008 to 2014, the number of establishments increased nearly 12.4 percent, while the cluster wages increased 19.6 percent over the same period. The average wage for health care occupations was around \$66,950 in 2014. This average wage was significantly higher than Nashville's average nonfarm wage of \$47,984. Nashville's health care cluster average wage increased about 26 percent from 2008.

Nashville Healthcare Cluster Profile: Wages and Establishments (2014)

Major Sectors	Wages (Million \$)	Establishments
Healthcare Management & Consulting (NAICS 551, 5412, 5415, 5416, 561, 813920)	\$426,098.00	165
Healthcare Providers (NAICS 621, 622, 623)	\$5,840,894.00	3,129
Research, Training, and Support Organizations		
<i>Educational (NAICS 6112, 6113, 6115)</i>	\$103,263.00	15
<i>Research and Public Health (NAICS 54171, 92312)</i>	\$192,486.00	37
Services to Providers (NAICS 524114)	\$140,437.00	14
Products to Healthcare Providers		
<i>Manufacturing (NAICS 3391, 3254)</i>	\$26,000.00	46
<i>Wholesalers (NAICS 42345, 42346, 4242)</i>	\$269,607.00	174
Products to Individuals (NAICS 44611, 44613)	\$199,579.00	447
Total	\$7,198,364.00	4,027

Source: BERC's estimates from Tennessee Department of Labor and Workforce Development database.

V.3. Investor-Owned Health Care Management Companies (Public and Private)

Many studies examine the locational patterns of large corporate headquarters in the U.S. The findings suggest that the presence of large corporate headquarters provides substantial benefits to the regional economy since such headquarters (1) bring high-paying jobs, (2) increase the competitive advantage of the host cities, (3) promote innovative technologies through acquisition and dissemination of information, and (4) spur growth in critical infrastructure industries, such as law, finance, and other professional and business services.²¹

Furthermore, the location decision of large corporate headquarters is also shaped by the presence of certain qualities in the host region, primarily (1) a good quality of life, (2) major transportation and communication infrastructure, (3) a diverse economic base, (4) a sound financial infrastructure, (5) professional services, and (6) a highly skilled labor force.

As an epicenter of corporate headquarter activity, Nashville presents a unique combination of these qualities. According to Klier and Testa's findings (2002), Nashville was one of the few large

²¹ For a review of literature on locational patterns of company headquarters, see Thomas Klier and William Testa's (2002) "Location Trends of Large Company Headquarters during the 1990s," *Economic Perspectives* (Federal Reserve Bank of Chicago). For detailed information on the concept of cluster and competitive advantage, see Michael Porter's (2000) "Location, Competition, and Economic Development: Local Clusters in the Global Economy," *Economic Development Quarterly*, vol. 14, pp. 15-34.

cities to experience phenomenal relocation of major corporate headquarters between 1990 and 2000. During this period, 16 large corporations chose Nashville as their new headquarters location for a growth rate of 177.8 percent. *Forbes* in 2014 named the Nashville MSA the 10th best city for business in the U.S. (www.forbes.com). In addition, Nashville is ranked the 12th best city in MarketWatch's Top Cities for Business Growth.

Nashville is truly the center of gravity for national health care industry company headquarters with 15 major public companies calling it home. As of 2014, 438 out of 1,060 investor-owned hospitals in the U.S. were owned or operated by Nashville-area hospital management companies. **In 2014, the 15 public health care industry cluster companies in Nashville counted revenues of more than \$73 billion and employed over 500,000 people worldwide.**²²

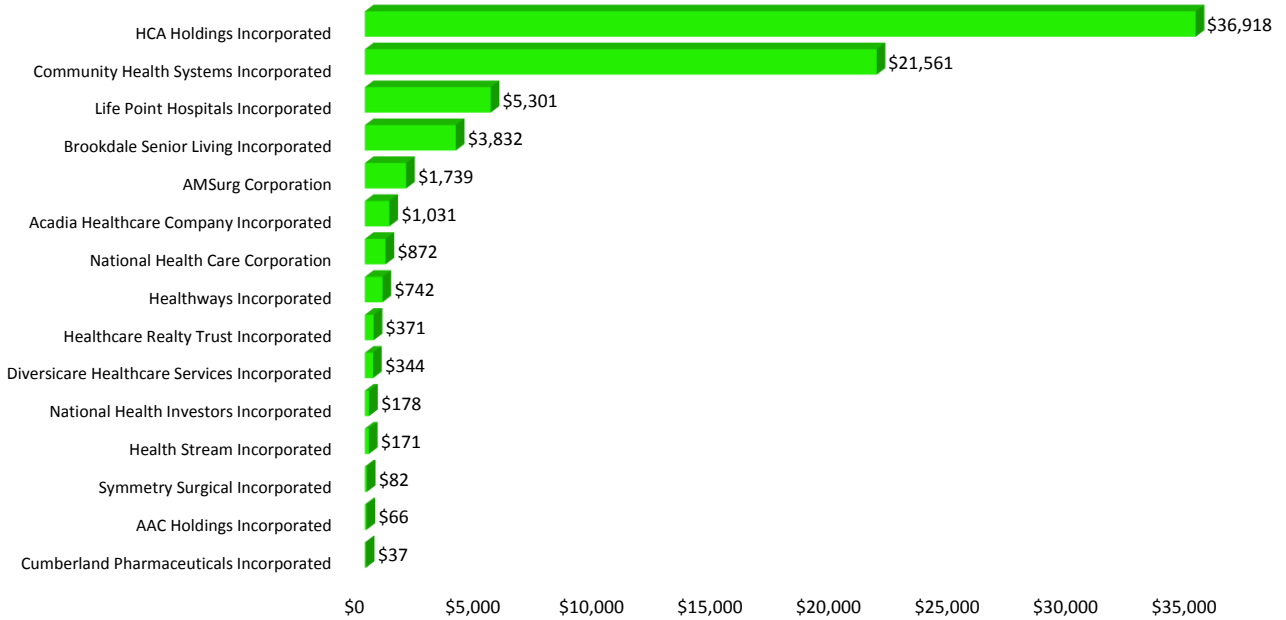
Nashville-Based Investor-Owned and Publicly Traded Health Care Management Companies

Company Names	Ticker	Number of Employers
AAC Holdings Incorporated	AAC	880
Acadia Healthcare Company Incorporated	ACHC	15,000
AMSurg Corporation	AMSG	10,500
Brookdale Senior Living Incorporated	BKD	52,500
Community Health Systems Incorporated	CYH	135,000
Cumberland Pharmaceuticals Incorporated	CPIX	85
Diversicare Healthcare Services Incorporated	DVCR	6,100
Healthcare Realty Trust Incorporated	HR	239
HCA Holdings Incorporated	HCA	225,000
Health Stream Incorporated	HSTM	787
Healthways Incorporated	HWAY	2,700
Life Point Hospitals Incorporated	LPNT	38,000
National Health Care Corporation	NHC	13,050
National Health Investors Incorporated	NHI	10
Symmetry Surgical Incorporated	SSRG	189
Total	15	500,040

Sources: ReferenceUSA, BERC estimates

²² Source: 2013 American Hospital Association Annual Survey Database, ReferenceUSA, LexisNexis Academic Universe, *Becker's Hospital Review*, and company websites.

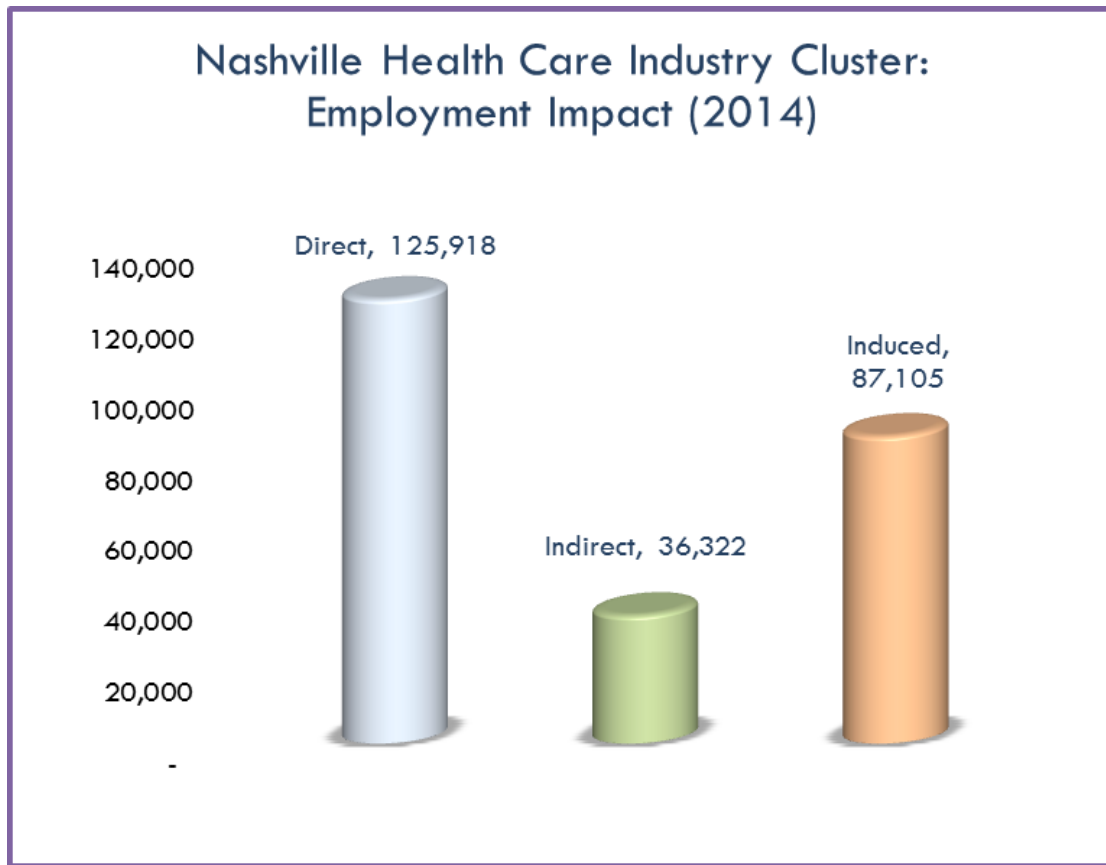
Publicly Traded Health Care Industry Cluster Headquartered Companies in the Nashville MSA Revenues (Million \$)



V.4. Economic Impact of the Nashville Health Care Cluster

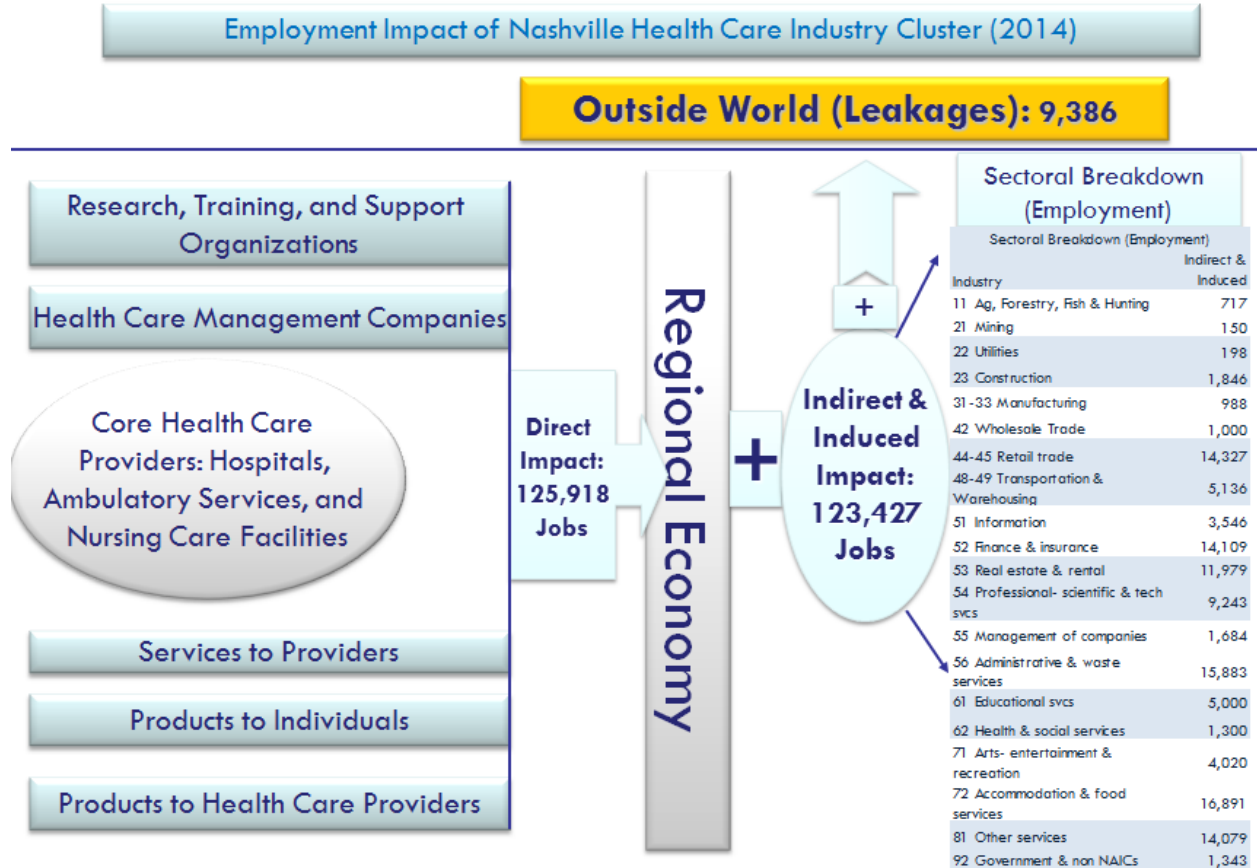
V.4.a. Employment Impact

The health care industry cluster's total employment impact is 249,345, which equals nearly 9 percent of Tennessee's and 25.6 percent of the Nashville MSA's 2014 nonfarm employment. One hundred industry cluster jobs create an additional 98 jobs in the Nashville economy. The employment impact of Nashville's health care industry cluster increased 18.1 percent from 2008.



Sectoral Impact

The largest sectors impacted by the health care industry cluster are accommodation and food services, administrative and waste services, retail trade, and finance and insurance, with almost 15,000 jobs each. Because of interregional transactions, Nashville's health care industry cluster creates nearly 9,386 additional jobs across sectors outside Nashville.



Industry Linkages

For every direct 1,000 jobs in the Nashville health care industry cluster, an additional 134 jobs are created in the accommodation industry, 126 in administrative, 114 in retail trade, 112 in finance and insurance, 112 in other services, 95 in real estate and rental, and 73 in professional services.

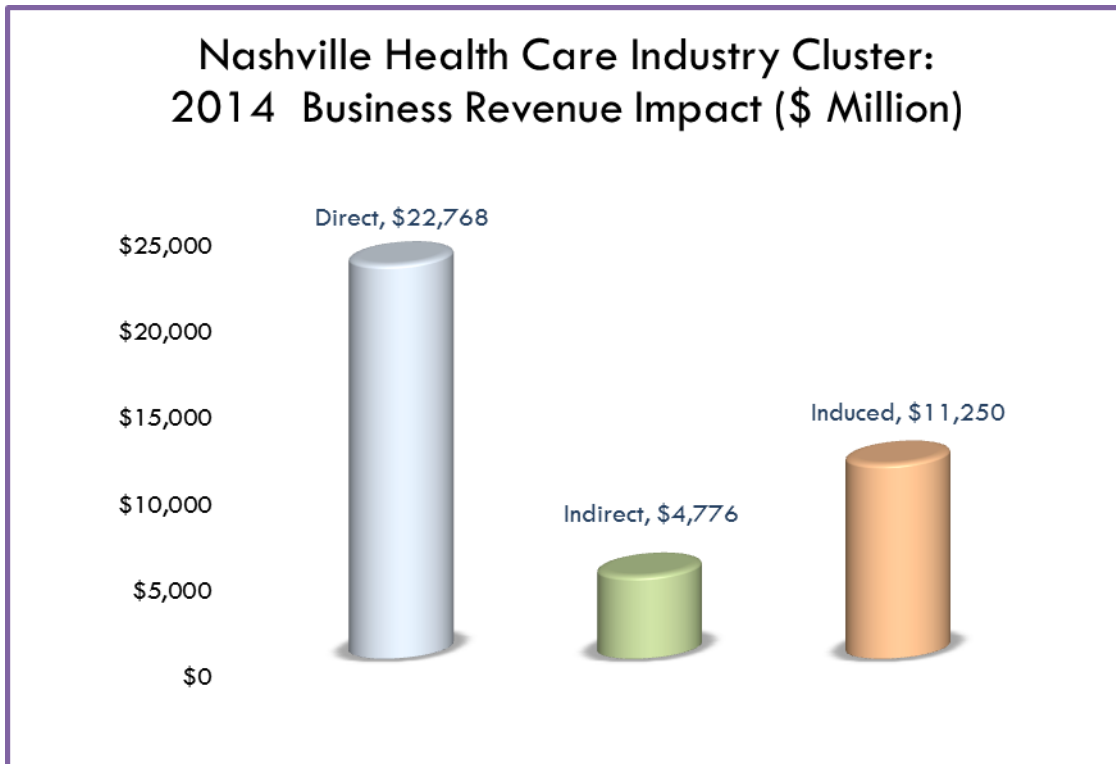
Employment Linkages between Health Care Industry Cluster and Sectors of Nashville's Economy

Industry	Indirect & induced	Number of jobs created per 1,000 healthcare industry cluster jobs
72 Accommodation	16,891	134
56 Administrative	15,883	126
44-45 Retail trade	14,327	114
52 Finance & insurance	14,109	112
81 Other services	14,079	112
53 Real estate & rental	11,524	92
54 Professional	9,243	73
48-49 Transportation & warehousing	5,136	41
61 Educational	5,000	40
71 Arts	4,020	32
51 Information	3,546	28
23 Construction	1,846	15
55 Management	1,684	13
92 Government	1,343	11
62 Health	1,300	10
42 Wholesale trade	1,000	8
31-33 Manufacturing	988	8
11 Agriculture	717	6
22 Utilities	198	2
21 Mining	150	1

Source: BERC's estimates based on IMPLANpro, Inc. impact figures.

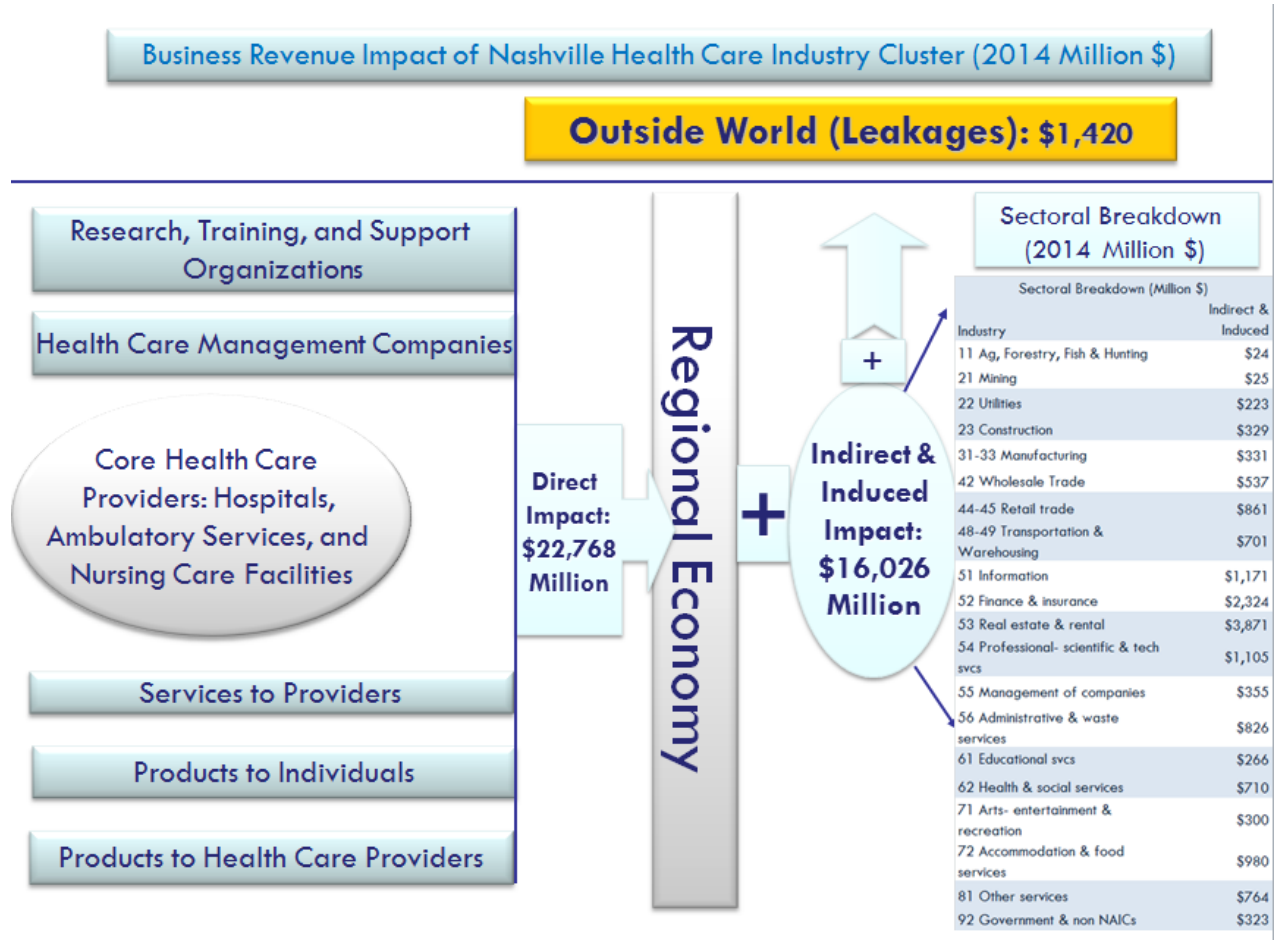
V.4.b. Business Revenue Impact

The total business revenue impact of the health care industry cluster is \$38.8 billion, \$22.8 billion of which is directly injected into the economy. The business revenue impact of Nashville's health care industry cluster increased 32.9 percent from 2008. This amount is equivalent to nearly 7 percent of Tennessee's and 21 percent of Nashville's total business revenues in 2014. Every \$100 in health care cluster spending generates an additional \$70 in business revenues.



Sectoral Impact

The real estate and rental sector in Nashville greatly benefits from the health care industry cluster, garnering \$3.8 billion in business revenues as a result. Moreover, leakage outside of Nashville is about \$1.4 billion across sectors.



Industry Linkages

Every \$1,000 in business revenue generated by the health care industry cluster generates additional revenue of \$170 in real estate, \$102 in finance, \$51 in information, and \$49 in professional services. Other sectors seeing substantial benefits are accommodation (\$43), retail trade (\$38), and administrative and waste management (\$36). The impact on other sectors ranges from \$34 in other services to \$1 in agriculture.

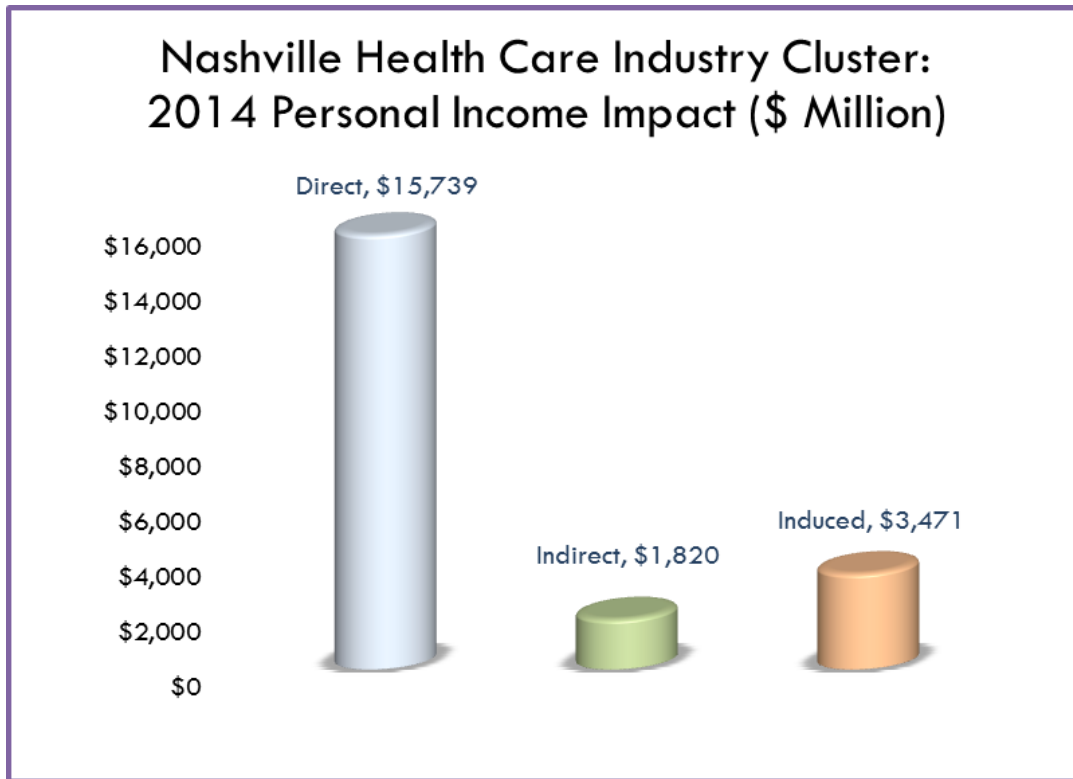
Business Revenue Linkages between Healthcare Industry Cluster and Sectors of Nashville's Economy

Industry	Indirect & induced (Million \$)	Revenues generated per \$1,000 health care industry cluster business revenue
53 Real estate & rental	\$3,871	\$170
52 Finance & insurance	\$2,324	\$102
51 Information	\$1,171	\$51
54 Professional	\$1,105	\$49
72 Accommodation & food services	\$980	\$43
44-45 Retail trade	\$861	\$38
56 Administrative	\$826	\$36
81 Other services	\$764	\$34
62 Health & social services	\$710	\$31
48-49 Transportation & warehousing	\$701	\$31
42 Wholesale trade	\$537	\$24
55 Management	\$355	\$16
31-33 Manufacturing	\$331	\$15
23 Construction	\$329	\$14
92 Government & non NAICs	\$323	\$14
71 Arts	\$300	\$13
61 Educational	\$266	\$12
22 Utilities	\$223	\$10
21 Mining	\$25	\$1
11 Agriculture	\$24	\$1

Source: BERC estimates based on IMPLANpro Inc. impact figures.

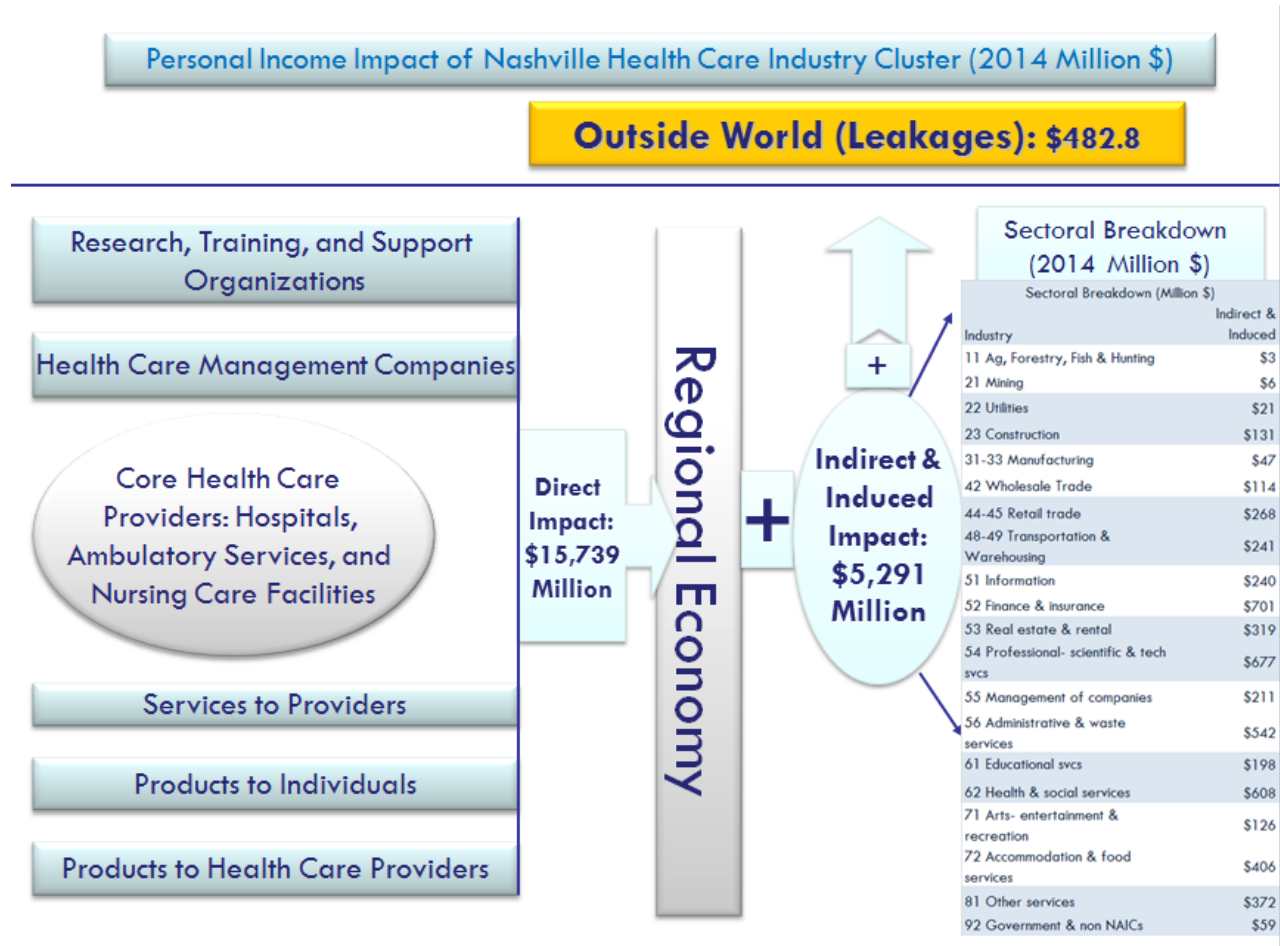
V.4.c. Personal Income

The Nashville health care industry cluster generates about \$21.03 billion in personal income for the local economy. This corresponds to 11 percent of Tennessee's and over 26 percent of the Nashville MSA's total personal income in 2014. Moreover, every \$100 of personal income generates an additional \$34 in the local economy. The personal income impact of Nashville's health care industry cluster increased 57 percent from 2008 to 2014.



Sectoral Impact

The largest sectoral impact is in finance and insurance with \$701 million. Other notable sectors benefiting from the Nashville health care industry cluster are professional, scientific, and technical services (\$677 million), health and social services (\$608 million), administrative (\$542 million), and accommodation (\$406 million). Total outside leakage is estimated at \$483 million across sectors.



Industry Linkages

Every \$1,000 in personal income earned in the health care industry cluster creates an additional \$45 in finance, \$43 in professional services, and \$39 in health and social services. In addition, there are substantial impacts on administrative (\$34), accommodation (\$26), other services (\$24), and real estate (\$20). Finally, the impact on other sectors ranges from \$17 in the information sector to \$0.05 in the agriculture sector.

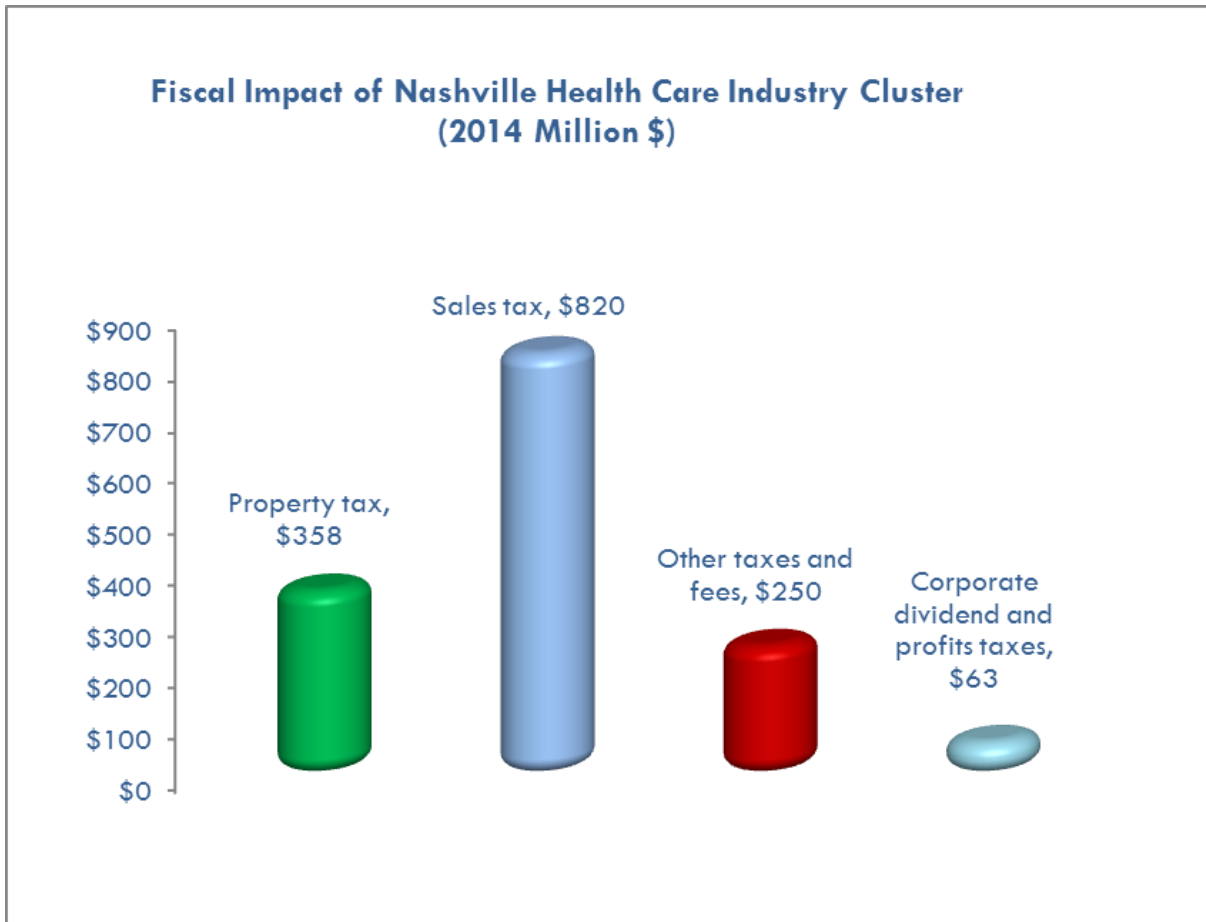
Personal Income Linkages between Healthcare Industry Cluster and Sectors of Nashville's Economy

Industry	Indirect & induced (Million \$)	Personal income created by sector per \$1,000 personal income in health care industry cluster
52 Finance & insurance	\$701	\$45
54 Professional	\$667	\$43
62 Health & social	\$608	\$39
56 Administrative	\$542	\$34
72 Accommodation	\$406	\$26
81 Other services	\$372	\$24
53 Real estate & rental	\$319	\$20
44-45 Retail trade	\$268	\$17
48-49 Transportation & warehousing	\$241	\$15
51 Information	\$240	\$15
55 Management	\$211	\$13
61 Educational	\$198	\$13
23 Construction	\$131	\$8
71 Arts	\$126	\$8
42 Wholesale trade	\$114	\$7
92 Government	\$59	\$4
31-33 Manufacturing	\$47	\$3
22 Utilities	\$21	\$1
21 Mining	\$6	\$0
11 Agriculture	\$3	\$0

Source: BERC estimates based on IMPLANpro Inc. impact figures.

V.5. Fiscal Impact of the Nashville Health Care Industry Cluster

The Nashville health care industry cluster accounts for nearly \$1.5 billion in state and local taxes. Of this amount, more than half stems from sales tax, while property tax, corporate dividends and profit taxes, and other taxes and fees make up the remainder. Compared to 2008, the fiscal impact of Nashville's health care industry cluster is up nearly 25 percent. This figure represents more than 10 percent of all taxes collected in Tennessee and nearly 18 percent of all taxes collected in the Nashville MSA in 2014.



VI. COMPARATIVE PERSPECTIVE ON NASHVILLE'S HEALTH CARE INDICATORS²³

VI.1. Employment Growth and Export Potential

Indicators of health care employment suggest the Nashville MSA has a strong health care industry presence compared to its peer MSAs. Health care employment per capita is the second largest among the peers with 59 employees per 1,000 people. Similarly, the employment share of the health care sector is the largest among the peers with 14.54 percent in 2012. Finally, in terms of growth of health care employment from 2008, all but two MSAs show a positive growth trend: the Nashville MSA ranks fifth with 15.11 percent.

Comparative Perspective on Selected Health Care Indicators

	Export Potential*		Health Care Employment			Average Score	Ranking
	Health care export capacity (LQ)	% Change in export capacity (2008-2012)	Health care employment per capita	Health care employment share (%)	Health care employment growth (%)		
Indianapolis	1.07	7.13	60	14.29	21.83	0.86	1
Nashville	1.08	6.84	59	14.54	15.11	0.82	2
Columbus	1.02	5.12	57	13.62	19.05	0.75	3
Jacksonville	1.04	8.21	50	13.90	10.90	0.69	4
Kansas City	0.95	6.03	54	12.70	9.83	0.59	5
Louisville	1.03	0.46	58	13.84	4.45	0.59	6
Charlotte	0.85	6.50	45	11.35	31.36	0.50	7
Birmingham	1.02	-3.26	52	13.65	-1.83	0.46	8
Dallas	0.80	7.26	43	10.66	19.97	0.41	9
Atlanta	0.74	8.20	37	9.87	11.87	0.30	10
Richmond	0.89	-3.11	47	11.87	-1.64	0.25	11
Denver	0.78	2.59	43	10.39	8.36	0.24	12
Raleigh	0.81	-5.50	40	10.85	5.16	0.14	13

*A score greater than "1" indicates that the MSA is exporting health care services. A score less than "1" indicates that health care services are primarily used by residents.

Source: Census County Business Patterns and BERC estimates.

²³ Section six incorporates data from BERC Estimates, LexisNexis Academic Universe, ReferenceUSA, County Business Patterns, Bureau of Labor Statistics, and PricewaterhouseCoopers/Venture Economics/National Venture Capital Association Money Tree Survey.

Furthermore, the Nashville MSA's health care industry overall has the best export potential among 13 comparable MSAs. A score greater than one "1" (LQ > 1) suggests an MSA is exporting health care services; that is, residents from other areas are traveling to the region to use its health care services. The Nashville MSA performed better than its peer MSAs in 2012 and also showed a positive growth trend with a 6.84 percent increase from 2008.

VI.2. Health Care Industry Cluster Headquarters and Global Impact

Nashville ranks first among the 13 MSAs in terms of the number of public health care industry cluster management companies, their revenues, and their employment. Nashville's global impact is quite substantial with more than 500,000 jobs and \$73 billion in annual business revenues generated by investor-owned health care management companies.

Comparative Perspective on Health Care Cluster Headquarters* (Public and Private)

MSAs	Number of Cluster Headquarters	Total Global Employment ('000)	Total Revenues (2014 Billion \$)	Composite Score	Rank
Nashville	15	500.04	\$73.24	0.91	1
Dallas	22	125.90	\$24.19	0.68	2
Louisville	4	135.40	\$55.92	0.58	3
Indianapolis	2	90.64	\$93.49	0.57	4
Columbus	3	48.25	\$93.58	0.54	5
Denver	13	73.83	\$17.51	0.53	6
Atlanta	21	22.74	\$3.52	0.51	7
Raleigh	9	16.82	\$2.70	0.37	8
Richmond	4	8.42	\$10.39	0.30	9
Kansas City	3	36.47	\$6.18	0.29	10
Birmingham	2	25.07	\$3.26	0.26	11
Charlotte	3	4.36	\$1.68	0.25	12
Jacksonville	0	0.00	\$0.00	0.21	13

Notes: *List includes health care industry cluster companies defined throughout this study. Two sources are used for this profile: LexisNexis Academic Universe and ReferenceUSA.com. Composite score includes relative rankings of each MSA with regard to (1) the number of headquarter companies, (2) their total revenues, and (3) their total number of employees.

VI.3. Health Care Occupations

Nashville ranks eighth among the 13 MSAs in percent of health care occupations among all occupations. Nashville ranks seventh among 13 MSAs in health care occupations per 1,000 people.

Healthcare Practitioners and Support Occupations			
MSAs	Total	Health Care Occupations as Percent of Total	Health Care Occupations Per Capita
Atlanta	153,670	6.79	28
Birmingham	50,420	10.38	44
Charlotte	67,560	7.89	29
Columbus	88,790	9.71	46
Dallas	158,290	7.55	24
Denver	91,980	7.47	35
Indianapolis	88,040	9.90	46
Jacksonville	50,560	8.73	37
Kansas City	85,230	8.78	42
Louisville	56,470	9.46	45
Nashville	67,740	8.42	39
Raleigh	40,000	7.78	34
Richmond	52,650	8.80	43

Note: Healthcare occupations per 1,000 people.
Source: Bureau of Labor Statistics (www.bls.gov)

VI.4. Venture Capital Flow

Tennessee ranks seventh among 12 states in terms of venture capital flow in medical devices, equipment, health services, and biotechnology. In Tennessee, the total value of venture capital in these fields between 1998 and 2014 was about \$1.2 billion. Due to data availability, state-level figures are used. However, the major MSAs in these states are the primary recipients of these capital flows.

Venture Capital Flow by State between 1998 and 2014* in Medical Devices and Equipment, Health Services, and Biotechnology (Million \$)

MSAs	1998-2003	2004-2009	2010-2014	1998-2014	Rank**
Texas (Dallas)	\$1,188.0	\$1,086.8	\$1,498.8	\$3,773.6	1
North Carolina (Charlotte & Raleigh)	\$1,287.4	\$1,498.4	\$822.9	\$3,608.7	2
Colorado (Denver)	\$658.5	\$818.2	\$539.9	\$2,016.5	3
Georgia (Atlanta)	\$492.9	\$408.7	\$360.4	\$1,262.0	4
Ohio (Columbus)	\$321.7	\$381.0	\$551.6	\$1,254.3	5
Florida (Jacksonville)	\$374.1	\$520.6	\$356.4	\$1,251.0	6
Tennessee (Nashville)	\$740.8	\$318.8	\$185.0	\$1,244.6	7
Virginia (Richmond)	\$342.5	\$176.5	\$195.8	\$714.8	8
Missouri (Kansas City)	\$184.2	\$120.6	\$141.3	\$446.1	9
Indiana (Indianapolis)	\$79.8	\$228.8	\$70.0	\$378.6	10
Kentucky (Louisville)	\$69.1	\$117.9	\$89.4	\$276.4	11
Alabama (Birmingham)	\$88.3	\$78.7	\$10.8	\$177.7	12
U.S. Total	\$34,402.7	\$47,012.5	\$37,661.2	\$119,076.4	

Source: PricewaterhouseCoopers/Venture Economics/National Venture Capital Association Money Tree Survey

Notes: *Data reflect the venture capital flow in the following sectors: (1) medical devices and equipment, (2) health services, and (3) biotechnology.

**Ranking is based on the cumulative value (1998-2014).

2014 Total Venture Capital by MSA

Nashville ranks fifth among the 13 MSAs in total venture capital investments for 2014. Nashville accounted for a total of almost \$118 million in venture capital investments and 48 venture capital investment deals. These figures are for total venture capital investments in all sectors within the MSA. Jacksonville is excluded because of it did not meet the minimum number of venture capital deals and invested dollars to be reported.

2014 MSA Venture Capital Investments

MSAs	Number of Deals	Total Venture Capital Invested (Million \$)	Score	Rank
Atlanta	59	495.85	0.96	1
Denver	43	480.27	0.89	2
Dallas	37	357.2	0.79	3
Raleigh	42	280.78	0.77	4
Nashville	48	117.91	0.64	5
Kansas City	13	91.44	0.32	6
Indianapolis	15	40.93	0.29	7
Columbus	12	15.55	0.24	8
Louisville	5	46.01	0.22	9
Richmond	8	19.03	0.22	10
Charlotte	6	17.8	0.20	11
Birmingham	2	0.89	0.16	12
Jacksonville	NA	NA	0.00	13

Source: National Venture Capital Association and BERC estimates

Venture Capital by Sectoral Breakdown

Total value of venture capital in Tennessee between 1998 and 2014 was \$362 million in medical equipment, \$746 million in health services, and \$136 million in biotechnology. Tennessee's share of venture capital in health services in U.S. health services venture capital was 8.95 percent. Much of this amount flowed to the Nashville MSA. This assigns a clear leadership position to Nashville in access to funding for health care services companies.

Venture Capital Flow by State between 1998 and 2014 (Million \$)			
MSA	Medical Equipment	Health Services	Biotechnology
Tennessee (Nashville)	\$361.74	\$746.36	\$136.48
Alabama (Birmingham)	\$70.85	\$32.78	\$74.10
Colorado (Denver)	\$438.71	\$136.49	\$1,441.33
Florida (Jacksonville)	\$480.03	\$245.46	\$525.52
Georgia (Atlanta)	\$770.72	\$171.80	\$319.42
Indiana (Indianapolis)	\$90.27	\$70.99	\$217.38
Kentucky (Louisville)	\$44.29	\$70.06	\$162.05
Missouri (Kansas City)	\$263.45	\$27.20	\$155.47
North Carolina (Charlotte & Raleigh)	\$1,024.85	\$214.86	\$2,368.96
Ohio (Columbus)	\$662.41	\$167.02	\$424.86
Texas (Dallas)	\$1,090.42	\$868.56	\$1,814.60
Virginia (Richmond)	\$169.93	\$385.23	\$159.63
U.S. Total	\$40,276.78	\$8,336.03	\$70,494.69
	Medical Equipment	Health Services	Biotechnology
	% in U.S. Total	% in U.S. Total	% in U.S. Total
Tennessee (Nashville)	0.90	8.95	0.19
Alabama (Birmingham)	0.18	0.39	0.11
Colorado (Denver)	1.09	1.64	2.04
Florida (Jacksonville)	1.19	2.94	0.75
Georgia (Atlanta)	1.91	2.06	0.45
Indiana (Indianapolis)	0.22	0.85	0.31
Kentucky (Louisville)	0.11	0.84	0.23
Missouri (Kansas City)	0.65	0.33	0.22
North Carolina (Charlotte & Raleigh)	2.54	2.58	3.36
Ohio (Columbus)	1.64	2.00	0.60
Texas (Dallas)	2.71	10.42	2.57
Virginia (Richmond)	0.42	4.62	0.23

Source: PricewaterhouseCoopers/Venture Economics/National Venture Capital Association Money tree Survey, and BEREC estimates

VI. Where does the Nashville MSA stand relative to its peers?

There are many studies for both academic and public policy purposes that analyze quality of life, business climate, infrastructure, and socioeconomic productivity across cities. While many of these studies are comprehensive in terms of their use of indicators and coverage area, some focus on a single issue, such as education.²⁴ The rankings serve many purposes: business groups use them as a marketing tool, policymakers address the deficiencies in their respective regions, and individuals and businesses make relocation decisions based on these rankings. From these perspectives, the rankings play an important role in understanding socioeconomic dynamics across regions.

A glance at various rankings demonstrates that Nashville is in the top 10 among comparable MSAs in terms of infrastructure and human capital.²⁵ Most recently, Tennessee was ranked the 15th most business-tax-friendly state in 2015. Furthermore, Franklin, Tennessee, is ranked among the best cities for startup companies.²⁶ Along similar lines, this study provides rankings of 13 comparable MSAs in the area of health care services. This study uses two categories of ranking: health care business climate and health care infrastructure. For ranking purposes, BERC identified 14 indicators for health care business climate and 16 for health care infrastructure.

Selection of indicators was affected by (1) availability of reliable data across peer MSAs (some data sources and indicators have changed from previous studies), and (2) literature on business climate and infrastructure indicators. Before ranking, each indicator was converted to a unitless relative score bounded between zero and one [0, 1]. These relative scores were then averaged across indicators for each MSA within the given category (business climate or infrastructure).

BERC's final rankings are based on two fundamental assumptions: (1) each indicator contributes equally to the final score for a given category (no weights are assigned to the indicators), and (2) each indicator's contribution to a given category is linear.

²⁴ For a review of literature on different aspects of city rankings, see Fred Carstensen et al. (2001), *Second MetroHartford Regional Performance Benchmark*, Connecticut Center for Economic Analysis, University of Connecticut, Storrs, CT.

²⁵ See Carstensen et al. (2001). These rankings are based on 56 comparable MSAs in the U.S.

²⁶ For a list of rankings, see Nashville Area Chamber of Commerce at www.nashvillechamber.com

VI.1. Health Care Business Climate Indicators

The health care business climate in Nashville is substantially better than in most of the 12 other MSAs.

Health Care Business Climate Indicators	Atlanta	Birmingham	Charlotte	Columbus	Dallas	Denver	Indianapolis	Jacksonville	Kansas City	Louisville	Nashville	Raleigh	Richmond
Health care employment share (% , 2012)	9.87	13.65	11.35	13.62	10.66	10.39	14.29	13.9	12.7	13.84	14.54	10.85	11.87
Health care employment per 1,000 people (2012)	37	52	45	57	43	43	60	50	54	58	59	40	47
Health care pay (average \$, 2014)	\$50,955	\$44,400	\$47,540	\$50,490	\$51,995	\$54,120	\$49,280	\$50,425	\$51,565	\$47,210	\$46,440	\$48,940	\$48,780
Health care occupations (% , 2014)	6.79	10.38	7.89	9.71	7.55	7.47	9.90	8.73	8.78	9.46	8.42	7.78	8.80
Health care occupations per 1,000 people (2014)	30	46	29	46	33	38	45	39	42	46	41	34	43
Total public health care cluster headquarters' employment ('000)	22.74	25.07	4.36	48.25	125.90	73.83	90.64	0	36.47	135.4	500.04	16.82	8.42
Total public health care cluster headquarters' revenue (billion \$)	\$3.52	\$3.26	\$1.68	\$93.58	\$24.19	\$17.51	\$93.49	\$0.00	\$6.18	\$55.92	\$73.24	\$2.70	\$10.39
Number of public health care cluster headquarters (2015)	21	2	3	3	22	13	2	0	3	4	15	9	4
Health care export capacity (LQ, 2012)	0.74	1.02	0.85	1.02	0.80	0.78	1.07	1.04	0.95	1.03	1.08	0.81	0.89
Change in export capacity (2008-2012)	8.2	-3.26	6.5	5.12	7.26	2.59	7.14	8.21	6.03	0.46	6.84	-5.5	-3.11
Health care employment growth (% , 2008-2012)	11.87	-1.83	31.36	19.05	19.97	8.36	21.83	10.9	9.83	4.45	15.11	5.16	-1.64

VIII.2. Health Care Infrastructure Indicators

Nashville's performance is better than the average of the 13 MSAs in health care cost, venture capital in health services, medical devices and equipment, and number of four-year colleges. Venture capital indicators are state-level indicators. However, a substantial portion of these funds flow to the major MSAs in their respective states.

Health Care Infrastructure Indicators	Atlanta	Birmingham	Charlotte	Columbus	Dallas	Denver	Indianapolis	Jacksonville	Kansas City	Louisville	Nashville	Raleigh	Richmond
Hospital beds per 100,000 people (2014)	150.7	515.6	178.1	239.7	239.0	196.0	357.4	311.2	327.8	421.6	342.6	320.8	327.9
Number of teaching hospitals (2013)	8	7	5	9	16	14	10	5	9	5	3	1	4
Number of 4-year colleges (2014)	37	12	15	10	20	17	12	10	17	12	21	14	10
Per capita income (\$, 2012)	\$40,738	\$42,124	\$41,436	\$43,031	\$46,400	\$51,432	\$42,210	\$42,875	\$45,006	\$41,404	\$45,207	\$43,667	\$45,745
Physicians per 100,000 people	189.0	274.1	151.5	302.6	194.4	251.8	248.1	236.4	265.1	265.0	264.1	199.1	\$ 263.9
Unemployment rate (% , February 2015)	6.1	5.1	5.5	4.5	4.1	4.5	5.8	5.6	5.9	5.0	5.0	4.6	\$ 5.3
Venture capital in biotechnology-state level (% , 2010-14)	0.20	0.01	2.48	0.64	3.66	1.80	0.19	0.65	0.27	0.30	0.08	2.48	0.31
Venture deals in biotechnology-state level (% , 2010-14)	0.45	0.17	2.60	1.69	2.77	2.27	0.50	1.07	1.41	0.62	0.87	2.60	1.07
Venture capital in health services-state level (% , 2010-14)	0.13	0.59	0.00	6.94	13.61	0.66	0.49	2.10	0.00	0.00	7.01	0.00	4.62
Venture deals in health services-state level (% , 2010-14)	0.84	0.84	0.84	4.18	9.62	0.85	2.09	5.02	0.00	0.42	12.97	0.84	2.51
Venture capital in medical-state level (% , 2010-14)	2.45	0.00	1.90	2.34	3.44	0.42	0.15	1.36	0.62	0.14	0.47	1.90	0.43
Venture deals in medical-state level (% , 2010-14)	2.15	0.00	1.85	4.67	4.07	1.85	0.42	1.50	1.67	0.66	2.69	1.85	0.60
Venture capital deals-MSA Level (2014)	59.00	2.00	6.00	12.00	37.00	43.00	15.00	0.00	13.00	5.00	48.00	42.00	8.00
Venture capital investments-MSA Level (2014)	495.85	0.89	17.80	15.55	357.20	480.27	40.93	0.00	91.44	46.01	117.91	280.78	19.03
Economic diversity (2012)	0.9228	0.9163	0.9185	0.9136	0.9218	0.9219	0.9149	0.9096	0.9155	0.9097	0.9135	0.9146	0.9153
Change in diversity (% , 2008-2012)	-0.17	-0.04	-0.31	-0.31	-0.12	-0.37	-0.29	-0.34	-0.52	-0.23	-0.51	-0.12	-0.27

VI.3. Relative Rankings

In health care business climate, the Nashville MSA ranks second among the 13 MSAs, while Indianapolis ranks first, Columbus third, and Louisville fourth. In health care infrastructure, Nashville differs from its 2010 ranking, now placing fourth among the 13 MSAs. This drastic difference from the 2010 study can be partly attributed to a change in some of the variables used in the ranking. Finally, in overall relative health care competitiveness, Nashville ranks second among the 13 MSAs, while Dallas ranks first, Columbus third, and Indianapolis fourth. There is again a significant shift in ranking for many of its peers.

MSA	Health Care Business Climate Relative Rankings*		Health Care Infrastructure Relative Rankings**		Overall Rankings	
	Average Score***	Relative Rankings	Average Score***	Relative Rankings	Average Score***	Relative Rankings
Dallas	0.48	7	0.76	1	0.64	1
Nashville	0.72	2	0.52	4	0.60	2
Columbus	0.70	3	0.51	6	0.59	3
Indianapolis	0.74	1	0.40	10	0.54	4
Denver	0.39	9	0.58	2	0.50	5
Kansas City	0.53	5	0.45	7	0.49	6
Atlanta	0.35	10	0.55	3	0.47	7
Jacksonville	0.52	6	0.39	12	0.44	8
Louisville	0.59	4	0.33	13	0.44	9
Birmingham	0.45	8	0.39	11	0.41	10
Raleigh	0.24	13	0.52	5	0.40	11
Charlotte	0.34	12	0.43	8	0.40	12
Richmond	0.35	11	0.42	9	0.39	13

Notes: *Based on the linear combination of standardized scores of 11 indicators presented above.

**Based on the linear combination of standardized scores of 16 indicators presented above.

***The BERCC assumes that each indicator contributes to the average score equally. The selected indicators are closely related to health care business environment and infrastructure. The data availability and timeliness were two key criteria used in the data selection process.

VII. NASHVILLE HEALTH CARE COUNCIL MEMBER COMPANIES²⁷

VII.1. Survey Methodology

The Nashville Health Care Council's member companies are diverse, ranging from direct health care providers, health care management, health information technology, and health care finance companies to such professional service providers as law and architecture firms. BERC's survey asked companies to report their health care–related employment, sales, office space, federal research money, payroll, and operating sites, both in Nashville and overall. The survey also included a *CEO Confidence Survey*, highlighting member company CEOs' evaluation of current economic conditions and business outlook. The survey materials are provided in the appendix.

The Council member companies are more diverse than the previous two classifications presented in this report, core health care providers and health care industry cluster, in terms of the industry segment. Core health care providers constitute a narrow sector and include only companies providing direct services to individuals. The health care industry cluster includes health care providers plus companies directly linked to the core providers sector. Readers should review this study with these salient differences between the three groups in mind.

As of November 2014, the Council had 265 member companies, a 56 percent increase from the 2010 study. BERC conducted an online survey of the Council member companies with follow-up reminders from the Council. The survey included three parts: (A) company profile, (B) company operations, and (C) *CEO Confidence Survey*. A total of 229 member companies were invited to fill out the survey. A total of 131 companies responded to parts A and B of the survey for a response rate of 57 percent. BERC estimated the missing company figures using company databases (e.g., ReferenceUSA, LexisNexis Academic Universe), individual member company websites, and other BERC sources. Through these methods of extrapolation, BERC prepared profiles for 98 additional member companies.

²⁷ Section seven incorporates data from BERC Estimates, the Bureau of Economic Analysis, CBRE 2013 Market Outlook Report for Nashville, the Conference Board's CEO Confidence Index, and the Federal Reserve Bank of Philadelphia's Employment Activity Index. Data from the BERC's survey of NHCC Member Companies is the primary source of data.

Council Member Survey: Survey Responses for Part A (Company Profile) and Part B (Company Operation)

Council Member Segments	Number of Companies	Percent of Companies (%)	Explanation
Council Member Companies Surveyed	229	86	Members Surveyed
<i>Number of Responses</i>	131	57	Survey Response Rate
<i>Company Profile Completed</i>	98	43	Percent Not Responded
Council Members w/o Nashville Presence	36	14	Percent Not Surveyed
Total Member Companies	265	100	

The response rate for the *CEO Confidence Survey* was slightly better than for previous sections: BERC received responses from 116 businesses for a response rate of 51 percent. The *CEO Confidence Survey* was designed to include certain elements from the business confidence survey conducted quarterly by the Conference Board²⁸ and the business outlook survey conducted monthly by the Federal Reserve Bank of Philadelphia.²⁹

Council Member Survey: Survey Responses for Part C (CEO Confidence Survey)

Council Member Segments	Number of Companies	Percent of Companies (%)	Explanation
Council Member Companies Surveyed	229	86	Members Surveyed
<i>Number of Responses</i>	116	51	Survey Response Rate
<i>Companies with no Response</i>	113	49	Percent Not Responded
Council Members w/o Nashville Presence	36	14	Percent Not Surveyed
Total Member Companies	265	100	

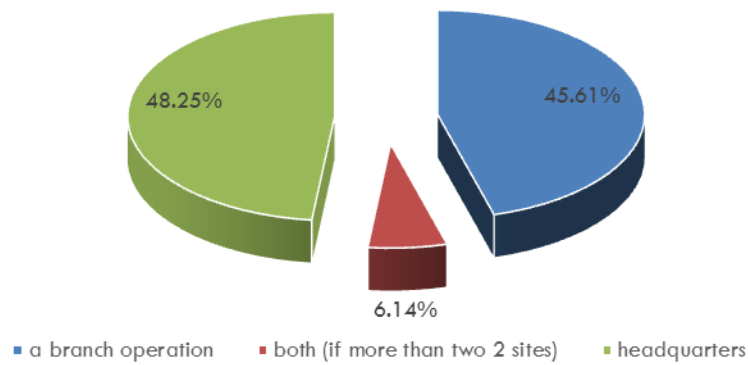
²⁸ For more information, see www.conference-board.org.

²⁹ www.philadelphiafed.org

VII.2. Council Member Companies—Profile

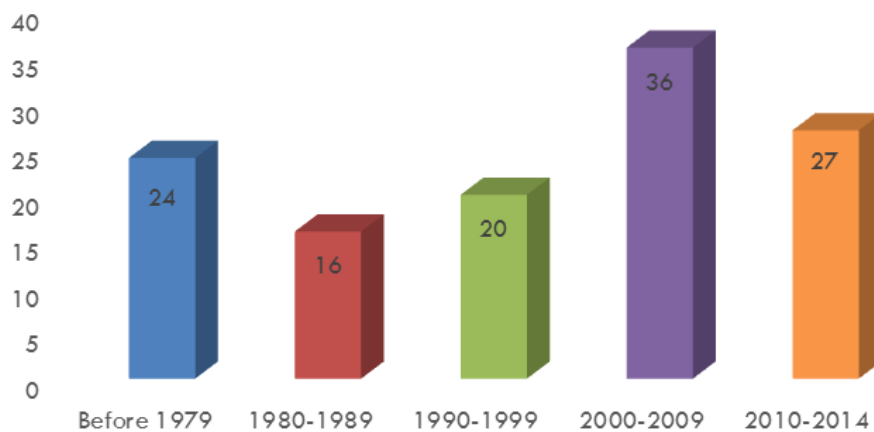
Headquarters or branch operations. Almost fifty percent of the companies surveyed in the Nashville MSA are headquarters (48.25%), while nearly the same amount are branch operations (45.61%). A small percentage (6.14%) are both headquarters and branch operations.

A1. Our company in the Nashville MSA (Metropolitan Statistical Area, which includes Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Maury, Robertson, Rutherford, Smith, Sumner, Trousdale, Williamson, and Wilson counties) is



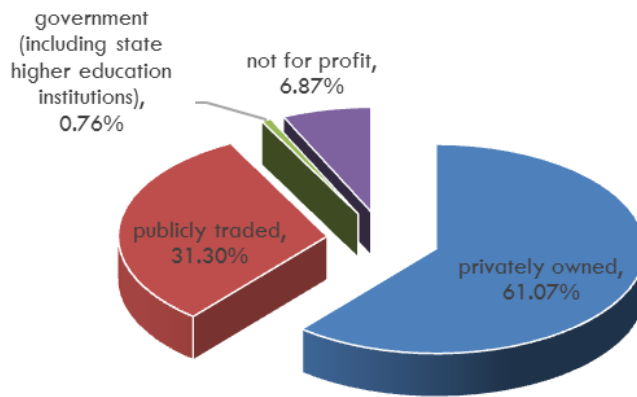
Year Nashville operation was established. The largest portion of responding companies (36 out of 123) were established sometime between 2000 and 2009, while a large number of companies (27) have been established since the 2010 report, suggesting the presence of strong entrepreneurial dynamics in the Nashville MSA.

A2. When did your company establish its Nashville operation?



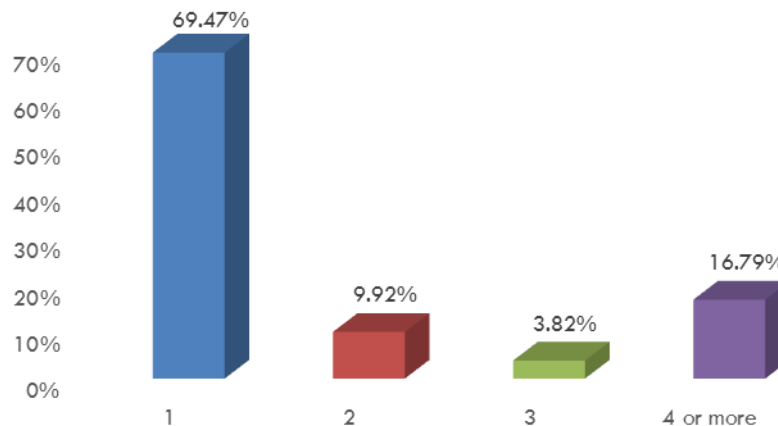
Ownership. A majority of the companies (61.07%) are privately owned, while about a third of the companies (31.30%) are publicly traded. The remaining 8 percent of companies are mostly not-for-profit organizations (6.87%), with a small portion of government institutions, including state higher education institutions (0.76%).

A3. Ownership: Our company is



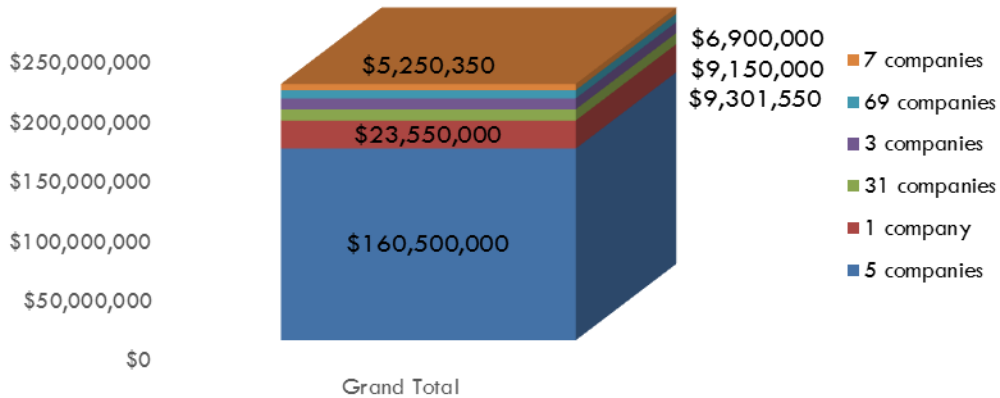
Sites in the Nashville MSA. Almost 70 percent of the companies (69.47%) have only one site in the Nashville MSA, while the majority of the remaining 30 percent of companies (16.79%) have four or more sites.

A4. How many sites does your company have in the Nashville MSA?



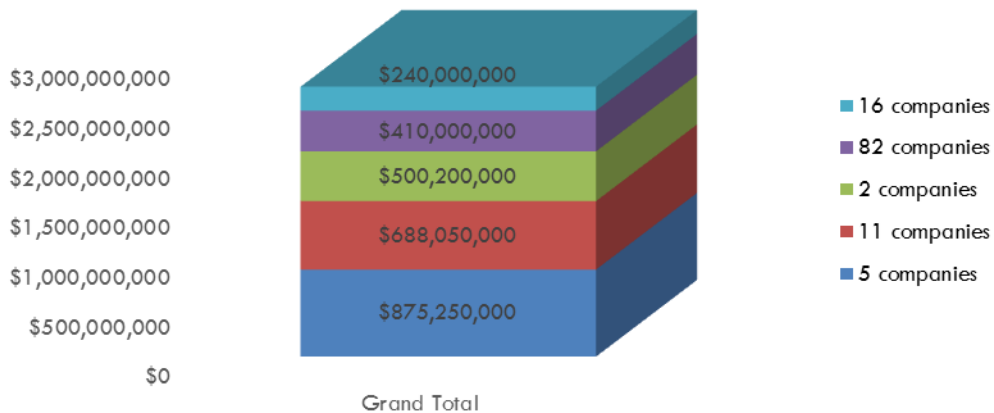
Philanthropic contributions. The combined philanthropic contributions of the responding companies surveyed total \$214,651,900. About \$160,500,000, or 74.77% of this total, was contributed by five companies. Average philanthropic contribution of the Council member companies was \$1,850,447 in 2014.

Philanthropic Contributions



Capital expenditures. The combined capital expenditures of the responding companies total \$2,713,500,000. As in the previous graph, five companies supplied the largest portion of this total at \$875,250,000 or 32.26%. Average capital expenditure of the Council member companies was \$23,392,241 in 2014.

Capital Expenditures



VII.3. Council Member Companies—Employment and Wages

Operating at 264 Nashville sites, Council member companies employ 96,347 people in the Nashville MSA, up over 37 percent from 2010. The total Nashville-based payroll is \$6.28 billion, up 28 percent from 2010. The average payroll per employee is \$84,641, substantially higher than the average nonfarm wage in the Nashville MSA. According to Bureau of Economic Analysis (www.bea.gov) figures, the average annual wage in the Nashville MSA in 2013 was \$47,984. Considering this disparity, Council member companies command substantial purchasing power in the Nashville MSA, which has profound implications for the local tax base. Many Council member companies are large corporate headquarters and health care management companies that employ highly skilled individuals who are experts in their respective fields. As previously discussed, these are some of the benefits corporate headquarters bring to a region.

This survey was not designed to address corporate citizenship of Council member companies. However, many studies highlight the role of corporate citizenship in a community. Large companies, especially in health care, traditionally make substantial contributions to local charities, civic organizations, governments, and individuals through direct cash donations, volunteer time, matching employee donations, in-kind contributions, and charity care.

Around 35 percent of Council member companies employ less than 20 people in the Nashville MSA. A handful of large member companies account for more than 67 percent of Council members' local employment. A total of 123 member companies reported total global employment of 628,044 for the period between November 14 and December 18, 2014.

Not all of these jobs, however, are related to health care. As the table below shows, for 35 percent of the Council member companies, health care is not their core business, as fewer than 30 percent of their employees are related to health care.

PART B. COMPANY OPERATION FOR FY 2013-2014 (or latest year available). Please estimate.

Please estimate the current number of employees (by place of work).

Please report if your business is a branch operation and your headquarter company is located outside the Nashville MSA.

Nashville MSA	Responses	Nashville Employment	Global	Responses	Global Employment
(All Companies)			(Headquarters Only)		(Headquarters Only)
a. 1-20	80	1,600	a. 1-20	26	520
b. 21-40	35	1,400	b. 21-40	15	600
c. 41-60	22	1,320	c. 41-60	11	660
d. 61-100	23	2,300	d. 61-100	10	1,000
e. 101-250	35	8,750	e. 101-250	15	3,750
f. 251-500	8	4,000	f. 251-500	9	4,500
g. 501-999	12	11,988	g. 501-999	7	6,993
h. 1,000 or more	13	64,989	h. 1,000 or more	30	610,021
Total	228	96,347		123	628,044

Taking into account health care–related share of their employment, Council member companies have more than 74,000 health care–related employees in the Nashville MSA and a little over 550,000 globally.

What percent of your total number of employees is health care-related (by place of work)?

For example, if your business is an information technology services company and has a diverse set of business clients, your health care-related employees may be estimated by the following ratio:

$$\text{Health Care-Related Employees} = \frac{\text{(Health Care IT Revenues, or Business Clients)}}{\text{(Total Revenues, or Business Clients)}}$$

Nashville MSA	Responses	Percent	Global	Responses	Percent
(All Companies)			(Headquarters Only)		
a. 1%-15%	33	14%	a. 1%-15%	12	10%
b. 16%-30%	49	21%	b. 16%-30%	13	11%
c. 31%-45%	13	6%	c. 31%-45%	8	7%
d. 46%-60%	4	2%	d. 46%-60%	4	3%
e. 61%-75%	4	2%	e. 61%-75%	2	2%
f. 76%-90%	6	3%	f. 76%-90%	4	3%
g. 91%-100%	119	52%	g. 91%-100%	80	65%
Total Reporting	228	100%		123	100%
Total Health Care-Related Employment in Nashville MSA					74,176
Total Health Care-Related Employment across Countries					550,373

Council member companies reported a total of \$8.2 billion in wages and salaries in the Nashville MSA. More than 70 percent of the companies have an annual payroll of less than \$10 million.

Please estimate total annualized payroll for all operations (by place of work).

Please report if your business is a branch operation and your headquarter company is located outside the Nashville MSA.

Nashville MSA	Responses	Percent of Companies	Total Payroll (Million \$)
a. Less than \$1 million	68	30%	\$68
b. \$1.1-\$2 million	15	7%	\$30
c. \$2.1-\$5 million	50	22%	\$250
d. \$5.1-\$10 million	29	13%	\$290
e. \$10.1-\$25 million	29	13%	\$725
f. \$25.1-\$50 million	14	6%	\$700
g. \$50.1-\$100 million	9	4%	\$900
h. \$100.1 million and more	14	6%	\$7,250
Total Responses	228	100%	\$8,239

Council member companies reported \$6.28 billion in wages and salaries related to health care in the region. Average payroll for their health care-related operations is \$84,641, about

76.4 percent higher than the average nonfarm wage in the Nashville MSA. Similar to their health care–related employment figures, about 42 percent of the member companies indicated their health care–related payroll represents less than 30 percent of their annual payroll.

What percent of your annualized payroll is for health care-related employees (by place of work)?

For example, if your business is an information technology services company and has a diverse set of business clients, your Health Care-Related Payroll = (Health Care IT Revenues, or Business Clients) / (Total Revenues, or Business Clients)

Nashville MSA	Responses	Percent of Companies
a. 1%-15%	34	15%
b. 16%-30%	61	27%
c. 31%-45%	3	1%
d. 46%-60%	3	1%
e. 61%-75%	4	2%
f. 76%-90%	4	2%
g. 91%-100%	119	52%
Total Responses	228	100%

Total Health Care-Related Payroll in Nashville MSA \$6,278,349,377

VII.4. Council Members: Office Space and Revenues

The Council member companies occupy nearly 9 million square feet of office space in the Nashville MSA, of which 6.3 million is health care–related. This study does not differentiate between the different types of commercial spaces the Council member companies occupy. The 9 million square feet could be in any combination of retail, office, industrial, or medical office space.³⁰ As of the second quarter of 2012, office and industrial space in the Nashville MSA is estimated at around 199.6 million square feet.³¹ The Council member companies occupy about 4.51 percent of office and industrial space in the Nashville MSA.

Total Nashville-based sales of Council member companies are estimated at around \$35 billion, in comparison to the reported amount of \$37.8 billion in 2010. Total global revenues of these member companies are estimated at around \$144 billion. Over half of the companies reported annual revenue of less than \$10 million.

³⁰ For a review of the Nashville office market, see quarterly reports at www.colliers.com/Markets/Nashville and www.cbre.com/USA/Research/Market+Reports/Local+Reports+Worldwide/globalresearch.htm.

³¹ See CB Richard Ellis MarketView reports for Nashville at [http://www.cbre.us/o/nashville/AssetLibrary/Nashville%20Market%20Outlook%202013%20WEB\[2\].pdf](http://www.cbre.us/o/nashville/AssetLibrary/Nashville%20Market%20Outlook%202013%20WEB[2].pdf)

Please estimate your company's annual gross revenues by site location. If there is more than one site in a location, please include all. Please report only you Nashville MSA revenues if your business is a branch operation and your headquarter company is located outside the Nashville MSA

Nashville MSA	Responses	Nashville Revenue (Million)	Global	Responses	Global Revenue (Million)
a. Less than \$1 million	8	\$4	a. Less than \$1 million	2	\$2
b. \$1-\$5 million	81	\$243	b. \$1-\$5 million	28	\$140
c. \$6-\$10 million	37	\$296	c. \$6-\$10 million	12	\$120
d. \$11-\$25 million	25	\$450	d. \$11-\$25 million	15	\$375
e. \$26-\$50 million	25	\$950	e. \$26-\$50 million	13	\$650
f. \$51-\$100 million	26	\$1,963	f. \$51-\$100 million	10	\$1,000
g. \$101-\$250 million	7	\$1,228	g. \$101-\$250 million	9	\$2,250
h. \$251-\$500 million	6	\$2,253	h. \$251-\$500 million	9	\$4,500
i. \$0.501-\$1 billion	7	\$5,253	i. \$0.501-\$1 billion	9	\$9,000
j. More than \$1.1 billion	6	\$22,800	j. More than \$1.1 billion	15	\$16,500
Total	228	\$35,441		122	\$144

Nashville-based health care–related revenues of the Council member companies are estimated at \$27.76 billion. Globally, their health care–related revenues are \$125 billion. For 39 percent of reporting companies, health care–related revenues account for less than 30 percent of their total revenues.

What percent of your company's annual gross revenue is from *your health care-related operations* ?

For example, if your business is an information technology services company and has a diverse set of business clients, your health care-related gross revenues may be estimated by using the following ratio:
 Health Care-Related Revenues = (Health Care IT Employees, or Business Clients) /
 (Total Employees, or Business Clients)

Nashville MSA	Responses	Percent of Companies	Global	Responses	Percent of Companies
a. 1%-15%	35	15%	a. 1%-15%	12	10%
b. 16%-30%	55	24%	b. 16%-30%	18	15%
c. 31%-45%	8	4%	c. 31%-45%	4	3%
d. 46%-60%	2	1%	d. 46%-60%	1	1%
e. 61%-75%	4	2%	e. 61%-75%	2	2%
f. 76%-90%	5	2%	f. 76%-90%	5	4%
g. 91%-100%	119	52%	g. 91%-100%	79	65%
Total Responses	228	100%		121	100%

Health Care-Related Gross Revenue (Nashville MSA) \$27.76 Billion
Health Care-Related Gross Revenue (Global) \$125.23 Billion

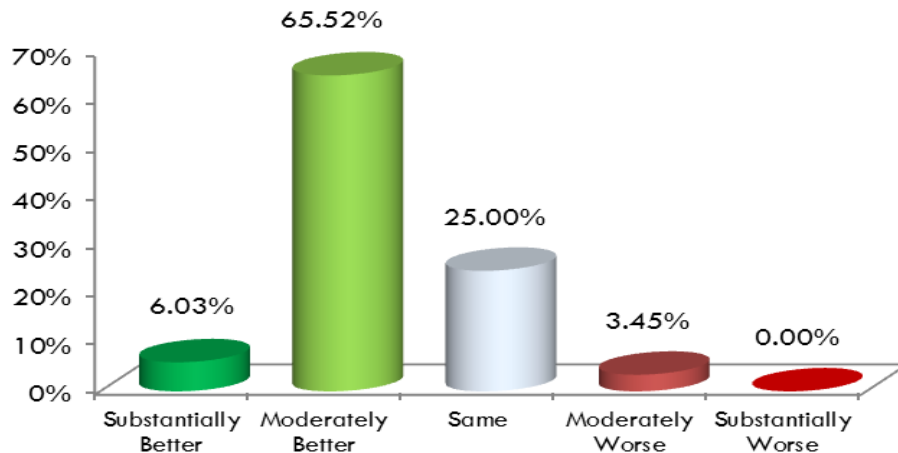
VII.5. Council Members: CEO Confidence Survey

BERC surveyed 265 Council member companies regarding their perspective on past, current, and future economic conditions in general and national and local health care in particular. A total of 115 CEOs from member companies responded to this section of the survey for a response rate of 43 percent. The survey took place between November 14 and December 18, 2014.

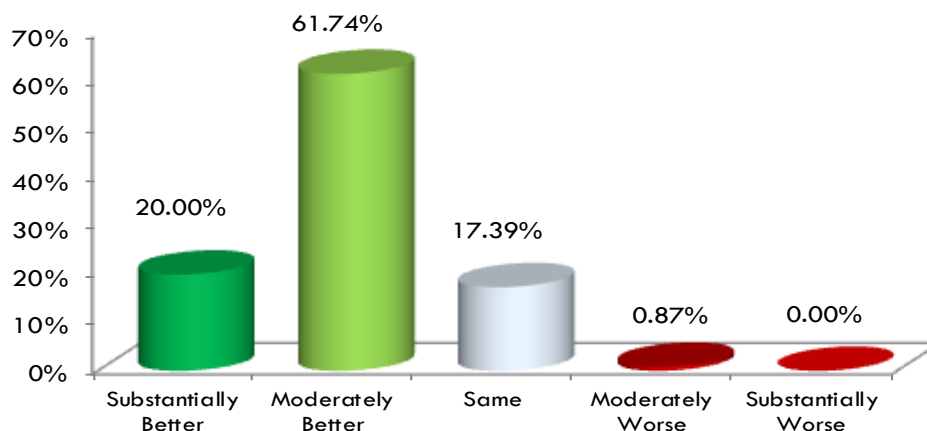
Compared to a year ago, current economic conditions in general (2014 compared to 2013)

According to member CEOs, the Nashville MSA is performing better than the nation. Current economic conditions are better for Nashville for 82 percent of CEOs versus 72 percent for the nation. Nearly 75% of the CEOs reported current economic conditions for the nation are better than a year ago, compared to 82 percent indicating the same for Nashville.

C1. Compared to 12 months ago, how would you evaluate general current economic conditions in the U.S.?



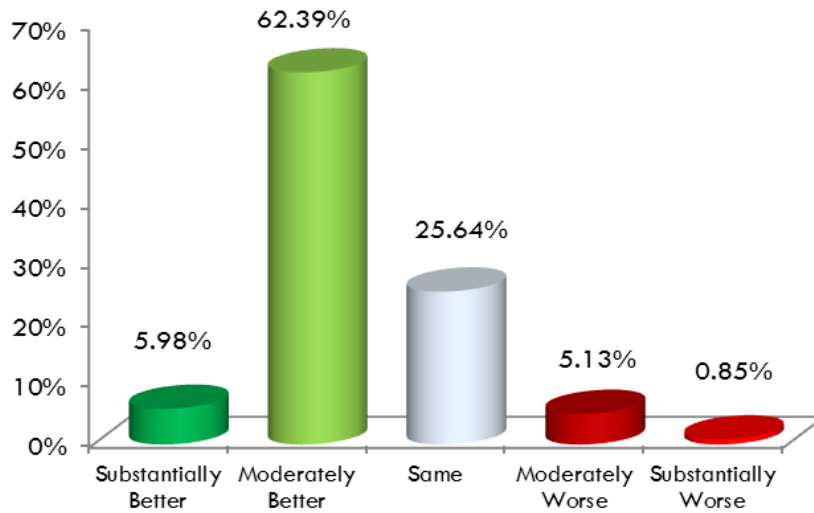
C1. Compared to 12 months ago, how would you evaluate general current economic conditions in the Nashville MSA?



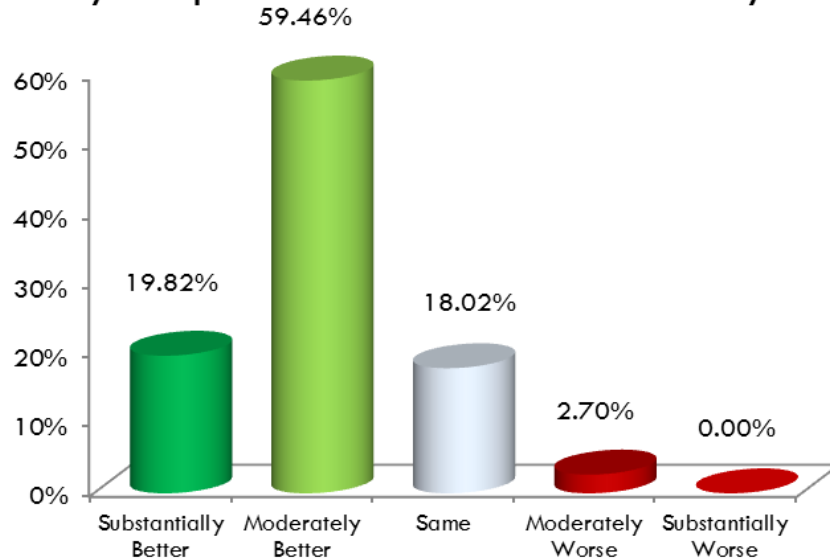
Expectations for overall economic conditions for the next year (2015)

The Council member CEOs are slightly more hopeful about the Nashville MSA economy than about the U.S. economy. Nearly 79 percent of the CEOs expect the Nashville area economy to be better in 2015. About 69 percent have the same expectations for the U.S. economy.

C2. Looking forward 12 months from now, what is your expectation for the U.S. economy?



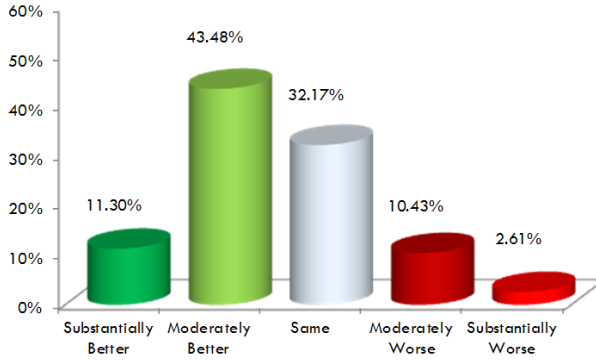
C2. Looking forward 12 months from now, what is your expectation for the Nashville MSA economy?



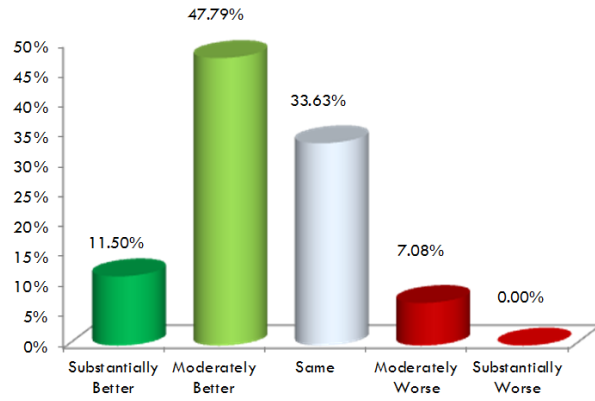
Compared to a year ago, current conditions for the health care industry and the Council member companies themselves (2014 compared to 2013)

The Council member CEOs see their companies better positioned than the national and local health care industry in general.

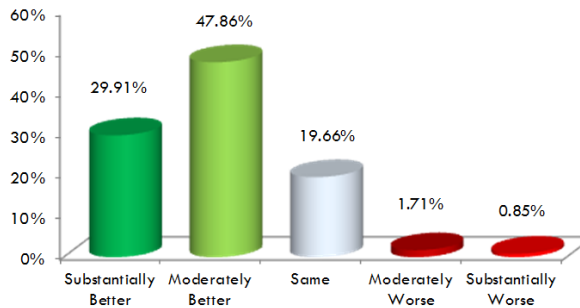
C1a. Compared to 12 months ago, how would you evaluate current conditions in the health care industry in the U.S.?



C1a. Compared to 12 months ago, how would you evaluate current conditions in the health care industry in the Nashville MSA?

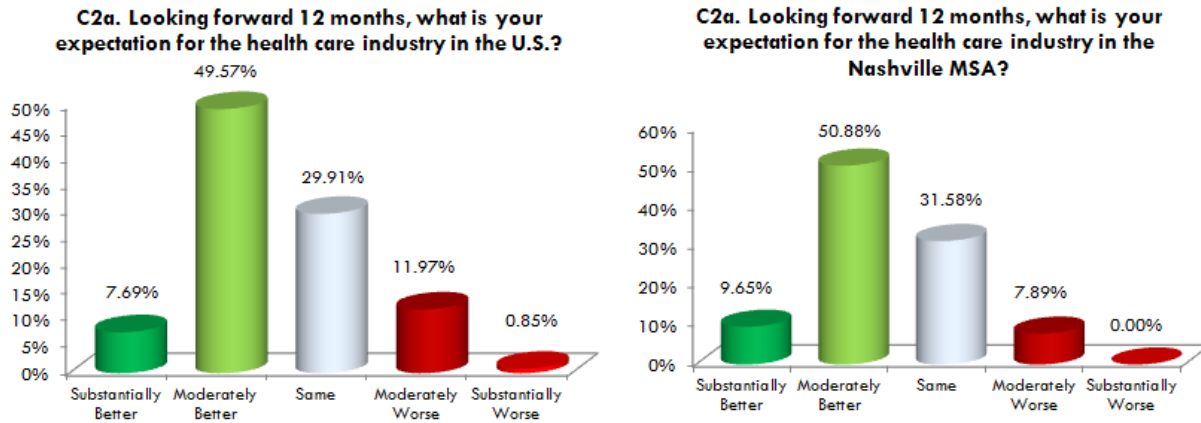


C1b. Compared to 12 months ago, how would you evaluate current conditions in your company?



Future expectations for the health care industry (2014)

CEOs are more upbeat about the future of the health care industry in the Nashville MSA than in the nation.



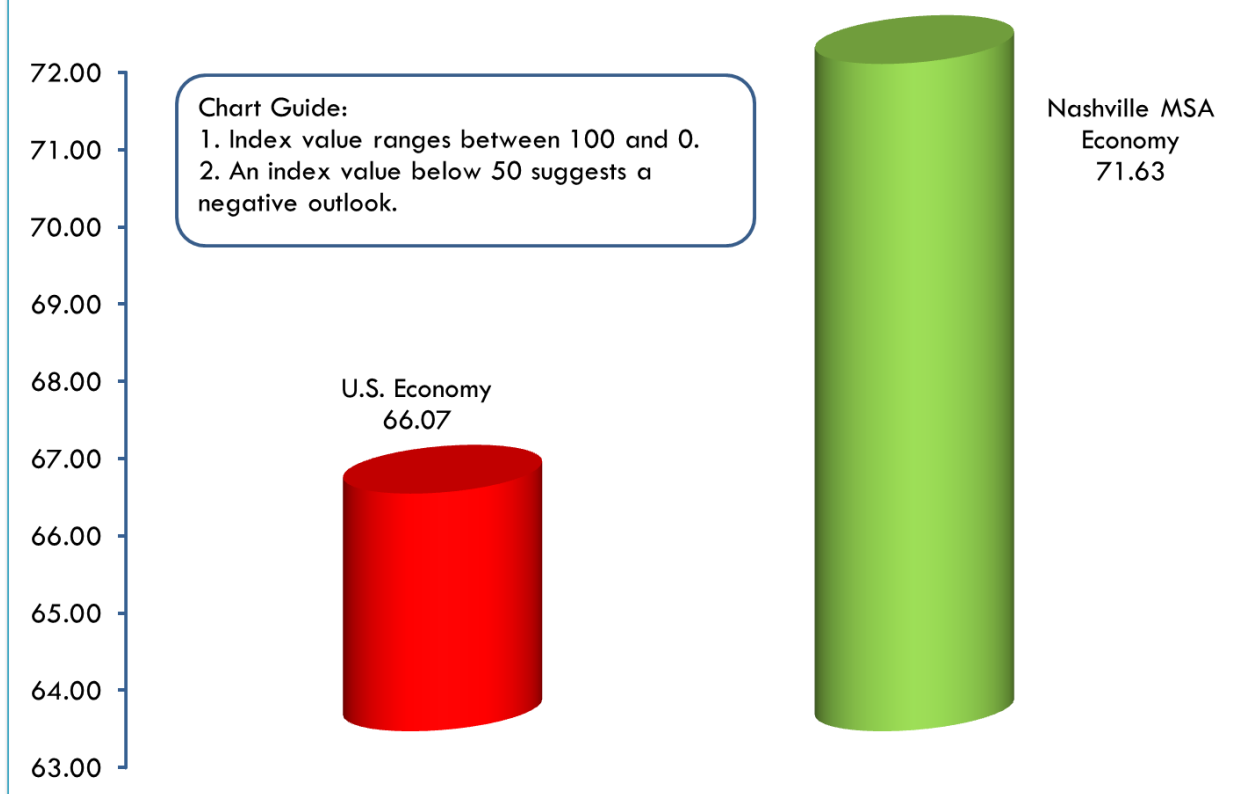
CEO Confidence Survey

The *CEO Confidence Survey* is the average value of standardized scores for the three survey questions highlighted above. These are (1) current general economic conditions compared to a year ago (question C1), (2) future expectations for the overall economy (question C2), and (3) future expectations for the health care industry (question C2a).

As presented below, overall the CEO outlook is positive for both the U.S. and Nashville MSA economies. An index value of 50 and higher suggests a positive outlook. These figures are comparable to the CEO business confidence survey conducted quarterly by the Conference Board. To give a context for *BERC CEO Confidence Survey*, the 2014 fourth-quarter reading of the Conference Board CEO Confidence Index is 60, suggesting a positive outlook.³² As noted below, the health care CEO outlook for the Nashville MSA is 71.63, five points higher than the health care CEO outlook for the nation.

³² <https://www.conference-board.org/data/ceoconfidence.cfm>

Nashville Health Care CEO Confidence Survey

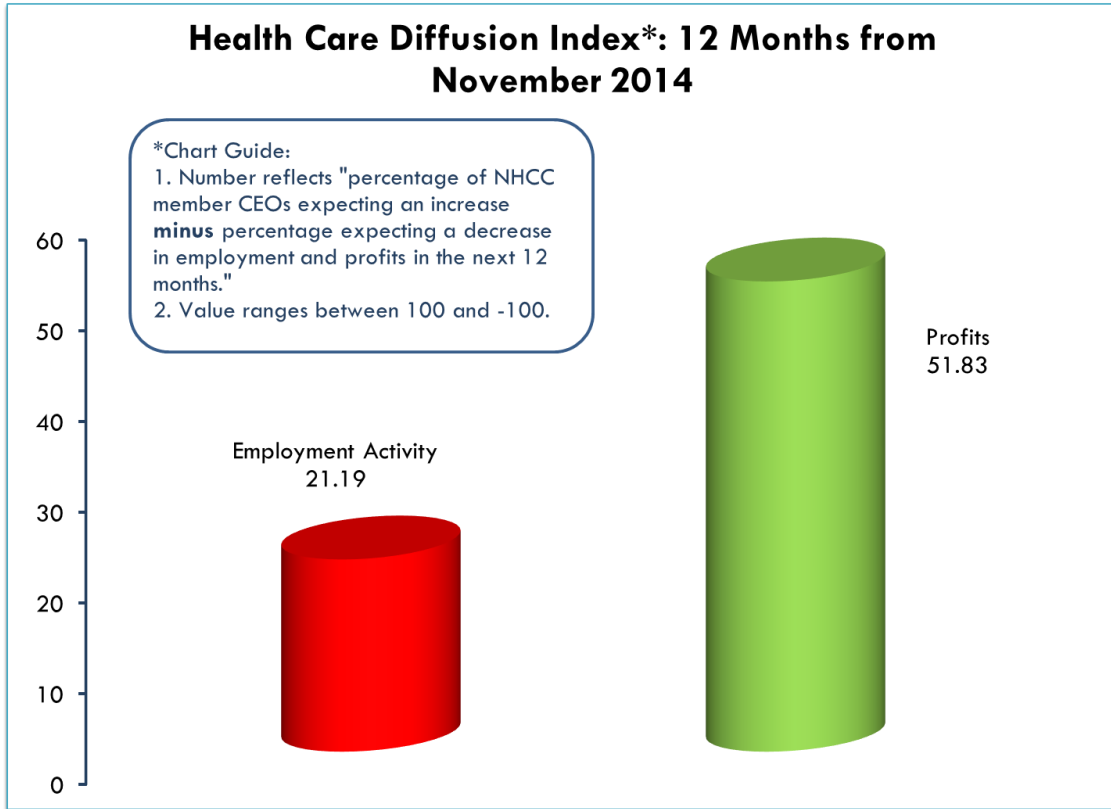


Hiring and profit expectations

The extensive analysis of the health care sector suggests the industry is a growth industry even in the face of the worst economic recession in recent history. The Council member CEOs suggest this trend will continue. The employment activity index, which ranges from -100 to +100, with -100 as very negative and +100 as very positive, shows a low hiring expectation for the year following November 2014. This index number is constructed as the difference between the percent of CEOs expecting an increase in hiring and the percent of CEOs expecting a decrease. The current reading of the employment activity index is 21.19. The employment activity index is higher than that of the business outlook survey for the manufacturing industry conducted by the Federal Reserve Bank of Philadelphia.³³ The March 2015 reading of the Federal Reserve Bank survey is 32, suggesting lower economic activity in the manufacturing sector.

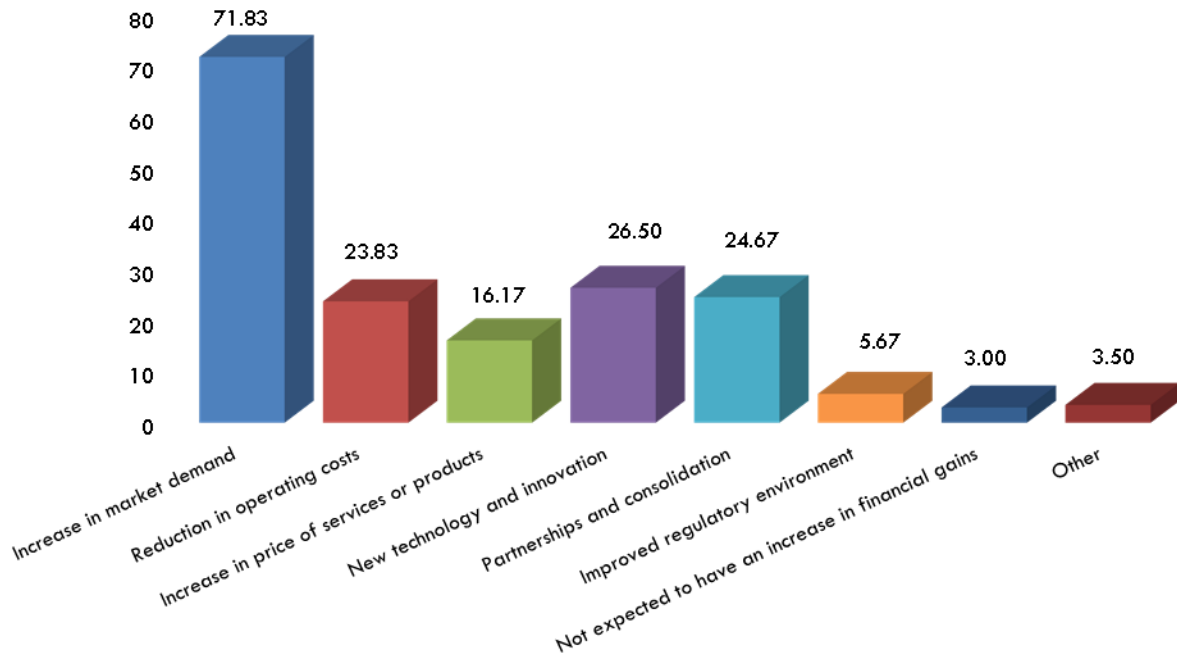
³³ For a recent survey, see www.philadelphiafed.org.

The chart below shows, in addition to hiring expectations, increasing profit expectations among the Council member CEOs: the index number for profits is 51.83.

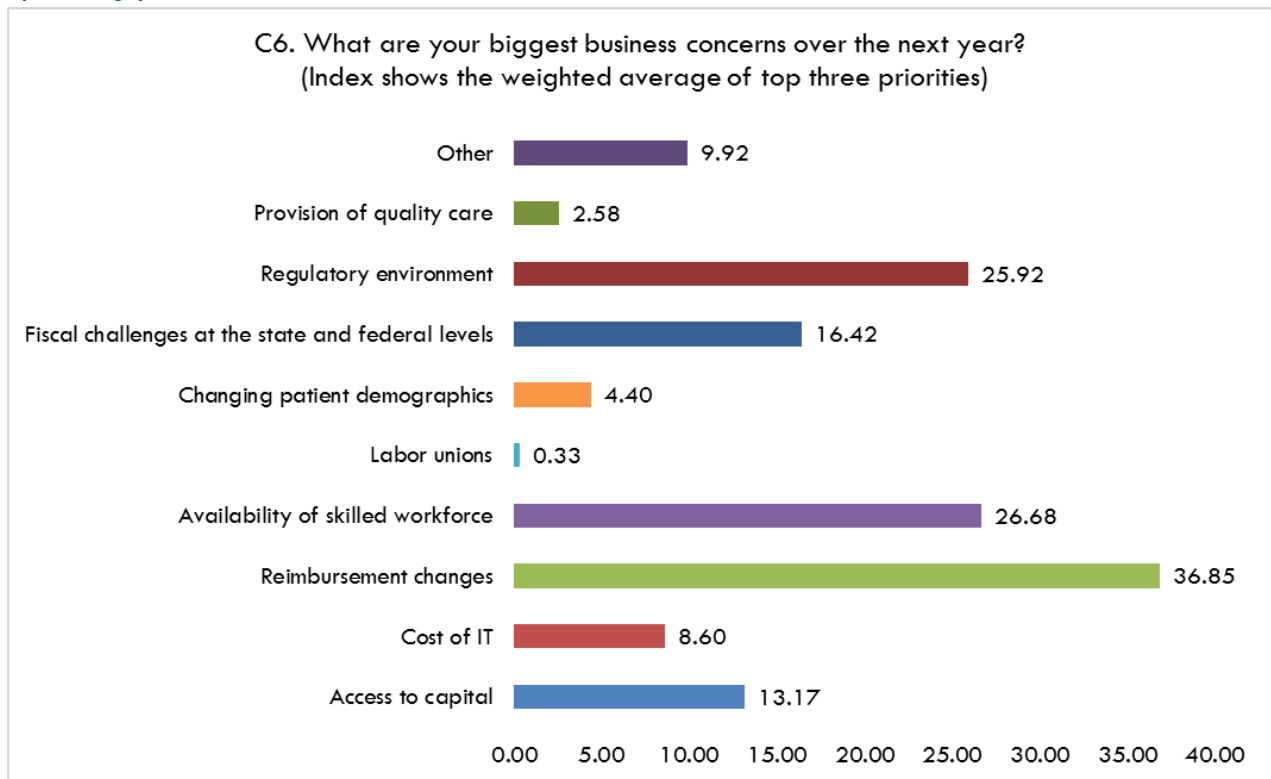


What is the driving force for increasing profit expectations? More than a third of Council member CEOs expect the growth in demand for health services to be the driving force for profits. Just over one-fifth of the health care CEOs cite cost reduction as a primary reason for increasing profit expectations. The major driver for profit is the increase in demand for goods and services.

C5. If you expect your financial gains from health-care related operations to increase, what would be the primary reasons?
 (Index shows the weighted average of top three priorities)



What are the biggest business concerns for the next year? Reimbursement changes, availability of skilled workforce, and regulatory environment ranked highest among CEO concerns for the upcoming year.

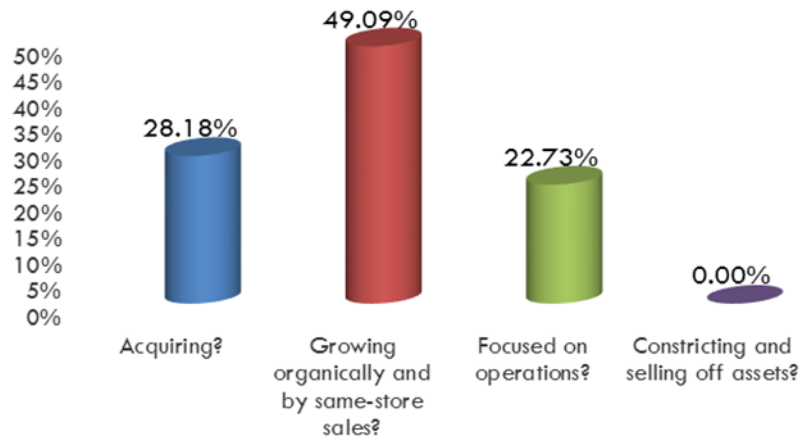


C6. What are your biggest business concerns over the next year? Please identify your top 3 in order of priority.

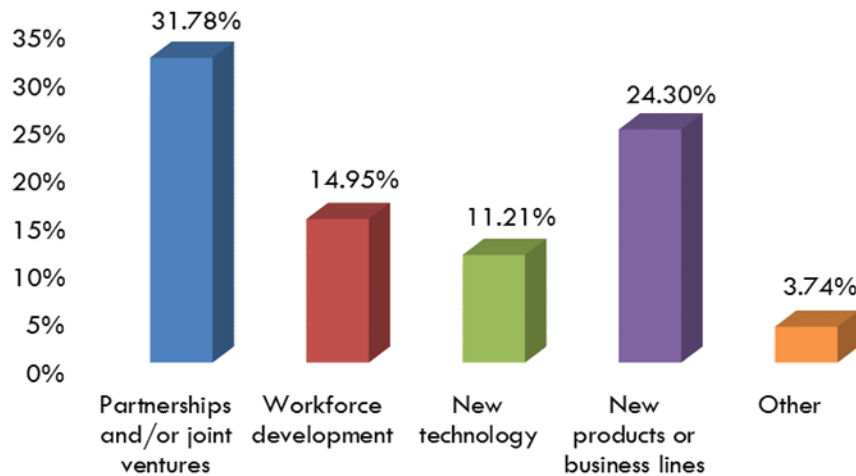
Answer Options	Ranking			Total	Index
	Rank 1	Rank 2	Rank 3		
Access to capital	7	10	17	34	13.17
Cost of IT	3	12	15	30	8.60
Reimbursement changes	31	17	15	63	36.85
Availability of skilled workforce	25	7	4	36	26.68
Labor unions	0	0	1	1	0.33
Changing patient demographics	1	8	9	18	4.40
Fiscal challenges at the state and federal levels	11	15	14	40	16.42
Regulatory environment	18	25	20	63	25.92
Provision of quality care	1	5	4	10	2.58
Other	8	5	5	18	9.92
<i>"Irrational exuberance" in the capital markets</i>					
<i>Changes in ACA</i>					
<i>Cost of healthcare benefits</i>					
<i>Increase of managed care, which drives rates down</i>					
<i>Increased competition in a market that is not growing</i>					
<i>Market consolidation</i>					
<i>Market uncertainty</i>					
<i>New product acceptance</i>					
<i>New projects delivering expected returns</i>					
<i>U.S. immigration policy</i>					

What are the plans for next year? Nearly 50 percent of member CEOs indicated their organization would grow organically. Mergers and acquisitions ranked second: 28 percent of CEOs expect their organization to acquire. Nearly 23 percent indicated their organization would focus on operations.

C7. Over the next year, do you see your organization...

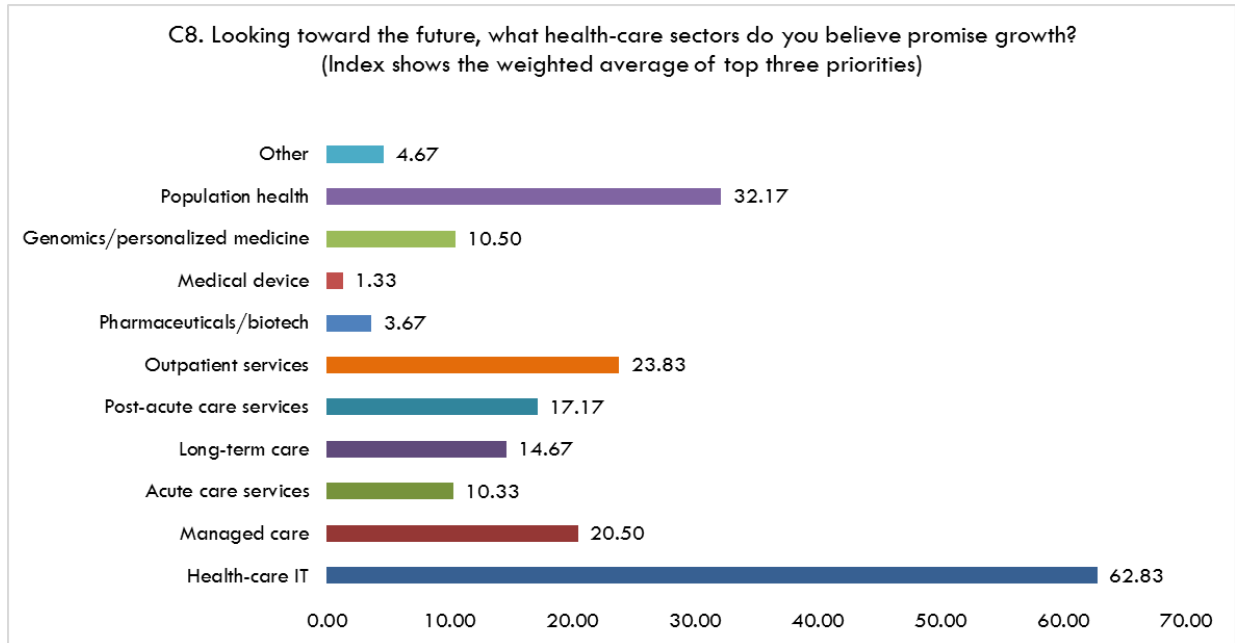


C7a. In the next year, where do you anticipate experiencing health-care investments?



In the next year, nearly one-third of member CEOs anticipate investments through partnerships and/or joint ventures. One-fourth of these member CEOs expect investment in health care–related new products or business lines.

Which health care sectors promise growth? Health-care IT, population health, and outpatient services are the top three areas identified by the member CEOs as promising growth in the coming years. Managed care and post-acute care services rank fourth and fifth, respectively.

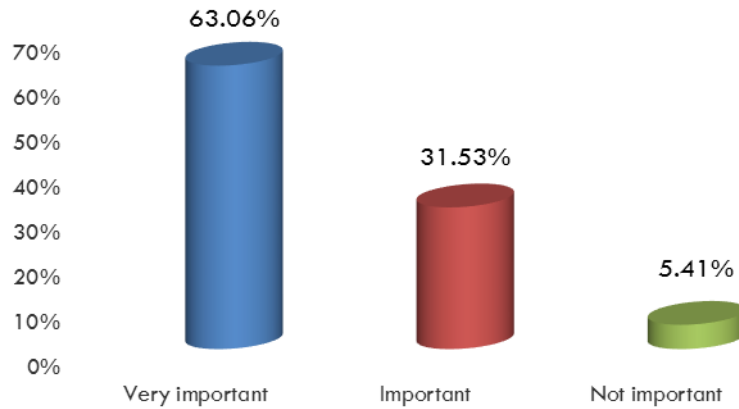


C8. Looking toward the future, what health-care sectors do you believe promise growth? Please identify your top 3 in order of priority.

Answer Options	Ranking			Total	Index
	Rank 1	Rank 2	Rank 3		
Health-care IT	48	21	13	82	62.83
Managed care	5	17	21	43	20.50
Acute care services	5	4	10	19	10.33
Long-term care	8	6	11	25	14.67
Post-acute care services	8	13	8	29	17.17
Outpatient services	10	21	10	41	23.83
Pharmaceuticals/biotech	0	4	5	9	3.67
Medical device	1	0	1	2	1.33
Genomics/personalized medicine	3	7	12	22	10.50
Population health	18	17	17	52	32.17
Other	4	0	2	6	4.67
<i>Behavioral</i>					
<i>Community health transformations of social determinants</i>					
<i>Consumer engagement and mobility</i>					
<i>Outsourcing</i>					
<i>Robotic process automation</i>					

How important is a Nashville location to your business? Does Nashville make a difference for your business? Overall, 95 percent of the Council member CEOs indicated Nashville is important for their business; 63 percent said very important.

C9. How important is it to your business to be located in Nashville?



Among the chief reasons, the Council member CEOs cite the Nashville MSA as a health care mecca. Talent, economic growth, health care leadership, and innovation are other frequently cited reasons.



VIII. CONCLUSION

Nashville is truly the epicenter of the health care industry in the nation. Indicators used in this study demonstrate that Nashville's health care industry has a substantial impact on the MSA's economy and plays a critical role in shaping the future of the health care industry landscape across the globe. Confirming this is the presence of health care company headquarters and the flow of venture and private equity capital to the Nashville area. Overwhelmingly, the Council member companies confirm that a Nashville location is important to their business. These member companies play a vital role in the Nashville MSA economy. A missing but important factor from this analysis is the impact of corporate citizenship of these global companies on the local economy. Additional growth opportunities are suggested in healthcare information technologies, population health, and global growth and economic development.

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X. APPENDIX

X.1. Data Sources

Data Sources Consulted	Web Link
Bureau of Labor Statistics	www.bls.gov
State Occupational Projections	www.projectionscentral.com
Census Bureau	www.census.gov
Tennessee Advisory Commission on Intergovernmental Relations (TACIR)	www.state.tn.us/tacir
Tennessee Department of Labor and Workforce Development	www.state.tn.us/labor-wfd
University of Tennessee, State Data Center	cber.bus.utk.edu
Nashville Health Care Council	www.healthcarecouncil.com
American Hospital Association Annual Survey Database	www.aha.org
ReferenceUSA	www.referenceusa.com
IMPLANpro, Inc.	www.impan.com
CBRE CB Richard Ellis	www.cbre.com
Urban Land Institute (Several study findings on employment density)	www.uli.org
Bureau of Economic Analysis	www.bea.gov
PricewaterhouseCoopers/Venture Economics/National Venture Capital Association Money Tree Survey	www.pwcmoneytree.com
MTSU Business and Economic Research Center (Survey)	www.mtsu.edu/~BERC
Nashville Chamber of Commerce	www.nashvillechamber.com
Expansion Management	www.expansionmanagement.com
Business Facilities	www.businessfacilities.com
LexisNexis Academic Universe	www.lexisnexis.com
Healthguideusa	www.healthguideusa.org
Conference Board	www.conference-board.org
Federal Reserve Bank of Philadelphia	www.philadelphiafed.org

X.3. IMPLAN Model Information

- The impact of the health care industry cluster on the Nashville economy includes not only the direct employment, business sales, and income generated by the health care industry cluster but also the additional or secondary impacts of all economic activity related to such employment and business sales. Secondary impacts fall into two general categories: **indirect effects** including all employment, business sales, or income generated by the interaction of local businesses with the health care industry cluster and by suppliers to local business transactions, and **induced effects** including all spending by health care industry cluster employees in the local economy
- To quantify secondary impacts, a method called “input-output analysis” was employed through the use of the IMPLAN Model developed by the Minnesota IMPLAN Group, Inc. IMPLAN is a predictive model based on regional accounting matrices; it simulates the inter-industry transactions occurring for any additional increase in demand in a regional economy. In this case, the increase in demand is attributed to the presence of the health care industry cluster and has been measured by jobs, business sales, and personal income. This study also employs a hybrid approach, which means that it combines the use of a survey to gather information on direct impacts with the use of input-output analysis to calculate subsequent secondary impacts.
- Direct Effects
 - The direct effects of health care industry cluster employment include the total number of reported full-time employees of health care industry establishments.
 - The direct effect of income includes the total reported pre-tax staff payroll of the health care industry cluster.
 - The direct effect of business sales includes the total spending of the health care industry cluster to purchase goods and services in the local economy.
- Indirect Effects
 - Indirect effects include all employment, business sales, or income generated by the interaction of local businesses with the health care industry cluster and by suppliers to local business transactions.
- Induced Effects
 - Induced effects include all employment, business sales, or income generated by the spending of health care industry cluster employees in the local economy.

XI.4. Health Care Industry Classifications

Detailed Health Care Industry Cluster Definitions³⁴

Core Health Care Providers

1. **Ambulatory Services (NAICS 621):** Industries that provide service directly or indirectly to ambulatory patients and do not usually provide inpatient services.

³⁴ Abstracted from 2007 US NAICS Manual. *North American Industry Classification System—United States*. 2007, at <http://www.census.gov/epcd/www/naics.html>

2. **Hospitals (NAICS 622):** Industries that provide medical, diagnostic, and treatment services including physician, nursing, and other health services to inpatients and the specialized accommodation services required by inpatients.

3. **Nursing Care Facilities (NAICS 623):** Industries that provide residential care combined with nursing, supervisory, or other types of care as required by the residents.

Health Care Management and Consulting Companies

1. **Management of Companies and Enterprises (NAICS 551):** Industries of three main types: (1) those that hold the securities of (or other equity interests in) companies and enterprises; (2) those (except government establishments) that administer, oversee, and manage other establishments of the company or enterprise but do not hold the securities of these establishments; and (3) those that both administer, oversee, and manage other establishments of the company or enterprise and hold the securities of (or other equity interests in) these establishments.

2. **Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 54121):** Establishments primarily engaged in providing services such as auditing accounting records, designing accounting systems, preparing financial statements, developing budgets, preparing tax returns, processing payrolls, bookkeeping, and billing.

3. **Computer Systems Design and Related Services (NAICS 5414):** Establishments primarily engaged in providing expertise in the field of information technologies through one or more of the following activities: (1) writing, modifying, testing, and supporting software to meet the needs of a particular customer; (2) planning and designing computer systems that integrate computer hardware, software, and communication technologies; (3) onsite management and operation of clients computer systems and/or data processing facilities; and (4) other professional and technical computer-related advice and services.

4. **Administrative and Support Services (NAICS 561):** Establishments engaged in activities that support the day-to-day operations of other organizations.

5. **Management, Scientific, and Technical Consulting Services (NAICS 5416)**

a. **Management Consulting Services (NAICS 54161):** Establishments primarily engaged in providing advice and assistance to businesses and other organizations on management issues.

b. **Other Scientific and Technical Consulting Services (NAICS 541690):** Establishments primarily engaged in providing advice and assistance to businesses and other organizations on scientific and technical issues (except environmental issues), such as biological consulting services.

6. **Professional Organizations (NAICS 813920):** Establishments primarily engaged in promoting the professional interests of their members and the profession as a whole.

Colleges, Research Organizations, and Public Health

1. **Junior Colleges (NAICS 6112):** Establishments primarily engaged in furnishing academic or academic and technical courses and granting associate's degrees, certificates, or diplomas below the bachelor's level.

2. **Colleges, Universities, and Professional Schools (NAICS 6113):** Establishments primarily engaged in furnishing academic courses and granting degrees at bachelor's or graduate levels.

3. **Technical and Trade Schools (NAICS 6115):** Establishments primarily engaged in offering vocational and technical training in a variety of technical subjects and trades.
4. **Scientific Research and Development Services (NAICS 5417):** Establishments engaged in conducting original investigations undertaken on a systematic basis to gain knowledge (research) and/or applying research findings or other scientific knowledge to create new or significantly improved products or processes (experimental development).
5. **Administration of Public Health Programs (NAICS 92312):** Government establishments primarily engaged in the planning, administration, and coordination of public health programs and services including environmental health activities, mental health programs, categorical health programs, health statistics, and immunization services.

Medical Insurance Companies

1. **Direct Health and Medical Insurance Carriers (NAICS 524114):** Establishments primarily engaged in initially underwriting (i.e., assuming the risk and assigning premiums for) health and medical insurance policies.

Health Care Manufacturing and Wholesalers

1. **Optical Instrument and Lens Manufacturing (NAICS 333314):** Establishments primarily engaged in one or more of the following: (1) manufacturing optical instruments and lens, such as binoculars, microscopes (except electron or proton), telescopes, prisms, and lenses (except ophthalmic); (2) coating or polishing lenses (except ophthalmic); and (3) mounting lenses (except ophthalmic).
2. **Medical Equipment and Supplies Manufacturing (NAICS 3391):** Establishments primarily engaged in manufacturing medical equipment and supplies.
3. **Pharmaceutical and Medicine Manufacturing (NAICS 3254):** Establishments primarily engaged in one or more of the following: (1) manufacturing biological and medicinal products; (2) processing (i.e., grading, grinding, and milling) botanical drugs and herbs; (3) isolating active medicinal principals from botanical drugs and herbs; and (4) manufacturing pharmaceutical products intended for internal and external consumption in such forms as ampoules, tablets, capsules, vials, ointments, powders, solutions, and suspensions.
4. **Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers (NAICS 42345):** Establishments primarily engaged in the merchant wholesale distribution of professional medical equipment, instruments, and supplies (except ophthalmic equipment and instruments and goods used by ophthalmologists, optometrists, and opticians).
5. **Ophthalmic Goods Merchant Wholesalers (NAICS 42346):** Establishments primarily engaged in the merchant wholesale distribution of professional equipment, instruments, and/or goods sold, prescribed, or used by ophthalmologists, optometrists, and opticians.
6. **Drugs and Druggists' Sundries Merchant Wholesalers (NAICS 4242):** Establishments primarily engaged in the merchant wholesale distribution of biological and medical products, botanical drugs and herbs, and pharmaceutical products intended for internal and external consumption in such forms as ampoules, tablets, capsules, vials, ointments, powders, solutions, and suspensions.

Pharmacies, Drug Stores, and Ophthalmic Goods

1. **Pharmacies and Drug Stores (NAICS 44611)**: Establishments known as pharmacies and drug stores engaged in retailing prescription or nonprescription drugs and medicines.

a. **Optical Goods Stores (NAICS 44613)**: Establishments primarily engaged in one or more of the following: (1) retailing and fitting prescription eyeglasses and contact lenses, (2) retailing prescription eyeglasses in combination with the grinding of lenses to order on the premises, and (3) selling nonprescription eyeglasses.

XI.5. Definitions and Ranking Procedure

Location Quotient (LQ)

The location quotient is the most commonly utilized method in regional economic analysis. The LQ is a measure of an industry’s concentration in a local economy relative to the national average or any other reference unit.

Ranking Procedure

Health care indicators are classified into two categories: (1) health care business climate and (2) health care infrastructure indicators.

$$LQ = \frac{\frac{E_{La}}{E_L}}{\frac{E_{Na}}{E_N}}$$

Where E_{La} = refers to industry “a’s” employment in the local economy,
 E_L = refers to total employment in the local economy,
 E_{Na} = refers to industry “a’s” employment in the national economy, and
 E_N = refers to total employment in the national economy.

(1) Health care business climate indicators: BEREC identified 14 indicators that reflect the overall trend in the health care sector in a given economy. Choices of these indicators are based on the review of literature and availability of indicators.

(2) Health care infrastructure indicators: BEREC identified 22 indicators that measure the capacity of the local economy to lay the foundation for growth of the health care industry. In addition to direct health care related indicators, BEREC included per capita personal income and unemployment rate in this category.

Standardization Procedure

In order to compare these MSAs using a diverse set of indicators, BEREC converted each indicator into a unitless indicator. This procedure makes it possible to get a summary indicator for each category across MSAs. The method used to assign a relative score for each MSA for a given indicator is called cumulative normal distribution, which places each MSA for a given indicator between 0 and 1, depending on how that MSA’s value is related to the average and standard deviation of a given series.

X.4. Publicly Traded Health Care Cluster Companies by MSA

Nashville MSA and Its Peers: Publicly Traded Health Care Industry Cluster Companies			
Nashville MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
AAC Holdings Incorporated	AAC	880	\$66,035,000
Acadia Healthcare Company Incorporated	ACHC	15,000	\$1,030,784,000
AM Surg Corporation	AMSG	10,500	\$1,738,950,000
Brookdale Senior Living Incorporated	BKD	52,500	\$3,831,706,000
Community Health Systems Incorporated	CYH	135,000	\$21,561,000,000
Cumberland Pharmaceuticals Incorporated	CPIX	85	\$36,902,000
Diversicare Healthcare Services Incorporated	DVCR	6,100	\$344,192,000
Healthcare Realty Trust Incorporated	HR	239	\$370,855,000
HCA Holdings Incorporated	HCA	225,000	\$36,918,000,000
Health Stream Incorporated	HSTM	787	\$170,690,000
Healthways Incorporated	HWAY	2,700	\$742,183,000
Life Point Hospitals Incorporated	LPNT	38,000	\$5,300,900,000
National Health Care Corporation	NHC	13,050	\$871,683,000
National Health Investors Incorporated	NHI	10	\$177,509,000
Symmetry Surgical Incorporated	SSRG	189	\$81,782,000
Birmingham MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Health South Corporation	HLS	24,100	\$2,405,900,000
Pro Assurance Corporation	PRA	967	\$852,326,000
Denver MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Ampio Pharmaceuticals Incorporated	AMPE	23	\$77,000
*ARCA Biopharma Incorporated	ABIO	16	\$3,795,702
Birner Dental Management Services	BDMS	526	\$65,126,000
Da Vita Health Care Partners	DVA	57,900	\$12,795,106,000
*Envision Healthcare Holdings	EVHC	14,664	\$4,397,644,000
Gene Thera Incorporated	GTHR	2	\$474,463
I Satori Incorporated	IFIT	28	\$9,655,000
Mesa Laboratories Incorporated	MLAB	273	\$52,724,000
*Muscle Pharm Corporations	MSLP	273	\$177,389,000
Peak Pharmaceuticals Incorporated	PKPH	4	\$948,926
Venaxis Incorporated	APPY	25	\$167,000
Vitro Diagnostics Incorporated	VODG	2	\$95,000
Zynex Incorporated	ZYXI	92	\$11,117,000
Jacksonville MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
N/A	N/A	N/A	N/A

Atlanta MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Ad Care Health Systems Incorporated	ADK	3,414	\$139,314,000
Agilysys Incorporated	AGYS	474	\$101,261,000
Alimera Sciences Incorporated	ALIM	105	\$8,423,000
American Care Source Holdings	ANCI	141	\$27,052,000
American Seniors Association Holding	AMSA	2	\$364,000
Biota Pharmaceuticals Incorporated	BOTA	66	\$68,700,000
CRYO Life Incorporated	CRY	535	\$81,883,000
Digirad Corporation	DRAD	297	\$55,608,000
*Galectin Therapeutics Incorporated	GALT	7	\$1,083,504
Geo Vax Labs Incorporated	GOVX	7	\$883,000
Guided Therapeutics Incorporated	GTHP	38	\$65,000
Halyard Health Incorporated	HYH	12,000	\$1,672,100,000
Health Discovery Corporation	HDVY	3	\$1,032,000
Immucor Incorporated	BLUD	1,090	\$388,056,000
Med Assets Incorporated	MDAS	3,350	\$720,229,000
*MEDOVEX Corporation	MDVX	6	\$928,717
Mi Medx Group Incorporated	MDXG	386	\$118,223,000
Sanguine Corporation	SGUI	2	\$33,000
Sanuwave Health Incorporated	SNWV	8	\$847,000
Streamline Health Solutions	STRM	123	\$27,625,000
Sun Link Health Systems Incorporated	SSY	681	\$105,430,000
Indianapolis MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Anthem Incorporated	ANTM	51,500	\$73,874,100,000
Eli Lilly & Company	LLY	39,135	\$19,615,600,000
Louisville MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Almost Family Incorporated	AFAM	10,900	\$495,829,000
Humana Incorporated	HUM	57,000	\$48,500,000,000
Kindred Healthcare Incorporated	KND	61,500	\$5,027,599,000
Phar Merica Corporation	PMC	6,000	\$1,894,500,000
Kansas City MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Hooper Holmes Incorporated	HH	145	\$28,524,000
Cerner Corporation	CERN	15,800	\$3,402,703,000
DST Systems Incorporated	DST	20,525	\$2,749,300,000

Charlotte MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Kewaunee Scientific Corporation	KEQU	619	\$111,166,000
Premier Incorporation	PINC	1,600	\$910,549,000
3D Systems Corporation	DDD	2,136	\$653,652,000
Raleigh MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Baxano Surgical Incorporated	BAXSQ	140	\$18,582,000
BioDelivery Sciences International Incorporated	BDSL	29	\$38,944,000
DARA Bio Sciences Incorporated	DARA	16	\$1,887,000
Incorporated Research Holdings Incorporated	INCR	5,600	\$1,178,799,000
*Ino Life Technologies Incorporated	INOL	6	\$963,029
*Islet Sciences Incorporated	ISLT	5	\$802,524
*NephroGenex Incorporated	NRX	11	\$1,765,554
PRA Health Sciences Incorporated	PRAH	11,000	\$1,459,586,000
Tenax Therapeutics Incorporated	OXBT	14	\$289,000
Columbus MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Cardinal Health Incorporated	CAH	34,000	\$91,084,000,000
Mettler-Toledo Limited Liability Company	MTD	14,200	\$2,485,983,000
Navidea Biopharmaceuticals Incorporated	NAVB	54	\$6,275,000

Dallas MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
Adeptus Health Incorporated	ADPT	1,869	\$243,318,000
Ashford Hospitality Trust Incorporated	AHT	185	\$942,260,000
Assured Pharmacy Incorporated	APHYG	18	\$5,193,000
Atrion Corporation	ATRI	483	\$140,762,000
BioTech Medics Incorporated	BMCS	2	\$4,999,000
Capital Senior Living Corporation	CSU	6,147	\$383,925,000
Fuse Medical Incorporated	FZMD	10	\$941,000
Greatbatch Incorporated	GB	3,690	\$687,787,000
Hasco Medical Incorporated	HASC	262	\$91,020,000
Mannatech Incorporated	MTEX	270	\$190,081,000
Natural Health Trends Corporation	NHTC	113	\$124,590,000
Oxy Sure Systems Incorporated	OXYS	26	\$2,437,000
Plasma Tech Biopharmaceuticals	PTBI	7	\$925,000
RBC Life Sciences Incorporated	RBCL	89	\$28,270,000
Retractable Technologies Incorporated	RVP	132	\$34,521,000
SWK Holdings Corporation	SWKH	4	\$17,400,000
Tenet Healthcare Corporation	THC	108,000	\$16,615,000,000
Titanium Healthcare Incorporated	TIHC	64	\$404,014,000
Torchmark Corporation	TMK	2,980	\$3,964,296,000
ULURU Incorporated	ULUR	7	\$864,000
USMD Holdings Incorporated	USMD	1,472	\$294,765,000
*ZS Pharma Incorporated	ZSPH	71	\$13,642,161

Richmond MSA			
Company Name	Ticker	Corporate Employee Size Actual	Corporate Sales Volume Actual
*ALR Technologies Incorporated	ALRT	1	\$1,233,019
Ampli Phi Biosciences Corporation	APHB	23	\$409,000
Tredegear Corporation	TG	2,700	\$945,129,000
Owens & Minor Incorporated	OMI	5,700	\$9,440,182,000

*Revenues for these companies are estimated.

NASHVILLE HEALTH CARE COUNCIL

MEMBER REGIONAL IMPACT AND BUSINESS CONFIDENCE SURVEY 2014

The purposes of this survey are to (A) create a summary profile of Nashville Health Care Council member companies, (B) measure their local, regional, and global impacts, and (C) create a CEO business confidence index similar to the Conference Board's CEO Confidence Survey. Your cooperation to this survey at the CEO or CFO level is greatly appreciated.

Please Note: (1) The Nashville MSA in this study refers to the following 14 counties: Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Maury, Robertson, Rutherford, Smith, Sumner, Trousdale, Williamson, and Wilson counties. (2) This survey has three (3) parts: (A) Company Profile, (B) Company Operation, and (C) Future Expectations.

EXTREMELY CONFIDENTIAL: Individual responses will not be released.

PART A. COMPANY PROFILE (Please pick one)

A1. Our company in the Nashville MSA (Metropolitan Statistical Area, which includes Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Maury, Robertson, Rutherford, Smith, Sumner, Trousdale, Williamson, and Wilson counties) is

- a. a branch operation
- b. headquarters
- c. both (if more than two (2) sites)

A2. When did your company establish its Nashville operation? -----

A3. Ownership: Our company is

- a. privately owned
- b. publicly traded
- c. not for profit
- d. government (including state higher education institutions)

A4. How many sites does your company have in the Nashville MSA?

- a. 1
- b. 2
- c. 3
- d. 4 or more

A5. If your headquarter is located in the Nashville MSA, please help us understand in what other states do you have a physical location or your services are utilized? For each state, please also estimate your company's employment.

<u>State</u>	<u>Employment</u>	<u>Revenues</u>
AL		
AK		
AZ		
AR		
CA		
CO		
CT		
...		

A6. Please estimate your company's total philanthropic contributions (both charitable care and donations) in 2013 for the Nashville MSA only. (Please do not include your employees' contribution).

- a. Less than \$100K
- b. \$100.1-\$500K
- c. \$500.1-\$1 million
- d. \$1.1-\$5 million
- e. \$5.1-\$15 million
- f. \$15.1-\$32 million
- g. \$32.1 million or more

A7. What is the square footage of space your company occupies in the Nashville MSA (if more than one (1) site, please estimate the total)?

- a. Less than 5,000
- b. 5,001-10,000
- c. 10,001-25,000
- d. 25,001-50,000
- e. 50,001-100,000
- f. 100,001-250,000
- g. More than 250,001

A8. What percent of the square footage estimated in A7 is health-care related?

For example, if your business is an information technology services company and has a diverse set of business clients, your health-care related square footage may be estimated using the following ratio:

Health-Care Related Square Footage = (Health-Care IT Revenues, Business Clients, or Employees) / (Total Revenues, Business Clients, or Employees)

- a. 1%-15%
- b. 16%-30%
- c. 31%-45%
- d. 46%-60%
- e. 61%-75%
- f. 76%-90%
- g. 91%-100%

A9. Please estimate your company's total capital expenditures (for structures and equipment) in the last 5 years in the Nashville MSA.

- a. Less than \$1 million
- b. \$1.1 million-\$5 million
- c. \$5.1 million-\$10 million
- d. \$10.1 million-\$25 million
- e. \$25.1 million-\$50 million
- f. \$50.1 million-\$100 million
- g. \$100.1 million-\$250 million
- h. \$250.1 million or more

PART B. COMPANY IMPACT FOR FY 2013-2014 (or latest year available). Please estimate.

In this section, we are trying to measure your company’s local, regional, national and global impact.

B1. Please estimate the current number of employees (by place of work).

If your business is a branch operation and your headquarter company is located outside the Nashville MSA, please report only your Nashville MSA employment.

If your headquarter is in the Nashville MSA, please report your Tennessee, United States, and Global employees

<u>Nashville MSA</u> <u>(All Companies)</u>	<u>Tennessee</u>	<u>United States</u>	<u>Global</u>
a. 1-20	a. 1-20	a. 1-20	a. 1-20
b. 21-40	b. 21-40	b. 21-40	b. 21-40
c. 41-60	c. 41-60	c. 41-60	c. 41-60
d. 61-100	d. 61-100	d. 61-100	d. 61-100
e. 101-250	e. 101-250	e. 101-250	e. 101-250
f. 251-500	f. 251-500	f. 251-500	f. 251-500
g. 501-999	g. 501-999	g. 501-999	g. 501-999
h. 1,000-2,499	h. 1,000-2,499	h. 1,000-2,499	h. 1,000-2,499
i. 2,500-4,999	i. 2,500-4,999	i. 2,500-4,999	i. 2,500-4,999
j. 5,000-9,999	j. 5,000-9,999	j. 5,000-9,999	j. 5,000-9,999
k. 10,000 or more	k. 10,000 or more	k. 10,000 or more	k. 10,000 or more

B1a. What percent of your total number of employees is health-care related (by place of work)?

For example, if your business is an information technology services company and has a diverse set of business clients, your health-care related employees may be estimated by using the following ratio:

$$\text{Health-Care Related Employees} = (\text{Health-Care IT Revenues, or Business Clients}) / (\text{Total Revenues, or Business Clients})$$

If your headquarter is in the Nashville MSA, please report your Tennessee, United States, and Global employees.

<u>Nashville MSA</u> <u>(All Companies)</u>	<u>Tennessee</u>	<u>United States</u>	<u>Global</u>
a. 1%-15%	a. 1%-15%	a. 1%-15%	a. 1%-15%
b. 16%-30%	b. 16%-30%	b. 16%-30%	b. 16%-30%
c. 31%-45%	c. 31%-45%	c. 31%-45%	c. 31%-45%
d. 46%-60%	d. 46%-60%	d. 46%-60%	d. 46%-60%
e. 61%-75%	e. 61%-75%	e. 61%-75%	e. 61%-75%
f. 76%-90%	f. 76%-90%	f. 76%-90%	f. 76%-90%
g. 91%-100%	g. 91%-100%	g. 91%-100%	g. 91%-100%

B2. Please estimate total annualized payroll for all operations (by place of work).

If your business is a branch operation and your headquarter company is located outside the Nashville MSA, please report only your Nashville MSA payroll.

If your headquarter is in the Nashville MSA, please report your Tennessee, United States, and Global payroll.

**Nashville MSA
(All Companies)**

Tennessee

United States

Global

- | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|
| a. Less than \$1 million | a. Less than \$1 million | a. Less than \$1 million | a. Less than \$1 million |
| b. \$1.1-\$2 million | b. \$1.1-\$2 million | b. \$1.1-\$2 million | b. \$1.1-\$2 million |
| c. \$2.1-\$5 million | c. \$2.1-\$5 million | c. \$2.1-\$5 million | c. \$2.1-\$5 million |
| d. \$5.1-\$10 million | d. \$5.1-\$10 million | d. \$5.1-\$10 million | d. \$5.1-\$10 million |
| e. \$10.1-\$25 million | e. \$10.1-\$25 million | e. \$10.1-\$25 million | e. \$10.1-\$25 million |
| f. \$25.1-\$50 million | f. \$25.1-\$50 million | f. \$25.1-\$50 million | f. \$25.1-\$50 million |
| g. \$50.1-\$100 million | g. \$50.1-\$100 million | g. \$50.1-\$100 million | g. \$50.1-\$100 million |
| h. \$100.1-\$250 million | h. \$100.1-\$250 million | h. \$100.1-\$250 million | h. \$100.1-\$250 million |
| i. \$250.1-\$500 million | i. \$250.1-\$500 million | i. \$250.1-\$500 million | i. \$250.1-\$500 million |
| j. \$500.1-\$1,000 million | j. \$500.1-\$1,000 million | j. \$500.1-\$1,000 million | j. \$500.1-\$1,000 million |
| k. \$1,000.1 million or more | k. \$1,000.1 million or more | k. \$1,000.1 million or more | k. \$1,000.1 million or more |

B2a. What percent of your annualized payroll is for health-care related employees (by place of work)?

For example, if your business is an information technology services company and has a diverse set of business clients, your health-care related payroll may be estimated by using the following ratio:

Health-Care Related Payroll = (Health-Care IT Revenues, or Business Clients) / (Total Revenues, or Business Clients)

If your headquarter is in the Nashville MSA, please report your Tennessee, United States, and Global payroll.

**Nashville MSA
(All Companies)**

Tennessee

United States

Global

- | | | | |
|-------------|-------------|-------------|-------------|
| a. 1%-15% | a. 1%-15% | a. 1%-15% | a. 1%-15% |
| b. 16%-30% | b. 16%-30% | b. 16%-30% | b. 16%-30% |
| c. 31%-45% | c. 31%-45% | c. 31%-45% | c. 31%-45% |
| d. 46%-60% | d. 46%-60% | d. 46%-60% | d. 46%-60% |
| e. 61%-75% | e. 61%-75% | e. 61%-75% | e. 61%-75% |
| f. 76%-90% | f. 76%-90% | f. 76%-90% | f. 76%-90% |
| g. 91%-100% | g. 91%-100% | g. 91%-100% | g. 91%-100% |

B3. Please estimate your company’s annual gross revenues by site location. If there is more than one site in a location, please include all.

If your business is a branch operation and your headquarter company is located outside the Nashville MSA, please report only your Nashville MSA revenues.

If your headquarter is in the Nashville MSA, please report your Tennessee, United States, and Global gross revenues.

Nashville MSA
(All Companies)

Tennessee

United States

Global

- | | | | |
|---------------------------|---------------------------|---------------------------|---------------------------|
| a. Less than \$1 million | a. Less than \$1 million | a. Less than \$1 million | a. Less than \$1 million |
| b. \$1-\$5 million | b. \$1-\$5 million | b. \$1-\$5 million | b. \$1-\$5 million |
| c. \$6-\$10 million | c. \$6-\$10 million | c. \$6-\$10 million | c. \$6-\$10 million |
| d. \$11-\$25 million | d. \$11-\$25 million | d. \$11-\$25 million | d. \$11-\$25 million |
| e. \$26-\$50 million | e. \$26-\$50 million | e. \$26-\$50 million | e. \$26-\$50 million |
| f. \$51-\$100 million | f. \$51-\$100 million | f. \$51-\$100 million | f. \$51-\$100 million |
| g. \$101-\$250 million | g. \$101-\$250 million | g. \$101-\$250 million | g. \$101-\$250 million |
| h. \$251-\$500 million | h. \$251-\$500 million | h. \$251-\$500 million | h. \$251-\$500 million |
| i. \$0.501-\$1 billion | i. \$0.501-\$1 billion | i. \$0.501-\$1 billion | i. \$0.501-\$1 billion |
| j. \$1.1-\$5 billion | j. \$1.1-\$5 billion | j. \$1.1-\$5 billion | j. \$1.1-\$5 billion |
| k. \$5.1-\$10 billion | k. \$5.1-\$10 billion | k. \$5.1-\$10 billion | k. \$5.1-\$10 billion |
| l. \$10.1-\$20 billion | l. \$10.1-\$20 billion | l. \$10.1-\$20 billion | l. \$10.1-\$20 billion |
| m. More than \$20 billion | m. More than \$20 billion | m. More than \$20 billion | m. More than \$20 billion |

B3a. What percent of your company’s annual gross revenue is from your health-care related operations?

For example, if your business is an information technology services company and has a diverse set of business clients, your health-care related gross revenues may be estimated by using the following ratio:

$$\text{Health-Care Related Revenues} = (\text{Health-Care IT Employees, or Business Clients}) / (\text{Total Employees, or Business Clients})$$

If your headquarter is in the Nashville MSA, please report your Tennessee, United States, and Global gross revenues.

Nashville MSA
(All Companies)

Tennessee

United States

Global

- | | | | |
|-------------|-------------|-------------|-------------|
| a. 1% - 15% | a. 1% - 15% | a. 1% - 15% | a. 1% - 15% |
| b. 16%-30% | b. 16%-30% | b. 16%-30% | b. 16%-30% |
| c. 31%-45% | c. 31%-45% | c. 31%-45% | c. 31%-45% |
| d. 46%-60% | d. 46%-60% | d. 46%-60% | d. 46%-60% |
| e. 61%-75% | e. 61%-75% | e. 61%-75% | e. 61%-75% |
| f. 76%-90% | f. 76%-90% | f. 76%-90% | f. 76%-90% |
| g. 91%-100% | g. 91%-100% | g. 91%-100% | g. 91%-100% |

PART C. FUTURE EXPECTATIONS (CEO CONFIDENCE SURVEY)

C1. Compared to 12 months ago, how would you evaluate general current economic conditions

in the U.S.?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

in the Nashville MSA?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

C1a. Compared to 12 months ago, how would you evaluate current conditions in the health-care industry

in the U.S.?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

in the Nashville MSA?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

C1b. Compared to 12 months ago, how would you evaluate current conditions in your company?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

C2. Looking forward to 12 months from now, what is your expectation for

the U.S. economy?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

the Nashville MSA economy?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

C2a. Looking forward to 12 months from now, what is your expectation for the health-care industry

in the U.S.?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

in the Nashville MSA?

- a. Substantially better
- b. Moderately better
- c. Same
- d. Moderately worse
- e. Substantially worse

C3. Looking forward to 12 months from now, do you expect the number of your employees in the Nashville MSA to

- a. Decrease?
- b. Remain the same?
- c. Increase?

C4. What are your firm's profit expectations from health-care related operations for the next 12 months?

- a. Increase substantially
- b. Increase moderately
- c. Remain the same
- d. Decrease

C5. If you expect your financial gains from health-care related operations to increase, what would be the primary reason(s)? Please identify your top 3 in priority order.

- 1. Increase in market demand
- 2. Reduction in operating costs
- 3. Increase in price of services or products
- 4. New technology and innovation
- 5. Partnerships and consolidation
- 6. Improved regulatory environment
- 7. Other (please specify) _____
- 8. Not expected to have an increase in financial gains

C6. What are your biggest business concerns over the next year? Please identify your top 3 in priority order.

1. Access to capital
2. Cost of IT
3. Reimbursement changes
4. Availability of skilled workforce
5. Labor unions
6. Changing patient demographics
7. Fiscal challenges at the state and federal levels
8. Regulatory environment
9. Provision of quality care
10. Other (please specify) _____

C7. Over the next year, do you see your organization (please pick one)

- a. Acquiring?
- b. Growing organically and by same-store sales?
- c. Focused on operations?
- d. Constricting and selling off assets?

C7a. In the next year, where do you anticipate experiencing health care-related investments?

- a. Partnerships and/or joint ventures
- b. Workforce development
- c. New technology
- d. New products or business lines
- e. Other (please specify) _____
- f. N/A

C8. Looking towards the future, what health care sectors do you believe to promise growth? Please identify your top 3 in priority order.

1. Health-care IT
2. Managed care
3. Acute care services
4. Long-term care
5. Post-acute care services
6. Outpatient services
7. Pharmaceuticals/ bio-tech
8. Medical device
9. Genomics/ personalized medicine
10. Population health
11. Other (please specify) _____

C9. How important is it to your business to be located in Nashville?

- a. Very important
- b. Important
- c. Not important

C9a. Why do you think Nashville is important to your business?