

# **KING COLLEGE**

## **SCHOOL OF BUSINESS**

### **KING INSTITUTE FOR REGIONAL ECONOMIC STUDIES (KIRES)**

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## **The Role of Health Care in the Tri-Cities Economy: Trends, Projections and Economic Impacts**

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### Introduction

This paper describes and quantifies the contribution of the health care sector to the Tri-Cities economy. The first section of the paper presents the current state of the local health care sector in terms of employment and earnings, the 10-year trend in health care sector employment and employment projections for the intermediate term. The second section of the paper presents an analysis of the economic impacts of the health care sector on total employment and earnings in the Tri-Cities economy. The analysis presented in section two is accomplished through the use of economic impact multipliers developed for the Tri-Cities region.

The Tri-Cities region includes the Tennessee counties of Hawkins, Sullivan, Washington, Carter and Unicoi, the Virginia counties of Scott and Washington and the city of Bristol, VA. These counties and Bristol, VA make up the Johnson City and Kingsport-Bristol Metropolitan Statistical Areas (MSA), as defined by the US Bureau of Labor Statistics (BLS).

### Health Care Sector Situation and Outlook

Employment trends by sector in the Tri-Cities mirror those exhibited nationwide over the past decade. The main feature of this trend is a loss of jobs in the goods-producing industries, primarily manufacturing, and a gain in jobs in the services sectors, including health care. The recession of 2007-09 buttressed this trend as over half of jobs lost nationwide and in the Tri-Cities were in the manufacturing sector. Over the past decade, 2002-2011, employment in the health care sector rose about 48 percent in the Tri-Cities while employment in all other sectors fell almost 5 percent (Figure 1).

Employment in the health care sector rose from slightly less than 17,000 in 2002 to more than 25,000 in 2011. The breakdown of health care employment and wages by occupation for 2011 is presented in Table 1. Slightly more than 65 percent of health care jobs are in the Health Care and Practitioners category. The mean annual wage for health care employees is around \$50,000, well above the nearly \$ 37,000 mean for all occupations in 2011. The mean annual wage is largest for the relatively small category, Medical and Health Services Managers, and it is lowest for Health Care Support employees, who represent nearly one-third of all health care employees..

The health care sector accounted directly for 13.4 percent of total employment in the Tri-Cities and for 18.3 percent of annual wages received by employees in all occupations. In the next section of this paper, the total contribution of the health care sector, the direct plus spillover effects, are considered.

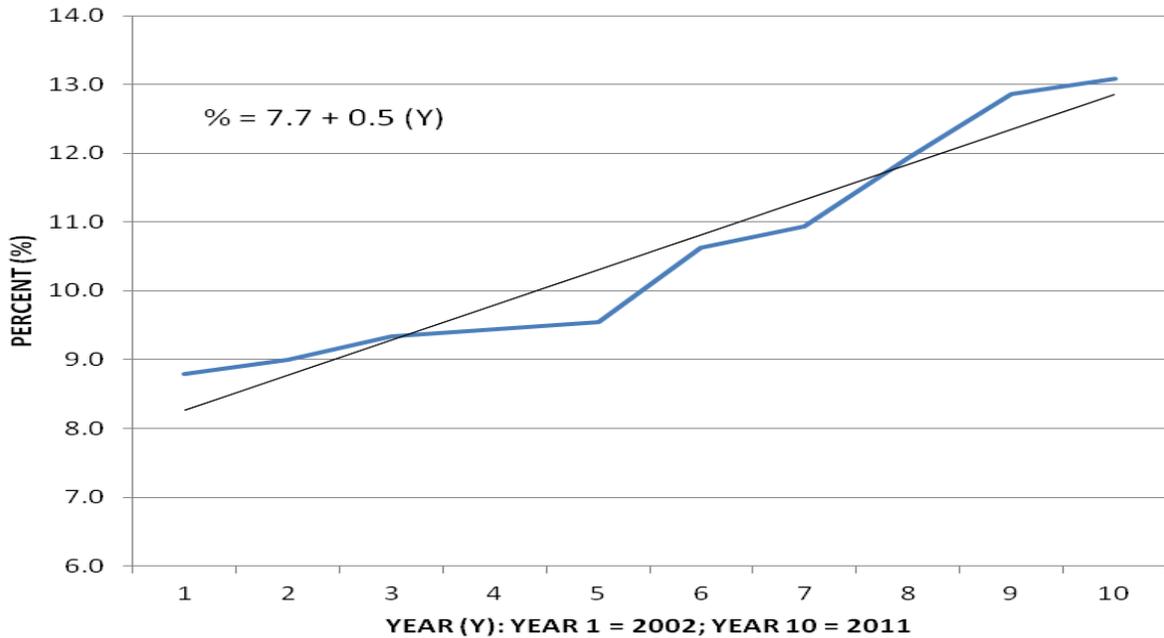
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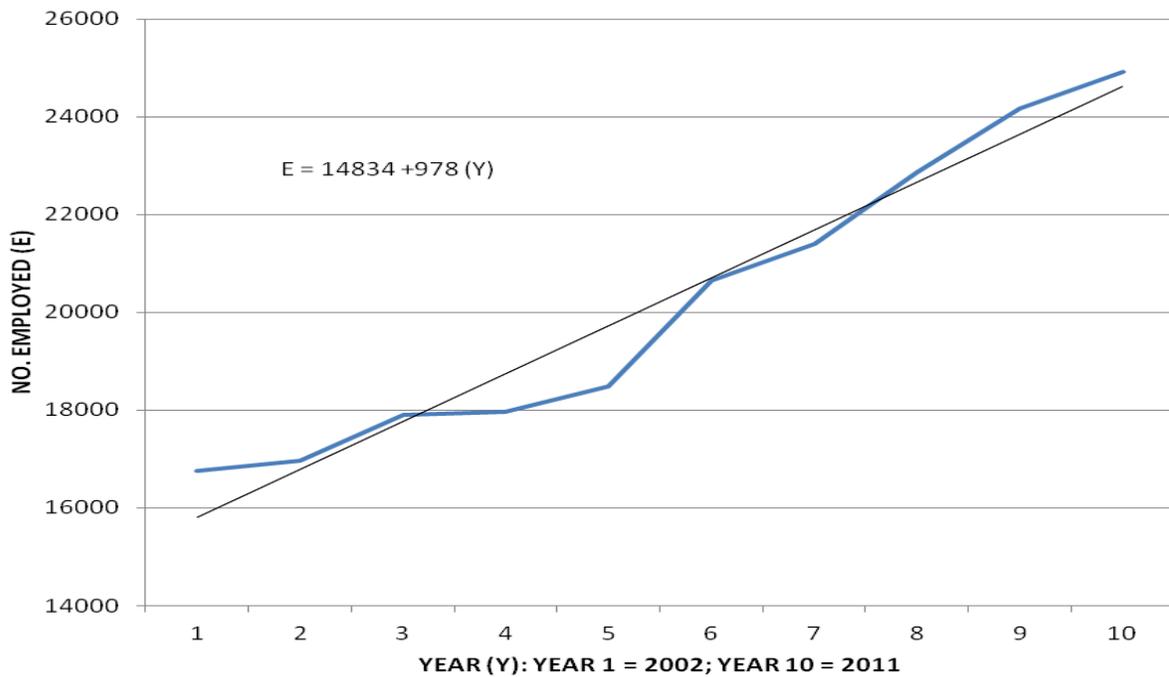
ITEM:	Employment	Mean Annual Wage
All Occupations	191,020	\$ 36,780
Health Care Occupations:		
Health Care Practitioners & Technical	16,740	\$ 60,850
Health Care Support	8,260	\$ 26,830
Medical & Health Services Managers	570	\$ 81,760
Total Health Care	25,570	\$ 50,330
Percent Health Care	13.4 %	
Source: Compiled from <i>Occupational Employment Statistics</i> , US Bureau of Labor Statistics, May 2011.		

Trends in health care employment over the 2002-2011 period are shown in Figures 2 and 3. There is every reason to expect a continuation of the forces, mainly demographic, that have driven the expansion of the health care sector over the past decade, and the new health care law, popularly known as Obamacare, is likely to increase demand for health care services.

**Figure 2. Health Care Employment As Percent Of Total Employment, Tri-Cities, 2002-2011**



**Figure 3. Health Care Employment, Tri-Cities, 2002-2011**



Health care sector employment as a percent of total employment in the Tri-Cities grew from less than 9 percent in 2002 to 13.4 percent in 2011 (Figure 2). The sector's share of total employment grew 0.5 percent annually over the 2002-2011 period. If this growth rate were sustained, health care employment would account for almost 18 percent of total employment by 2020. During the

same time period, health care sector employment rose by 978 jobs per year (Figure 3). Should this growth rate be sustained, health care employment would top 34,000 by 2020.

### Health Care Sector Economic Impacts

The Bureau of Economic Analysis (BEA) in the US Department of Commerce makes regional economic impact multipliers available through its Regional Input-Output Modeling System (RIMS II). These multipliers allow users to estimate the extent to which a one-time or a sustained change in economic activity will be supplied by industries within a region and, consequently, how this change in economy activity will affect total employment, earnings and output of goods and services in the region.

The RIMS II multipliers are based on fixed interindustry relationships in the 2010 national input-output (I-O) accounts developed by BEA. To develop multipliers for the Tri-Cities, the national I-O relationships are adjusted to reflect the industrial structure and trading patterns in the region's economy as of 2010. These adjustments are based on knowledge and assumptions about the extent to which increases in demand for intermediate goods and services will be supplied by businesses located within the region.

We report multipliers for health care and other selected industries in the Tri-Cities. These industries account for the vast majority of employment and earnings for residents of the region and represent a broad cross section of the region's economic activity. The BEA supplied multipliers for 62 industries existing in the region in 2010, the latest year for which regional multipliers are available. The complete package of multipliers is available upon request.

The employment and earnings multipliers in Table 2 demonstrate the importance of the health care sector to the Tri-Cities economy. The health care sector is represented by three subsectors: (1) Ambulatory Health Care Services (primarily, offices of physicians and dentists, outpatient care centers, medical and diagnostic laboratories and home health care services), (2) Hospitals and (3) Nursing and Residential Care Facilities (primarily, nursing care facilities, mental health and substance abuse facilities and community care facilities for the elderly). Multipliers are reported for each subsector and for the total health care sector. The latter multipliers are estimated by weighting the subsector multipliers by their respective share of total health care employment (41 percent for Ambulatory Health Care Services, 37 percent for Hospitals and 22 percent for Nursing and Residential Care Facilities).

Comparative analysis of the information shown in Table 2 reveals that the employment and earnings multipliers for the services sectors, including health care, generally are smaller than those for manufacturing. Thus, the shift in employment patterns over the past decade is a double-edged sword ... manufacturing creates larger economic impacts, but services, including health care, provide more stable employment. The employment multipliers for the health care sector are, however, significantly larger than employment multipliers for the other services sectors with a high level of employment ... retail trade, educational services, administrative and support services and food and drinking places.

It was noted earlier that the health care sector accounts directly for 13.4 percent of total employment in the Tri-Cities and 18.3 percent of annual wages. The employment multiplier for the total health care sector is estimated at 1.63, meaning that for every 100 jobs created in the health care sector, 63 jobs are created in other sectors of the Tri-Cities economy. Thus, the health care sector accounts, directly and indirectly, for 21.8 percent of total employment in the Tri-Cities (13.4 percent \* 1.63).

During the 2002-2012 period, employment in the health care sector increased by 978 jobs per year. An additional 978 health care jobs support 616 jobs in other sectors of the Tri-Cities economy ( $978 \times 0.63$ ). The annual gain in total employment due to expansion in the health care sector is, consequently, 1,594 jobs per year.

<b>Table 2. Economic Impact Multipliers, Health Care and Selected Industries, Tri-Cities</b>		
	Direct	Direct
	Jobs	Earnings
<b>INDUSTRY</b>	Multiplier <sup>1</sup>	Multiplier <sup>2</sup>
Health Care, Total Sector:	1.63	1.45
Hospitals	1.69	1.51
Ambulatory Health Care Services	1.72	1.43
Nursing & Residential Care Facilities	1.35	1.41
Construction	1.63	1.57
Fabricated Metal Product Mfg.	1.99	1.74
Machinery Manufacturing	2.04	1.70
Chemical Manufacturing	2.05	1.61
Plastics & Rubber Products Mfg.	1.91	1.77
Food & Beverage Mfg.	2.27	2.19
Transportation Equipment Mfg.	2.33	2.55
Wholesale Trade	1.97	1.59
Retail Trade	1.37	1.53
Credit Intermediation & Related Services	2.29	1.80
Educational Services	1.33	1.41
Professional, Technical & Scientific Services	1.74	1.40
Management of Companies & Enterprises	2.12	1.44
Administrative & Support Services	1.28	1.42
Food Services & Drinking Places	1.27	1.58
Accommodation	1.52	1.77
Source: Bureau of Economic Analysis (BEA), US Dept. of Commerce		
<sup>1</sup> Total change in the number of jobs in all industries for each additional job in the row industry.		
<sup>2</sup> Total dollar change in earnings of households employed in all industries for each additional dollar of earnings paid to households employed in the row industry.		

The earnings multiplier for the total health care sector is 1.45. This means that for each additional \$100 of wages paid to households employed in the health care sector, an additional \$45 is earned by households employed in other sectors of the Tri-Cities economy. Whereas, the

health care sector accounts directly for 18.3 percent of annual wages earned by households in the Tri-Cities , the earnings multiplier demonstrates that 26.5 percent of wages earned by all households in the Tri-Cities may be traced back to the health care sector (18.3 percent \* 1.45).

The multipliers reported in Table 2 for the three health care subsectors show that the Hospital and Ambulatory Health Care Services subsectors have significantly larger employment multipliers than the Nursing and Residential Care Facilities subsector. The creation of 100 new jobs in the Hospitals and Ambulatory Health Care Services subsectors supports 69 and 72 new jobs, respectively, in other sectors of the Tri-Cities economy; creation of 100 new jobs in the Nursing & Residential Care subsector supports 35 new jobs in other sectors of the economy.

The effect on total employment in the Tri-Cities due to increased demand for health care services depends, to some extent, on relative growth rates for the three subsectors. The projections of future growth in health care employment presented in this paper are based on the existing division of health care employment across the three subsectors.

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The King Institute for Regional Economic Studies (KIRES) was established with a threefold mission in mind: build a knowledge base of the regional economy, inform private and public decision-making and provide King College students an opportunity to participate in research projects.

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