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## **Frontiers (Summer 2011) - Special Insert: The Impact of Education, Research and Patient Care**

University of Tennessee Medical Center

University of Tennessee Graduate School of Medicine

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## **THE IMPACT OF EDUCATION, RESEARCH AND PATIENT CARE.**

### AN ECONOMIC IMPACT ANALYSIS OF THE UNIVERSITY OF TENNESSEE MEDICAL CENTER & THE UT GRADUATE SCHOOL OF MEDICINE

#### **BACKGROUND**

While there are more than 5,000 hospitals in the United States, there are only 132 academic medical centers. These medical centers substantially impact the nation's health care economy, research advances, and patient care quality. At a national level, academic medicine's commitment to advancing patient care and research are vital components to generating economic impact and improving the health of the economy. According to a 2008 study by the Association of American Medical Colleges (AAMC), academic medical centers accounted for more than \$512 billion of economic impact nationwide. East Tennessee is fortunate to have an established, nationally recognized academic medical center in Knoxville, TN. The University of Tennessee Medical Center (UTMC) includes the UT Graduate School of Medicine (UTGSM). Together they are a powerful economic engine for the region.

#### **KEY FINDINGS**

UTMC is an economic engine in our state affecting every resident of East Tennessee in some fashion.

- The Medical Center generated approximately \$615 million within the state in overall economic impact in 2009.
- Over 6,700 jobs in Tennessee were supported by UTMC.
- Approximately half of all UTGSM trained residents and fellows stay in the region after graduation to practice medicine. UTMC residents and fellows represent an additional economic impact of \$34 to \$45 million annually for Tennessee.
- State government revenues attributable to the presence of UTMC totaled \$13.6 million in 2009.
- The economic impact of the UTGSM research engine is estimated at \$20 million and creates 189 jobs as a result of its activities and spending.
- Having an academic medical center in East Tennessee is a significant factor in making this region an attractive location for new residents and businesses.

## ECONOMIC IMPACT

### STATEWIDE GENERATOR

UTMC supports approximately \$615 million in economic impact and more than 6,700 jobs in Tennessee. Conversely, the loss of UTMC or the complacency of its programs could result in the defection of business from Tennessee and the region.

Tripp Umbach’s analysis demonstrates UTMC, renowned as a first class medical center committed to high quality patient care, education and discovery; is a significant economic activity generator in Tennessee. The economic impact of UTMC operations is an ongoing reality unfolding each day. The activity surrounding UTMC is apparent. There are 200 full-time faculty and more than 200 clinical and volunteer faculty on campus.

### REGIONAL IMPACT

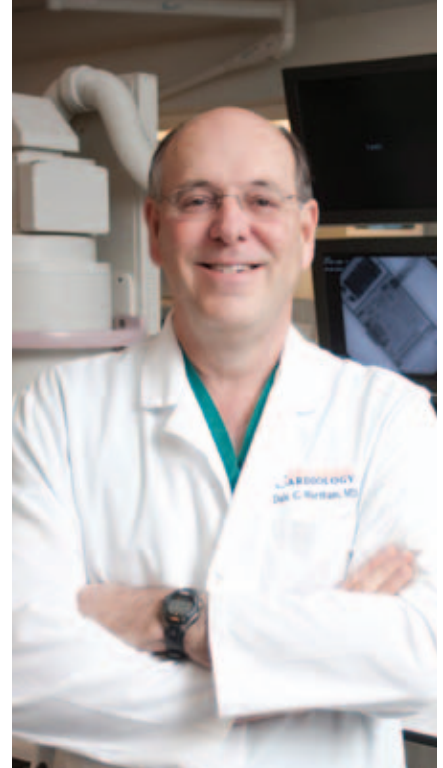
The total UTMC operational economic impact within East Tennessee is approximately \$312 million. This includes approximately \$173 million of direct economic impact generated by UTMC spending on goods and services within the region; and UTMC employee spending within the region. The indirect impact, generated by the spending of UTMC suppliers, vendors and supporting industries, is approximately \$139 million. The fact the region has a teaching hospital with a national reputation attracts health professionals who enhance and grow the workforce for the state and region. The significant impact would not occur without the expertise of our almost 500 medical and dental staff with the best educational background, credentials and clinical interest assuring that patients receive the most comprehensive care needed in the East Tennessee region.

**TABLE 1: DIRECT AND INDIRECT ECONOMIC IMPACT**

	TOTAL		UTMC		UTGSM	
	TENN.	E. TENN.	TENN.	E. TENN.	TENN.	E. TENN.
<b>TOTAL</b>	\$614.8	\$312	\$506.5	\$268.6	\$108.4	\$43.4
<b>DIRECT</b>	\$267.3	\$173.3	\$220.2	\$149.2	\$47.1	\$24.1
<b>INDIRECT</b>	\$347.5	\$138.7	\$286.3	\$119.4	\$61.3	\$19.3

All numbers in millions.

Table 1 demonstrates the Total economic impact of the University of Tennessee Medical Center (UTMC) and the University of Tennessee Graduate School of Medicine (UTGSM).



**UTMC affects business volume in Tennessee and the local region in two ways:**

- 1. Direct expenditures** for goods and services by UTMC, its employees, physicians, researchers, students, patients, and visitors. This spending supports local businesses, which in turn employ local individuals to sell the goods and provide the services UTMC constituencies need.
- 2. Induced or indirect spending** within Tennessee. The businesses and individuals who receive direct expenditures re-spend this money within the state, thus creating the need for even more jobs.

## EMPLOYMENT IMPACT

### JOBS FOR THE STATE & REGION

UTMC is a major employer, providing quality sustainable employment to a diverse group of workers. Dramatic levels of economic expansion created by UTMC support increased demand for additional employment in the state and regional economy. In 2009, over 6,700 full time jobs in Tennessee were provided directly by UTMC or indirectly as a result of UTMC operations.

These jobs include not only 3,738 direct jobs employed by UTMC but also 2,990 indirect jobs created for supply and equipment vendors, contractors and laborers for the construction and renovation of UTMC facilities, and jobs created in the community at hotels, restaurants and retail stores in support of UTMC workforce and its visitors. Consequently, the majority of employee spending radiates throughout the regional economy to create economic activity and additional jobs.

**TABLE 2: DIRECT AND INDIRECT EMPLOYMENT IMPACT**

	TOTAL		UTMC		UTGSM	
	TENN.	E. TENN.	TENN.	E. TENN.	TENN.	E. TENN.
<b>TOTAL (FTE)</b>	6,728	5,394	5,369	4,726	1,359	1,208
<b>DIRECT</b>	3,738	3,709	2,983	2,954	755	755
<b>INDIRECT</b>	2,990	2,225	2,386	1,772	604	453



All numbers represent full-time equivalent (FTE).

Table 2 shows that over 6,700 full-time jobs are supported directly and indirectly by UTMC & UTGSM.

## TAX REVENUE IMPACT

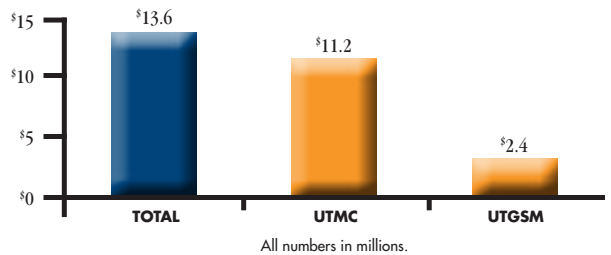
### SUPPORTING TENNESSEE & LOCAL GOVERNMENT

Academic medical centers are major generators of state tax revenue. State government revenues attributable to the presence of UTMC totaled \$13.6 million in 2009. Sales tax is the primary source of government revenue. Sales tax revenue arises from UTMC employees spending the income they earn as well as sales taxes from spending of income generated by the center.

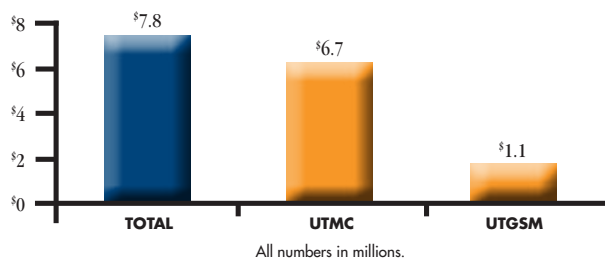
It is important to note that UTMC receives no funding from the State's general funds. All of the economic impact is generated through patient, research grants, and service grants for specialty services.

Through its local spending as well as direct and indirect support of jobs, the presence of UTMC stabilizes and strengthens the local and statewide tax base. UTMC is an integral part of the economy—generating revenue, jobs and economic impact.

**TAX REVENUE IMPACT — TENNESSEE**



**TAX REVENUE IMPACT — EAST TENNESSEE**





## Research, Medical Innovation & the Related Economic Benefit

Research and medical innovation provides multiple benefits beyond pure economics and employment. Each day, UTMC's physicians and scientists collaborate to discover and develop new and exciting treatments and technologies in their respective fields.

Clinical research studies, or clinical trials, are an active area of UTMC's research expertise. In 2009, UTGSM sponsored over 104 active clinical trials involving 13,790 patients. These patients visit Knoxville from all parts of the country and stay anywhere from 2-6 days.

**As a result of its strong research programs, the economic impact of the UTGSM research engine is \$20 million (direct impact and indirect impact) and creates 189 jobs.** These jobs include direct employment by UTMC research professionals and indirect jobs created for supply and equipment vendors, contractors and laborers for the construction and renovation of facilities, administrators and managers who support the research infrastructure and jobs created in the community by the income of the scientific workforce.

UTMC research operations make tangible and quantifiable economic contributions. Along with creating jobs for research staff and support personnel, the UTGSM scientists are contributing to new product development and technology commercialization. Knowledge and technology transfers have helped start commercial ventures promoting entrepreneurship, economic development, and job creation.

## Education of Medical Professionals

Beyond economic benefits, academic medical centers train physicians who are likely to locate their practices locally and provide a wide range of community outreach and volunteer services to the underserved.

The economic impact of a new medical practice is significant. In 2009, 49% of the 65 UTGSM residents and fellows, who completed their training, remained in East Tennessee to practice medicine. **Tripp Umbach estimates UTGSM residents who remain within the state after graduation to practice medicine represent an additional impact of \$34 to \$45 million annually.** The state of Tennessee benefits from an educated workforce, including current faculty and students and retired faculty and alumni who reside or work in-state.

UTGSM's healthcare education resources have a multitude of other impacts on the state. The quality of healthcare resources available enhances workforce productivity and the quality-of-life of state residents. In addition, education is well documented in providing a present value of future earnings impact for education recipients. The increased earning power of Tennessee-trained healthcare professionals provides a return in terms of increased tax revenues to state and local government, and increased income for other in-state recipients of healthcare professionals' spending of disposable income.



Tripp Umbach is a national leader in conducting feasibility analysis / economic impact studies and consultation services for leading academic medical campuses and for new or expanded medical schools. The firm has provided consultation and economic impact analysis services to 18 new or expanded medical schools over the past six years.

Since 1995, Tripp Umbach has completed four national studies measuring the economic impact of all 130 medical schools and more than 400 teaching hospitals for the Association of American Medical Colleges (AAMC) making Tripp Umbach the most qualified firm to assess the feasibility and economic impact of medical schools and academic medical centers. In 2000, 50 of the top 100 academic medical centers ranked by U.S. News & World Report were active clients of Tripp Umbach. Since 1990, Tripp Umbach has completed individual studies for more than 75 academic medical centers.