The Economic Impact of the Wright State University Boonshoft School of Medicine

2008 Executive Report
Introduction

Academic health care is a driving force in the overall U.S. health care economy and a critical growth engine for the state of Ohio. Current estimates show that the nation now spends more than $2 trillion annually on health care. While there are more than 5,000 hospitals in the United States, there are just 129 academic medical colleges. However, it is these medical colleges and their affiliated teaching hospitals, as part of the broader academic health center organizational structure, that impact a substantial part of our current health care economy. According to a national study by the Association of American Medical Colleges, academic health centers accounted for more than $450 billion in 2005, nearly one quarter of the entire U.S. health care industry.\(^1\)

The seven medical colleges and 105 affiliated teaching hospitals that compose Ohio’s medical education industry are significant engines of economic expansion whose impact is regional, statewide, and even national. Although less than four percent of the total U.S. population resides in the state of Ohio, approximately six percent of the total economic impact of the U.S. academic health care industry is attributable to Ohio-based medical colleges and affiliated teaching hospitals.

Communities in all regions of Ohio rely on these seven medical colleges and teaching hospitals for direct job creation and attraction of new out-of-state and international investment. With one in 12 workers in Ohio working directly or indirectly for a medical school or teaching hospital, the academic health industry is one of Ohio’s leading generators of employment.

The Wright State University Boonshoft School of Medicine, along with Ohio’s six other medical schools, retained the services of Tripp Umbach to measure the 2007 impact of the medical schools and their core and non-core affiliated teaching hospitals (see fig. 1) on the state of Ohio. This executive report summarizes the overall economic, employment, and government revenue impacts generated by the Boonshoft School of Medicine, the school’s faculty practice plan (Wright State Physicians), and its teaching affiliates. A complete report of the study’s findings is also available, as is a comprehensive version addressing the combined impact of all seven medical schools.

Although this report focuses on statewide economic impact, the medical school and its affiliated teaching hospitals naturally have the most direct and substantial impact on the Dayton Region as a whole and the local communities within it, where most spending, employment, and economic activity by visitors take place. Beyond strictly economic benefits, medical schools also have a long-term effect on regional prosperity and quality of life by training physicians who are likely to locate their practices locally, continue to contribute to the economy, and provide essential services for the community, and by making the area more appealing to new businesses, residents, and visitors.

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1 Tripp Umbach. Economic Impact of Medical Schools, Association of American Medical Colleges, 2005.
Summary of Findings: Ohio’s Seven Medical Colleges

The Wright State University Boonshoft School of Medicine is part of an impressive statewide concentration of academic health centers. In 2007, the seven medical colleges and their affiliated teaching hospitals in Ohio had a combined economic impact on the State of Ohio of $37.2 billion, an increase of approximately $16.5 billion since 2002. This increase is attributable not only to the growing economic impact of the academic health care industry, but also to the increased number of teaching affiliates associated with Ohio’s medical colleges: 62 in 2002, and 105 in 2007. Ohio ranked sixth in the nation, behind only New York, Pennsylvania, California, Massachusetts, and Texas, in terms of the economic impact of its academic health care industry.

Ohio’s academic health care industry also accounted for 425,000 FTEs (full time equivalent positions). Nearly one of every 12 workers in Ohio was employed, directly or indirectly, by a medical school or teaching hospital in 2007.

The medical colleges and teaching hospitals generated nearly $1.6 billion in total state tax revenue in 2007. During the same period, the state provided $149.6 million in funding for medical education, meaning that Ohio received approximately $10 in tax revenue for every $1 invested in the state’s medical colleges. 2

In 2007, the seven medical colleges directly accounted for $413 million in NIH (National Institutes of Health) research grant funding, or two thirds (66 percent) of all NIH grants awarded to the state. 3 The total economic impact of all medical school graduates who remain in Ohio after graduation equals nearly $700 million annually.

Key Findings: Wright State University Boonshoft School of Medicine

The study specifically looked at three key areas of impact generated by the Wright State University Boonshoft School of Medicine, its faculty practice plan, and its teaching affiliates: overall economic impact, employment, and government revenue.

Overall Economic Impact

The combined direct and indirect overall economic impact of the Wright State University Boonshoft School of Medicine, its medical student education and research enterprise, Wright State Physicians, and the resident training and research enterprise of its core affiliated hospitals equalled $850.5 million in 2007.

In addition to its firsthand impact, the medical school has an extensive network of operations from which its faculty, staff, researchers, students, and residents influence the academic and research health care industry of Ohio. Just as it would be presumptive to attribute the statewide operational impact of its affiliated hospitals to the medical school, it would be overly limiting to consider only the operations of the school itself.

The medical school’s broader “academic health care industry,” which includes the full activity of its core and non-core affiliated hospitals, contributed to a total economic impact of $3.1 billion in 2007. This includes $1.4 billion in direct spending and $1.8 billion in re-spending by recipients.

Businesses operating within the state of Ohio in the wholesale, retail, service, and manufacturing sectors also benefit from the direct expenditures of the school and its staff on goods and services. In addition, Ohio businesses benefit from spending generated by hospital patients, patients’ visitors, and medical students and their visitors. These “direct” expenditures are then re-circulated in the economy as recipients spend a portion of this income with other businesses and individuals, phenomenon often termed the “multiplier” or “indirect” effect.

By bringing in funds from outside the state, the Wright State University Boonshoft School of Medicine also contributes substantially to a net expansion in the state economy. Sources of funds from outside Ohio include payments from patients who don’t live in the state, tuition and other payments by students from outside Ohio; and research funding, endowments, and other contributions from out-of-state sources. The school also creates economic benefits such as spending outside of the school and its affiliates by out-of-state students, patients, visitors, and participants in sponsored conferences, seminars, and symposiums.

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2 http://www.ohio.gov/financial/index.php
Employment

The Boonshoft School of Medicine and its teaching affiliates are also major regional employers, providing quality sustainable employment to a diverse group of workers. The school, its medical student education and research enterprise, its faculty practice plan, and the resident training and research enterprise of its core affiliated hospitals also contribute 13,334 full-time equivalents to the ranks of Ohio workers.

In addition, the business volume generated by the academic health centers creates increased demand for additional employment in a broad range of sectors throughout the state’s economy. The “employment-multiplier” related to the economic impact of the seven Ohio medical colleges and teaching hospitals is responsible for thousands of additional jobs. In total, the Boonshoft School of Medicine’s “academic health care industry” supported 46,767 jobs in Ohio directly or indirectly related to its operations.

Government Revenue

The school, its medical student education and research enterprise, its faculty practice plan, and the resident training and research enterprise of its core affiliated hospitals also contributed $24 million of state tax revenue to Ohio.

Government revenue generated by the school and its affiliates consists of state income taxes paid by staff members, employed and independent contractor physicians, and medical residents, as well as sales tax, corporate net income tax, and other selective business taxes. The school’s entire “academic health care industry” contributed a total of $89.9 million to government revenue in 2007. Ohio’s academic health care industry continues to demonstrate an organizational capability to produce medical school graduates and generate jobs for Ohio, which in turn produces more tax dollars for the state.
Uncompensated Care

While the economic impacts of institutional expenditures and job creation in Ohio are substantial, the Wright State University Boonshoft School of Medicine and its teaching affiliates also contribute to the regional and state economy by providing care for the uninsured. Uncompensated care is a major financial burden on many teaching hospitals and integrated academic health organizations. Although academic health centers comprise less than 6% of the nation’s acute care hospitals, estimates show they provide 50% of uncompensated care in the United States.4

Uncompensated care includes care provided for uninsured patients, forgiveness of bad debt, and Medicare and Medicaid shortfalls. Tripp Umbach estimates that total uncompensated care provided by the school and its teaching hospital affiliates equaled more than $260.8 million in 2007.

Research, Innovation, Business Spin-Offs

In addition to creating jobs and providing direct economic benefits, research and medical innovation undertaken by medical school and affiliated hospitals are enabling major advances in medical knowledge. Research at the Boonshoft School of Medicine and other medical schools in Ohio is fundamental to the future health status of Ohio residents. Since the majority of research funding is from federal sources, revenue for research activities also represents “fresh dollars” to the Ohio economy.

In 2007, BioOhio and Tripp Umbach teamed to quantify the economic and employment impact generated by Ohio’s commercial biosciences industry, which is fueled by the research and resources generated by Ohio’s medical colleges and teaching hospitals. In 2006, the commercial biosciences in Ohio accounted for an overall (direct and indirect) operational impact of more than $27 billion and an overall employment impact of over 128,000 jobs. Since 2004, 181 commercial bioscience companies have developed or been recruited to the state of Ohio.5

University-based research is an important source of innovation for industry, especially in the biological sciences, and it contributes substantially to the generation of spin-off businesses. Companies in the medical technology, biomedical, and many other industries within the Dayton region and across the state have undoubtedly benefited from research conducted at the Boonshoft School of Medicine and its affiliates, as well as the expanded research capabilities they provide.


Education of Medical Professionals

The U.S. model of medical education, led by a faculty deeply involved in research and clinical practice, produces health care practitioners with skills and training among the best in the world. Medical professionals trained at the Wright State University Boonshoft School of Medicine have the opportunity to learn from some of the nation’s most renowned physicians, scientists, researchers, and other professionals. This depth of teaching excellence attracts medical students of the highest caliber to train in the state, and many physicians and other professionals who graduate from the school choose to remain in the Dayton region or elsewhere in Ohio and serve the state’s citizens for a substantial portion of their careers. The economic impact of new medical practice is significant.

Ohio’s health care education resources have a multitude of other impacts on the state. The quality of health care resources available enhances workforce productivity and the quality of life of state residents. These enhancements do not go unnoticed in the location decisions of industry. In addition, education is well documented in providing a present value of future earnings impact for education recipients. Although not quantified in this report, increased earning power of Ohio-trained health care professionals provides a return in terms of increased tax revenues to state and local government, and increased income for other in-state recipients of health care professionals’ spending of disposable income.

6 “A Comparative Assessment of Southwest Pennsylvania as a Business Location,” Tripp Umbach report to the Conference on Real Estate of Southwestern Pennsylvania.
Ohio’s Medical Colleges: Vision and Challenges for the 21st Century

The Ohio Council of Medical Deans, an alliance of Ohio’s seven medical colleges founded in 1993, has worked together to create a vision that addresses the needs of the state by focusing on the improvement of health care through:

- Increased cost effectiveness
- Increased quality
- Improved access

The medical colleges of Ohio, at the forefront of today’s health care delivery system, recognize the dynamic demographic, social and economic forces that will have dramatic effects on the availability and affordability of medical care for the citizens of Ohio.

Access to available and affordable health care has been greatly influenced by a variety of factors including the spread of managed care, the aging of our citizenry, medical malpractice decisions, the costs of advanced technology, and changing cultural behaviors. In short, we now live in an age where medical science can produce treatments that most people can no longer afford. The average US household spent approximately 5% of their before-tax income on health care expenditures in 2004. The lowest income households spend five times more on health care than the highest income households, but spend less than half the amount of the highest income households in absolute dollar terms.8

The medical colleges of Ohio believe that while the problems besetting the health care system are both pervasive and critical, they are not insurmountable. Ohio’s medical colleges are doing their part and will do more. Through their residency programs and teaching hospitals, Ohio’s medical colleges provide the lion’s share of health care to the medically indigent. They likewise continue to make dramatic advances in the prevention, diagnosis, and treatment of cancer, heart disease and other serious illnesses.

Through collaborative efforts of all Ohio’s medical colleges, they are committed to:

- Increasing the number of primary care physicians while ensuring a better distribution of primary care resources throughout the state;
- Offering Ohio’s citizens the opportunity to benefit from newly developed medicines, procedures and technologies through improved coordination of information and resources;
- Searching out new opportunities for concerted programs of biomedical and health services research;
- Emphasizing cost-effective delivery of care in the education and training of physicians who will likely be practicing in a marketplace dominated by managed care corporations;
- Seeking to ensure that those populations and programs funded by government receive high quality, accessible, culturally sensitive, cost effective health care; and
- Increasing the number of under-represented individuals prepared for and admitted to Ohio’s medical colleges and practicing in Ohio.

By contributing economic, employment, research and social impacts to the state of Ohio, Ohio’s medical colleges are prepared to meet the health care delivery challenges facing us today. Using the intellectual and institutional resources in an intensive program of teaching, research and patient care, the medical colleges of Ohio will help ensure a brighter, healthier future for all of our citizens.

7 This section was included with excerpts from the Medical Education for Ohio Resource Guide, The Council of Deans Ohio Colleges of Medicine.
## Overall economic impact

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>School, medical student education/research enterprise, faculty practice plan, and resident training/research enterprise of core affiliated hospitals</td>
<td>$850.5 million</td>
</tr>
<tr>
<td>“Academic health care industry” (total activity by the school, faculty practice plan, and all affiliated hospitals)</td>
<td>$3.1 billion</td>
</tr>
<tr>
<td>Direct business volume impact</td>
<td>$1.4 billion</td>
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<tr>
<td>Indirect business volume impact</td>
<td>$1.8 billion</td>
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<tr>
<td>Spending for capital improvements, goods, supplies, and services</td>
<td>nearly $770 million</td>
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<tr>
<td>Spending by staff</td>
<td>over $339.4 million</td>
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<tr>
<td>Spending by employed physicians</td>
<td>$56.1 million</td>
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<tr>
<td>Spending by residents and students</td>
<td>$31.1 million</td>
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<tr>
<td>Spending (outside of school/hospitals) by patients not from Ohio</td>
<td>$25.7 million</td>
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<td>Spending by visitors not from Ohio</td>
<td>$39.8 million</td>
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<tr>
<td>Spending by event attendees not from Ohio</td>
<td>$94.8 million</td>
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<tr>
<td>Business investments, inventory supported</td>
<td>$848.9 million</td>
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## Government revenue impact

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<td>“Academic health care industry” (total activity by the school, faculty practice plan, and all affiliated hospitals)</td>
<td>$89.9 million</td>
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<tr>
<td>Direct payments</td>
<td>$2.9 million</td>
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<tr>
<td>Income taxes paid by employees, others</td>
<td>$37.8 million</td>
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<tr>
<td>Sales tax</td>
<td>$31.7 million</td>
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<tr>
<td>Corporate net income tax</td>
<td>$7.5 million</td>
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<tr>
<td>Other selective business taxes</td>
<td>$11.4 million</td>
</tr>
</tbody>
</table>

## Employment impact

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>School, medical student education/research enterprise, faculty practice plan, and resident training/research enterprise of core affiliated hospitals</td>
<td>13,334 FTEs</td>
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<tr>
<td>“Academic health care industry” (total activity by the school, faculty practice plan, and all affiliated hospitals)</td>
<td>46,767 FTEs</td>
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