

Economic Impact of University of Mississippi Medical Center

Presented to:

Mississippi State Legislators

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The **LEWIN GROUP**

Overview

- ◆ Purpose
- ◆ Key findings
- ◆ Overview of UMMC
- ◆ Current economic impact of UMMC
- ◆ UMMC as a safety net provider
- ◆ UMMC as a major contributor to the healthcare workforce
- ◆ UMMC as a potential economic engine for the future
- ◆ Conclusions

Purpose of Study

- ◆ Describe the mission of UMMC
- ◆ Describe UMMC's role in the market
- ◆ Assess the economic impact of UMMC on metropolitan Jackson and the State
- ◆ Explore UMMC's potential to expand its biosciences research capability
- ◆ Inform policymakers and community leaders of the potential role that UMMC could play in future health care provision, research, medical education, and economic development

Key Findings

- ◆ UMMC is a critical component of the state's healthcare system
- ◆ UMMC is currently a major economic engine for Jackson MSA and the State
- ◆ UMMC is a major safety net institution and serves as a provider of last resort for the entire state
- ◆ As a major safety net provider, UMMC has limited ability to cost shift to private payers making additional state support necessary unless the proportion of private payers increases

Key Findings

- ◆ UMMC plays a critical role in building the healthcare workforce in the State where there is an evident shortage of physicians
- ◆ With substantial investment from the public and private sectors, UMMC could gain significant returns:
 - **Expansion of cancer care services and transplant program**
 - **Enhancement of biomedical research**
 - **Creation of a biotechnology research park**

Overview of UMMC

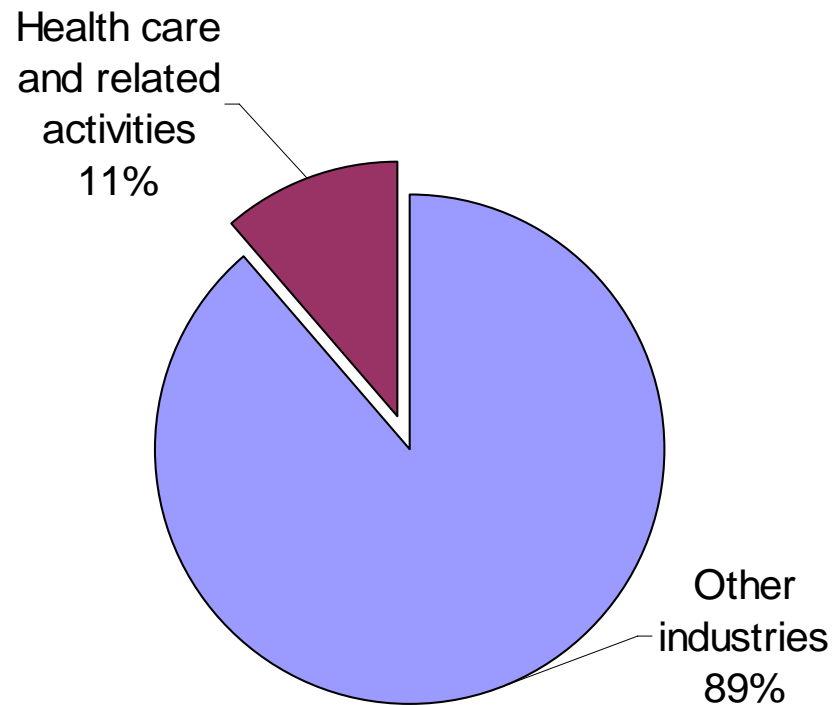
- ◆ UMMC is an educational, research, and clinical enterprise
- ◆ Clinical services are provided by The University Hospitals and Clinics (UHC)
- ◆ UMMC maintains graduate education programs in the life sciences including The Schools of Medicine, Nursing, Allied Health, and Graduate Programs in the Basic Sciences
- ◆ UMMC supports biomedical research, basic science research and several population-based research programs
- ◆ With appropriate investments, UMMC could expand its role as an economic engine for health sciences research and clinical resource for the region and State

UMMC Clinical Services

- ◆ Aside from preventive, acute, and chronic care, UMMC provides a number of complex medical & surgical services
- ◆ UMMC is the sole provider of several critical services in Mississippi, including:
 - *Organ and bone marrow transplant services*
 - *Trauma services through its Level I Trauma Center*
 - *Comprehensive children's health services including a Level III Neonatal Intensive Care Unit (NICU)*

Health care and related activities comprises 11% of employment in Jackson MSA, as well as the State

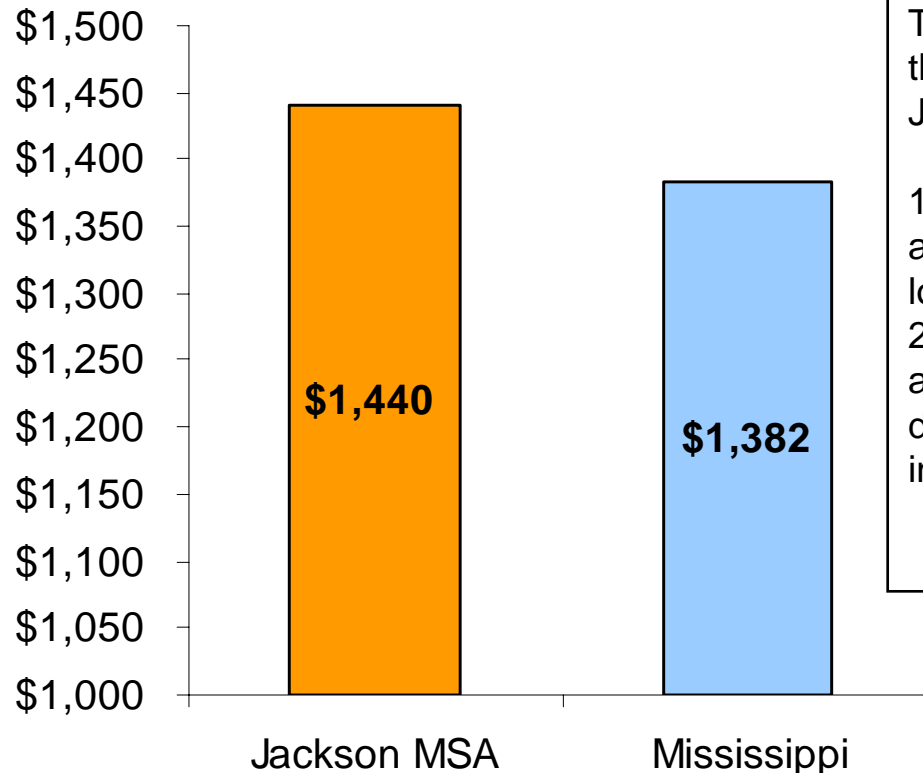
Employment by Industry in Jackson MSA and Mississippi
2004



Source: Bureau of Economic Analysis

Final demand represents 10% of Jackson's economy and 2% of the State's economy

**Estimated Impacts on Output in Jackson MSA
and Mississippi Attributable to UMMC
(in millions)**



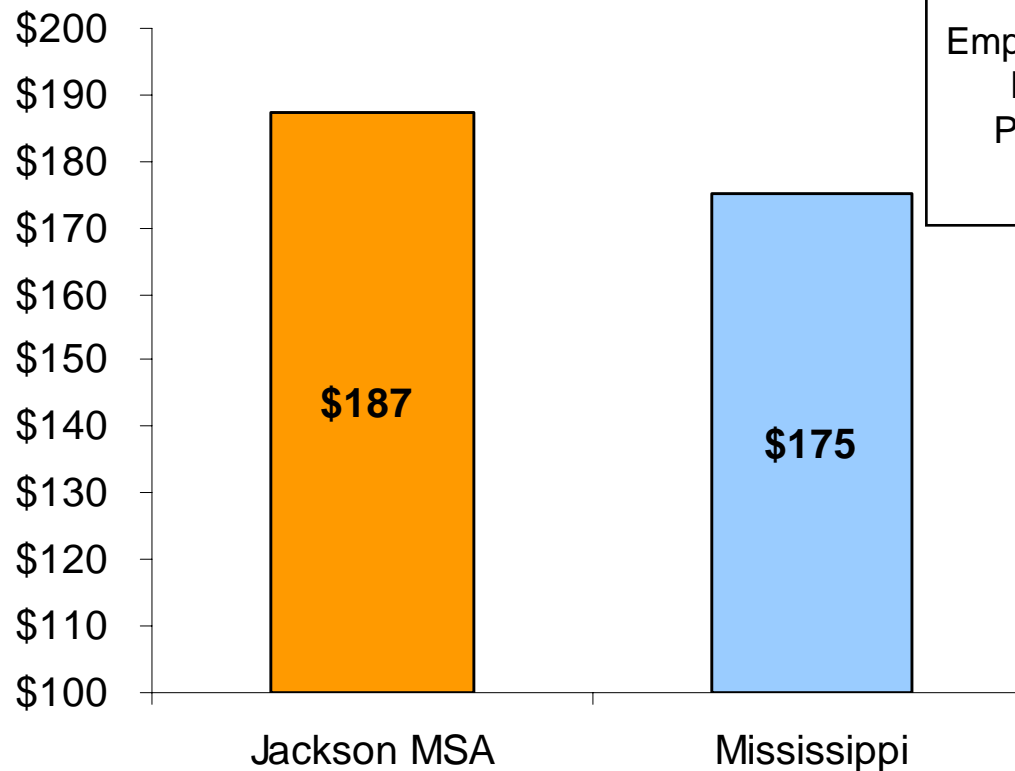
The estimate of final demand for the state is lower than that of Jackson MSA because...

- 1) UMMC's economic activities are heavily concentrated in the local economy
- 2) the state number is based on an average of all counties which downplays the output per worker in Jackson

Source: Lewin Group analysis using IMPLAN

UMMC generates a tax impact of over \$187 million for Jackson MSA and \$175 million for the State

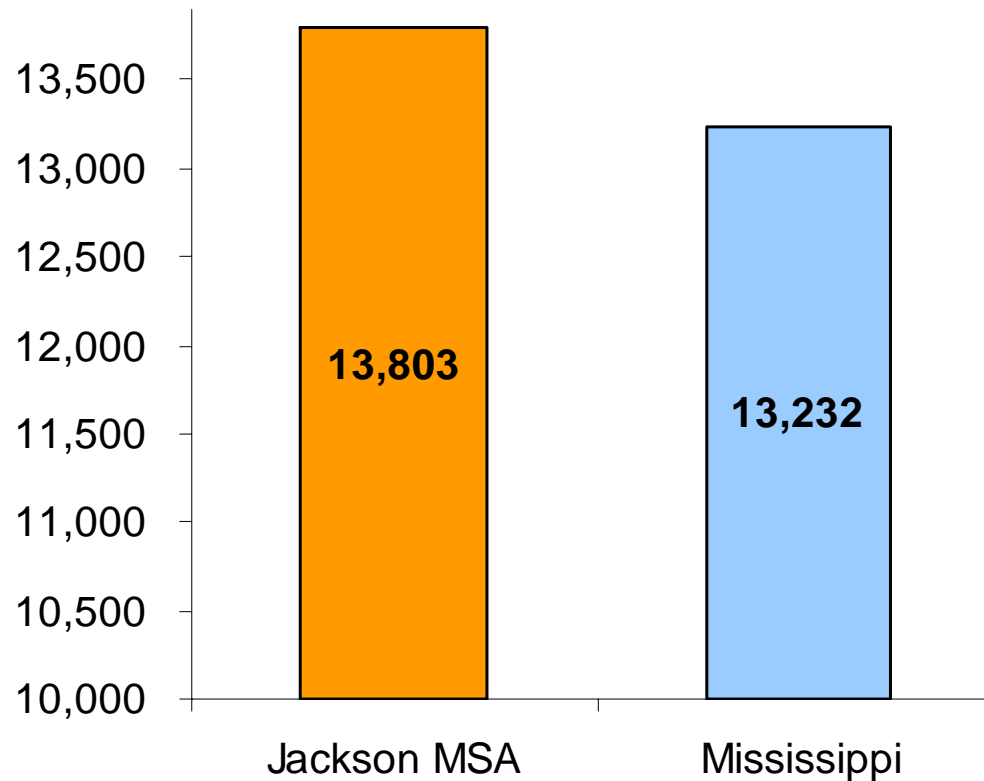
Estimated Tax Impact in Jackson MSA and Mississippi Attributable to UMMC (in millions)



Tax impact includes:
Employee compensation taxes
Indirect business taxes
Proprietary income taxes

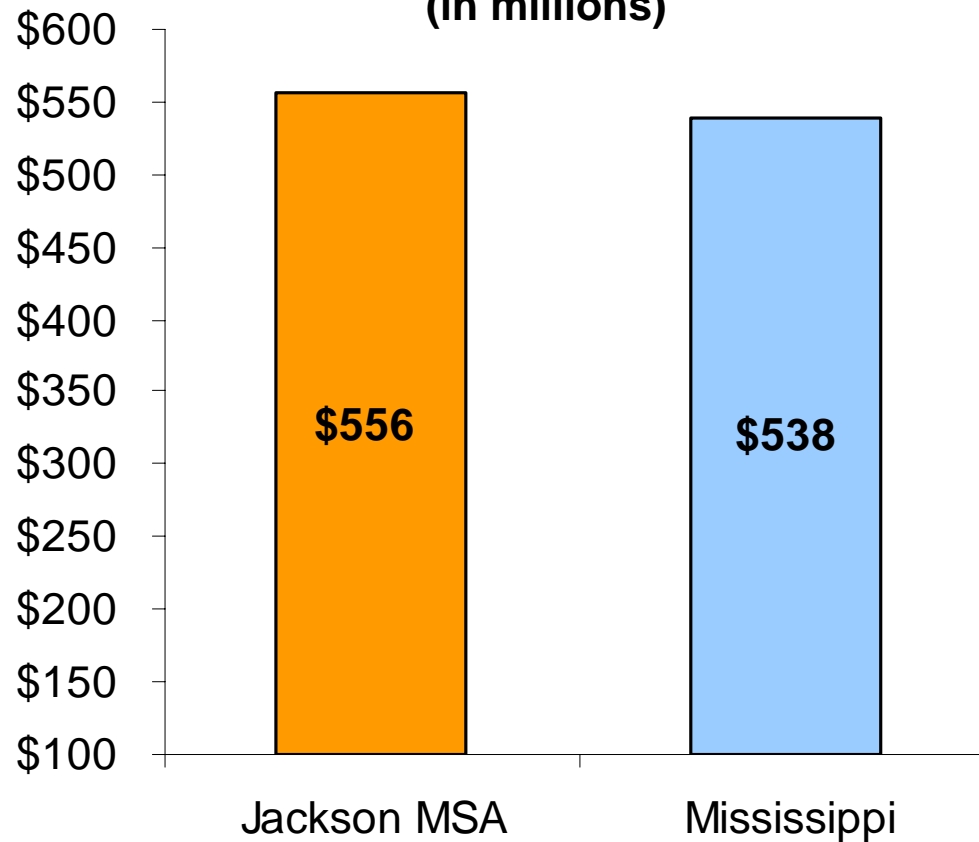
UMMC generates almost 14,000 jobs in the Jackson MSA and over 13,000 jobs in the State

Estimated Impacts on Employment in Jackson MSA and Mississippi Attributable to UMMC (number of jobs)

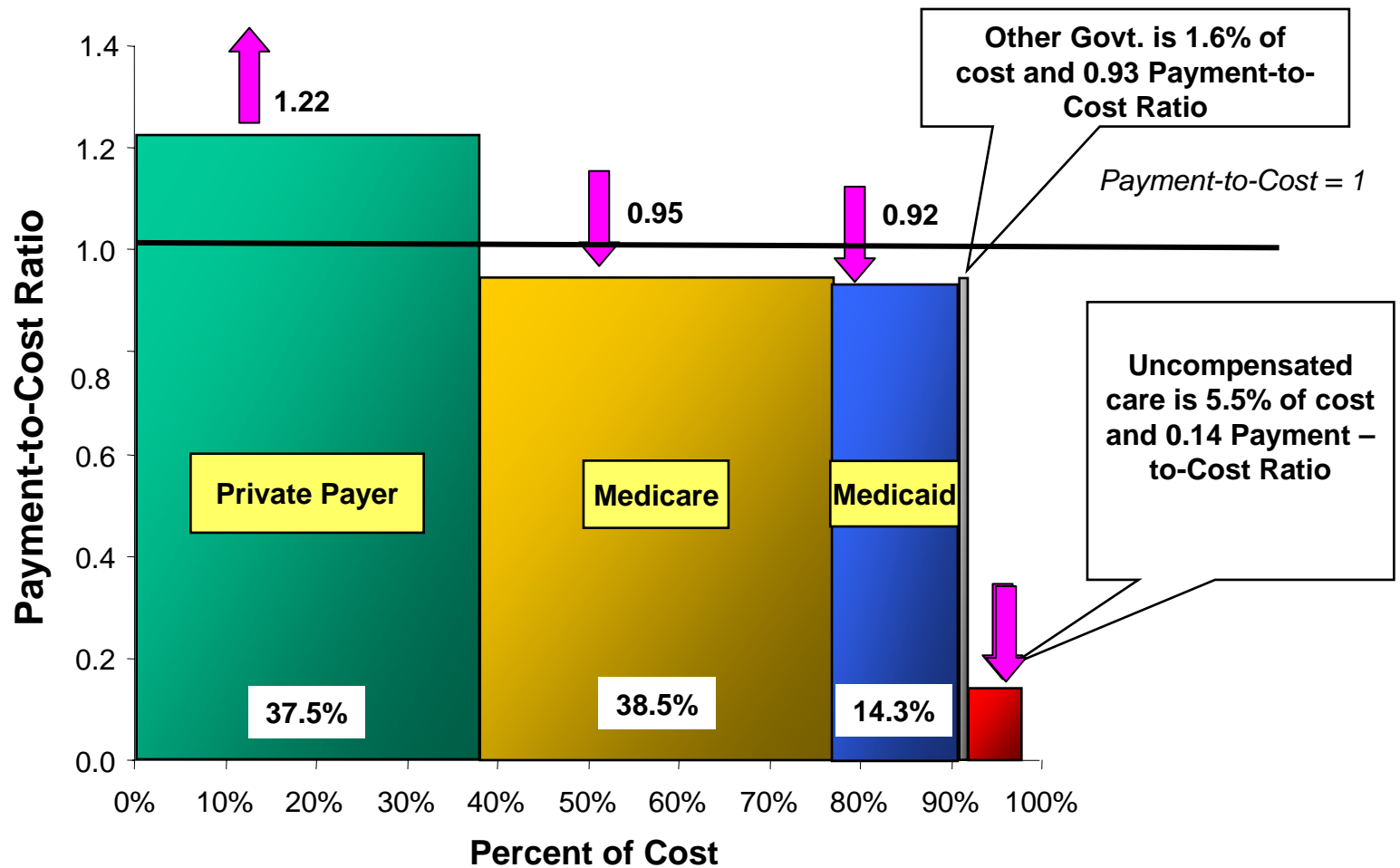


UMMC generates over \$556 million in labor income for Jackson MSA and \$538 million for the State

Estimated Impacts on Labor Income in Jackson MSA and Mississippi Attributable to UMMC
(in millions)

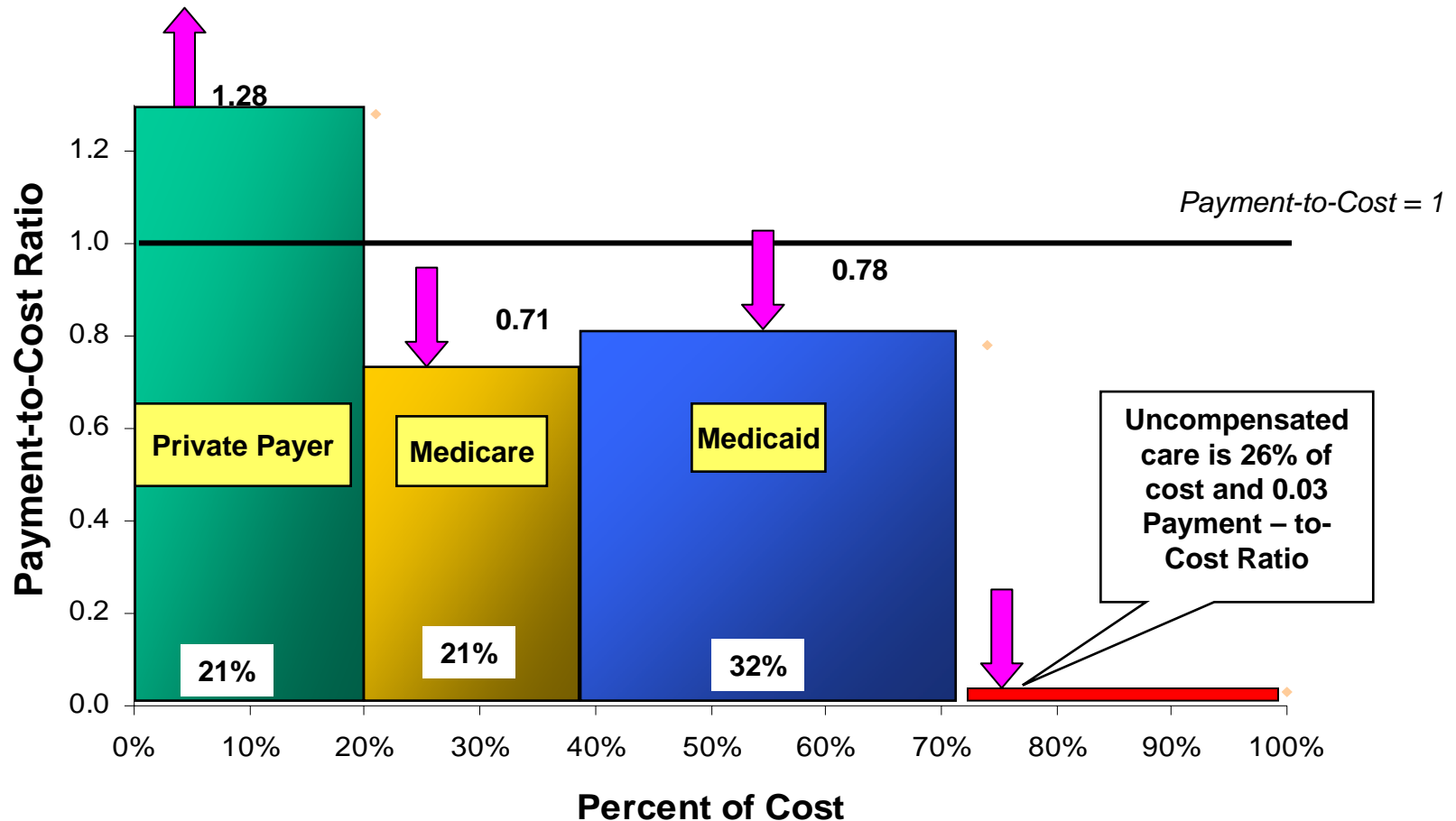


Nationwide hospitals are able to cost shift...



Source: Al Dobson, Joan DaVanzo and Namrata Sen, "The Cost-Shift Payment 'Hydraulic': Foundation, History, and Implications," Health Affairs, January/February 2006, volume 25.

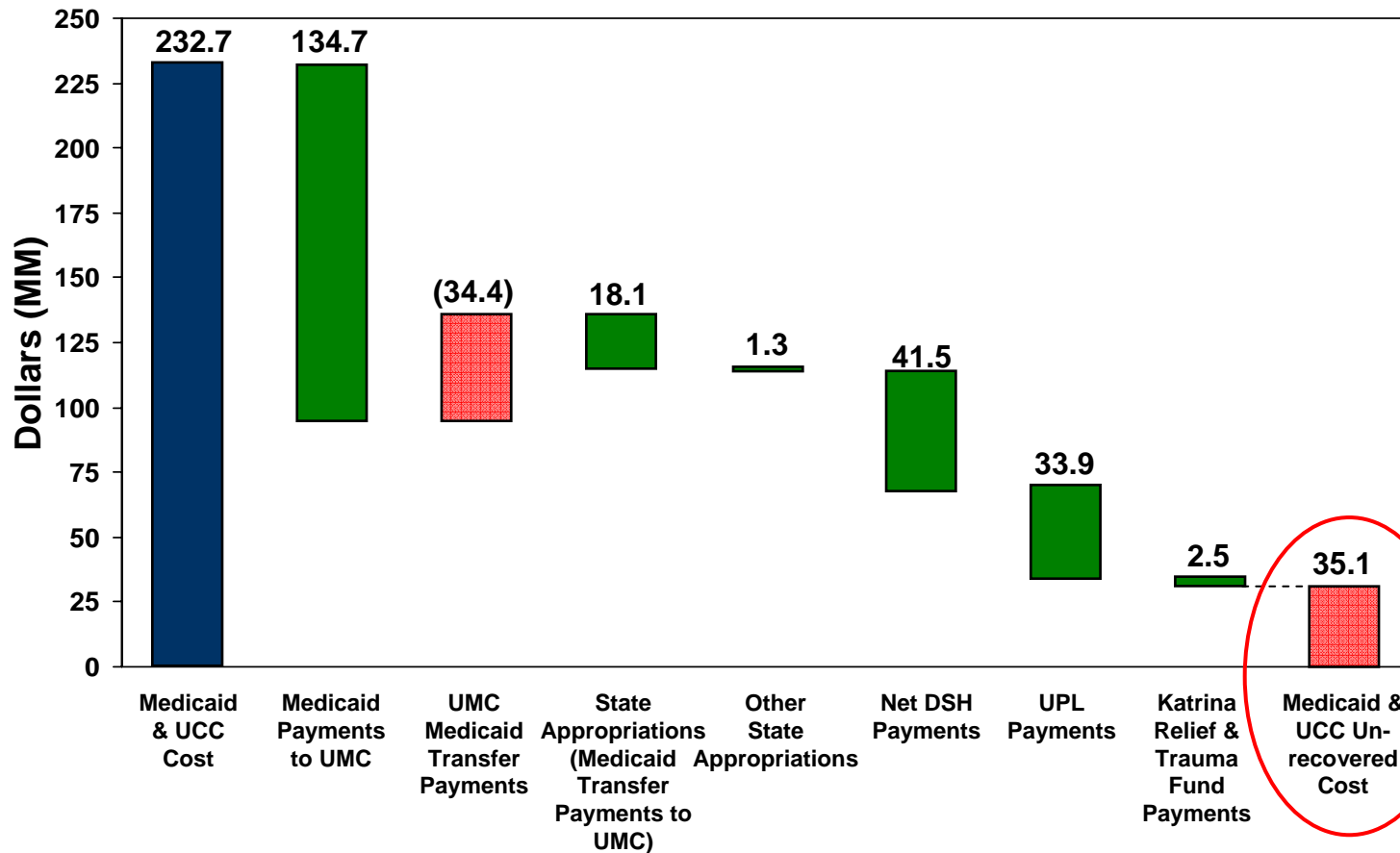
However, UMC's ability to cost shift to offset the shortfalls from public programs and the uninsured is limited



Source: The Lewin Group analysis of the 2005 AHA Annual Survey data provided by University of Mississippi Medical Center

This results in \$35.1 million in unrecovered costs for care provided by UMMC, despite public funding

UMMC Unrecovered Medicaid and Uncompensated Care Costs



Accumulating deficits from Medicaid transfer payments have put further pressure on UMMC

Effect of Medicaid Transfer Payments
(in millions)

Year	State Funds Appropriated to UMMC for Match	UMC Transfer Payments to Medicaid	Annual Surplus (Deficit) Due to Transfer Program
2000	\$18.2	\$17.8	\$0.4
2001	\$18.6	\$21.6	\$(3.0)
2002	\$19.1	\$29.9	\$(10.8)
2003	\$20.1	\$28.6	\$(8.5)
2004	\$18.1	\$25.3	\$(7.3)
2005	\$18.1	\$31.4	\$(13.3)
2006	\$18.1	\$34.4	\$(16.3)
Total	\$201.5	\$261.9	\$(60.4)

Source: UMMC Provided Data, FY 1995-2006. Lewin Analysis.

Should UMMC sustain itself through additional public funding or position itself in the market as provider of choice for private payers?

- ◆ By state mandate, 50% of the care provided by UMMC must be care provided to indigent and Medicaid population

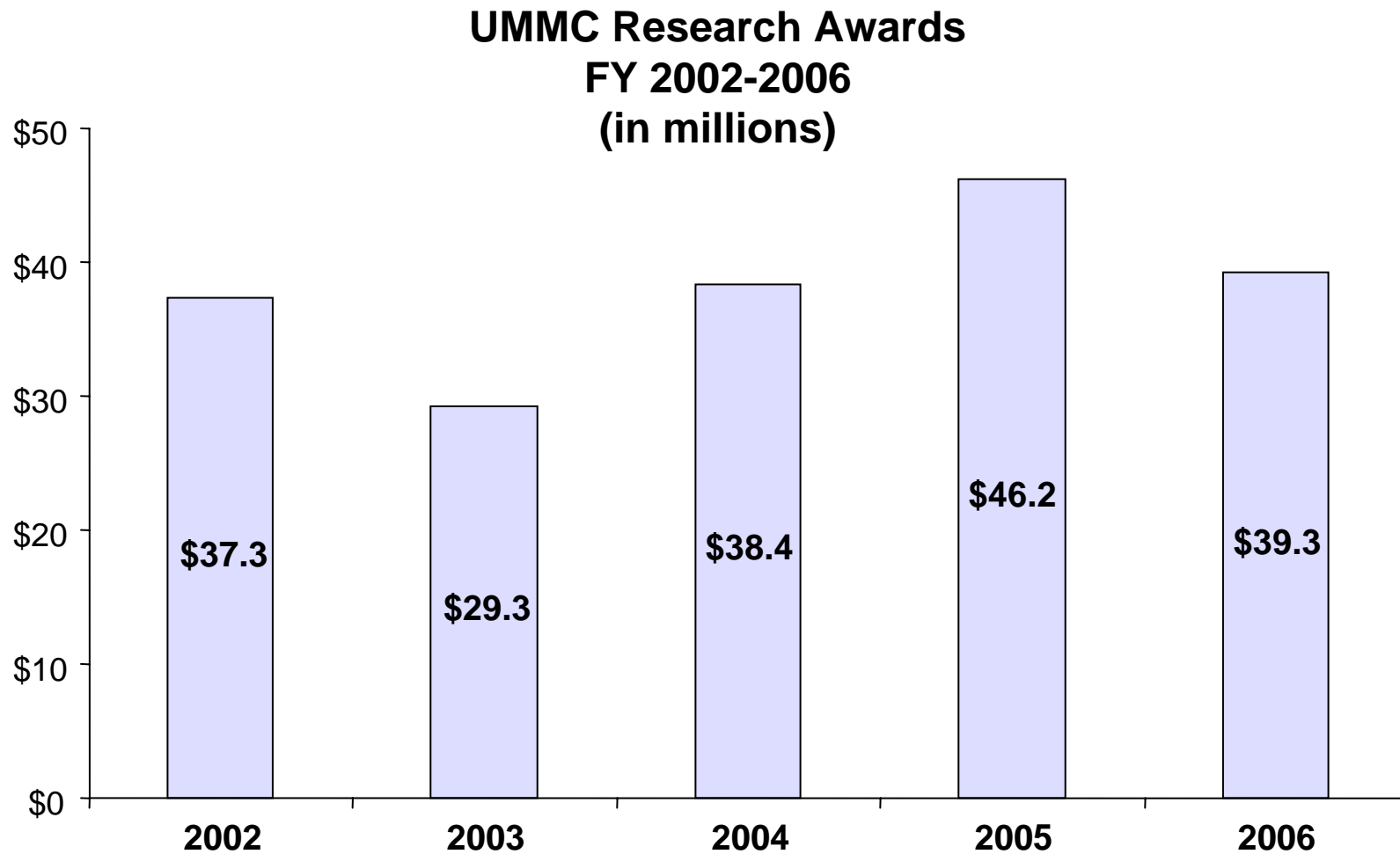
“...All University of Mississippi Medical Center locations shall provide in the aggregate not less than fifty percent (50%) of their services to indigent persons including qualified beneficiaries of the State Medicaid Program.”

- ◆ This limits UMMC’s ability to market themselves as a provider of choice to private payers
- ◆ Without additional state support, UMMC needs to market itself as a provider of choice to the private payers if it is to remain financially viable and position itself for future challenges

The medical school is important because...

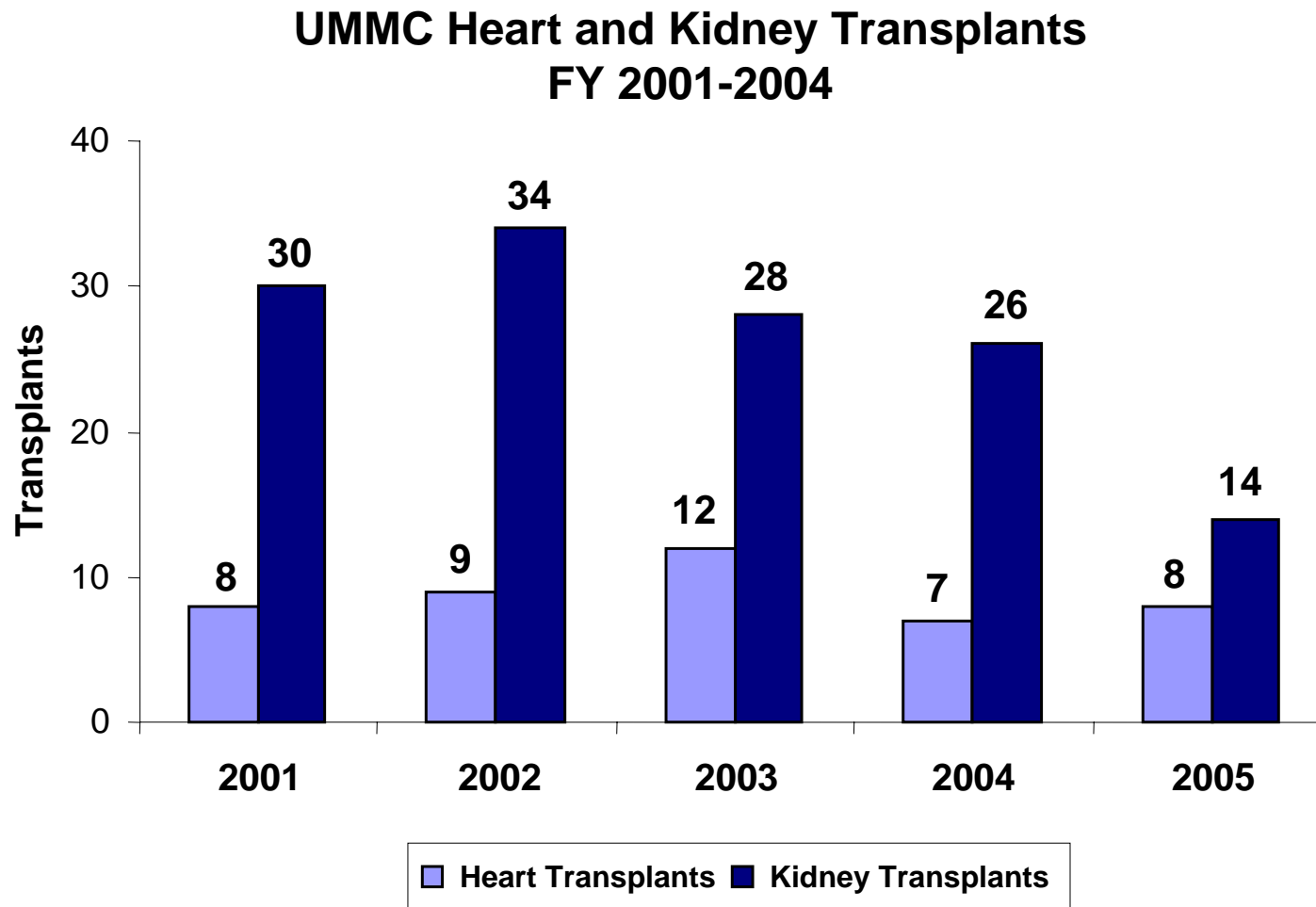
- ◆ Mississippi's per capita physician rate is well below the national average, and lowest amongst peer states
- ◆ More than 2/3 of the UMMC medical graduates remain in the State to practice medicine
- ◆ Despite the high retention rates of medical and nursing students, the training activities are not, as a sole source, adequate to meet the future needs of the entire biomedical work force
- ◆ Each physician that graduated from the UMMC medical education program and subsequently practiced in the region resulted in 5.1 jobs in any given year

Of the 123 medical schools receiving NIH funding in FY 2005, UMMC ranked 98th, suggesting an area of opportunity



Source: Institutional Annual Report on Research and Sponsored Programs, FY 2002-06.

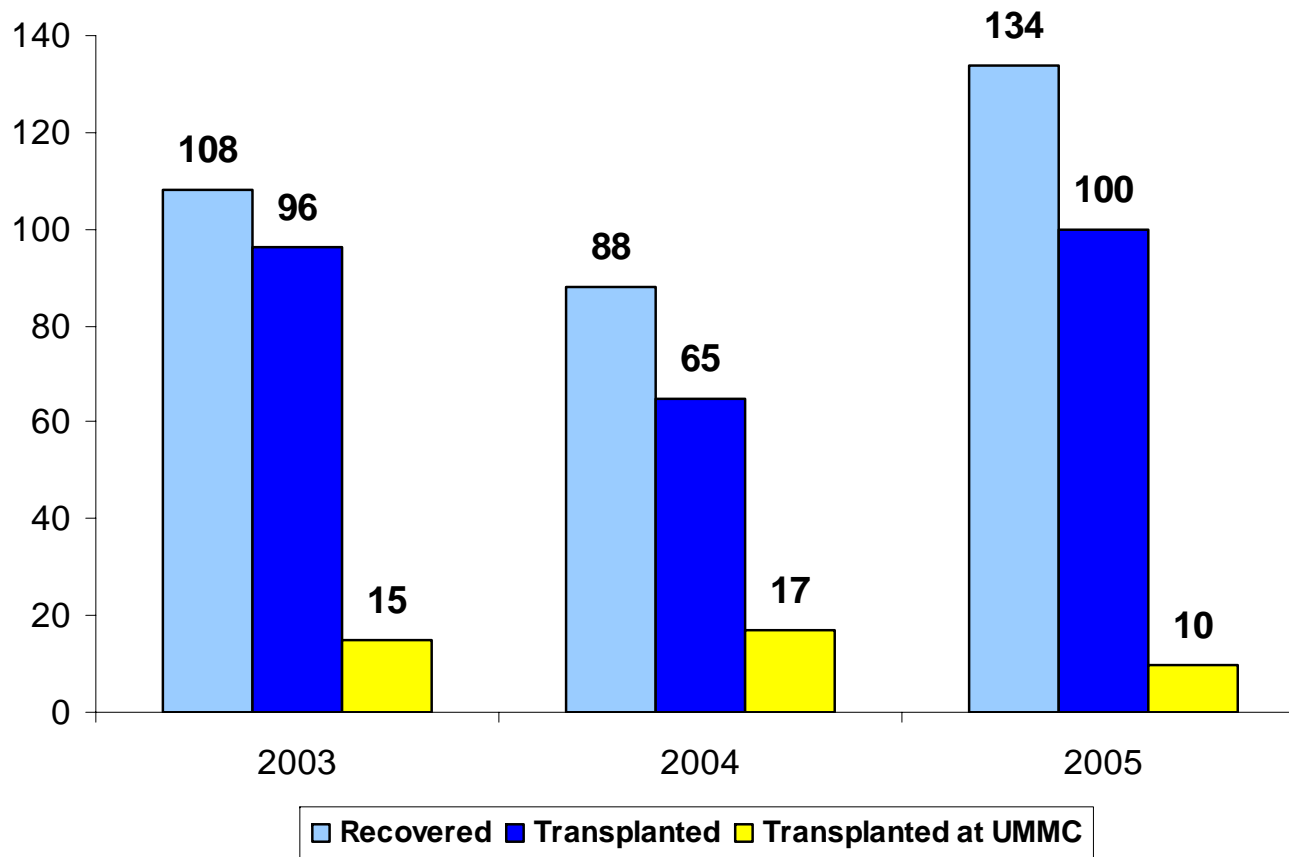
The number of kidney transplants decreased by almost 59% between 2002 and 2005



Source: Organ Procurement and Transplantation Network

Mississippi appears to be a large net exporter of kidneys for transplant

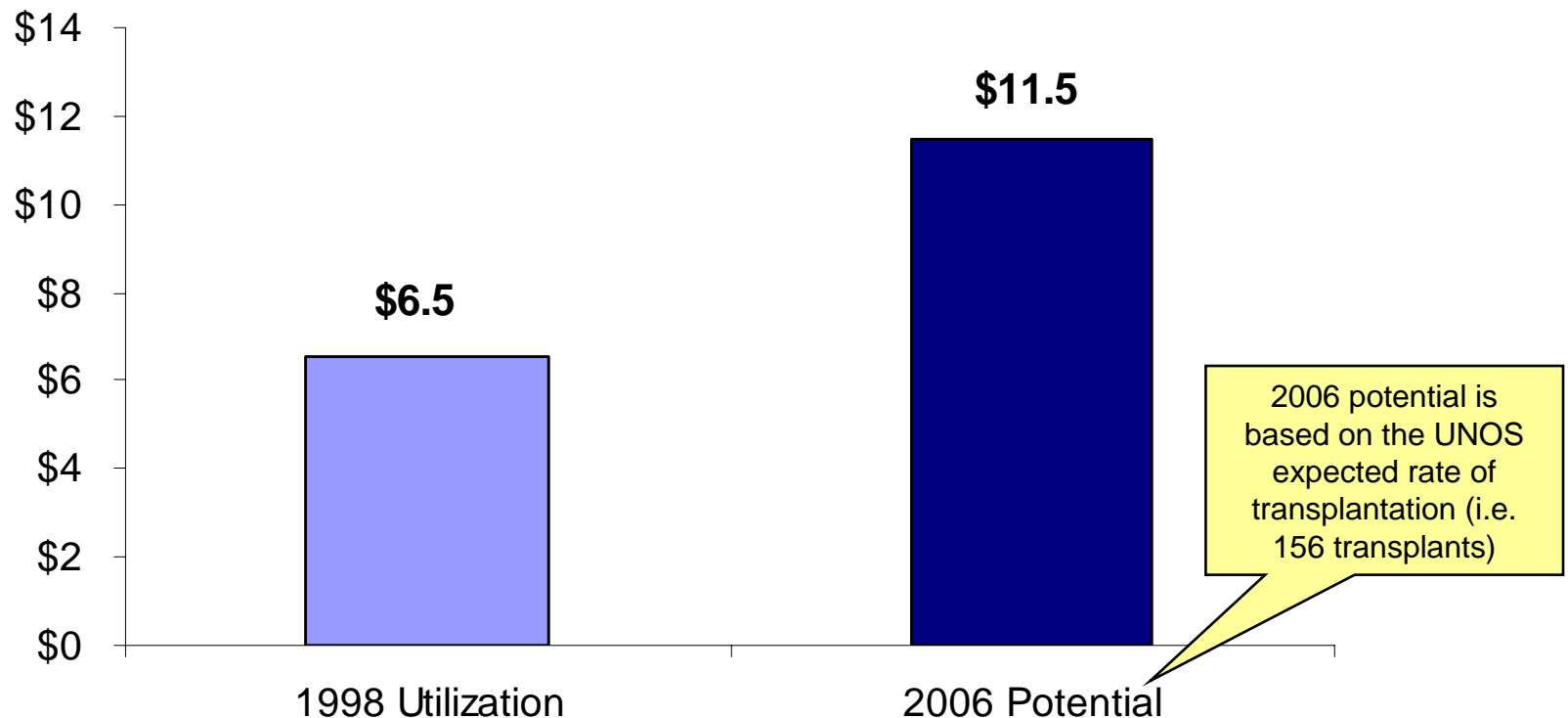
Mississippi Organ Recovery Agency (MORA)
Kidney Recoveries, Transplants and UMMC Transplants



Source: MORA historical data

The need for kidney transplantation is not being met, availing an opportunity to reap economic benefits & meet patient demand

**Economic Impact on Revenues Attributable to
Kidney Transplant Volume
(in millions)**



Cancer is the second leading cause of death in Mississippi

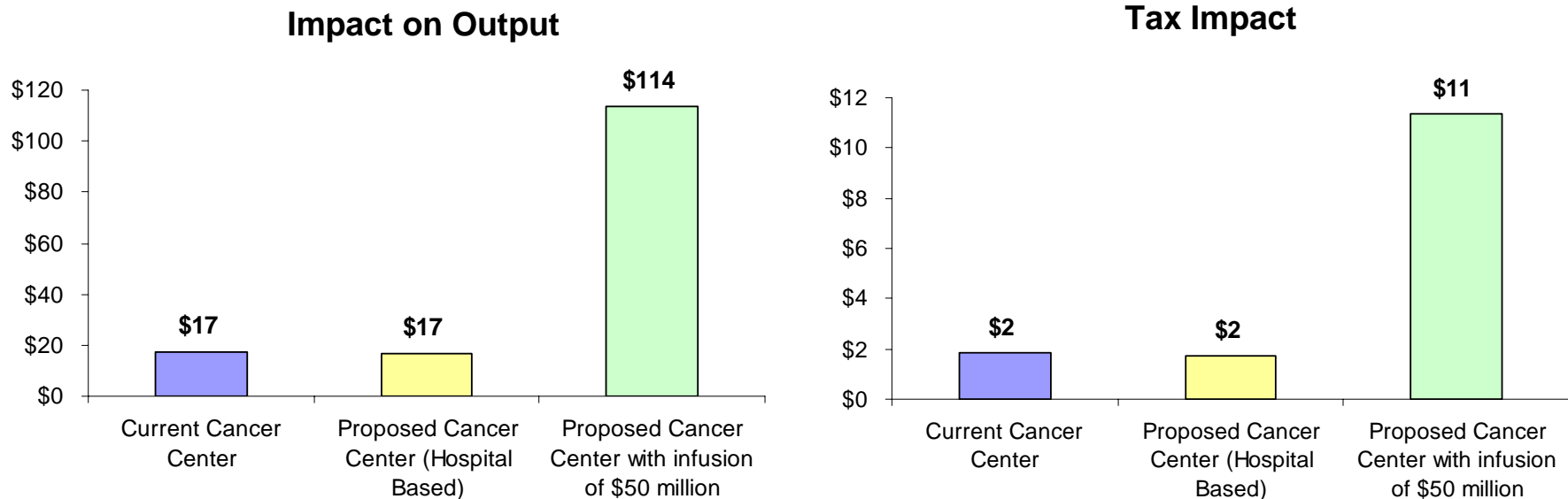
Estimated Incidence Rates by Type of Cancer for 2006

Type of Cancer	Mississippi (per 100,000)	U.S. (per 100,000)
All Cancers	517.6	466.6
Prostate	105.8	78.2
Breast	78.4	71.0
Lung and Bronchus	75.3	58.2
Colon and Rectum	57.2	49.5
Non-Hodgkin Lymphoma	19.2	19.6
Melanoma of the Skin	16.1	20.7
Urinary Bladder	16.1	20.5
Uterine Corpus	13.4	13.7
Leukemia	12.3	11.7
Uterine Cervix	5.5	3.2

Source: Mississippi Department of Health and American Cancer Society

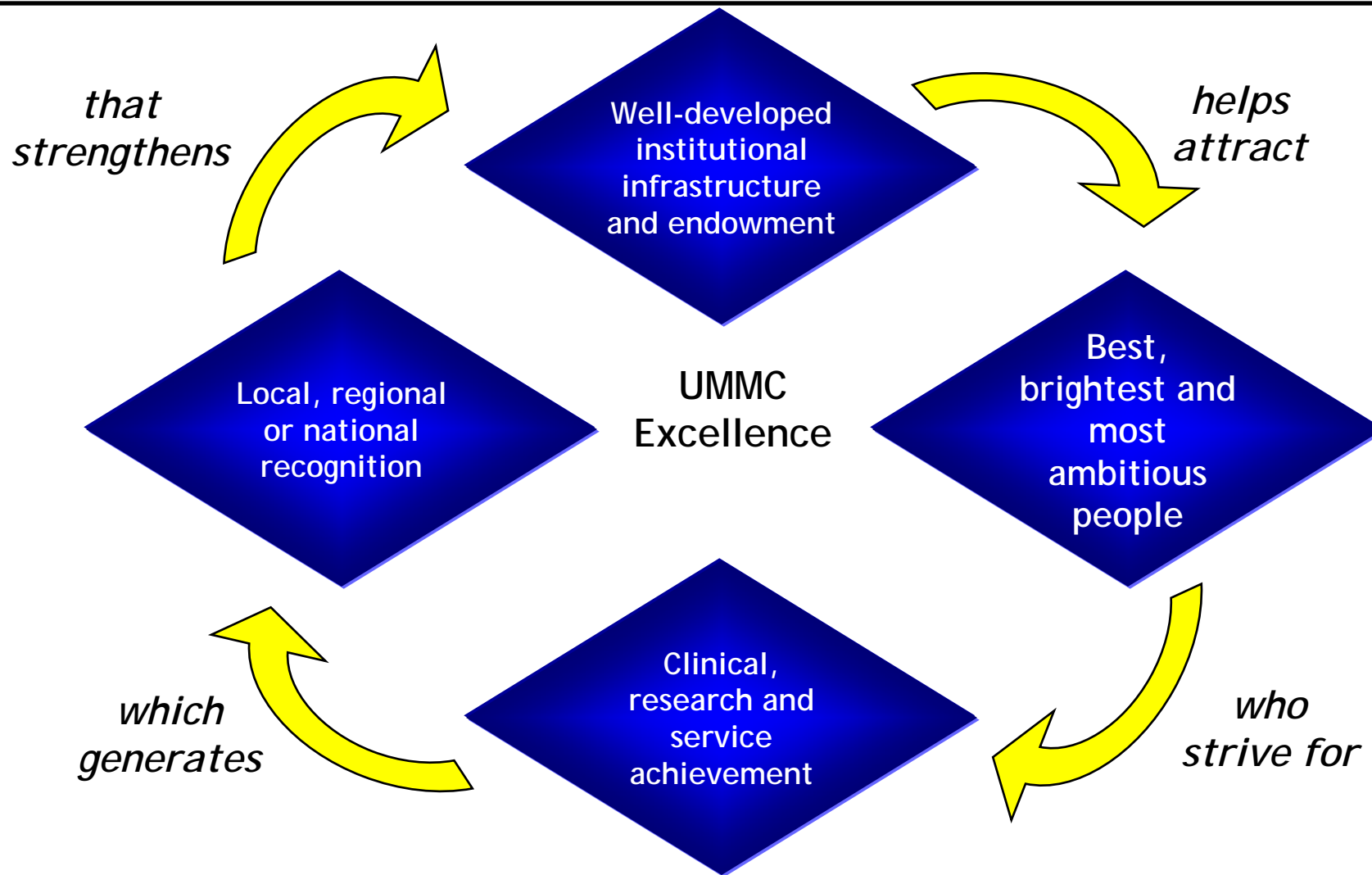
The expansion of cancer care services will require substantial public & private investment

Economic Impact of the Expansion of Cancer Care Services on Output and Taxes (in millions)



Source: Lewin Group analysis using IMPLAN

The key to clinical and economic growth for UMMC is the development of sustainable preeminence



UMMC has pursued unique research areas such as...

- ◆ The Jackson Heart Study – This long term, single-site epidemiologic study of cardiovascular disease in the African American population has been active at UMMC for the last nine years
- ◆ Neuroscience area – UMMC has received \$10 million in NIH funding from the NIH Center for Psychiatry neuroscience
- ◆ Obesity – UMMC is conducting a study for The Delta Health Alliance, whereby it is evaluating some of the diabetes and obesity related disease management programs
- ◆ Health Care Disparities – Department of Health and Human Services has contracted with UMMC to assess the differences in health care utilization

What does the biotechnology industry encompass?

- ◆ Biotechnology is the use of cellular and biomolecular processes to address problems or make useful products
- ◆ It encompasses pharmaceuticals, medical devices, agricultural chemicals and feedstock, and research and development activities
- ◆ Academic health centers such as UMMC offer a valuable foundation for a region that aspires to develop in the biotechnology industry
- ◆ Biotechnology research parks promote innovation in science and technology, which invariably lead to sustained economic growth

Other universities have had great success in the biotechnology industry

- ◆ **Virginia Commonwealth University (VCU)**
 - Formed the Virginia BioTechnology Research Park, a joint venture of VCU, city of Richmond, and Commonwealth of Virginia
 - In 10 years, the park has expanded to include 1.5 million square feet of research, office, and laboratory space, close to \$500 million in investment, and 3,000 employees
- ◆ **University of Arkansas for Medical Sciences**
 - Formation of the Biomedical Biotechnology Center in 1994
 - Catalyst for most of the growth in the life sciences industry
- ◆ **Duke University**
 - Developed breakthroughs in science including first real-time 3-D ultrasound diagnostic system and the first engineered blood vessels
 - Highest growth rate in NIH funding of the country's top 15 medical schools in 2002-2003, receiving more than \$245 million

Using these case studies as examples of success, there are several lessons learned

- ◆ Substantial state support is needed
- ◆ Need to attract more government sponsored funding, such as NIH awards
- ◆ Strong alliance with private sector also helps pave the way for economic development in biotechnology research
- ◆ With potential recognition from the public and private sector, UMMC could perform cutting edge research that would build the foundation for additional research and development in the biosciences

Can UMMC emulate the success of other universities and states?

- ◆ The creation of a UMMC-based biotechnology research park with initial federal appropriations of \$25 million would generate the following within 10 years:
 - Increase in annual revenue to \$54 million
 - Provision of almost \$3.5 million in annual tax revenue*
 - The initial federal appropriations is likely to attract investment from other public and private sources
- ◆ Addition of a biotechnology research park would greatly enhance UMMC's capability in building a knowledge base that could be leveraged by entrepreneurs in developing new science spin-offs and startups
- ◆ UMMC is becoming well positioned for NIH movement to translational research

*Source: Lewin Group analysis using IMPLAN

Conclusion

- ◆ UMMC represents a significant economic, clinical and safety net asset for the Jackson region and for the State of Mississippi
- ◆ UMMC needs to either gain additional state support or be allowed to make the investments necessary to increase its market share of private payers
- ◆ With substantial initial investments and leadership from the State, UMMC could expand its research and clinical abilities to evolve into a stronger economic engine for the region and Mississippi