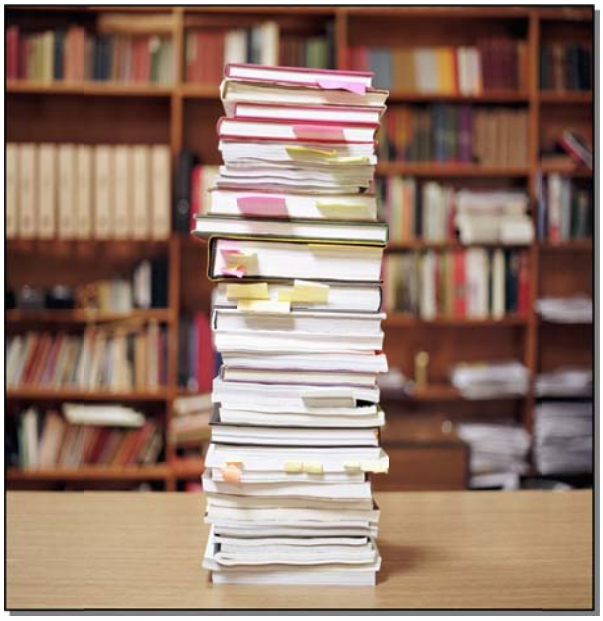
UNIVERSITY of NORTH TEXAS
HEALTH SCIENCE CENTER
AT FORT WORTH

ACADEMIC AND BUSINESS PLAN FOR THE DEVELOPMENT OF A PROPOSED MD PROGRAM



AUGUST, 2010

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Purpose of this Document

The University of North Texas Health Science Center at Fort Worth (UNTHSC) has proposed adding an MD program to its academic offerings. In response to a proposal from the Health Science Center at its November, 2009 meeting, the UNT System Board of Regents approved taking the next steps toward complementing the top-performing Texas College of Osteopathic Medicine with an MD-granting program, authorized the Health Science Center to do four things:

- Enact measures that will protect TCOM as the nation's pre-eminent osteopathic medical school.
- Secure startup funding for the new school, estimated to be $21.5 million - UNTHSC will raise this money from the local community.
- Confirm relationships with area hospitals for student rotations and clinical training.
- Establish a detailed business plan for the allopathic school.

This document constitutes the detailed academic and business plan to seek the approval of the Board of Regents and, given that approval, the Texas legislature's approval for the new school. It outlines the planned approach to support accreditation from the Liaison Committee for Medical Education (LCME), the accrediting body for MD programs in the U.S. and Canada.

The document was constructed to provide a clear pathway to the implementation of a new MD program, governed by the Guiding Principles presented in this document. Additional detailed planning of curriculum and other specific areas will take place as a part of the accreditation process.

Executive Summary

The University of North Texas Health Science Center at Fort Worth (UNTHSC) is planning for the addition an MD program, preliminarily referred to as UNTMD,[1] to their academic portfolio. Physician shortages, an aging population, and the demographically changing population are driving the need for additional medical education training programs in Texas, but most importantly in the Fort Worth community.

Texas ranks 42nd in the nation in the ratio of physicians per 100,000 individuals. Fort Worth proper is ranked 17th in the country for size and is the only city of its size in the U.S. that does not currently have an MD-granting (Liaison Committee for Medical Education-approved) medical school. For Tarrant County and the greater Fort Worth area, population growth, particularly among the elderly and baby boomer generation, will be significant. Healthcare reform will worsen the physician shortage problem. The Association of American Medical Colleges indicates that "Potential reforms, such as universal health care coverage, will add to overall demand for doctors and increase the projected shortfall by 25 percent…. There is mounting evidence that a physician workforce shortage exists in both primary care as well as in a number of specialties…particularly those specialties serving the elderly…"

To train additional physicians, the major hospitals in the Fort Worth area have sought to partner with a new MD program at the UNTHSC to create new graduate medical education programs (GME), expanding the residency opportunities in the Tarrant County area. Since physicians are more likely to practice where they do their graduate medical training, the development of these GME programs by the UNTHSC working with its clinical partners will help address these shortages.

Not only will the MD program be developed in such a way as to not hurt the Texas College of Osteopathic Medicine (TCOM) in any way, the MD program will support TCOM's security for the future, leveraging the hospital relationships and philanthropy that will be generated by the MD program. As part of the planning and potential implementation of a new MD program, the UNTHSC has developed guiding principles that will assure the quality, growth, and culture of TCOM, the UNTHSC, and all of its graduate programs.

The Fort Worth/Tarrant County community has made strong expressions of support for the MD program and is supporting the creation of the program through philanthropic donations to offset the startup costs. They believe that UNTMD will help to provide additional high-quality physicians and a more diverse population of physicians, both in primary care and in specialties who will improve the quality of care in the Fort Worth Community and will provide economic benefits to the community as predicted by the economic impact study, resulting from increased number of physicians and MD program faculty and their activities, including research.

UNTHSC is a uniquely perfect place for Texas to create a new MD program.

- The hospitals want to partner with this school to create new residencies. Since a high percentage of physicians locate in the geography where they do their training, these new residency programs leveraging the relationship with the new MD program will increase the number of physicians in Tarrant County and Texas.

[1] "UNTMD" is a preliminary draft nomenclature for planning purposes. It is not a final or formal designation.

- UNTHSC again is uniquely positioned to leverage existing infrastructure and resources that can be used in the operation of an MD program, reducing the startup costs for a new school from the estimated $100M - $150M for a "greenfield" startup to an estimated $25M given existing academic and physical resources. Analysis of the current resource base and the resources that will need to be added to ensure that the new program has no negative impact on existing programs has led to estimates of $7.1 million as startup funds for the first three years of planning and $14.4 million as ramp-up funds to support the program in the first three years of operation, for a total of $21.5 million.

- The Fort Worth philanthropic community has pledged to provide these funds. Thus, the development of a new MD degree-granting program at the UNTHSC will provide a cost-effective means supporting the training of more physicians utilizing existing community resources.

In looking at what might happen in Fort Worth if the UNTHSC does not proceed with the plan to develop an MD program, it is important to focus on the hospitals and their agendas. Given the plan of more than one of Fort Worth's major clinical players to add Graduate Medical Education programs (residencies) in the next few years, Fort Worth will become much more attractive as a potential site for a branch campus from one of the established Texas medical schools, or possibly a medical school in another state looking to expand. Harris Methodist, as an example, will be an attractive clinical partner given its size and substantial number of planned residencies. If UNTHSC does not create this program, the hospitals will partner with another medical school outside Forth Worth, perhaps outside Texas, limiting access to residencies and, potentially, clinical teaching sites if another school is involved in the Fort Worth community.

In sum, UNTMD will:

- Help reduce physician shortages in the state;
- Improve the quality of healthcare in the Fort Worth community and the entire State of Texas;
- Provide an opportunity to create a new MD program at a startup cost of $25M instead of approximately $100M;
- Attract community philanthropy to offset all of the startup costs, providing a "free" MD program to the State of Texas;
- Help UNTHSC to secure primacy of relationship with the clinical providers in Forth Worth, assuring clinical training sites for TCOM and all other HSC programs for the future.
- Attract philanthropy that will provide resources that will benefit TCOM and all HSC programs;
- Attract significant additional research that will support TCOM faculty and faculty and students in all HSC programs.

UNTHSC now seeks approval from the Regents to move to Phase Two which includes:

1. Authorize the UNT System and UNTHSC staff to pursue all necessary state and legislative authorization for commencement of a new MD degree program beginning with enrollment of students in 2013;
2. Apply to the LCME for pre-accreditation status; and
3. Initiate the search for a dean and all other next steps in the process leading to full accreditation of a new MD degree program on the campus of the UNTHSC, pending 2011 legislative review and approval.

Why a New MD Program in Fort Worth?

Overview

The United States is currently facing a severe shortage of physicians. In 2005 Jordan Cohen, MD, President of the Association of American Medical Colleges, warned that, "The consequences for the public's health of a shortfall in physicians are obviously much more serious than those of an oversupply. Access to equitable health care is already tenuous for many of our countrymen; a paucity of physicians would compound this problem enormously."[2]

Healthcare reform will worsen the physician shortage problem. The Association of American Medical Colleges indicates that "Potential reforms, such as universal health care coverage, will add to overall demand for doctors and increase the projected shortfall by 25 percent…. There is mounting evidence that a physician workforce shortage exists in both primary care as well as in a number of specialties…particularly those specialties serving the elderly…"[3]

The Institute of Medicine (IOM), the Association of American Medical Colleges (AAMC), the Liaison Committee on Medical Education (LCME), the American Osteopathic Association (AOA), and other professional healthcare organizations have recognized the implications of the shortage and have increasingly been encouraging new school formation and expanded training slots to meet projected population demand.

The University of North Texas Health Science Center (UNTHSC) has heeded this request and is currently expanding various academic programs. The Texas College of Osteopathic Medicine (TCOM) has been increasing its class size over the last five years from 125 students to just over 200 per class this fall to help meet the demands of physician shortages in the area of primary care.

UNTHSC is also working with area hospitals to increase the number of residency programs in the region, the number one driver of an increased physician population, as many physicians will locate permanently in the geography where they do their residency training.

Texas has fallen below U.S. averages in the ratio of physicians per population for 37 of the 40 major categories of medical specialties.[4] MD students typically pursue specialty training and practice; many hospitals prefer to partner with a medical school that grants an MD degree.

The Dallas/Fort Worth metro area ranks as the eighth largest city in the nation and maintains one MD degree-granting medical program and one DO degree-granting medical program. Fort Worth proper is ranked 17th in the country for size and is the only city of its size in the U.S. that does not currently have an MD-granting (LCME-approved) medical school. The population and broad array of large hospitals makes Fort Worth an attractive site for medical training programs, and as these hospitals add residency programs accredited by the American Council on Graduate Medical Education (ACGME), this attraction will increase. As other medical schools in Texas grow and new schools are formed, it may become more challenging for the UNTHSC not only to retain, but to expand clinical training opportunities for their students.

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[2] Cohen, Jordan J. "A Word from the President: Filling the Workforce Gap," AAMC Reporter, April 2005.
[3] Association of American Medical Colleges, "The Physician Shortage and Healthcare Reform",
[4] Texas Medical Association, "2009 Medical Education and Physician Workforce: Consensus Statement, 81st Texas Legislature," March 2009.

Community Health Impact

Physician shortages, an aging population, and the demographically changing population are driving the need for additional medical education programs in Texas, but most important for the Fort Worth community.

There are four key factors contributing to the physician shortage in Texas

- Aging physicians: 21.8 % of Texas practicing physicians are over the age of 60, and therefore will reach retirement in the next five years[5]
- Shortage of physicians by medical specialties[6]
- A growing population: From 2005 to 2015, the state's population is expected to growth by approximately 16%; the Tarrant County population is expected to grow by approximately 15%[7]
- An aging population: By 2015, the population of people that are 65 or older is expected to increase by 30%[8]

Although Texas has in the past successfully recruited physicians to generally meet the healthcare needs of State, it has not been able to keep up with current population growth. Approximately 56 percent of recruited physicians are coming from outside Texas (or outside of the country).

Access to Care: *Overall Physician Shortages in Texas*

As depicted in the table below, physician shortages in Texas are considerable, based on total population, and in comparison to its neighboring states. Texas ranks 42nd in the nation in the ratio of physicians per 100,000 individuals. Given current Texas growth projections and the changes anticipated due to healthcare reform, the need for additional physicians is evident. The table below shows the total number of active physicians in Texas.

Active Physicians in Texas and Neighboring States

		Total Active Physicians		U.S. Rank
	Total Population	Number	Rate per 100,000	
U.S.	299,398,484	747,581	249.7	
Louisiana	4,287,768	9,960	232.3	27
New Mexico	1,954,599	4,421	226.2	32
Texas	**23,507,783**	**46,432***	**197.5**	**42**
Oklahoma	3,579,212	6,867	191.9	46
Arkansas	2,810,872	5,311	188.9	48

*Includes MDs and DOs. Source: Association of American Medical Colleges "2007 State Physician Workforce Data Book"

In addition, of the approximately 46,432 physicians in Texas, 21% are over age 60, and over 10,109 physicians will reach retirement age in the next five years. While mid-pack nationally, this

[5] Association of American Medical Colleges, "2007 State Physician Workforce Data Book," December 2007.
[6] Texas Medical Association, "2009 Medical Education and Physician Workforce: Consensus Statement, 81st Texas Legislature," March 2009.
[7] Texas Higher Education Coordinating Board, "Projecting the Need for Medical Education in Texas," October 2008.
[8] Ibid.

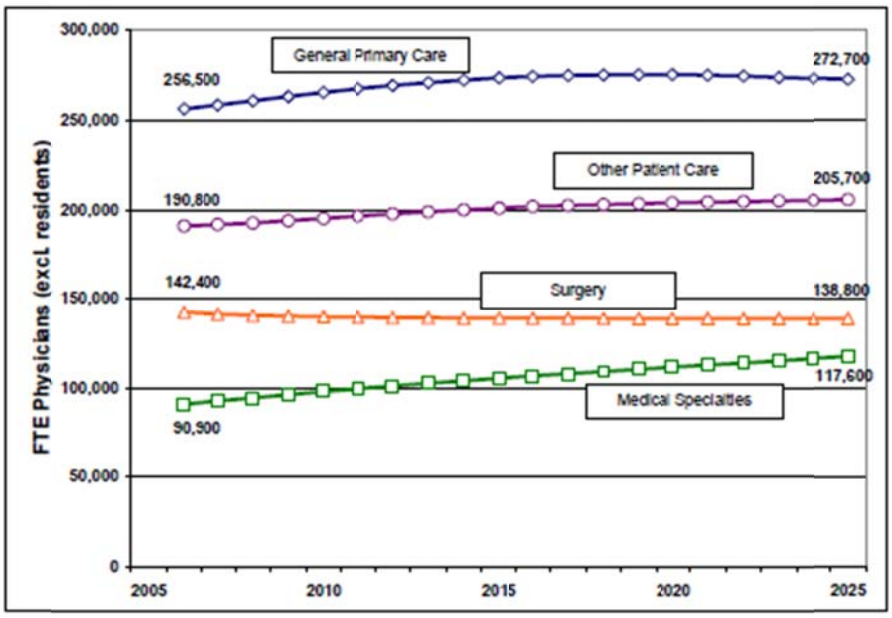
is still significant, representing over a one-fifth loss of the current physician population in Texas. The aging of the physician population as depicted in the graph below shows how Texas fares in comparison to its neighboring states.

Active Physicians by Selected Age Groups in Texas and Neighboring States					
	Active Physicians Under Age 40		Active Physicians Age 60 or Older		U.S. Rank
	Number	Percent	Number	Percent	
U.S.	140,586	18.80%	174,113	23.30%	
Louisiana	1,932	19.40%	2,407	24.20%	11
New Mexico	747	16.90%	1,062	24.00%	12
Oklahoma	1,248	18.20%	1,560	22.70%	17
Texas	**9,597**	**20.7%**	**10,109**	**21.80%**	**26**
Arkansas	1,018	19.20%	1,129	21.30%	32

Source: Association of American Medical Colleges "2007 State Physician Workforce Data Book"

Access to Care: *Physician Shortages in Texas by Specialty*

Another important factor to overall physician need is increasing shortages across many medical specialties. Texas falls below U.S. totals in the ratio of physicians per population along 37 (93%) of 40 major categories of medical specialties.[9] While the AAMC reports that projected growth varies by specialty, should specialty choice patterns remain unchanged, growth appears to be largest for specialties in the "medical specialties" categories and declining in surgery (though these are projected to remain the two smallest specialty groups). The specialty groups noted include general primary care (general and family practice, general internal medicine, and general pediatrics); medical specialties (cardiovascular disease, gastroenterology, internal medicine subspecialties, nephrology, pulmonology, and other medical specialties); surgery (general surgery, obstetrics and gynecology, ophthalmology, orthopedic surgery, otolaryngology, thoracic surgery, urology, and other surgical specialties); and other patient care (anesthesiology, emergency medicine, neurology, pathology, psychiatry, radiology, and other specialties). Although Primary Care remains the largest, it is also projected to begin a decline prior to 2025.[10]



[9] Texas Medical Association, "2009 Medical Education and Physician Workforce Consensus Statement, 81st Texas Legislature," March 2009.

[10] Association of American Medical Colleges, "The Complexities of Physician Supply and Demand: Projections Through 2025," November 2008.

A Growing and Aging Population

The Growing Population

Since 1980, the U.S. population has grown from 226 to over 300 million people (the 2008 population estimate for the United States is 304,059,724), representing a one-third increase. When compared to the nation's ten fastest growing states, Texas has the largest gross population increase. Although Texas as a whole will experience considerable growth, the Dallas - Fort Worth metro area is expected to grow dramatically, both in population and resulting economic growth. The Hispanic population is among the highest in terms of growth and has continuously exceeded demographer's most aggressive projections.[11] The Texas State Data Center projects 47% growth in the State of Texas and Tarrant County from 2010 to 2040.

Population 2000 and Projected Population 2005-2040 by Race/Ethnicity and Migration Scenario for State of Texas

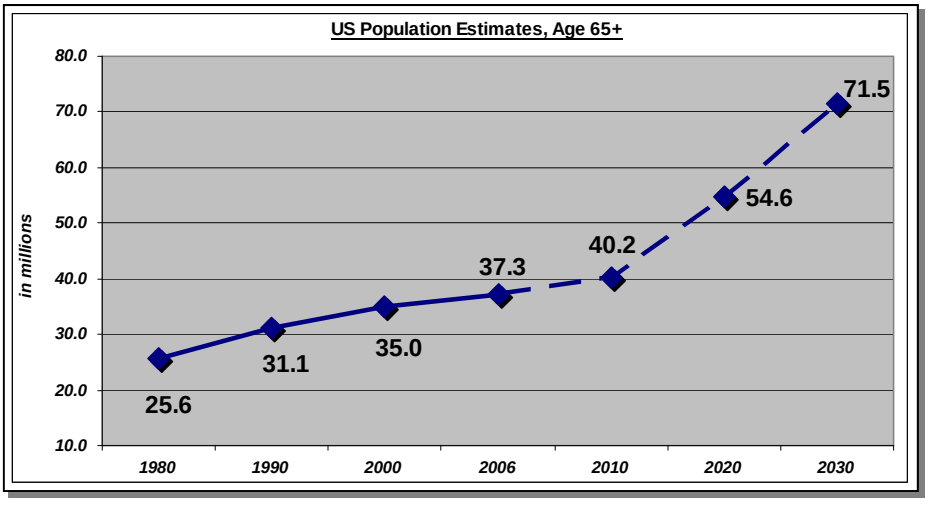
YEAR	TOTAL	ANGLO	BLACK	HISPANIC	OTHER
2000	20,851,820	11,074,716	2,421,653	6,669,666	685,785
2005	22,556,046	11,327,873	2,588,605	7,820,842	818,726
2010	24,330,646	11,533,976	2,754,751	9,080,459	961,460
2015	26,156,723	11,694,520	2,913,062	10,436,546	1,112,595
2020	28,005,740	11,796,448	3,052,417	11,882,980	1,273,895
2025	29,897,410	11,830,578	3,170,964	13,448,459	1,447,409
2030	31,830,575	11,789,274	3,268,623	15,140,100	1,632,578
2035	33,789,697	11,682,022	3,345,687	16,934,464	1,827,524
2040	35,761,165	11,525,089	3,403,163	18,804,311	2,028,602

Population 2000 and Projected Population 2005-2040 by Race/Ethnicity and Migration Scenario for Tarrant County

YEAR	TOTAL	ANGLO	BLACK	HISPANIC	OTHER
2000	1,446,219	908,197	188,144	285,290	64,588
2005	1,553,725	913,930	206,584	353,688	79,523
2010	1,662,201	910,902	225,094	430,994	95,211
2015	1,776,624	902,323	243,363	518,507	112,431
2020	1,895,533	886,218	260,323	617,602	131,390
2025	2,020,545	861,817	275,908	730,637	152,183
2030	2,152,155	829,316	290,024	858,242	174,573
2035	2,290,615	790,716	302,217	998,979	198,703
2040	2,437,327	748,304	313,039	1,151,940	224,044

An Aging Population

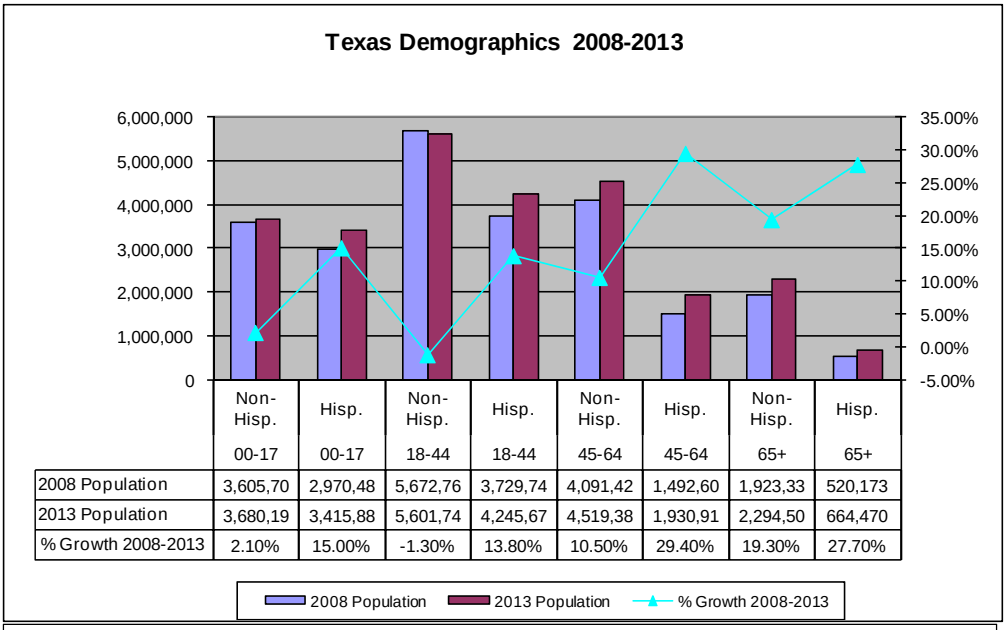
The Administration on Aging estimates that in 2007, approximately 37.9 million people were 65 and older, in comparison to just 25.6 million in 1980. The 65 and older population now represents 12.6% of the U.S. population, up from 11.3% in 1980. The number of older Americans increased by 3.8 million, or 11.2%, since 1997 alone.[12] In the near future, the nation will be aging dramatically, primarily due to increases in life expectancy and the aging of the large population represented in the



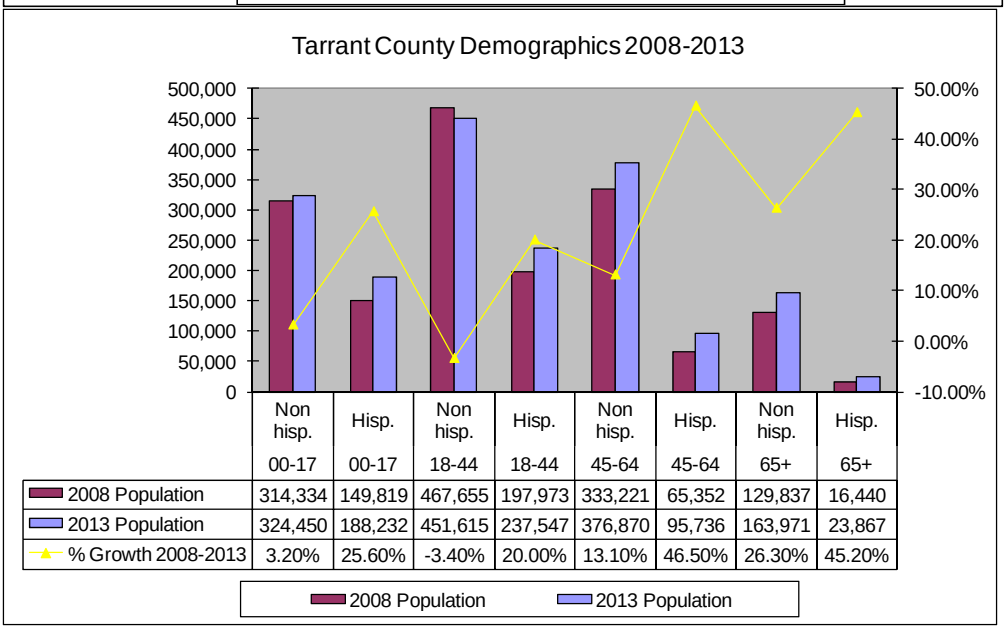
[11] Senate Higher Education Subcommittee Interim Report, December 2008.
[12] http://www.aoa.gov/prof/statistics/2006Pop/Stterr2006.html

"baby boom" generation. Together, these factors will contribute to the largest-ever proportion of older adults, increasing from 12 percent of the U.S. population in 2005 to an estimated 20 percent by 2030.[13]

Moreover, while a large segment of this group will maintain health and independent functioning well past the age of 65, reaching traditional retirement age is generally accompanied by an increasing number of personal health challenges. More than three-fourths of adults over age 65 suffer from at least one chronic medical condition that requires ongoing care and management. Arthritis, hypertension, osteoporosis, and diabetes are among the most prevalent chronic conditions reported by Medicare beneficiaries.[14] Caring for the elderly population poses a unique set of challenges. In addition to geriatric syndromes, such as falls and malnutrition, which often lead to acute health care problems, older adults also suffer from a range of cognitive impairments that can impact their ability to perform as active participants in their own care.



	Non-Hisp. 00-17	Hisp. 00-17	Non-Hisp. 18-44	Hisp. 18-44	Non-Hisp. 45-64	Hisp. 45-64	Non-Hisp. 65+	Hisp. 65+
2008 Population	3,605,70	2,970,48	5,672,76	3,729,74	4,091,42	1,492,60	1,923,33	520,173
2013 Population	3,680,19	3,415,88	5,601,74	4,245,67	4,519,38	1,930,91	2,294,50	664,470
% Growth 2008-2013	2.10%	15.00%	-1.30%	13.80%	10.50%	29.40%	19.30%	27.70%

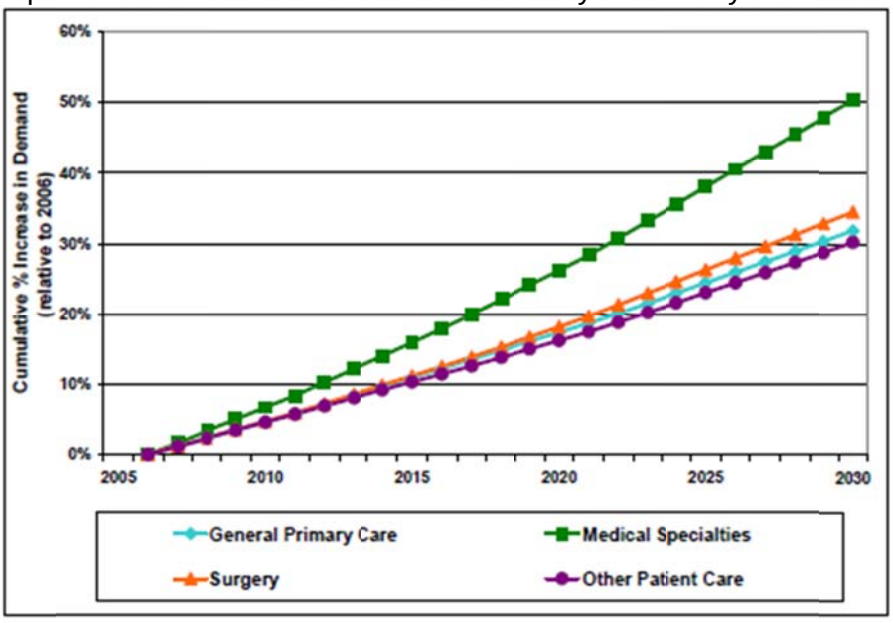


	Non hisp. 00-17	Hisp. 00-17	Non hisp. 18-44	Hisp. 18-44	Non hisp. 45-64	Hisp. 45-64	Non hisp. 65+	Hisp. 65+
2008 Population	314,334	149,819	467,655	197,973	333,221	65,352	129,837	16,440
2013 Population	324,450	188,232	451,615	237,547	376,870	95,736	163,971	23,867
% Growth 2008-2013	3.20%	25.60%	-3.40%	20.00%	13.10%	46.50%	26.30%	45.20%

Moreover, healthcare for older adults can be complex because these patients can often suffer from a range of ailments, including chronic conditions such as hypertension and congestive heart failure, which require ongoing care and active management from multiple providers simultaneously. This phenomenon requires both an influx of healthcare providers and a new way to train providers to care for an array of complex and chronic conditions present in the elderly population.

[13] Source: US Census Bureau
[14] MedPAC Report to the Congress, "Promoting Greater Efficiency in Medicare," June 2007.

As depicted in the graph below, the overall rate of growth is projected to be largest for medical specialties, followed by surgery, primary care, and the "other patient care" category. However, the percent growth in demand is highest for specialties that predominantly serve the elderly.[15] In short, the need for an increase in medical specialties is necessary; in particular, more physicians will be needed to care for the aging population in the state and the Tarrant County community.



For Tarrant County and the greater Fort Worth area, population growth, particularly among the elderly and baby boomer generation, will be significant. The first graph on the prior page depicts the projected population growth in the State of Texas within five years. The graph below depicts the projected population growth in Tarrant County within five years. Overall, the highest percentage growth for all age groups is in the Hispanic population. However, the largest number of new patients will come from the 65+ age group (26% growth for Non-Hispanic patients and 45% for Hispanic).

Overview of Texas Undergraduate and Graduate Medical Education Programs

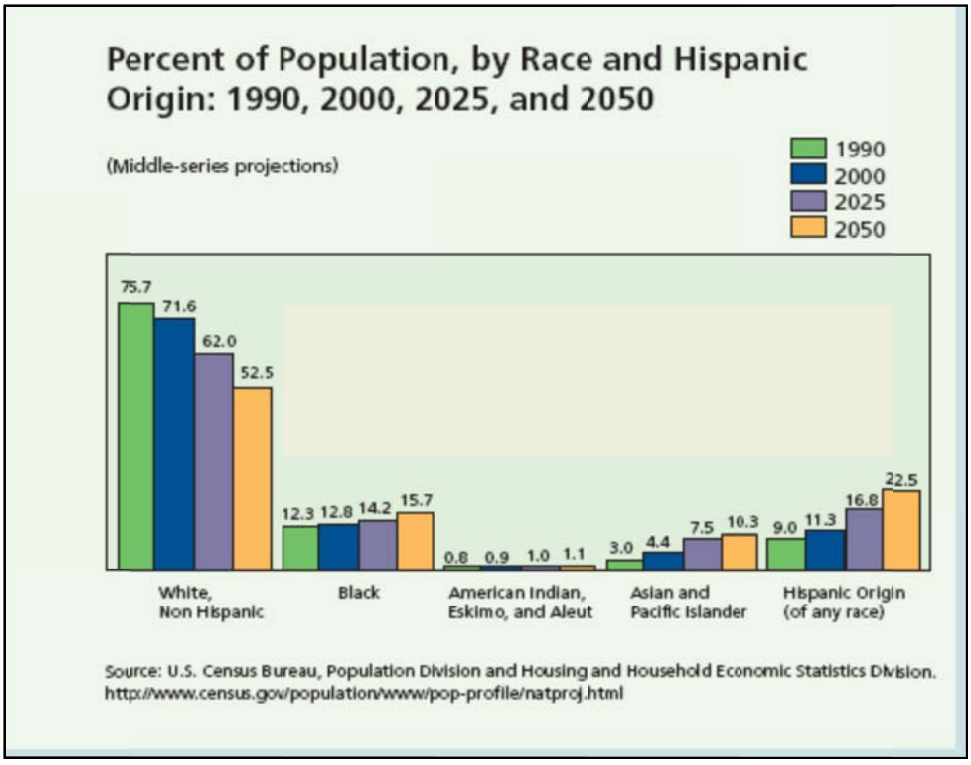
Total U.S. MD medical school matriculations had remained virtually unchanged from 1980 to 2007 (with the only new MD school added being Florida State University in 2001), even as the U.S. population grew from 226 million to 300 million during this time. In order to address this issue, in 2004 Jordan Cohen, MD, President of the Association of American Medical Colleges, called for a 30% increase in medical school admissions by increasing the size of current medical schools and by creating additional medical schools to prevent the potential consequences to the nation's healthcare infrastructure caused by a shortage of physicians.[16] Currently, Texas has 5,861 enrolled medical students. In order to meet the 30 percent increase target; the state would need to increase its medical student enrollment from 5,861 to 7,619 by 2015.[17] In addition, local hospitals and clinical training sites would need to increase the number of residency opportunities for these students proportionately.

[15] Association of American Medical Colleges, "The Complexities of Physician Supply and Demand: Projections Through 2025," November 2008.
[16] Cohen, Jordan J. "A Word from the President: Filling the Workforce Gap," AAMC Reporter, April 2005.
[17] Senate Higher Education Subcommittee Interim Report, December 2008.

Applicants and Student Body of MD Schools in Texas

Applications, 2008		Applications	Applications by Instate Status		Matriculants	Matriculants by Instate Status	
			In State	Out of State		In State	Out of State
			%	%		%	%
	Medical School						
	Baylor	4,879	30	70	176	79.5	20.5
	Texas A & M	3,088	85.4	14.6	139	92.8	7.2
	Texas Tech-Lubbock	2,966	87.3	12.7	140	96.4	3.6
	UT Galveston	3,580	82.5	17.5	230	92.2	7.8
	UT Houston	3,636	81.8	18.2	230	90.9	9.1
	UT San Antonio	3,529	82.8	17.2	221	89.1	10.9
	UT Southwestern	3,445	80.8	19.2	221	89.6	10.4
TOTALS		25,123	75.8	24.2	1357	90	9.9

Source: Association of American Medical Colleges, http //www.aamc.org/data/facts/. This list does not include the new Texas Tech University Health Sciences Center Paul L. Foster School of Medicine at El Paso or TCOM.



In terms of the ratio of medical student to population, Texas ranks twenty-fifth in the nation and,[18] without the addition of medical student slots, this ranking is expected to drop dramatically given the large population increases estimated for Texas. In addition to physician shortages, underserved populations and the under-representation of Hispanics and African-Americans in medical education are critical issues for the State of Texas. The Texas Higher Education Coordinating Board recommended that "the Legislature should continue to expand efforts to attract African-American and Hispanic students to careers in medicine."[19] By 2050, racial and ethnic minorities are projected to account for half of the U.S. population. While African-Americans and Hispanics are among the fastest growing segments of

[18] Association of American Medical Colleges, "2007 State Physician Workforce Data Book," December 2007.
[19] Texas Higher Education Coordinating Board, "Projecting the Need for Medical Education in Texas," October 2008.

the population, they are also the most severely underrepresented minorities in medicine. Presently, African Americans, Hispanics, and Native Americans together make up 25 percent of the U.S. population; however only 6 percent of practicing physicians come from these groups. Increasing physician diversity can improve healthcare to these groups, as research indicates that physician diversity can address health care disparities in at least three important ways:

- Improved access: Studies show that minority physicians are more likely to treat minority patients and indigent patients and to practice in underserved communities.
- Increased patient satisfaction: Studies further indicate that when minority patients select a health care professional, they are more likely to choose someone of their own racial background.
- Ensures culturally competent care: Exposure to racial and ethnic diversity in medical school contributes to cultural competence of all of tomorrow's doctors. A diverse student body brings an array of ideas to the learning environment; helps students challenge their assumptions; and broadens their perspectives regarding racial, ethnic, and cultural differences. [20]

In-State Physician Retention

The AAMC reports indicate about 70% to 80% of physicians will ultimately practice near where they complete both residency and medical school.[21] As of 2007, Texas ranked fifth in the nation for retention of physicians who graduated from a Texas medical school, completed their graduate medical education programs in the state, and are practicing in Texas.

Active Physicians who Graduated from an MD or DO School in the State, Completed Graduate Medical Education in the State and are Active in the State					
	Total Active Physicians	Total Active Physicians Who Graduated from an MD or DO School in the State and Completed GME in State	Active Physicians Who Graduated from an MD or DO School in the State, Completed GME in State, and are Active in State	% of Active Physicians who graduated from an MD or DO School in the state, completed GME in the state and are active in the State	U.S. Rank
U.S.	747,589	218,429	144,209	66.00%	--
Texas	46,432	16,970	13,484	79.60%	5

Source: Association of American Medical Colleges "2007 State Physician Workforce Data Book"

The Senate Higher Education Subcommittee Interim Report, however, states that increasing Graduate Medical Education (GME) residency slots has proved to be a challenge for the state. Texas currently has approximately 6,741 residents and ranks 22nd in the nation for its ratio of residents to population. In order to maintain that ranking by 2025, Texas will need an additional 1,478 residency positions. Although the funding for residency expansion has continued to rise, it has not been able to keep up with the overall need.

Furthermore, many students leave Texas in order to pursue residencies in specialties such as emergency or surgical programs because the state does not offer enough of those specialties and subspecialties.[22] As Texas prepares to address the projected shortage of physicians, retaining physicians after medical school and/or residency is essential to ensure the health care needs of the community as well as the state are met.

[20] Association of American Medical Colleges, "Minorities in Medical Education: Facts & Figures 2005," Spring 2005.
[21] Association of American Medical Colleges, "2007 State Physician Workforce Data Book," December 2007.
[22] Senate Higher Education Subcommittee Interim Report, December 2008.

Major hospitals in the Fort Worth area are interested in partnering with a new MD program at UNTHSC to create new graduate medical education programs (GME), expanding the residency opportunities in the Tarrant County area and North Texas region. Since physicians are more likely to practice where they do their graduate medical training, the development of these GME programs by the UNTHSC working with its clinical partners will help address these shortages.

Benefits of a New MD Program

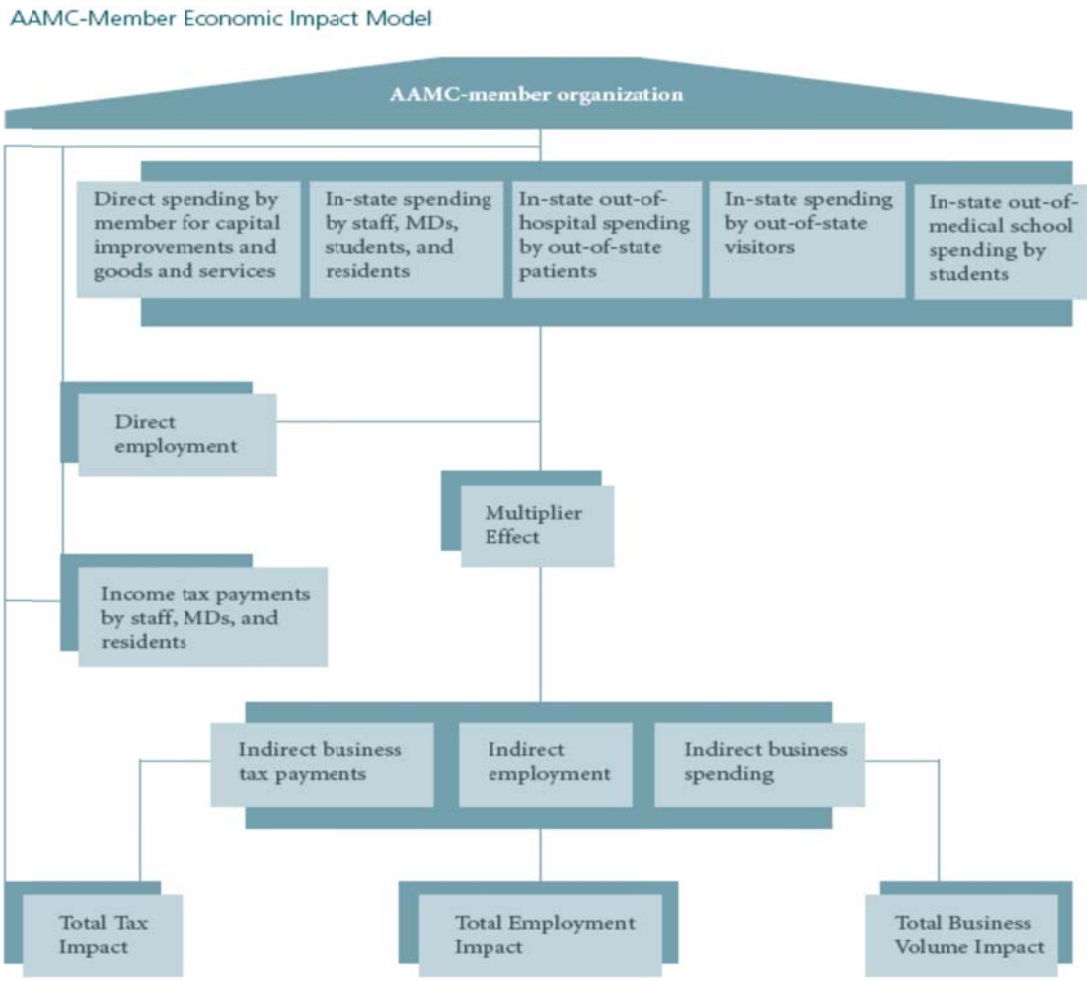
While medical education in general is expensive, the presence of medical education programs and their related medical schools and teaching hospitals are important economic drivers for local economies.

Economic Benefits

Economic benefits from an MD program are traditionally associated with additional, high-paying jobs related to administrators and faculty, capital investment impacts, and research spin-off companies. Additional high-paying jobs help to stimulate the local economy though activities such as increased demand for local real estate, increased spending at local businesses/entertainment venues, and heightened interest on the part of businesses in locating to the Fort Worth area. This type of activity can ultimately serve as a catalyst to attract investors ranging from commercial lending institutions and private equity investors to independent philanthropists.

In a report commissioned by the Fort Worth Chamber of Commerce, the economic consulting, research, and analysis firm Impact DataSource estimated the economic impact of the medical education aspect of the proposed MD program at $1.7 billion over the first 10 years. The impact of faculty research and clinical activity would increase these substantially. The model on the next page depicts the typical impact on the local economy of an academic medical center.[23]

[23] Association of American Medical Colleges, "The Economic Impact of AAMC-Member Medical Schools and Teaching Hospitals," September 2009.



A report published by the Association of American Medical Colleges (AAMC) found that during 2008, the combined economic impact of AAMC members was $512,285,592,095 billion (economic impact represented $222,733,300,911 in direct business volume impact and a further $289,553,291,184 in indirect economic impacts accruing to the economy through the multiplier). AAMC members directly or indirectly accounted for more than 3.3 million jobs, equating to one out of every 43 wage earners in the American labor force working directly or indirectly for an AAMC member institution. "Furthermore, AAMC members generated more than $22 billion in total state tax revenue through income taxes and sales taxes, corporate net income taxes, and capital stock/franchise taxes produced by businesses who receive revenue from AAMC members."[24]

In 2008, the economic impact for the State of Texas was as follows:

- Total economic impact (direct + indirect) was $31,566,102,793.
- Total employment impact (direct + indirect) was 210,501 jobs.
- Government revenue impact was $968,186,757.

"For every dollar directly spent by a medical school or teaching hospital, an additional $1.30 is indirectly generated for a total impact of $2.30."[25] An additional medical college will further benefit Fort Worth's economy. The following Table further depicts the Economic Impact of AAMC-Member Medical Schools and Teaching Hospitals in 2008 for the State of Texas.[26]

[24] Ibid.
[25] Ibid.
[26] Ibid.

Total State Business Volume Impact of AAMC-Member Institutions 2008 for Texas	
Total impact (direct + indirect)	$ 31,566,102,793
Direct spending for capital improvements, goods, services, supplies	$ 8,921,930,747
AAMC Members' Staff Spending	$ 2,716,277,987
AAMC Members' Physician and Faculty (Employed and Contract) Spending	$ 802,678,671
AAMC Members' Resident and Student Spending	$ 242,667,607
AAMC Members' Out-of-State-Patient Spending	$ 75,959,702
AAMC Members' Patient Visitor Spending	$ 101,547,434
Spending by Visitors to AAMC Members' Conferences, Staff, Physicians, Residents, and Students	$ 863,330,370
Sales and Gross Receipts Tax Revenues Generated by AAMC Members' Spending	$ 769,819,695
AAMC Members' Business Real Property Investments	$4,671,783,213
AAMC Members' Government Revenue Impact	$ 968,186,757
Other Tax Revenue Generated by AAMC Members	$ 198,367,062

Intellectual Capital

The creation of a new MD program in Fort Worth will bring with it additional faculty, clinicians, and administrative staff. Typically, the education level of these individuals extends to masters, doctoral, and professional levels of training. In addition, medical students and residents typically represent the highest caliber of student (as evidenced by TCOM students). The education and intellect of these individuals will infuse new thought, talent, and intellectual capital into the area.

In addition to serving students, MD schools frequently serve as economic catalysts to their surrounding communities. An MD program in Fort Worth will bring increased intellectual capital to the region, additional high-paying jobs, and a renewed motivation for capital investment.

Research

UNTHSC already has experienced significant research growth including the Osteopathic Research Center. Because of the MD program requirements that medical students participate in research activities, research partnerships and regional research activity expands with the creation of new medical schools. The new MD program in Fort Worth will attract new faculty who are biomedical scientists seeking to participate in cutting-edge basic, clinical, and translational research. This will help drive additional extramural grant funding for UNTHSC. The Graduate School of Biomedical Sciences will provide an outstanding context to recruit these new faculty and connect them with their colleagues in existing research programs at UNTHSC. An MD school often also serves to attract life-sciences business professionals and/or pharmaceutical, medical device, and/or biotechnology firms seeking to drive clinical research and interact with clinical faculty, medical staff, and an inventive student body.

Partnerships

New MD programs are frequently established as partnerships among clinical, academic, and research entities. As a result, the formation of a new MD program, in and of itself, lends to the creation of new partnerships. A new MD program may help to bridge new, public-private partnerships and alliances that help to increase dialogue around public health concerns, heighten

understanding of local health issues, and better address healthcare needs through both prevention and care.

A new MD program also brings the implication of an interest in expanding medical training efforts in the direction of residencies. By choosing to focus on certain types of care, recruitment, and training, a new program could simultaneously enhance existing safety and quality improvement initiatives. Finally, new programs can also utilize available resources to partner with patient populations for educational initiatives that increase patient knowledge and personal involvement in care.

Why Should the Fort Worth MD Program be Housed at The UNTHSC?

The UNTHSC is the ideal environment for the creation of an MD program in Fort Worth.

The new MD program will contribute to the creation of additional Graduate Medical Education opportunities. Hospitals in the Fort Worth community are committed to partnering for committed ACGME-accredited graduate medical education programs with the UNTHSC MD program once it is developed. These programs will accept both MD and DO graduates, and the hospitals have indicated their enthusiasm for students from both programs as trainees. These new GME positions will increase the likelihood of graduates remaining in the Fort Worth area for their careers.

The opportunity to strengthen relationships with clinical providers is of high importance to the entire Health Science Center. Several hospitals have become founding donors to the UNTMD program. Although teaching relationships for TCOM and other students currently exist with local and state-wide providers, the UNTHSC and TCOM are the only health science center and medical school in the state that do not have a comprehensive relationship with one or more primary teaching hospitals to support the clinical education needs of its students. The new program provides an opportunity to cement stronger relationships with several key clinical providers and bind them to the UNTHSC with new affiliation agreements that can help secure the future of all the UNTHSC programs. Specifically, by having both MD and DO programs, several community hospitals have indicated even stronger and more permanent support for clinical educational opportunities for all the UNTHSC students. These stronger hospital and clinical relationships will help transition the UNTHSC to a comprehensive academic health science center with comprehensive primary hospital affiliations that support more expanded clinical education, research, joint faculty recruitment, fundraising, and other opportunities.

The unique opportunity to co-locate an MD program with an outstanding osteopathic school has generated significant excitement in the academic medical community, because of the opportunity for inter-professional education involving MD and DO students working in interdisciplinary teams as part of their pre-clinical training. The Institute of Medicine has outlined a vision that: "All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches and informatics." The UNTHSC is uniquely positioned to offer a climate for interprofessional medical education that includes both MD and DO students. In collaboration with TCOM, the School of Public Health (SPH), the Graduate School of Biomedical Sciences (GSBS), and the School of Health Professions (SHP), real-time integrated learning experiences can be developed to train medical and allied health students in the principles of teamwork.

UNTHSC is uniquely positioned to leverage existing infrastructure and resources that can be used in the development and operation of the MD program. While estimates for most new medical schools range from $100 to $150 million for start-up costs alone, the UNTHSC has much of the existing infrastructure of a health science center already in place; this will provide a very cost-effective means of creating a new medical school in Fort Worth. Analysis of the current resource base and the additional resources needed to ensure that the new program has no negative impact on existing programs has led to estimates of $7.1 million as startup funds for the first three years of planning and $14.4 million as ramp-up funds to support the program in the first three years of operation, for a total of $21.5 million (see financial analysis). It is anticipated that the Fort Worth philanthropic community will be the primary source of these funds. MD schools are historically strong attractors of philanthropic funds as evident by the TTUHSC El Paso School of Medicine's

receipt of a $50 million donation from Paul L. Foster. This was the largest gift ever to be received in the Texas Tech University System. Thus, the UNTHSC is positioned to develop a new fifth school granting a MD degree in a cost-effective means that will expand the much needed physician work force utilizing community resources. This is simply the most efficient and cost-effective pathway to support a new MD program in Fort Worth.

Community and business leaders in Fort Worth have expressed strong interest in a new MD program at the UNTHSC to enhance the university, to support the hospitals, to expand the physician base, to improve healthcare, to expand student choice in becoming either an MD or DO physician, to provide patient choice in being cared for by either an MD or DO, and to drive economic growth. The MD program presents the UNTHSC with an enormous opportunity to be more relevant to the community of Fort Worth and Tarrant County. This expanded relevance will help support a more secure and permanent partnership with greater collaborative opportunities for all the UNTHSC programs with the Fort Worth community, including: hospitals, businesses, physicians, political leaders, philanthropic supporters, and others. A competing, non-UNTHSC, Fort Worth MD-granting school likely will result in diminished relevance of the UNTHSC to major community stakeholders, which will compromise long-term institutional growth and success.

TCOM and UNTMD

Assuring the quality, growth, and culture of the Texas College of Osteopathic Medicine, the Health Science Center, and all the graduate programs of the UNTHSC are the top priorities for the UNT Health Science Center leadership. Critical measures will be put in place to protect and secure TCOM's future and success. These include the following:

- TCOM will maintain a larger class size than the MD program to help support the primary care needs of Texas.
- Separate Deans will lead TCOM and the new MD program.
- TCOM's Dean will continue to operate with all of the normal existing infrastructure.
- The TCOM Dean will be responsible for ensuring the traditions and philosophy of osteopathic medicine in the college will continue.
- Sufficient clinical training sites are being secured to support both the MD and DO and other clinical programs into the future.
- The money required for start-up will be supported by outside dollars from the community, state, and/or others. Funds will not come from TCOM.
- Shared resources will be budgeted proportionately to the MD and DO programs, as is currently the practice with UNTHSC's various schools and programs, resulting in a substantial infrastructure cost reduction for TCOM, and freeing up resources for additional faculty and teaching infrastructure.

Not only will the MD program be developed in such a way as to not hurt TCOM in any way, the MD program will support TCOM's security for the future. UNTMD will provide opportunities for TCOM through:

- Helping UNTHSC to secure primacy of relationship with the clinical providers in Forth Worth, assuring clinical training sites for TCOM and all other HSC programs for the future.
- Attracting philanthropy that will provide resources that will benefit TCOM and all HSC programs.
- Attracting significant additional research that will support TCOM faculty and faculty and students in all HSC programs.

Assurances have been developed and agreed-upon to ensure the support of the entire UNTHSC community for the ongoing growth and continued thriving success of TCOM (see Appendix A).

Mission and Vision

The sections below outline a prototypical Mission, Vision, and key elements for a new UNTHSC MD program. These are plans regarding initial strategic direction for this program. The dean, once recruited, will wish to further define the program's mission and identify ways to develop educational approaches that respond to the needs of the community, subject to certain framework decisions already made.

> **Mission:** Increase the numbers and diversity of the Tarrant County and Texas physician populations by graduating doctors with outstanding fundamental training, research awareness, technology proficiency, and team professionalism.
>
> **Vision:** UNTMD will train physicians with enhanced capabilities in research, community service and team professionalism, who embrace team building, apply research, leverage new technology, and remain life-long learners.

The MD school will duplicate the success achieved at TCOM by adopting a similar, although not identical, educational delivery model, teaching style, and curriculum, subject to meeting all the requirements for curriculum content for an MD program. It is important that the two schools be distinct, with those distinctions being complementary and not competitive.

Three educational features will be emphasized at the MD school:

- Scholarly concentrations,
- Certificates of Recognition, and
- Inter-professional education.

Recruiting of students for the MD school, and selection criteria for admission, should support the emphasis on these features.

Scholarly Concentrations

The MD school will develop and offer multiple scholarly concentrations as an integral part of its curriculum. These scholarly concentrations may begin as early as the second semester of the first year, with special emphasis in the second year, and as part of 4th year electives. The implementation of these scholarly concentrations will require the development of formal and informal relationships within UNTHSC and with the larger community, as well as faculty development within the medical school, to assure that appropriate resources are available as students pursue their scholarly interests.

Scholarly concentrations are elective or required curricular experiences that allow medical students to study specific subjects (medical or non-medical) in greater depth beyond that provided by a conventional medical school curriculum. These may include bench or clinical research, as well as medically-related scholarly work that is not pure research. They can vary in duration, from a project of 8 to 10 weeks to longitudinal studies over several years.

Educational goals that will be achieved by incorporating scholarly concentrations as part of the curriculum include these objectives:

- To foster students' analytical skills;
- To provide students with the skills needed to perform research;
- To provide mentoring to students who may seek a career that includes research, teaching and clinical activity, thereby increasing the number of students who will pursue an academic career;
- To enhance self-directed learning, as well as oral and written communication skills;
- To provide opportunities to develop original and independent critical thinking skills, so that the learner can analyze both their own findings and the findings of others;
- To develop the skill to appropriately access sources of relevant information in making evidence based decisions;
- To provide methods to integrate new knowledge into clinical practice.

Achieving these goals will require:

- Close mentorship by faculty who are well-versed in the concept of evidence-based medicine;
- An ability to appropriately interpret research findings;
- Teamwork with regular and close communication.

Specific scholarly concentrations include:

- The MD school, in keeping with its mission, will develop a robust scholarly concentration in the area of biomedical research.

- Additional options for scholarly concentrations include broad areas of medical specialty (Women/Infants/Children, Surgical Specialties, Diagnostic Medicine); concentrations related to the "business" aspects of health care (Medical Informatics, Public Policy, Healthcare Administration); and concentrations related to Academic Medicine.

Dual Degrees and Certificates of Recognition

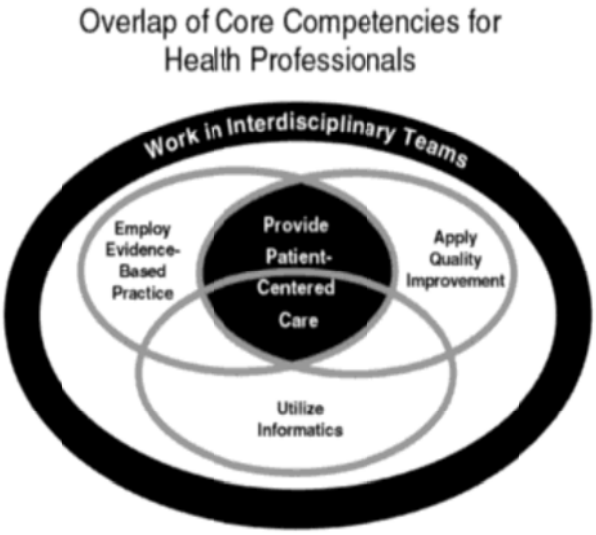
Many medical schools, including TCOM, offer their students the opportunity to obtain a second degree, in addition to that of MD or DO, during their term at the medical school. These dual degree programs do not necessarily integrate the curricula of the two schools and the student is required to complete most, if not all, requirements of both degree programs. Another approach is to acknowledge students' work outside the standard curriculum with Certificates of Recognition. These Certificates are given by the medical school to students who complete specified requirements in the classroom, laboratory, and/or clinical/community environment.

Existing dual degree programs with other schools at UNTHSC will be offered to students in the MD program. Additional dual degree programs may be developed with UNT or with other colleges and universities. Examples may include: MD/Ph.D. and MD/M.S. programs with the Graduate School of Biomedical Sciences, an MD/MPH with the School of Public Health, or other programs to be developed partnering with other local institutions (UNT Denton, Texas Christian University) who offer degrees not available at UNT, such as an MD/MBA.

In addition, it is recommended that the UNTMD develop and offer Certificates of Recognition that correspond to the scholarly concentrations.

Inter-professional Education

The Institute of Medicine report "A Bridge to Quality," (2003) declared the following vision for health professions education: "All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches and informatics."[27]



The need to work together in teams of professionals is a critical aspect of medical practice. The MD school will recognize that aspect in its mission, and implement it in a special emphasis on inter-professional education. Although that may include multiple disciplines in the same classroom, inter-professional education is much more meaningful when it involves multiple disciplines in an ongoing project or community effort. One potential context for these experiences is service learning – a structured learning experience that combines community service with preparation and reflection. It is noted that service learning in itself is not inter-professional education. In order to achieve the objective of inter-professional learning, students are organized into multi-disciplinary teams that work together to devise and implement strategies for learning, research, or community service. UNTHSC provides a unique opportunity for such teams with its variety of schools, and the community adds to those opportunities with schools of nursing, social work, etc.

An emphasis on inter-professional education will be a distinguishing feature of the MD school.

- In the classroom, non-graded courses, such as Medical Ethics, will be developed to include other professionals, such as physician assistant students, nursing students, public health students, etc.
- The “heart” of the inter-professional education program at the MD school should be outside of the traditional classroom. A variety of multi-professional learning and service opportunities will be developed that allow students to experience working in teams. Each student will have at least one team experience that extends across more than one semester.
- Team building and inter-professional learning will be incorporated into the clinical clerkships, as well.

[27] Institute of Medicine, "Health Professions Education: A Bridge to Quality," April 2003.

Organizational Structure

The MD program will be led by a Dean. The UNTMD Dean will report to the President through the Provost, as do the current academic units of the UNTHSC. The Board of Regents for the University of North Texas System will be the ultimate governing body for the MD program just as it is for the existing programs. The MD program will also have appropriate leadership for Medical Education/Academic Affairs, Student Affairs, Clinical Affairs, Pre-clinical Affairs (basic sciences), and Operations/Administration. The LCME requires that the Dean have control over all elements of MD program education.

- The Dean is responsible for leadership of UNTMD and oversight of all of its functions, for developing relationships within the UNTHSC and in the community, working with the TCOM dean and other UNTHSC leadership to develop philanthropy, and fostering expanding relationships with the hospitals and physicians in the community.
- To every extent practical the DO and MD schools should utilize the same organizational structure and personnel, creating a matrix type of reporting structure to the deans of each school.

It is recognized that each school will have its own philosophy and culture, and that each will be distinct from the other. Accreditation requirements, educational approaches and operational practicalities will, at some levels of the organizations, suggest that roles be duplicated. On the other hand, whenever commonalities exist so that roles, and the personnel filling those roles, can be shared between the two schools, the benefits of that approach can be significant. In the sharing of certain administrative and operational functions, economies can be achieved. Sharing of leadership roles and faculty has economic benefits, but will also benefit both schools by reducing feelings of competition and engendering opportunities for a duality of commitment and expanded use of talent.

Therefore, at the leadership level of Associate or Assistant Dean, and at the administrative support level, each school's Dean will create his/her own organizational structure, responding to the needs of the school, the requirements of accrediting bodies, and the strengths of the individual dean. There are some leadership positions and administrative functions that should be considered by the two Deans as shared:

- Faculty Affairs
- Graduate Medical Education
- Hospital Relationships
- Medical Education staff support
- The Associate Dean for Clinical Affairs will work with the clinical chairs to coordinate the academic activities of the clinical faculty for both Schools and with the partner hospitals to assure appropriate clinical training for MD and DO students.

Other leadership positions and administrative functions are more appropriately handled independently by the two schools:

- Director of Medical Education & Curriculum Committee

  There will be a Director of MD Medical Education in the medical education office which will be joint with TCOM. The Director of MD Medical Education will be responsible for coordination and oversight of the curriculum and support to the UNTMD Curriculum Committee.

- Admissions/Student Affairs

  Leadership for Student Affairs will be specific to UNTMD and will be responsible for support to the Admissions Committee and the admissions process for the medical program and for ensuring delivery of student services including counseling, financial aid, and registrar to MD students.

- Research
- School specific business, planning and operations functions

It is intended that the Graduate School of Biomedical Sciences would constitute the basic sciences faculty for the MD program, as it does for TCOM and the other schools and colleges at the UNTHSC. Therefore, the Dean of the Graduate School of Biomedical Sciences would take the place of the traditional basic sciences chairs in being functionally responsible to the Dean of the UNTMD for supporting the delivery of the pre-clinical MD curriculum.

As detailed in other sections, the UNTHSC would provide the administrative and operations staff, leveraging the existing leadership of the infrastructure units with additional staff individuals specifically tasked to support the MD program. All of those functions that are currently shared at the UNTHSC level (business, planning, finance, human resources, information technology and communications, animal laboratory, research management, intellectual property protection, legal, IRB, bursar, library, etc.) will be extended to cover the MD school. Many of the support functions can be shared by the two schools, as some are currently shared by all of the schools at UNTHSC. In some of the support functions, resources should be dedicated to the MD school, in order to establish and maintain that school as distinct from TCOM.

Clinical Department Structure and Clinical Chairs

The profession of medicine has long organized itself around clinical specialties, which in both hospitals and medical schools have been further organized as departments (i.e. Internal Medicine, Surgery, Radiology, etc). This organizational approach has been criticized for the formation of intellectual and economic silos that encourage medical professionals to guard their own interests. In the medical school environment, concern has been raised that the clinical department structure tends to over emphasize clinical service and fails to develop expertise in education. The departmental organizational structure, however, provides an efficient and effective mechanism of subdividing a large group of professionals into logical and sustainable units for decision making and professional development.

Although there are other theories and proposals for departmental structure, initially, the MD school will maintain the departmental structure that currently supports TCOM and UNT Health. The leadership of the two schools, in conjunction with the UNTHSC Executive Vice President of Clinical Affairs and Business Development/President and CEO of UNT Health, the Provost and the President, will continue to explore new and innovative approaches that could be beneficial to the academic and clinical program at UNTHSC, but future changes to the departmental structure by any of the three entities will be considered only when the implications for all three entities have been considered, so that consistency is maintained. Each department will have the responsibility to assure that it includes faculty with specific expertise and time commitments sufficient to adequately support the multiple missions of the institution – education, research and clinical service.

There are three primary leadership roles for each Department – Academic Chair for TCOM, Academic Chair for UNTMD, and Clinical Chair for UNT Health. It is possible, and desirable, for all

three roles to be filled by the same individual. It is likely, however, that in some cases there will be compelling reasons to have one or more of the roles filled by different individuals. For example, there are departments of TCOM that may be required to have a DO as chairman for accreditation purposes. While that same person might be appropriate to also fill the other two roles, it would not be desirable to impose that requirement (for a DO chair) on the MD school. There may be other, as yet unidentified, local and operational reasons for choosing to fill these roles with more than one person.

Job descriptions will be developed delineating the three departmental leadership roles. At the time the MD school is formed, the existing clinical chairs within TCOM/UNT Health will be acknowledged as the interim clinical chairs of the MD school. Following the appointment of the founding Dean of the MD school, and any time thereafter, the two Deans and the Executive Vice President for Clinical Affairs and Business Development and President/CEO of UNT Health, with the concurrence of the Provost, may reach mutual agreement to appoint a separate individual to one or more of the roles. Whenever a vacancy occurs in a leadership position in a department, those same persons will reach a mutual decision about how such vacancy will be filled. When any clinical department has more than one person filling the leadership roles, an Executive Chair will be appointed by the Provost, in consultation with the Deans and the Executive Vice President for Clinical Affairs and Business Development and President/CEO of UNT Health, and the approval of the President. The Executive Chair will provide leadership in developing overall departmental culture and strategic direction of the academic and clinical programs and department administration, as well as assignment of faculty and administrative resources.

Academic Plan

Over the past several years, TCOM has adopted and developed a Problem-Focused, Application-Oriented Curriculum. The teaching style has been a large group (classroom) approach, but emphasizing case presentations with a Socratic-method question and discussion structure, rather than the more traditional lecture format. The data demonstrate that this delivery method has proven to be extremely effective in helping students to be successful.

The MD school will adopt the Problem-Focused, Application-Oriented Curriculum, and the same teaching format as TCOM, with appropriate unique curricular elements as outlined below:

- Phase I Introduction to Integrated Systems (basic sciences) and Phase II Mechanisms of Disease, taught during the first year in a large group lecture format. These classes are likely to be the same in content to those of TCOM and, in order to achieve economies of scale, some or all of them could be taught with combined classes from both schools, subject to resolution of any concerns by students or accrediting bodies.
- Phase II "Problem Focused Application" courses involve more case presentations and student discussion. Although much of the content of these courses will be the same for both schools, these classes will be taught separately to keep class size smaller and encourage student participation, and to allow for specific emphases to be developed by the individual Dean and/or curriculum committee.
- The curriculum will also include courses which address the competencies for physicians. Each school may develop unique courses (such as Literature and Medicine at TCOM) or the schools may jointly develop these courses (such as Medical Ethics). These courses may be taught in combined classes when jointly developed by the two schools.
- The MD school will include in its curriculum specific course work that will advance its research emphasis, support its scholarly concentrations, and foster inter-professional education. Those courses will be developed by its curriculum committee as the school is brought to fruition.
- In order to maintain a consistent curriculum, there will be a joint curriculum committee, but each school will have its own curriculum subcommittee to address its unique aspects of their curriculum. The two schools should work closely together to:
    - complete the development of the problem modules for the second year curriculum;
    - develop strategies to support self study and develop life-long learning skills;
    - advance the use of new technology in the learning environment.

Informatics Instruction

While the library meets or exceeds LCME requirements for study space, collections, and other resources, there is a specific requirement for instruction in informatics for medical students, which is currently fulfilled at TCOM by library staff. Informatics instruction incorporates educational technology, research techniques and design, as well as tools for life-long learning and clinical practice.

The library should develop the necessary resources to include informatics instruction to the MD school. While some of the instruction may occur in a classroom, which could be combined with TCOM, because of the hands on nature of the technology, some of the instruction must be done in

small groups or by library staff available to the students in the library. Because the students' use of informatics ties into their clinical and research experiences, informatics instruction should also be integrated into the ongoing curriculum, rather than solely as a stand-alone course.

Clinical Training

During third year, students are engaged in clinical rotations or core clerkships through the clinical departments. Because TCOM includes manipulative medicine as a core rotation, the specific time frames for these rotations will vary to some extent between the two schools, but the content, the learning opportunities and the locations of the clinical clerkships, under the direction of the responsible department, must be consistent between the two schools.

Sites for core clinical rotations should be available to both students from TCOM and the MD school. For example, if one Department uses both Harris and JPS hospitals for training students, then assignment between the two hospitals must not be based on which school the student represents. A shared position of Clinical Education leadership within both Deans' offices will provide oversight to assure that students will have access to an equivalent level of educational quality across all locations.

Clinical education also requires the development of a formal curriculum. The LCME has requirements for the content and the administration of the clinical curriculum. It must, for example, "cover all organ systems, and include the important aspects of preventive, acute, chronic, continuing, rehabilitative, and end-of-life care" and include both primary care and training in the "core" areas of family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery. In addition, there must be a system to monitor that all students are having clinical experiences that are consistent with the curricular objectives or are addressing any gaps with simulator or other experiences. The UNTMD's Curriculum Sub-Committee will work with the Clinical Chairs to establish the planning process for the clinical curriculum and will provide oversight for the outcome.

The Texas Senate Higher Education Subcommittee recommended that higher education institutions should emphasize commercialization of research as well as expand and strengthen opportunities for researchers to collaborate within and across university systems and to partner with private and industry representatives where appropriate.[28] The LCME has recently added a standard that requires, in addition to learning experiences in basic research, medical students to have learning experiences in clinical and translational research. The UNT Health Science Center currently leads all Texas health science centers in research growth. Over the past five years, extramural research awards have increased by more than 100 percent. In developing the research elements of its curriculum, the UNTMD faculty will be able to leverage existing research programs from the UNTHSC to provide students with excellent research experiences, including such activities in the UNTHSC research centers and institutes known collectively as the Health Institutes of Texas:

- Cardiovascular Research Institute (CRI)
- Center for Community Health (CCH)
- Center for Commercialization of Fluorescence Technologies (CCFT)
- Focused on Resources for her Health Education and Research (FOR HER)
- Institute for Aging and Alzheimer's Disease Research (IAADR)
- Institute for Cancer Research (ICR)
- Mental Sciences Institute (MSI)

[28] The Texas Senate Higher Education Subcommittee Interim Report, December 2008.

- North Texas Eye Research Institute (NTERI)
- Osteopathic Research Center (ORC)
- Primary Care Research Institute (PCRI)
- Texas Center for Health Disparities (TCHD)

Presently, UNTHSC faculty researchers are exploring new approaches to the treatment of disease, including Alzheimer's disease, cancer, women's health problems, musculoskeletal issues, and health disparities. The UNTHSC employs advanced technologies such as nanotechnology, proteomics, and mass spectrometry. In addition to the current research at UNTHSC, the Office of Clinical Trials is currently conducts dozens of clinical studies each year for some of the nation's leading pharmaceutical companies.

Additionally, the students will also have access to various clinical and translational research opportunities through UNTHSC's hospital affiliates. Potential research opportunities include:

- Texas Health Resources - Clinical trials are currently in progress in the areas of cardiology, internal medicine, urology, OB/GYN, cancer/oncology, and cancer prevention.
- Cook Children’s Medical Center has 258 research projects registered by their Institutional Review Board and clinical trials are under way in the Emergency Department, Epilepsy Monitoring Unit, and the Neonatal Intensive Care Unit. Representatives have indicated that they welcome student participation in research activities. Dr. Paul Bowman, Chair and Professor of Pediatrics, is leading a collaboration between Cook Children's and St. Jude Children's Research Hospital on pioneering new Acute Lymphoblastic Leukemia (ALL) treatment.
- JPS Health Network - As an academic teaching hospital, JPS has numerous research opportunities such as clinical drug trials and device trials.

Faculty and Staff

The exact nature of faculty needs will be determined by the nature of the MD curriculum. It is expected that faculty can be shared among the UNTHSC schools, as they are now for TCOM's basic science instruction by the faculty of the Graduate School of Biomedical Sciences.

The existing clinical faculty structure, separating UNT Health from the medical school, is an appropriate structure to allow for the introduction of the second medical school. The clinical functions of the faculty should continue to be under the auspices of UNT Health, and UNT Health may develop relationships with physicians who do not have faculty appointments. An environment of competition between the two schools is not seen as desirable, which suggests that even in the academic arena, a single faculty is the most appropriate approach.

The DO and the MD schools will share a single medical faculty. In order to have a single faculty, it is important that the two schools be as consistent as possible in criteria for appointment, promotion and tenure. Full or part-time faculty normally should not be allowed to apply to only one of the two schools. Exception to this policy may be appropriate for 1) faculty who are part of a remote campus used for clinical rotations by only one of the two schools, 2) adjunct faculty who have a very limited function within only one school, or 3) faculty who are entirely in administrative or academic roles at only one school, without appointment to any clinical department.

- Each school will adopt its own bylaws and appoint an independent bylaws committee. The committees and Deans should cooperate to insure that criteria for appointment, promotion and tenure are consistent between the two medical schools, and within UNTHSC.
- Each school will have a Promotion and Tenure committee, with joint membership, to assure that clinical faculty are considered equally by each school for appointment, promotion and tenure, consistent with the bylaws of the schools and UNTHSC.
- There will be a single joint administrative function for faculty credentialing that provides for a seamless process between the related institutions of TCOM, the MD school, and UNT Health.
- Faculty recruitment and hiring decisions will remain with the individual departments. Faculty will continue to have only one employment agreement, with specific academic responsibilities addressed in the agreement.

Among its schools and colleges, the UNTHSC maintains an impressive cadre of faculty and staff members. These professionals represent deep functional and technical skills, many of which can be shared with an MD program. This presents a unique collaborative opportunity to the UNTHSC, one absent from most newly developed MD programs. In all cases, faculty and staff workloads and recruitments will hold firm to the principle that the addition of an MD program would serve to augment and support existing programs.

Basic Science Faculty

The existing basic science faculty members at the UNTHSC also offer potential economies of scale that can be leveraged for an MD program. This does not mean that current faculty members are expected to add significant work of an MD curriculum to their responsibilities. Additional basic science faculty members are slated to be hired to support the instructional needs of the MD program. Projections for new faculty are based upon the current instructional staffing and

assuming that some of the lecture-type instruction can be combined. Existing faculty members bring deep experience in their disciplines and instruction to medical (and health sciences) students, and this experience will prove invaluable as a new MD program would launch.

For the new MD program, the addition of an equivalent of 12 FTE basic science faculty members (an estimated 28 new faculty) devoted to medical education is planned. Costs for these faculty are estimated based upon average salaries for GSBS faculty and the cost of current faculty FTE's in the GSBS. Note that 12 Full Time Equivalents (FTEs) devoted to medical education may represent significantly more headcount numbers of faculty (approximately 25-30) as a result of additional research and other expected commitments. While the MD program would add FTEs, it is envisioned that instruction in the new program would be delivered from a variety of basic science faculty, many of whom would also teach in other UNTHSC programs, including TCOM.

Clinical Faculty

The involvement of clinical faculty from hospital and other partner organizations is critical to the accreditation and success of an MD program. As with most new MD schools, clinical faculty are typically utilized and compensated on a part-time basis for their teaching responsibilities; this compensation can come in the form of direct payment to private practitioners or payments to a clinician's employer (such as in the case of hospitalists). In addition, MD programs may also pay hospitals for services related to student clinical rotations, either in lieu of or as a supplement to payment for practitioner services. For the new UNTHSC MD program, the financial estimates assume part-time involvement of clinical faculty from required specialties, consistent with other recently developed MD programs.

A limited set of clinical faculty members from a variety of specialties will need to be involved in the program's planning within the first year, serving on the curriculum committee and providing insight into the planning for clinical rotations. This involvement is expected to be relatively limited, but nonetheless critical. As the MD students move into their clinical rotations during the third and fourth years of training, the involvement of a cadre of clinical faculty among multiple disciplines and clinical teaching sites will be required. It is envisioned that the MD program would engage approximately 14 FTEs (an estimated 70 new faculty with partial support from patient care and research revenues) of new clinical faculty members (at varying ranks) across, but not limited to, seven main specialties (Internal Medicine, Family Medicine, Pediatrics, OB/GYN, Surgery, Pathology, and Psychiatry). Clinical faculty involvement is expected to include both DO and MD physicians serving as clinical faculty and instructing students.

Leadership and Staff

The new MD program will require a professional staff and infrastructure to support its operations. In the first planning year, the new program will need to establish its executive leadership, composed of several critical senior positions. Some of these individuals may be new appointees and others may be from leveraging existing expertise and/or sharing among the UNTHSC programs, such as the Dean of the Graduate School of Biomedical Sciences.

In addition to senior leadership, several functions are necessary to operate an MD program. These functions include, but are not limited to, curriculum development and management, faculty affairs, academic advising, tutoring/student support, financial aid, admissions, fundraising/ development, and communications. For its operations, it is envisioned that a new program would leverage as many of the existing UNTHSC resources as possible by adding staff to existing departments. This appears most possible in key administrative areas, such as the registrar, controller, admissions staff, and fundraising/development.

While there is opportunity to share staff and resources, a new program will also require new dedicated hires for certain key positions. These new hires will include some new staff to accommodate increased needs and volumes from MD students, as well as new management and experts to support MD program operations. For example, the MD program would need to hire additional staff in medical education and admissions. In addition, while library and bioinformatics leadership would be expected to be shared with the other UNTHSC programs, adding the MD program would require additional library and IT staff (estimated at 4 FTEs) to support the needs of the new medical students.

Students: Recruitment and Admissions

The planning assumption for class size of the MD program is 100 students. The existing facilities to be used for the MD classes and study space will accommodate that size class with some renovation, and this plan outlines the needed additional resources for infrastructure and administrative units as well as faculty to be enlarged and enhanced to accommodate the additional 200 students on campus and 200 students on clinical rotations at any one time, assuming a traditional two-year preclinical/two-year clinical calendar.

As with every medical program, the goal of the admissions process is to recruit and matriculate the most qualified students possible. The specific characteristics of desired candidates for this program would be determined by a program's admissions committee and leadership. Admissions processes and criteria are expected to be consistent with other MD programs and will be updated on a regular basis and publicly posted. Per state requirements for the Texas Medical and Dental Schools Application Service (TMDSAS) participation, a description of factors to be considered by the UNTMD in making admissions and scholarship decisions must be published one year in advance of student applications. In accordance with LCME guidelines, the MD program will in no way, however, solicit or advertise for applicants prior to receiving LCME Preliminary Accreditation.

The LCME requires that an accredited MD school must have a thorough, fair, and clearly communicated admissions process. The school must also communicate its admissions standards and expectations.

Participation in the admissions process must include multiple constituents including faculty, staff, and students, which typically results in a balanced admissions committee. Admissions decisions must be made without any political or personal influence from the dean, leadership, faculty, or others in the institution. The methods of screening, interviewing, accepting, and matriculating medical students vary among medical programs. These methods, however, typically include a common application process, secondary applications, and interviews.

Student Recruitment, Selection and Admission

The recruitment, interview and candidate selection process both sets and reflects the culture of a medical school. In this area, as much as any aspect of the school, the MD school should develop and demonstrate itself as distinct from TCOM. The MD school will develop its own philosophy and approach to the interviews, selection of candidates for interview, and acceptance of candidates for admission. In order to support the distinct philosophy of the MD school, the admissions office, admissions officer, and interview and admissions support function should be distinct. Recruitment, including materials, web presence, recruiting events, etc. will be developed uniquely for the MD school. Students who desire consideration for admission by both schools will apply to each school independently. It is anticipated that the MD school, like TCOM and all other Texas medical schools, will use the Texas Medical and Dental Schools Application Service (TMDSAS).

Although it is expected, based on volume of applications to all Texas medical schools, that there will be a sufficient number of applicants to both the DO and the MD schools, the increased number of medical schools and student seats throughout Texas will require that all schools conduct more interviews and make more offers per seat. The two schools should work to identify and take advantage of any economies related to the “back office” support and use of the TMDSAS system.

- Faculty who do student interviews will interview for either school. Faculty will not be designated by their own credentials (MD or DO) to interview for one of the schools.

However, care should be taken that the same faculty member does not interview a student twice, if the student has applied to both schools.

- There will be two separate admissions committees. The applicant's status as an applicant with the other school will not be considered as part of the admission process. Information regarding the candidates will not be shared between the two schools.

It is anticipated that the MD program will maintain a separate admissions director, function, processes, committee, and "storefront" from TCOM. This is for several reasons. First, the MD program must evaluate candidates according to its own admissions policies and criteria as established by the MD program faculty and admissions committee. Much as TCOM seeks certain characteristics from its applicants, the MD program would seek its desired characteristics from applicants.

Second, if interested in both programs, students will need to separately apply to both the MD program and TCOM. These applicants will be evaluated independently upon their own merits and potential fit for each program. This further drives the need for separate storefronts, interviewers, and admissions committee members for each school. Separate storefronts also provide comfort to applicants should they be interviewing at both schools; it can alleviate concern that interviewing at one school and then returning for another interview at the same location illustrates indecisiveness or lack of true interest in one program or another.

Third, as both TCOM and the MD program will seek desired characteristics in applicants, a separate admissions director will help ensure those criteria, and their related processes, are kept discrete.

It is contemplated, however, that student recruitment and admissions support operations and staff functions can be shared between TCOM and a new MD program. These functions would be kept separate from any admissions decision-making process, therefore not interfering with admissions decisions by each school's admissions committee. Specifically, two staff resources (in addition to an MD program admissions director) would be added to accommodate the workload associated with the MD program admissions process.

Diversity among the MD program class will be an important element to the admissions process and the ultimate success of the program. Matriculating a class that reflects the diversity of Fort Worth and Texas will help produce culturally-competent practitioners, suited to meet the healthcare needs of the state. The MD program will have a Director of Diversity Programs who will educate around and address cultural competency and related issues within the program. In the spirit of inter-professional education, it is anticipated that these efforts would be collaborative across all UNTHSC schools and programs.

Admissions Processes

TMDSAS Application

The proposed MD program would participate in the Texas Medical and Dental Schools Application Service (TMDSAS) application process. TMDSAS is the common application resource process for all state university medical, dental, and veterinary schools. TCOM currently participates in TMDSAS, as do the seven other state university-based medical programs within Texas. TMDSAS allows students to apply to these schools (as selected) through one process, aggregating and centralizing critical application data such as grade point average (GPA), Medical College Admissions Test (MCAT) scores, and recommendation letters for schools' use in screening applicants.

Applications verified by TMDSAS will be the first step in the applicant screening process. TMDSAS applicant data will be received directly into the program's Admissions Office. Once the initial application is received, the application will be reviewed for completeness and the data will be verified to ensure accuracy of information. The MD program may then elect to screen applicants based upon quantitative criteria (such as GPA or MCAT scores) prior to the next step in the admissions process. This is not uncommon at other MD schools, and this would need to be done in accordance with Texas state law. TCOM, however, requires that a secondary application be completed prior to review of a candidate's TMDSAS application. Either route could be reasonable.

Similar to TCOM, the new MD program will be committed to the education of students from the State of Texas seeking a doctor of medicine degree. Student applicants will not, however, be limited to candidates with Texas residency, and overall state residency is expected to resemble other state medical schools' requirement of at least 90% Texas residents.

Secondary Application

The UNTMD program would require a secondary application from each applicant it wishes to consider for admission. This can occur either after or as part of the acceptance and verification of TMDSAS application information. The program may elect to charge a nominal application fee with the submission of the secondary application.

This application will collect additional applicant information, ask for updated information as applicable, and utilize open-ended essay questions to obtain additional insight into the applicant. These questions can focus on issues such as the candidate's desire to become a physician and interests in medicine, commitment to Texas healthcare, and/or interest in the UNTHSC. The secondary application can also provide information to the applicant, such as the expectations of academically successful students. Based upon this information, the UNTMD Admissions Committee will determine which candidates will be invited for interviews. The UNTMD will have a separate admissions committee from TCOM.

Interviewing

Formal interviews of MD program candidates will be used to evaluate candidates' intelligence, integrity, and personal and emotional characteristics necessary to become effective physicians. The MD program will maintain a separate cadre of admissions interviewers from TCOM admissions interviewers. Students invited for an interview are also typically offered a tour of the facilities and an opportunity to meet students and faculty.

Interviews are intended to assess an applicant's motivation, potential fit within the program, understanding of the complexities of being a physician, and communication skills. Interviewers will be appointed by a UNTMD leader (typically an Associate Dean for Student Affairs), undergo specialized training, and utilize a series of structured questions and evaluation mechanisms. Interviewers will evaluate candidates on their responses to questions and discussions during the interview process.

The UNTMD program can elect to use a variety of interview approaches, based upon preference. The interview can be "closed" (interviewers do not have access to the applicants' files), "open" (interviewers have full access to the applicants' files), or "semi-open" (interviewers have limited access to the applicants' files). Some schools have utilized a tiered process, with one open and one closed interview, and leadership of a new MD program would determine the best approach for

the UNTMD. In addition, interviews can be one-on-one or several-on-one meetings for each candidate. Again, this will be a matter of preference.

Admissions Committee and Acceptance

The MD program would maintain a distinct admissions committee to evaluate candidates. The decision regarding admission of students is a faculty responsibility. The Admissions Committee would be supported by the functions within the office of the Associate Dean for Student Affairs and the Director of Admissions. Committee members can include faculty and (eventually) students, leveraging the expected additional faculty resources from the MD program.

TMDSAS Trafficking Process

Since the MD program would participate in the TMDSAS application process, it would also participate in the TMDSAS trafficking process. The TMDSAS trafficking process is a procedure whereby accepted applicants rank their preferred medical schools in the state, regardless of their acceptance or rejection status at each school. Once admissions offers and acceptances have been made at the medical colleges, the admissions offices at all Texas medical schools work collaboratively through TMDSAS to identify potential opportunities to move (or swap) students to give students enrollment at a higher priority school. The intent is to allow students to attend their most preferred school, perhaps opening slots at another program for another student who seeks that institution.

The exact timing and initial involvement with TMDSAS will need to be finalized should the MD program move forward. TMDSAS application cycles run from May through June of each year.

For the MD program's first year, there are three possible options related to TMDSAS timing, all determined by the timing of LCME preliminary accreditation:

1. February LCME accreditation would allow for normal TMDSAS participation in that year.
2. Following a June LCME accreditation, it may be possible to join TMDSAS (via activation online) in June of that application cycle. TMDSAS has indicated that it could send an alert to applicants indicating the new school is available on TMDSAS following accreditation.
3. Following a September LCME accreditation, the MD program would utilize a separate application process (outside of TMDSAS) only for its first class, participating in TMDSAS thereafter. Should this occur, the MD program would share its acceptance information with TMDSAS (as Baylor Medical College does now) to facilitate the TMDSAS trafficking process.

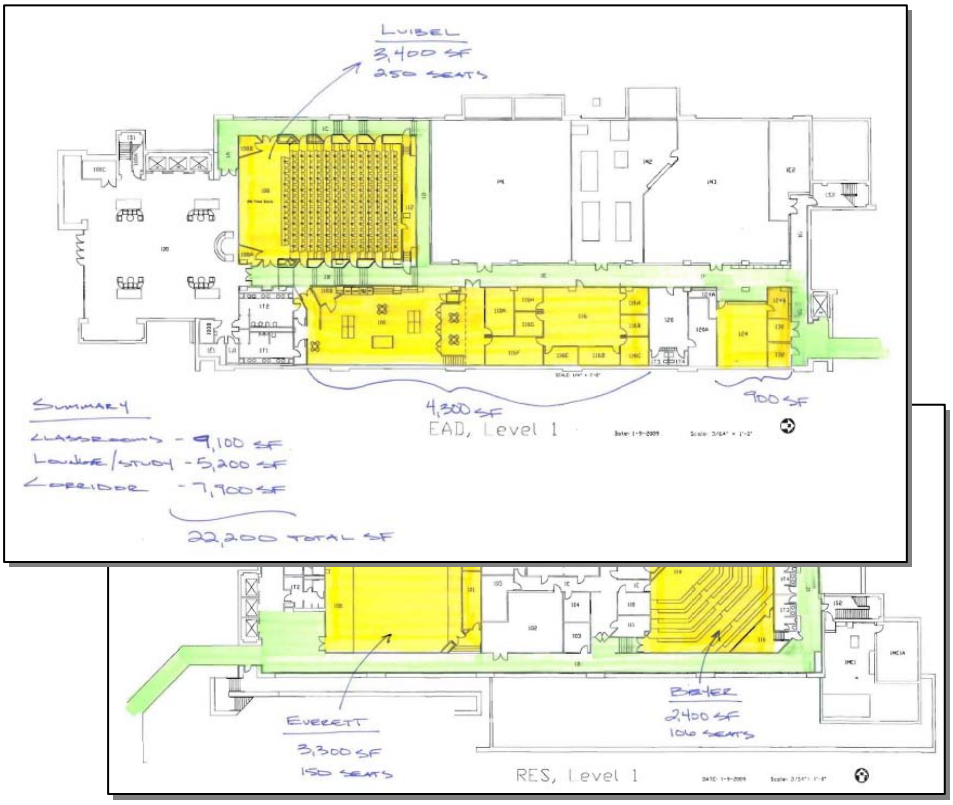
Infrastructure Requirements

The MD program would develop resources and infrastructure consistent with LCME accreditation requirements. The intention is to augment and provide an enriched resource base to leverage existing resources and infrastructure at UNTHSC.

Lecture and Classroom Facilities

TCOM (along with other programs) has recently moved from its former classroom and clinical skills laboratory locations to the new 112,000 square-foot UNTHSC Medical Education and Training building on the corner of Camp Bowie Boulevard and Montgomery Street. This building provides new auditorium, classroom, simulation, faculty, study, and student lounge space.

The new MD program is expected to occupy the former TCOM lecture, classroom, and lounge space upon vacancy. This space, estimated at approximately 22,000 square feet by the UNTHSC facilities, includes the Luibel lecture hall, the Everett lecture hall, the Beyer lecture hall, and current student lounge and activity space. This space would be renovated as a UNTHSC project. With the exception of the Beyer lecture hall, significant construction would not be necessary.



This space should prove adequate for the MD program's classroom instruction given that the MD program curriculum will utilize similar delivery methods (lecture size, interactive cases, etc.) as the TCOM curriculum.

Note that some classes in the first year may be taught to both schools simultaneously in the Medical Education and Training Building (MET), and that the Dean's offices may be co-located with the offices of the TCOM Dean, also in the MET. In addition, the MD students will utilize the clinical skills laboratory in the MET.

Anatomy Laboratory Space

The UNTHSC currently maintains a substantial gross anatomy laboratory and anatomy storage facility, parts of which have been expanded in recent years. It is assumed that, like TCOM students, four to five MD students would share one cadaver for the gross anatomy course; this would mean about 20 additional cadavers to accommodate an MD program class of 100 students. Faculty within the UNTHSC Department of Cell Biology and Anatomy indicated that the current anatomy facilities can accommodate this addition. While anatomy classes among all the UNTHSC schools would need to be staggered, the laboratory and storage facilities would be sufficient for instruction. Additional teaching resources would be required; this plan assumes four new anatomy faculty will be recruited.

As the curriculum for the MD program is developed in detail by the Dean and curriculum sub-committee, there may be a decision to move away from cadaver-based anatomy instruction for the MD program toward a more technology-based model.

Library and Study Space

The UNTHSC maintains a substantial library, the Gibson D. Lewis Health Science Library (Library), encompassing stacks, open study space, large conference rooms, team rooms, and study carrels. Along with its cadre of professionals, the Library houses computer labs, the UNTHSC information technology offices, reference materials, and medical informatics capabilities.

The Library can accommodate learning and reference needs for all UNTHSC students. Additional needs (staff, reference, and database costs) are included in the potential MD program's preliminary budget estimates.

The Library recently has been expanding its study space and has added an entire open floor available 24 hours per day for student individual and group study space. By itself, the UNTHSC Library appears adequate for a significant portion of the student body's simultaneous desk-based study in the future. Additional study space in facilities outside of the Library, such as classrooms, small-group rooms, lounges, and off-campus locations will be available. The new MD program plans include significant study space in the renovation of the former TCOM teaching and lounge space. In addition, TCOM students have access to study space in the new building.

Information Technology

The UNTHSC currently maintains adequate information technology infrastructure (networking, servers, etc.) to accommodate an MD program. Each MD program student would be issued a laptop (similar to what is issued to TCOM students), which can be supported by the UNTHSC information technology professionals. Medical informatics, including online database and electronic journal access, can be provided by the Library, and costs for such external fees are included in the financial estimates.

Digital Learning and Virtual Environments

Virtual worlds (virtual reality or VR) have been present for nearly two decades, with advances in computer processing, graphical resolution, and data bandwidth capabilities allowing for more sophisticated topography/environments that can be shared via networking. The term "Presence" refers to the feeling of being in one place, (such as a realistic VR environment), while actually existing in another place (the physical world). Presence further requires that the participant be mentally focused and experience an adequate series of interesting inputs, be them engaging avatars (virtual people), environments, or events, all of which must exhibit believable behavior. Such environments can also enhance social interaction, as well as students' abilities to learn together and from each other.

Actual DUSON SecondLife® DUSON

Presence and VR environments have been integrated into curricula and medical education at some institutions, most in recent years. For example, Duke University's School of Nursing (DUSON) has created its SecondLife® environment.[29] This world includes a virtual creation of the DUSON building where students can attend virtual lectures, interact and socialize via avatars, access tutorial and other resources, and work together in virtual classrooms. SecondLife is being used by millions of participants globally, allowing other academic institutions to modify their SecondLife environment to mimic their surroundings and orient to their needs.

The UNTHSC has been investigating the application of advanced digital learning methods, like (but not limited to) a SecondLife application or a "Discovery Room," to enhance medical education. These efforts would be applicable to all programs, including the proposed MD program. This type of learning can become an integral part of the UNTHSC's medical programs, DO and MD programs, based on curricular needs and desires. For example, it has been suggested that students can manage VR patient avatars, who will unexpectedly present with problems and needs, requiring triage, diagnoses, and possibly medical intervention. This type of educational environment would enhance the UNTHSC's successful applications-based curriculum, and it would most likely be well received by the LCME. The MD program has allocated some shared costs into its financial model, recognizing the potential for such a VR learning environment for itself and all of the UNTHSC programs.

Simulation and Standardized Patients

Simulated Patient Mannequin

Both standardized patient encounters and simulated patient exercises are common and valuable medical instructional experiences. The UNTHSC has recently expanded from eight standardized patient examination rooms and three simulated patient mannequins to 28 examination rooms and five simulated patient mannequins in the new UNTHSC MET building. Additional instructional staff is also planned to accommodate this growth. These new facilities and staff should be adequate for the planned UNTHSC program growth, including a potential MD program.

[29] Johnson, Vorderstrasse, and Shaw, "Virtual Worlds in Health Care Higher Education." Journal of Virtual Worlds Research, August 2009.

Student Affairs

The UNTHSC maintains robust student support operations for all its programs. A new MD program would seek to leverage these capabilities, adding resources and personnel as needed.

Academic Advising and Performance Tracking

Like the other UNTHSC programs, the MD program will be focused on helping students achieve their academic goals through superior academic advising. The MD program's system of academic advising will integrate faculty members, course directors, clinicians (as applicable), and student affairs professionals.

The UNTHSC currently maintains an impressive academic support and advising service. Most notably, TCOM has developed the "No Medical Student Left Behind" (NMSLB) program, a pro-active academic tracking and counseling approach to monitor students' progress throughout their medical school training. The students can also monitor their own performance along a number of axes. The NMSLB program allows faculty members to track student performance and intervene with assistance. Information technology driven, NMSLB tracks student testing and other performance, providing reports to administrators, faculty and students in real-time. Data is also integrated into the student's academic record, tracking from pre-admission through real-time, giving a longitudinal (and color-coded) view of overall performance. It is envisioned that the MD program would utilize this software, coordinating with TCOM colleagues, yet maintaining distinct academic records for each program.

Academic advising for students will be an ongoing and actively engaging process, involving student affairs staff, faculty, and clinicians, as appropriate. The Associate Dean for Student Affairs and the UNTHSC academic counseling professionals, leveraging the NMSLB system, will be involved in advising all MD students who have encountered academic difficulties. Students will also be encouraged to self-identify and report academic difficulties. Tutorial services will be also available for students who are encountering academic difficulties.

Hospital Partnerships

The LCME standard states that "Clinical resources should be sufficient to ensure breadth and quality of ambulatory and bedside teaching. This includes adequate numbers and types of patients (acuity, case mix, age, gender, etc) as well as physical resources." The new MD program will have appropriately documented affiliation agreements and clerkship schedules for any and all clinical teaching sites for its students. The standards also require that students have the opportunity to work with medical residents during their clinical training, so clinical sites with residents on staff are a requirement.

A number of the local hospitals have, or are in the process of developing, ACGME-accredited residencies. They are actively looking to partner with medical schools to support ACGME-accredited residencies. Although the hospitals are supportive of osteopathic training, they want to have flexible programs that can accept both DO and MD graduates, consistent with their current medical staffs. Hospitals are somewhat hesitant to develop additional AOA-accredited residency programs, as AOA residency programs can only take osteopathic graduates and some have limitations such as mandating that program directors must have a DO degree. ACGME residency programs do not have those limitations.

Affiliation agreements are now in place with all key potential affiliates. Affiliation agreements are structured to allow for maximum collaboration benefitting the medical education experience for the UNTHSC medical students (both TCOM and UNTMD). This commitment to medical education can be used to structure a unified vision between affiliation partners.

Clinical Affiliates

Texas Health Harris Methodist Hospital

An important affiliate for the UNTMD is Texas Health Harris Methodist Hospital. The hospital, a 710-bed facility, is the second busiest hospital in the metroplex. A full-service medical center, Harris offers specialized care in Oncology, Trauma, Cardiology, and Women's Services. More than 800 physicians serve on the medical staff. The hospital has 93,000 ER visits, tertiary and acute care, level 2 trauma, and an emergency helicopter. Although Harris does not have residencies, it is in the process of establishing three residencies, the first being in Internal Medicine (IM), followed by Surgery and Emergency Medicine. Harris intends to accept its first IM resident in 2012.

Additionally, the Texas Health Research & Education Institute facilitates and conducts clinical and pre-clinical research throughout Texas Health Resources. The Institute advances patient care through translational research, including research and clinical trials in varied specialties, product evaluation, and proof of concept testing and product development. Harris conducts research that contributes to the prevention, diagnosis and treatment of disease. Since translational research will be one of the components in the MD program curriculum, an affiliation with Harris would ensure the UNTMD students exposure to research experiences throughout their medical education. Harris Methodist has expressed interest in serving as a major affiliate to the UNTHSC.

JPS Health Network

JPS Health Network operates a state-of-the-art emergency and acute care facility with 567 licensed beds, Level II trauma center, Level III NICU, more than 6,000 births each year, as well as an outpatient network totaling approximately 850,000 patient encounters per year. An academic medical center, JPS has 12 residency programs including the largest Family Medicine residency program in the country.

In addition to the UNTHSC, JPS has academic affiliations with the University of Texas Southwestern Medical School and Texas A&M Health Science Center. JPS provides clinical medical education to Baylor University Medical Center, Dallas (General Surgery Residency) and the University of Texas Southwestern Medical School (Ophthalmology Residency, Otolaryngology Residency, and Oral and Maxillofacial Surgery Residency), as well as the UNTHSC. Medical specialties encompass cancer, robotic surgery, and dental.

Plaza Medical Center

A 320-bed facility offering comprehensive diagnostic and treatment services, Plaza Medical Center serves as a tertiary referral center for Tarrant County and numerous counties within a 90 mile radius. Plaza offers cutting-edge diagnostic treatment services in a wide range of specialties: Cardiac Care, Neurosciences, Oncology, Orthopedics, and Specialty Surgery. Plaza currently has three AOA residencies in Family Practice, Internal Medicine and General Surgery, but intends to acquire ACGME accreditation for these programs as well. In addition to the existing residencies, Plaza intends to develop ACGME residencies in Internal Medicine, Cardiology, Critical Care, (the Critical Care Residency is scheduled to start July 2010). Plaza Medical also strives to be a center of excellence in medical research.

Baylor All Saints Medical Center

A 527-bed facility, Baylor All Saints offers a broad range of medical services including programs of excellence in Cardiology, Transplantation, Neurosciences, Oncology and Women's Services. Other services include Family Practice, Internal Medicine, Emergency Medicine, Orthopedics, and General Surgery. Statistics for 2007 show 13,514 admissions, 1,595 births, 24,829 emergency department visits, 44,292 outpatient visits (excluding home care and emergency department), and 937 physicians on the medical staff.

Baylor All Saints has several community programs to promote the health and well-being of Tarrant County residents. The UNTHSC students, as part of their community projects, could participate in many of the Baylor All Saints community programs as part of their Service Learning program.

Cook Children's Medical Center

A 297-bed facility, Cook Children's specializes in Neurology and Neurosurgery, Cardiology and Cardiothoracic Surgery, Hematology and Oncology, Neonatology and Pulmonology. Statistics for 2008 include 97,588 outpatient visits, 99,286 ER/urgent care visits, 15,955 surgical procedures, and 2,133 intensive care admissions. Unfortunately, Cook Children's does not have any residency programs, nor do they have a current interest in developing residency programs although they have recently contracted for a small number of residents to spend a portion of their residency at Cook Children’s.

Pediatric clinical research is prevalent at Cook Children’s, partnering with such prestigious institutions as St. Jude Children's Research Hospital. At the beginning of fiscal year 2009, Cook Children’s patients and staff were involved in 258 research projects registered by their Institutional Review Board. Additionally, clinical trials are under way in the Emergency Department, Epilepsy Monitoring Unit, and Neonatal Intensive Care Unit, as well as in the following specialty care clinics:

Cardiology, Endocrinology, Gastroenterology, Infectious Diseases, Neurosciences, Nephrology and Pulmonology. Since clinical and translational research will be one of the components in the MD medical program curriculum, an affiliation with Cook Children's would ensure the UNTMD students exposure to research experiences throughout their undergraduate medical education.

Clinical teaching sites in Fort Worth for the UNTMD and TCOM students will include several major teaching hospitals to support all third year clinical rotations. The major Tarrant County teaching hospitals include: THR Harris Methodist Hospital of Fort Worth, THR Harris Southwest of Fort Worth, Cook Children's Health Care System of Fort Worth, Plaza Medical Center of Fort Worth, Baylor All Saints Hospital at Fort Worth, and JPS Health Network of Fort Worth. In addition to the teaching sites above, relationships are likely to provide clinical opportunities for students to train at THR Presbyterian Hospital at Plano, HCA Hospitals of Plano, and Methodist Hospital of Dallas.

Presently, the approximate 230 physician faculty members of UNT Health provide most of the outpatient teaching infrastructure for the third-year clinical clerkships, as well as clinical exposure for all first- and second-year medical students. Students may also choose these teaching sites for their fourth-year electives.

Potential UNTMD training sites are outlined on the following page.

Potential UNTMD Training Sites				
Training Sites	**Location**	**Core Services**	**Total Beds**	**Residency Programs**
JPS Health Network	Fort Worth, TX	Internal Medicine Obstetrics-Gynecology Psychiatry Surgery ER Pediatrics Family Medicine	567	Family Medicine Obstetrics and Gynecology Oral and Maxillofacial Surgery (intern program only) Orthopedic Surgery Podiatry Psychiatry (ACGME & AOA) Radiology (AOA residency) Transitional Internship
Texas Health Harris Methodist Hospital	Fort Worth, TX	Obstetrics-Gynecology Surgery ER Internal Medicine	710	Plans to develop the following ACGME residencies - Internal Medicine, Surgery, and Emergency Medicine
Plaza Medical Center	Fort Worth, TX	Internal Medicine Surgery ER Family Medicine	320	AOA residencies (Plans to acquire ACGME accreditation): Family Practice Internal Medicine General Surgery Plans to develop ACGME residencies in Internal Medicine, Cardiology, Critical Care, (the Critical Care Residency is scheduled to start July 2010).
Cook Children's Medical Center	Fort Worth, TX	Pediatrics ER	297	Not interested in developing residencies at this time.
Baylor All Saints Medical Center	Fort Worth, TX	Internal Medicine Surgery ER Obstetrics-Gynecology	527	Not interested in developing residencies at this time.
HCA Plano Medical Center	Plano, TX	Internal Medicine Obstetrics-Gynecology Psychiatry Surgery ER Pediatrics Family Medicine	427	Currently plans to develop several ACGME residency programs by 2012.
Methodist Medical Center	Dallas, TX	Internal Medicine Family Medicine	515	ACGME residencies: Family Medicine, General Surgery, Internal Medicine, and Obstetrics and Gynecology

Community Support, Advancement, and Donor Opportunities

There have been strong written and vocal expressions of support from a number of community leaders including the chambers of commerce, business leaders, and leaders of physician organizations. Public testimony has been consistent with perspectives in individual meetings and in focus groups with the planning consultants where strong expressions of support for the MD program were universally heard from community representatives. The community is greatly interested in:

- Additional high-quality and diverse population of physicians, both in primary care and in specialties.
- Positive economic impacts from increased number of physicians and medical school faculty and their activities, including research.
- Improved student choice for training to become either an MD or DO physician in Fort Worth.
- Provide more patient choice in selecting either an MD or DO physician.

The financial commitments from the Fort Worth community for a new MD program have been established and continue to expand. It is clear, however, that MD schools are historically strong attractors of philanthropic funds. Nationally, of the top 20 educational institutions in fundraising in 2008, 18 have medical schools.

This can include very large transformational "naming" gifts for new schools. Two of the three recently accredited schools have received such gifts, Florida International University ($40 million) and Texas Tech University ($50 million). Dr. Herbert Wertheim, optometrist and inventor, donated $20 million to the College of Medicine at FIU, and because the gift was eligible for matching dollars under the State of Florida Major Gifts Trust Fund, this increased its total impact to $40 million. This, the largest gift ever to FIU, resulted in renaming the School "the Herbert Wertheim College of Medicine" at FIU.

Texas Tech University Health Sciences Center at El Paso determined that its new El Paso School of Medicine would be named in honor of Paul L. Foster, President and CEO of Western Refining, Inc. Foster donated $50 million to the TTUHSC El Paso School of Medicine, also the largest gift ever to be received in the Texas Tech University System.

The University of Central Florida, the third of the three new schools, achieved a nationally-acclaimed goal of raising $7 million for scholarships - enough philanthropic funds for the entire education of their charter class.

Liaison Committee on Medical Education (LCME) Accreditation Process

The Liaison Committee on Medical Education (LCME) accredits programs of medical education leading to the MD degree in institutions that are themselves accredited by regional accrediting associations. Program accreditation assures that medical education takes place in a sufficiently rich environment to foster broad academic purposes.

The LCME accreditation process ensures the quality in postsecondary education that determines whether an institution or program meets established standards for function, structure, and performance.

Accreditation Process (Preliminary, Provisional and Full Accreditation)

The first step in the accreditation process is preliminary accreditation. A medical school achieves this status when:

1. The school submits a modified medical educational database and a self-study summary to the LCME.
2. An LCME team completes a site visit at the medical school and prepares a report of its findings for consideration by the LCME at its next regularly scheduled meeting.
3. The LCME reviews the survey team's report and determines that the program leading to the MD degree meets the expectations outlined in the LCME document guidelines for developing new medical schools.
4. The LCME votes to grant preliminary accreditation to the program for an entering class in an upcoming academic year.

Once preliminary accreditation is granted, the program may begin to recruit applicants and accept applications for enrollment.

Provisional Accreditation Process

When the students in the charter class are in their second year, the LCME conducts a provisional accreditation review. A medical school achieves "Provisional Accreditation" status after it receives preliminary accreditation and enrolls a charter class, when:

1. The school submits a modified medical educational database and a self-study summary to the LCME.
2. An LCME team completes a limited survey visit prior to the midpoint of the second year of the curriculum to review progress toward implementation of the educational program leading to the MD degree and the status of planning for later stages of the program, and prepares a report of its findings for consideration by the LCME at its next regularly scheduled meeting.
3. The LCME reviews the survey team's report and determines that the program leading to the MD degree meets the expectations outlined in the Guidelines for Developing New and Developing Schools.
4. The LCME votes to grant provisional accreditation to the program.

Once provisional accreditation is granted, students enrolled in the program can continue their medical studies in the third and fourth years of medical education, and the program can continue to enroll new students.

Full Accreditation Process

When the charter class is in the middle of its clinical training, the LCME conducts a full accreditation review. A medical school achieves "Full Accreditation" status after it receives provisional accreditation and enrolls at least three classes, when:

1. It submits a modified medical educational database and a self-study summary to the LCME.
2. An LCME team completes a full accreditation survey visit that takes place late in the third year or early in the fourth year of the curriculum, and prepares a report of its findings for consideration by the LCME at its next regularly scheduled meeting.
3. The LCME reviews the survey team's report and determines that the program leading to the MD degree fully complies with all LCME accreditation standards.
4. The LCME votes to grant full accreditation to the program for the balance of an eight-year term that began when the program was granted initial accreditation status.

LCME Accreditation Timeline

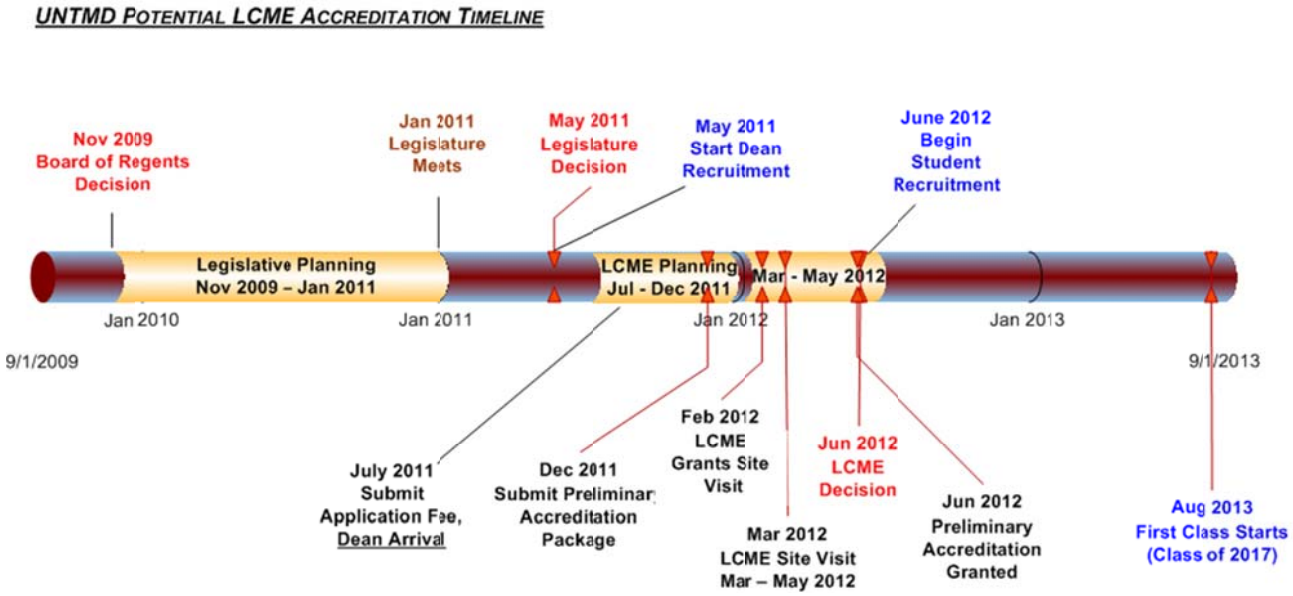
The recruitment of the first class of students requires preliminary accreditation. This results in a number of required processes. Attaining accreditation requires a rigorous effort that should begin early in the planning process.

In order to assess the best possible scenario to secure preliminary accreditation, several timelines were considered to accommodate key milestones in the planning process. The first of these is the UNT System Board of Regents meeting in November 2009 to decide upon adding an MD degree to the portfolio of academic degree programs at the UNTHSC. The second crucial milestone is the Texas Legislature's vote to amend statutory language which prohibits the UNTHSC in Fort Worth from offering an MD degree. The next meeting of the state legislature will take place in January 2011 and the decision will likely be announced in May 2011.

Timeline: 2013 Matriculation of Charter Class

With a 2013 matriculation timeline both key milestones (UNT System Board of Regents' approval and the Texas Legislature's vote) are accomplished before commencing the Dean's recruitment. Assumptions include:

- May 2011: The UNTHSC will commence recruitment of UNTMD Dean.
- July 2011: The UNTMD Dean arrives and starts the planning and accreditation process.
- December 2011: The UNTMD submits accreditation package; LCME votes at the February 2012 meeting and grants a site visit anytime between February and May; LCME votes for preliminary accreditation at the June 2012 meeting.
- June 2012: The UNTMD begins student recruitment.
- August 2013: The UNTMD matriculates its first class (Class of 2017).



Financial Analysis

Overview

The UNTHSC maintains significant resources that can be leveraged in the operation of the MD program. As noted previously, the MD program will share staff, faculty, and other resources with other programs, while being provided with the necessary investments to ensure adequate capabilities. In developing financial estimates for an MD program, the intent is to identify all necessary marginal costs, leveraging existing capabilities, but resulting in no reduction in existing resources for the current UNTHSC programs.

While the cost to create the new MD program have been developed on a marginal cost basis, once in operation, the financial resources required to support the two schools would be budgeted to each proportionately. Because of potential economies, this has the potential to reduce costs to TCOM substantially.

The financial estimates include costs of leadership and administration, faculty positions, and operating expenses. The estimates also include calculations for expected tuition and state revenues for the potential new MD program. Given the requirement for LCME accreditation, planning for a new MD program must begin several years prior to actual accreditation, student applications, and student matriculation. The program cannot solicit or enroll students prior to accreditation. From a financial perspective, this means that no tuition or state revenue will be received during this period, but the school must ramp up resources and capabilities for accreditation.

On average, it will take between two and three years of planning and implementation prior to student matriculation. While the UNTHSC has been addressing the feasibility and potential scenarios for a new MD program, formal detailed planning for the program has not yet begun. The timeline allocates one partial and two full planning years before "Year 1," the first matriculation year. Expected investment costs for this period are estimated at $7.1million.

In addition, it can also be useful to look at the total expected costs for the program prior to a full ramp-up of students (four classes), which does not occur until three years after initial matriculation or five to six years after initial planning begins. For this period, the MD program's expected investment is estimated at $14.4 million, with full state allocation tuition dollars mitigating ongoing costs thereafter. Total operating costs for this period are an estimated $21.5 million.

The estimates also take into account key investments that the UNTHSC will make that will benefit the program. In other words, these are expenditures that would be made regardless of the presence of an MD program. It is estimated that the MD program would be able to leverage about $2.7 million of these investments for its activities; most significant which would be required is renovation of the existing TCOM classroom and lounge spaces upon TCOM's move into the new building.

Beginning in the fourth year of the program, the MD program will be fully treated as all of the other UNTHSC colleges and schools in the allocation of a percentage of revenues to support institutional infrastructure for such things as central administration, finance, utilities, library, student services, and police. This will provide a net reduction of the burden on all other schools by distributing these central infrastructure costs to the new MD program as well. This will provide a financial advantage to all colleges and schools, including TCOM, by spreading the overhead more widely while continuing to enhance the services.

Preliminary Budget, UNTMD, 2013 Initial Enrollment:

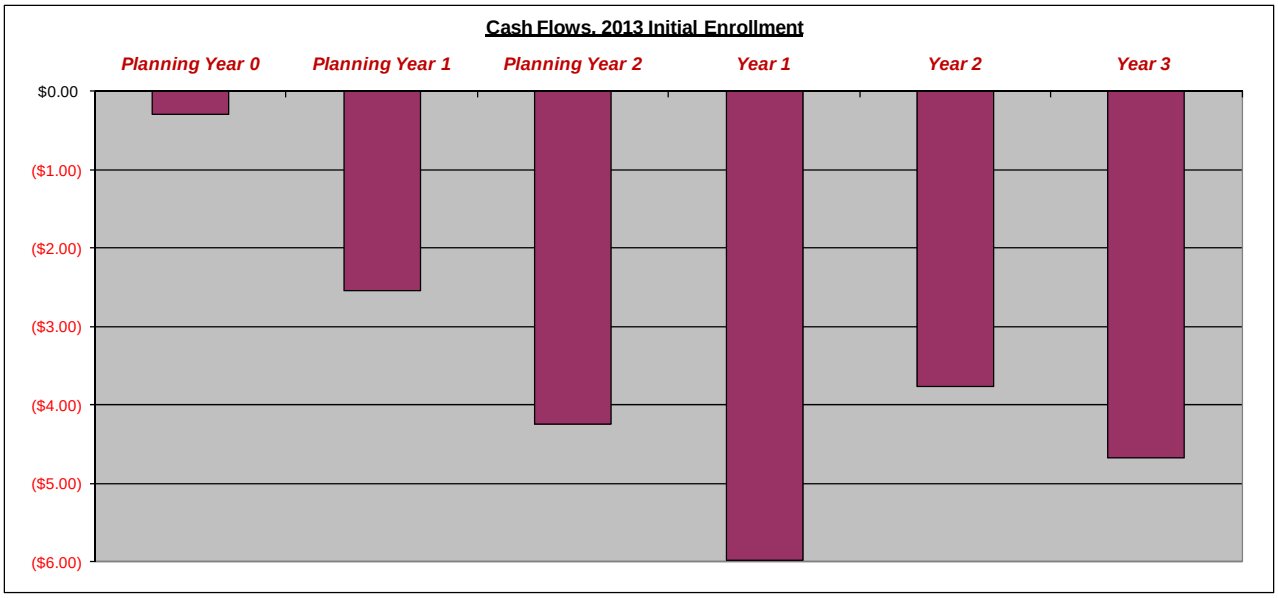
UNTHSC MD Program High-Level Cost Estimates: Summary

2013 TIMELINE

Planning Years Investment (sunk) costs*:	**($7,069,035)**
Three-Year Ramp Up	**($14,423,895)**
TOTAL, 6 Year:	**($21,492,931)**

	July-Aug 2011	September 1, 2011 Start										
MD Program	**Planning Year 0 Jul-Aug 2011**	**Planning Year 1 9/1/2011**	**Planning Year 2 9/1/2012**	**Year 1 9/1/2013**	**Year 2 9/1/2014**	**Year 3 9/1/2015**	**Year 4 9/1/2016**	**Year 5 9/1/2017**	**Year 6 9/1/2018**	**Year 7 9/1/2019**	**Year 8 9/1/2020**	**10 Year Total**
Salaries and Benefits:	($176,700)	($1,621,037)	($2,762,849)	($4,424,003)	($6,006,614)	($7,674,209)	($9,174,522)	($9,541,503)	($9,923,163)	($10,320,090)	($10,732,893)	**($72,357,583)**
Operating Costs:	($112,500)	($920,800)	($1,475,150)	($2,756,805)	($3,602,097)	($4,107,157)	($4,606,512)	($4,743,679)	($4,632,332)	($4,402,532)	($3,944,339)	**($35,303,903)**
Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Total Expenses	**($289,200)**	**($2,541,837)**	**($4,237,999)**	**($7,180,808)**	**($9,608,711)**	**($11,781,366)**	**($13,781,034)**	**($14,285,182)**	**($14,555,495)**	**($14,722,621)**	**($14,677,232)**	**($107,661,486)**
Expected Tuition	$0	$0	$0	$1,850,626	$3,695,466	$5,639,308	$7,649,866	$7,955,860	$8,274,095	$8,605,059	$8,949,261	**$52,619,541**
State Payments	$0	$0	$0	$0	$5,289,600	$5,289,600	$15,868,800	$15,868,800	$21,158,400	$21,158,400	$21,158,400	**$105,792,000**
Infrastruture Costs	$0	$0	$0	($647,719)	($3,144,773)	($3,825,118)	($8,231,533)	($8,338,631)	($10,301,373)	($10,417,210)	($10,537,681)	**($55,444,039)**
Investment / Net Support for Additional Faculty & Academic Programming:	**($289,200)**	**($2,541,837)**	**($4,237,999)**	**($5,977,901)**	**($3,768,418)**	**($4,677,576)**	**$1,506,098**	**$1,200,847**	**$4,575,626**	**$4,623,627**	**$4,892,747**	**($4,693,985)**
Additional, Institutional-wide expenses:												
HSC investments:	$0	($45,500)	($847,320)	($981,213)	($105,261)	($109,472)	($113,851)	($118,405)	($123,141)	($128,066)	($133,189)	**($2,705,418)**

The ramp-up costs related to the new program are $21.5 million for the discrete first six years. This is illustrated in the figure below.



Leadership, Dean's Suite, Administration, Library, and Faculty

The financial estimates include the cost of a Dean and the functions of Associate Deans for Medical Education, Clinical Education, Student Affairs, Preclinical Affairs, and Operations and Finance. The estimates also include costs of staff to augment key services, such as the registrar function, admissions, finance, and diversity; all of these functions would work closely with the existing UNTHSC professionals, and in some cases, share responsibility across programs. In addition, the model accounts for personnel resources needed in the library, with library leadership expected to oversee the MD program's needs, while augmented by a full-time librarian and shared new resources for virtual reality educational development and operations.

As noted in the section on faculty, the estimates include an investment in basic science and clinical faculty. The basic science positions would be allocated to their respective departments, with the deans and chairs determining actual teaching responsibilities. Costs for these faculty members are based on current costs for similar instruction in the TCOM program. For the clinical faculty, most teaching responsibilities are expected to be conducted by residents and practicing clinicians whose efforts are partially dedicated to teaching. In addition, estimates assume some direct payments for clinical clerkships, consistent with industry benchmarks, to the program's teaching hospital partners. All new faculty allocations ramp up over time, seeking to leverage existing resources in the planning years and minimize costs as practicable.

Operating Costs

The financial estimates for the MD program account for key operating costs, such as information technology costs, subscriptions and medical informatics, events, faculty recruiting, office expenses, tuition discounts, publications, and the simulation center. These costs are either based on historic UNTHSC data or industry benchmark costs estimates. Efforts were made to hone the applicability of elements in certain cost areas, such as administration and IT, for this MD program, eliminating many investments that would be required at a stand-alone school but where resources already exist at the UNTHSC. Educational space for the MD program would be renovated in the course of the UNTHSC operations.

Revenues

The financial estimates include expected tuition revenues and potential state support related to the new program's students. Tuition and state support amounts were based on 2010 TCOM figures, with a 90% in-state and 10% out-of-state student mix assumed, approximately consistent with TCOM. In order to account for tuition discounts and reductions, which would be expected, the model allocates an expense of slightly over 12% of total tuition.

Next Steps

Given that all critical prerequisites established by the UNT System Board of Regents on November 20, 2009 have been met, UNTHSC will seek approval from the Regents to move to Phase Two which includes:

1. Authorize the UNT System and UNTHSC staff to pursue all necessary state and legislative authorization for commencement of a new MD degree program beginning with enrollment of students in 2013;
2. Apply to the LCME for pre-accreditation status; and
3. Initiate the search for a dean and all other next steps in the process leading to full accreditation of a new MD degree program on the campus of the UNTHSC, pending 2011 legislative review and approval.