FINANCING A NEW MEDICAL SCHOOL

by

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ABSTRACT

This paper reviews different ways to finance a new medical school. There will be a shortage of 46,000-90,000 too few physicians by 2025. To help close the gap, new medical schools need to be founded and financed.

The first section of this paper discusses the main costs that institutions face when attempting to start a new medical school. The paper then goes into describing four different ways that medicals schools can finance themselves. The paper looks at government funding, endowment, for-profit model, and partners as the different theories to finance such a large project.

Additionally, the paper looks at three new medical schools; Texas Christian University, Texas Tech University Health Sciences Center- Paul L. Foster School of Medicine, and the Commonwealth Medical College of Pennsylvania. The paper discusses the different strategies and approaches each of these schools took to finance their new medical school. It then discusses the changes that may need to be made in the future to streamline the process to finance a medical school.

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Financing a New Medical School

Physicians are a part of life. They take the Hippocratic Oath to treat those that are ill to the best of their ability and to make ethical choices. Society needs doctors to keep them healthy, to heal them when they do become ill, and to comfort them when physical healing is not possible. There will always be a demand for doctors. Unfortunately, in the next ten years, the demand for doctors will exceed the combined supply of new and existing doctors. The demand for doctors is expected to grow by 17% by 2025 and there will be a projected shortage of 46,000 to 90,000 too few physicians (Association of American Medical Colleges, 2015). This demand is due in part to a growing population. Over a ten-year period, 2015-2025, the population in the United States is expected to rise 10% from roughly 316 million to 347.3 million (Association of American Medical Colleges, 2015). A higher population means more people that could become sick and would need doctors. The Baby Boomer generation is also aging. That is a large portion of the American population that will soon need specialty care for chronic diseases. The advances in technology have caused many previously lethal diseases to become chronic diseases. This promises to continue over the next ten years. The demand for doctors with specialty care exceeds that for primary care because of this generation's size.

A second contributor to the projected shortfall of physicians is in part due to the Affordable Care Act, which provides medical coverage to those that may have not previously been covered. The number of uninsured Americans is estimated to decline by 27 million by 2017 (Association of American Medical Colleges, 2015). This means that by 2017 there will be 27 million more Americans with the ability to seek medical help. That is 27 million more people that need to see doctors. That estimate is also only through the year 2017, there is more expected growth as the ACA continues to grow and expand. Even if President Trump and the Republicans

repeal ACA, it is likely that those insured by it will continue to receive some sort of coverage under the new plan.

A third reason for the demand is that roughly one-third of all working physicians will retire by 2025. Currently about 10% of the workforce are between 65-75 and another 26% are 55-65 so within 10 years they will likely retire (Association of American Medical Colleges, 2015). It takes roughly 10 years to train a medical student so a shortage in 2025 needs to be addressed at the latest by 2015.

Solving the Shortage Problem

One seemingly obvious solution to this shortage of doctors would be to train more in medical schools. However, medical schools have a fixed class size that often does not grow. Universities maintain a fixed class size to ensure a consistently high level of quality education. Universities strive to make sure that all students are receiving the same body of knowledge and to prevent less prepared medical students from "slipping through the cracks." To universities, a relatively smaller class size is an important strategy in achieving the goal of forming consistently educated medical school graduates.

If the current medical school class size cannot be meaningfully enlarged, then new medical schools need to be opened. Interestingly, in the period from 1986-2005, no new medical schools opened in the United States; in fact, the number went down from 124 to 121 (Association of American Medical Colleges, 2012). It was only when Florida State opened their medical school after accreditation in 2005 that a mini-boom in new medical schools started. The current number of medical school in the U.S. is at 141 in 2016, with more to come.

Starting a medical school is not easy. It takes years of planning, building, and ultimately obtaining accreditation. In addition, the financial investment to support such a project is very

substantial. The costs of starting a medical school are well over $100 million (Goldstein, 2008). There is the substantial recruiting and payroll cost of staff and faculty before a student even enrolls in the school and starts paying tuition. There is also the capital expense for the physical plant. The per square capital expense of medical schools is enormous due to all of the required investments in technology and equipment needed to provide a modern, high quality medical education.

How does a university finance such a large project while still being able to budget the annual needs of the university? This paper plans to look at different ways that universities have worked toward financing such a large project. This paper will also look at different theories to finance a medical school and will then look at the different ways several new medical schools, including TCU, financed such a project.

Historical Financing of Medical Schools

The University of Edinburgh is one of the oldest and most respected medical schools in the world. Although it was officially founded in 1726, preparations to start such a project started in 1690 when a man named John Monro, a retired military surgeon, wanted to form an official medical facility as part of the established university. Previous to the start of a medical school, young doctors would take on apprenticeship-like training. They would often enter a guild and work under a master for years as they learned their craft. John Monro wanted to create an actual school with Chairs in botany, chemistry, anatomy, midwifery, and the theory and practice of medicine in the city (Emerson, 2004). In 1729, a teaching hospital opened that would later grow into the Royal Infirmary, one of the great hospitals in Europe for the next two centuries. While

this is a lovely tale of the founding of a historical institution, there is also history to the way that it was financed.

At the time of the founding of the Medical School in Edinburgh, there were at least two others in Scotland; St. Andrews and Glasgow. One of the biggest problems for these schools was the lapse of the medical chairs. They had lost funding for the posts and while they often still treated patients, they no longer taught. Those in Scotland would have to travel to France to get a formal education (Emerson, 2004). The school in Edinburgh was set up to be privately funded by the local politicians. They would have a patronage for the different chairs. It gave them control over appointments of the chairs but also kept the school funded. The school would be funded by rich families since the population of the country was too poor to fund the school or the posts. The posts of chair were paid $20 per year (Emerson, 2004). So for a school like Edinburgh, they would be paying roughly $100 a year for teachers.

Current Costs of Starting a Medical School

The cost of starting a medical school in 2016 is significantly higher than what it was in 1726. A report in 2015 states that it would currently cost about $15-$20 million dollars to support the faculty and staff before a student even enrolls in the school (Goldstein, 2008). Starting a medical school is not something that happens overnight, it takes years' worth of work to make it a reality. Generally, the first step towards starting a medical school is a probability report that the university puts together to look at the probability of success for a medical school. The report looks at two main factors. The first factor looks at the impact that a medical school will have on the university that is adding it. They also look to see how it could integrate with different area hospitals or health systems that could be enhanced by the addition of the medical

school. The second factor is the impact that the medical school could have on the community surrounding it. They look to see if there is a need for physicians in that area, as well as the draw for the young physicians to stay in the area and start their own practices. Both of these factors look for positive impacts to make sure that a new medical school is a right fit for the community (Whitcomb, New and Developing Medical Schools; Part Two, 2013). After the university has determined that a medical school is the right path for them, they will start to develop a feasibility analysis to gain information about the next steps in the accreditation process.

The feasibility analysis looks at three potential challenges that the university could face. The first potential challenge that the university needs to demonstrate it can handle is the financial cost of planning and starting the medical school. The second challenge that the university must prove is that they have the space required for the administration and teaching. Not only do they need to have the space needed, but it also needs to meet the current standards of medical instruction. The third and final challenge that a university must prove it can handle is the ability for students to gain clinical experience. These experiences can happen through forming relationships with hospitals and health centers in the area to make sure that their students are gaining quality clinical experiences. The feasibility analysis can take months to years to fully finish, but once complete the university has a better idea on the next steps that it needs to take to make the medical school a reality (Whitcomb, New and Developing Medical Schools; Part Two, 2013).

After the completion of the feasibility report, the school moves towards getting accredited by the LCME, the Liaison Committee on Medical Education. The university needs to prove that they can provide a quality medical education to the students that enroll. The first step in the process is proving that the medical school will be financially sustainable. The LCME

wants to make sure that the university can cover all operating costs through several years. Their main priority is making sure that students receive a quality education, so the school going bankrupt in the middle of one year would stand in the way of that path. A university must first try and get primary accreditation for the first two years of curriculum to start enrolling students (Whitcomb, New and Developing Medical Schools; Part Two, 2013). Part of the primary accreditation is proof that they would be able to find clinical experiences for their students in the latter two years of their education. After the primary accreditation, the university must work towards full accreditation for their students to graduate (Whitcomb, New and Developing Medical Schools; Part Two, 2013).

These steps in the planning and accreditation phases take considerable time and money. A staff must be hired to first figure out if the school is even a possibility. Then a staff must be hired to create a curriculum that meets the standards of the LCME. This staff must have experience and leadership to completely design a medical school from the ground up. They also have to work on the building space as well as creating the relationships with other hospitals and clinics to provide clinical learning environments. This entire process can be years in the making. That is years of paying for a full staff as well as other costs such as a building to do this work in and the recruitment of a teaching staff as they progress. That is where the previously mentioned $15-$20 million comes from.

On top of the funds for faculty and staff, it costs another $50-$100 million for the building and all of the equipment needed for teaching (Goldstein, 2008). A report from 2008 by the Texas Higher Education Coordinating Board, reported that the six-year startup costs would be "$92 million for the administration, faculty, and staff," (THECB, 2008). Their estimates are based on a class size of 60 students in the first year and a school with 240 students when fully

enrolled with all four years. The estimates are also based on having a starting administration of 20 before students are enrolled and a starting faculty of 70. The full faculty and staff would be about 170 by the fourth year of enrollment (THECB, 2008).

Both the THECB and Goldstein reports state that it takes roughly $100 million dollars to start a medical school. That is not a sum of money that can easily be found and thrown at a project. Universities and institutions must find creative ways to finance such large projects. A simple solution would seem to be found in the story of Edinburgh; find funding from the government.

Government Funding for Medical Schools

Government funding seems like an easy answer to the problem of financing a new medical school, but it isn't quite so simple. In 1963, Congress passed the Health Professions Educational Assistance Act to provide federal funding for new medical schools as well as the expansion of classes in existing medical schools (Whitcomb, New and Developing Medical Schools; Motivating Factors, Major Challenges, Planning Strategies, 2009). This bill passed due to the widespread belief that there would soon be a shortage of doctors across America (LeRoy, 1977). The results from the Health Professions Educational Assistance Act were impressive. From 1960-1980, 40 new medical schools opened in the United States and the the number of graduates rose from 7,500 to exceeding 16,000. In the 1970s, Congress established the Graduate Medical Education National Advisory Committee (GMENAC) to conduct an analysis on the workforce of physicians in the country. They reported back that at current levels of enrollment, there would be an excess of physicians in the coming decades. Due in part to the predicted surplus of physicians, federal funding for medical schools ran dry and no new medical school

was founded after 1980 until FSU started the process in 2000 and reached full accreditation in 2005.

While it is hard to gain federal funding, some rural counties are still providing funding from the government. For example, Warren County Fiscal Court in Kentucky issued no more than $29 million in hospital industrial bonds on behalf of The Medical Center to finance the University of Kentucky College of Medicine Bowling Green (French, 2017). It is a partnership between the University of Kentucky College of Medicine, Western Kentucky University, and The Medical Center to build a facility with a 4-year medical school, offices for physicians, and a parking garage. The reasoning behind such funding is to draw new physicians to rural Kentucky. They have a population filled with baby-boomers that are aging and need a different level of healthcare. This new funding from rural counties shows that some communities are in such desperate need for physicians that they are spending the money.

To this day, government funding for new medical schools is not a priority and is often very hard to come by. There is almost no federal funding of a medical school and most states no longer have the excess funds to put into such a project. Occasionally, there are counties that are willing to pay to fund for new medical schools, but that mostly occurs in situations where they are most needed. These counties with the most need often have the lowest tax base so it can be very hard to fund themselves. Most schools need to find other ways to fund a new medical school besides government funding.

Making a Medical School for Profit

One of the new ideas that is currently popular in India is to make a medical school a for-profit institution. The theory behind this idea is that a for-profit medical school becomes more

attractive to investors with money to invest in something long term. This would be an investment to make returns, but many years down the line. This creates an influx of cash from a source not previously tapped. A for-profit model also forces medical schools to act more efficiently to be appealing to investments (Walsh, 2015). Investors do not want an investment that is wasting resources, they want one that is working efficiently to create a high-quality output. This could force medical education to make a large leap in innovation in the way medical education is taught or approached. If this new approach is successful, then there would be the funds to scale it and create other for-profit medical schools. While a private medical school is alluring, it also has potential issues. One of the major ones is that it raises an ethical question: are these institutions churning out doctors to help a community in need, or are they there to make a profit? Will the education still be a high-quality education or will short-cuts be taken to maintain that profit? A for-profit medical school could also create a hidden agenda to keep making a profit; causing the institution to lack social accountability in creating ethical doctors that serve. Some of these ethical questions can be too much of an issue for a for-profit model to finance a medical school.

For-profit medical schools have become very popular in the Caribbean. These schools serve as second chance schools for American students that were not accepted into a medical school in the 50 states. Most of these medical schools are for-profit institutions. One of the largest, St. George's, uses some funds to pay hospitals in the United States for third and fourth-year clinical rotations. These rotations lead to highly coveted residencies that are needed if a young doctor wants to practice in the U.S. Rotations by medical students are usually free, but St. George's entered into a 10 year, $100 million contract for 600 rotation spots (Hartocollis, 2013). Paying for their students to gain these clinical rotations is an innovation that has arisen from thinking of these schools as an investment. American medical schools complain that they do not

have the funds to win these spots back for their own students. The unconventional route has seemed to work for St. George's. They currently have over 7,700 graduates that are licensed to practice medicine in the United States. They also boast a 95% pass rate on the United States Medical Licensing Exam Step 1.

While St. George's makes a solid case for medical schools to fund through a for-profit model, it is an exception to the rule. Certification rates for the same exam that 95% of St. George's students passed, varied from 19% to 84% (Zantan & Boulet, 2008). While this study did consist of some lower-tier schools in the Caribbean, it is still something to think about. Students at these schools usually have lower GPAs and lower MCAT scores. They are given this second chance that lures them to these for-profit schools. These schools range from 28% to 86% of basic knowledge for a medical student. (Norcini, McKinley, Boulet, & Anderson, 2006). On top of this variation in basic knowledge taught in these schools, they only have a 53% match rate to a U.S. residency program. This is incredibly low compared to the 94% of students matched from United States schools. Students are getting an education that is potentially really spotty with no real security that they can further their education in quality residency programs in the United States, and they have on average $50,000 more in student loans from medical school. The average loan is $220,000 for a Caribbean school and $170,000 for a school in the United States (Hartocollis, 2013). That type of money is especially substantial when paired with the prospect that it will take them longer to get a residency, pass certification exams, and gain a license to practice medicine and earn a salary.

These for-profit medical schools in the Caribbean do a good job of showing the advantages and disadvantages of having medical schools work for a profit. While schools can use that profit to reinvest in their student's success, like paying for clinical rotations, they can

also just be a lure to subpar students that are desperate. They can then make a profit in an unethical way.

Endowment

Another common form of funding for medical schools is the creation of an endowment for a medical school. The theory is that, if an endowment is created, then the school could fund itself off of the interest that the money is making over a yearly basis. The obvious question is; how to raise the money to fill an endowment? Endowments are usually filled by private philanthropists. One of the most common ways to raise large amounts for the endowment is by selling naming rights. The largest one would, of course, be the name for the entire medical school, but others could be for different specialties, clinical, or even research labs. For example, the Livestrong Foundation just donated $50 million to the UT-Dell Medical School to create the Livestrong Cancer Institutes (Hamilton, 2014). Another way to create the endowment would be to set up one from the university's previously established endowment. If the school is willing and able, they could take part of their own endowment and create a smaller separate one for the medical school. While endowments are a great source of funds, they cannot always cover the large amounts needed to start everything from scratch. They are great to pay for operating costs like the faculty before students enroll, but are not great for startup costs such as buildings.

Partners

The most common way to finance a medical school now is to partner with health systems or other institutions when the university itself cannot fully fund it from within. By partnering, universities are getting financial help to cover all the costs while also splitting the liability of

such a large task. They are also completely getting rid of some costs. A health system may have the buildings that can house the medical school with the teaching equipment needed already there. They also have the relationships to create the clinical experiences that students need. The health systems benefit in getting eager young students that are engaged in their work and could potentially become future employees for these systems. Sometimes these pairings work so well that they will open several medical schools within that university's system if possible. This symbiotic relationship offers benefits to both parties with very little downside. Universities may have to give up some independence by pairing with a health system, but the financial benefits often outweigh the negatives.

Another potential partner for medical schools is through their research labs to drug companies. This partnership is helpful for both institutions. For the medical school, it is a source of revenue for the school with funds that can be used to create a higher quality education for the students. It helps the drug companies by saving them time and money. By working with the research labs in medical schools, the drug companies are saving up to a decade long work of research and the millions of dollars that are needed to fund the work. The drug companies are instead putting funds into the research labs in medical schools that are already doing the work needed to make new drug candidates (West Virginia State Medical Association, 2014). It reduces the risk for both institutions.

Financing a medical school does not have one plan that fits all schools. Some universities may receive some funding form the state and others will not. Some may decide to go down a private route if nothing else will work out. Other universities will have enough money to finance it completely by themselves. Some will need to partner up to split the costs and liabilities. Most

will probably have to employ many of these tactic to fully cover the immense startup cost of a medical school.

Texas Christian University

At a leadership retreat in 2012, leaders at TCU committed to the vision of 1,500 graduate students at the university. When considering different opportunities to reach such a goal, they looked at a peer group of universities consisting of Vanderbilt, SMU, Tulane, and Baylor. This group serves as a measure of how TCU is doing and provides TCU perspective when the university sets goals on how to rise above the rest. A medical school at TCU helps to reach the goal of 1,500 graduate students on the campus while also enhancing TCU's reputation and national standing. The commitment to 1,500 graduate students, and the decision to build a medical school, reflects the belief that if TCU is not constantly striving to improve things and building new things, then they are already behind. This medical school is an important project that will really help TCU stay competitive and to remain a leader as compared to their peer schools.

Once TCU decided to start a medical school, they faced the difficult problem of figuring out how to finance the roughly $100 million needed for the school. TCU was aware that the Health Sciences Center at the University of North Texas (UNT) had gone to the state several years before to try and get approval for a medical school but was denied due to lack of funding. TCU pitched the idea to the Health Sciences Center to form an alliance and to bring their pieces together in an effort to begin a medical school. TCU was able to provide some of the funds to make the medical school a reality. The Health Science Center already has the building, equipment, and staff that is needed to start a medical school just down the road from the TCU

campus. The Health Sciences Center can 'rent' out their building and equipment while still getting the medical school that they have been working towards for years. This 'loan' to the medical school helps TCU cut out the cost of building a physical building and then purchasing all the equipment for a modern, high level education. As previously stated in this paper, the cost to build the physical property is $50-$100 million, so this initial loan with the Health Sciences center saves TCU considerable capital expenses. TCU might eventually build a building, but they don't have to pay it upfront when other startup costs are high. Additionally, the Health Sciences Center also has an experienced staff that can assist in more quickly obtaining full accreditation. These assets of the Health Sciences Center are immediate solutions to costs that TCU otherwise would have had to finance to get the medical school up and running.

While TCU does save a lot of money from partnering with the Health Sciences Center at UNT, they do still have to make significant investments to make the medical school a reality. One of the most important costs that TCU has is directly related to achieving primary accreditation. Medical schools must prove that they can raise $27-30 million a year to pass accreditation (Janek, 2016). This financial capacity is to show that the medical school will not shut down in the middle of the year due to lack of funds and leave students with a wasted year and scrambling to find other schools. TCU has to find a way to raise that money this year and then put into place a sustainable way to raise it in future years.

Another one of the large investments that TCU must address is the creation of the new $50 million endowment for the medical school (Janek, 2016). This money comes from the current TCU endowment but is now separate from the University's. The endowment is currently being used to pay for the administration and staff that are working to establish the curriculum, recruiting faculty and ultimately obtaining accreditation for the school. This is the largest cost

that TCU has had to pay so far for the start of their new medical school. It is a very large commitment of money, but the good news is that the university is being good stewards of these resources and it will not be used completely before students are enrolled. Most likely, they are using the interest on the endowment to pay for the cost of the administration as well as the hourly reimbursement from those working at UNT.

Another cost to start the medical school at TCU is the money that is needed to set up a new accounting system for TCU. This accounting system has to be able to create reports for the board about TCU individually, the medical school individually, and then TCU and the medical school combined. It is a large undertaking but necessary to make sure that the medical school is not weighing down the university. The medical school is in many ways a separate entity from the university, but it is still within the umbrella of TCU. There is overlap with administration, the board, and other resources. This accounting system will allow both institutions to be evaluated on their current financial strengths and weaknesses. It will also allow the ability to put the two pieces together to see how they are influencing each other and what is the best decision moving forward.

Another cost that TCU has to plan for, but doesn't need to pay immediately, is the ramping costs as the medical schools add classes. The medical school will not receive full tuition until the fourth year of operation. As the school grows with each additional class, so do operational costs. There is the cost for new faculty to teach new courses. The school will have more students and that will require more space for the classes, which is a raise in the cost of 'renting' rooms at the Health Sciences Center. There is more time spent in the classrooms, which require lighting, A/C, and Wi-Fi among other things. Each new year of classes requires new equipment as the students move on to more complicated material. All of these costs could be a

negative drain on TCU's resources without careful planning and oversight. TCU has the expectation that in 10-20 years the entire project is self-sustaining, but that is a long time to just be pouring money into a project. There has to be a plan in place from the beginning to carefully manage the ramping costs. Ultimately, TCU hopes that the school will eventually make extra money to put in the endowment or go towards future growth.

Sources of Revenue for TCU

TCU has an extensive list of costs that need to be financed and they have several ways that they are covering those costs. One of the most obvious ways they are financing the school is by cutting down on costs that other schools would normally have to pay. The building loan from UNT's Health Science Center is automatically a huge relief. Another is their staff to help develop the medical school's curriculum to speed up the process of getting students enrolled and in classes. A medical school does not make any money to offset costs until the medical school is earning revenue from student's tuition. By not wasting years building a physical building and having an experienced staff working quickly on creating an accredited curriculum, TCU has dramatically shortened the start-up phase of starting a medical school from scratch. They can quickly move to the phase of sustaining revenue with students enrolled.

An additional way that TCU is supporting the substantial costs of staring a medical school is the endowment that was previously mentioned. TCU is actively developing donors that are willing to donate money to the medical school. TCU's plan is that some of these donations will be designated as restricted funds for the medical school only. If they are unrestricted funds, then the University has to debate on where to spend the funds. Another potential big source of income for the medical school is by selling the naming rights. Naming rights for medical schools

start around $8 million for schools like East Carolina Medical School and rise to over $200 million for the likes of Cornell and the University of California (Danielle Ofri, 2015). Harvard sold the naming rights to their public health school for $350 million and are currently in a debate to sell the naming rights for their medical school. Dr. Lee Nadler, Harvard's medical dean has stated that it would have to be a $1 billion dollar donor (Bailey, 2016). While TCU is not going to raise $1 billion from the naming rights of the medical school, it shows a potential source of funding for the school. Not only can TCU name the medical school as a whole, it can sell naming rights to auditoriums, labs, and classrooms. All of these are potential sources of funding as the years go on.

The biggest source of revenue for the TCU medical school is student's tuition. TCU is a private university with a reputation for providing nationally recognized education. That education comes with a private school price tag. The current average costs for private medical schools range from $53,000 to $55,000 and it is expected that the TCU will be somewhere in that range. There will be 60 students in each class with a full enrollment of 240 students. (Janek, 2016) So at full enrollment, TCU will generate $12.72 million to $13.2 million in revenue from student's tuition alone. Another potential source of funding for the school will come once the school is open and students are enrolled. At that point, faculty members can potentially set up labs and apply for grants for research and clinical testing. The awarding of research money will help support the operation of the school, will help pay for the equipment and staff needed in the lab and enhance the reputation of the TCU medical school. Ultimately it will establish TCU as a place that is doing quality work and is being rewarded and recognized as such with these grants.

Remaining Obstacles for TCU

TCU has developed an innovative partnership model to overcome the traditional obstacles of starting a medical school. This partnership would not be possible without the shared vision and help of UNT's Health Sciences Center.

There are a couple of obstacles that remain to be overcome. The biggest issue is the mix of private and public institutions. UNT is a public institution (one that asked for state funding and was told repeatedly that the state could not offer it any funding). By starting a medical school and accessing UNT's resources, both TCU and UNT have to make sure that the state isn't paying for anything that is related to the medical school. TCU and UNT have worked together to create different systems to make sure that in the case of an audit, nothing would pop up.

The first system in place is a carefully structured reimbursement system for the use of the health science center. The TCU medical school is 'renting the space' without an actual lease. TCU needed to find a way to pay for the space and utilities that are being used for the medical school. The easiest way to accomplish that is by thinking of the square footage that the medical school is using as a percentage of a whole. That percentage can then be used to pay for a variety of bills such as electricity, water, and Wi-Fi. This is a simple but easy way to make sure that the state is not funding a private medical school with public monies.

The other system in place is related to making sure that the administration is being paid for the work that they are doing for the medical school. Even though the medical school doesn't have students enrolled and going to classes, UNT has members of its administration that are already working to set up different parts of the medical school. This time that the UNT administration spends working on the medical school, in addition to their normal UNT duties, should not be paid for by the state. UNT and TCU have created processes that require the UNT

administration staff to identify the hours that they are working on the medical school to make sure that their time is reimbursed separately by TCU and not by the state. By making sure that TCU covers the costs of medical school, they will not face auditing issues in the future that could conceivably threaten the viability of their unique partnership.

TCU and UNT have also put plans in place just in case that school needs to be dissolved for any reason. They have signed agreements to guide how to dissolve all assets and liabilities. While dissolving the medical school is not high on anyone's priority list, there is hope that it would be less painful and financially draining with this plan in place.

TCU has financed their medical school by using many different interlocking strategies. They have eliminated a large portion of the traditional need for capital investment at the front end by partnering with the Health Sciences Center to 'rent' buildings, staff, etc. They are able to focus the developing endowment money on paying for the current administration and developing a world-class faculty with the newly created endowment. They have plans in the future to raise money through private donations, the largest of which will be the naming rights to the medical school. Once students are enrolled, they will have a source of funds coming in from student tuition and then, hopefully, grants. TCU has received no federal funding and will not operate as a for-profit institution.

Texas Tech University Health Sciences Center- Paul L. Foster School of Medicine

Texas Tech University in Lubbock, Texas has had a medical school since the early 1970s. In the 70's they established a regional clinic close to their El Paso campus. This clinic served as a place for clinical rotations for third and fourth year medical students. They eventually built a large education building next to the clinic and started the Regional Academic Health Center

(Whitcomb, New and Developing Medical Schools; Motivating Factors, Major Challenges, Planning Strategies, 2009).

In the 1990s, the Regents approved a plan to expand the clinic to a four-year medical school. In 1996, the Texas Tech University Health Sciences Center system was created and all health science programs, including the medical school in Lubbock and the clinic in El Paso, were incorporated into it. This began the real push for a medical school in El Paso. The Texas legislation approved the proposal for a new medical school in 2003 and the appropriated funds for a new research building next to the University Medical Center (Whitcomb, New and Developing Medical Schools; Motivating Factors, Major Challenges, Planning Strategies, 2009). El Paso is considered a medically underserved area by the federal government, so this funding will help to bring a higher level of healthcare to the area. These funds were helpful in covering the largest cost of starting a medical school, the physical building.

El Paso was also able to keep costs low because they are part of the Tech system with the medical school in Lubbock. They already have an administration that knows how to run a medical school and the curriculum needed for accreditation. They didn't have to spend a lot of extra money to bring in a new staff and then start from scratch.

Texas Tech in El Paso also raised money by selling the naming rights to their medical school. The naming rights sold for $50 million to create the Paul L. Foster School of Medicine (Bailey, 2016). This was a large source of income that greatly helped to finance the medical school before they started receiving tuition from students. Another way they kept costs low was to start with a small class size of 40 in 2009. They increased each class size by 20 in the following years until they reached their goal class size of 80 students. This delay in growth helps to keep down the initial rise in operational costs as a school grows.

Since the new medical opened in 2009, there has been rapid growth in the healthcare for the area. The city granted funding for the El Paso Children's Hospital as well as an expansion of the medical center's women's hospital. The Texas Tech campus in El Paso also has plans to open up a nursing school, which would increase enrollment revenue.

Texas Tech financed their medical school through state funding and donations. The funding given by the state of Texas really helped to offset the largest cost, but also served as a way to bring healthcare to areas where it was lacking. The large donation to name the school also served as a substantial amount of funding to get the school up and running. El Paso did a good job of controlling other costs by being part of the Health Sciences Center in Lubbock. They were able to set up a curriculum faster to start enrolling students. The planned delay in student class growth also helped to keep costs low.

The Commonwealth Medical College of Pennsylvania

The Commonwealth Medical College of Pennsylvania is unique to most other medical schools because when it was founded, it had no connection to a university or a health system. In 2002, a group of community leaders came together in Scranton, Pennsylvania to discuss the possibility to start a medical school. They decided to found the Commonwealth Medical Education Corporation as a 501© (3) non-profit entity, to serve as the controlling group for the medical school. The Commonwealth Medical College (TCMC) was financed by area banks that collaborated for a $40 million loan and senators worked to secure a $35 million matching state grant (O'Connell, 2016). They also received a $70 million donation from Blue Cross of Northeastern Pennsylvania to further raise capital. TCMC enrolled their first class of 65 students in 2009 and by 2012 had increased their class size to 100 students.

TCMC had controlled some of their early costs by renting out facilities owned by Lackawanna College and not spending the capital to build a new facility. They had hoped to spend the grant money given by the state on building a new facility that would open in 2011 and allow them to again increase their class size to 120 students (Whitcomb, New and Developing Medical Schools; Motivating Factors, Major Challenges, Planning Strategies, 2009). They encountered an issue in 2011 when LCME, the accreditation association, put them on probation because they did not have enough external funds coming in. As previously mentioned, a medical school has to demonstrate that it can raise $27-$30 million a year to maintain accreditation. Since TCMC was founded by a corporation and not a university, it had no outside funding. Operational costs were completely covered by funds donated by Blue Cross, who did not want to fund the project forever. TCMC had to scramble to find an institution that would want to pair with and financially support the medical school. TCMC originally talked to the University of Scranton since it was the local private institution, but negotiations fell through. Blue Cross agreed to financially support TCMC for a set amount of years until it could find a financial supporter.

In 2016, Geisinger Health System took over financial control of TCMC to finance it forever (Lange, 2016). There will be a name change to the Geisinger Commonwealth College of Medicine. While there is no set price for the partnership, Geisinger is responsible for maintaining at least five years' worth of funding in the bank so that the medical school can maintain its accreditation. As of January 1, 2017, all employees at the medical school were now employees of Geisinger and not the corporation that started the medical school.

TCMC is an interesting case for coming up with all financing completely from scratch. There was no university or health system to pull any sort of funding from. They kept costs low by renting space in another college first before building their own facilities. They also received

some grants from the state as well as loans from area banks. Their biggest source of financing came from a large donation from Blue Cross to keep the school operational. In the end, it took a large Health System to keep the school afloat and required a name change to make it happen.

Discussion of the Three Schools

The three schools that were looked at were each funded in different ways, but there were definite similarities between them. The most obvious similarity between all three schools is that none of them were completely self-sufficient, but rather they financed their medical school from multiple sources. TCU is using resources from UNT's Health Sciences Center, an endowment, as well as individual private donors. Texas Tech-El Paso used resources from within the Texas Tech Health Sciences Center system as well as funding from the state to serve an underprivileged area. They also received financing from their donors, including the naming rights to the school. The Commonwealth Medical College received grants from the state, loans from area banks, and a large donation to finance their school.

The costs of starting a medical school are high and only continue to rise until the school reaches full enrollment. On top of these costs, the medical school has to prove that they possess an external source of funds for accreditation. These schools have to get creative to find ways to finance their medical schools. Having diversified sources of income is vital in case one falls through.

The next similarity between all three of these medical schools is that the rely heavily on the communities that they are a part of. It's said that "it takes a village to raise a child" and it clearly takes cities and counties to raise a medical school. TCU paired with UNT's Health Science Center and will eventually work to get clinical rotations in the hospitals in town. Texas

Tech-El Paso needed Texas Tech University Health Sciences Center system working out of Lubbock to set up their medical school. They also worked with local clinics and hospitals as a way to bring healthcare to the region. The Commonwealth Medical College was the most independent of the three, but even then it eventually needed the support of the regional Geislinger Health System. By involving multiple institutions in the community, they can raise support for the medical school outside of the smaller communities that are trying to start them. The more people think a new medical school is a worthwhile investment, the more likely they will work together to make that dream a reality. These new medical schools often rely on resources in the beginning to cut down on initial costs to start them. If they can create those connections in the community that they are a part of, then they might be able to use resources that they previously may not have had access to. These resources can become invaluable when faced with the long list of requirements to start the medical school.

An additional similarity between two of the schools, Texas Tech-El Paso and The Commonwealth Medical College of Pennsylvania, is that both received funding from their respective states. While this is rare since the Health Professions Educational Assistance Act was repealed, there are ways around it. The important similarity between all the schools that received funding from their state or county is that they proved a need for physicians in the area. El Paso was a federally recognized medically underprivileged area. Kentucky was a rural area in need of new doctors to help the aging baby boomer generation. The Commonwealth Medical College of Pennsylvania was started by community leaders that realized the need for better healthcare in the area and they found senators that were willing to fight to get them funding. There is a rising need for doctors, especially in rural parts of the country. Eventually the problem will become so bad that the government will eventually have to find better ways to fund these medical schools. Until

then, there is hope that these communities will continue to fight for their right to quality healthcare and persuade those in power to help finance the medical school.

Implications for Future New Medical Schools

This paper focuses on the many costs that institutions face when they decide to start a medical school. It also goes through a potential list of solutions to these costs. Currently, they are all being used in different schools. Almost every medical school has been financed in a way that is unique in one way or another. Just like every other bit of healthcare, financing a medical school has no straightforward answer. Schools will piece together parts of different strategies to find a mixture that best fits their institution.

Future research should focus on which strategies work best. Which ones are the fastest to enrollment? Are the schools that are within a larger system of schools faster to get accreditation or are the ones that partner with a healthcare or hospital system faster? Which strategies help to get schools in the black faster or at all? This paper did not focus on the hard numbers, but rather the different theories behind ways to finance these schools. A study to look at the actual finances of several of the schools would be interesting to see how they actually run.

The biggest challenge that needs to be addressed for the future is transparency about what different schools are doing to finance themselves. There is a need for physicians in this country, and we are already behind the curve. These medical schools need to find ways to finance themselves and be able to usher in the next generation of healers. Since every medical school is solving their financial troubles independently, there is a lot of wasted time and resources on figuring out problems that have already been solved by someone else. There needs to be a way to streamline the process or at least a sharing of information to make these medical schools a place

that focus on teaching knowledge to students rather than worrying about having enough money in the bank to make it through the year and pass the accreditation process.

Conclusion

This paper shows the many creative ways to finance a new medical school. It breaks down the current costs and barriers that institutions must work through to even enroll students. It then gives a historical background to the founding of one of the oldest medical schools in the world, the University of Edinburgh. The similarities between that time and now are striking. Even then, there was a struggle to finance medical schools and there was uncertainty as to if they could even finish a year.

The paper then describes four popular ways to finance a medical school; government funding, endowment, for-profit schools, and partners. Each of these four options has their own individual pros and cons. Some of them are extremely hard to come by and others can easily raise moral and ethical questions. For all of their positives, none of these strategies will ever work independently. A new medical school needs several different ways to finance itself. These are large amounts of capital, not easily found from one source. If an institution can create the right mix of strategies, then they might be able to start a medical school without as much of the costs. The three examples of TCU, Texas Tech-El Paso and the Commonwealth Medical School all showed the importance of mixing different strategies to have success. They also showed the importance of creating a community that supports the school and is willing to share resources.

The importance of starting new medical schools cannot be overstated. There is a huge looming shortage of physicians in this country. There is the growing baby-boomer generation that will need more care as they age. There are a lot of physicians in this generation that will

retire within 10 years as well, which will only increase the deficit of physicians. Medical schools need to be founded to offset this deficit and they need to be founded soon. A medical student's education takes 8-10 years to fully complete, so this problem needs to be faced now. If medical schools were more willing to share knowledge and information, then some of the problems that are being faced could be solved sooner.

Finally, there needs to be a wider understanding of the need to finance medical schools for the physicians of the future. These are the potential physicians that will cure cancer or Alzheimer's disease. Why would we not want to invest in making sure that our next generation of physicians has received a quality education from a quality medical school? The need for more physicians is a compelling enough reason to solve the problem of financing such a project.

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