Michael Hafertepe

Michael Hafertepe is currently a fourth year medical student at Creighton University School of Medicine - Phoenix Regional Campus. He received his bachelor degree in natural science from Xavier University. He then received a Master's degree from Tulane University in Cell and Molecular Biology. He plans on pursuing a residency in Diagnostic Radiology.

Issues Facing the Medical Field: Old, New, and Improved

As a fourth year medical student, excited to be entering the home stretch of my medical education, I can't help but think back at how daunting the application and admissions processes were, not to mention all of the hard work that followed. Despite the arduous process, I am certain that there will never be a time where medical schools lack applicants. While I am confident in this statement, I see many barriers to the longevity of the current system in the face of mid-level medical professions boasting shorter duration and easier access. According to the Association of American Colleges (AAMC), there were roughly 52,536 applicants for 20,627 medical school positions in 2015[1].

Since 2006 the total number of matriculates has increased nearly 18%, with the addition of new medical schools, in an effort to supplement the growing shortage of primary care physicians[1]. While this increase may be seen as strength there are many areas of weakness in the system that make the path towards becoming a medical doctor in the United States a grueling one. In 2015 the median debt of allopathic medical school graduates was $180,000[2]. The AAMC offers a sample table displaying the average debt repayment model based on $180,000 of debt using a pre-taxed salary of $ 183,000. The interest on standard repayment plans ranges from $140,000 to $300,000[2]. This results in a total cost ranging from $400,000 - $500,000 for medical education.

This does not take into consideration that students are investing anywhere from 3-7 years in residency work, which does not offer a return reflective of the debt accrued. Additionally, this is a time in students' lives when they are often starting families, buying homes and taking on a mortgage, all the while trying to save to save for retirement, children's educations and the ever increasing cost associated with raising a family. These factors create multiple barriers to fast

loan repayment, thus increasing interest accrued and overall debt in the face of decreasing physician salaries.

While this information is readily available and good food for thought, many students entering medical school do not understand the magnitude of medical education debt and the repercussions of that debt.

Perhaps this is because students are so focused on the rigorous application process. I would argue that the mindset of many medical students tends to be on the prestige of the profession and promise of high compensation. Unfortunately, this has led to overemphasis on acceptance and under emphasis on the realities that accompany almost a decade of education and hundreds of thousands of dollars of debt.

At some point during four years of medical education students begin to understand the magnitude of the debt that has accrued. Unfortunately, the time in which students begin to realize they will have more debt than any generation of physicians before is usually around the time they are choosing their area of specialty. While many other factors that lead people to choose a medical specialty to pursue, I believe that the cost of medical education is forcing students to favor high paying specialties. This is evidenced by the fact that allopathic medical schools educate only 47% of Family Medicine residents[3].

During its peak in the mid 1990's 2,340 allopathic medical students chose Family Medicine, as their area of practice[3]. This is a seemingly large number when compared to the most recent graduating class, wherein where only 1,416 chose Family Medicine as an area of practice[3]. This is data supports the idea that the seemingly positive 18% increase in the total number of medical students has done very little to support the increased need for primary care physicians.

While the need for primary care physicians continues to increase, the rate of allopathic medical students choosing to practice primary care remains at best, stagnant. This is a large void to fill within the United States healthcare system. Fortunately, or unfortunately, what appears to have the most notable growth in the past decade is the role of mid-level medical care professionals, the Physician Assistants (PA) and the Nurse Practitioners (NP). The growth of these programs and practitioners has been drastically larger, when compared to the increase in medical education programs and has resulted in a booming "midlevel workforce". A 2010 article from Public Health Reports projected a 72% increase in the PA workforce over the next 15 years, an incredibly large number when compared to the previously mentioned 18% increase in physicians[4]. The emphasis on PA and NP positions moving forward is positive step toward addressing the provider shortage within our healthcare system; however, there are obvious drawbacks for physicians with the emergence of this workforce.

A retrospective comparison study conducted by the Mayo Clinic in 2014 concluded that the quality of referrals was lower for PA's and NP's when compared to physicians[5]. Specifically, the

study cites reduced clarity of the referral question, inadequate pre-referral evaluation, documentation and understanding of pathophysiology, when compared to their physician counterparts. If this finding true, we must have a better understanding of the impact of these errors on the medical system, before assuming that a 72% increase is a solution for under supported primary care. If we do not do our due diligence to understand the ramifications of these changes we risk stressing the infrastructure and specialty groups who are receiving the referrals. These stresses have the potential to increase appointment wait times, increase patient volumes, increase specialist referrals, and lead to an overall reduction in the quality of patient care.

Another factor to consider when evaluating the value of a growing mid-level workforce is the infringement of jobs, or perceived infringement on jobs, once held by a physician. The increase in midlevel provider workforce certainly fills a much needed gap in primary care; however, with what is known about the great investment that is allopathic medical education one asks what additional sacrifices are being required of physicians to practice under this new structure? Although a mid-level workforce has been present for over 50 years, the drastic growth in recent years poses changes to the mid-level provider-physician relationship. As a result, it is highly likely that a greater presence of mid-level providers changes the scope of physician practice. An increased need for primary care providers, coupled with the rapidly increasing aged population, means physicians will likely be forced into increased supervisory roles with decreased patient interaction so that physician assistants are able to meet the demand.

A second infringement on the physician role, albeit more perceived than supported by data, is that of the mid-level provider replacing the clinic physician. Perhaps this is why many primary care physicians are moving away from this area of medicine toward specialties where the role remains intact.

According to the Society of Hospital Medicine, the number of Hospitalists increased 172% between 2003 and 2010, a statistic that is unlikely to slow down. I believe this is important because as dependence on PA's and NP's increases, the role of physicians will inevitably change and will ultimately play one of the largest roles in defining healthcare in United States over the next ten years. Defining roles and developing productive relationships is of the utmost importance, if successful integration of workforces is to occur. It is paramount for the healthcare system and continued delivery of quality healthcare; it should be prioritized as such.

Although there remains significant room for growth and improvement in the unification of medical professionals, there is one area of healthcare that has shown promise moving into the next decade, the electronic medical record (EMR). While in the recent past there have been significant growing pains across healthcare, as hospitals and clinics have transitioned to EMR. Many people believe that the change to EMR resulted in cumbersome, time consuming and mediocre documentation. This paired with the frustrations that accompany transitioning thousands of employees and differing roles, left many feeling it wasn't worth the investment.

However there are two main reasons that the next decade will have fewer issues with EMR. The first is that the companies making EMR systems have adapted to early flaws in their system. The second is this generation of medical students and young physicians have never not worked in an EMR system. Furthermore many of younger medical professionals have been required to use several different EMR systems throughout their training, which in theory makes this generation more adaptable and more capable of streamlining the EMR process.

Ultimately many of the same healthcare challenges that the last decade faced, we continue to face looking towards the next decade. The ever-transforming landscape of American healthcare, only made more tumultuous by the upcoming presidential election, leaves questions as to what new challenges will emerge and how the healthcare community reacts to solve them.

Resources

1. "Applicants and Matriculants Data - FACTS: Applicants, Matriculants, Enrollment, Graduates, MD/PhD, and Residency Applicants Data - Data and Analysis - AAMC." Applicants and Matriculants Data - FACTS: Applicants, Matriculants, Enrollment, Graduates, MD/PhD, and Residency Applicants Data - Data and Analysis - AAMC. AAMC, 25 Nov. 2015. Web. 29 Aug. 2016.

2. Fresne J, Youngclaus J, Shick M. Medical Student Education: Debt, Costs and Loan Repayment Fact Card. AAMC. October 2015

3. "Charts and Graphs." Charts and Graphs. AAFP, 2016. Web. 30 Aug. 2016. http://www.aafp.org/media-center/materials/charts.html

4. Hooker R, Cawley J, Everett C. Predictive Modeling the Physician Assistant Supply: 2010-2025. Public Health Reports. 2011; 126: 708-716.

5. Lohr R, et al. Comparison of Quality of Patient Referrals from Physicians, Physician Assistants, and Nurse Practioners. Mayo Clinic Proceedings. Nov 2013; 88.11 : 1266-1271