

EDITORIAL

New models or remodeling students or both?

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In the US, medical education does well in developing academic skills, however medicine is much more than academics. Few medical students are prepared for the challenges that await them after the completion of formal training. Relationships with patients, staff, and communities are a particular challenge. Some physicians may choose specialties to ensure that they avoid such challenges. However those who hope to become deans, medical leaders, rural physicians, or primary care physicians must develop significant expertise in these areas. Physicians also face challenging social issues and are important leaders in the process of organizing communities for improved health care. Despite an increasing body of evidence regarding the need for improvements in training, these areas await the attention of US medical education leaders. The probability of including these areas within formal training seems to diminish with each passing year. In the meantime US medical schools are admitting a much narrower medical student, one who is even less prepared to address these areas before, during, and after medical school. US medical schools are also graduating fewer family physicians, the ones who

will be forced to develop these areas more than any other physicians.

While student interest groups and service organizations during medical school are important, they are limited in what they can accomplish for communities, students, or schools. The Community Medical Outreach program at Florida State University is a different model¹. CMO is organized by college students as part of their pre-medical preparation. All participants benefit including the communities in need, the students in need of medical school admission, the health agencies and organizations in need of resources, and the college in constant need of evidence of public benefit. Rather than a large organization with little responsibility, the model is small, requiring much from 12 student members. No member can hide or 'forget' menial tasks because all are important to the effort. There is only one defect with the model. It is established for service, not replication.

Replication is up to those of us in the academic arm. Through this article¹, through discussions with colleagues, and in conversations with future students, we can share an



opportunity. In the process we might just shape the students admitted, the training, and the distribution of physicians and resources in future years.

The model is young, but it is already influencing states and nations. One of the students, Mehran Heravi, was awarded the Howard R Swearer Student Humanitarian Award in 2004. However the real winners will be the communities and peoples that will be served by replicating this program, now and in generations to come.

This article¹ comes at a pivotal time in American medical education. The nation has never experienced such a rapid change in admissions of medical students to US allopathic medical schools. The medical students from parents making over \$100,000 increased by 3000 a year from 1997 to 2004 matriculants. The students from parents making less than \$40,000 declined by 1500, and another 1500 were lost from the middle income groups. All races and ethnicities participated in this narrowing of the American medical student toward the highest income levels. Asian and foreign born US MD graduates have now increased beyond 30% of annual graduates^{2,3}. The groups admitted at higher and higher levels have the lowest choices of primary care, family medicine, rural careers, and underserved locations. These groups are replacing those with the highest level of distribution (Appendix I).

The narrowing of origins is accompanied by a narrowing of scores. Medical College Admission Test (MCAT) scores have narrowed upward for admitted medical students. The increase in the biosciences component alone has been nearly 0.1 point a year since 1993, the last time the MCAT was standardized. Despite the lack of evidence for any improvement in physicians by admitting students with 10 or 11 or 12 MCAT scores, the nation continues to narrow those admitted. American universities are not immune to this narrowing. The top 146 colleges that shape American leadership are a narrow group with 74% from the top quartile and only 3% from the bottom quartile⁴. The current focus on science and math in high school, rather than a needed focus on child development and preschool also reveals national

priorities. The priority is improvements in science and math in high school benefit those remaining, perhaps 30-40% of the total. Proposals for the improvements in age 0-6 years that would benefit lower and middle income Americans are not even being discussed. In the meantime, Americans continue to ignore the Nordic nations and a few others who invest the most in child development and increasingly lead the world in education and health outcomes, and new technology. Investments after age 8 years are more costly and increasingly ineffective⁵. Schools, state budgets, and healthcare efforts remain crippled by failure to recognize the need for the best start for all citizens and residents.

Americans born in the middle and lower income segments represent 70% of the population but only 30% of admitted medical students. The 70% gaining admission have top 30% status. They are also the least likely to leave major medical centers and serve underserved or rural areas. They are also most likely to become medical leaders and are least likely to be aware of the health needs of 70% of the nation. It is difficult to design health systems if the only life experiences of a leader involve major medical center parents and neighborhoods, private schools, top colleges, and elite medical schools. The narrowing tends to be an elite group of professionals and children of professionals.

Reversing these trends will take a different type of physician and enough of a different type of physician so that a nation can meet service needs and sacrifice some physician servants for leadership positions. Many talk about servant leadership, but few implement the necessary components.

Having enough different types of physicians is a complex process, but Australia, some provinces and states, and a variety of medical schools and programs are addressing this. These efforts all require more students and students with different preparation.

The Community Medical Outreach (CMO) program at Florida State University addresses a number of areas simultaneously.



Giving admissions committees an excuse to admit the best

It truly is a sad day when the best students enter through the back door while the best-scoring students enter through the front, but such is 2007. Innovative US medical schools (but sadly few) are creating tracks for a variety with different barriers to medical school. Older admissions tracks, admissions at the rural high school level, college tracks for small colleges, and premedical experiences that are not limited to research focus are just a few. The nation needs medical students with people and community focus, but these are often students from lower and middle income backgrounds. As such they do not have professional parents and they do not have every advantage of education and preparation. They cannot afford to pay for the top colleges or the standardized testing coaches that teach them strategies to improve scores even more. Although their ultimate performance is no different as a physician, their MCAT scores are lower. If they were the standard test population and rich children took the test, the rich children's scores would be lower. Such is the nature of standardized tests. The effect is even stronger when 'speeded bias' is allowed to remain in the test. Those most socially, culturally, linguistically, and geographically different will score lower on a test with speeded bias. They will not be able to process the test as fast as those with a lifetime of standardized test focus. Those most different that have different scores also are the most likely to distribute (Appendix I) and have advantages of sharing the different backgrounds of their patients.

In other words, the parents of the elite students and their influences at the local, state, institutional, and national level improves the probability of their children's admission while the parents of humble students are not as able to do so. This also means that the humble origin types are more likely to be admitted on their own efforts and characteristics compared to elite students. Elite students are their scores, but few can predict who they will be. Humble origin students are who they are and their scores predict very little. Elite younger

students have few life experiences and medicine takes them before they can establish a life. Older graduates establish a life and relationships and then attach medical training. Some level of balance is a more likely result. It takes a wise admissions effort to understand these areas.

There are ways for the different types of graduates to gain admission. Returning veterans from World War II got a new opportunity with *The GI Bill*. In four medical schools of the nation, the admissions rolls in the 1950s suddenly found medical students from isolated rural and small rural locations making a significant dent on urban origin students. This effect was not there in the 1940s graduates or the 1960s graduates. The opportunity of *The GI Bill* plus recognition by these four medical schools (Alabama, Tulane, Kirksville, Illinois) appears to have made the difference. Even with *The GI Bill*, the other schools missed the opportunity.

Current opportunities to admit differently involve diverse, older, and different types of students. The 'excuses' to admit these students with lower scores involve opportunities that let them shine in their strength areas such as service orientation, people skills, and community focus. Again this seems distorted since all physicians need these skills, but desperate times mean innovative responses.

Implementing important training despite a crowded curriculum

Initial efforts in problem-based education, rural medical education, and other innovative areas have often found that 'voting early and often' is best. Many have involved the week or month prior to medical school. Most realize that medical students will do just about anything early in the first year of medical school, but less and less after this point.

There were many obstacles to overcome when establishing a new elective community-oriented training program involving medical students at Creighton and University of Nebraska Medical Center medical students, nurse practitioner students, and physician assistant students. It was difficult to get



students to participate, the students who participated already had many of the skills and inclinations, the crowded curricula pushed the program around, and some of the underserved sites were too busy to bother with the students or the program. This was particularly short sighted since the focus of the program was to facilitate student choice of the very same facilities.

The physician assistant curriculum was particularly crowded and this forced us to use a new tactic: recruiting PA students to participate after they were accepted but before they entered PA school. The bright, energetic students had most of what they needed for a community experience; we trained them and matched them with the best community mentors in Nebraska; and they exceeded expectations. Unfortunately the National Health Service Corps of the time did not agree and squelched the program, but the idea and potential remained in those who had experienced some of the benefit.

Raising awareness levels for future leaders

Surveys of medical students by the Association of American Medical Colleges (AAMC) indicate that those most socially distant from admitted medical students are admitted at lower levels but have greater levels of awareness of the needs of underserved peoples. They must also begin attempts to gain admission earlier and are admitted at older ages. (For further discussion access: <http://www.unmc.edu/Community/ruralmeded/awareness.htm>).

The differences between those least aware and those most aware were illustrated by a recent critical event at a top US medical school. A new community medicine rotation was developed that involved an inner city community. The effort was designed to improve education and gain some level of awareness of the healthcare needs of a population much different than the medical students. A few students protested and then a more organized protest drew the attention of the dean. It seems that elite students are very good at organizing, although their choices are not always the best. The small

minority of students who had experienced different populations most of their lives were also upset by the narrow views of their classmates. The leadership of the school also could have dealt with the situation more constructively, if they had a better level of awareness.

The entire situation is disturbing since this particular medical school graduates a number of medical leaders for the nation. It is disturbing as other elite medical schools have also had conflicts with their disadvantaged neighbors with poor awareness as a common denominator. There is little doubt that a narrow focus on scores and elite colleges leads to a narrowing level of awareness. Attempts to do research involving awareness questions, income, and scores are not likely to see the light of day, however, and it was rare 10 years ago.

The students of professional parents will always have advantages. Even in rural areas with few professionals, the children of professionals soon turn up in new programs. Program developers marvel at how 'truly rural kids' seem to remain unaware of such programs even after decades and the children of professionals find out immediately. Communities benefit when students pursue health career information and share it while in high school. However this effort is lost when the student graduates. Children of professional parents have a built-in college and professional career advice source.

One of the inherent advantages of the CMO model is that it benefits all student types¹. Lower and middle income origin students need better organization skills, boosts to their self-image, and better recognition of some of the advantages that they have stemming from their origins. The children of professionals will find out about CMO as they do any advantage for admission. They may even be more likely to become members of CMO. However the responsibilities and the contacts will give them a chance to gain awareness and be different before, during, and after medical training.

Much the same process is needed in all medical students. Elite medical students are not 'bad' but they do have gaps such as awareness, service orientation, empathy, and people



skills that need to be addressed. An elite medical student choosing a fellowship is not unusual, but an elite student forced into a fellowship to some degree because they do not comprehend the importance of basic human relationships is a problem area. Physician satisfaction is lowest for the top level subspecialists⁶. These are also the medical students who were youngest at admission, who had the highest scores, and who are the least likely to rate people skills as important. There is an important relationship between quality of care and physician satisfaction. Perhaps the real quality measure for a people career such as medicine, is whether a physician has a reasonable understanding of people, including patients, staff, and colleagues.

Right now in the USA, those promoting themselves as primary care and as solutions for rural and for underserved health care are gaining legislative attention. The key to this is promotion. Nurse practitioners do not have the national studies to back these claims, but they are gaining the attention during a period of time when desperation ranks higher than perspiration. Those who are sweating it out in primary care, rural areas, and underserved locations are family physicians. While other physicians and practitioners leave these areas with each passing month, family physicians stay. For the 1997-2003 FP residency graduates, 99% are active, 98% are still in family medicine, 90% are in office based primary care, over 50% are found outside of major medical centers (80% inside for other physicians). For the past 30 years of graduating classes, over 24% of family physicians are still found in rural areas (double the national average of 11%) and over 10% are found in underserved areas (double the 5.4% national average). All other forms of primary care leave primary care, rarely leave major medical centers, or return to major medical centers over time for hospital duties or subspecialization.

The major defect of US family medicine seems to be that it would rather serve where most needed, rather than promote itself at the national and state level. Because family medicine services middle and lower income populations at the highest levels, family physicians have the broadest understanding of the needs of Americans. This experiential knowledge is not

enough, however. Family physicians with field experience also need training that allows them to share this most important awareness asset with a nation in great need of better awareness. Given the types of students who choose family medicine, their consistently higher service orientation, and their persistent workforce track record; this is unlikely to change without significant efforts. These efforts will need to be earlier rather than later in the training.

The future

Changing family physicians to develop organizational skills may be a most important area for a different future for family medicine, and for the nation.

Most of all the CMO model and similar models are all about hope¹. Leaders such as W Donald Weston MD have spent a lifetime dissecting, researching, teaching, and implementing true partnerships⁷. Sometimes we all lament the lack of success in these efforts. There is hope in the CMO model.

There is little doubt that the CMO students 'get it' before they get to medical school. They will have decades to influence their peers, faculty, colleagues, communities, states, and nations.

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Appendix I

Defining distributional

The most basic definition for 'distributional' is distribution outside of major US medical centers with 75 or more physicians at a zip code location or at a medical school. These are the locations that train 100% of physicians so distribution means escape from training locations and areas with the highest concentrations of health care resources. For example, in the US, major medical center areas have 75% of the physicians but only 32% of the population. Also 70% of the physicians have major medical center origins such as birth or upbringing. The remaining 30% of lower and middle income America supplies only 30% of physicians.

Distributional is the opposite of physician concentration, as occurs in higher income, urban, and major medical center locations. Distributional approaches are also the opposite of 'market forces' or the natural tendencies that do concentrate all of the various resources and systems of the nation within urban and higher income areas. Distributional approaches are also present in other systems. Distributional approaches structure education and health policies toward an endpoint of better distribution

Distributional locations have two major categories within nations: low income urban and more distant (and usually low income) rural locations. Inner city, urban underserved, village, small town, frontier, low income, underserved, isolated, small rural, and socially distant populations are the endpoint of distributional approaches. These populations are also the major sources of distributional health care practitioners. Ultimate solutions for cost, quality, and access in health care are providers that match the characteristics of the populations that they serve. The only other providers capable of such distribution are those with the broadest scope such as nurses and family physicians and teams of nurses, family physicians, and a variety of healthcare workers distributed throughout communities in need, of course depending on health policy support.

Distributional as a broad global term also involves distribution of health and education resources to nations in the most need of such resources. Nations with truly distributional policies demonstrate by policy and action that the limit or prohibit the taking of health and education resources of other nations, especially the ones who can ill afford such losses of infrastructure and the resulting instability.

Major medical center, urban served, and micropolitan or large rural areas in the USA have the capability to self-determine their physician workforce. These are areas with sufficient economics, healthcare coverage, number and variety of providers, and facilities. These areas train



100% of healthcare resources, receive the highest levels of reimbursement, and receive multiple lines of support not found in distributional locations, such as funding from research and training grants, public health, and corporations. Beyond major medical centers, the focus is nearly total on patient care and the support for health care in such locations depends on a federal, state, local partnership.

Distributional locations required distributional education, distributional admissions, distributional training, distributional specialty choice, and distributional health policy, especially funding support for those in primary care and those found in distributional locations. Each of these efforts is a specific focus on people and service orientation to the same or greater degree than academics or prestige.

For the USA the distributional package for medicine includes much improved child development and early education before age 8 years, better education and opportunity for distributional populations, broader admissions focused on the individual characteristics and qualities related to becoming a physician equal to or greater than scores, specific choice of family medicine as the only career that facilitates distribution, and health policy that continues to improve primary care reimbursement, even at the cost of decreased specialty care reimbursement and major medical center reimbursement. Each of these efforts has resulted in improved levels of distribution and documentation of improvements in healthcare costs and quality is building with such an approach. The major impediment to building this final case is restriction of access to the individual scores (Medical College Admission Test, MCAT, and board scores) and parent income levels of the physicians. Studies comparing those with the highest concentrations of scores and status demonstrate lower levels of service orientation, awareness of the needs of others, and physician distribution. Studies demonstrate no improvement in empathy but may well demonstrate lower levels of empathy and physician satisfaction if structured to compare directly these areas with scores and parent status. The major impact of such studies is not to change the types of students admitted, but to change the preparation for a medical career. Any nation needs a broad range of physicians, but all must have service orientation, people skills, and academic ability. Only by forcing the most academic types to develop people skills and the most people oriented to develop academic skills will the needs of a nation be met effectively.
