Nova Southeastern University College of Osteopathic Medicine

Medical Education Digest

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Impact of Foreign Medical Graduates on U.S. Health Care

There are 157,410 international medical graduates (IMGs) who have completed residencies in the United States and 30,899 who are residents. More than 20 percent of the IMGs are from India, followed by 8 percent from the Philippines. Each of the following states indicates that 30-40 percent of their active physicians are IMGs: New York, New Jersey, West Virginia, Illinois, and Florida. In Vermont, Montana, Idaho, Wyoming, Utah, Colorado, Oregon, and Alaska, 10 percent of the physicians are IMGs.

Active physicians under age 70, excluding residents, include 477,369 graduates of U.S. or Canadian allopathic medical schools, 42,258 who are graduates of osteopathic medical schools, 22,771 who are IMGs who were U.S. citizens upon entering medical school, and 120,675 who were not U.S. citizens upon entering medical school. IMGs amount to 25 percent of residency positions and make up 25 percent of the physician workforce, which demonstrates the dependency of the U.S. physician workforce on IMGs.

Medical schools that have contributed the greatest number of physicians in descending order are: Universidad Autonoma de Guadalajara (nearly 7,000); University Santo Tomas (about 7,000); St. George's University (more than 5,000); Ross University (about 4,000); and Dow University (more than 3,000).

Questions that need to be answered include: How can we best use IMGs in planning for the U.S. health workforce? How will the projected increase in U.S.-trained physicians affect overall supply and distribution? What is the future role of U.S.-citizen IMGs? Will physician migration patterns change in the future?

(Gastel B. Concurrent sessions: exploring issues relating to international medical graduates. Academic Medicine. 81:S63-S68; 2006.)

Assessing Students with Virtual Patients

An online assessment tool (OAT) was developed at the University of Ulm in Germany. It provides a way to integrate multimedia such as videos, interactive graphics, and automatic marking. The student takes the role of a physician, "virtually" taking a history, performing a physical examination, and ordering tests. The study looked at five sources of evidence for the validity of the OAT. Among these sources are content, response process, and internal structure. Three clinical case scenarios in primary care settings were presented. These included two home visits of confused elderly ladies—one with hypoglycemia and the other with dehydration. As a control, score results attained in the online simulation were correlated with the results of the regular written multiple-choice examination. Solving virtual clinical scenarios addresses other abilities, skills, and knowledge than traditional written exams. The use of the virtual patient is closer to reality in that comprehensive knowledge is acquired through the use of the OAT rather than simply learning details and "dull facts."

(Waldman UM, Gulich MS, and Zeitler HP. Virtual patients for assessing medical students-important aspects when considering the introduction of a new assessment format. Medical Teacher. 30(17-24); 2008.)

Genetics in Medical Education: Its Impact on Primary Care

There is now recognition that family history and genetic predisposition are key risk factors for common cancers (e.g., breast, ovarian, colorectal, prostate) and common diseases (e.g., diabetes, heart disease). Genetic tests are being assessed for their value to patients in discussing risk factors, benefits, and limitations. Family physicians will need to assume a major role in genetic medicine since there is a shortage of geneticists and genetic counselors. However, they lack the knowledge and skills to integrate genetics into practice. Additionally, a need for education in this area of medicine has been identified.

In a University of Toronto study of family medicine residents in Canada, 94 percent indicated they need to know about genetics to practice. They reported that their genetics training in medical school was restricted to rare disorders, making them think genetics was clinically irrelevant. Their understanding of genetics was confined to pediatrics, obstetrics, and cancer. In addition, study participants reported that genetics will be an important part of future primary care as genetic knowledge and genetic testing opportunities increase. Furthermore, they concluded, counseling about genetic testing and genetic services will become a role that will be central to them as family physicians.

The residents included in the study suggested that genetics is best taught by acquiring practical knowledge such as guidelines for risk factor assessment, referral, and counseling. They also stated there should be observation of the practical application and clinical relevance of genetics with real patients or problem-based learning and simulated patients that emphasizes common problems that should be delivered by practicing health professionals with patient experience. In addition, there should also be up-to-date information through the use of Internet resources.

Finally, they suggested that genetics should be taught in the latter years of medical school when students are better able to appreciate its application. The study also concluded that the genetic curriculum should be developed with a focus on the common aspects of genetics, including psychosocial and ethical implications.

(Telner DA, Carroll JC, and Talbot Y. Genetics education in medical school: a qualitative study exploring educational experience and needs. Medical Teacher. 30:192-198; 2008.)

Sharks
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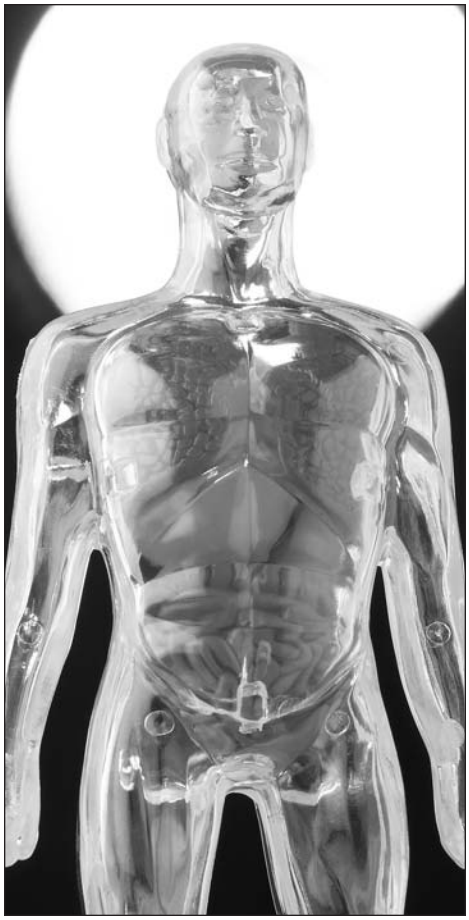
Analyzing the Use of Artificial Organs in Medical Education



Carla Pugh, M.D., a Northwestern University Medical School surgical faculty member, has been employing makeshift artificial organs to which sensors are attached to serve as an adjunct to clinical training. The sensors permit teachers to know whether students are touching the right areas and are using the correct pressure. Training in medical school is often handicapped by shame and embarrassment. As a result, Dr. Pugh has fabricated dummies that use many household or commonly found items to assist in simulating patients for the purpose of performing examinations.

Lima beans, for example, are used to simulate tumors in breasts. In a 1998 report in *The Archives of Family Medicine*, 78 percent of male physicians rated themselves comfortable in performing breast examinations, but only 35 percent rated their skills as excellent. This compares to 95 percent of female physicians who rated themselves as comfortable performing such examinations and 37 percent who said their skills were excellent.

Richard Satava, M.D., a University of Washington in Seattle surgeon, pioneered surgical methods relying on electronic measurements. He reminds us that aviation uses simulators that are not distinguishable from real airplanes and that flying has a remarkable safety record. He indicates that we need to have such a safe environment in medical education as well. Furthermore, he says, such models do not have to be high-tech.

(Morgan R. Building organs even the prudish can handle. New York Times. Health Section. D5; Tuesday, February 12, 2008.)

Osteopathic Medical Education in 2008

Even with agreement that there is a need for more physicians trained in the United States, osteopathic medicine has a number of questions. These include whether there will be a sufficient number of applicants, faculty, administrators, clinical placements, and graduate medical education positions to sustain quality education, will core education in osteopathic principles and practice suffer, and what will the long-term impact be on the profession?

Three new osteopathic medical schools were just granted provisional accreditation and matriculated their first classes: A.T. Still University School of Osteopathic Medicine in Mesa, Arizona, Lincoln-Memorial University-DeBusk College of Osteopathic Medicine in Harrogate, Tennessee, and Touro University College of Osteopathic Medicine in New York, New York. Two others received provisional accreditation and will be admitting classes this year: Pacific Northwest University of Health Sciences, College of Osteopathic Medicine in Yakima, Washington, and the only for-profit medical school in the United States—Rocky Vista University College of Osteopathic Medicine in Parker, Colorado.

This brings the total number of schools offering a D.O. degree to 28, and by the end of this year, the number will rise to 30 schools in 23 states. Currently, 20 percent of all medical students attend a college of osteopathic medicine.

(Shannon SC. Osteopathic medical education in 2008; course corrections and new horizons. Journal of the American Osteopathic Association. 100(10); 2008.)

Trends in Osteopathic Medical School Enrollment and Graduates, 1968-2006

Year	No. DO Programs	Total 1st Year Enrollment	Women	% Women	Total Enrollment	Women	% Women	Total Graduates	Women	% Women
1968	5	521	21	4.0	1,879	53	2.8	427	8	1.9
1978	14	1,322	222	16.8	4,221	688	16.3	1,004	163	16.2
1988	15	1,780	571	32.1	6,614	1,986	30.0	1,609	491	30.5
1998	19	2,745	1,135	41.3	9,882	3,862	39.1	2,169	818	37.7
2006	23	4,055	2,023	49.9	14,409	7,246	50.3	3,119	1,578	50.6

(Source: Journal of the American Osteopathic Association. 108; 2008.)

Comparison of 2005-2006 to 2006-2007 Osteopathic Medical School Application Pool, 1st Year Enrollment, Graduates and % of Applicants Enrolling

Year	Total Applications	1st Year Enrollment	Total Enrollment	Graduates	% Applications Enrolled
2005-2006	51,099	3,908	13,406	2,708	26.23
2007-2008	60,398 (18.19)	4,055 (3.76)	14,409 (7.48)	3.119 (15.18)	23.86 (-10.20)

( ) % increase or decrease between 2005-2006 and 2006-2007

(Source: Journal of the American Osteopathic Association. 108; 2008.)

Future Allopathic Med School Enrollment

A survey conducted by the Association of American Medical Colleges (AAMC) queried 126 U.S. medical schools accredited by the Liaison Committee on Medical Education regarding their enrollment plans. In view of the projected shortage of physicians, over 85 percent of medical schools—or 108 of the 126 allopathic medical schools—have increased their first-year class or are in the process of doing so.

Of the new first-year positions, 69.1 percent are in public institutions while 30.9 percent are in private schools. There are also more than a dozen new medical schools either being developed or being considered. Nine of these have indicated that they estimate 786 new first-year students by 2012-2013. The South and the West project the greatest increases, which is congruent with the fact that these areas of the nation have the fastest-growing populations. Additionally, enrollment increases are being targeted for minorities currently underrepresented in medicine.

While the AAMC has projected a need for a 30 percent increase in first-year medical school enrollment, the efforts underway indicate that this will not be accomplished by 2015 but will instead occur by the year 2017.

(Association of American Medical Colleges. Projections of future medical school enrollments. Analysis in Brief. 8 (3); April 2008.)

Population Health Education and the M.P.H. in the Training of Physicians

A 2007 report by the Institute of Medicine (IOM) entitled "Training Physicians for Public Health Careers" indicated that all physicians are part of the public health system. It recommended that required topics in medical education should include leadership, public health emergency preparedness, and clinical and community preventive services. At the 2007 Association of American Medical Colleges (AAMC) Annual Meeting, Daniel D. Federman, M.D., senior dean for alumni relations and clinical teaching at Harvard Medical School, stated, "In the overall distribution of medical students' time, we pay too much attention to what is instantly wrong and give little thought to preventive measures addressed to what is probably wrong or going to be."

Both the AAMC and the IOM have recommended that medical students receive training in population health. There has been a tripling of medical schools offering an M.P.H. degree since the mid 1990s. However, fewer than 60 percent of current medical school graduates feel there is appropriate time in occupational medicine, health policy, and health care systems. Currently, 11 LCME-accredited medical schools have one-year grants through cooperative agreements between the AAMC and the Centers for Disease Control and Prevention to become Regional Medicine-Public Health Education Centers (RMPHEC) for the purpose of integrating population health into their curricula.

Among the approaches these institutions followed was the offering of an M.D.-M.P.H. program. Columbia University Mailman School of Public Health, for example, provides medical students from six medical schools in New York City the opportunity to pursue an accelerated one-year M.P.H. degree with a full-tuition scholarship after completing their third year of medical school training. It is designed for them to better treat and advise their patients on the roles of behavioral and social factors in health and disease as well as being able to understand the structure, financing, and administration of the health care delivery system. RMPHEC programs should help to enlist some medical students as agents of change who are committed to designing a system of care that is equitable, cost-effective, prevention-oriented, universal, and moral.

(Maeshiro R. Responding to the challenge: population health education for physicians. Academic Medicine. 83(319-320); 2008.)

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