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The population of the United States increased 10 percent between 2000 and 2010. The median state total M.D. and D.O. medical school enrollment growth was 14.7 percent. In 2005, the Council on Graduate Medical Education predicted the demand for physicians would grow rapidly after 2015 because of growth of the aging population and expansion of health insurance.

Between 2005 and 2012, M.D. and D.O. medical school enrollment dramatically increased, but medical students' interest in primary care as well as the output of primary care physicians has been declining. By 2013, the Liaison Committee on Medical Education said 15 new medical schools had been established since 2005, while the number of D.O. schools grew from 20 in 2003 to 37 in 2013—including branch and satellite campuses—and D.O. student enrollment expanded from 2,968 to 5,778.

States like Florida with fewer active primary care physicians and a lower number of M.D./D.O. students per 10,000 may face a substantial shortage of primary care physicians in the future. In addition, if graduate medical education (GME) positions do not increase proportionally to medical school enrollment, more graduates will leave the states where they went to medical school for GME and will not return to those states to practice.

While 63 percent of medical students enter a school in their state of residence, only 39 percent of M.D. and D.O. students return to practice there. It is recommended that local and regional health care needs, population growth, access to care, and geographic distribution of physicians should drive efforts for medical school expansion. Coordinated efforts by neighboring states should be pursued due to high costs of medical education. Policies encouraging primary care at preadmission, admission, and curriculum levels are needed. Intentions by new medical schools to increase physician supply in primary care should be assessed by measuring graduates' practice after five years of graduation.

(Adler B, Biggs WS, Bazemore AW. State patterns in medical school expansion, 2000-2010: variation, discord, and policy priorities. Academic Medicine. 88 (12); 2013.)
Public Investments in Graduate Medical Education Should Focus on Policy, Need, and Population

The federal government plays a leading role in financing residency programs in the United States. This program is governed by Medicare's Graduate Medical Education (GME) payment policies, which are major forces in the nature and location of residency training. Residency training is usually concentrated in certain urban centers with growing populations, making rural states concerned about their area's low rate of training. This is important because of the positive association between the site of GME training and location of practice.

There is no mechanism in Medicare's GME system to reallocate training positions. The training of 89,000 residents and fellows was supported by Medicare in 2010. At that time, the breakdown of residents was about 110,000 allopathic and 5,700 from osteopathic medicine.

A limited number of residencies are sponsored with some Medicare funding by the Department of Veterans Affairs, Department of Defense, and a children's hospital. A study in *Health Affairs* calculated the difference between the resident cap and number of residents trained to determine over-cap training. It included all states, the District of Columbia, and Puerto Rico. The resident gap includes the maximum number of residents who qualify for Medicare GME payments. The study found considerable variation in the geography of Medicare GME, with densely populated states like New York, Rhode Island, and Massachusetts supporting twice as many residents per person as the national average. New York gets 19.89 percent of all Medicare GME funding compared to 29 states that received less than 1 percent.

As a result, the Northeast has substantial residency training capacity frozen in place by the 1997 Medicare GME caps. Since 2000, 26 new allopathic and osteopathic medical schools have opened, many in southern and western states where governors and legislators knew little about Medicare GME. These states realize now that they face a substantial barrier since their residency program base is small and they lack Medicare GME funding to expand rapidly. This results in graduates leaving the state to find residencies or forces states to fund new GME positions. Reforms are needed to transform the current system of GME to meet the needs of a growing population as well as a population that will be more fully insured.

(Chen P. Should medical school last just 3 years? New York Times. October 24, 2013.)

Three-Year Medical School Curriculum Has Critics and Supporters

Steven B. Abramson, M.D., vice dean for medical education at New York University, said we cannot dissociate medical education from societal and student needs when society calls for doctors to get into the community sooner. Three-year program options permit students to practice sooner and result in as much as 25 percent less debt.

In the 1970s, as a result of federal government support, 33 medical schools offered a three-year M.D. option to address impending physician shortages. Even though these students did as well or better on tests as their four-year counterparts, when provided with a choice, the vast majority would have chosen the traditional four-year route. Vocal critics were faculty members who claimed they were under pressure to compress their lessons and students who also felt they did not have enough time to make thoughtful career decisions.

In 2010, Texas Tech University Health Sciences Center began providing a three-year medical school track for students with an interest in primary care. Mercer University School of Medicine also offered that option. This fall, New York University followed suit with a three-year medical school option. Four more medical schools are considering adding a three-year M.D. option. Another new initiative being considered consists of a program that is competency-based, where students would be assessed and allowed to graduate when they demonstrated the necessary skills, instead of being locked into a four-year requirement.

(Mullan F, Chen C, and Steinmetz E. The geography of graduate medical education: imbalances signal need for new distribution policies. *Health Affairs.* 32(11), 1914-1921, 2013.)
Johns Hopkins University School of Medicine Transitions to Human Genomics

Ranked as one of the nation's premiere medical schools, Johns Hopkins University School of Medicine has made a comprehensive transition in its curriculum with an entire overhaul—the integration of human genomics into all components of the course of study. Edward Miller, M.D., dean and chief executive officer of the school, supports the transition and said it is the biggest thing to happen to Johns Hopkins in 100 years.

Geneticist Davis Valle, a member of the Hopkins faculty and leader of the initiative, said doctors have been trained in an overly rigid concept of disease with a focus on the average patient. He said there are no such patients since everyone's genome is different.

Clinical encounters begin in the first two years with basic sciences added in the third and fourth years. A series of short seminars is included during the entire four years, integrating genetics and medicine.

The school acquired a $2 million simulation center and a $52 million curriculum building. Other medical schools and research centers are also making major investments to become part of the new genomics movement.


Future Demand for Physicians Surpasses Record High Allopathic and Osteopathic Medical School Enrollment

Enrollment of medical students in allopathic medical schools rose 2.8 percent this year with 6.1 percent more applicants, or in excess of 48,000. Osteopathic medical schools had an even greater increase with enrollments growing by 11.1 percent this year and almost doubling over the past 10 years.

There had been concern during discussions regarding the Patient Protection and Affordable Care Act that the new law would make the medical profession less attractive. Darrell Kirch, M.D., chief executive officer of the Association of American Medical Colleges, said the data show otherwise. The vast majority of medical students said they want to be employed in systems that have more resources rather than groups run by private practices.

A shortage of 130,000 physicians is projected by 2025, with 25 million new patients being added to the health care system by 2016. In addition, the population of those 65 years of age and older is projected to more than double to 81.2 million by 2040. If Congress doesn’t act soon, there will not be enough residency positions to train new physicians, which could lead to a physician shortfall.


Completing Electronic Health Records Results in Residents Missing Lectures, Rotations

An American Academy of Family Physicians poster session at its annual meeting showed family medicine residents were missing lectures and occasional rotations in order to document patient encounters in the electronic health record (EHR). The poster cited a survey that included 99 clinicians who said it took an average of 21 to 37 minutes to see a patient and chart the visit at Riverside County Regional Medical Center and at Pomona Valley Hospital Medical Center.

Resident productivity was reduced by 30 percent when there was a switch from paper to an EHR. The conclusion showed the hospitals were using an older version of the EHR system and required residents to move from one screen to another to complete a basic note. Often, it also took from one to two minutes to go from one screen to another.

The poster illustrated that converting to an EHR system often does not include an adequate amount of training, which was the case at Riverside County Medical Center. It was reported that 70 percent of the residents received less than five hours of training. This compared to the average of 16
Completing Electronic Health Records...

hours of training required by Pomona Valley Hospital Medical Center residents—95 percent of whom rated their training as very good.
In addition, the productivity of family medicine residents at Pomona declined by only 20 percent compared to 30 percent at Riverside—a public institution with fewer resources for EHR training. Residents should not have to miss lectures to complete charts, the poster’s author emphasized.

(Lowes R. Residents skip lectures to catch up on EHR charting. www.medscape.com; October 14, 2013.)

Academic Health Centers Must Evolve to Avoid Risking Extinction

Academic health centers (AHC) may be at risk due to the evolution of health care and a reduction in research funding. Pressures to constrain growth include state budget deficits, private insurers’ response, and the Affordable Care Act. In addition, reductions in Medicaid and Medicare reimbursement drive health plan enrollees to lower-cost providers, while the cost of research often exceeds the amount of grant funds available.

If deficit reduction continues to be a high priority, research support may decline. Money from philanthropic organizations could decrease as the groups attempt to recover from the recession. The gap between excess costs of meeting the AHCs’ missions and funds available also jeopardize their mission. A key consideration will be the centers becoming more selective about areas in which they decide to excel. AHCs may need to find a balance between clinical excellence and population health.

AHCs will need to develop world-class, cutting-edge, highly specialized clinical programs that include translational research and advanced training. They will have to become high-performance regional health systems that include primary care as well as specialized hospitals with post-acute care that integrate effective information systems.

It is recommended that AHCs leverage their affiliations, redesign care delivery, and draw from health and behavioral economics, psychology, sociology, policy and management, industrial engineering, and computer science. AHCs must increase research yields, accelerating the translation of results into practice that boosts their impact on medicine and health. Medical education and training must adapt to the changing health paradigm. AHCs need to be coordinated with planning that affirms, aligns, and prioritizes specific aspects of the centers’ mission with decisions made collaboratively to serve the entire long-term interests of the institution.

Continuing Medical Education Credit Form

One (1) hour of continuing medical education credit may be obtained by reading the Medical Education Digest and completing the following evaluation that is being used to assess the reader’s understanding of the content. Please circle the answers you believe to be correct for all four questions located on this two-sided form. To acquire CME credit, physicians must mail, fax, or deliver the form (also available online at http://medicine.nova.edu), including both the completed quiz and evaluation form by December 15, 2013 to: Office of Education, Planning, and Research, Nova Southeastern University College of Osteopathic Medicine, 3200 South University Drive, Fort Lauderdale, Florida 33328. Email: lspeiser@nova.edu; Fax: (954) 262-3536. Please complete and return the evaluation form attached on the reverse side by fax or email.

AOA or AMA No. ___________________________ Print Full Name ___________________________

The correct answers will be published in the next issue of the Medical Education Digest.

1. **All of the following states receive Medicare GME to support twice as many residents per person as the national average except:**
   a. North Carolina
   b. Massachusetts
   c. New York
   d. Rhode Island

2. **Johns Hopkins School of Medicine overhauled its entire curriculum to initiate:**
   a. The establishment of a three-year medical school program
   b. A curriculum that integrates human genomics
   c. A competency-based curriculum
   d. A and C

3. **By 2025, because of the aging of Americans and the Affordable Care Act (aka Obamacare), the shortage of physicians is expected to be:**
   a. 15,000
   b. 45,000
   c. 85,000
   d. 130,000

4. **The effect of the Affordable Care Act on medical school enrollment this year has resulted in all but the following:**
   a. A decrease in applicants to M.D. and D.O. schools
   b. An increase in enrollment in D.O. schools
   c. An increase in enrollment in M.D. schools
   d. B and C

**Answers to the September/October 2013 CME questions:** 1. (C) 2. (D) 3. (B) 4. (C)

**Target Audience and Objectives**

The target audience includes physicians who have faculty appointments at a medical school or who train residents and fellows in hospital-based environments. It also is for non-physician faculty members who have the responsibility for teaching medical students and others who seek education in the continuum of medical education (e.g., residency, continuing education). Also, since residents are typically responsible during their training to train medical students, they too are part of the audience to which the Medical Education Digest is directed.

- To provide an overview from the world literature of medical education knowledge, concepts, and skills of contemporary, new, and innovative ways to facilitate learning among medical students, residents, and practicing physicians
- To identify sources of information regarding the medical education process
- To create curiosity among those responsible for the medical education process to read in depth some of those articles that are summarized in the Medical Education Digest.
In a continuing effort to fulfill your professional interests and to improve the educational quality of continuing education, please complete this form. Please darken bubble.

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AOA
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Grievance Policy
Complaints should be submitted in writing to the Department of Continuing Medical Education, Nova Southeastern University Health Professions Division, Terry Building, 3200 S. University Drive, Room 1459, Fort Lauderdale, FL 33328.