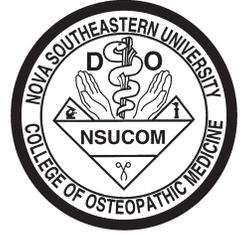


Medical Education Digest



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Educating Future Physicians: New Report from the Carnegie Foundation



The Carnegie Foundation sponsored the famous *Flexner Report* 100 years ago, which revolutionized medical education in the United States. Since then, there have been major changes in health care delivery, financing, public policy, and technology influencing diagnosis and therapeutics as well as an expanded understanding of human learning. These aforementioned factors lead to the conclusion that there is a need to reexamine medical education.

A recently released report also sponsored by the Carnegie Foundation concluded that in spite of many innovations, medical education is inflexible, excessively long, and not learner-centered. It found that clinical education is overly focused on inpatient clinical experience in hospitals with marginal capacity to support their teaching mission and that students often poorly understand nonclinical physician roles.

Furthermore, it was observed in visits to many medical schools that at both the undergraduate and graduate level of medical education, there is little attention to the

knowledge and skills required to meet health care needs of the U.S. population. In addition, medical education does not adequately make use of the learning sciences. The study, which included visits to 11 accredited medical schools and teaching hospitals, also concluded that the pace and commercial nature of health care impedes the inculcation of the fundamental values of the profession. It recommended four goals for medical education. These included the following:

- Standardization of learning outcomes and general competencies as well as an individualization of the learning process. This includes the possibility of fast tracking within and across all levels of medical education.
- Integration of formal knowledge and clinical experience. Integration of the basic, clinical, and social sciences should occur, including early clinical immersion.
- Development of habits of inquiry and innovation. To promote excellence throughout practice, students and residents should engage in inquiry, discovery, and innovation.
- Focus on professional identity. This includes the development of professional values, actions, and aspirations as a major focus of medical education with an essential foundation of clinical competence and interpersonal skills and ethical and legal considerations.

(Cooke M, Irby DM, O'Brien BC. Educating physicians: a call for reform of medical school and residency. The Carnegie Foundation for the Advancement and Teaching of Physicians. Jossey-Bass. 304 pages;2010.)

“Medical Education Highlights for Primary Health Care”

Analysis: Plagiarism on Residency Applications

Evidence of plagiarism was found in approximately 1 out of 20 essays accompanying applications to residency programs at Brigham and Women's Hospital, a Harvard University major affiliate. About 5,000 essays from applications to residencies in internal medicine, anesthesiology, general surgery, and emergency medicine were examined between September 2005 and March 2007.

Scott Segal, M.D., and Brian Gelfand, M.D., believe that since 28 to 45 percent of applicants to these residency programs apply to Brigham, the results they obtained in their study are representative. The study employed a computerized program called Turnitin for Admissions Essays. If more than 10 percent of an essay looked the same, it would be concluded that the essay was plagiarized. Typically this would mean it may include stories about patients, family, or fellow students.

While plagiarism was almost 14 percent among non-U.S. citizens, it was about 2 percent in citizens. Those with lower test scores were more likely to plagiarize, but sometimes this occurred in high achievers. Maxine Papadakis, M.D., and David Wofsky, M.D., from the University of California, San Francisco, School of Medicine query whether the personal essay has outlived its usefulness. Dr. Segal, however, finds the essay useful in deciding who to invite for an interview.

(Cooney E. 1 in 20 residency applications contain plagiarism, study finds. White Coat Notes: News from the Boston-Area Medical Community. July 19, 2010.)

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End of "See One, Do One" Era in Bedside Procedural Instruction

The 1999 *Institute of Medicine Report* regarding medical error and patient safety indicated that from 50,000 to 100,000 deaths occurred annually as a result of errors in the provision of health care. Medical residents are required to complete a number of procedures by the end of their programs, some of which are invasive bedside procedures. However, they may not have developed sufficient proficiency to perform them independently or safely.

A paradigm exists in which the learner is completely dependent on the teacher's knowledge and technical capabilities. When teachers are not able to perform procedures safely, errors and complications occur. Few allopathic and no osteopathic residency programs, the author reports, have a standardized curriculum in procedural instruction.

A member of the University of Miami-Jackson Memorial Hospital Center for Patient Safety believes that simulation-based standardized instruction would improve both medical knowledge and procedural skills. The program was provided every four weeks throughout the academic year. Residents and students were tested and evaluated with bedside checklists that have shown a reduction in patient complications and enhanced safety. Instructors with excellent teaching skills who were volunteers came from anesthesiology, emergency medicine, family medicine, general internal medicine, neurology, and radiology.

Also employed were videos used by the instructors to modify their techniques derived with permission from the *New England Journal of Medicine*. Four trainees, who signed an IRB consent form, volunteered per rotation (one slot for medical students) and worked on various training models to perform the following procedures:

- central venous catheterization
- knee arthrocentesis
- lumbar puncture
- paraentesis
- thoracentesis

Statistically significant improvement was noted in pre-instruction versus post-instruction checklist scores on all of the procedures. It was concluded that this model could improve osteopathic and allopathic procedural medical education.

(Lenchus J. End of the "see one, do one, teach one" era: the next generation of invasive bedside procedural instruction. Journal of the American Osteopathic Association. 110:340-346; June 2010.)

2009 Medical School Enrollment Survey

A targeted medical school increase of 30 percent is expected to be reached by 2018, according to a 2009 enrollment survey by the Association of American Medical Colleges (AAMC). The combined D.O. and M.D. first-year enrollment by the 2014-15 academic year is projected to be 26,500, which is 7,000 or 36 percent above 2002-03. In the D.O. colleges, first-year enrollment in 2014-15 is estimated at 6,300, or more than twice what it was in 2002.

(Results of the 2009 medical school enrollment survey. Association of American Medical Colleges. 11 pp. March 2010.)

Because of the recession, the growth of enrollment has been delayed in schools that existed prior to 2002. In addition, 12 schools planned to reduce enrollment due to financial pressures. The AAMC indicated concern about the supply of qualified preceptors by 73 percent of those that responded to the survey because of the growing competition from osteopathic medical schools as well as from offshore medical schools and nurse practitioner and physician assistant programs. Similar

concern was expressed about the number of clinical training sites.

Of the 126 schools included in the survey, 50 percent were considering or instituting primary care initiatives, and 47 schools were targeting efforts that address the needs of rural/underserved communities. While there will be more opportunity for Americans to enter medical schools, concern by the AAMC was expressed about the need for more entry-level graduate medical education positions.

Geriatric Education and Virtual Patients

Virtual patients shift the control of learning from instructors to learners by offering a realistic, controlled, and nonthreatening learning environment to practice clinical skills. Learners act as health professionals and obtain a history, physical examination, and make diagnostic and therapeutic decisions.

In its 2008 report, the Institute of Medicine indicated that between 2005 and 2030, the number of people aged 65 and over will double from 35 million to 70 million. However, in the same time with only 7,128 geriatricians in 2007, only a 10 percent growth is expected by 2030, while 36,000 is the estimated need. Since there also is an increasing population of medical students, a declining number of hospital inpatient stays, and an increase in competency-based learning, the role of virtual patients should be explored.

Virtual patients can address reduced student access to real patients, the need for standardization encounters, and the need for safe and responsive environments to acquire and practice patient skills. The environments created by virtual patients are controlled, allow for rigorous assessment, provide for informative feedback, and improve student performance. Since the virtual patient content can be delivered using the Internet, it allows flexibility for students at distant sites as well as the ability to tailor the complexity of the problems depending on the level of the learner while assisting in meeting the clerkship objectives.

GeriaSims, used by medical schools throughout the world, provides training in areas of geriatric care, including delirium, dementia, failure to thrive, falls, functional assessment, ischemic stroke, palliative care, and polypharmacy. In surveys, 91 percent of responders agreed that GeriaSims enabled the achievement of the targeted learning objectives.

The authors, from the Division of Aging in the Department of Medicine of Harvard's Brigham and Women's Hospital, concluded that virtual patients are a potentially useful tool for

case-based learning and assessment. They indicated it has been used in several education programs. Studies to determine the optimal way it can be used are recommended.

(Tan ZS, Mulhausen PL, Smith SR, and Ruiz JG. Virtual patients in geriatric education. Gerontology & Geriatrics Education. 31:163-173;2010.)

"Best" Med Schools

George Washington University School of Medicine released a new list ranking medical schools, but using a scale that has different criteria than most others that provide such reports. In addition to research performance, it highlights the ability of schools of medicine to address the primary care shortage, their efforts to improve accessibility of health care where shortages exist, and their focus on racial and economic disparity.

In fact, schools usually ranking high on traditional lists sometimes ranked low on the George Washington University scale. Washington feels that by using its criteria for ranking medical schools, it is better able to address the needs of the 21st century rather than what was needed in the 20th century.

Fitzhugh Mullen, M.D., professor of health policy at Washington University School of Medicine and the lead author, espouses that the absolute mission of medical schools is to educate and graduate doctors to care for the country as a whole. He maintains that an overemphasis on research by medical schools has had a negative effect and that they tend to devote fewer efforts to the social mission of the schools. The pressure to bring grant money to a school can be overwhelming and draw enthusiastic educators away from students, indicates Dr. Mullen. He adds that by continuing to be unresponsive to patient needs in the current system, it will not be possible to address health outcomes and the underserved.

The study assessed 60,000 graduates of the 141 allopathic and osteopathic medical schools from 1999 to 2000.

(Chen PW. Redefining "the best" medical schools. The New York Times. June 17, 2010.)

Impact of the Recession on Medical Schools



mandated by their parent university. These typically consisted of reduction in discretionary expenses (e.g., travel), hiring and salary freezes, administrative staff furloughs, and layoffs. These furloughs and layoffs usually did not apply to faculty. Budget reductions that may have occurred at medical institutions were typically across the board. The study identified a number of other tactical steps:

- consolidating basic science departments
- consolidating certain administrative functions such as information technology and grants management
- increasing tuition and fees
- delaying capital projects
- deferring building maintenance
- eliminating bonuses, position reclassifications, and changing benefits plans
- outsourcing services such as printing
- implementing incentives (e.g., clinical performance)
- changing faculty compensation
- consuming less energy
- developing new revenue producers (clinical service lines, new programs)

It was concluded that while there are signs of economic recovery, the impact of the financial crisis on medical schools will likely extend well into 2011.

(Krakower J, Goodwin M, Hefner D. Impact of the 2008 economic recession on U.S. medical schools and related organizations. Association of American Medical Colleges; May 2010.)

The Association of American Medical Colleges (AAMC) conducted a study in July 2009 to determine the impact of the recession on its member medical schools. It noted in the media that furloughs and staff layoffs were reported at universities, medical schools, and teaching hospitals.

The AAMC study described two steps to address losses that led to budget reductions and budget revenue shortfalls categorized as *strategic* or long-term and *tactical* or short-term. Medical schools that might have taken a strategic orientation were sometimes constrained by tactical steps



Health Professions Division
College of Osteopathic Medicine
3200 South University Drive
4th Floor, Room 1495
(954) 262-1469
Fort Lauderdale, FL 33328-2018
<http://medicine.nova.edu>

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Editor

Leonard Levy, D.P.M., M.P.H.
Associate Dean

Associate Editor/Art Design

Scott Colton, B.A.
Director of Medical Communications