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Globally, about a million new health professionals are trained each year. This includes 2,420 medical schools, with China, India, Brazil, and the United States having as many as 150 schools of medicine each and 36 countries having no medical colleges. Problems faced by medical education include:

- a mismatch of competencies to patient and population needs
- poor teamwork
- persistent gender stratification of professional status
- narrow technical focus without broader contextual understanding
- episodic encounters rather than continuous care
- orientation to hospital care with minimal emphasis on primary care
- quantitative and qualitative imbalances in the professional labor market
- a weakness in the leadership to improve health-system performance

The inhabitants of a large percent of the world’s seven billion people have health care conditions of a century ago. Innovative use of information technology is recommended by commission members, as is preparing students for teamwork and global collaboration. Barriers to low- and middle-income countries are particularly in the generation and application of knowledge.

It has been encouraged that all stakeholders use the Global Commission report as a basis for further discussion and action. (Kreimer S. Education of health professionals must change in an interdependent world. Medscape Medical News. www.medscape.com/viewarticle/733577; December 3, 2010.)
Special Feature: Recommendations on Medical Education Two Decades Ago

The Commission on Medical Education: The Sciences of Medical Practice, created by the Robert Wood Johnson Foundation in 1990, reported that as a result of the revolution in the sciences, it is necessary to reexamine many old departmental boundaries. The commission, headed by the former director of the National Institutes of Health and president emeritus of the University of Florida, Robert Q. Marston, M.D., remarked that medical education made only fitful pace with changes in biomedical science and health care needs.

What is required is a new unity in teaching and learning of science throughout the educational experience. Changing patterns of disease and transformation of medical practice, including an emphasis on prevention, requires that students learn how to use social and behavioral sciences, clinical epidemiology, and information science to improve patient care. It was recommended by the commission that schools of medicine integrate the sciences of medical practice through the entire course of study.

In addition to the biological sciences, they must have an understanding of the social and behavioral aspects of health and disease as well as ethics. Furthermore, they must expand the contexts of training beyond tertiary care hospitals to ambulatory care settings, community hospitals, nursing homes, and hospices. Clinical faculty members must prepare students to understand and also emphasize the longitudinal course of an illness, its science base, and the long-term chronic problems that bring patients to seek continuing care. Examinations should be developed that are interdisciplinary and interdepartmental.

A concluding comment of the commission was that fighting for departmental time and autonomy at the expense of high-quality integrated educational programs to produce competent physicians is not rational.


Integrating Evidence-Based Medicine in the Osteopathic Medical School

Among the competencies required in the osteopathic medical curriculum are patient care and practice-based learning and improvement. Kirksville College of Osteopathic Medicine-A.T. Still University (KCOM) employed a consensus model to change its curriculum so it would integrate evidence-based medicine (EBM) into the existing course of study. It used the Rogers' diffusion of innovation (DOI) model, which focuses on five phases:

- **KNOWLEDGE:** Exposure to innovation, solicitation of additional information, and developing an adequate understanding of it
- **PERSUASION:** Process of forming a favorable attitude for change
- **DECISION:** Adoption or rejection of innovation
- **IMPLEMENTATION:** Putting innovation to use
- **CONFIRMATION:** Evaluation of the efficacy of the innovation, moving forward with it, making modifications, or discontinuation of its use

KCOM employed the DOI process beginning with a series of workshops designed to provide knowledge and encourage changes that would lead to the adoption of EBM in the curriculum. The college created a computer skills laboratory based on a needs assessment and using the DOI initial three stages of knowledge, persuasion, and decision. Workshops examined and taught the components of EBM, namely asking a critical question, acquiring appropriate evidence, critical appraisal, and applying the best evidence for clinical practice.

Partnering with the Pennsylvania State University College of Medicine, the importance associated with integrating EBM across the curriculum was communicated. As a result of this process, EBM concepts were expeditiously implemented across all four years of training without increasing faculty contact hours.

Focusing Attention on the Flexner Report

At the beginning of the 20th century when the 100-year-old Flexner Report on medical education in the United States was completed, the education of a physician ranged from an innovative scientific approach such as that of Osler and Cushing at Johns Hopkins to an entrepreneurial approach that granted a doctorate simply by paying a fee. Formal didactics, if required, were from months to years and often included scientific rationalism mixed with folk medicine and myths.

A major thrust of the Flexner Report was strong advocacy of scientific rigor such as a laboratory experience, including unbiased objective systematic student evaluation. However, Flexner even then addressed the methodology of medical education, including concern about the overreliance on didactics that were “hopelessly antiquated,” urging that students must “not only know, but know how.” He remarked in 1925 that the medical school curriculum was “still too crowded” with an “overemphasis on rote learning.”

Today, this is being echoed with great emphasis on pressing medical education to emphasize understanding that must trump memorization and application of knowledge to patient care. The author indicates that these notions derived from the 1910 Flexner Report will soon be “rediscovered.” It is being realized that the era is passing where the full-time medical faculty member who is the educator, clinician, and funded researcher will have the time, talent, and expertise to do all three of these equally well.

Great attention was focused on Flexner’s recommendations about science education, but little was paid to those he made on humanism and the importance of the techniques of facilitating the learning process. He advocated that if applicants to medical school are precluded from admission if they fail to take requisite sciences, those who fail to take humanities courses should, too. Flexner remarked that healing without science is superstition; healing without humanism is technology; healing with both is medicine.

(Riggs G. Are we ready to embrace the rest of the Flexner Report? Academic Medicine. 85:1669-1671;2010.)

Family Medicine Clinic as a Site for Geriatric Residency Training

While family medicine residents should receive geriatric education in a variety of settings, the continuity clinic is a potential site for such education. With the limited number of family medicine faculty certified in geriatrics, all training programs should be sure that preceptors are able to teach residents about common geriatric problems found in outpatient settings.

About one in five family medicine office visits involves care of patients 65 years of age or older. However, there is limited research in geriatric education in the outpatient setting. By 2030, 70 million people will be older than age 65, doubling the amount in 1999. Additionally, those who are older adults make up 36 percent of hospital stays. In 2008, there were 7,590 certified geriatricians or one for every 2,500 people over age 75. The projected increase in older adults is expected to result in a further reduction in geriatricians to one for every 4,254 Americans.

Family medicine continuity clinics are an additional venue for geriatric residency education so that residents acquire a basic level of competence in addressing geriatric issues. Since residents most commonly discuss issues that are functional, prescribing, depression, and multidisciplinary care, these may be areas important for faculty development. Supplementing continuity of care clinics should be experienced in nursing homes, home care, and ambulatory care.

(Medical Student House Calls for Older Adults

A House Calls Program was established in 1984 at the Virginia Commonwealth University (VMU) School of Medicine that is mandatory for second-year students. An open-ended anonymous survey of 123 VMU medical students who observed a preceptor during house calls to the homebound elderly reported on the reflections of the students regarding medical treatment as well as the social learning process they experienced.

Among the areas reported were the qualities of the patients (e.g., their mobility, awareness, limitations, life outlook), the qualities of the physician-mentor (e.g., dedication, compassion, skill, patience), the family/caregiver qualities (e.g., commitment, responsibility, hardworking), patient-doctor relationship (e.g., communication, genuineness, how personal), family/doctor relationship (e.g., how comforted family felt by house calls), patient/caregiver response to physician (e.g., receptiveness, openness, welcoming, gratefulness), home setting (e.g., lessening of a burden by the patient and family to get out of the home), and community resources (e.g., collaborative care available to the homebound).

Students emerging from the House Call Program generally do so with a positive view. The researchers recommend that the caregiver, clinical provider, and patient also be included in additional studies to provide their insights.

(Abbey L, Willett R, Selby-Penczak R, McNight R. Social learning: medical student perceptions of geriatric house calls. Gerontology & Geriatrics Education. 31:149-162;2010.)
Medical Student Burnout and Unprofessional Conduct and Attitudes

A large study conducted at seven U.S. medical schools showed there was an association in medical students experiencing burnout with self-reported cheating and dishonest clinical behavior. While cheating and other dishonest activity were less than 10 percent, unprofessional conduct related to patient care was endorsed by 43 percent of 2,566 student respondents to the survey, 1,354 (52.8 percent) of whom had burnout.

Schools included in the study were Mayo School of Medicine, University of Washington School of Medicine, University of Chicago Pritzker School of Medicine, University of Minnesota Medical School, University of Alabama School of Medicine, University of California-San Diego School of Medicine, and the Uniformed Services University of the Health Sciences.

Students were more willing to falsely report physical examination findings than admit they performed an incomplete physical examination. The study also reported that students with burnout were less likely to hold altruistic views regarding their responsibility to society. The authors suggested that the relationship between burnout and medical student opinion about physician responsibility to society raises questions for physicians in general.

New Work-Hour Standards for Residencies

New standards of the Accreditation Council for Graduate Medical Education (ACGME) retain the 80-hour workweek that was established in 2003. All but first-year residents will be allowed to work for 24 consecutive hours. However, second- and third-year residents must have 14 work-free hours after a 24-hour shift. A first-year resident can have a maximum shift of 16 hours in a row. If a resident is providing care to a single patient and continuity of care is required for a severely ill or unstable patient, the resident can be given an exemption and work up to 88 hours of weekly duty. The exemption may also be given if there are events of academic importance occurring or if humanistic attention is required to be provided to a family or patient.

The chief health officer of the Association of American Medical Colleges (AAMC), Joanne Conroy, M.D., provided her approval, indicating that this is part of the way the practice of medicine is being changed. However, AAMC member institutions were disappointed that the standards were going into effect in July 2011 rather than in 2012.

Thomas Nasca, M.D., ACGME CEO, reported that the cost of these standards will be $308 million for the first year and then $330 million after that. This represents $32 per hospital admission. These costs are due to the need to hire physician assistants, nurse practitioners, and other physician extenders, but the biggest expense will be to provide transportation home for residents on night call since they are too tired to drive safely.

UCLA and the RAND Corporation predict there could be a 2.4 percent reduction in adverse events as a result of these standards. The Institute of Medicine (IOM), which made these recommendations, estimated it would cost $1.7 billion by including 16-hour shift limits for residents and giving them five days off each month.

(Reznick A. Modern Physician; November 8, 2010.)
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 **February 15, 2011** 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 are true about the new work-hour standard for residents except:*
   a. The 80-hour workweek established in 2003 was reduced.
   b. All but first-year residents will be allowed to work for 24 consecutive hours.
   c. Second- and third-year residents must have 14 work-free hours after a 24-hour shift.
   d. A first-year resident can have a maximum shift of 16 hours in a row.

2. *Problems facing medical education worldwide include all of the following except:*
   a. Episodic encounters rather than continuous care
   b. Orientation to emphasis on primary care
   c. Quantitative and qualitative imbalances in the professional labor market
   d. A weakness in the leadership to improve health-system performance

3. *Medical student burnout is associated with:*
   a. Increase in promotion of public health
   b. Increase in advocacy for patients
   c. Increase in barriers to health care
   d. Increase in altruistic views to society

4. *The 100-year-old Flexner Report had as its major initial thrust when it was instituted:*
   a. Overreliance on didactics
   b. Advocacy of scientific rigor
   c. Overemphasis on rote learning
   d. Overcrowding of the curriculum

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**Answers to the November/December 2010 CME questions:** 1. (c) 2. (a) 3. (*) 4. (c)

*As a result of an error, all answers to question 3 will be considered to be correct.*

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**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.*
January-February 2011 Evaluation Form
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 ☐

1) Your field / degree: ☐ MD ☐ DO/AOA # __________________________

   Strongly Agree   Agree   Neither Agree Nor Disagree   Disagree   Strongly Disagree

2) Reading this issue of Medical Education Digest has influenced the way that I will treat future patients.

3) The contents of this issue will be useful in my practice.

4) Was disclosure of commercial relationships made?
   ☐ Yes ☐ No

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   ☐ Yes ☐ No

6) Did you perceive any inappropriate commercial bias or influence?
   ☐ Yes ☐ No

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   ☐ Phone ☐ Email ☐ Correspondence ☐ Other __________________________

If you desire credit, please complete the areas below:

I have read this issue, approved for 1 hour of AMA-PRA category 1 credit & AOA category 1-B credit.

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