The Medical Education Digest celebrates its 100th issue with this edition. In the digest, published bimonthly every year since 1999, Leonard Levy, D.P.M., M.P.H., identifies current topics in medical education—providing an overview of innovations used to facilitate learning among the medical community.

The item below is from the first volume of the Medical Education Digest, published in 1999:

**COMING ERA OF RAPID CHANGE IN MEDICAL EDUCATION (OCTOBER 15, 1999)**

Exponential change in medical education is forecasted over the next 20 years in a commentary by Kenneth V. Iserson, director of bioethics and professor of surgery at the University of Arizona. Computer simulations that mimic patient and tissue response will be available as will the ability to prove that medical students are competent in basic clinical procedures. Residents also will be able to practice advanced clinical techniques before performing them on patients. Simulations will guarantee trainees’ experiences that they learn while decreasing patient danger and discomfort. Activities like OSCEs (objective structured clinical examination) will become individualized and rigorous, allowing those who achieve competency fast to progress more rapidly through medical school and residency.


Since that time, OSCEs have become a commonly used evaluation technique in undergraduate and graduate medical education. They employ standardized patients (individuals trained to simulate health problems) as well as computer simulations. Today, simulation labs are equipped with advanced robotics simulating a wide array of health problems.

NSU’s Second Life—a virtual world tool enhancing socialization and social presence in distance learning—provides students and instructors novel ways to interact, collaborate, and engage, offering students expanding opportunities in their medical education.
MEDICAL STUDENTS’ JOURNALS SHARE USEFUL GERIATRIC EDUCATION INFORMATION

Through the use of journals, medical students reveal responses to their experiences that include doctoring and communication skills when caring for older adults. They describe their responses to new content in geriatrics and with encounters with older patients in clinical settings during a period when they are developing their identity as physicians.

This includes the evaluation of geriatrics in the curriculum, revealing how students think about professionalism and professional development over time, and how they think about older patients. The use of journaling in medical schools both didactically and as an evaluation method fosters reflection, empathy, and improvement of clinical and communication skills. It showcases not only what is taught, but also what is learned.

Brown University Warren Alpert Medical School integrated content in geriatrics throughout the curriculum. For the purpose of evaluation, journals were kept that allowed the students to respond to weekly questions and share their thoughts about becoming professionals. Regardless of their interest in aging, first- and second-year students wrote weekly entries in their third- and fourth-year clerkships submitted journals every other week. Depending on their year in medical school, they responded to the following questions:

• What are your experiences, reactions, and insights related to geriatrics content?
• What are your experiences, reactions, and insights regarding the older patients (>65 years)?

A five-member interprofessional team with a geriatrician, geriatric fellow, anthropologist, and health service researcher read the individually de-identified journals. There were 30 journals that included 405 entries representing a large number of journal keepers from all the medical school classes. Identified themes from the subject of professionalism and the older patient included the following:

• Students gradually internalize principles of professionalism.
• Students report behaviors that demonstrate increasing professional skills.
• Students become increasingly self-aware regarding their roles as professionals.

It was recommended that journals be a strategy to elicit attitudes and ideas about medical students developing their professional identity as they care for older adults, while becoming competent physicians.

The University of California, San Francisco created an interprofessional program designed to train students from medicine, dentistry, nursing, and pharmacy to develop competencies in the delivery of high-value health care. It addressed the importance of creating universal health professions education for health care value that defines a comprehensive set of competencies spanning a variety of learners at various stages of training.

The need to train all members of interprofessional clinical teams in the basic concepts of health care value was emphasized. A task force included faculty members from all of the involved professions. The task force developed a set of comprehensive competencies that described proficiencies related to the stewardship of resources and the practice of cost-conscious care.

Proposed competencies were divided into the following categories: beginner, proficient, and expert. The beginner category included competency in the health professional being trained to be able to describe the various components of health care value. Examples of this category include the principles of health care delivery, organization and financing, strategies to control costs, access and resource allocation, the effect of insurance on demand, and the ability to discuss cost-conscious care with patients, providers, administrators, and leaders.

Among the competencies in the category labeled as proficient included being able to demonstrate an understanding of the need for change in clinical approaches, health care system incentives and restrictions, as well as being able to advocate for improving access, quality, and cost-effective care. Competencies at the expert level included such items as training staff to develop cost-effective clinical programs and having a capacity to employ political economy theory in analyzing current health care system politics analyzing clinical, human resources, and fiscal implications of introducing new devices and interventions.

Ethically sensitive areas of genomics include such issues as the diagnosis of genetic diseases, in vitro fertilization, and the genetic susceptibility to common diseases as well as communication to the general public. Often students find it difficult to apply knowledge on ethical issues to real situations in the clinic.

The experience of faculty members from Riga Stradins University in Latvia is described with regard to ethical problems that are faced when teaching genetics and their solutions. The Human Genome Project has enabled the study of the genetics of common complex disorders such as cardiovascular diseases, cancers, and diabetes in which genetic factors and the environment play a role in the etiology of these diseases. Medical students should understand their responsibility as future physicians to explain, in a sensitive way, that genes are not the only factors responsible for a disease, and the importance of lifestyle should not be underestimated. In individuals identified with the highly penetrant breast cancer gene BRACA-1, they must also explain lifetime risk, the possibilities of preventive surgery in those determined to be high risk, and efficient treatment measures.

Physicians can help in assisting patients develop a healthy lifestyle by discussing the possible importance of restricting hormonal contraceptives, smoking cessation, and having a physically active lifestyle. The more complex the genetic implication of the disease, the greater the ethical responsibility of the physician in providing genetic counseling. If a patient tells a physician that her sister has been diagnosed with cancer due to the BRACA-1 gene, the physician should be able to inform the patient, in a delicate manner, what her lifetime risk of breast cancer may be. In addition, the physician has to determine whether this information needs to be shared with her husband and daughters.


NURSES AND DOCTORS: SHOULD THEIR EDUCATION BE INTEGRATED?

With the advent of the electronic health record and other health information exchange-related collaborative initiatives, the medical industry is becoming more focused. In a column in The New York Times, Dhruv Khullar, M.D., resident physician at Massachusetts General Hospital, explained that it is time for these collaborative initiatives to expand following the way the industry trains its nurses and doctors. He insists that nurses and doctors need to be trained in the same way the industry expects them to perform in their actual professions.

The American Association of Colleges of Nursing reports that there are over 3.1 million nursing professionals in the United States, just under four times the number of licensed physicians. As the most populous medical profession, nurses are the first and most frequent point of contact for many patients. The efforts of nurses are integral to whether physicians will have any success in their own work. Health care reform is pushing medical professionals toward integrated care, in which collaboration between professions becomes vital.

Incongruent medical education between nurses and doctors becomes evident in practice. Khullar explained that he was expected to lead a team of medical professionals as a first-year resident—including leading some professionals who had far more experience working in a medical setting—in addition to applying the theory of medicine into practice. Integrated education is needed to make the disparate abilities of doctors and nurses complement one another to create a collaborative team.

FEMALE MEDICAL STUDENTS OUTSCORE MALES IN OB/GYN

The percentage of female residents in obstetrics and gynecology (OB/GYN) increased dramatically from 12 percent in 1980 to 77 percent in 2006. Since females in OB/GYN work fewer hours per week than men, this may affect the availability of the specialty per unit population.

There has been a 50 percent reduction in male graduates of OB/GYN residencies between 1998 and 2003—a phenomenon that no other specialty has experienced. Studies show that females outperform males in OB/GYN clerkships. A study at the Icahn School of Medicine at Mount Sinai that included 305 students, 163 (53.4 percent) women, and 142 men (46.6 percent) showed that women outperformed men in the OB/GYN clerkship.

Women also outscored men on the standardized National Board of Medical Examiners (NBME) subject examination in OB/GYN. This was in spite of women scoring lower on standardized preclerkship examinations (e.g., MCAT, USMLE Step 1). It was also shown that although women had better overall scores than men in the OB/GYN clinical clerkship, they did not score higher on patient relationship scores. Similarly, while women received higher final grades than men in the OB/GYN clerkship, there was no difference in clinical evaluation scores. In addition, the study revealed a higher percentage of women majored in the humanities, suggesting that they had less background in the basic sciences than male students.

It was thought that this may be the reason women had lower MCAT and USMLE Step 1 scores. Female students also appear to be more interested in learning about women’s health and in patient education and prevention. This is offered as an explanation of why they outperform men in retention of material, which leads to better scores on the NBME subject examination in OB/GYN and on the related USMLE Step 2 CK. With the increasing number of practicing female OB/GYNs, it is also suggested that male students are finding fewer male role models. While some studies have been done, more need to be conducted to try to identify how to improve male student performance in the OB/GYN clerkship.


PROFESSIONALISM AND UNDERGRADUATE MEDICAL EDUCATION

Research showed students who have deficiencies in professionalism in medical school continue to display deficiencies in residency and practice, placing patients at risk for harm. In addition to achieving academic standards, standards of non-cognitive behavior include honesty, professional behavior, dedication to learning, professional appearance, respect for law and others, confidentiality, and issues regarding substance abuse. These go beyond expectations in knowledge and reasoning skills and include nine core interpersonal and intrapersonal competencies for entering medical students. They are

- ethical responsibilities for self and others
- reliability and dependability
- service orientation
- social skills
- capacity for improvement
- resilience and adaptability
- cultural competence
- oral communication
- teamwork

These competencies are predictive of success at the majority of medical schools in clinical rotations and later practice. Components in the admissions process to address this are

- 2015 introduction to the MCAT of testing requiring demonstration of an understanding of social and behavioral factors that contribute to health
- guidelines for letters of reference ensuring inclusion of information about core competencies
- documentation of personal experiences
- introduction of multiple mini-interviews, including responses to various scenarios
- inclusion of the situational judgement test (SJT) assessing response to various situations