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Nova Southeastern University
Clinical Skills Testing of Osteopathic Medical Students

A sample of 121 fourth-year osteopathic medical students was subjected to the Comprehensive Osteopathic Medical Licensing Examination (COMLEX) clinical skills prototype. This is a standardized examination using people who are trained to be "patients" who, in a standardized way, respond to examinations and assessments performed by students. Pen and pencil examinations are not appropriate evaluation instruments to test motor skills, verbal communication, interpersonal skills, and hands on treatment.

Tests have been developed that employ standardized patients that ensure examination content is sound and evaluation tools such as checklists and rating scales are sound. The accuracy and consistency of patient portrayal and scoring also can be monitored. This is a spin off of objective structured clinical examinations and other performance-based assessments that have become widespread at medical schools.

The study with 1452 standardized patient encounters provided additional evidence to support the adoption of a clinical skills examination administered by COMLEX. This would be for the purpose of assessing the readiness of osteopathic medical students to provide patient care in supervised graduate medical education training programs. The examination consisted of a series of 12 standardized patient clinical encounters with patients who ranged in age from 20 to 74.

Students completed the same 12 cases and each student was given 13 minutes to interview and evaluate each patient followed by a seven-minute post-examination exercise (SOAP note). In any one-test session there were 11 students for each osteopathic physician rater.

Standardized patients were trained in a two-day workshop and physicians received four hours of formal education as well as a one-hour orientation on the day of the examination. Standardized patients completed case-specific checklists after each student encounter consisting of relevant history questions and maneuvers students should perform in a focused physical examination.

USMLE Clinical Skills Examination

The governing board of the United States Medical Licensing Examination (USMLE) voted to implement a clinical skills (CS) examination as a component of USMLE Step 2. The CS employs interactions between standardized patients and examinees to simulate one-on-one personal encounters between physicians and patients in clinical settings.

It has been endorsed by the governing bodies of the National Board of Medical Examiners and the Federation of State Medical Boards for implementation in 2004. The existing Step 2 examination will be known as the clinical knowledge (CK) component. To register for Step 3, students and graduates of LCME- and AOA-accredited medical schools must take and pass Step I and the CK and CS component. The CS component of Step 2 will replace the Clinical Skills Assessment currently administered by the Educational Commission for Foreign Medical Graduates required for ECFMG certification of international graduates.

(Status of the USMLE Clinical Skills Examination. NBME Examiner. 50 (1): 2: Spring/Summer 2003.)

Problem-based Learning in Epidemiology

In a study at the University of Western Australia Medical School, 80 of 136 second-year medical students agreed to participate in a randomized controlled trial of teaching epidemiology by PBL compared to traditional means. There was no significant difference between PBL students and traditional students in scoring on quizzes and examinations. However, those who took the course using PBL indicated they enjoyed the course more and were much more enthusiastic about epidemiology and its professional relevance when compared to students who took the course traditionally.

On interview, those students who were in the group that took the PBL version of the course thought it would require more work. However the study in Australia found there was no difference in time spent on study between the PBL students and traditional students. The study supported contentions that medical students are eager to learn as adults. It also concluded with a recommendation that it is imperative for medical schools to provide students with the opportunities to do so using vehicles such as PBL. Given the choice, two-thirds of those students in the study said they would opt for PBL rather than the traditional methods of learning.


PDAs Play Increased Role in Medical Education

Rapid improvements in technology and falling prices are bringing a very broad range of audio and visual capabilities to classrooms. Wolfvision’s Ceiling Visualizer VZ-C10 (www.wolfvision.com) uses various lenses and mirrors to produce high-resolution images of three-dimensional objects. It has been proven especially useful in capturing large format objects such as x-ray prints and in wet laboratories and pathology labs where projection equipment needs to be kept at a safe distance.

The Margi Mirror software (www.margi.com) compresses PowerPoint presentations, downloading them from the PC to the PDA. While running the device, presenters see a speaker’s notes on the handheld computer while projecting the regular slide. Computers can be left behind when making a presentation using Presenter-to-Go. Presenter-to-Go is in use at Tufts New England Medical Center and the University of Texas Health Science Center. Faculty members who do not have laptops report Presenter-to-Go is an inexpensive and convenient way to add electronic presentations to teaching. No other area of technology used in instruction is evolving as rapidly as presentation systems.

Rural Medical Education Driven by the Community

The courtship process is a term used to recruit physicians to rural practice. Marriages of rural and academic communities hold the potential to graduate more rural physicians. This community-driven approach includes selecting students from rural areas who have an interest in a career in family medicine and is referred to as Physician Shortage Area Program (PSAP) (Jefferson Medical College). The program involves health professions advisors at small colleges who play a key role in selecting PSAP students to Jefferson. It involves only one percent of the medical students in the state but now constitutes 21 percent of the rural family physicians in Pennsylvania.

Another example is the Rural Physician Associate program, which includes 40 third-year University of Minnesota (UM) students each year since 1971. Half the students selected are from the UM traditional medical school and half attend the first two years at the Duluth campus where a priority is put on selecting and preparing rural and primary care physicians. The Nebraska Rural Health Opportunities Program created a special admissions track that admits 10 students yearly to the University of Nebraska Medical School after premedical preparation at Chadron State College or Wayne State College. By selecting only one or two colleges to work with the program from both sides of the state, it attracted a large share of academically gifted rural high-school students.


Problem-based Learning in Biochemistry

The University of Rochester School of Medicine and Dentistry employs problem-based learning and complementing lectures in its Double Helix Curriculum. Students are excited about learning in a PBL environment and look for ways to integrate biochemistry, cell biology, genetics, and molecular biology into the curriculum. Complementary lectures not only assure that quality is uniform but that the learning students acquire is accurate. The author states that it is no longer practical for students and faculty to spend so much academic effort mastering generalized scientific information without mentoring students in the specific applications of that knowledge for biochemical research and the practice of medicine. He also advocates that there be changes in premedical education as part of the solution for the crowded medical school curriculum.

A PBL case can provide a learning environment in which students perceive the objectives as worthwhile. In addition, PBL can solve problems associated with limited time for biochemistry. Students in PBL scenarios acquire the concept of relevance of biochemistry concepts by being provided with opportunities to identify aspects of the case as learning objectives in the process of applying them to the patient’s case. Using PBL cases in biochemistry or any one course alone is not sufficient for students to become lifelong learners. PBL needs to be integrated into the entire curriculum so students and the curriculum design team appreciate the significance of biochemistry, genetics, and molecular biology in the practice of medicine over the entire four-year curriculum where basic science learning objectives are revisited. The breadth and depth of PBL discussions can be supplemented by complementary lectures to help students avoid gaps in knowledge and create concept maps that are important for future learning. A well-written PBL case will motivate students to propose learning objectives that include those intended by the writer. This is a more effective way than providing learning objectives in advance.

(Smith H. “A course director’s perspectives on problem-based learning curricula in biochemistry.” Academic Medicine. 77(12). December 2002, Part I; 1189-1198.)
Removing Cadavers from the School Curriculum

UCLA is reducing cadaver dissection by 40 percent and the University of California at San Francisco has eliminated dissection entirely since 2001 for first-year medical students. Students examine pre-dissected bodies and body parts rather than perform dissection. Hugh Patterson, adjunct professor of anatomy at the University of Cincinnati, says that dissection is a waste of time. He indicates that examining previously dissected cadavers is a better as well as more effective and efficient way to learn anatomy. Time constraints are among the reasons for the decline in the amount of dissection at medical schools.

N. Barry Berg, coordinator for gross anatomy at the State University of New York Upstate Medical Center, which has reduced anatomy classes by 40 percent, says “The curriculum in many medical schools has become crowded, and older courses have been cut back to make room for molecular biology and genetics. The easiest to cut back are those with a lot of lab time, and gross anatomy is a prime candidate.” Medical schools are turning to technology to help students learn anatomy and the use of virtual reality such as the digitized bodies of a man and woman is already being used in Colorado as part of the Visible Human Project.