

# Medical Education Digest



Volume 11, Number 5

Published six times per year by NSU College of Osteopathic Medicine

September/October 2009

## Empathy Erosion in Medical Students



The most essential time for medical students to demonstrate empathy is when they begin the transition to engaging in clinical activities. However, a study at Jefferson Medical College indicated there is an erosion of empathy when the medical school curriculum shifts toward patient care. Empathy is an affective and emotional characteristic that primarily involves understanding another person's pain and suffering with the capacity to communicate this understanding. Sympathy is predominantly affective or emotional and involves intense feelings about a patient's suffering.

To determine empathy level, Jefferson Medical College developed a survey instrument with 20 items that are answerable on a seven-point scale (7=strongly agree; 1=strongly disagree). The instrument is available in three different versions, including one for physicians, another for other health professionals, and a third for students. Using the student version, the study included 456 medical students who entered the college between 2002 and 2004. Results indicated there was a significant decline in empathy in third-year students, which was similar for both men and women. However, those who went into patient-oriented specialties scored higher than those who entered technology-oriented specialties. The authors recommended that to avoid this erosion of empathy, medical education needs to make profound changes targeting undergraduate, graduate, and continuing education levels.

*(Hojat M, et al. The devil is in the third year: a longitudinal study of erosion of empathy in medical school. Academic Medicine. 84:1182-1181;2009.)*

## Changing or Renaming the D.O. Degree



A study of how a group of osteopathic medical students feel about the D.O. degree or an alternative designation was conducted at a single osteopathic medical school by investigators from Missouri State University. They indicated that results of a previous survey conducted by the Student Doctor Network showed that 253 (or 47.5 percent) of participating D.O. students preferred a change of their degree from D.O. to M.D.

Because a study of recent D.O. graduates and osteopathic medical students revealed they did not see significant differences between allopathic and osteopathic training, many D.O. students feel they should have the same degree designation. The study looked for the factors that may lead D.O. students to desire such a change. Anecdotally, among the possible reasons cited was that allopathic principles and procedures have become increasingly adopted by D.O.s in clinical practice, while another is that many D.O. residents receive their training side-by-side with allopathic residents.

However, a survey was conducted of 480 Ohio University College of Osteopathic Medicine students in 2007 with 214 participants (45 percent). Analysis of the results indicated that 117 (or 54.7 percent) of the respondents opposed a change to M.D., and only 75 (or 35 percent) were in favor of the degree change. Only 10.2 percent were neutral or undecided. Limitations included the fact that only one school was represented, leading to a recommendation that a nationwide survey be done. The study does not appear to identify new strategies in this debate, but does support efforts to promote the "D.O. difference."

*(Bates BR, Mazer JP, Ledbetyer AM, Norander S. The DO difference: an analysis of causal relationships affecting the degree-change debate. Journal of the American Osteopathic Association. 109(7):359-369;2009.)*

## A Look at Dermatologic Medical Education



**T**here are many challenges to expanding curricular time for dermatologic medical education. This includes issues regarding the inclusion of advances in molecular biology, newer and more complex

pathophysiologies, more emphasis on communication skills, sensitivity to diverse cultures, ethics, population health, and preventive medicine. The average amount of time devoted to dermatology in medical schools is 10 hours, but over 700 students apply for dermatology residencies—and only 300 are successful.

Since the majority of dermatological care is provided by non-dermatologists in primary care specialties, increasing both the quality and quantity of education in dermatology for health care providers can improve the quality of dermatologic care in patients. A medical needs assessment is advocated to determine the nature of the dermatology curricula. It should identify problems, conditions, or diseases that have the greatest frequency in clinical practice. This includes those that have potentially serious outcomes in mortality or morbidity and are poorly addressed by health care providers.

A list of clinical skills and procedures related to the integumentary system was identified by the Association of American Medical Colleges (AAMC) in 2006. The AAMC now has a dermatologist on its clinical skills taskforce. With very little expense, dermatology-teaching volunteers can implement multi-station, mobile, hands-on dermatology teaching labs.

*(Stratman EJ. Exploring more dermatology education for medical students: who, what, when, where, and how? Journal of the American Academy of Dermatology. 61:Issue 1;2009.)*

## Students Gain Insight by Becoming Nursing Home Residents

**T**o help generate interest in seeking a career in geriatrics, medical students from the University of New England College of Osteopathic Medicine are given a “diagnosis” and enter a nursing home to live for two weeks like any other resident in the facility. The experience is voluntary, the student receives no remuneration, and there is no difference as to how the student is treated compared to other nursing home residents. One student described going through a full body-mole and pressure-ulcer check. She also received pureed foods and was raised out of her bed with a lift so she could be placed into a wheelchair.

To date, 10 students have gone through the program, which was established by the college in 2005, including one who spent 10 days in the summer at a Department of Veterans Affairs Hospital nursing home in Maine. Petroleum jelly was smeared on his glasses and cotton placed into his ears to simulate impaired vision and hearing. Currently, there is only one geriatrician for every 5,000 people over age 65, which, if recruitment remains the same, is expected to increase to one for every 8,000 by 2030. Geriatrics is one of the most underrepresented and lowest paid fields in medicine.

*(Zezima K. Experiencing life, briefly, inside a nursing home. The New York Times. A10; Monday, August 24, 2009.)*

## Exposing Medical Students to Health Care System Problems



**S**tudents from the medical school at the University of Washington shadowed physicians for the purpose of observing what it was like for physicians to see as many as 45 patients a day for an average of five minutes each, including those who had no insurance, and looking at illegible physician records. The students also learned about ordering tests that were possibly unnecessary but were done to protect physicians

against lawsuits and saw physicians trying to match Medicaid patients with drugs costing four dollars on the Wal-Mart list.

Students felt there needed to be a reorientation of the health care system, which has devalued primary care. The payment policy that inadequately reimburses primary care providers has led some students to conclude it would take years for them to pay off their large medical school loans. Therefore, little incentive is provided for them to enter primary care practice. One student noted that medical decisions were often driven based on the knowledge acquired about the financial situation of patients.

However, in spite of these issues, a number of other students became more committed to primary care practice as a result of their experiences in underserved and rural areas. One cited as a reason the ability to get to know patients much better. But another student, who indicated she was planning to enter primary care, said, “To feel at the end of the day that I’ve treated a patient and helped—that would be enough for me.”

*(Sack K. Summer of work exposes medical students to system’s ills. N.Y. Times. September 9, 2009.)*

# Authoring Innovative Virtual Patient Cases

**V**irtual patient cases have become useful and innovative tools in medical education. However, the process of virtual case development can be very difficult to author, adapt, and exchange. Faculty members at the medical school of McGill University in Montreal have developed guidelines for authoring virtual patient cases. These are built on principles of instruction, cognition, and educational informatics and are based on research, are theory-grounded, and criterion-referenced. The McGill group developed 12 tips for virtual patient case development:

- Determine **case content** and choose a **design model** – relevance, pedagogical framework, suitability for the narrative and the learner.
- **Organize and storyboard** a case before starting – discuss developmental process that will be used and available resources, determine specific sections or components.
- Manage case **complexity** and match it to the case **objectives** – determine level of learner, determine content or story, and determine cognitive load associated with virtual patient case.
- Include **assessment and feedback** from the start – provide learner response and measure if predetermined learning objectives have been obtained.
- Support **individualized approach** to learning – virtual patient cases should be safe and in a risk-free environment because they are learner-centered and constructive.
- Use your virtual patient case to encourage **collaboration and collaborative learning** – collaboration should be from learner’s perspective, specific to individual school, and to current national and international initiatives.
- Tackle **interactivity** – interactivity heightens learner’s sense of participation, which facilitates learning.
- **Anticipate and navigate** – logical navigation permits learner to focus on narrative content and objectives.
- Ensure **privacy and confidentiality** of data – actual cases can make content more authentic but require informed consent; however, they may not address instructional objectives completely.
- **Integrate evaluation** – highlight how author’s objectives are achieved using focus groups of learners and educators, obtain oral/written feedback and formative and summative measurements of outcomes.
- Recognize the potential of **expert traces** and the use of **script concordance** – virtual patient cases can provide insight, comprehensive data, and diversity in expert approaches in a single clinical situation.
- Choose the right **authoring application** for your case – application functionality should address requirements from the

perspective of the author, learner, and the system architecture. This should include the ability to integrate all forms of supporting media as well as documentation to clarify complex concepts and enhance existing explanations.

Virtual patient cases provide an innovative teaching strategy that engages and motivates learners and assists faculty.

*(Posel N, Fleischer D, Shore BM. 112 tips: guidelines for authoring virtual patient cases. Medical Teacher. 31:701-708;2009.)*



# Using Virtual Patients in Problem-Based Learning as a Replacement for Paper Cases

**P**roblem-based learning (PBL) was shown in a recent study to result in a higher probability of developing critical thinking compared to learning in a didactic environment. It is useful for all health care practitioners who must synthesize information, identify solutions, and test solutions. However, PBL using paper cases can proceed in only one direction, limiting their use in clinical reasoning. They also do not emulate real life or address the many ways to solve a problem.

Saint George University of London is using multi-route, engaging virtual patients through an application called "OpenLabyrinth." Such cases are more lifelike and include practice in using reasoning and decision-making skills and exploration of the consequences of those decisions. Paper cases were replaced by online interactive virtual patients and were evaluated by both students and tutors as an improvement to the PBL process. The use of virtual patients allowed students to make choices, explore the consequences of such choices, and identify mistakes. Surprisingly, enthusiasm for the change by both students and staff was unanimous.

*(Poulton T, Conradi E, Kavia S, Round J, Hilton S. The replacement of "paper" cases by interactive online virtual patients in problem-based learning. Medical Teacher. 31:52-758 2009.)*

## Creating Virtual Patients Using CT Images



**B**asic and clinical scientists at Tufts University Health Science Center created a virtual patient (VP) case history. Within 12 hours after death, bodies were embalmed through common carotid artery infusions, which were then subjected to computerized tomography (CT) several weeks later. Immediately after embalming, air was infused, enhancing the visualization of the arterial system. Thirteen embalmed bodies were imaged, with the images then being reviewed by a radiologist who sent his observations to clinicians. It was found that CT images from embalmed cadavers are of high resolution and were able to be used for the development of a VP.

In addition, the VPs are able to be stored on a server as a movie placed in the Tufts University Sciences Knowledgebase (TUSK). This led to the development of a virtual patient case including the generation of appropriate questions and answers. These virtual patients were placed on the server of Tufts University and made available to medical students. It was concluded by the study participants that the use of CT scanning of cadavers is feasible for use to develop VPs. Students indicated that the images were accessible at home or in the university library using the Internet. In addition, they encouraged the development of more VPs from cadavers. Additional studies are underway to determine how this process affects student learning.

*(Jacobson J, et al. Creation of virtual patients from CT images of cadavers to enhance integration of clinical and basic science student learning in anatomy. Medical Teacher. 31:749-751;2009.)*



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>

Nova Southeastern University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia, 30033-4097; telephone number: 404-679-4501) to award associate's bachelor's, master's, educational specialist, and doctoral degrees. Nova Southeastern University admits students of any race, color, sex, age, nondisqualifying disability, religion or creed, sexual orientation, or national or ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the school, and does not discriminate in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other school-administered programs.

### **M**edical Education Digest

The *Medical Education Digest* is published bimonthly through the NSU-COM Office of Education, Planning, and Research

#### Editor

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

#### Associate Editor/Art Design

Scott Colton, B.A.  
Director of Medical Communications