

Medical Education Digest

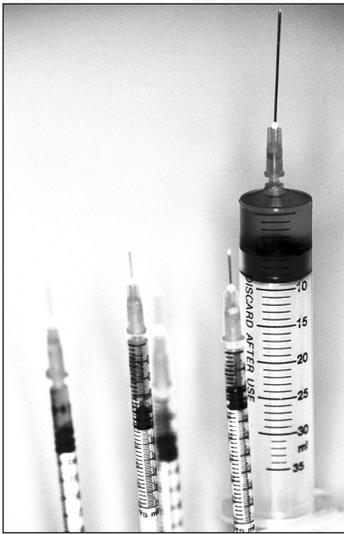


Volume 11, Number 6

Published six times per year by NSU College of Osteopathic Medicine

November/December 2009

OUCH! Needlesticks and Medical Students



While there are as many as 600,000 to 800,000 reported needlesticks and other percutaneous injuries to health care workers annually, evidence suggests there is a vast amount of underreporting of such incidents. This is true in medical students as well who, because of underdeveloped surgical skills, are at high risk of needlesticks. These injuries can lead to chronic infection, social stigma, and long-term disability as well as psychological stress reports a Johns Hopkins University School of Medicine research group.

The study included almost 700 recent medical school graduates enrolled in a surgical residency at 17 U.S. medical centers. Among this group, there was a median of two needlestick and related injuries. This included a 2.51-fold increase in such injuries among high-risk patients (e.g., HIV, HCV, and HBV). Medical students were 12.5 times less likely to sustain needlestick injuries in a low-risk patient. Of these injuries, 72 percent were self-inflicted and 67 percent occurred when they felt rushed. The most recent needlestick injuries among 21 percent of the subjects occurred when they were in medical school. The researchers recommended that there needs to be prompt reporting of needlestick injury, but not only in cases of high-risk patients. If this was done, proper prophylaxis could be accomplished, counseling provided, and legal

precautions implemented. This is important since 47 percent of those with needlestick injuries did not report them.

Martin A. Makary, M.D., M.P.H., of Johns Hopkins states that medical schools and hospitals are not doing enough to protect medical students. He indicates further that a culture needs to be created for the reporting of needlestick injuries by both medical schools and hospitals. It is suggested that education needs to be increased about needlestick reporting measures and simulations be done to master proper needle handling. Double gloving also is recommended. To the extent possible, electrocautery should be used instead of a knife. In addition, skin glue should be utilized instead of suture closure.

(Sharma GK, et al. Needlestick injuries among medical students: incidence and implications. *Academic Medicine*.84:1815-1821;2009.)

Shortage of Physicians, Residency Programs

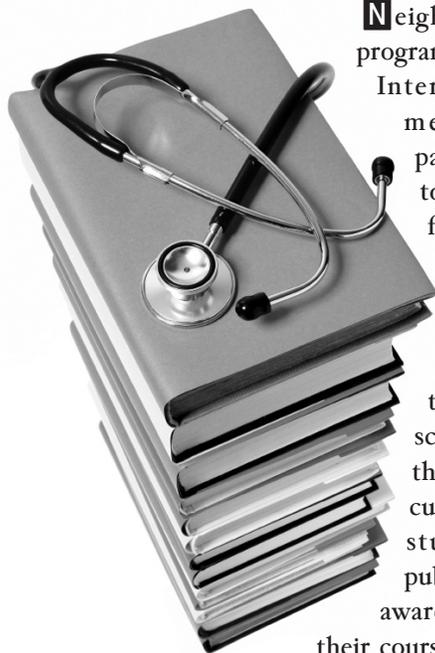
By 2025, it is anticipated that a shortage of physicians will occur that can range from 124,000 to 159,000. Four new medical schools enrolled their first classes this year, including the University of Central Florida, Florida International University Herbert Wertheim College of Medicine, The Commonwealth Medical College, and Texas Tech University Health Sciences Center Paul L. Foster School of Medicine. In addition, 12 medical schools have increased their entering classes by seven percent or more.

According to Darrell G. Kirch, M.D., president of the Association of American Medical Colleges (AAMC), the number of residency slots must be increased. None of the reform bills currently before Congress includes more Medicare funding or graduate medical education positions. The Resident Physician Shortage Reduction Act (S.973/H.R. 2251) increases the number of Medicare-supported training positions for medical residents by 15 percent.

(Sherrod R. Medical school enrollment continues to rise to meet physician need but future graduates could face shortage of residency training slots. AAMC Press Release. October 20, 2009.)

“Medical Education Highlights for Primary Health Care”

New Florida Medical School Focuses on Serving Communities in Need



Neighborhood HELP is a program at the new Florida International University medical school that pairs medical students together with students from nursing and social work and focuses on low-income families that have health care barriers. In addition to its basic medical science instruction and the introductory medical curriculum, FIU medical students have ethics, public health, and cultural awareness integrated into their course of study.

The Josiah Macy Jr. Foundation indicates that the new medical schools and those under development provide an opportunity for innovation and experimentation since standards set after the Flexner Report of 1910, while essential, have not kept pace with the changing demographics as well as evolving technology. Representing the Macy Foundation, George Thibault, M.D., remarked that the FIU approach exemplifies the foundation's 2008 report, which recommends a focus on societal needs rather than those of the profession. This concept is integrated into all four years of the curriculum rather than in one or two courses. The FIU medical school's student ratio is 35 percent Hispanic/Latino and 7 percent African-American, with the remainder being Asian and Caucasian.

FIU students will be serving a population demonstrating the effects of poverty. Those effects include low literacy rates, a dearth of fresh produce, a lack of parks, and limited transportation to get to health clinics. The FIU medical students will be expected to research and help solve local problems with a focus on prevention, indicates the assistant dean of academic affairs, Pedro Jose Greer, M.D., who in August received a Presidential Medal of Freedom in recognition of his longtime involvement in delivering medical care to the homeless in Miami.

(Khadaroo ST. Medical school reinvented: adding lessons in compassion. Christian Science Monitor. September 15, 2009.)

Analysis of Competency-Based Osteopathic Medical Education

The Matrix, a novel assessment tool, was applied to a Kirksville College of Osteopathic Medicine (KCOM) program in microbiology for the purpose of demonstrating its utility in curriculum assessment. However, it may be more valuable in assessing student behavior in clinical encounters with the use of human patient simulators, standardized patients, or real patients. The Matrix employed a set of 16 standardized patient encounters in the first-year medical microbiology course and was effective in integrating these experiences with the seven core competencies that are required in an osteopathic medical curriculum as well as the Comprehensive Osteopathic Medical Licensing Examination (COMLEX) - USA Level-2 Performance Evaluation.

The authors suggest that by lining up the osteopathic medical curriculum with the seven core competencies, it will also result in improving the probability that students pass the COMLEX examination as well as become excellent osteopathic physicians. In the spring quarter of 2006, 168 first-year medical students completed the 44-hour medical microbiology course in which 16 standardized patient (SP) encounters were included. The encounters included 16 outpatient scenarios. Each encounter included the presentation of a chief complaint and associated symptoms consistent with a lecture the students had just completed. The exercise consisted of two four-hour sessions in two days. Each student had 40 minutes with the SP at KCOM, where there were eight patient examination rooms equipped with audio, digital video capture, and real-time monitoring capabilities.

Students received a five-minute orientation about logistical issues. They took turns with each scenario as "physician" and "observer," both entering the room at the same time. At the end of 11 minutes, they were given a two-minute warning, after which they received two to three minutes of feedback from the SP. After a four-minute wait, they then proceeded to another room to begin their next encounter. When the 40-minute session ended, all students went to a computer lab to complete a SOAP note (Subjective, Objective, Assessment, Plan) that was graded by the clinical faculty evaluator. The authors concluded that the Matrix is especially valuable when evaluating and designing realistic clinical experiences.

(Lockwood MD, Tucker-Potter S, and Sargentini NJ. Curricular analysis of competency-based osteopathic medical education: application of a matrix for quality enhancement to a standardized patient encounter example. Journal of the American Osteopathic Association. 109:486-500;2009.)

Quizzing Medical Schools on Ghostwriting



Iowa U.S. Senator Charles E. Grassley sent letters of inquiry to 10 research-focused medical schools as part of his continuing investigation on ghostwriting. He was trying to determine the prevalence of articles in which a writer other than the investigator publishes an article in a medical journal and one or more academic researchers receive author credit. Sometimes the outside

writer receives payment from a drug or medical device company whose product is under study. Senator Grassley is troubled by attempts that may lead to the manipulation of the scientific literature, which in turn may lead to the prescription of treatments that may not be effective or may cause harm to patients as well as promote products that are expensive or less effective than alternatives.

While some journals, medical associations, writers, editors' groups—and even pharmaceutical companies—have called for restricting such practices referred to as ghostwriting, some universities have been slow to respond. Pfizer, GlaxoSmithKline, and AstraZeneca are among companies that have been accused by lawyers and investigators of providing ghostwriters for research papers. Universities have been asked by Senator Grassley to describe their practices on ghostwriting and plagiarism as well as respond to complaints that have occurred since 2004. The senator remarked that plagiarism is very hard to prove.

This year, the senator's letters went to Harvard, Johns Hopkins, the University of Pennsylvania, Washington University in St. Louis, the University of California, San Francisco, Duke, Stanford, the University of Washington, Yale, and Columbia. These medical schools were asked to respond by December 8, 2009. Senator Grassley writes, "Students are disciplined for not acknowledging that a paper they turned in was written by someone else. But what happens when researchers at the same university publish medical studies without acknowledging that they were written by somebody else?"

(Wilson D. Medical schools quizzed on ghostwriting. The New York Times. November 18, 2009.)

Placement of Online Unprofessional Information by Medical Students



Online posts by medical students and residents often include medical situations that could identify a patient and could also be potentially embarrassing to students. However, 78 medical school administrators that were surveyed indicated they knew of medical students who made improper online posts, and about half of these entries were laced with profanity as well as racist or sexist language. Some included sexually provocative photos, sexually suggestive comments, or requests for inappropriate friendships.

Lindsay Acheson Thompson, M.D., a University of Florida pediatrics professor, reported that breaches of patient confidentiality are occurring more often than patients realize. However, she indicated that posts that are personally embarrassing and potentially career damaging were even more common. There were a number of posts that showed or described intoxication or illegal drug use. Katherine C. Chretien, M.D., of the Washington VA Medical Center recommends that we should do a better job of making medical students aware of what is not appropriate because simply advising them to keep a patient's name out of a post may not be enough.

The anonymous poll of student affairs officers nationwide found that 60 percent were aware of incidents in which unprofessional posts were made and that 13 percent involved a breach of patient confidentiality. In fact, three incidents led to medical student dismissal. Only half the schools had or were developing policies to define online-appropriate content. It was reported that just more than one third of the surveyed student affairs officials reported that their school had a policy to define appropriate and inappropriate content on social networking sites.

(Boyles S. Med students put unprofessional info online. WebMDHealth. September 23, 2009.)

The Role of Basic Science in Physician Training



It is the goal of national medical licensing examinations to assess the needs of physicians preparing for supervised and unsupervised practice. One of the important principles is that the exams should emphasize the importance of the scientific foundation of medicine. This has led to the charge of transforming postgraduate training from a structure- and process-based curriculum to a competency-based curriculum, which requires physicians to demonstrate they have mastered a number of designated outcomes. It is impossible for medical schools to impart all the knowledge needed to practice medicine, nor should they do so. However, the basic sciences will continue to play a major role in developing physicians for the 21st century.

Basic science faculty members need to facilitate the development of problem-solving skills, which means they must interact closely with clinical faculty. The importance of integrating the basic sciences longitudinally throughout the curriculum must be emphasized. The Mayo Medical School, for example, transferred from a course-based curriculum where students are exposed to content and where material is covered with little integration or student retention. It instead has developed a curriculum that is linked to outcomes rather than to a list of topics to be covered. The resulting curriculum is block-based and integrates normal structure and function with pathophysiology of disease. The school also has implemented intersessions in years three and four when students revisit the basic sciences in a clinical context in order to promote long-term retention of relevant basic-science material.

(Grande JP. Training of physicians for the twenty-first century: role of the basic sciences. Medical Teacher. 31:802-806;2009.)

Technology-Based Virtual Clinic at Dartmouth

Dartmouth Medical School is combining emerging technologies with new instructional design. Joseph Henderson, M.D., professor of community and family medicine and director of the Interactive Media Laboratory, developed a "Virtual Practicum" that is employed in continuing medical education. It uses technology to communicate, combining traditional education with active things students can do through the use of simulations as well as various pieces of information. The practicum permits students to download modules and install them into their computers. This can be as technology-based virtual clinics or as a mini fellowship approximating clinical practice. One example is a program on HIV patient care that uses interactive video, sound, and graphics to move students through a virtual clinic. This includes an orientation, a learning resource room, encounters with a virtual patient, and interviews with an actual patient. A senior practitioner/mentor acts as a coach and guides the student.

(Ramaswami R. Best of both worlds. Campus Technology. 24-31;September 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.

Medical 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

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 **January 8, 2010** 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. *The Josiah Macy Jr. Foundation 2008 report indicates that:*
 - a. Medical schools should focus on the needs of the profession.
 - b. Medical schools should focus on societal needs.
 - c. Medical schools need to increase the amount of basic science taught.
 - d. Medical schools need to provide the majority of instruction online.

2. *Needlestick injuries are very prevalent in health care workers and should be reported primarily to:*
 - a. Provide care to those who have experienced such injuries
 - b. Advise health care workers that they put hospitals at risk
 - c. Provide proper prophylaxis, counseling, and legal precautions
 - d. Establish a database indicating the frequency of needlesticks

3. *According to the Mayo Medical School, basic-science education in medical schools should:*
 - a. Have additional classroom hours added to the curriculum
 - b. Be integrated longitudinally throughout the curriculum
 - c. Mainly be taught online in the first and second year of medical school
 - d. Be in a curriculum that is structure- and process-based

4. *The supply of physicians by 2025 is expected to:*
 - a. Keep up with population growth according to current medical school enrollment
 - b. Provide an adequate number of primary care doctors
 - c. Be in short supply, resulting in a need of an additional 159,000
 - d. Be satisfied by using non-physician providers such as PAs



Answers to the September/October 2009 CME questions: 1. (c) 2. (b) 3. (c) 4. (d)

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*.

November-December 2009 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. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3) The contents of this issue will be useful in my practice. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4) Was disclosure of commercial relationships made? | | | <input type="radio"/> Yes | | <input type="radio"/> No |
| 5) Were off-label products described? | | | <input type="radio"/> Yes | | <input type="radio"/> No |
| 6) Did you perceive any inappropriate commercial bias or influence? | | | <input type="radio"/> Yes | | <input type="radio"/> No |
| 7) What is the best way to contact you in reference to future articles? | | | | | |
| | <input type="radio"/> Phone | <input type="radio"/> Email | <input type="radio"/> Correspondence | <input type="radio"/> 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.

Signature

Date

PLEASE PRINT THE FOLLOWING:

Name: _____ Tel: _____ Fax: _____

Mailing Address: _____ Email address: _____

Accreditation Statements

ACCME

Nova Southeastern University Health Professions Division is accredited by the ACCME to provide medical education for physicians. This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through Nova Southeastern University Health Professions Division. Nova Southeastern University Health Professions Division designates this educational activity for a maximum of one (1) hour towards the AMA Physician's Recognition Award Category 1 Credit(s)TM. Physicians should only claim credit commensurate with the extent of their participation in the activity.

AOA

Nova Southeastern University College of Osteopathic Medicine is an accredited Category 1 sponsor of the American Osteopathic Association. One (1) hour of continuing medical education credit in Category 1-B is being offered through the American Osteopathic Association for this program.

Grievance Policy

Complaints should be submitted in writing to the Department of Continuing Medical Education, Nova Southeastern University Health Professions Division, Terry Building, 3200 S. University Drive, Room 1379, Fort Lauderdale, FL 33328.