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Objectives of undergraduate medical education in musculoskeletal surgery and medicine

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TOPICS IN TRAINING

OBJECTIVES OF UNDERGRADUATE MEDICAL EDUCATION IN MUSCULOSKELETAL SURGERY AND MEDICINE

BY MARTIN I. BOYER, MD, MSc, FRCS(C)

The Medical School Objectives Project is an initiative of the Association of American Medical Colleges (AAMC) that is designed to reach a general consensus within the American medical education community on the “skills, attitudes, and knowledge” that students graduating from accredited American medical schools should possess before beginning postgraduate training. Since its inception in 1997, the Medical School Objectives Project has published special reports addressing specific topics in medical education. The goal of these reports is to outline these learning objectives and the educational and assessment strategies that might be put to use in their implementation. Titles of previous reports issued by the Medical School Objectives Project include “Medical Informatics and Population Health,” “Communication in Medicine,” “Basic Science and Clinical Research,” “Quality of Care,” and “Genetics Education.” These reports are available online at www.aamc.org/meded/msop/start.htm.

The underlying philosophical thrust of the reports, and of the Medical School Objectives Project, is the belief that mastery of their content might result in physicians who are altruistic, knowledgeable, skillful, and dutiful. In order that the critical importance of the mastery of musculoskeletal medicine and surgery would be appreciated by medical educators, the Committee on Medical Student, Resident and Fellow Education of the Council on Academic

Affairs convened a meeting entitled “Musculoskeletal Medical Student Educators’ Workshop” in October 2003 (see Appendix). Representatives of the AAMC, United States Bone and Joint Decade, American Academy of Orthopaedic Surgeons (AAOS), American Society for Bone and Mineral Research, American College of Rheumatology, and American Academy of Physical Medicine and Rehabilitation gathered in Rosemont, Illinois, with the goal of producing a preliminary list of learning objectives that the participants believed that medical students across the country should demonstrate mastery of prior to graduation. The result of this meeting was a list of eighteen objectives that serves as an initial document from which the “objectives” defined by the Medical School Objectives Project of the AAMC might be distilled (Table I and Appendix).

The list is intended to be inclusive rather than exclusive. Orthopaedic surgeons participated in the workshop, as did representatives of the organizations listed above, because of a longstanding interest in musculoskeletal education and curriculum development. The participants compiled this list of objectives during a series of workshops. It was debated and refined and then collated and distributed.

The list serves as a necessary first step in a process that will heighten awareness of the need for increased undergraduate musculoskeletal medical and surgical education. It will be of sub-

stantial importance in leading to the issuance of an AAMC report that outlines the objectives, potential methods for evaluation, and opportunities for teaching and inclusion of these objectives within the undergraduate curriculum. This list will be sent both to the Deans of AAMC-accredited medical schools as well as to the Associate Deans in charge of medical education at those same accredited medical schools. The list does not serve as an outline for a course in musculoskeletal medicine and surgery. The demands and the heterogeneity of medical school education in 2005 are such that a prescribed course as recommended by any subspecialty society or the AAMC might prove overly restrictive and could not be implemented. This would immediately render the committee’s work useless. These topical objectives should more appropriately be considered in the sense that their inclusion at any time within the undergraduate medical curriculum can and should occur, without any notions of preconception as to timing.

Presently, Dennis Boulware, MD, a practicing rheumatologist and the Senior Associate Dean of Education at the University of Alabama, Birmingham, is chairing the AAMC Expert Panel on Musculoskeletal Education. He has been charged by Michael Whitcomb, MD, Senior Vice President, Division of Medical Education of the AAMC, to produce this report. The expert panel includes thirteen additional participants (including two orthopaedic sur-

TABLE I Preliminary List of Objectives for Undergraduate Medical Education in Musculoskeletal Surgery and Medicine

1. Demonstrate the ability to perform an appropriate musculoskeletal history and physical examination
2. Develop an organizational framework for the diagnosis and treatment of patients presenting with low back pain
3. Discuss the impact of aging on musculoskeletal health
4. Recognize and initiate appropriate treatment for the following musculoskeletal emergencies: septic arthritis, necrotizing fasciitis, compartment syndrome, open fracture, cauda equina syndrome, and joint dislocation
5. Develop an organizational framework for the diagnosis, initial management, and definitive management of patients with fractures of the axial and appendicular skeleton
6. Develop an organizational framework for the diagnosis and treatment of patients presenting with osteoarthritis
7. Develop an organizational framework for the diagnosis and treatment of patients presenting with rheumatoid arthritis
8. Develop an organizational framework for the diagnosis and treatment of patients presenting with crystalline arthritis: gout and pseudogout (calcium pyrophosphate)
9. Develop an organizational framework for the diagnosis and treatment of patients presenting with sports injuries (both chronic overuse phenomena and acute injury)
10. Develop an organizational framework for the diagnosis and treatment of patients presenting with occupational injury (both acute and chronic overuse phenomena, and injury)
11. Develop an organizational framework for the diagnosis and treatment of patients presenting with musculoskeletal infection
12. Develop an organizational framework for the diagnosis and treatment of patients presenting with musculoskeletal neoplasia (both primary and metastatic disease)
13. Understand the relevant physiologic, pathologic, and sociologic issues involved in the treatment of patients with spinal cord injury or stroke
14. Understand the relevant physiologic, pathologic, and sociologic issues involved in the treatment of children with myopathic or neurologic conditions and in the treatment of complicating neuromuscular problems in adults with diabetes mellitus
15. Understand the relevant physiologic, pathologic, and sociologic issues involved in the treatment of children with orthopaedic disorders
16. Display an understanding of the diagnosis and treatment of patients suffering from chronic pain and of the interdisciplinary approach required for the treatment of this condition
17. Understand normal and abnormal physiologic characteristics of bone and the clinical presentation and treatment of patients with bone that has altered physiologic properties
18. Demonstrate an understanding of the principles and practice of injury and disease prevention

geons, Joseph Bernstein, MD, of the University of Pennsylvania and myself) and several AAMC staff persons (see Appendix). The work of the Committee is presently ongoing, and opportunities for further development and refinement of the list are in progress.

The American Academy of Orthopaedic Surgeons, through the Coun-

cil on Academic Affairs Committee on Medical Student, Resident and Fellow Education and its chair, Peter Stern, MD, continues to support actively the premise that musculoskeletal medical and surgical education in the medical school curriculum is of critical importance because of the disease burden of musculoskeletal illness in a rapidly ag-

ing population. Textbooks published by the AAOS, including *Musculoskeletal Medicine*, edited by J. Bernstein, MD, and *Essentials of Musculoskeletal Imaging*, edited by T.R. Johnson, MD, and L.S. Steinbach, MD, can aid substantially in this effort. The Committee on Medical Student, Resident and Fellow Education and the AAMC Expert Panel on Musculoskeletal Education actively encourage and solicit commentary on, and critique of, this report and on the List of Objectives itself. The participation of all orthopaedic surgeons in this process is encouraged and welcomed. Suggestions for alterations and improvements in the List of Objectives can be e-mailed to me directly at boyerm@msnotes.wustl.edu.

Appendix

 Tables presenting the names of those attending the Musculoskeletal Medical Student Educators' Workshop in 2003, the complete List of Objectives, and the members of the current AAMC Expert Panel are available with the electronic versions of this article, on our web site at jbjs.org (go to the article citation and click on "Supplementary Material") and on our quarterly CD-ROM (call our subscription department, at 781-449-9780, to order the CD-ROM).

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