



## Highlights From ACADEMIC MEDICINE

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### Beginning Subspecialty Clinical Training in Early Medical Education

Many US medical students lack essential exposure to common technologies, tests, and procedures within a number of subspecialties when they start their clinical training. The rich environment of subspecialty settings could be employed for clinical teaching and self-directed learning during the early years of medical school, say Alon Seifan, Nancy Kheck, PhD, and Joshua Shemer, MD. In a "Perspective" article, the authors propose that educators develop a system of subspecialty clinical learning for first- and/or second-year students correlated to the classroom study of pathophysiology.

The authors list several points that demonstrate the need to develop such an approach for every organ system:

- ❖ Knowledge of science and pathophysiology will be the key enabler of the physician to lead the health care team of the future.
- ❖ The second year is an ideal time to begin practicing clinical skills, and the subspecialty units provide substantial learning opportunities.
- ❖ The subspecialty units are well suited to group and/or interdisciplinary projects.
- ❖ Exposure to all the subspecialty departments emphasizes systems-based practice.
- ❖ Behavioral and social sciences are intertwined with real patient cases.
- ❖ Students are now not exposed to each subspecialty before they graduate.
- ❖ Educational theory strongly supports experiential learning.

The authors believe that comprehensive subspecialty exposure during the patho-

physiology portion of the medical curriculum is feasible and will improve the preparation of medical students for clinical experiences. In addition, creativity may be fostered by ensuring that students learn medicine by experiencing it in the various clinical environments.

*Seifan A, Kheck N, Shemer J. Perspective: The case for subspecialty clinical learning in early medical education—moving from case-based to patient-based learning. Acad Med 2008;83(5):438–443.*

### Transition Courses in Preparation for Clerkships

In the effort to improve students' preparation for clinical settings, medical schools have incorporated clinically oriented courses and experiences into the preclerkship curriculum. However, students continue to encounter difficulties when making the transition into clerkship. Clerkship transition courses offer a means of providing a focused block of time in which students can learn clinically relevant knowledge and information in close proximity to the time and place in which they will be used, practice clinical tasks with coaching and feedback, and ease their way into clinical settings with guidance and support. Ann Poncelet, MD, and Bridget O'Brien, PhD, describe the content and educational approaches used in transition courses to examine the extent to which the objectives and content of these courses are aligned with the challenges associated with the transition to clerkships, and to provide a framework that can assist educators who are involved in designing and directing transition courses.

The researchers conducted an open-ended survey of curriculum deans at US medical schools. Only slightly more than half of respondents reported having transition courses that met the researchers' criteria of being more than one day but less than 12 weeks long, occurring immediate-

ly before clerkships, having content that focused specifically on the transition to clerkship, and provided sufficient information for coding the responses. The researchers identified three curricular themes from their analysis of the courses:

1. Presentation of new information and skills;
2. Review and application of preclerkship knowledge, skills, and attitudes in a clinical setting; and
3. Student well-being and stress reduction.

The authors propose a framework as a guide for designing transition courses. It is based on three principles. First, the course must address aspects of the transition to clerkships that students have identified as particularly difficult or challenging and that are necessary for students to function in clinical settings and contribute to patient care activities. Second, courses must have specific, measurable objectives that are consistent with the needs identified by students and clinical faculty and that are relevant to students' performance and participation in clerkships. Finally, courses must use instructional approaches and include learning activities that match these needs and objectives.

*Poncelet A, O'Brien B. Preparing medical students for clerkships: a descriptive analysis of transition courses. Acad Med 2008;83(5):444–451.*

### Undergraduate Partnership Fosters Diversity

To help in increasing the pool of qualified minority medical school applicants in Texas, the Texas A&M Health Science Center College of Medicine has partnered with Prairie View A&M University, a historically black university that is a component of the Texas A&M system, to develop an undergraduate medical academy (UMA). Alan R. Parrish, PhD, and associates report that the UMA was designed to cultivate a campus-to-campus relationship between medical faculty and students and UMA students that is focused on academic enhancement, including MCAT preparation, and professional development, while giving students an introduction to clinical experiences.

The specific goals for the UMA were to identify and attract qualified students, prepare them for entrance into medical school, develop a nurturing mentor network, identify and develop opportunities for participation in research activities, and develop a nationally recognized model for the program. Measures of success would be retention and graduation, GPA, and acceptance into medical school.

Students are admitted to the UMA after their freshman year in college. The program involves intensive academic counseling, as well as opportunities for tutoring in a number of subjects. MCAT preparation is a year-round activity. Biweekly seminars on the college campus feature medical school faculty and students who introduce UMA students to key concepts in basic and clinical sciences and expose them to various clinical specialties.

Metrics indicate that the program has been a success. The UMAs overall retention rate has been 91.7%. The first class of UMA students graduated last year and had a medical school acceptance rate of 64%, compared with acceptance rates of 38% for African American students nationwide, and 45% for all students.

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Parrish AR, Daniels DE, Hester RK, Colenda CC. *Addressing medical school diversity through an undergraduate partnership at Texas A&M Health Science Center: a blueprint for success.* *Acad Med* 2008;83(5):512–515.

### What Is Missing in Premedical Education?

The years during which a student prepares for medical school are a vital, yet understudied, part of the process of medical education. Although the premedical curriculum has been debated for almost a century, those who call for reform of premedical education focus almost exclusively on the content of the courses students should take, while ignoring the “hidden curriculum” learned directly and indirectly from professors, advisers, peers, and a host of other sources. In a “Perspective” article, Jeffrey P. Gross and associates point out that the premedical experience also gives students a moral education, showing them what it takes to succeed

and thereby molding the character of the next generation of physicians.

To better understand the types of advice that premedical students receive, the authors surveyed the premed-oriented Web sites of a stratified random sample of undergraduate colleges and universities. They found a subtle tension in the nature of this advice: Whereas advisors are aware that the premedical years should both build and reflect the character of the future physicians, they also feel that their advice must be “strategic” in orientation, aimed at winning the competition for acceptance to medical school.

Based on their research and observations, the authors suggest a new approach to premedical education—one that not only provides the necessary coursework and preparation for the MCAT, but that also gives students the opportunity to realize that the undergraduate premedical experience is not just a means for gaining entry to medical school, but also an experience that shapes their character. What is needed, say the authors, is a course that encourages students to reflect on their motives for choosing careers in medicine, recognize the influence of premedical culture on their behavior, and understand the difference between the demonstration and the development of character.

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Gross JP, Mommaerts CD, Earl D, De Vries, RG. *Perspective: After a century of criticizing premedical education, are we missing the point?* *Acad Med* 2008;83(5):516–520.

### A Framework for Longitudinal Pedagogy

In traditional third-year curricula, there is generally little interaction among clerkship directors, limiting direct communication regarding specific concerns, strengths, or interests of a particular student. In addition, students’ transient experiences are compounded by brief interactions with their respective teams. Opportunities for direct observation of students are limited, and faculty have a hard time gaining perspective on students’ maturation and development during the first year of clerkship. A further difficulty is the diminution of patient-centered attitudes demonstrated by

senior students compared with their more junior colleagues. Sigall K. Bell, MD, and colleagues describe the efforts at Harvard Medical School to address the problem of third-year fragmentation by creating a pilot program rooted in longitudinal mentorship and feedback, interdisciplinary care, emphasis on humanism and patient-centered care, and consistent integration of the basic and clinical sciences.

The program was based on six inter-related principles:

1. Designing a student-centered curriculum;
2. Providing patient-centered care;
3. Fostering humanism in patient care;
4. Providing a longitudinal primary care experience;
5. Integrating clinical and basic science throughout the longitudinal curriculum; and
6. Emphasizing a cross-disciplinary approach to patient care.

Eight students volunteered for the first year of the pilot program. Each rotated through seven clerkships, receiving unified mentorship from faculty. In parallel with their rotations, students participated in a longitudinal curriculum, which included, among other items, case conferences, basic science correlation conferences, clinical physiology grand rounds, and a writing and literature program.

On evaluation, pilot students recorded statistically significantly higher scores than traditional curriculum (TC) students in all categories measured, including the atmosphere of learning, effective integration of basic and clinical sciences, and access to faculty. Pilot students also reported feeling that they received more fair and accurate assessment, greater mentorship, and more useful feedback, and that they were more integrated into the hospital setting. Survey comparisons also showed that pilot students found their third-year clerkship to be more humanizing and less hectic, marginalizing, and frustrating than did TC students.

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Bell SK, Krupat E, Fazio SB, Roberts DH, Schwartzstein RM. *Longitudinal pedagogy: a successful response to the fragmentation of the third-year medical student clerkship experience.* *Acad Med* 2008;83(5):467–475.