



The Integration of Clinical Skills and Clinical Anatomy in Medical Education

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The University of Hawaii John A. Burns School of Medicine has anticipated and is meeting the needs of future physicians in a constantly evolving, challenging environment. In 1992, the Robert Wood Johnson Foundation Commission on Medical Education recommended that medical schools integrate basic and clinical science instruction and evaluation as one of five recommendations for medical education.¹ JABSOM responded to this call for improved integration by designing a new course combining introductory clinical skills and clinical anatomy for the first-year curriculum. The primary goal was for students to develop an understanding of clinical anatomy in the context of the basic physical examination sequence and diagnostic imaging. Other goals include learning the components of the problem-oriented medical record, medical interviewing and effective physician-patient communication.

The course is 14 weeks in length at the beginning of the first-year, with 6-8 hours of structured activity per week. This time is divided between large group interactive demonstrations, dissections in the anatomy laboratory, and supervised practice of clinical skills. Six afternoons are reserved for direct patient interactions under the supervision of faculty and volunteer physicians throughout the community. Students interview and examine select patients, discuss and review pertinent clinical data, and receive feedback on their interview, physical examination and communication skills. Additionally, supplemental self-directed resources including videotapes, computer-based learning, self-study lab modules, and recommended readings are incorporated into the curriculum.

The organization and sequencing of the course follow closely the sequence of the basic physical examination, as do the tutorial health care problems that are studied concurrently and serve as the foundation of the medical school's problem-based learning (PBL) curriculum. For example, when students are focusing on the basic clinical skills, clinical anatomy and diagnostic imaging of the heart and vascular system, they are concurrently working through a health care problem on acute myocardial infarction in their tutorial sessions. The following week, the focus shifts to the clinical skills, clinical anatomy and imaging of the abdomen, and the related tutorial case covers acute viral hepatitis.

As the first semester of the curriculum is designed as an introduction to the skills necessary for efficient and effective problem solving, the health care problems, clinical skills and clinical anatomy are presented as an introduction to topics that will be re-visited in depth later in the curriculum.

Students are required to pass an integrated laboratory examination, attend and satisfactorily complete all assigned course activities. They also complete entry and exit questionnaires that assess their appreciation of the value of, and interrelationships between, the various components of the course. The results of these questionnaires have indicated that students felt an improvement in their understanding of clinical anatomy, clinical skills, elements of a strong physician-patient relationship, diagnostic imaging and human sexuality ($p < 0.05$). Their perception of the importance of each component was high both before and after the experience. Written feedback from clinical preceptors indicated that students were able to apply the materials from this course to their patient care experiences. Feedback from tutors in subsequent units indicates that students are better prepared in anatomy and imaging aspects of health care problems than previously.

It is emphasized that this course represents a beginning of a continuum of learning experiences that span the four years of medical student education at JABSOM. Clinical skills laboratories and preceptorship experiences continue weekly through the first two years of the curriculum as a prelude to the more traditional clinical clerkships of the third and fourth years. Supplemental to actual patient care experiences, standardized patients and videotaped exercises are utilized throughout the curriculum for both learning and evaluation. Similarly, this course represents the first of many opportunities for students to learn anatomy and imaging. Elective experiences in clinical anatomy are offered throughout the curriculum, and continue to be emphasized in health care problems and clinical clerkships. Moreover, diagnostic imaging, incorporated into health care problems throughout the first two years of training, is covered in the context of patient care in the third year clerkships and offered as an elective for senior students.

In summary, this course represents an effective integration of introductory clinical skills, clinical anatomy and imaging. Significant early patient care experience have been combined with a wide variety of other instructional strategies. Students feel that the course is valuable and satisfying, and faculty also believe that the course helps students meet the desired behavioral objectives. This integrated course serves as a model for educational collaboration between basic science and clinical teachers in the context of a problem-based learning curriculum and provides students with a solid foundation for future success as physicians.

References

1. Marston RQ The Robert Wood Johnson Foundation Commission on Medical Education. The Sciences of Medical Practice, Summary Report. JAMA 268(9):1144-1145.
2. Li, JTC Clinical Skills in the 21st Century. Arch Intern Med 154:22-24.