

Undergraduate Medical Education Program *We focus on clinical skills and professional behavior.*



SIU School of Medicine students begin their four-year program on the Carbondale campus, where they can enjoy a university environment. Their studies are focused on learning about the normal human organism.

This first year provides a transitional period from undergraduate education to medical education. It uses case-based learning, with much time spent in small group learning activities. Basic sciences are emphasized, while clinical activities center on building basic clinical skills and enhancing the learning of basic science concepts in a clinical context.

Students spend the remaining three years in Springfield, benefiting from the resources of the full-time and community basic science and clinical faculty and two large community hospitals. During these years, students learn pathophysiology and more complex clinical applications of basic science knowledge, as well as the diagnosis and treatment of patients.

The second year of the curriculum continues with a series of multidisciplinary rotations of case-based, small group learning units that emphasize the basic sciences in a clinical context. The third year consists of a series of multidisciplinary clinical clerkship rotations, with experiences in both hospital-based and ambulatory settings. Basic sciences continue to be integrated throughout the third year as students work with patients.

The fourth year is comprised of more than 200 elective courses designed to help students with final preparations for residency. Special emphases include primary care, rural care, surgical specialties, emergency medicine and research.

Early Clinical Experience

A Doctoring Streamer runs through all four years, providing opportunities for students to acquire clinical skills. Students are assigned to mentors who help them develop and build these skills. Within the first few weeks of the first-year curriculum, students begin a variety of experiences including seeing real and standardized patients (healthy people trained to represent actual patient problems). The importance of interviewing and physical examination skills is emphasized so that students may better use and correlate their understanding of the sciences basic to medicine with the kinds of problems patients bring to a physician. Other Doctoring activities include peer and self-assessment skill building, physicians' attitudes and conduct sessions, and medical humanities issues including physician/patient relationship, ethics, death and dying, and practice management.

Doctoring also has an innovative geriatrics program in which students work with a "standardized couple" each year of medical school. As the couple "ages" 10 years each year of the curriculum, students become familiar with the wide array of normal and abnormal changes associated with aging.

Curriculum in Year 1

A typical week's schedule for Year 1 includes

- **Small group, problem-based learning meetings with a tutor on Monday, Wednesday and Friday mornings from 8-11am;**
- **One hour case wrap up of the case presented in the problem-based learning meeting at the end of the week;**
- **Resource meetings (large group lectures) on average of 1-3 hours per week;**
- **Clinical skills sessions on Tuesdays;**
- **One half day every other week out in the community with a physician mentor;**
- **Laboratory two afternoons a week;**
- **About 10 hours of required weekly time in a classroom, with another 5-8 recommended or optional activities.**

Standardized Patients

SIU School of Medicine was a pioneer in the use of standardized patients, an educational innovation that has since been adopted around the country by other medical schools. Standardized patients are healthy people trained to respond as an actual patient would in a similar situation. Through the use of these patients, students are introduced to clinical problems such as acutely ill patients, emergencies, and emotional or ethically sensitive situations. These interactions challenge clinical skills and knowledge and may represent an experience that may not always be accessible to students in a typical setting.

Some standardized patient assessments are observed by clinical faculty so students can receive feedback about organization, technique, and thoroughness of history taking and physical examination skills. Standardized patients also assess students' communication skills, professional and personal manner, and overall satisfaction with the encounter.

Problem Based Learning

Another educational innovation used early at SIU School of Medicine, and subsequently adopted around the world by many schools, problem based learning is learning of medical information in small groups of students (typically 6-8) with a faculty tutor. During these tutorial sessions, students are introduced to a "patient" and must diagnose the individual problem using history questions, physical

Curricular Emphases

- **Continual curricular evaluation and improvement**
- **Early clinical experience including the use of standardized patients**
- **Opportunities for pursuit of individual interests (research, clinical work) in the summer after the first year**
- **Life-long, self-directed learning through the use of problem-based learning**
- **Integration of basic and clinical sciences**
- **Humanistic medicine**

examination and appropriate laboratory tests. This is done in a small group room using a computer-based "patient." In working through the case, students discover the basic science concepts behind the clinical work and direct their own learning toward the issues the team has uncovered. Students must be active participants in their own learning. This kind of integrated basic science and clinical learning is known to enable students to retain the knowledge they have gained.

Educational Technology

Students have access to multiple tools to enhance their knowledge and skills, log clinical hours and evaluate curricular activities. The Clinical Skills Laboratory in Springfield includes dozens of models and simulators for training and self-study. Educational computer programs in tutor rooms and other student-access computers include interactive programs that show graphical interpretations of cellular, biochemical and pharmacological information. Much of the curricular information presented in large group formats is available on the Web for download either prior to or during the learning sessions.

Cases used in problem-based learning are set up in an online format. Tutor rooms have large screen computer monitors for displaying patient cases and recording learning issues. An online self-assessment system is available to students from campus and remote computer locations to allow practice for licensure and other exams.

Curriculum Goals

The mission of Southern Illinois University School of Medicine is “To assist the people of central and southern Illinois in meeting their health care needs through education, patient care, research and service to the community.” In serving this mission our curriculum goals are to prepare students to be —

- Physicians who are compassionate, tolerant and respectful in caring for patients and trustworthy and truthful in all of their professional dealings;
- Physicians who understand the scientific basis of medicine and are capable of applying that knowledge in the practice of medicine;
- Physicians who are highly skilled in providing care to individual patients;
- Physicians who are self directed, life-long learners capable of employing systematic approaches for promoting, maintaining and improving the health of individuals and populations;
- Physicians who understand the roles of other health care professionals and who collaborate with and learn from them in fulfilling their roles as clinicians and patient advocates;
- Physicians who are skilled in the critical appraisal of new scientific knowledge and its application to clinical practice;
- Physicians who recognize and accept limitations in their knowledge and clinical skills and who are committed to improving their knowledge, ability, and habits and patterns of practice;
- Physicians who, through knowledge of health care policy and practice issues, are responsive to the changing environment of health care;
- Physicians who recognize that spirituality and cultural beliefs are important elements of the health and well being of patients and
- Physicians who advocate the interests of patients over self interest and their own personal rewards.



Primary Care and Ambulatory Care

The School has a required clinical rotation in Family and Community Medicine devoted to primary care. Since 1981, more than 2,000 students have participated in the program which currently utilizes more than 160 central and southern Illinois physicians. In addition to primary care, other clinical rotations offer students more than one-quarter of their clinical experiences in non-hospital settings. Some of these experiences include opportunities to work in rural communities. Full-time and community faculty work side by side with students in their office practices to provide students with valuable clinical experiences.

Humanistic Medicine

Good interpersonal skills and professionalism are essential to the practice of medicine. Development of these skills, which help build trusting physician-patient relationships, is continuously evaluated by the faculty. The use of small group learning throughout the curriculum encourages team building, enhances communication skills and plays a major role in building interpersonal skills. Interpersonal skills have equal weight with knowledge and clinical reasoning skills in the assessment process.

The Department of Medical Humanities emphasizes the psychosocial, ethical and legal dimensions of the practice of medicine. Its standardized patient experiences allow students to interact with a number of different types of patient scenarios so students have many opportunities to fine tune professional behavior.

Evaluation and Promotion

Every student must attain the predefined levels of competence established by the faculty. Evaluations are designed to measure competence in knowledge, skills and attitudes. Decisions regarding student progress are made on the basis of whether students demonstrate the prescribed levels of competency. Oral and computer-based examinations, faculty evaluation of cognitive and non-cognitive attributes, and performance-based examinations are used to evaluate students' knowledge, attitudes, concepts and skills.

Performance-based examinations give students the opportunity to demonstrate their clinical skills and abilities with standardized patients. These exams, in which students' interviewing and physical examination skills are observed by faculty, occur with increasing frequency throughout the first three years of study. Feedback provided by faculty observers helps students recognize strengths and weaknesses and provides advice on performance improvement.



After completing all clerkships, students are required to participate in the fourth year (senior) clinical competency examination, which assesses their ability to apply knowledge and clinical skills in a “real life” medical setting. Students are evaluated and receive feedback regarding inquiry strategy, diagnosis development, test selection and interpretation, and patient management.

All students are required to record a score on the U.S. Medical Licensing Examination (USMLE) Step 1 before beginning clerkships and must pass Step 1 of the USMLE to graduate. All students must sit for both USMLE Step 2 Clinical Knowledge and Clinical Skills components to graduate. Course designations of honors, pass or fail are included on students’ official transcripts.

Curriculum Guidelines

- **Students should be exposed to a variety of clinical settings throughout their entire undergraduate education and should be expected to show progressive development of skills and professional behaviors.**
- **Learning of basic and clinical sciences shall be integrated.**
- **Active learning in small group settings should be encouraged.**
- **The curriculum shall develop the flexibility necessary for students to function in the rapidly evolving health care delivery system, and in a variety of roles such as individual patient care, community health, and preventive medicine.**
- **All curricular events should be evaluated; such evaluations should be diverse in style and performance-based.**
- **The following content areas should receive emphasis in the curriculum: history and physical examination skills, medical practice management, health policies, evidence-based medicine, resource acquisition and medical informatics, and opportunities to explore diverse career choices.**
- **Where appropriate, management of the curriculum should be by interdisciplinary teams which cross geographical and calendar barriers.**

