University of South Alabama College of Medicine
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Medical Education Program Highlights
• The school has a small class size (74 students per class), allowing students to form close bonds with peers and faculty during all phases of the curriculum.
• Preclerkship courses deliver content primarily through small-group learning and simulation exercises, allowing students opportunities to apply basic science concepts to clinical cases.
• Preclerkship students rotate through ambulatory care clinics (year 1) and specialty-based programs of their choice (year 2) synchronously with the organ system–based modules.
• In the clerkship and postclerkship phases of the curriculum, students have the opportunity for extensive hands-on experience and patient interactions, developing a wide breadth of clinical and procedural skills.

Curriculum
Curriculum description
• We began planning for curriculum renewal in 2010. The new curriculum, implemented in 2012, is aligned with the 6 ACGME core competencies and possesses a 2-year preclerkship phase composed of integrated, organ system–based modules. This is followed by a clerkship phase and postclerkship phase that integrate a robust clinical curriculum with the basic science concepts introduced in the preclerkship phase. Clinical skills instruction is integrated throughout the curriculum.

See Supplemental Digital Appendix 1—Curriculum Overview and Sequence—at http://links.lww.com/ACADMED/A938.
• The preclerkship phase begins with foundational content, critical to all organ system–based modules. Starting in 2019, basic content in both public health and epidemiology was repositioned and integrated into the first week of this course. An initiative using virtual patient families was developed to facilitate teaching of this material.
• Clinical Skills is a longitudinal course spanning the first 2 years of the educational program. Instruction integrates simulation, standardized patient encounters, and real-life experiences. The course also delivers education related to interprofessional collaboration and culturally responsive medicine.

• During the Clinically Integrated Introductory course (CLINIC) offered within the clinical skills curriculum, all preclerkship students encounter real patients. Students work with their assigned clinical preceptor for required sessions each semester to practice history gathering, physical exam techniques, and communication skills. During the first year, our students work predominantly in primary care settings. In the second year, students choose a different specialty area each semester to promote professional development, clinical skills, and career exploration.
• We identified key curricular content to be delivered longitudinally, referred to as threads. These threads are integrated horizontally and vertically over a single academic year or multiple years as appropriate. Current threads include bioethics, evidence-based medicine, microbiology, nutrition, scientific method, physician wellness, and population health/epidemiology/biostatistics.
• We offer students the option to take a selective in their third year and defer their required neurology clerkship to the fourth year. Selectives allow students to explore additional experiences for professional development; options include emergency medicine, neurosurgery, orthopedic surgery, pathology, radiology, and research.
• During the fourth year, we offer a variety of electives. Students are required to take an acting subinternship, a course fulfilling basic science integration, a subspecialty course, and our Transitions to Residency course.
• The Transition to Residency course occurs in spring of the fourth year. It provides education on topics including graduate medical education requirements, health care organization and financing, health care law and malpractice, effective teaching, and leadership skills.

Curriculum changes since 2010
• The curriculum renewal transitioned our educational program from a discipline-based curriculum to the current structure. A Division of Medical Education was created to facilitate the transition and maintain the current program.
• The new curriculum reduced lecture content by more than half and expanded small-group learning, self-directed learning, and clinical skills instruction.
• Our clinical skills program has expanded significantly. We have appointed a director of clinical skills, introduced a standardized patient program, constructed a clinical skills center recreating an ambulatory clinic, expanded mannequin and procedure simulation, and implemented regularly scheduled weekly clinical skills instruction.
• We developed a standardized list of required clinical experiences and skills for all clerkships. Centralized electronic oversight is provided to assure student achievement of these activities.
In the preclerkship curriculum, students maintain their assessment methods at http://links.lww.com/ACADMED/A938. See Supplemental Digital Appendix 2—Program Objectives and Assessment Methods—at http://links.lww.com/ACADMED/A938.

- Our Curriculum Committee, recognizing a need to enhance interprofessional skills, has expanded interprofessional longitudinal experiences. We partner with other institutional health professions training programs to host joint educational sessions throughout the entire curriculum.
- Beginning in 2014, we phased in an integrated quality improvement and patient safety curriculum in the clerkships. Instructional methods include flipped classroom, small-group discussion, facilitated workshops, simulation, standardized patients, and interactive games. Students learn about improvement cycles, adverse event analysis, medication reconciliation, disclosing medical error, reducing health care waste, and clinical decision-making tools.
- In 2019, we implemented a longitudinal physician wellness curriculum spanning the third year. This initiative was developed jointly with our Office of Student Affairs and Student Wellness Council. Sessions include preventing burnout, reducing cynicism, recognizing substance abuse and suicide risk, mitigating stress, promoting wellness, addressing mental health needs, and coping with death and dying.
- We developed a competency coaching program to support students in the new curriculum. This activity provides each first- and second-year medical student with a faculty competency coach whose role is to assist the student longitudinally with the achievement of educational objectives.

Assessment

- Our education program objectives are based upon the 6 ACGME core competencies and the Physician Competency Reference Set.


- A 3-tier honors/pass/fail grading system and a minimum pass scoring threshold were adopted in the first 3 years. We recently began using only a pass/fail system for the fourth year.
- Premedical modules adopted a standardized set of summative assessments administered by the Division of Medical Education, including biweekly exams and a customized NBME assessment as the final exam for each module.
- In the preclerkship curriculum, students maintain their small group for the entire academic year. This allows for peer evaluations to be completed by students on each of their small-group team members.
- Numerous formative and summative OSCEs are delivered in the clinical skills curriculum and are required for student promotion. A fifth summative OSCE occurs at the conclusion of the third year.
- During the curriculum renewal process, we identified many opportunities to add assessment methods not previously used.
- Rubrics are now used frequently. Our Curriculum Committee and course directors have found that these types of tools allow for more robust assessment of small-group learning, simulation, and independent learning activities. Examples include:
  - Our standardized patient and simulation exercises are assessed using rubrics.
  - Self-directed learning activities are assessed using rubrics developed from national accreditation frameworks with emphasis on the quality of evidence-based resources.
  - A competency-based assessment rubric is used to measure student progress achieving core clinical skills. The format uses milestones similar to those used in ACGME-accredited residency programs. The tool provides formative feedback during the clinical skills curriculum and summative grading for clerkships.
- All modules and courses undergo an annual comprehensive review by the Assessment and Evaluation Subcommittee of the Curriculum Committee to ensure compliance with accreditation standards, achievement of educational program objectives, and continuous quality improvement.
- The Student Subcommittee of the Curriculum Committee conducts an independent student analysis of each module and course in the preclinical years. This information complements feedback received on course evaluations and is incorporated into the annual review.

Pedagogy

- Pedagogical approaches used in our curriculum include case-based learning, clinical experiences in the ambulatory and inpatient settings, large- and small-group discussions, laboratory, lecture, preceptorship, reflection, self-directed learning, simulation, standardized patients, team-based learning, virtual patients, and workshops.
- We use a variety of small-group learning strategies. Examples include team-based learning, structured self-directed learning activities, games, and independent small-group projects.
- “Case constructs” are a small-group learning strategy that involve the development of sets of individual cards with specific elements linked to distinct clinical diseases. The elements on cards can be related to epidemiology, pathophysiology, clinical history, physical exam, diagnostic tests, or treatment methods. Card sets are grouped together into a session theme and distributed to student groups. Teams then work to arrange and appropriately match them.
- Team-based learning was uniformly adopted as the preferred small-group learning strategy in the required clinical clerkships. In addition, our team-based learning activities primarily use clinical vignette scenarios.
- Reflective writing is integrated into the CLINIC program, clerkships, and multiple fourth-year electives.

Clinical experiences

- Clinical sites for our students include our 2 hospitals, University of South Alabama (USA) University Hospital and USA Children's and Women's Hospital, for inpatient experiences. Ambulatory clinical sites include both university- and community-based clinical sites.
- Students begin their exposure to clinical skills instruction in the first weeks of their first year using facilitated demonstrations by faculty as well as application of content delivered in didactic or small groups using standardized patients and mannequins.
- Clinical experience begins in the first semester with the CLINIC program as previously described.
Curricular Governance

- The Curriculum Committee provides central oversight for the development, implementation, assessment, and improvement of the educational program.
- There are 7 working subcommittees of the Curriculum Committee:
  - Assessment and Evaluation Subcommittee
  - Preclerkship Subcommittee
  - Clerkship Subcommittee
  - Clinical Pathways Subcommittee
  - Clinical Skills Subcommittee
  - Integration and Educational Strategies Subcommittee
  - Student Subcommittee
- The Curriculum Committee membership includes basic science and clinical faculty, students, and educational support personnel from across the institution, all with 3-year term limits.
- Our preclerkship course directors have their primary faculty appointment either in basic science departments or in the Division of Medical Education. Our clinical course directors have their appointments within their respective clinical departments.

Education Staff

- The Division of Medical Education was formed in 2010 at the onset of our curriculum renewal. This division is overseen by the associate dean of medical education and is composed of administrative leadership, 6 educational support personnel, and 2 full-time faculty.
- Educational support personnel manage educational materials and our learning management system; distribute evaluations to students and faculty; organize clinical skills sessions; coordinate clinical experiences; and prepare, deliver, and analyze assessment data.
- In year 3, there is a full-time coordinator for each of the clerkships, and we also have a selective coordinator. The fourth-year courses are coordinated by 2 full-time personnel.
- The Office of Educational Technologies and Services assists course directors and the Division of Medical Education with multimedia tools, video capturing, and information technology support.

Faculty Development and Support in Education

- Professional development is offered to faculty through internally conducted workshops, retreats, departmental grand rounds, and faculty meetings in partnership with university faculty development centers. In addition, professional development opportunities at educational meetings are used by faculty with support from the institution.
- Our institution has created the position of associate dean for faculty development and faculty affairs.
- Teaching is a component of the promotion and tenure process at our institution. We offer a clinician–educator track for those faculty interested in this career path. Educational scholarship and excellence in teaching are critical components of this track. Educator portfolios are encouraged to demonstrate excellence in teaching.

Initiatives in Progress

- We are currently developing a longitudinal 4-year parallel track focusing on primary care. This track will expose selected students to the skills necessary to be collaborative primary care leaders of interprofessional teams delivering high-value,

Figure 1 Administrative organizational chart.

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culturally responsive care to patients with complex, chronic diseases. This curriculum will integrate health systems science objectives longitudinally.

- As part of our continuous quality improvement efforts, we have started a review of our Foundations course in the first year. The purpose of this review is to optimize the curricular location of foundational content necessary for each of the organ system modules. We anticipate this review will also enhance the effectiveness of content delivery and time utilization during each of the organ system modules.

- We are introducing point-of-care ultrasound training into the curriculum. Ultrasound workshops have been introduced into 3 of our 10 preclerkship courses and 1 clerkship. Our goal is a 4-year longitudinal ultrasound curriculum beginning in 2020.

- We plan next academic year to institute an Oncology course at the conclusion of the second year, to replace the Multisystem Disorder course.

- Different initiatives related to enhance our students’ global health experience are underway. These will complement current educational activities already implemented in Africa and Latin America.