Medical Education Program Highlights

The NextGenMD curriculum at University of Miami Miller School of Medicine (UMMSM) strives to empower learners to transform lives and inspire them to serve the global community.

The NextGenMD curriculum emphasizes:

- Active, case-based, collaborative learning with early clinical experiences
- Integration of basic sciences, clinical medicine, and health systems sciences throughout all curricular phases
- Personalized areas of scholarly concentration including options for a 4-year dual degree or accelerated transition to residency
- Opportunities to study social and cultural determinants of health in South Florida

Graduates will demonstrate competence in 4 core domains: professionalism and interpersonal skills, health systems sciences, biomedical knowledge and clinical care, and practice-based learning.

Curriculum

The NextGenMD curriculum has 3 phases:

- Phase 1 is grounded in foundational, translational and health systems sciences, learned in a case-based format. Phase 1 is 14 months, including 2 months of summer capstone work.
- Phase 2 consists of integrated clinical clerkships, with continued embedded foundational, translational, and health systems sciences themes. It is divided into four 12-week integrated clerkships that begin with introductory bootcamps covering core themes, reinforced throughout the phase, including social determinants of health, patient safety, leadership and health advocacy, wellness promotion, and quality improvement.
- Between Phases 2 and 3, students have dedicated time to prepare for and take USMLE Steps 1 and 2 CK examinations.
- Phase 3 is 17 months and allows students to develop a personalized pathway in a specialized area of interest and pursue scholarly work (including dual-degree pursuits or early transition to residency within our institution).


Curriculum changes since 2010

In 2011, UMMSM launched a 4-year MD–MPH dual-degree program designed to produce physician leaders with expanded career opportunities in medicine and public health. It is the largest 4-year dual MD–MPH program nationwide, with approximately 50 students annually. The MD and MPH curricula are fully integrated, and MPH coursework was designed to offer practicum experiences with community-based clinical partners and capstone projects that integrate public health interventions with clinical practice. Public health immersions are provided in partnership with public health agencies such as the local health department. The MD coursework uses small-group and problem-based learning, along with learning communities involving intensive faculty mentorship. All basic science courses use problem-based learning, with case objectives reflecting integration of multiple core disciplines. Students in this cohort also experience their clinical curriculum on the regional medical campus (RMC), which features a preceptor-based curriculum, focusing on continuity of care and treatment of chronic disease. On the RMC, there are 2 integrated clerkships. The 12-week integrated medicine clerkship integrates internal medicine with palliative care, geriatrics, and radiology. The 12-week integrated surgery clerkship combines surgery with anesthesia and radiology. The MD–MPH program used and piloted several pedagogical approaches that became key components of the curriculum.

The NextGenMD curriculum originated from a 2017 taskforce and launched in August 2020.

There have been no changes in class size since 2010 (200 students per class) and none are planned in the future.

Assessment

The medical education program objectives support our outcomes-based education mission and incorporate and expand upon the AAMC’s Entrustable Professional Activities while building a link to GME via ACGME core competencies. Students and faculty track individual progress through e-portfolios using frequent, low-stakes assessments, and students are mentored to create individual learning plans based on interests, demonstrated strengths, and areas for improvement.

See Table 1—Program Objectives and Assessment Methods.


Students in Phase 1 are assessed primarily with probing short-answer and essay questions to demonstrate deeper knowledge and mastery learning. Limited use of multiple-choice questions prepares students to meet external progress measures such as USMLE Step examination performance. Leadership and
<table>
<thead>
<tr>
<th>Medical education program objectives</th>
<th>Assessment methods</th>
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<tr>
<td><strong>Professionalism and interpersonal skills</strong></td>
<td><strong>Develops and maintains a professional identity</strong></td>
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|  | • Narrative medicine—reflections on medicine as a profession  
|  | • EPA-based clerkship evaluation form—professionalism section  
|  | • Course/curriculum attendance records  
|  | • Physician incidence reports  
|  | • Physicianship commendation reports  
|  | • Portfolio entries of ongoing professional development  
|  | • Faculty mentor/coach portfolio assessment  
|  | **Maintains emotional, physical, and mental health in the pursuit of continual personal and professional growth** |
|  | • Student well-being assessments (e.g., depression, anxiety, stress, burnout, resiliency, imposter syndrome, empathy, work hours)  
|  | • Personal well-being plan  
|  | • Student journaling  
|  | **Collaborates as a member of an interprofessional team (includes patients and caregivers)** |
|  | • 360° and other multisource evaluations  
|  | • EPA-based clerkship evaluation form—performance on health care team  
|  | • Narrative medicine—reflections on the roles of other disciplines  
|  | • IPE competency self-assessment  
|  | • Interprofessional team exercises  
|  | **Health systems science** |
|  | • Team-focused assessments—evaluation of team function and individual team contributions  
|  | • Self and peer assessment of leadership style  
|  | • Portfolio entries of leadership roles and institutional service  
|  | • Participation in QI projects  
|  | • Patient safety exercises  
|  | • Resource allocation exercises  
|  | **Recognizes and addresses social and environmental determinants of health for patients and populations** |
|  | • Group community health engagement projects  
|  | • Individual public health capstone projects  
|  | • Narrative medicine—the patient story  
|  | • SP exercises, OSCEs  
|  | • Portfolio entries of community-based activities (e.g., health fairs, free clinics)  
|  | **Biomedical knowledge and clinical care** |
|  | • EPA-based clerkship evaluation form—reporter section (histories and physical examinations, oral case presentations, written notes)  
|  | • Patient write-ups  
|  | • SP exercises, OSCEs, mini-CEX evaluations  
|  | • Technology-enhanced simulation exercises  
|  | **Applies foundational science to analyze and prioritize clinical data** |
|  | • EPA-based clerkship evaluation form—interpreter section  
|  | • Patient write-ups/written notes  
|  | • NBME subject examinations  
|  | • MCQ style progress assessments  
|  | • Student generated questions for self-assessment  
|  | • Individual and team readiness assessment tests  
|  | • Oral examinations  
|  | • Clinical reasoning assessments  
|  | • Mastery testing: SP exercises, OSCEs  
|  | • Mini-CEX evaluations  
|  | **Recommends management for core clinical experiences** |
|  | • EPA-based clerkship evaluation form—management section  
|  | • Patient write-ups/written notes  
|  | • Mini-CEX evaluations  
|  | • Oral examinations  
|  | • NBME subject examinations  
|  | • Mastery testing: SP exercises, OSCEs  
|  | • Direct observation of procedural skills  
|  | • Technology-enhanced simulation exercises  
|  | **Practice-based learning** |
|  | • Student self-assessment of strengths, weaknesses, and learning gaps  
|  | • Narrative medicine—journaling of personal learning and growth  
|  | • Faculty mentor review of the ILP  

(Table continues)
communication skills are evaluated using direct observation, personal reflection, standardized patient assessments, and peer feedback.

In Phase 2, an increasing share of students’ evaluations are derived from performance on objective structured clinical examinations and other assessments of real-world applications of knowledge focusing on nuanced areas of patient evaluation and care, leadership, and communication skills. Peer evaluation, personal reflection, and assessment by allied health professionals prepare students to recognize strengths and areas for improvement pertaining to teamwork, professionalism, and personal wellness.

Assessments during Phase 3 confirm readiness for residency and progress toward a scholarly concentration or dual degree. Students are evaluated in patient care settings performing supervised tasks. Scholarly productivity is assessed by mentors who track students’ progress developing practical expertise in their chosen pathway and help inform decisions regarding performance and degree eligibility.

**Parallel curriculum or tracks**

All students are afforded opportunities to develop a personalized pathway in a specialized area of interest. Students are required to select an emphasis for their scholarly work, which for many culminates in a dual degree, or consideration for an accelerated path to residency.

**Pedagogy**

Phase 1 uses a combination of guided, self-directed, case-based collaborative learning (in a team-based learning model), and lab case correlates. Additionally, ongoing clinical skills training linked to cases use standardized patients and longitudinal ambulatory patient experiences. These methods are continued in Phase 2 during the four 12-week integrated clerkships.

**Clinical experiences**

In Phase 1, students engage in biweekly early longitudinal clinical experiences in the offices of community preceptors, at the bedside with clinical preceptors, in the health systems as patient navigators, and in the community through an Emergency Medical Service course and ride-along shifts with paramedics to develop skills in emergency response.

Medical students receive clinical instruction at a constellation of primary teaching sites: Jackson Memorial Hospital (third-largest public teaching hospital nationwide), University of Miami Hospitals and Clinics, the Miami VA Medical Center, and community physician practices. At the RMC, teaching facilities include 10 community hospital affiliations, health department clinics, and community physician offices.

**Required longitudinal experiences**

There are 2 longitudinal themes across all 3 phases of the curriculum:

- **Medicine as a Profession** covers clinical skills, professionalism, communication skills, population health, health systems sciences, nutrition and wellness, and personal development.
- **Scholarly concentration** integrates scholarly activities into the curriculum, including research design, epidemiology/biostatistics, quality improvement, and collaborative working environments.

**Required and elective community-based rotations**

In addition to the hospitals listed above, students train at community preceptor offices as well as private, state, and federally funded health systems and health centers. The core clerkships in the MD–MPH program occur at the RMC in Broward and Palm Beach. The RMC is affiliated with several partner hospitals, community practices, and the Palm Beach County Department of Health.

**Challenges in designing and implementing clinical experiences for medical students**

The expanded role of early clinical experiences and varied ambulatory rotations in NextGenMD increase the challenge of designing and implementing comparable experiences. The curriculum committees closely monitor required clinical experiences to ensure similar exposure for all students. We increased our pool of community preceptors and provide faculty development to ensure comparable experiences and assessments.
We also expanded ambulatory sites to include satellite offices of our health systems and adjusted faculty compensation to ensure appropriate commitment to the teaching mission.

**Curriculum Governance**

The UMMSM Faculty Council charges the Executive Faculty Curriculum Steering Committee (EFCSC) with overall design, management, integration, and evaluation of a coherent and coordinated curriculum. The EFCSC consists of 21 voting members; two-thirds of its members are nominated by the Faculty Council’s Committee on Committees and one-third are nominated by the Dean’s Office. Two standing committees meet monthly and are responsible for advising the EFCSC on respective curricular components:

- The Basic Science Curriculum Advisory Committee consists of all course directors who lead preclerkship courses, in addition to elected student curriculum representatives from the preclerkship years. This committee includes designated associate and assistant medical education deans who serve in a non-voting ex officio capacity.
- The Clinical Curriculum Advisory Committee makes recommendations regarding the clerkship and postclerkship curricula, consisting of all core, required clerkship directors and elected student curriculum representatives. This committee includes designated associate and assistant medical education deans who serve in a non-voting ex officio capacity.

**Decentralized curricular governance**

The clinical clerkships are managed at the department level with central oversight from the Office of Medical Curriculum (by the associate dean for clinical curriculum). Departmental funding for clerkship administration and education comes from an annual allocation from the Dean’s Office. The Office of Medical Education sets specific guidelines outlining level of support required for clerkship directors and administration.

**Education Staff**

The Office of Medical Education provides administrative and academic support for curriculum delivery, monitoring, and management under the senior associate dean for undergraduate medical education and regional dean for medical education

- Office of Medical Curriculum on the Miami campus and RMC is responsible for curricular operation, and prepares syllabi, distributes handouts, administers examinations, manages the website, and provides administrative support to course and clerkship directors.
- Registrar’s Office distributes evaluations, collects results, and summarizes data.
- Office of Program Evaluation (OPE) works with course directors to design course evaluations that are analyzed and distributed to curriculum committees, course directors, administration, students, and department chairs. The OPE director assists course directors in reviewing examination item analyses and determining exam score cutoffs and in creating the assessment instruments used in competency assessment exercises.
- Office of Information Technology (IT) provides IT technical support to medical education programs. The office is responsible for audiovisual support for the curriculum and upkeep of teaching facilities, including the computer lab.
- Medical Education Administration handles all budgetary, purchasing, and human resource needs of the Office of Medical Education.

**Medical education leadership**

See Figure 1—Miami campus organizational chart.

See Figure 2—Regional medical campus organizational chart.

**Department of Medical Education**

A new Department of Medical Education was established in 2019 to provide primary, secondary, and voluntary appointments to faculty in medical education; it equips teachers with the skills necessary to become more effective in their educator roles.

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**Figure 1** Miami campus organizational chart.
Additionally, the department helps create and support a culture of educational research, scholarship, and innovation. The department also provides an academic “home” for faculty whose primary focus is education and allows for development of new and creative approaches to educating learners.

Faculty Development and Support in Education

The Educational Development Office (EDO) provides consultative and programmatic support to faculty and departments in educational design, instruction, evaluation, and research in medical education. The EDO monitors faculty teaching efforts and generates reports for department chairs and medical finance. Additionally, a redesigned Office of Faculty Affairs and Professional Development offers ongoing faculty development sessions to continue training faculty for their NextGenMD roles.

Role of teaching in promotion and tenure

In August 2019, the UMMSM adopted new bylaws and guidelines regarding promotion and tenure in 4 faculty tracks: educator, clinical educator, tenure, and research.

Educational contributions are required for appointment and promotion in all tracks, and applicants for promotion are strongly encouraged/required to submit a detailed educator portfolio as a critical part of the process. Publications and other forms of scholarship are also universal requirements for promotion. An important distinction among the educator and clinical educator tracks is the requirement for extramural funding; no significant amount is required in either of the tracks emphasizing education.

See Table 2—Weighted Contributions and Achievements by Track.

Educational experiences across sites

The UMMSM RMC is the clinical campus for approximately 50 students in the clerkship phase of our 4-year MD–MPH program. An associate dean for clinical curriculum oversees clinical clerkships on both the Miami campus and RMCs. The regional dean for medical education, associate dean for clinical curriculum, and Clinical Curriculum Advisory Committee review the shared objectives, curricular content, required clinical experiences, assessment methods, and all evaluations of all clerkships across sites throughout the year to ensure comparability. Ongoing faculty development efforts, including meetings with clinical faculty and residents, ensure consistency of educational experiences. The Executive Faculty Curriculum Steering Committee, the curriculum’s governing committee, also reviews these reports annually.

Our curriculum has evolved over the years to adapt to changing societal needs and evolving pedagogical landscape; to include more student-centered, self-directed, and collaborative learning; increased early clinical experiences; to enhanced focus on social determinants of health; and to place stronger emphasis on leadership skills training—so that we can shape our learners to become change agents who transform lives and are inspired to serve the global community—the mission of the UMMSM.

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<td><strong>Weighted Contributions and Achievements by Track</strong></td>
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<td><strong>Track</strong></td>
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<td>Educator</td>
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