Medical Education Program Highlights

Western Michigan University Homer Stryker M.D. School of Medicine (WMed) enrolled its inaugural class in the fall of 2014 with the mission to educate and inspire lifelong learners to be exceptional clinicians, leaders, educators, advocates, and researchers of tomorrow. The preclinical phase is a team-based learning (TBL) curriculum delivered through systems-based courses. Clinical education begins in the first year of the curriculum, relying on a robust standardized patient and simulation program and a partnership with the Program of All-Inclusive Care for the Elderly to develop longitudinal relationships with patients and interprofessional faculty. This is combined with a required curricular focus on service learning through community partnerships. The preclinical and clinical phases of the curriculum are designed in a decompressed fashion with a “green” week in between each course/clinical clerkship. The USMLE Step 1 examination occurs after 4 of 6 core clerkships.

Curriculum

Curriculum description


Curriculum changes since 2010

Since WMed’s inaugural class of 54 students started in 2014, the class size has subsequently increased over 4 years to reach the maximum class cohort size of 84 students. The preclinical curriculum spans 20 months and consists of 13 foundational organ system courses that average 5 weeks in duration, a longitudinal Professions of Medicine (POM) course, and a longitudinal Introduction to Clinical Experiences (ICE) course.

• A TBL format is used in all foundational organ system courses. TBL is an instructional strategy that promotes application of knowledge to clinically relevant scenarios in an active learning setting. TBL holds students accountable for learning independently, promotes the development of high-performing teams, and enhances problem-solving skills. All of this is achieved with less didactic lecture time and more energy in the classroom.

• The POM course includes clinical skills training that heavily uses standardized patients and simulation and is integrated/aligned with the organ system courses; service learning via the active citizenship component of the course; and sessions on topics such as ethics, epidemiology, and biostatistics in the principles component of the course.

• The ICE course gives students early exposure to clinical medicine and diverse medical teams beginning with Medical First Responder certification during the first term.

• Self-directed learning is accomplished in part through a curricular innovation called Explorations, which runs throughout the preclinical years. Students work in small groups to apply concepts of evidence-based medicine and critical thinking to medically relevant topics of interest.

• The new Multisystem Disorders course is being implemented for the fifth matriculating class as the final course of the preclinical curriculum to serve as a capstone for the preclinical years by integrating knowledge of classic multisystem diseases such as diabetes, lupus, and cystic fibrosis that are difficult to convey in a single organ system course.

• Students are assessed progressively using the NBME Comprehensive Basic Science Exam (CBSE). There are 4 attempts spaced throughout the preclinical years. Students achieving our competency threshold on the third or fourth attempt progress to clerkships, otherwise they progress upon successful remediation of the CBSE.

The clinical applications phase of the curriculum was launched in 2016 for the inaugural class and has undergone significant revisions during the first 3 iterations before hitting a steady state.

• Core clerkships were initially designed with all didactic teaching and assessment in the first and last weeks of the clerkship. Each clerkship was 8 weeks with a dedicated preparatory week that included simulation, facilitated learning sessions, and independent preparation. This pedagogical approach was taken in an effort to allow students to fully immerse themselves in the clinical experience, armed with foundational knowledge and technical skills to be successful as they encounter patients. As a new curriculum, there was also the conscious choice to delay Step 1 until the completion of all core clerkships. While these strategies resulted in successful Step 1 scores, the timing of Step 1 results made career planning difficult.

• For the subsequent class, core clerkships were organized to create four 11-week shared blocks. Family medicine and pediatrics shared a block; women’s health and psychiatry shared a block; medicine and neurology shared a block; and the surgery rotation incorporated a midclerkship didactic week with focus on surgical subspecialties, radiology, and anesthesia. We continued to have more concentrated didactics in the first week of each block but added formal once-weekly didactics.
throughout each rotation, as students and faculty both noted improved case discussion and retention of topics that were taught in conjunction with authentic patient interactions. Step 1 was taken three-fourths of the way through core curriculum, which proved to be better timed with career planning needs.

- For subsequent classes, we reverted to the model of independent clerkships, each 7 weeks in length, and have allowed clerkships to balance clinical assignments and didactic teaching as best fits the demands of the clerkship. Students are taking Step 1 in December or January following their fourth-core clerkship experience with an average of between 5.5 and 6 weeks to prepare for the exam.

- Advanced clerkships have evolved over the life of the school in an attempt to provide both rigorous subinternship experiences as well as allow for exploration of individual and career interest. The current requirements include three 4-week rotations in emergency medicine, advanced hospital medicine, and critical care.

- Our curriculum has 4 transition sessions bridging the matriculation to medical school, the move from preclinical to core clerkships, from core to advanced clerkships, and transition into residency. We heavily use our simulation center during these transitions, both for teaching and assessing procedures, and for clinical tasks and certifications (Basic Life Support, Advanced Cardiac Life Support).

**Assessment**

The medical education program objectives (EPOs) derive from the Physician Competency Reference Set. The EPOs are classified into 2 groups:

- Knowledge, skills, and abilities for which students must demonstrate competency
- Concepts to which students are exposed or for which they should have an understanding

The Curriculum Committee is responsible for evaluation and movement of EPOs between these 2 groups based on curriculum delivery, developmental appropriateness, and assessment reliability. Structured clinical assessments use the key functions within the AAMC Entrustable Professional Activities framework, which are mapped back to EPOs.


**Parallel curriculum or tracks**

While our curriculum does not have separate tracks, we have developed a framework to allow for academic distinctions in an area of curricular focus. This includes a combination of particular electives as well as additional curriculum and scholarship participation within an area of curricular focus. Students apply for an academic distinction and completion is reflected on student transcripts. The first fully implemented academic distinction is in global and public health.

**Three-year curriculum**

WMed does not currently offer a 3-year curriculum option but is an exploratory phase for focused specialties in which GME training can be continued at WMed.

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**Figure 1** Curricular governance.
Pedagogy
The Foundations of Medicine (FOM) curriculum phase for basic science courses is structured in a TBL format. Each week includes a mixture of case-based learning, large-group discussions, lectures, and independent/self-directed learning. This material is then applied to clinical scenarios during a TBL event each Friday. The FOM curriculum for clinical skills development includes large- and small-group discussions, peer teaching, workshops, standardized patient experiences, and simulations, all of which are integrated or aligned with the corresponding basic science course. During the clinical applications phase of the curriculum, case-based learning, large- and small-group discussions, preceptorship, peer teaching, self-directed learning, simulation, standardized patients, virtual patients, and workshops are integrated into clerkship experiences.

Clinical experiences
Types of clinical sites used for required educational experience:
- Tertiary care community hospitals
- Regional hospitals
- Critical access hospitals
- Level 1 trauma center
- Level 2 trauma centers
- Critical access emergency departments

Required longitudinal experiences
- Medical First Responder course: Students become certified as a medical first responder as part of their transition to medical school and early clinical skills development. They complete their certification by December of year 1.
- ICE: Students work with Senior Care Partners throughout their first 2 years of the curriculum, following the same panel of patients along with an interprofessional team of providers.
- POM Clinical Skills: Students focus on doctor–patient communication, physical examination, and documentation skills necessary to complete a patient encounter.
Required and elective community-based rotations
WMed Health manages academic physician clinical activity through multiple WMed ambulatory sites and through academic services at its 2 primary affiliate hospitals. All hospital-based rotations occur in community settings, including the Veterans Affairs hospital in Battle Creek, Michigan. Students may be assigned to WMed Health academic services or to community-based physician groups for inpatient clinical experiences. We also rely heavily on our outpatient community partnerships, including independent private practices, hospital-owned practices, and local federally qualified health centers in Kalamazoo and Battle Creek, Michigan. Some of our core clerkships primarily use our WMed Health clinics for their ambulatory component (surgery, internal medicine) while others employ a mix (pediatric and adolescent medicine; women’s health, family, and community medicine; and neurology).

Challenges in designing and implementing clinical experiences for medical students
- Challenges include securing high-quality preceptors who are able to both teach and complete the required clinical midclerkship and final narrative assessments. We compete with our residents, other health professions students, and the need for clinical productivity. The academic year of our students does not align with resident start dates, causing additional stress in trying to forecast learner capacity within our system.
- We have a strong commitment from system administrators but that does not always translate to ease of acceptance among practice managers and physicians.
- Management of assessment is also a challenge. Busy practitioners can find it challenging to complete and submit assessments at the rapid pace required during many clerkships.

Curricular Governance
WMed manages the undergraduate medical education curriculum through the centralized Office of Educational Affairs. All internal and external faculty support for teaching, including course and clerkship director roles, are budgeted and managed through the Office of Educational Affairs. The Department of Medical Education, Department of Biomedical Sciences, and the clinical departments interface with the Office of Educational Affairs in delivering curriculum.

Faculty Development and Support in Education
The Office of Educational Affairs works closely with the Office of Faculty Affairs to coordinate faculty development events focused on educational delivery needs. These include a combination of embedded “micro” development events within meetings and retreats, larger events including outside speakers, and utilization of course/clerkship directors for faculty development within their individual course/clerkship offerings. The Department of Medical Education also serves a consulting role for individual faculty development in the areas of curriculum management, content delivery, and program evaluation. Teaching data, including degree of engagement, student experience, and student outcomes, are included in promotion decisions. Educational research is included in publication considerations.