Tufts University School of Medicine

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Medical Education Program Highlights

The new Tufts curriculum (beginning with the class of 2023) seeks to graduate highly skilled and compassionate clinicians imbued with the knowledge, skills, and attitudes to promote the continual improvement of health and health care of individuals and populations. Students develop advanced skills in clinical reasoning and communication, allowing them to improve the patient experience while delivering high-quality and cost-effective care. Students cultivate skills in personal reflection, mindfulness, resilience, inquiry, and lifelong learning, essential for adaptation to a constantly changing health care environment. Graduates will be able to apply a detailed understanding of health care delivery systems (and how to navigate those systems), patient-centered outcomes, social determinants of health, and population health to their practice of medicine.

Highlights:

• Curricular threads interwoven throughout the 4-year curriculum
• A new coaching program designed to ensure that a faculty member has a 4-year longitudinal picture of a student’s development of clinical skills and professional identity formation
• A Maine Track Program (20% of the class) that includes a longitudinal integrated clerkship (LIC) with a focus on rural health
• Comprehensive student participation in developing and monitoring the curriculum, including engagement in designing the new curriculum, regular meetings with deans and education staff to discuss all student educational experiences, and full representation on the Curriculum Committee (CC) and its task forces
• Completion of a dual-degree program: MD–PhD, MD–MPH, MD–MBA, or MD–Master of Arts (Fletcher School) by 20% of students

See Table 1—Curricular Threads.

Curriculum

Curriculum description


Curriculum changes since 2010

A new curriculum was launched in August 2019 with the class of 2023 that builds on and further expands on detailed curriculum revisions implemented in 2009. Features of the new curriculum, and other changes since 2010, include:

• Faculty coaching program. Coaches are assigned 10 students (every other class) to support academic performance and personal and professional identity development throughout medical school. The coaching program is nested in a set of learning communities (with 5 coaches per learning community). The coach is responsible for fostering the student’s professional identity development (including resilience, ethical practice, self-regulated lifelong learning, navigating uncertainty), providing formative feedback on clinical skills, facilitating self-reflection, and helping students remediate areas of weakness. The coach meets regularly with each student, reviews all formative and summative assessments, participates in the first-year Problem-Based Learning course, and provides formative feedback on clinical skills. A learning portfolio system was launched to facilitate student/coach collaboration.
• Redefined curricular threads woven throughout all 4 years emphasize knowledge, skills, and attitudes related to population health, health care delivery, personal and professional development, and the patient experience.
• A new Population Health and the Profession of Medicine course at the start of the first year introduces students to the health care system, social determinants of health, health care disparities, quality improvement science, ethics and professionalism, and principles of population health. The course includes a community engagement exercise providing early experience in assessing the health needs of populations. This exercise introduces students to the Tufts Community Service Learning Program that is completed during the preclerkship phase.
• New preclerkship thematic blocks (starting in fall of the first year) that promote a more cohesive integration of basic, clinical, and health care systems science and the curricular threads.
• Expanded preclerkship clinical reasoning curriculum that begins in the first year.
• Maine Track students have increased preclerkship time on the Portland, ME campus.
• A preclerkship phase that ends in mid-January with core clerkships beginning in March of the second year.
• New core clerkship integration weeks that return students to campus to more effectively integrate curricular threads.
• A required scholarly project program that includes online modules on research design, translational medicine, quality improvement, and academic writing. Working individually or in teams of up to 4, students collaborate with faculty mentors on a scholarly project in basic science, clinical research, or quality improvement.
Addition of an end-of-fourth-year boot camp to provide final preparation for residency.

Significantly expanded interprofessional collaboration experiences (case based, simulated, and clinical) throughout the curriculum with professionals and students including pharmacists, physician–assistants, nurses, social workers, and dieticians.

Expanded curriculum on end-of-life and palliative care, management of pain, and management of substance use disorders (students now qualify for certification to provide medication-assisted treatment).

The new Health Justice Scholars Program designed for students committed to serving under-resourced populations. Students work with a faculty mentor, engage in extracurricular programmatic activities, and complete many of their clinical rotations at sites with a large underserved patient population.

The required Student-As-Teacher Program was launched and includes online modules and a field teaching experience.

Assessment

Tufts has defined 58 overall learning objectives and competencies, addressed in both preclerkship and clerkship phases, grouped using the taxonomy of competency domains proposed by Englander et al (https://medicine.tufts.edu/sites/default/files/education_educational-objectives.pdf).

- Preclerkship course and clerkship objectives and assessments (multiple-choice and short-answer exams, standardized patient and simulated scenario exams, ethical analyses, reflective papers, direct observation of preclerkship small-group work, objective structured clinical examinations, workplace observations) map to the overall learning objectives.
- Since 2010, there has been an expansion of standardized patient assessments, reflection papers, team-based learning assessments, and implementation of integrated cumulative exams.

**Pedagogy**

Tufts uses an array of pedagogical approaches to achieve the school’s educational program objectives. Of note, the first-year Problem-Based Learning course is delivered exclusively as a self-directed learning experience. Pedagogical changes have been implemented since 2010:

- Reduction in lecture time to promote active and collaborative learning approaches
- Requirement that all lectures include an interactive component
- Requirement that at least 50% of preclerkship teaching hours use active or engaged learning
- Significant expansion in team-based learning, flipped classroom, and small-group learning
- Expanded simulation education including a comprehensive preclerkship ultrasound curriculum
- Expanded use of standardized patient experiences including for training on advanced communication skills and with interprofessional collaboration

See List 1—Pedagogical Approaches.

**List 1

**Pedagogical Approaches**

- Case-based teaching
- Clinical experience: ambulatory
- Clinical experience: inpatient
- Discussion: large group (> 12)
- Discussion: small group (≤ 12)
- Flipped classroom
- Laboratory
- Lecture (interactive)
- Patient presentations
- Peer teaching
- Preceptorship
- Problem-based learning
- Role play
- Self-directed learning
- Simulation
- Standardized/simulated patients
- Team-based learning
- Video/podcast
- Virtual patient
- Workshop
Clinical experiences

- Learners encounter clinical experiences during the first month of medical school in the medical interviewing course and through weekly clinical selectives.
- Students subsequently spend a full day each week in a primary care office (the competency-based apprenticeship in primary care) from May of the first year through January of the second year.
- Tufts has a diverse group of affiliated inpatient and outpatient clinical sites for core clerkships and advanced clinical rotations, giving students the opportunity to learn in a range of settings including rural communities, suburban locations, and major urban areas.
- Site directors for each of the core clerkship disciplines meet quarterly to ensure comparability of experience and to refine the curriculum.
- Students in the Maine Track can participate in an LIC (see below).
- Required fourth-year experiences include two 4-week acting internships, a 4-week clinical neuroscience rotation, and a minimum of five 4-week electives.
- The principal challenge faced in implementing clinical experiences is the competition between medical schools and other health sciences professions programs for core clerkship slots.

See List 2—Teaching Affiliates.

Curricular Governance

The Tufts curriculum is managed by the faculty-led CC, Office of Educational Affairs (OEA), and Office of Student Affairs (OSA).

- The CC, consisting of elected and appointed members, meets monthly. Members are drawn from basic science and clinical faculty with representation from course and clerkship directors, all major clinical departments, and each major teaching affiliate. Sixteen student members (4 from each year) are elected by the student body.
- The CC is responsible for development and implementation of the school's educational policies and the evaluation of the educational program, content, and teaching.
- The CC has responsibility for reviewing all new curricular initiatives.
- The CC oversees the work of task forces and subcommittees, including preclerkship course directors (phase 1), core collaborators (phase 2), the Simulation Curriculum Subcommittee, and the Evaluation Subcommittee.
- The core collaborators, consisting of the overall core clerkship directors and key educational staff, meet monthly and oversee the core clerkships, acting internships, and clinical electives. The group examines all aspects of clinical education including competency-based learning objectives, content within and across clerkships, assessment tools, grading, evaluation of site quality, and best educational practices across sites.
- The CC performs regular peer review of all courses and clerkships (approximately every 3 years) and conducts a yearly review of the entire educational program to ensure the Tufts overall educational learning objectives are achieved in both phases of the curriculum.
- The CC is charged with implementing the educational strategic plan (new curriculum).
- The OEA and OSA work to implement the CC’s recommendations and policies.

See Figure 1—Curriculum management.

Education Staff

The OEA works with the CC, and its subcommittees, to plan, implement, evaluate, and oversee the curriculum while supporting curriculum delivery, monitoring, and management.
The OEA is exclusively responsible for undergraduate medical education, including:

- Centralized management of the curriculum, including delivery of all preclerkship courses and programs
- Implementation of CC recommendations
- Working with the OSA and the core collaborators to manage the core clerkships and fourth-year required rotations and electives
- Evaluation and assessment of all courses and clinical rotations (overseen by a doctorate-level evaluator)
- Oversight and administration of educational grants
- Faculty development (overseen by a doctorate-level associate dean)
- Conduct and support of educational research
- Administrative support for education-related faculty committees
- Coordination of specialized programs including the standardized patient program and medical education electives
- Oversight of the 9,000 square foot clinical skills and simulation center (a new, expanded facility is scheduled to open in spring of 2022)

- Support of the Accreditation Standards Oversight Committee, charged with continuous monitoring of Tufts’ compliance with LCME accreditation standards

The new Department of Medical Education was recently created to provide an academic home for basic science (and some clinician) educators.

**Faculty Development and Support in Education**

- Both centralized and hospital-based programs are included.
- A new, comprehensive series of webinars can be watched live or asynchronously.
- In-person centralized and hospital-delivered workshops and sessions, including seminars on teaching, educational research, and educational leadership, and a mutual mentoring program for career advancement. All in-person initiatives focus on promoting the development of communities of practice.
- A longitudinal faculty development program for new coaches has been implemented.
- A faculty medical education journal club consists of regular online exchanges providing summaries of key articles in health sciences education.

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**Figure 1** Curriculum management.
• Faculty receive individualized medical education literature alerts, including monthly email updates from the Hirsh Health Sciences Library.
• Annual Innovations in Medical Education and Innovations in Diversity Education Awards grant programs have provided faculty with approximately $1,000,000 in intramural funding since 2005.

Regional Medical Campus
• Since 2009, Tufts has partnered with Maine Medical Center (MMC) in Portland, Maine, to offer the Maine Track. Forty students (20% of each class) are annually accepted to the track by a subcommittee of the Admissions Committee.
• Accepted students have close ties to Maine or are otherwise interested in clinical training experiences with exposure to the unique aspects of rural practice and with an interest in returning to Maine to practice.
• Before the class of 2023, Maine Track students spent their first 2 years primarily on the Boston campus, with some specific curriculum components completed in Maine. Students relocated to Maine for core clerkships and portions of the monthly rotations in the fourth year.
• Beginning with the class of 2023, Maine Track students will spend their entire second year in Portland. Preclerkship courses delivered in Maine have identical objectives, content, and assessments as those delivered in Boston. Boston and Maine course codirectors meet regularly and work collaboratively to deliver a consistent educational experience.
• 20–22 Maine Track students annually participate in a 9-month LIC experience either at MMC or at select rural/community sites throughout the state. The remaining Maine Track students complete block core clerkships at MMC.

References