# Job Roles of the 2025 Medical Educator

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Medical educators recognize that physicians' roles are rapidly changing. The Accreditation Council for Graduate Medical Education's (ACGME's) Sponsoring Institution 2025 (SI2025) initiative identified 3 major driving forces in health care and graduate medical education: democratization, commoditization, and corporatization.[1] Wartman and Combs argued that, as the practice of medicine transforms from the information age to the age of artificial intelligence, the medical community must accept that "devices will, on an increasing scale, outperform humans, cognitively and physically."[2] As educators, we seek to understand these changes and design education to be consistent with the roles of physicians in this future system consistent with a true competency-based approach to education.[3] Job analyses reveal that physicians in 2020 must be competent health care clinicians for patients and populations, superb communicators, fluent with digital data and technology, agile and innovation-driven, and capable as leaders and members of interprofessional teams.[2,4]

Education, like health care, is aggressively changing to include anytime and anywhere adaptive strategies driven by learning analytics, virtual and augmented reality, gamification, and mobile/wearable technologies. Yet, despite the multitude of calls for medical education reform, including the recommendations arising from SI2025, limited attention is focused on what this means for the medical educators who will design, deliver, and assess learners and evaluate our educational programs in 2025. The SI2025 Task Force's competence No. 27 (Accountability for Faculty with Clinical and Educational Responsibilities) focuses on who will be responsible for the development of physicians in these areas, with shifts from medical schools to health care organizations, yet the specific skills and roles of educators in 2025 were not addressed.[1] In addition, while medical educator colleagues have defined competencies for teaching[5] and for clinician educators,[6] a new lens must be added to account for the transformations occurring in education.

To identify the future roles of medical educators, we led an "Educators of the Future—2025 Job Roles" session at the Association of American Medical Colleges (AAMC) 2017 Learn, Serve, Lead meeting. The 90-minute interactive session used the futurist concept of *hard trends*[7] (measurable, predictable facts about transformations in education) and began with a rapidly playing set of screen shots and images of current education trends. Then, the session organizers provided provocative, hard trend–based perspectives on the future of medical education and the roles of the medical educator.

## Future Hard Trends in Medical Education

- *Outsourcing of Education:* Textbook publishers have built software platforms where students can do homework exercises and get real-time feedback.[8] Education-oriented partnerships between academics, professional societies, and vendors are increasing. Examples include the Surgery Resident Skills Curriculum[9] developed by the American College of Surgeons and Association of Program Directors in Surgery, the AAMC/Kahn Academy for MCAT Prep, the MedU Cases completed by more than 40 000 students each year,[10] and the in-training examinations and prep courses delivered by specialty/professional societies.

- *Technology:* Virtual and augmented reality technology, combined with built-in learning analytics, are used to create virtual companions that support trainee learning and new forms of real-time assessment.[11,12]

- *Learning Analytics/Big Data in Education:* The use of big "education" data facilitates personalized learning for individuals and groups, as well as use of assessment data for program evaluation. Examples include the ACGME's analysis of milestone data[13] and the emergence of

> **BOX** 2025 Medical Educator Job Roles
>
> **Diagnostic Assessor:** Use results of big data to identify individual/group performance gaps to individualize training
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> **Content Curator:** Access, select, sequence, and deliver high-quality content developed by national experts
>
> **Technology Adopter:** Be an early adopter and fluent in selecting and using appropriate technology tool(s)
>
> **Learner-Centered Navigator and Professional Coach:** Guide learners' use of resources and practice to achieve identified performance targets
>
> **Clinician Role Model:** Exemplar for the various 2025 physician job roles
>
> **Learning Environment Designer, Engineer, Architect, and Implementer:** Designs the "space" to optimize learning informed by sciences (eg, learning)

conferences highlighting how to analyze and use big data.[14]

- *Learner as Consumer and Co-Designer:* Examples include mobile 24/7 anytime/anywhere learning and testing and micro/nano degrees that allow students to take a series of short online courses, finish a capstone project, obtain a certificate, and prepare for a specific role or job.[15]

- *Regulation and Alignment:* Increasingly, regulators and accreditors will focus on integrating and aligning education and clinical care outcomes (health care quality, safety, patient experience) as the primary driving force for the design of medical education programs across the continuum. There also is increasing emphasis on team/interprofessional collaborative care and education as decisions and actions will no longer be a solo act. Decision-making will be distributed among the team members based on their license and scope of practice, and supported by artificial intelligence/machine learning (eg, Watson).[2]

## Identifying Job Roles for the 2025 Medical Educator

The AAMC Annual Meeting brings together a diverse group of medical education stakeholders—clinical and educational leaders, teachers, learners—of various ages, geographic locations, and expertise in education. To take advantage of this diversity of perspectives, the session used small group discussions using experienced medical educators as facilitators. Each facilitator received a preparatory packet in advance. The groups were asked to consider the identified hard trends and to generate key job

elements or features of the 2025 Medical Educator. Facilitators reported their group's results with panelists identifying cross-cutting themes to represent the input from 95 participants. Reports and discussions were audiotaped and transcribed for analysis by the authors. Job roles were then sent to facilitators who made clarifying revisions and affirmed the results.

## 2025 Medical Educator Job Roles

There was general agreement that these are new job roles in response to the changing landscape of health care and medical education. As we transition to these new roles, specialized training will be required, while jobs that exclusively emphasize subject matter expertise will decline. Groups of participants working independently converged on 6 common job roles. While it is unlikely that everyone will have the same degree of competence in each role, every 2025 medical educator will be expected to have basic competence in all 6 roles, which are shown in the BOX and described below.

### Diagnostic Assessor

The use of big data in education will continue to grow. This requires educators to identify performance gaps for individuals and groups in order to personalize educational experiences (including competency-based and time-variable training), tailor performance assessments, and evaluate curricula.[16] As diagnostic assessors, educators must be skilled at translating learning and predictive analytic results[5] to actions that optimize learning and performance for individuals, cohorts, groups, and populations.

### Content Curator (not Creator)

High-quality content, developed by national experts, is increasingly available across a number of professional organizations and societies, textbook companies, and vendors who contract with experts in the field. Accessing, selecting, sequencing, delivering, and sharing these materials with learners to meet local needs, in real time at the point-of-care, already occurs in several specialties. As curators of content, educators must be skilled in selecting content materials from existing educational materials, and building alliances across stakeholders, including faculty, specialties, professions, accrediting bodies, and professional and interprofessional societies.

### Technology Adopter

Since release of the first smart phone in 1992, its effects and that of other technologies have transformed our personal and professional lives. This

technological progress will continue at an exponential rate and presents an opportunity, not a threat, to enhance our work.[17] Medical educators in 2025 must be early adopters, fluent in selecting, using, and assessing the appropriate technology tools. These range from an app to a virtual reality or augmented reality immersion activity. In addition, educators will need to recognize when technology use is misguided or fails.

### Learner-Centered Navigator and Professional Coach

Moving from the diagnostic assessment of individual learner performance dashboards to advancing learners' growth and development will require a skilled educational navigator. Medical educators, as learner-centered navigators, will guide the use of resources, materials, and practice opportunities to achieve identified performance targets. As professional coaches, educators must be skilled in face-to-face and virtual facilitation, to provide personalized and group coaching sessions that support learners' accurate construction of meaning.

### Clinician Role Model

Role modeling is teaching by example.[18] Medical educators in 2025 must be the exemplars for competence in the various 2025 physician roles. These include individual care provider and leader/member of interprofessional teams, with superb communication skills and professionalism.[4] Additional role-modeling elements will focus on demonstrating humanism,[19] attention to personal well-being,[20] and integrated systems thinking with cross-cutting foundations (eg, quality, patient safety, and lean approaches) as part of clinical and educator competence.[2]

### Learning Environment Designer, Engineer, Architect, and Implementer

In 2025, medical educators will be designers of the learning environment. Think of this role as an architect or engineer who designs the "space" to optimize learning. Educators will need to draw on the sciences of human learning, cognition, memory, and implementation to inform their designs. Will the learning environment be a 2025 version of a Google Hangout, a team activity in an augmented reality space with interprofessional trainees, individualized adaptive practice exercises, or a rapid time-lapse quality improvement simulation? Key to this medical educator role is the underlying foundation in learning and implementation sciences.

## Implications

As education evolves, medical educators must embrace these role changes and a new professional identity. As noted by Catherine Lucey in her keynote address at the 2017 meeting of the Association for Medical Education in Europe in Helsinki, Finland, "The value of a faculty member can no longer be linked to superior knowledge or skills in all things health care and education."[21] We share Lucey's vision that educators' value will lie in their "wisdom, structured approach to a problem, ability to model ongoing learning, and in their ability to create an environment where every learner is valued and supported to achieve their best."[21]

As good educators, we hope we have left you with more questions than answers: How will we learn these skills? How will we be compensated and rewarded for these new roles? What will be the optimal designs to maximize and streamline learning at minimal costs? As the first to outline the roles of medical educators in 2025, using hard trends to trigger discussion at an international medical education conference, we acknowledge that these are projected roles. We are however certain about 1 thing: the job of the medical educator in 2025 will require new skills, redevelopment and expansion of old skills, and the same commitment to graduating physicians who we will be proud to have care for a loved one.

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