Supporting innovative medical educators: American Medical Association initiatives to transform medical education

Apoyando a educadores médicos innovadores: Iniciativas de la Asociación Médica Estadounidense para transformar la educación médica

Medical educators seek to continually improve their programs to foster the health care workforce and thus optimally serve patients and communities. However, competing demands on educators, coupled with challenges of change management, limit capacity for innovation. As the largest association of physicians and medical students in the United States (US), the American Medical Association (AMA) supports physicians across the entire trajectory of their careers. The AMA acknowledges the need for significant support for innovation across the continuum of medical education. This editorial describes strategies the AMA has deployed over the past decade to catalyze change, and highlights some of the resulting resources available to all.

The AMA's interest in medical education dates to its inception in 1847 to improve public health and raise the standards of the profession. The AMA was a sponsor of the Flexner Report, upon which the American system of medical education is largely based, promoting improved standardization but with significant detrimental effects.[1] The 2010 centennial of that report spurred the US medical education community to reflect on the relative lack of change in educational structures despite significant shifts in health needs and care delivery over the ensuing 100 years. Historically, care focused on acute illness, a singular patient-physician dyad, and hospital or clinic-based interventions. Our educational system reflected that mindset. The AMA called for educational redesign —focused on population health and anchored in the communities served— to better prepare diverse physicians to address health maintenance and chronic disease through team-based care.

The resulting AMA ChangeMedEd® initiative,[2] which launched in 2013 as Accelerating Change in Medical Education, leverages a wide range of partnerships to reduce barriers to lifelong learning, advance health equity, and improve patient outcomes. The AMA applies multiple strategies to foster change, including thought leadership and expertise, grants programs, faculty development, and creation of learning resources. Most importantly, the AMA has established a strong network of like-minded educators who openly share their challenges and collaborate across institutions to address them.

This network was built over time with multiple investments. The AMA launched this[3] initiative with four goals for medical schools:

- Create competency-based assessments and flexible individualized learning plans (competency-based medical education, CBME)
- Develop exemplary methods to achieve patient safety, performance improvement, and patient-centered team care
- Understand the health care system and health care financing
- Optimize the learning environment: pedagogy, tools, and technology.

This grants program awarded $1 million over five years to each of eleven institutions. The consortium formed to facilitate work across sites on common themes has grown in membership over the ensuing years.

In 2019, the AMA expanded to graduate medical education with the Reimagining Residency[4] initiative. The AMA had three goals:

- Preserve continuity in training by supporting the transition from medical school to residency
- Ensure readiness for entry into practice, including CBME, competency in Health Systems Science (described below), and transitions across the educational continuum.
- Support well-being for trainees, mentors, and colleagues.

This program awarded $1.8 million over five years to eleven projects, several of which involved multiple institutions. These experts in graduate medical education joined the existing medical school teams to deepen the exploration of core themes across the continuum.

To date, the AMA ChangeMedEd® initiative has engaged nearly every medical school in the US, generating transformative changes[5] that have been disseminated well beyond sites receiving grants. These innovations are anticipated to contribute to learner well-being by making education more relevant and personalized. Areas of focus are as follows (additional resources linked in references):

HEALTH SYSTEMS SCIENCE (HSS)[6]

HSS is defined as the study of how health care is delivered, how health care professionals work together to deliver that care, and how the health system can improve patient care and health care delivery.[7] HSS acknowledges that, no matter how competent individual physicians are, they cannot help their patients attain optimal outcomes without effectively leveraging the health system and the care team (including the patient, family, and community). Training in HSS is conceived as the third pillar of medical education[8] to complement basic sciences and clinical skills. Interprofessional experiential training through value-added roles[9] for learners is most impactful. Although the resources that were developed around this theme are US-centric, core concepts such as systems thinking and teaming apply widely.

COMPETENCY-BASED MEDICAL EDUCATION (CBME)

In CBME, training programs are designed to ensure each learner attains the desired learning outcomes, shifting from time-based to competency-based progression. AMA initiatives at both the medical school and residency levels explored challenges of CBME. Five of the medical schools in the original consortium fully implemented CBME with fidelity and collaborated to articulate the critical role of organizational infrastructure and culture.[10] Residency initiatives tackled time-variable competency-based progression[11] as well as bolstering neglected areas of competency, such as bedside clinical skills.[12]

THE MASTER ADAPTIVE LEARNER[13]

The rapidly evolving health care ecosystem demands that physicians move beyond routine expertise to adaptive expertise – the ability to recognize when a typical approach will not be effective and engage in creative problem solving. The Master Adaptive Learner conceptual model describes a strategy by which an individual who has identified a need engages in iterative cycles of planning, learning, assessing, and adjusting practice.[14] Both personal and organizational attributes are necessary to implement this continuous learning model effectively.[15]

COACHING IN MEDICAL EDUCATION[16]

Coaching is focused on supporting the development of a trainee or practicing physician across multiple dimensions of performance as well as personal aspirations. This is a formal relationship in which the coachee drives a process of reflecting on successes and challenges and, with guidance from their coach, creates goals and executes a plan. Structured coaching programs are an important step to establishing an organizational culture that supports the continuous learning of all team members, and coaching can facilitate effective transitions across a physician's career.[17]

EQUITY, DIVERSITY, AND BELONGING[18]

Eliminating health inequities requires deliberate actions to produce a competent health care workforce capable of meeting the health care needs of our population. Strategies range from training in HSS and structural competency to enhancing the diversity of the physician workforce and providing leadership development. AMA collaborators seek to combat educational inequities within medical training programs and reimagine medical education to achieve social justice and equity.[19]

ARTIFICIAL INTELLIGENCE (AI) AND DIGITAL HEALTH[20]

AI and other digital technologies are transforming health and health care delivery, but most physicians lack formal training to optimally use these tools and to fulfill our duty to monitor their effectiveness and safety. The AMA has been an advocate for training in telehealth[21] and artificial intelligence[22] for physicians at all levels and has produced a series of introductory modules on AI.[23] AI also offers opportunity to improve processes of medical education, and the AMA has issued guidelines for the ethical implementation of AI for educational purposes.[24]

This opportunity to leverage informatics and emerging technologies to improve medical education is the focus of AMA's newest initiative: *Transforming Lifelong Learning through Precision Education*.[25] Precision education is a "*system that uses data and technology to transform lifelong learning by improving personalization, efficiency, and agency at the individual, program, and organization levels*".[26] Focused on providing the right education to the right learner at the right time, precision education can be conceived of as "CBME on the steroids of data and technology",[27] and the concept has garnered interest internationally.[28] The AMA's new grant program will award $1 million over 4 years to each of 10 projects that span the educational continuum and explore implementation in a variety of institutional settings. Recognizing a default future in which only the most resourced institutions could create such systems, the AMA hopes to identify key issues that would facilitate an equitable implementation of precision education for all learners and the patients they serve.

The AMA is fortunate to have the capacity to make this investment of over $37 million to promote educational innovation over the past decade, but such monetary commitment is likely out of reach for many other medical associations and countries. It is important to highlight other elements of the AMA approach that have been critical to promoting change.[5] Indeed, many principal investigators have articulated that, while the funding is deeply appreciated, other factors generated the most local impact. External validation of the need for change is an important first step; the AMA spoke for its many members in stating an imperative to realign education to current practice realities. Networking across institutions fosters clarity of emerging conceptual models and generates shared strategies and resources that facilitate implementation. Change management and implementation science are challenging areas; AMA offers training in these concepts, and AMA staff provide customized coaching to specific projects, institutions, and thematic groups. Strategies must be implemented at the organizational level to support medical educators juggling the demands of innovation on top of routine duties.[29] The AMA uses its international platform and various communication channels to champion and widely disseminate the projects, augmenting traditional scholarly publication. Being associated with prominent AMA initiatives makes educational programs competitive for other funding sources, such as philanthropic or government issued grants.

Such measures can be tackled to varying degrees by any professional association with a clear mission and dedicated staff. The AMA hopes that the rich resources emerging from its partnerships will catalyze others embarking on innovation. The AMA medical education team and partners are eager to learn from other professional societies and cultures as they develop novel approaches tailored to the unique challenges and assets of their constituencies.

Disclaimer: The opinions expressed in this article are those of the author and do not necessarily reflect American Medical Association policy.

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