

Precision Education: The Future of Lifelong Learning in Medicine

Issue:

The current process of medical education across a physician's career is inefficient, inequitable, and inflexible. Precision education offers a personalized approach to students and physicians as they progress along the educational continuum and through their professional life. The academic community is currently defining this emerging concept and tackling the challenge of translating it from vision to implementation.

Background:

Precision education can be described as the tailoring of education to the specific characteristics of the individual learner. This echoes the earlier concept of precision medicine, which denotes prevention and treatment strategies that take individual patient variability into account. In 2015, President Obama announced a research initiative with the National Institutes of Health that aimed to accelerate progress toward a new era of precision medicine. It follows suit that precision education would emerge, addressing the full spectrum of learning from medical school through continuing professional development.

Much like how clinical medicine integrates precision medicine approaches, where appropriate, to improve the diagnostic process and personalize patient care, so too should academic medicine integrate precision education to personalize the learning and training of physicians to improve patient care.

Despite rigorous evaluation and accreditation processes, current educational practices across the continuum may fail to apply learning science to improve learning outcomes, leave learners vulnerable to gaps in understanding of their own educational needs, and neglect the social elements of learning, thereby eroding curiosity and joy within the physician. Disconnected education and patient care undermines the impact of lifelong learning. Thus, precision education seeks to implement a system that leverages data and technology to improve personalization of education, efficiency of learning, and ultimately, patient outcomes. In other words, it holds promise for improved patient care by delivering the right education to the right physician at the right time. Greater precision offers an opportunity to elevate equity, diversity, and belonging by better understanding the experiences and assets, as well as ongoing developmental needs, of individuals. Ongoing efforts are needed to create a shared mental model and identify best practices to support precision education.

Potential Strategies:

Overarching principles that should drive precision education include relevance, accessibility, equity and inclusivity, fostering curiosity, cultivating collaboration, and human-centered design. Key attributes of innovation in this space include:

- Individualized and relevant assessments (identifying gaps)
- Assessment and training harmonized with physician workflow
- Learner-centered agency (assessments with the learner, not of the learner)

- Promoting the concept of a learning health system
- Education informed by interoperable data from dispersed sources
- Use of leading technologies, including virtual platforms for scale, personalization, and reach
- Leverage of coaching and adaptive learning principles to learner development
- Built for the future

The AMA and others seek to advance this important body of work. In 2022, the AMA convened a precision education summit with a dozen nationally recognized leaders in health care, education, and technology to ask the question — What do you think of when you hear the term “precision education”?

The AMA redefined its strategic focus in medical education in 2023 to prioritize four key areas through its [ChangeMedEd®](#) initiative:

- Competency-based medical education (CBME)
- Transitions across the continuum
- Equity, diversity, and belonging
- [Precision education](#)

The work that comes out of the ChangeMedEd® initiative related to precision education can be used to increase collaborations and inform best practices, leading to a clearer understanding across the field. The [plenary session](#) of the ChangeMedEd® 2023 conference addressed precision education and is available to view on the [AMA Ed Hub™](#). The session described a conceptual model of precision education followed by examples of innovation in the field at the medical school, residency, and practice/health system levels.

Moving Forward:

Timely, robust pilot projects will aid in fostering the improvement and acceptance of precision education. One such example is Reconnect, a pilot project by multiple departments at the AMA, which uses a supportive, augmented intelligence (AI) algorithm within the EHR to provide anticipatory learning resources based on upcoming patient visits. Its development has been informed by feedback from more than 60 physicians at all career stages and within a variety of disciplines. This project seeks to personalize lifelong learning thereby improving efficiency and patient outcomes.

AMA Resources:

The AMA has ample policy that supports the continuum of education — starting at preschool and moving through undergraduate, graduate, and continuing medical education. Such policies can be found on the [AMA Policy Finder](#). Additional resources include:

- [ChangeMedEd](#)
- [Reimagining Residency](#)
- [Council on Medical Education](#)
- [AMA Ed Hub™](#)
- [Health Care Advocacy](#)
- [Medical Student Section](#)
- [Resident & Fellow Section](#)