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# Undergraduate Medical Education in the Post-COVID-19 Era: Innovation that Bridges Biomedical Science, Healthcare Delivery and Societal Expectations

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## COVID-19's Impact on Undergraduate Medical Education

The academic year of 2019-2020 witnessed an event that impacted nearly all facets of undergraduate medical education (UME) and graduate medical education (GME) education, the COVID-19 pandemic. Medical schools responded to the urgency of COVID-19 public health interventions in a number of important ways. First, they and their teaching hospitals, as the safety-net health care delivery systems, dealt and continue to deal with the onslaught of patient care and demand for services. Medical schools, supported and guided by the Liaison Committee for Medical Education (LCME), rapidly adapted their educational models for preclinical and clinical education to meet the simultaneous challenges of maintaining the integrity of their curricula plus faculty and student safety. For example, various synchronous and asynchronous technologies have been used to enhance remote learning in both preclinical and clinical environments. Simulation has been more widely employed to ensure that students who were in clinical rotations met necessary educational objectives for graduation requirements.

At a larger level, COVID-19 also revealed glaring deficiencies in public health systems and policies. As the pandemic played out, medical schools were confronted with the need to address these deficiencies, resulting in increased attention on how population health and public health educational objectives were folded into the curriculum. Renewed focus on health system design and improvement, health disparities, data-driven patient care, research and education has resulted.

The societal protests that ensued following the death of George Floyd amplified the need for medical schools to address immediately social determinants of health and illness within the context of social justice and systemic racism. As many medical schools and their teaching hospitals are urban, safety-net health care institutions that have disproportionately treated poor, racially and ethnically diverse, and marginalized populations, institutional leadership began to address how their institutions could effectively address systemic racism and continue to do so.

## A Long Track Record of Curricular Reform in Undergraduate Medical Education in the U.S. and Canada

Undergraduate medical education (UME) curriculum reform has been a priority within medical education dating to the famous Flexner Report that was issued over 110 years ago. The report, funded by the Carnegie Foundation and fueled by scientific discovery, helped eliminate proprietary medical schools in the United States and

Canada. It established the biomedical model as the educational standard for schools of medicine. The legacy of the Flexner Report includes creation of the groundwork for the current accreditation organization for U.S. medical schools, the LCME. This organization was founded in 1942 by an agreement between the Association of American Medical Colleges (AAMC) and the American Medical Association (AMA). In 1979 a joint agreement between the Committee on Accreditation of Canadian Medical Schools (CACMS) and the LCME was signed where upon the LCME would officially recognize CACMS. Since that time, Canadian medical schools have been accredited by both organizations. Membership of the LCME is composed of medical school faculty from U.S. and Canadian medical schools, student representatives, and public members, and staffed by the LCME Secretariats, one each from the AAMC and AMA. (See "Academic Quality and Public Accountability in Academic Medicine: A 75-Year History of the LCME.")

The strength of UME education in the United States and Canada is that the curriculum of each medical school is created by the faculty of that school, and thereby aligns with the mission and values of the institution. While each school implements its own unique curriculum, the strength of U.S. and Canadian medical education is that a school's curriculum must meet accreditation standards established by LCME. Medical schools – in concert with the LCME – continue to push for advances in teaching methods, modernization and relevance of curriculum content, and organization and delivery of the UME curriculum such that it prepares students to effectively transition to the next level of professional development, graduate medical education and beyond.

COVID-19 has created new opportunities to further UME curricular change in medical schools. Allow us to outline some of the current opportunities for leaders in medical education to consider moving forward.

- **Create Opportunities to Balance UME Curricular Objectives with Technology Innovation and Continuous Quality Improvement.** With the explosion of knowledge across the biomedical, population health and social scientific spectrum, UME is challenged by how best to adapt the curriculum to better prepare medical students for their professional careers. We see rapid change in technology in both clinical care and education, from telemedicine to artificial intelligence (AI) tools, robotics and nanotechnology. How will these tools be used to enhance teaching methods, but also assist in the care of the patient? The practice of medicine remains, at its core, the humanistic application of science and art.

  Alternative instructional methods related to, for example, synchronous vs. asynchronous learning, hybrid approaches, and team-based initiatives are now part of the educational curriculum and teaching methods. Additional competencies in interprofessional education (IPE) and collaborative practice are central to curricular discussions as well. One downside risk to exploring these additional expectations is how to balance expanding curricular goals and objectives, the length of the UME program requirements, and how to maintain coherence and integration of goals and objectives across the education continuum.

  It is important to note that the LCME accreditation requirements insist that a medical school have institutionally agreed upon overarching educational program goals and that preclinical and clinical clerkship goals and objectives are directly linked to the overarching program goals and monitored through a continuing quality improvement process (CQI).

- **Seek Opportunities to Mitigate Educational Expense to Institutions and Students.** While the costs of operating comprehensive medical education programs and academic medical centers continue to escalate, students often bear the brunt of offsetting some of those educational costs. How can we keep medical schools strong and solvent while minimizing the enormous debt that students accumulate over the course of their training?

- **Seamless Integration of Population Health Sciences into Medical Education Curriculum.** As the traditional emphasis on treating the patient evolves to one of treating the community, curricula must also evolve to focus on preventive measures that

address the collective rather than the individual. Specific changes will center upon, for example, healthy equity, infection control, pandemic modeling, population and public health, and telemedicine.

- **Create Learning Environments that Respect Diversity, Equity, Inclusion (DE&I) and Social Justice as Institutional Core Values.** Related to the above, curricula must instill in students an appreciation for underrepresented individuals and underserved communities and how each physician's pledge must include an ongoing commitment to the leveling of inequities.
- **Create Learning Environments that Support Student and Clinician Well-being.** In an era where physician burnout runs rampant, medical education must underscore the need for lifelong personal growth, resilience and well-being as a fundamental tenet to the effective practice (and study) of medicine.

## On the Right Path

To put the need for change in context, it is important to consider the key players and relevant documents from the industry's governing bodies.

- Accreditors must play a fundamental role in encouraging curricular change. The latest version of the Current Structure and Functions of a Medical School Document – the regulatory document used for LCME accreditation – is the guiding instrument for UME accreditation for the nation's allopathic medical schools. Standards, and the elements that are the components of standards, are continually reviewed and updated by the LCME and changes posted for the medical education community. LCME continues to adapt standards and elements over time based on advances in scientific, educational, and culturally important and relevant information necessary to prepare medical students to become physicians. LCME's rapid and accommodating flexibility to the COVID-19 pandemic is illustrative of the accreditation body's flexibility to provide schools significant leeway during the pandemic to ensure students complete core requirements.
- Perhaps more significant to ensuring curriculum change is the current AAMC Strategic Plan, in light of the global pandemic and seismic societal changes taking place. It is important to note that, within AAMC's 10-point plan, item number one is to strengthen medical education. AAMC has adopted a firm commitment to furthering the fourth pillar of the quadruple aim, what it terms "community collaborations", and this emphasis should push curricular change as well.
- The AMA offers another perspective – one that in our estimation reflects the practical needs for education reform to meet the expectations of practice. With its Accelerating Change in Medical Education initiative, AMA took the lead on curricular reform. Among the noteworthy propositions from AMA are innovation grants, reimagining residency, coaching in medical education, and other pursuits.

There is thus a groundswell of activity pushing meaningful curricular reform forward, catalyzed by the global pandemic and recent social upheaval.

## Final Thoughts and Implications for Leadership

From our perspectives, the three organizational initiatives described above will almost guarantee significant curricular change in the future despite a history of inertia in this area. The AAMC strategic plan may have greater weight in modifying medical school program behavior and in proscribing the desired characteristics for future senior leaders in the search and selection process. The LCME will continue to encourage educational innovation that is aligned with the mission of each medical school through its standards and elements.

As reform relates to leadership recruiting, there will be a tremendous need for chairs, deans and other executives within academic medicine to embrace change and find new means and strategies for educating young physicians. Already our clients are seeking leaders who exhibit, for example, a passion for innovative pedagogies; a commitment to supporting communities and pursuing social equity; financial acumen and creativity; and a true concern for the well-being of colleagues in the practice of

medicine. As academic physicians who are also executive search professionals, we embrace the opportunity to help our clients find leaders who champion meaningful curricular reform.

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