Medical Teacher

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/imte20

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To cite this article: Susan E. Skochelak, Kimberly D. Lomis, John S. Andrews, Maya M. Hammoud, George C. Mejicano & Julie Byerley (2021) Realizing the vision of the Lancet Commission on Education of Health Professionals for the 21st Century: Transforming medical education through the Accelerating Change in Medical Education Consortium, Medical Teacher, 43:sup2, S1-S6, DOI: 10.1080/0142159X.2021.1935833

To link to this article: https://doi.org/10.1080/0142159X.2021.1935833

Published online: 22 Jul 2021.

MEDICAL TEACHER
2021, VOL. 43, NO. S2, S1–S6
https://doi.org/10.1080/0142159X.2021.1935833

Realizing the vision of the Lancet Commission on Education of Health Professionals for the 21st Century: Transforming medical education through the Accelerating Change in Medical Education Consortium

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ABSTRACT

In the last two decades, prompted by the anticipated arrival of the 21st Century and on the centenary of the publication of the Flexner Report, many in medical education called for change to address the expanding chasm between the requirements of the health care system and the educational systems producing the health care workforce. Calls were uniform. Curricular content was missing. There was a mismatch in where people trained and where they were needed to practice, legacy approaches to pedagogical methods that needed to be challenged, an imbalance in diversity of trainees, and a lack of research on educational outcomes, resulting in a workforce that was described as ill-equipped to provide health care in the current and future environment. The Lancet Commission on Education of Health Professionals for the 21st Century published a widely acclaimed report in 2010 that called for a complete and authoritative re-examination of health professional education. This paper describes the innovations of the American Medical Association Accelerating Change in Medical Education Consortium schools as they relate to the recommendations of the Lancet Commission. We outline the successes, challenges, and lessons learned in working to deeply reform medical education.

KEYWORDS

Medical education; Flexner report; medical education reform; health care workforce

Introduction

A decade ago, many in medical education reflected on the state of health professions training and called for transformation to address the widening gap between the needs of health care and the educational systems producing the health care workforce. (Cooke et al. 2010). Prompted by the centenary of the publication of the Flexner Report, there were uniform calls to address missing curricular content, mismatch in locations of training, legacy approaches to pedagogical methods, imbalance in diversity of trainees, and lack of research on educational outcomes, and the resulting workforce that was described as ill-equipped to practice in the current and future health care environment (Crosson et al. 2011; Lucey 2013).

The Lancet Commission on Education of Health Professionals for the 21st Century (Frenk et al. 2010) published a widely acclaimed report in 2010 that described the situation as 'the problems are systemic: mismatch of competencies to patient and population needs; poor teamwork; persistent gender stratification of professional status; narrow technical focus without broader contextual understanding; episodic encounters rather than continuous care; predominant hospital orientation at the expense of primary care; quantitative and qualitative imbalances in the professional labor market; and weak leadership to improve health-system performance.' The Lancet Commission called for 'a thorough and authoritative re-examination of health professional education, matching the ambitious work of a century ago'.

Practice points

- The American Medical Association (AMA) Accelerating Change in Medical Education initiative is one successful model that has demonstrated the ability to implement deep and lasting changes that improve the way we train our future health care workforce.
- As the consortium has matured, participants are increasingly outward-looking—embracing a responsibility for advocacy at a systems level to improve medical education.
- During this past decade, the AMA Accelerating Change in Medical Education institutions and the consortium have implemented all aspects of educational reform described by the Lancet Commission to some degree and have expanded and modernized the ideas put forward in the original report.

The Lancet Commission described three generations of educational reform in the past century. After the Flexner Report, the first generation of reform focused on a science-based curriculum. The second generation followed about 50 years later with problem-based learning and integrated curriculum approaches. The Lancet Commission stated that a third generation of reform is now needed that 'should be

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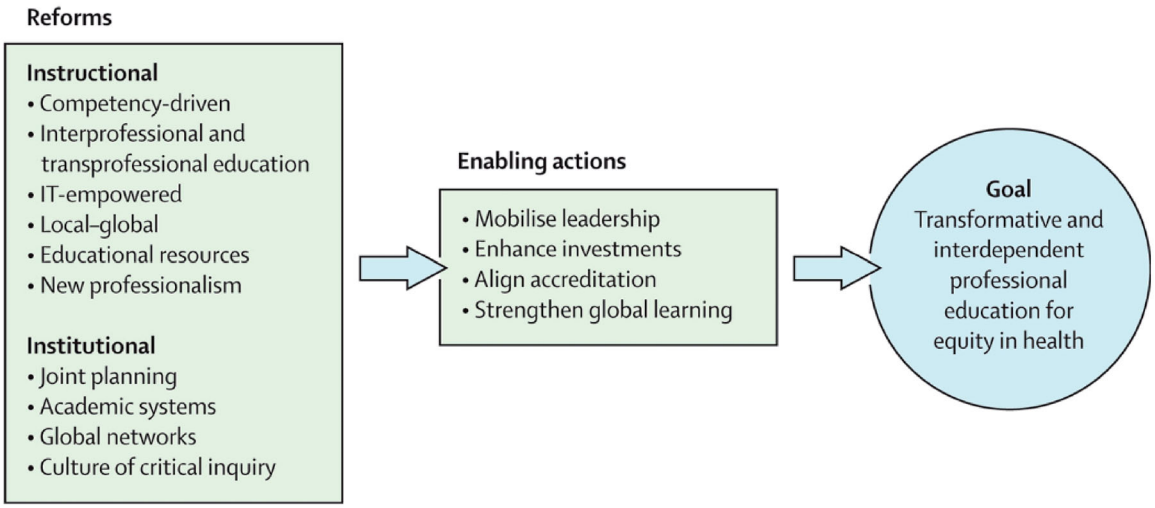

Figure 1. Recommendations for reforms and enabling actions. Frenk et al. (2010).

systems based to improve the performance of health systems by adapting core professional competencies to specific contexts, while drawing on global knowledge.' The Lancet Commission described their vision for this second century of health professions training: 'all health professionals in all countries should be educated to mobilize knowledge and to engage in critical reasoning and ethical conduct so that they are competent to participate in patient and population centered health systems as members of locally responsive and globally connected teams.' These efforts would be essential to advance health equity within and between countries (Frenk et al. 2010).

To realize the vision, the Lancet Commission described a number of instructional and institutional reforms and enabling actions that would result in achieving the goal of transformative and interdependent professional education for equity in health (Figure 1).

They expanded upon these concepts and developed 10 recommendations to guide the needed reforms. The Lancet Commission report ended with a call for all constituencies to embrace the imperative for reform to develop an enlightened new professionalism leading to better services and improvements in the health of patients and populations.

In parallel, more than a dozen national and international reports focused on the need for innovation in medical education in the United States and throughout North America. The recommendations of these reports were in remarkable congruence to the Lancet Commission's findings and recommendations, calling for a focus on competency-based education; training that included content on population health, quality and safety, team-based care, and social determinants of health; deeper partnerships with health care systems for training purposes; and addressing issues of the learning environment to implement new technology-assisted instruction and assessment and the well-being of trainees (Skochelak 2010a, 2010b).

The AMA Accelerating Change in Medical Education initiative

In 2013, recognizing the almost universal agreement on needed changes in medical education together with the absence of recommendations on implementing solutions, the American Medical Association (AMA) designed an intervention to support innovation in medical education across the United States (Lomis et al. 2020). The intervention, the AMA Accelerating Change in Medical Education initiative, was designed to provide resources and a supportive infrastructure to overcome the barriers that were holding back needed educational reform. By 2020, the Accelerating Change in Medical Education schools and its collective consortium have implemented all aspects described by the Lancet Commission to some degree and have expanded and modernized upon ideas put forward in the original report (Skochelak and Stack 2017). This series of manuscripts describes in more detail the innovations of the consortium's schools as they relate to the recommendations of the Lancet Commission: the successes, challenges, and lessons learned in working to deeply reform medical education to meet the goals as described above.

The AMA designed the Accelerating Change in Medical Education initiative to support the general consensus that medical education needed to change to address significant gaps reported in physician training and to prepare new physicians to practice effectively in modern health systems and communities. When the AMA launched the initiative in 2013, four goals were articulated: (1) support competency-based flexible individual pathways in education, (2) add needed curricular content in health systems science, (3) partner with health care systems for improved education, and (4) support changes in the learning environment that incorporated technology and addressed learner well-being.

The AMA established a competitive funding program, awarding 5-year grants of $1 million dollars each to 11 medical schools. More than 80% of U.S. medical schools wrote letters of intent applying for these funds, indicating that enthusiasm for change was high. After awarding initial grants to 11 medical schools from across the country, the AMA brought these schools together to form the AMA Accelerating Change in Medical Education Consortium—a unique, innovative collaborative that allowed for the sharing and dissemination of groundbreaking ideas and projects.

The AMA Accelerating Change in Medical Education Consortium expanded to 32 schools in 2016 after awarding smaller grants to an additional 21 schools. The consortium

added another five schools in 2019, bringing membership to 37 medical schools. In addition, the consortium also expanded to graduate medical education with the launch of the Reimagining Residency program in 2019. This supplement is primarily focused on 2013–2018, the first five years of the consortium that focused on undergraduate medical education, and the original 32 schools. The GME programs added in 2019 will be addressed in the final paper.

Innovations developed and implemented by the schools are described in multiple papers. Accomplishments include the expansion of competency-based medical education to include master adaptive learning and coaching; the development of technology to support education, including a teaching electronic health record and a technology-enabled curriculum to train medical students in using large and complex data sets to improve care coordination and quality; conceptualization of the content of health systems science as the 'third pillar' of medical education; leadership development; and experience in working with under-resourced communities and understanding structural and social determinants of health influences on health outcomes and health equity.

This paper and the subsequent manuscripts in the supplement describe how the innovations of the AMA Accelerating Change in Medical Education Consortium brought to fruition the recommendations of the Lancet Commission.

The Lancet Commission framing for transformational reform in education

The Lancet Commission emphasized two major goals for educational reform: the need for transformative change and the need to strengthen interdependence in medical education. They articulated that a combination of institutional design and instructional design changes would be needed to accomplish these goals (Figure 2).

Of the 10 recommendations put forth the first six are listed under instructional reforms, which are described as encompassing the entire range from admission to graduation. These include: (1) adoption of competency-based curricula responsive to rapidly changing needs, (2) promotion of interprofessional education that breaks down professional silos, (3) use of the power of technology for enhanced learning, (4) adoption locally but harnessing global resources to confer capacity to flexibly address local challenges while using global knowledge and experience, (5) strengthening educational resources and faculty development, and (6) promoting a new professionalism that emphasizes interprofessional collaborative practice and uses competencies as the objective criterion for classifying health professions.

Four additional recommendations were classified under institutional reforms, which align national efforts through joint planning by the education and health sectors. These recommendations are: (1) joint planning mechanisms to engage key stakeholders; (2) expansion from academic centers to care across the continuum, including primary care and communities; (3) linking together through networks and consortia; and (4) nurturing a culture of critical inquiry.

The Lancet Commission recommendations and the Accelerating Change in Medical Education Initiative

Reflecting back upon the body of literature that informed the launch of the AMA Accelerating Change in Medical Education initiative, the work of the Lancet Commission resonates with the approach to, and breadth of, the consortium's activities. The strong systems orientation of the Commission's interprofessional and international author group aligns well with the AMA's ambition to not only impact medical education at individual grantee sites but to influence medical education at a systems level. Although funding in the first 5 years was focused on U.S. medical schools, there has been interprofessional leadership engaged at each site and meaningful interprofessional learner experiences often anchored in the health system and communities. An international presence evolved via various convening activities and direct consults extending from North America to Europe, Africa, the Middle East, and Asia (IAMSE 2020, 2021 posting by S Moosa to PROFMOOSA blog; unreferenced).

Systems orientation

A systems orientation was apparent in the original request for proposals for the AMA's grants, which included the original objectives of promoting exemplary methods to achieve patient safety, performance improvement, and patient-centered team-based care; improving medical students' understanding of the health care system and health care financing; and requiring evidence of collaboration between the educational program and its affiliated health system (Skochelak and Stack 2017). The frame of systems thinking was articulated in early collaborations around these goals, which were later fully expressed as the construct of health systems science (Baxley et al. 2016; Gonzalo, Dekhtyar, et al. 2017; Starr et al. 2017). The influence of systems thinking rapidly expanded to shape educators' strategic approach to other collaborative efforts of the consortium, including competency-based medical education and individualized pathways (Lomis et al. 2017; Mejicano and Bumsted 2018); and attention to the learning environment and learner well-being.

As the consortium has matured, participants are increasingly outward-looking—embracing a responsibility for advocacy at a systems level to improve medical education.

Informative/formative/transformative learning

The Lancet Commission distinguished three levels of education: informative—focused on development of knowledge and skill; formative—focused on developing values of a professional; and transformative—focused on preparing learners to act as change agents and leaders. The consortium demonstrates that successful informative and formative programming cannot be fully realized without transformative change in medical education. At the level of informative education, there are specific content gaps (such as health systems content), but more importantly there is a fundamental flaw in structured education's historic focus on delivery and memorization of information.

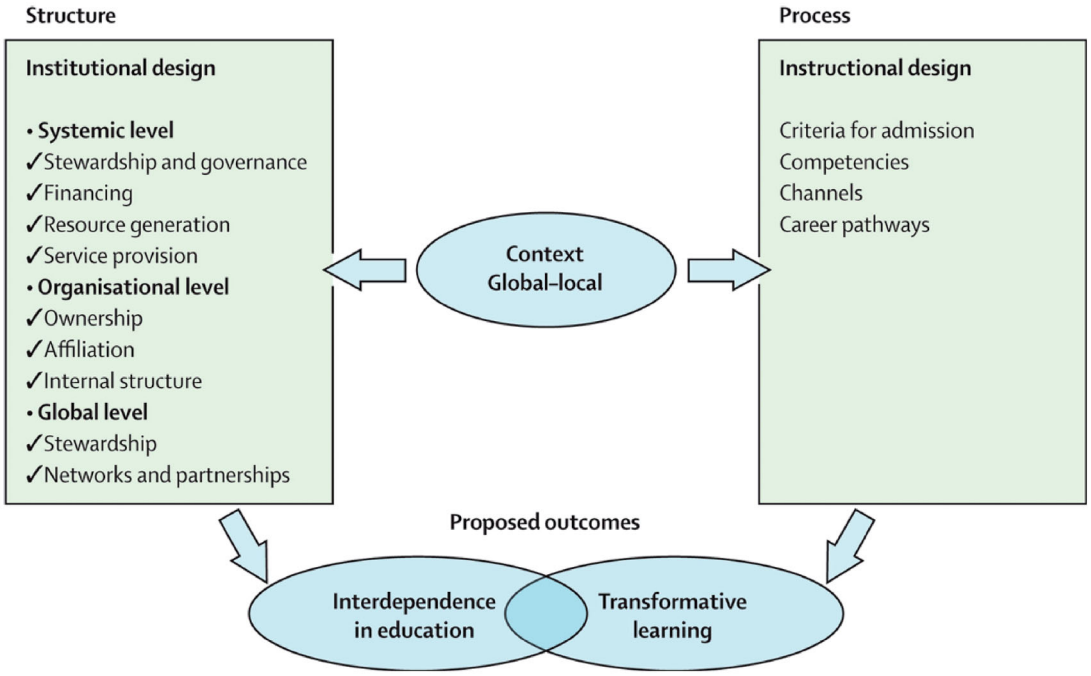

Figure 2. Key components of the educational system. Frenk et al. (2010).

This has resulted in medical professionals who are not adequately prepared to become critical thinkers, to become problem solvers, or to deal with ambiguity and the rapidly evolving systems in which they work (Domen 2016; Cutrer et al. 2017).

There have been similar gaps at the level of formative education. Despite a desire to support professional identity formation, many educational programs ignore systems influences that drive student motivations in other directions. Pervasive concerns among U.S. students about the residency selection process are manifest quite early in their course of training. Parallel curricula to prepare for licensing exams and chasing competitive grades to build an attractive resume distort students' focus from professional growth and caring for patients. To better align learners' focus with desired identity formation, consortium members have developed early meaningful clinical roles to engage students at their proximal zone of development, allowing them to experience the gratification of contributing to the welfare of patients, families, and communities and develop a deep understanding of how systems of care interact with structural and social determinants to influence health and well-being (Erlich 2014; Gonzalo, Graaf, Johannes, et al. 2017; Gonzalo, Graaf, Kass, et al. 2017; Greer et al. 2018).

As the Lancet authors point out, 'transformative learning involves three fundamental shifts: (a) from fact memorization to searching, analysis, and synthesis of information for decision making; (b) from seeking professional credentials to achieving core competencies for effective teamwork in health systems and (c) from non-critical adoption of educational models to creative adaptation of global resources to address local priorities.' The consortium has embraced these three fundamental shifts through (a) supporting master adaptive learning principles and active learning formats; (b) supporting competency-based progression in medical education and adding content in health systems science; and (c) developing a strong and lasting consortium that shares goals, content, tools, and solutions—developed collaboratively but applied locally in consideration of each institution's unique mission and resources (American Medical Association (AMA) 2017; Cutrer et al. 2017; Lomis et al. 2017; Mejicano and Bumsted 2018).

Interdependence

The Lancet Commission highlights interdependence and indicates the third generation of educational reform requires shifts from isolated to harmonized education and health systems; from stand-alone institutions to networks, alliances, and consortia; and from inward-looking institutional preoccupations to harnessing global flows of educational content, teaching resources, and innovations. The AMA Accelerating Change in Medical Education Consortium set out to foster a community of innovation which features interdependence through a growth mindset. It supports a group of educators willing to question the status quo, giving permission to fail and employing iterative implementation, allowing for sharing of challenges as well as successes. The consortium, in the first five years, has published 168 collaborative papers (AMA 2017; 2021 email from S Santen unreferenced), and the community has adopted an open-access orientation, sharing materials freely among institutions. Members highlight this interdependent and collaborative work across multiple individuals and institutions as the consortium's greatest strength. Interdependence of member educational programs with their affiliated health systems and communities has also been strengthened by the local process of innovation.

Workforce

The Lancet Commission emphasizes the relationship of health professions education programs to the development of a well-prepared workforce to address the needs of patients and populations. This seems obvious yet that link can be lost, particularly in the U.S. system which prioritizes

Table 1. Relationship of supplement manuscripts with recommendations of the Lancet Commission.

Supplement manuscript	Specific Lancet reforms addressed	Lancet reforms addressed in all papers
Competency-Based Medical Education (CBME)	• Adoption of CBME	Address competency gaps
Exploiting information	• Exploit informatics and foster skills in critical appraisal and application of knowledge	Harness globally, adapt locally
Health systems science as the new professionalism	• Interprofessional training • Promote a new professionalism	Strengthening of resources; faculty development Nurturing critical inquiry, both in learners and regarding effectiveness of educational innovations
Interdependence	• Expanding training settings • Linking together through consortia	
Workforce	• Joint planning mechanisms to harmonize supply and demand of health professionals	

individual choice in career pursuits. The Accelerating Change in Medical Education initiative sought to elevate a focus on meeting workforce needs in several ways. The diversity of institutions awarded grants includes those with proven success in, and those with creative approaches to, addressing targeted workforce needs, such as enhancing capacity to deliver primary care and enhancing the diversity of the workforce (White et al. 2015; Leep Hunderfund et al. 2018). Additionally, several collaborative themes that emerged serve to support the preparedness and well-being of the future workforce.

Enabling actions

The Lancet Commission refers to multiple enabling actions necessary to promote innovation. These enabling actions align with the structure and activities of the Accelerating Change in Medical Education Consortium. The Lancet Commission draws attention to the significant under-funding of medical education. The AMA grant process infused funds into partner schools, but also enhanced investment by the institutions themselves—at many sites the in-kind dedication of resources was greater than the grant funds. Members of the consortium also leveraged their participation in the consortium's community of innovation to obtain additional grants or gifts. The magnitude of the initial grants was sufficient to mobilize leadership, attracting top leaders in medical education from across the country and stimulating conversations with leadership of affiliated clinical systems that ultimately prompted greater alignment of missions. Consortium conferences were designed to strengthen global learning, as participants openly shared learning from their experiences. Additionally, an evaluation group was formed to prompt critical appraisal of methods at each site and, where possible, explore shared supporting metrics, evaluation, and research to determine which innovations work under which circumstances. As implementation efforts advanced across sites, institutions identified external systemic barriers beyond the control of any given institution hampering the fidelity of implementation for some forms of innovation. An increased interest in collective advocacy developed among members desiring to align accreditation and licensing processes in support of innovation, and the consortium has regularly conversed with U.S. medical education accreditors and other stakeholders to influence the processes to support educational reform (Lomis et al. 2020).

Conclusion

It has been 10 years since the Lancet Commission paper was published and 8 years since the AMA created the Accelerating Change in Medical Education initiative. During this past decade, the AMA Accelerating Change in Medical Education institutions and the consortium have implemented all aspects of educational reform described by the Lancet Commission to some degree and have expanded and modernized the ideas put forward in the original report. The series of papers that follows in this supplement describes in more detail the innovations of the consortium and highlights specific ways that the 10 recommendations made by the Lancet Commission to reform medical education have been implemented (Table 1). The final paper predicts the future pathways needed to expand the innovations into new levels of training.

The papers in this supplement highlight specific tactics used to address the recommendations, describe successes and lessons learned, and outline areas of needed future work. Innovation in medical education is challenging—if it were easy, all the Lancet Commission's envisioned reforms would be adopted quickly and universally. Medical education transformation requires high motivation, new resources, sustained effort, and a community of practice to support the efforts of dedicated individuals. The AMA Accelerating Change in Medical Education initiative is one successful model that has demonstrated the ability to implement deep and lasting changes that improve the way we train our future health care workforce.

Acknowledgments

The authors would like to thank their home institutions, fellow members of the American Medical Association's (AMA) Accelerating Change in Medical Education Consortium, and the AMA for their support of innovation.

The AMA Supplement is sponsored and supported by The American Medical Association.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

Disclaimer

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

Funding

This work was funded in part by the American Medical Association.

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