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RECOMMENDATIONS & GUIDELINES

Transforming the Education of Health Professionals to Confront the Burden of NCD

Commission on Education of Health Professionals for the 21st Century

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The burden of non-communicable diseases (NCDs) worldwide accounts for an ever-greater absolute number and relative fraction of years of life lost prematurely. In low-income and middle-income countries, cardiovascular diseases (CVDs) now account for 30% of deaths; these deaths constitute over 80% of all CVD deaths globally [1]. Despite these trends, health systems in high-income, middle-income, and low-income countries lag in adapting the care they provide. In most countries that are less economically developed, healthcare systems have never been considered robust; moreover, the complexity of NCDs requires health systems much more sophisticated than those traditionally prevalent. Such systems must be capable of delivering care that goes far beyond that needed for most acute health conditions.

The required healthcare systems mirror the complexity of NCDs. The rising prevalence of NCDs reflects a growth in risk factors that are preventable through individual and collective action such as smoking, sedentary lifestyles, and unhealthy diets. Timely diagnoses of NCDs require a system that can deliver and document periodic screening-oriented exams. Treatment often involves complex clinical judgments, the carefully managed use of chronically administered medications, repeated laboratory tests for monitoring, and referrals to a range of specialists and ancillary providers. Inter-professional communication is essential to coordinate complex care. Venues for the care provided typically extend well beyond the traditional provider's office, encompassing a continuum from home care to tertiary hospitalization and long-term nursing care. A healthcare system oriented to NCDs involves surveillance and community public-health interventions as well as the coordinated teamwork of a range of practitioners: community health workers, clinical officers, social workers, behavioral therapists, nutritionists, nurses, physicians, and rehabilitation specialists. In much of the world, however, education systems for health professionals fall short qualitatively and quantitatively in training such workers and thus in creating health systems that can deliver the requisite degrees of professional competency and interdependence. To produce graduates prepared to offer equitable and effective quality care, these academic institutions must be better aligned with the burden of diseases their graduates will encounter and with the systems within which their graduates will work.

A report from the Institute of Medicine (IOM), *Promoting Cardiovascular Health in the Developing World* [1], calls for an ambitious range of actions to promote cardiovascular health and to deliver related care despite currently inadequate workforce capacity. Even the United States finds its ratio of about 267 physicians per 100,000 people inadequate to meet its needs. India tries to cope with a ratio of 60 physicians per 100,000 people, and most sub-Saharan African countries struggle at fewer than 15 physicians per 100,000 people [2]. In 2010, the Education of Health Professionals for the 21st Century Commission (an independent and

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global *Lancet* commission of 20 experts in medicine, nursing, and public health) published a report recognizing the quantitative and qualitative deficiencies in the health professional workforce for the 21st century and analyzing the state of the education of health professionals around the world. The Commission's report, *Health professionals for a new century: transforming education to strengthen health systems in an interdependent world* [3], offered recommendations for ongoing reformation to meet evolving needs; the report also tracked the evolution of the education of health professionals since the landmark Flexner, Rose-Welch, and Goldmark reports of the early 20th century [4–6]. These historic documents called for innovations to ensure that medical, public-health, and nursing professionals had the science-based education (i.e., the informative learning) needed to be technically competent. In the middle of the 20th century, the Flexnerian revolution was enhanced by a greater emphasis on formative education designed to inculcate professionals with appropriate values, attitudes, and behaviors honed through problem-based learning. The Commission called for a third level of learning, transformative learning, that would imbue all health-professional students with the leadership skills needed to adapt global knowledge and core competencies to local contexts and to be socially accountable change agents for health systems not meeting population needs. As envisioned, the implementation of transformative learning would require a series of instructional reforms.

In the *Lancet* report, the outcome of transformative learning was coupled with movement toward greater professional interdependence in education. Treatment of NCDs demands coordinated teamwork among health professionals across time and space. For students of various disciplines, achieving the skills and attitudes required for efficient teamwork necessitates institutional reforms because professional tribalism and the associated boundaries can interfere with creating a dynamic approach to the most effective manner to deliver care. These boundaries can obstruct more flexible and effective competency-based approaches to the use of available talent. They are often legacies of static ideas about professional roles when the cost-effective delivery of high-quality, accessible care now calls for a more dynamic evolution of professional roles that allows for more porous professional borders and the documented benefits of task sharing and teamwork.

The *Lancet* report indicates that those in need often live in the less-accessible rural areas of low-income and middle-income countries. For extending the workforce in such regions, competency-based credentialing and innovative uses of distance learning and telemedicine can be valuable contributors to addressing the NCD epidemic. This approach, however, will also require building competency in providing supervision when care is delivered through intermediaries. The *Lancet* commissioners found that putting into practice the institutional reforms necessary to achieve professional interdependence will require a harmonization of education and health systems; a movement from stand-alone academic institutions to consortia, alliances, and networks; and an outward vision to harness the best knowledge and practices from around the globe. The report noted that academic medical centers should evolve into academic systems that encompass networks of hospitals and primary healthcare centers.

The themes of the *Lancet* Commission report can be summarized in ten recommendations. Six of these are pertinent to instructional reforms, and four are directed to institutional change. The proposed instructional reforms are as follows:

1. Competency-based curricula should be adapted to the local context after drawing from global knowledge and best practices. Competency gaps should be filled to reflect the demands of increasingly complex health systems.
2. Inter-professional and trans-professional education should be promoted to break down professional silos and to foster collaborative, non-hierarchical approaches to teamwork. Common competencies include analytic abilities, leadership and management, and communications skills.
3. Students should be educated to make maximal use of information technologies to identify and interpret knowledge, to manage information, and to collaborate.
4. The full range of global resources should be harnessed for local adaptation.
5. Educational resources, both financial and didactic, should be strengthened to include improved resources for faculty development.
6. A new generation of health professionals should be educated and mentored, one that meets objective criteria for competencies to move beyond categorization based on traditional disciplinary silos. They should possess a common set of attitudes, values, and behaviors and should acquire the ability to manage resources, to promote evidence-based policies, and to serve as socially accountable change agents.

The proposed institutional changes are as follows:

1. To harmonize supply and demand, to overcome fragmentation, and to address gender and geographic issues in creating the most effective health workforce, joint human health resource planning should involve ministries of health and ministries of education.
2. The education of health professionals should extend into primary-care settings and into communities through a shift from the concept of academic health centers to the concept of academic health systems.
3. Linkages between academic institutions worldwide should be strengthened through networks, alliances, and consortia, and extended to include government, business, the media, and civil society. Non-exploitative, non-paternalistic use of information technologies to connect with better-resourced locations can help compensate for faculty shortages in many countries.
4. A culture of critical inquiry should be established to foster social transformation.

To ensure that these recommendations achieve the desired outcomes (and ultimately to position healthcare systems to provide a robust response to the challenges posed by NCDs), the *Lancet* Commission called for the mobilization of leadership not only from academia, but also from the political sphere, from philanthropy, and from global organizations such as the World Health Organization and UNESCO. The commissioners urged the creation of national forums on the education of health professionals that would convene actors from academia, government, and professional associations to illuminate approaches to the institutional and instructional challenges to health, including NCDs, in the 21st century. Given the cost of ill health, the level of investment in the education of health professionals is grossly inadequate. Whereas funds to rectify this situation could come from many sources, the Commission cautioned that increasing dependence on the rising role of unregulated, unaccredited, and low-quality for-profit medical education could, ironically, lead to the de-Flexnerization of medical education. It also called for aligning the criteria for accreditation with the goals of the relevant stakeholders.

Modernized, evidence-based health systems must lead the response to the epidemic of NCDs. These systems should reflect local needs and should evolve in line with the more complex demands of the times. Deficiencies in the numbers of health professionals needed are beyond dispute. One must recognize the bureaucratic obstacles to creating the most efficient disciplinary mix. The multidimensional response called for in the IOM report will only be possible in many countries if the issues highlighted by the *Lancet* Commission are addressed. The world's systems for educating health professionals are the essential underpinnings of the health systems needed for global control of NCDs. The emergence of NCDs in all parts of the world necessitates commensurate adaptations in the education of health professionals and in health systems.

DISCLAIMER

Unless otherwise referenced, the opinions herein are those of the author alone and should not be construed as representing the position of the Institute of Medicine or the National Academies.

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