EDUCATION OF HEALTH PROFESSIONALS FOR THE 21ST CENTURY:
A GLOBAL INDEPENDENT COMMISSION

TRANSFORMATIVE LEARNING FOR A NEW CENTURY: INTERDEPENDENCE IN THE EDUCATION OF HEALTH PROFESSIONALS

Draft Executive Summary
August 2010

New Contexts – New Challenges

Health is all about people. Beyond the glittering surface of modern technology, the core space of every health system is occupied by the unique encounter between one set of people who need services and another who have been entrusted to deliver those services. That trust is earned through a special blend of technical competence and service orientation, steered by ethical commitment and social accountability, which forms the core of professional work. Developing such a blend requires a prolonged period of education and a substantial investment on the part of both student and society. Through a chain of events flowing from effective learning to high-quality services to improved health, professional education at its best makes an essential contribution to the well-being of individuals, families, and communities.

Yet, the context of and demands on the education of health professionals are rapidly changing across time and space. Looking backward, dramatic educational reforms one century ago helped to spark unprecedented health gains around the world. Good health, after all, is knowledge-based and socially-driven. The health professional plays a critical mediating role as "knowledge broker," linking people to technology and information; as service provider and care-giver; as communicator and educator; and as team member, manager, leader, and policy-maker. As such, the health worker is the human face of the health system.

But not all is well. By the opening of the 21st century, glaring gaps and striking inequities in health have been exposed, both within and across countries. For those left behind, the dramatic advances in health and health care in richer countries are simply an indictment of our collective failure to ensure the equitable sharing of good health in a polarized world. At the same time, the health security of all is being challenged by new infectious, environmental, and behavioral threats superimposed upon rapid epidemiologic and demographic transitions. Health systems are struggling to keep up as they become more complex and costly, placing fresh demands on health workers. Growing global interdependence has intensified these health challenges by accelerating the flow of diseases, technology, knowledge, financing, trade in health-related services, and international migration of professionals and patients.

Professional education has not been immune from these dynamics. Indeed, there is a slow-burning crisis in the mismatch between professional competencies and patient and population priorities due to narrowly-conceived, out-dated and static curricula producing ill-equipped graduates from under-financed institutions. Complacency will perpetuate the inflexible application of 20th century educational strategies to tackle 21st century challenges. The failings are systemic – professionals unable to keep pace, becoming mere technology managers, and exacerbating protracted problems such as a reluctance to serve marginalized rural communities. Several well-meaning recent efforts have attempted to address these fractures, but they have mostly floundered for several reasons including the rigidity and "tribalism" that afflict the health professions.

What is clearly needed is a full and authoritative re-examination of the health professional education system that matches the ambitions of reforms a century ago. Review and re-design are especially timely not only because of changing contexts but also because of fresh opportunities ushered in by global interdependence and the shared aspiration of the universal right to health.

The Commission

These are the reasons why our Commission has embraced the mission of advancing health, both individual and population-based, through landscaping instructional and institutional innovations in professional education to prepare the next generation for addressing new health challenges. We, the Commissioners, are professional leaders from diverse countries who have worked to develop a common approach to post-secondary education beyond the confines of national borders and the silos of individual professions. We adopted an inclusive approach to the health professions, but due to data and time limitations, we concentrated on medicine, nursing-midwifery, and public health.

We call for a new era of professional education that advances *transformative learning* and harnesses the power of *interdependence in education*. Just as reforms in the early 20th century rode on the wave of the germ theory and the establishment of modern medical sciences, so too our Commission believes that the future will be shaped by adaptation of core competencies to specific contexts drawing upon the power of global flows of knowledge. Our vision is global not parochial; multi-professional not confined to a single group; committed to building sound evidence; encompassing both individual and population-based approaches; and focused on instructional and institutional reforms.

We believe that all health professionals in all countries should be educated to lead in the capacity to mobilize knowledge, as well in critical reasoning and ethical conduct, so they can participate in patient- and population-centered health systems as members of locally responsive and globally connected teams. The ultimate purpose is to deliver high-quality comprehensive services for advancing the universal right to the highest attainable standard of health. This vision is guided by two notions (Figure 1):

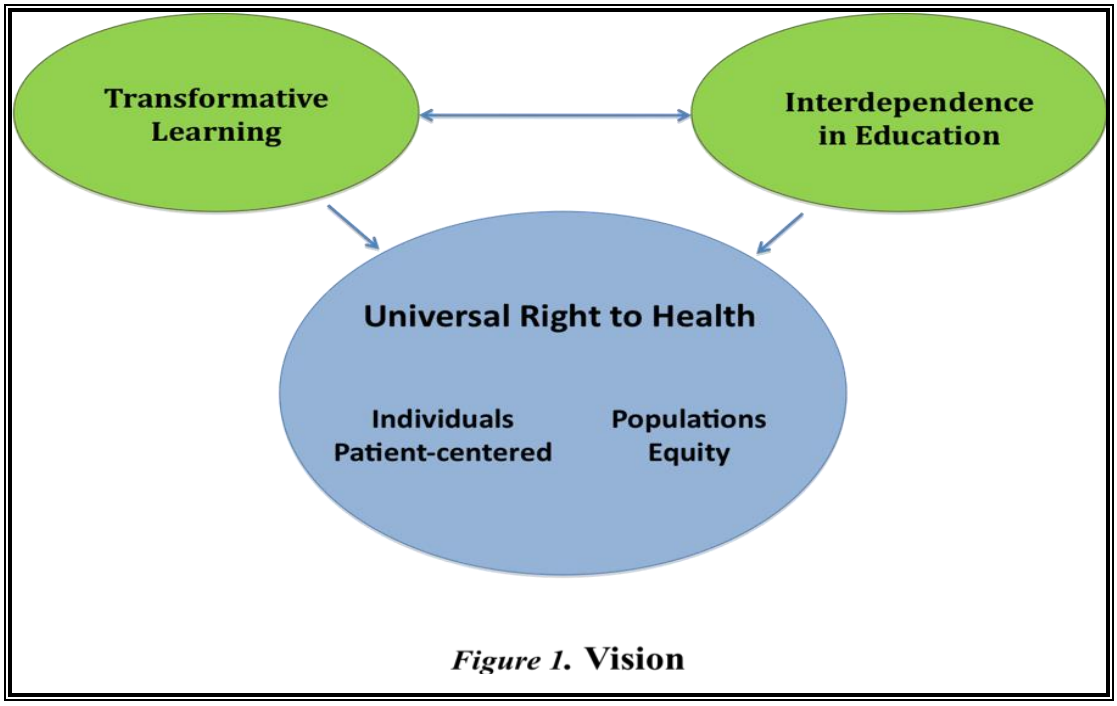

Figure 1. **Vision**

Transformative learning captures the imperative of generating purposeful change of: (i) students through the learning process; (ii) classroom-to-practice learning continuum; (iii) educational institutions through reform; and (iv) social reality through the action of competent and committed professionals.

Interdependence in professional education underscores interactions that harmonize six key linkages among: (i) the local and global spheres of action; (ii) the health and education systems; (iii) health professionals and the people they serve; (iv) all members of the health workforce for inter- and trans-professional collaboration; (v) competencies shaped by context; and (vi) teachers and learners together.

Framework and Findings

We employ a systems approach to bring together the spheres of education and health, and we open the "black box" of the educational system to examine both instructional and institutional design. Our framework is centered on people as co-producers and as drivers of needs and demands in both education and health. Interacting through the labor market, the provision of educational services generates the *supply* of an educated workforce to meet the *demand* for professionals to work in the health system. To impact on health outcomes, the professional education subsystem must design instructional and institutional strategies.

Instructional innovations. A total of 75 cases were identified through a systematic search. For illustrative purposes, 25 are mapped highlighting the participation of all world regions and all major professions (Figure 2).

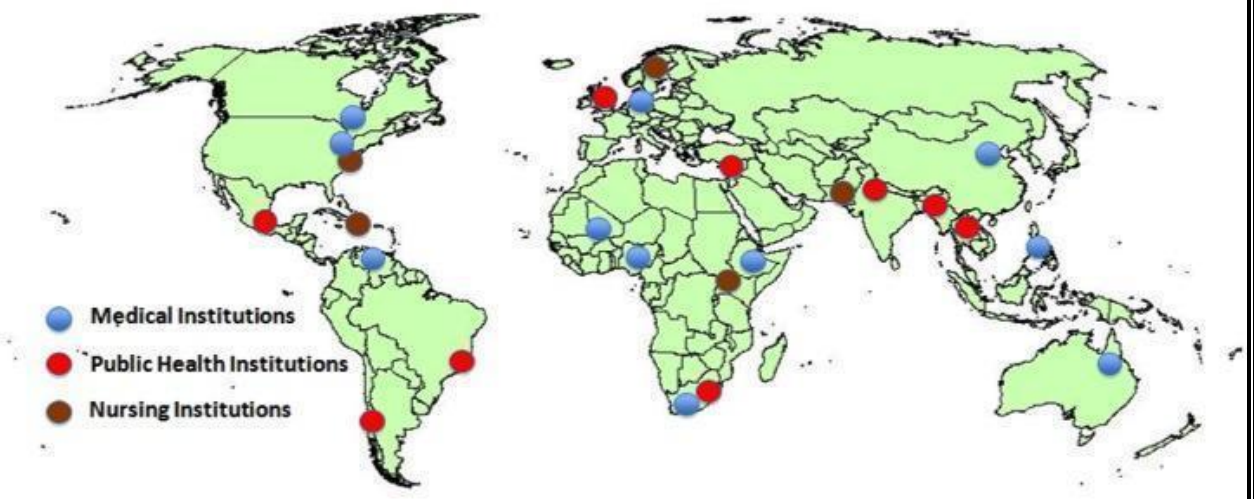

Figure 2. Seeds of innovation

	1st Generation	2nd Generation	3rd Generation
INSTRUCTIONAL DESIGN	• Basic science-clinical • Disciplinary instruction • Admission qualifications	• Problem-based learning • Integrated curriculum • Inter-disciplinarity and expanding fields • Early exposure to patients	• Competency outcomes • Inter-professional team-based • Leadership and management • Technology-empowered learning • Global perspectives
INSTITUTIONAL DESIGN	• University base • Hospital training • Research-education • Accreditation, licensing	• Broaden training worksites, hospitals, community centers, home	• Education and health systems • Connectivity, Networks, partnerships
OUTCOMES	• Professionalism • Standards technical and ethical	• Active learner	• Life-long learning • Socially accountable professionalism

Table 1. Three generations of reform

Innovations were classified into three generations of reform (Table 1). Educational reforms in the 20th century share roots going back to social and scientific developments in the 19th century. The first generation was sparked by three seminal reports -- Flexner (1910), Welch-Rose (1915), and Goldmark (1923) -- which integrated modern sciences into university-based schools of medicine, public health, and nursing, respectively. The second phase, around mid-20th century and included problem-based learning and integrated curricula accompanied by growth of hospitals as academic centers. The more recent third generation has emphasized patient and population centeredness, competency-driven curricula, inter-professional and team-based

education, IT-empowered learning, and leadership skills. Despite these reforms, dozens of recent reports, task forces, commissions, and committees in several countries have underscored global workforce shortages, biased skill mix, mal-distribution within and across countries, and misalignment of competencies to health priorities.

We analyzed the instructional process in a comprehensive manner, from admissions through graduation into professional careers. Overall, we concluded that instructional innovation, global in scope, is proceeding, albeit unevenly and slowly. Although some experience has been accumulated, the field still mostly lacks hard evidence. Recent reform movements offer a base to build on – from the mobilization of an appropriate workforce to a re-focus on competencies driving curriculum development for team work strengthened by IT – all with the purpose of aligning education to health goals across national borders and individual professions in all countries.

Institutional landscaping was undertaken where data permitted in medicine, nursing, and public health. Altogether, we tabulated 2,420 medical schools and 467 schools or departments of public health and a global output of about 1 million newly trained doctors, nurses-midwives, and public health professionals each year (Table 2).

Region		Population (millions)	Estimated schools		Estimated graduates annually (thousands)		Workforce (thousands)	
			Medical	Public Health	Doctors	Nurses/ midwives	Doctors	Nurses/ midwives
Asia	India	1,230	300	4	30	36	646	1,372
	China	1,371	188	72	175	30	1,861	1,259
	East, South, South East, Other	1,075	241	33	18	58	494	1,300
	Central	82	51	2	6	15	235	603
	High Income Asia Pacific	227	168	26	10	56	409	1,543
Europe	Central	122	64	19	7	28	281	670
	Eastern	212	100	15	22	47	840	1,798
	Western	435	282	52	43	119	1,350	3,379
Americas	North America	361	173	65	19	74	793	2,997
	Latin America/Caribbean	602	513	82	32	28	827	1,099
Africa	North Africa/Middle East	450	206	46	17	22	540	925
	Sub - Saharan Africa	868	134	51	6	26	125	739
World		7,036	2,420	467	386	539	8,403	17,638

Table 2. Population, institutions, graduates, and workforce by region (2008)

Educational institutions are highly differentiated and severely mal-distributed. Average class size, for example, varied between 100 students in India to 1,000 in China. Four countries – China, India, Brazil, and USA – each having more than 150 medical schools, constituted 35% of the global total. Thirty-six countries had no medical schools, and 26 countries in sub-Saharan

Africa have one or no schools. Medical school density per capita demonstrated robustness in Latin America, Western Europe, North Africa/Middle East and Australia, but sparseness in sub-Saharan Africa and parts of Southeast Asia. Not surprisingly, medical school numbers did not align well with either country population size or national burden of disease.

Total expenditures in health professional education were estimated at around $100 billion ($43.6 billion for medicine, $24.7 billion for nursing, and the remainder assumed for other health professionals). The average cost per medical graduate was $113,000 and per nursing graduate $46,000. Unit costs were highest in North America and lowest in China. Noteworthy were the small share of student tuition fees to school revenue and the recent explosive growth of private schools in countries such as Brazil and India (Figure 3).

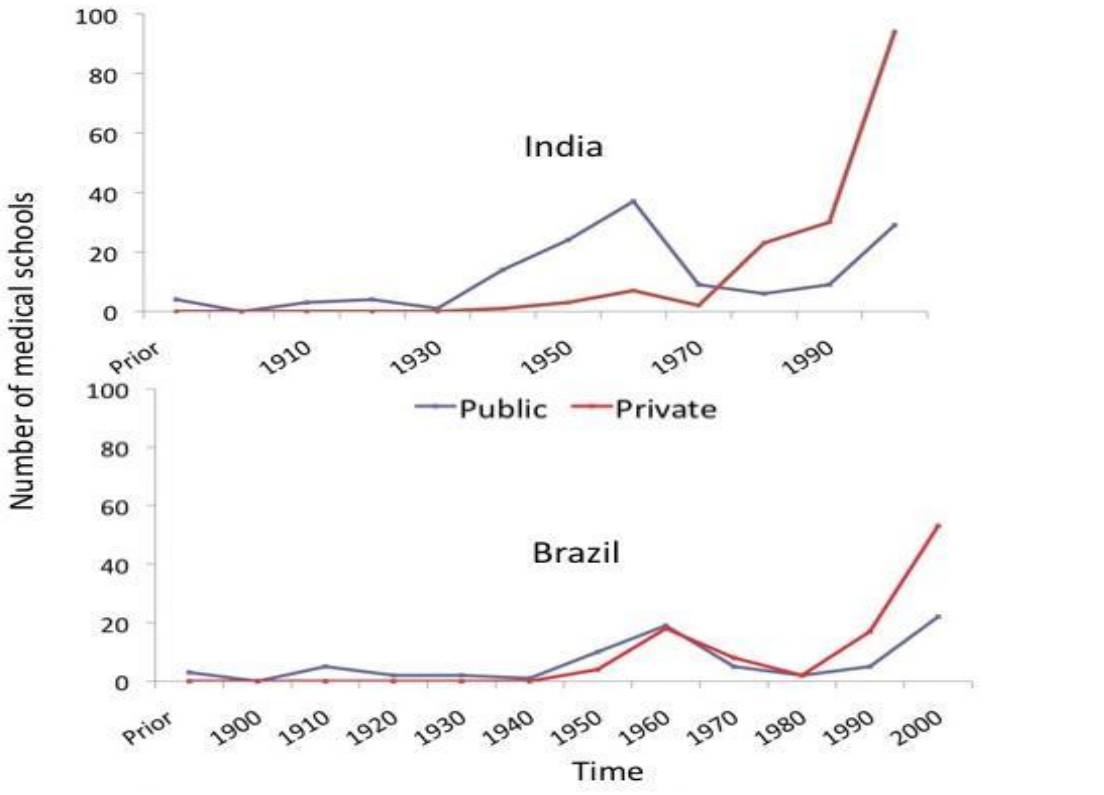

Figure 3. **New medical schools (public and private) in India and Brazil**

Accreditation is a key stewardship function but is unevenly practiced around the world. The challenge is to balance local practice with global standards in aligning its purposes with health and societal goals. Skill mix and labor markets underscore how poorer countries must harmonize professional with basic health workers to form effective teams and how richer countries must introduce global perspectives into their domestic programs, while paying attention to the education of up to one-quarter of their professional workforce which is imported after overseas training. Interdependence creates both the need and the potential for an expansion of collaboration through global networks and consortia that will harness resources and enhance shared learning across countries.

Overall, there is a severe global shortage of institutions devoted to health professional education, exacerbated by marked mal-distribution both across and within countries. Financing is very

weak for professional education and funding for R&D is inferred to be exceptionally low. The explosive growth of private schools, as in Brazil and India, poses the challenge of a "de-Flexnerization" process with the multiplication of low quality proprietary schools of the type that were closed a century ago.

Reforms for the 21st Century

All peoples are tied together in an increasingly interdependent global health space. While each country must address national problems through building its own workforce, there is a global pool of talent. Cross-border flows of professionals, patients, and services are growing and impacting on educational content, channels, and competencies in all countries. Each profession may have a distinctive set of skills, but there is the imperative for bringing such expertise together into teams for effective patient-centered and population-based health work in diverse and rapidly changing contexts. Like porous borders, the walls between functional competencies by professions are not airtight but assume various shades of grey where "task-shifting" and "task-sharing" are crafted to produce practical health outputs that would not be possible with impermeable professional silos.

We call for a new era of professional education that advances *transformative learning* and harnesses the power of *interdependence in education.* Our two guiding notions lead to specific reforms and actions (Figure 4).

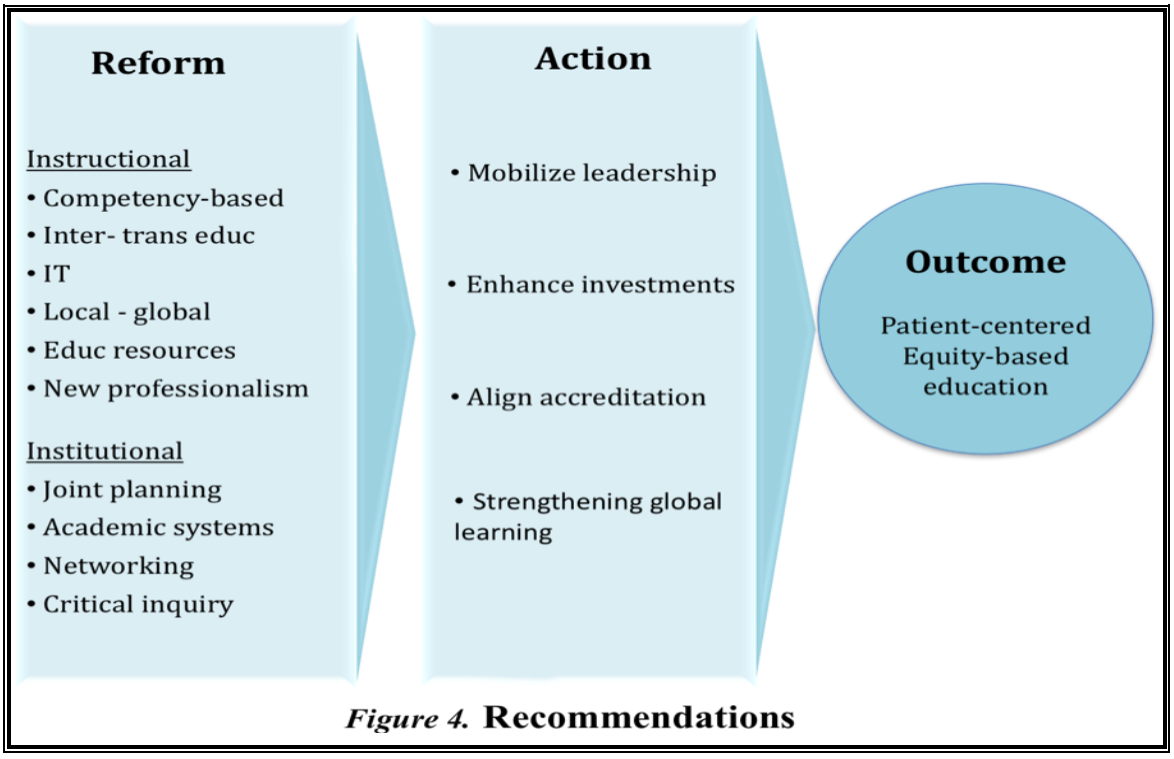

Figure 4. **Recommendations**

Instructional reforms – should be driven by a competency-based approach crafting curriculum and learning channels as instruments to match local conditions while harnessing global resources; the set of competencies that define distinctive professions should be constantly reviewed and re-aligned to reflect changing contexts.

Institutional reforms – are urgently needed to strengthen weak stewardship of organizations and systems through joint education-health sector planning, expanding academic systems into clinics and communities locally and globally, developing collaborative networks for mutual strengthening, and promoting the culture of critical inquiry and public reasoning.

Enabling Actions – are critical for overcoming barriers to reform. We propose immediate and longer-term actions to:

Mobilize leadership in the academic and professional communities backed by political leaders in government and civil society, specifically *philanthropic leadership* which catalyzed reforms one century ago and has the opportunity to do so again; *ministerial summits* sponsored by WHO and UNESCO; and *national academic forums* engaging all stakeholders.

Enhance investments, which now approximate $100 billion annually for professional education in a $5.5 trillion global healthcare industry. Only *2% of expenditure* devoted to human capability enhancement for a labor- and talent-intensive industry is plainly insufficient, imbalanced, and unwise. Given this huge gap, every country and agency should consider doubling its investments over the next five years. *Public financing* should seek to align competencies and skill mix, while reducing waste and re-structuring incentives for performance; *donor funding* must be sharply increased; and *private financing* should be enhanced but guided by policies to optimize health while minimizing the hazards of unregulated, un-accredited, and low quality schools.

Align accreditation with societal health goals through engaging relevant stakeholders in setting objectives, criteria, assessment, and tracking of accreditation processes at both the *national and global levels*.

Strengthen global learning systems that are weak because the funding for R&D in this field is shockingly meager. Overcoming lethargy and low vitality could be addressed by *metrics, evaluation, and research* to build a knowledge base for continuous improvement.

At this critical time upon the centenary of major reforms, we invite all concerned stakeholders to join us in much needed rethinking for transforming professional education in the 21st century. Health professionals have made huge contributions to health and happiness over the last century, but we cannot fight 21st century health battles with out-dated, inappropriate, or inadequate competencies. The extraordinary pace of global change is stretching the core competencies of all the health professions. That is why we call for this new round of more agile and rapid adaptation of competencies based on trans-national, multi-professional, and long-term perspectives to serve the needs of individuals and populations.

Ultimately, however, reform must begin with a change in the mindset that acknowledges problems and seeks to solve them. Effective implementation will require *a global social movement* engaging all stakeholders as part of a concerted effort to strengthen health systems. The result would be an enlightened new professionalism that can lead to better services and consequent improvements in the health of patients and populations. In this way, professional education would become a crucial component in the shared effort to address the daunting health challenges of our times, and the world would move closer to a new era of passionate, participatory, and people-centered action to progressively realize the right to the highest attainable standard of health for all.

About the Commission

The independent Global Commission on Education of Health Professionals for the 21st Century was launched in January 2010 and is scheduled to release its Report in The Lancet in November of the same year. Co-Chaired by Julio Frenk and Lincoln Chen, the Commissioners consist of a diverse group of Commissioners from around the world that deliberated, consulted, and conducted research compiling data and undertaking analyses. The aim was to articulate a fresh vision with practical recommendations of specific actions to catalyze steps leading to the 21st century transformation of health professional education in all countries, rich and poor alike.

The 20 Commissioners listed below was supported by teams in research and management. Advisory consultations were conducted with many stakeholders -- 25 young professionals, 14 members of an informal scientific advisory committee, and numerous advisors, consultants, and other contributors. The Commission had three formal meetings, three preparatory workshops, and numerous consultations around the world. The Commission was financed by the Bill and Melinda Gates Foundation, the Rockefeller Foundation, the China Medical Board, and The Lancet.

Commissioners

Julio Frenk, Co-Chair	Dean Harvard School of Public Health
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Jordan Cohen	Professor of Medicine and Public Health, George Washington University Medical Center
Lord Nigel Crisp	House of Lords
Tim G. Evans	Dean James P. Grant School of Public Health
Harvey Fineberg	President, US Institute of Medicine
Patricia Garcia	Professor of Public Health, Universidad Peruana Cayetano Heredia
Richard Horton	Editor-in-Chief, The Lancet
Patrick Kelley	Director, Boards on Global Health and African Science Academy Development, US Institute of Medicine
Barry Kistnasamy	Executive Director, National Institute for Occupational Health, South Africa
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David Naylor	President, University of Toronto
Ariel Pablos-Mendez	Managing Director, The Rockefeller foundation
Srinath Reddy	President, Public Health Foundation of India
Susan Scrimshaw	President, The Sage Colleges
Jaime Sepulveda	Senior Fellow, Bill and Melinda Gates Foundation
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